



Self Study Report for Accreditation



Submitted to
*National Agricultural Education
Accreditation Board (NAEAB)
Indian Council of Agricultural Research
New Delhi*



(2026-2031)

Reporting Period 2021-2026



ICAR-National Dairy Research Institute
(Deemed University)
Karnal-132001, Haryana, India



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SELF STUDY REPORT 2021-2026

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A national workshop on “Application of Artificial Intelligence and IoT-enabled Sensor Technologies for Precision Dairy Farming” was organized on July 24, 2024 at ICAR-NDRI, Karnal. The workshop was attended by 98 participants, including faculty and students.	646
A national workshop on “Application of Artificial Intelligence and Machine Learning in the Dairy & Food Industry” was organized on July 31, 2024 at ICAR-NDRI, Karnal. The workshop saw participation from a total of 265 individuals, including students and faculty members.	647
A workshop on ‘NARES-Blended Learning Platform (BLP)’ was held on August 23, 2023. Dr. Sudeep Marwaha and Dr. Shashi Dahiya were the resource persons.	647
An International Workshop on the topic “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding” has been organized by Animal Genetics and Breeding Division, ICAR-NDRI during 21 August to 1st September, 2023. Dr Cedric Gondro Dept of Animal Science, CNR at Michigan State University from USA delivered the lecture on the following topics 1) Genomic Analysis of R 2) Artificial Intelligence Applied to Animal Genetics.	647
Revenue through Sample analysis, consultancy services, equipment usage, Training and technology transfer	651
Total revenue generated by the NRCMQS during the last three years = Rs. 79.13 lakhs.	651
Transfer of technology titled “Indigenous Probiotic <i>Limosilactobacillus fermentum</i> NCDC 400 strain” to The Rohtak Coop. Milk Producers Union Ltd., Rohtak, Haryana on 12 June 2025	683
Transfer of 09 technology titled “Rapid detection technologies for milk adulterants” to Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat on 26 March 2025.	683
Transfer of 09 technology titled “Rapid detection technologies for milk adulterants” to Hatsun Agro Product Ltd., Chennai, on 04 January 2024.	684
Transfer of technology titled “Strip based technology for early detection of sub-clinical and clinical Mastitis” to Schreiber Dynamix Dairies Pvt. Ltd., Pune, on 24 November 2023.	684
Transfer of technology titled “Spore based kit for detection of antibiotic residues in milk at dairy farm” to Beejapuri Dairy Pvt. Ltd., BG-05, Unitech Arcadia, Gurugram, Haryana, on 8 June 2023.	684
Transfer of technology titled “Misti Doi with fast acidifying high sugar tolerating lactic cultures” to Terrestrial Foods Ltd., New Delhi, on 20 March 2023.	685
Transfer of 02 technology titled “Indigenous probiotic <i>Lactobacillus rhamnosus</i> NCDC 610” and “Native vitamin B12 producing <i>lactobacillus Reuteri</i> NCDC” to Vickro Biopharma Pvt. Ltd., Hyderabad, on 20 January 2023.	685

Transfer of technology titled “Total mixed ration” to Digi Vet Care Pvt. Ltd., Vasant Kunj, New Delhi, on 29 August, 2022.	685
Transfer of technology titled “Technology for preparation of curcumin enriched ghee” to Brahmins Foods India Pvt. Ltd., Vengalloor - Kolani Bypass Road, Manakkad P.O., Thodupuzha, Kerala, on 7 July 2022.	686
Transfer of 10 technologies to “Karnataka Cooperative Milk Producers’ Federation Limited”, Karnataka, on 21 May 2021.	686
Transfer of technology titled “Paper strip assay for rapid detection of pesticide residues” to “Delmos Research Pvt. Ltd, Gurugram, Haryana, on 09 May 2022.	686
Transfer of technology titled “PCR based method for differentiating A1 and A2 milk” to “Manorama Agrobiotech. Pvt. Ltd. Gujarat, on 06 May 2022.	687
QR Code for ICAR-NDRI Technology Booklet-2026	687
Front cover of the NDRI Technology Booklet 2026	687
Back cover of the NDRI Technology Booklet 2026	688
Back and front cover of the NDRI Technology Booklet 2024	688
Extension Education/Services providing section of ICAR-NDRI	872

LIST OF ABBREVIATION

Abbreviation	Full Form
SSR	Self Study Report
ICAR	Indian Council of Agricultural Research
NDRI	National Dairy Research Institute
IQAC	Internal Quality Assurance Cell
PME	Planning, Monitoring & Evaluation
CC	Course Curriculum
UG	Undergraduate
PG	Postgraduate
Ph.D.	Doctor of Philosophy
NCC	National Cadet Corps
NSS	National Service Scheme
NET	National Eligibility Test
SRF	Senior Research Fellowship
JRF	Junior Research Fellowship
ARS	Agricultural Research Service
IT	Information Technology
CAFT	Centre for Advanced Faculty Training
CPC	Consultancy Processing Cell
NRCMQS	Referral Centre for Milk Quality and Safety
ITMU	Institute Technology Management Unit
ITMC	Institute Technology Management Committee
QRT	Quinquennial Review Team
IPR	Intellectual Property Rights
CSR	Corporate Social Responsibility
SC/ST	Scheduled Castes / Scheduled Tribes
KVK	Krishi Vigyan Kendra
SRS	Southern Regional Station
ERS	Eastern Regional Station
IAEC	Institutional Animal Ethics Committee
RAC	Research Advisory Committee
MoU	Memorandum of Understanding
BPD	Business Planning and Development

ISO	International Organization for Standardization
HACCP	Hazard Analysis and Critical Control Points
ICT	Information and Communication Technology
ABRC	Artificial Breeding Research Centre
LRC	Livestock Research Centre
PCR	Polymerase Chain Reaction
RT-PCR	Real-Time Polymerase Chain Reaction
FACS	Fluorescence-Activated Cell Sorting
MS	Mass Spectrometry
IVF	In Vitro Fertilization
OPU-IVF	Ovum Pick Up – In Vitro Fertilization
CRISPR	Clustered Regularly Interspaced Short Palindromic Repeats
DNA	Deoxyribonucleic Acid
RNA	Ribonucleic Acid
SNP	Single Nucleotide Polymorphism
QTL	Quantitative Trait Loci
GEBV	Genomic Estimated Breeding Value
BLUP	Best Linear Unbiased Prediction
PCA	Principal Component Analysis
CNV	Copy Number Variation
TWAS	Transcriptome Wide Association Studies
HF	Holstein Friesian
RPC	Rumen Protected Choline
KLDB	Kerala Livestock Development Board
AICRP	All India Coordinated Research Project
UNDP	United Nations Development Programme
EBC	Embryo Biotechnology Centre
ABTC	Animal Biotechnology Centre
B.Tech	Bachelor of Technology
M.Tech	Master of Technology
M.Sc.	Master of Science
M.V.Sc.	Master of Veterinary Science
AFC	Age at First Calving
ADMY	Average Daily Milk Yield

PY	Peak Yield
SP	Service Period
FF	Female Fertility
TD	Test Day
MY	Milk Yield
LMY	Lactation Milk Yield
TLMY	Total Lactation Milk Yield
BOD	Biochemical Oxygen Demand
UF	Ultrafiltration
MF	Microfiltration
RO	Reverse Osmosis
MAP	Modified Atmosphere Packaging
RVA	Rapid Visco Analyzer
CO2	Carbon Dioxide
LIMS	Laboratory Information Management System
AI	Artificial Insemination

Self-Study Report of the Programme

Bachelor Program in Dairy Technology

6.4 Self Study Report for the Programme: Bachelor Program in Dairy Technology

6.4.1. Brief History of the Degree Programme:

The elite and prestigious degree offered by National Dairy Research Institute is undoubtedly the B. Tech. in Dairy Technology. This four years' degree course was started in the year 1955 as B.Sc. (D.T.), which was re-christened in 1993 as B. Tech. (D.T.) after thorough revamp and updating of course curriculum. The B.Tech degree holders from NDRI, Karnal under the state-of-the-art course curriculum are thoroughly accustomed to the latest technological advancements and quality assurance protocols relating to milk and milk products.

Objective:

- To train out standing dairy technology professionals with core competence in theoretical knowledge and adequate practical training to independently handle milk processing operations in any commercial dairy establishment
- To transform undergraduate students into a competent professionals endowed with skills in analyzing problems, finding novel solutions, designing and creating novel products and processes for dairy operations
- To support students develop communication skills, team spirit, leadership qualities and inculcate ethics and values for holistic development of their personality necessary for success in career and life
- To produce professionally competent and highly motivated dairy technology professionals who are equally prepared for a role in the industry and for career in research and development organizations.

Accomplishments:

- Implementation of 6th Dean Committee as per ICAR guidelines including the permissible 25% modification in syllabus. New course on energy auditing & conservation, Engineering mathematics, Student Ready-I & Student Ready-II were initiated.
- The Placement Cell of the institute facilitated 100% placement of the graduating students.
- Students of B. Tech. Dairy Technology Programme were deputed to foreign universities and research organizations for a period of 45 to 60 days under NAHEP Project.
- 02 students of B. Tech. Dairy Technology Programme were deputed to foreign universities and research organizations for a period of 30 days through NDRI Alumni Association.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	***Professor	1#	-	01#
2.	**Associate Professor	2DT	1FT	2DT+1FT
3.	*Assistant Professor	7DT+02FT+01LPT	6DT	13DT+2FT+01LPT

***Principal scientist cadre, **Senior Scientist Cadre 2DT+01FT, *Scientist cadre (13DT+02FT+01LPT), (#Head)

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Technical	3	-	ICAR
2.	Administrative	2	-	ICAR
3.	Supporting Skilled Staff	2	-	ICAR

6.4.4. Classrooms and Laboratories:**1. Classrooms**

S. No.	Classrooms	Numbers	Size (m ²)
1.	B. Tech. Lecture Rooms (First floor Central Lecture Hall)	Classroom 1:64 seats Classroom 2:56 seats Classroom 3:96 seats Classroom 4:40 seats	67.78 63.46 89.68 48.24

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	UG/ PG Laboratory	Three	168.00
2	By-Products Technology Laboratory Membrane Processing Plant	One	37.50 56.00
3	Cheese and Fermented Foods Laboratory	One	112.0
4	Food Packaging Laboratory	One	75.00
5	Food Technology Laboratory	One	121.5
6	Formulated Dairy Products Laboratory	One	178.0
7	Functional Ingredients and Applications Laboratory	One	149.0
8	Protein Analysis Laboratory	One	19.0
9	Sensory Evaluation Laboratory	One	56.0
10	Traditional Indian Milk Products Laboratory	One	112.0
11	Experiential Learning Laboratory-cum-Pilot Plant	One hall	376.0

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	By-Products Technology Laboratory Membrane Processing Plant	Pilot scale UF Plant, MF Unit, Ovens, High shear disperser, Centrifuge, RO plant, Infra-red moisture analyzer, Density meter	One each
2.	Cheese and Fermented Foods Laboratory	UV-Vis Spectrophotometer, Laboratory homogenizer, Micro balance, Ultra turax, Cheese knives, Cheese vats	One each
3.	Food Packaging Laboratory	MAP Machine, Head space Gas Analyser, Electro spinning machine, Vacuum packaging machine, Vacuum dryer, BOD incubators,, Universal testing machine, Bursting strength tester, Substance indicator, Micrometer, Cobbs apparatus, tearing strength tester, UV treatment chamber, Ultra pure water purification system	One each
4.	Food Technology Laboratory	Freeze drier, Refrigerated centrifuge, Low temperature water bath, BOD incubator, Spectrophotometer, Abbe's Refractometer, Bio safety cabinet, Stomacher, Automatic Nitrogen analyzer, Soxtec, Modular MF-UF Plant	One each
5.	Formulated Dairy Products Laboratory	Texture analyzer (2), Rapid Visco Analyzer (RVA), Rheometer, Water activity meter, Microfluidizer, Spectrophotometer (2), Prober Sonictior, Hunter colour lab, High shearmixer, BOD incubator, Incubator shaker,	One each
6.	Functional Ingredients and Applications Laboratory	Laminar flow, High shear mixer, Vacuum rotary evaporator, Table top centrifuge, Protein distillation unit, Hotairoven, BOD incubator	One each
7.	Protein Analysis Laboratory	Kjeldhal Digester, Semi-automatic protein distillation assembly. Muffle furnace	One each
8.	Sensory Evaluation Laboratory	Modular Sensory Booths, Sample Preparation and storage accessories	One each

9.	Traditional Indian Milk Products Laboratory	Vacuum and modified packaging machine, BOD incubator, Laminar air flow, Spectrophotometer, Turbidity meter, Colorimeter, Laboratory centrifuge, Microscope	One each
10.	UG/PG Laboratory	Cream separator, Electronic balance, Centrifuge, Water bath, Autoclave Muffle furnace, Hot air oven BOD incubator	
11.	Experiential Learning Laboratory-cum-Pilot Plant	Bakery oven big, Coating pan, Bakery oven small, Planetary Mixer Big, Dough Molder, Planetary Mixer Smaller, Shrink Wrapping Machine, Wet Grinder, Single Screw, Extruder, Pulverizer, Cookie Dropper machine, Biscuit Packaging Machine, Flaking machine Snack Packaging Machine, Butter churner, Cheese vat, Powder packaging Machine, Modular Pasteurizer, Softy ice-cream freezer, Ice-cream fruit feeder, Modular Ice-cream unit, Spray dryer, Twin screw extruder, Paneer pressing unit, Cream separator, Pasta making machine, Paneer cube machine, Vacuum tray dryer, Tray dryer, Canning line, Fluidized bed dryer, Fermentation line, Potato Peeler, Carbonation Unit,	One each

4. Laboratory-cum-Pilot Plant at Business Planning and Development (BPD) Unit:

Pilot plant at BPD has more than 30 equipment for small to medium scale processing of milk products, frozen foods and bakery products. All these equipments are available for research work of postgraduate and doctoral students of dairy processing disciplines.

5. Dairy Plants-

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in-plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of

milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR-NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board.

It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 2,00,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 150,000 l/day milk, 2.5MT/ day ghee and 150kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

(c) Quality Control Laboratory: A quality control laboratory is attached to the Experimental Dairy and is equipped with all the necessary facilities for routine chemical and microbiological analysis of dairy products. All the dairy products manufactured by the Experimental Dairy are analysed in this laboratory before dispatch to milk parlour for sales. It also provides the analytical support for carrying out analysis of outside samples on consultancy basis and for training of students from other institutions / participants of various training courses conducted by KVK.

6. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	B. Tech.	40-50	20-25 (In each batch)

6.4.5. Conduct of Practical and Hands-on-Training:

The B. Tech. students are exposed to the professional working environment during the Student Ready program in the summer breaks after the first and second year

and industrial tours in various dairy and food companies of India. The “Experience Learning” programme that the students undertake during their 7th semester helps them to develop competency, capability, skill, expertise and confidence to start their own enterprise and turn ‘job creators instead of seekers’. Besides, a full semester of in plant training during the 8th semester. NDRI has two fully functional and commercial dairy plants *viz.*, Experimental Dairy and Model Dairy Plant, especially dedicated for hands on learning of the students. The Experimental Dairy at NDRI is virtually a practical class room under fully functional operational condition of dairy machineries, where the students acquaint themselves with small scale production of products under the guidance of the scientists. The students boast of being industrially experienced by the time they graduate out owing to their experience at working in the fully automated Model Dairy Plant, having capacity to handle 60,000 liter milk per day, certified under quality systems ISO - 9001 and food safety IS-15000 (HACCP). It offers intensive training in processing, quality control of milk and milk products and engineering aspects of milk processing plants. As the plant was set-up exclusively for providing world-class dairy plant management training to B. Tech. (D.T.) final year students, they were entrusted with full operating responsibilities starting from milk reception operation to its dispatch including the monitoring of the processing and product manufacturing operations.

6.4.6. Supervision of students in PG/PhD Programmes:

Not applicable. However, a faculty is nominated as Class teacher for all the four years’ students of UG degree programme. The faculty assists students in their academic matters, act as mentor and coordinate in addressing their grievances if any. Placement Cell also guides and mentor students in enhancing their employability.

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): The course curriculum of the programme is modified as per the need and requirements of stakeholders. Considering the learning as continuous process, the syllabus, course content and opportunities for “Hands on Practical/Learnings” have been introduced time to time. Besides, to enhance the world view of the students to the food sector at large, the course has been designed to include not only the whole range of core dairy courses comprised from disciplines of Dairy Technology, Dairy Engineering, Dairy Chemistry, Dairy Microbiology and Dairy Business Management but also contains a few courses in food science. For facilitating the discussion among the different stakeholders the delegates were divided into six groups. Each group consisted of 7-8 members representing industry, academia, students and alumni. The senior most faculties from NDRI moderated each group who was assisted by a rapporteur. The recommendations and action points were communicated to the participants.

6.4.8. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
B.Tech. (DT)	40	40	44	55	61	3.8	2.6	2.4	1.2	3.3

6.4.9. ICT Application in Curricula Delivery:

The classrooms are well-equipped with interactive board and internet connectivity. The involvement of students was ensured by random attendance during lectures, announced and un-announced quizzes, short answer questions, discussions on a specific topic related to subject, assignments, and presentations being regular part of the classroom teaching.

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Bachelor Program in Animal Biotechnology

6.4. Self Study Report for the Programme: Bachelor Program in Animal Biotechnology

6.4.1. Brief History of the Degree Programme:

ICAR-NDRI, Karnal began working on biotechnology in the mid-1980s as part of a UNDP 'Centre of Excellence on Biotechnology' programme. The urgent need to apply recent biotechnological advances in reproduction and production to superior females of dairy breeds of ruminants in order to improve animal productivity in our country prompted the Department of Biotechnology to fund the establishment of a state-of-the-art Embryo Biotechnology Centre (EBC). The development of the Livestock Genome Lab and Molecular Biology Unit under the National Agricultural Research Project-II increased biotechnology even more. In June 1999, the Animal Biotechnology Centre was reformed, bringing together all of the infrastructural facilities built under several biotechnology programmes. The Centre also provides an M.Sc. Animal Biotechnology degree in addition to research in areas important to biotechnology in dairy production and processing. The doctoral programme began in 2003.

The proposed Division's goals are to: a) conduct biotechnology-oriented basic and applied research to improve animal productivity and develop innovative dairy processes to produce superior quality, safe, and wholesome dairy products; and b) train manpower in biotechnology applications in dairy production and processing for M.Sc. and Ph.D. degrees in biotechnology.

Degree program initiated:

Under a UNDP programme, the NDRI developed a 'Centre of Excellence on Biotechnology' in 1985. NDRI created the Embryo Biotechnology Centre (EBC) in 1992 to begin research in the frontiers of animal reproduction and embryo biotechnology. The Animal Biotechnology Centre was established in 1999 as a result of a consolidation of biotechnology research efforts (ABTC). The master's degree programme was initiated in 1999. The Animal Biotechnology Centre opened a new state-of-the-art facility in 2007. The B,tech Biotechnology programme began in 2024.

Objective:

- Increase the number of genetically superior (elite) female cattle and buffaloes on farms and in the field by identifying and developing novel goods and techniques that could lead to significant increases in milk producing animals' economic features.
- To create sexed semen technologies in order to produce creatures of the desired sex.
- Develop animal herds capable of generating custom-made milk to meet people's individual demands.

- Discovering previously unknown new genes and dissecting the irregularity systems in order to utilize economically valuable features.
- To use dairy cultures/probiotics to make recombinant medicines, nutraceuticals, and consumable vaccines.

Accomplishments:

- Gantantra and Basant, two elite buffalo male cloned calves produced in NDRI.
- India's first cloned cattle, named 'GANGA', was born in March 2023 at ICAR-NDRI Karnal.
- Myostatin gene-edited buffalo calf for double muscling was successfully produced, which is a huge leap towards gene edited animal production technology for Indian farm animals.
- Utilization of cloned cattle 'GANGA' for in-vitro production of OPU-IVF embryos
- Evaluation of commercial single-step embryo embryos, all media supported similar early culture media for in vitro production of development, though Vitrogen caused dish surface parthenogenetic, in vitro fertilized, and cloned adhesion. In IVF experiments, Vitrogen and GM-501 buffalo embryos
- Global DNA methylation profile of spermatozoa of cloned buffalo bulls
- Generation of oocyte-like cells from umbilical cord blood-mesenchymal stem cells in cattle
- Protein engineering to enhance stability of leucyl aminopeptidase (PepL) of *Lactobacillus casei*
- Production of engineered phage endolysin for improved bactericidal activity against *Escherichia coli*
- Antimicrobial resistance genes and associated mobile genetic elements in *Escherichia coli* from human, animal and environment - an in silico investigation
- Live birth of buffalo calf with β -lactoglobulin (BLG) gene knock out has been achieved.
- Successful pregnancy of cloned cow, Ganga, was established through OPU-IVF technology.
- Gene editing technology was perfected for development of NANOG-gene edited buffalo cells.
- First time the genotype of all Sahiwal cows was generated to study breed purity and climate resilience in dairy cattle.

- An RT-LAMP assay was developed for lead and cadmium toxicity detection using the gene expression of the Heme Oxygenase 1 (HMOX1) gene in HepG2 cells.
- Lipid profile of sperm plasma membrane in Sahiwal bulls was established in relation to male fertility.
- Mesenchymal stem cells were used to treat cattle and buffaloes' wounds.
- An antibody conjugated magnetic nanoparticles - based technology was developed for enriching X-spermatozoa in a given bovine semen sample. In in-vitro IVF trials, this method skewed sex ratio towards females (3 females: 1 male) in cattle
- An X-specific ligand was identified for enrichment of X-chromosome-bearing sperm that resulted in the production of 75% female-biased embryos in IVF trials
- A simple method was developed for the purification of lactoferrin from Ladakhi Yak colostrum. Shotgun proteomics of 0-day Ladakhi yak colostrum was used to identify key proteins in colostrum

6.4.1. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/other Regulatory bodies
1.	***Professor	0	1	1#
2.	**Associate Professor	2	1	3
3.	*Assistant Professor	6+1@	0	6+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, #Head, @ERS

6.4.2. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/other Regulatory bodies
1.	Technical	4	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.3. Classrooms and Laboratories:

1. Classrooms:

S. No.	Classrooms	Numbers	Size (m ²)
1	Smart class rooms	2	30x2=60 m ²
2	Conference Hall	1	95 m ²
3	Seminar Room	1	30 m ²

2. Laboratories:

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	Embryo Biotechnology Laboratory	01	160 m ²
2.	Cloning Laboratory	01	160 m ²
3.	Regenerative Biotechnology Laboratory	01	72 m ²
4.	Cell Culture Laboratory	01	48 m ²
5.	FACS Facility	01	16 m ²
6.	Animal Genomics Lab-1	01	160 m ²
7.	Animal Genomics Lab-2	01	160 m ²
8.	Laboratory No-6	01	160 m ²
9.	Cell Science Laboratory	01	160 m ²
10.	Cell & Molecular Biology Laboratory	01	160 m ²
11.	Proteomics Laboratory	01	16 m ²
12.	Diagnostic Kit Development Laboratory	01	16 m ²
13.	MS Facility	01	16 m ²
14.	Fermentation Laboratory	01	16 m ²
15.	Bio informatics Laboratory	01	16 m ²
16.	Centre of excellence of genome editing	01	16 m ²

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Embryo Biotechnology Laboratory	Binocular Microscope, Real Time, PCR Machines Refrigerated Centrifuges Water purification system Gel Documentation Systems Electrophoresis Inverted Microscope Refrigerated centrifuges Laminar Flow Bench Centrifuges Western blotting system Gel Electrophoresis Stereozoom Microscope Nano Spectro Photometer Hybridization oven	16
2.	Cloning Laboratory	Water purification Systems Ultra sound machine Refrigerated Centrifuges Ultra low Deep Freezers Sonicator Osmometer Inverted Microscope Refrigerated centrifuges Laminar Flow Bench Centrifuges	10

3.	Regenerative Biotechnology Laboratory	Microscope with Imaging System CO ₂ Incubators Sonicator Stereo zoom Microscope Oocyte Aspiration Pump Micromanipulator Electrofusion machine	9
		CO ₂ Analyzer	
4.	Cell Culture Laboratory	Laminar Flow Cabinet Incubator Shakers CO ₂ Incubators Inverted Microscope Refrigerated centrifuges Centrifuges	6
5.	FACS Facility	FACS Aerosol Evacuation Stereozoom Microscope	3
6.	Animal Genomics Lab-1	Flow Cytometer Centrifuge High Speed Pulse field Gel Refrigerated High speed Nano Spectro Photometer PCR Realtime PCR Ultralow Deep Freezers	8
7.	Animal Genomics Lab-2	Electro manipulator optimizer Micromanipulator System Electro Fusion Apparatus Zoom Stereo Microscope Electrophoresis Unit Humidity Control Chamber Ultra low Deep Freezers DNA Sequencer	8
8.	Laboratory No-6	Health care bio services 2 Delectrophoresis module Elisa Reader Herbaceous Multiuse	4
9.	Cell Science Laboratory	Nucleofector Device Bio-safety Cabinet Embryo Respiratory Laparoscopic Instrument	4
10.	Cell & Molecular Biology Laboratory	Multidimensional Calorimetry Lyophilizer LIMS Cooling cabinet	5
11.	Proteomics Laboratory	Differential Scanning Calorimetry Cell Disruptor Shaking incubator OFF Gel Fraction Chromatography system Protein Purification System Protein Digester and spotter	17

		Protein Imager and Robotic Spot cutter PCR Machine Quixstand system Freeze Dryer (Lyophilizer) Crystallization Incubator Monochromat or Hybridization Incubator Osmometer Ultralow Deep Freezers	
12.	Diagnostic Kit Development Laboratory	Bio-safety Cabinet Electrophoresis Bioanalyzer Centrifuge High Speed Vacuum Concentrator	4
13.	MS Facility	Mass spectrometer facility Dual Refrigerator shaker Bio Safety Cabinet	3
14.	Fermentation Laboratory	Bio Safety Cabinet Vacuum Concentrator Micro centrifuge Fermenters	4
15.	Bio informatics Laboratory	Workstations	3

4. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

5. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animal
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

6. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

7. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	M.Sc./ M.V.Sc/ M.Tech	1	1

6.4.4. Conduct of Practical and Hands-on-Training:

Animal Biotechnology Centre has a state of art facility for student research in the area of genomics, Proteomics and Embryo Biotechnology. Students are offered In-farm training in collaboration with LRC, NDRI Karnal. Additionally, it has Proteomics Lab, BioinformaticsLab, Embryo Biotechnology Lab and Mass spectrometry Lab for hands on training and conducting research.

6.4.5. Supervision of students in PG/PhD Programmes:

Masters

S. No.	No of faculty	No of eligible guide	No of supervised students
1	11	11	-

*: Ten from NDRI, One from NBAGR

6.4.6. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

- We have a feedback system in place for PG/Ph.D students who have completed their graduate studies. Based on the feedback received, we will address these issues in the coming academic years in order to improve our teaching and student research.
- Animal Biotechnology Centre offers a variety of practical training programmes in the areas of animal genomics, proteomics, embryo biotechnology, and bio informatics. Senior students from postgraduate institutions, state agriculture universities, and animal science-related enterprises make up the majority of the participants (for eg. Animal feed industry, milk processing industry, disease diagnostic laboratories and animal vaccine production industry). We always obtain comments from the participants after the training term. The issues that have been mentioned are being addressed in order to strengthen our continuing academic and research efforts.
- Customized service work for the dairy sector, animal husbandry department, and state agriculture universities is also available. We tailor or modify our academic and research efforts in response to customer feedback in order to attain excellence.

6.4.7. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five Years (From session 2021-26)		Attrition (%)	
	2024	2025	2024	2025
B.tech	16	23	16	

6.4.8. ICT Application in Curricula Delivery:

The topic fields in Animal Biotechnology are dynamic in nature. Every year, we must update and improve our existing teaching curricula in order to suit the needs of the present situation. For example, the CRISPR/cas9 system is a novel tool in genomic modification that was found in the last several years, and we need to incorporate related theory and practice into our present research efforts due to the demand for animal genetic manipulation. As a result, we must improve our research operations based on concurrent animal science discovery and development.

To grasp, remember, and answer the thematic questions in competitive tests, we create compatible reading material. Our professors compile study materials from the most recent publications, as well as review materials and books, to supplement the content taught in class. To address the most recent developments in animal biotechnology, we provide YouTube link

And other updated information on various university websites. Our teaching strategies are as follows:

- Physical/offline mode to meet biological phenomenon knowledge
- Online mode to fulfill teaching curriculum during the Covid 19 epidemic time
- Online classroom based (Google class rooms) on supplying reading material to students, collecting daily records, and monitoring subject themes.

6.4.9. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.10. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the section

6.4.11. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Animal Genetics and Breeding

6.4. Self-Study Report for the Programme: Master's Program in Animal Genetics and Breeding

6.4.1. Brief History of the Degree Programme:

ICAR-NDRI, Karnal was granted the status of Deemed University in the year 1989. Animal Genetics and Breeding division, earlier known as Dairy Cattle Breeding (DCB) division was among the very first departments established at NDRI. However, even prior to that the subject was recognized by NDRI and was involved in imparting Master's degree through Kurukshetra University, Kurukshetra.

Objective:

- Research, Teaching and extension in the area of Animal Genetics and Breeding
- Human Resource development in the area of Animal Genetics and Breeding
- Imparting national and international level training and consultancy.
- Development of superior germplasm and its dissemination to farmers and stakeholders involved in the dairy development in the country.

Accomplishments:

- A model was developed by assigning weights to different test days, where TD90, TD106, and TD150 can be used to predict lactation yield with 90% correlation with the International ICAR method.
- Selection Index in Murrah buffalo was developed using production, reproduction and health traits. Selection Index based on Av. Daily Milk Yield, PY, SP, AFC and Female Fertility giving 48%, 30%, 1%, 1% and 20% weightage to the traits, respectively. INDEX VALUE = $56.733 \text{ (ADMY)} + 35.588 \text{ (PY)} - 1.473 \text{ (SP)} - 1.341 \text{ (AFC)} - 23.407 \text{ (FF)}$.
- Genetic polymorphism in LAP3, MASP2 and SIRT1 genes and their association with milk yield, composition traits and clinical mastitis in 140 Sahiwal and 145 Karan Fries cows were carried out. For Karan Fries cows, SNPs g.-267C>G, g.-239T>C, g.-229A>G, g.-71G>A and g.51T>G, g.24555A>G and g.24794C>T in LAP3 gene were significantly associated with 305d MY, while SNPs (g.-267C>G and g.51T>G) also significantly influenced LMY. With a logistic regression model, significant association of the SNPs g.25406C>T (Sahiwal) and g.-239T>C (Karan Fries) with incidence of clinical mastitis was determined.
- Genomic diversity in Sahiwal cattle of NDRI herd found to be moderate ($H = 0.33 \pm 0.19$). ROH analysis indicated a recent inbreeding event. Chromosome 1 had longest ROH (66.92 Mb, 1241 SNPs), covering 6.68% of chromosome; while Chromosome 5 had highest number of ROH segments ($n = 377$).

- Studies revealed that Sahiwal cows may be selected on the basis of these linear type traits (stature, body length, chest girth) having positive genetic correlation with production traits.
- The data on cattle genome were simulated for sex limited traits over 10 current generations (GPopSim tool). Impact of evolutionary forces on GEBV prediction bias was also simulated. The studies indicated that Selection and High mutation and Recombination models rapidly accumulated inbreeding over generations.
- Tetra-primer ARMS-PCR protocols were developed for genotyping rs43722771 (ENSBTAT00000014098.6:c.1050+4197C>T) in CUX1 gene and all the three genotypes identified in Karan Fries. But Tharparkar animals showed monomorphic pattern with CC genotype. Breed wise variation existed in Surface Temperature and Respiration Rate in heat stress between Tharparkar and Karan Fries cattle.
- Genome-wide association identified a total of 11 genes viz. NCBP1, FOXN3, TPK1, ZBTB7C, XYLT2, CPXM2, HERC1, OPCML, PRTFDC1, PCDH9 and COBL were identified which have association with incidence of clinical mastitis in 96 Murrah buffaloes using the ddRAD approach.
- Genome wide association studies identified, GRIA3 and ZNF292 to be associated with milk yield in Murrah buffaloes. Potential genes involved in regulating fertility in Murrah were APC, PDP1, SLAMF6, GRID2, PDE11A, EDIL3, ERICH2, and EIF5A2.
- Two models, first multi-breed joint prediction model and second Single-Step model for shallow pedigree data typical to Indian dairy breeding structure were standardized for genomic evaluation so that unbiased and accurate estimates of genomic breeding values can be obtained.
- Multi-trait sire evaluation methodology using production (305DMY) and major linear type traits (Stature, chest girth, and body length), which may be introduced in the ICAR-NDRI herd for balanced and valuable selection of dairy animals for long-term benefits.
- The genomic diversity and population structure were assessed in Karan Fries cattle suggesting sufficient genetic variability. The population was stabilized at exotic inheritance of 61.7% and Tharparkar of 38.3% in KF crossbred cattle. This is the first genomic study and further work is in progress.
- Whole transcriptome analysis in Karan Fries and Tharparkar indicated pathways related to energy metabolism identified in Tharparkar cattle and 5508 miRSNPs of which 1103 were unique to Tharparkar cattle. Further, a total of 20 genes were found to be associated with QTLs of thermotolerance.

- The pedigree data of Sahiwal and Karan Fries crossbred were considered for estimating inbreeding coefficient and found most of the population is non-inbred in both Sahiwal (37.66%) as well as Karan Fries cattle (63.03%). The QTL are enriched for milk composition traits in both Sahiwal as well as Karan Fries cattle.
- Using sex sorted semen of genetically improved Sahiwal bulls at NDRI, 4 superior elite female calves were produced successfully.
- Based on the 15th set evaluation results (across all the coordinating units), Bull no. 6007 from NDRI ranked second and was declared as a proven bull and selected for nominated mating.
- During the year 2023, a total of 4844 artificial inseminations of the test Murrah bulls were performed at farmers' herds under field conditions under Field Progeny Testing program of Murrah Buffalo with and overall conception rate of 48.14%.
- During the year 2023, The EPD % superiority of the selected males was 5.89% with a range of 3.83 to 11.8 % and Dam's best Lactation Yield ranges from 3572-3710 kg. There at present 32 elite cows in the herd with the average best milk yield in first lactation being 2952 kg and 4012 kg best milk yield against herd average of 1794 kg and 3997 kg respectively.
- Whole genome assembly of threatened buffalo breed "Bhadawari" was created for the first time with 86.6% completeness.
- The mirSNPs identified in the miRNAs of btamiR- 2388 and bta-miR-1584 which were found to be associated with heat tolerance in KF and Tharparkar cattle, could be used for selection of animals for better heat tolerance.
- Transcriptome wide association studies were carried out to identify milk production and its composition related genes in Murrah buffaloes (*Bubalus bubalis*). Gene ontology of TWAS-identified genes was performed to understand the function of these genes, it was revealed that milk production and composition genes were mainly involved in Relaxin, AMPK, and JAK-STAT signaling pathway, along with CCRI, and several key metabolic processes.
- Population structure analysis revealed that the Karan Fries cattle is stabilized with the genetic inheritance of 61.7% for exotic (Holstein Friesian) and 38.3% for zebu (Tharparkar) genetics.
- A total of 43 elite milch buffaloes were produced under Network Project on Buffalo Improvement during this year with an average total lactation milk yield (TLMY) of 2,747 kg.
- A total of 5,108 artificial inseminations were performed in Murrah buffaloes under field conditions, resulting in an overall conception rate of 46.38%. A total of 1,625 Murrah buffalo elite calves (943 males and 682 females) were born in farmer's herds.

- In Sahiwal cattle, the conception rate increased from 42% (set -I) to 48.66% in the current set. The Milk production performance showed increasing trend in first lactation 305-day milk yield. A total of 239 elite cows were produced since beginning out of which 103 were produced after introduction of AICRP and at present 35 elite cows are present in the herd.
- Technical input with regards to implementation of genomic selection is being given to the Kerala Livestock Development Board (KLDB) for enhancing productivity in crossbred cattle.
- Breed-specific copy number variation (CNVs) in 4 breeds of Indian buffaloes using exome sequencing.
- First ever Genomic characterization of pastoral breed in Haryana Belahi cattle was carried out indicating the Stand alone genomic grouping of Belahi cattle, indicating no recent admixture and distinct evolution history as revealed by PCA, admixture and lineage.
- Genomic association studies in Sahiwal/KF cattle for milk composition, milk production and stature; thermoresilient indicator traits and fertility traits.
- Karan Fries was registered as a synthetic breed and have been published in the gazette of India.
- Genomic Selection was implemented in Indigenous Sahiwal Cattle herd of ICAR-NDRI.
- Population structure of Karan Fries cattle along with parental breeds of HF and Tharparkar was studied using Principal component analysis (PCA) and plotted in R, showing clear-cut genetic clustering among three cattle populations based on SNP genotype data.
- Understanding Epigenomics during transition period in Goats: A study investigating the effects of dietary Rumen Protected Choline (RPC) supplementation on stress modulation, liver–kidney function, hematological and immunological status, and offspring performance in transitioning goats was conducted to record the epigenetics control and stress levels across the mother and its progeny in crossbred goats (Alpine × Beetal and Saanen × Beetal).
- Genomic characterization of camel breeds of India, indicating distinctive pattern for double humped camels and Karai breed.
- Novel method for estimation of heritability and genetic correlations for large dimensional genomic data.
- Development of Genomic Evaluation Model for Field crossbred cattle using a Single-Step Random Regression Test-Day Model, with increased accuracy of

genomic estimated breeding values showed higher accuracy (0.83) and reduced bias (0.92) compared to pedigree BLUP.

- A novel strategy for multibreed genomic evaluation for numerically small breeds using shared SNP effects across breed.

6.4.2. Faculty Strength:

All the faculty mentioned in the AGB division all are engaged in Master's Course teaching. No deviation in the AGB Faculty position with respect to the recommendations of V Deans' Committee / VCI / BSMA / other regulatory bodies.

S. No.	Sanctioned Faculty	Faculty in Place	Vacant position	Faculty recommended by the ICAR / UGC / VCI /other regulatory bodies
1	Head	1	0	1
2	***Professor	1	0	1
3	**Associate Professor	2	1	3
4	*Assistant Professor	4	3	7

*** Principal Scientist Cadre, ** Senior Scientist Cadre, * Scientist Cadre, #Head

6.4.3. Technical and Supporting staff:

Three technical and one supporting staff and one divisional clerk is engaged in research and teaching activities of the division.

S. No.	Sanctioned Technical and Supporting staff	Technical and Supporting Staff in Place	Vacant Position	Faculty recommended by the ICAR / UGC / VCI/ other regulatory bodies
1	Technical Officer	1	-	NA
2	Senior Technical Officer	1	-	NA
3	Technical	1	-	NA
4	Skilled Supporting Staff	1	-	NA
5	PS	1	-	NA

6.4.4. Classrooms and Laboratories:

The division has a sufficient infrastructure for taking classes of Master's Degree program. There is one dedicated class room and one seminar room both are being used for taking Master's degree classes.

1. Classrooms/Seminar Rooms

S. No.	Class Rooms	Numbers	Size (m ²)
1	Class Room	1	40.6m ²
2	Seminar Room	1	60.9m ²
3	Divisional Library	1	81.2m ²

The Divisional Library has 427 books, 272 M.V.Sc thesis

2. Laboratories

S. No.	Class Rooms	Numbers	Size (m ²)
1.	Molecular Genetics Lab	1	243.6m ²
2.	Buffalo Breeding Lab	1	60.9m ²
3.	Biometrical Lab	1	40.6m ²
4	Animal Breeding Lab	1	60.9 m ²

There are 4 research labs, Molecular genetics lab, Buffalo Breeding Lab and Biometrical Lab and Animal Breeding Lab to conduct the Master's degree practical classes. The entire practical is conducted in a single batch of 16 students.

3. Laboratories and equipment:

S. No.	Name of Laboratories	Name of Equipment	Numbers
1.	Buffalo Breeding Lab	1. Horizontal gel electrophoresis,	1 each in No's
		2. Gel documentation system,	
		3. Ultra pure water systems,	
		4. incubator,	
		5. Realtime PCR machine,	
		6. Microwave,	
		7. Vertical gel electrophoresis,	
	Biometrical Lab	8. Fridge (4degree).	
		9. Automatic nucleic acid system	
		10. Deep freezers	
		11. PCR machine	
		12. Refrigerated centrifuges	
		13. Computers	
		14. Workstation	
	Animal Breeding Lab	Facilities for training in analysis of animal breeding data as well as bioinformatic analysis.	
2.	Animal Breeding Lab	1. PCR machine, 2. Horizontal gel electrophoresis, 3. Refrigerated centrifuges, 4. Deepfreezer.	1 each in No's

3.	Molecular Genetics lab	1. Weighing balance 2. Magnetic stirrer 3. PH meter 4. Trans illuminator 5. Horizontal gel electrophoresis 6. Gel documentation system 7. Protein documentation system 8. Refrigerated centrifuges 9. Gradient PCR machine 10. Ultra pure water systems 11. Deep freezer 12. Laminar air flow	1 each in No's
		13. PCR machines	3

4. Instructional farm- Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System, Research and Varietal evaluation. The facilities include:

- Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- Azolla unit for its practical training.
- Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal Nutrition, Genetics & Breeding, Physiology, Production and Management, Biotechnology, Bio-chemistry, Microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

7. Theory and Practical batches

Sr. No.	Program	Theory batch	Practical batch
1.	MVSc	12-16	12-16

6.4.5. Conduct of Practical and Hands-on-Training:

The sanctioned intake of Masters Students in a year to AGB department is 16 students. There are sufficient laboratories of AGB division are dedicated to conduct practical and hands on training for the enrolled students. All the three laboratories are well equipped with the latest machines and equipment to conduct the practical classes as per the BSMA syllabus. Besides the above infrastructure the division has Livestock Record Room, Livestock Research Station and Animal Breeding Research Centre of the institute to support the dairy production.

6.4.6. Supervision of students in PG/PhD Programmes:

All the faculty members of the division are PhD degree holders and are eligible and competent to guide the Masters Degree students in Animal Genetics and Breeding division. All the faculty members are engaged in teaching and are taking classes both in physical and using online mode. Also other Sister Institutes scientists from ICAR-NBAGR and ICAR-CIRB also involved in teaching.

S. No.	No. of faculty	No. of eligible guide	No. of Supervised students
1.	9+7*	9+7*	46**

Including faculty from other from Sister Institutes ** from 2021-2025

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): At institute level feedback of students and their parents are taken during alumni meetings from time to time. Institute industry interface are also organized to discuss regarding need based technologies in dairy sector. Technology developed by the Animal Genetics and Breeding Division was transferred to Mother Dairy, Delhi, for Detection of buffalo milk in cow milk using Hansa Test. The AGB division has a direct linkage with the farmers and the division has adopted 20 villages under network program on buffalo improvement and under MGMG programme. Also developed various genomic prediction models in association with Livestock development boards and NDDB, for the improvement in accuracy of prediction of breeding value.

6.4.8. Student intake and attrition in the programme for last five years:

Actual Sanctioned Strength in Animal Genetics and Breeding

Masters– 16 students per year

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
Year	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Actual intake of M.V.Sc. students in Animal Genetics and Breeding	14	9	11	12	8	14%	-	-	-	-

6.4.9. ICT Application in Curricula Delivery:

Animal Genetics and Breeding Division is well equipped with ICT required to take the theory classes and seminar and discussion. The division has multiple computers with different generations including a workstation to conduct the bioinformatics based research analysis. Various software required in AGB practical like Wombat, BLUPF90 are freely loaded. The internet connectivity and latest scanners and printers are available with the division. The faculty from regional stations and other sister Institutes are taking online classes and the Divisional Library has 428 books, 298 M.V.Sc and 187 PhD. thesis, the access to CAB abstract and a national library in Dairy Science having online access to many worlds' best Journals in dairying is available to the students. The degree form is meeting the expectations of the post graduate students as very good placement rate in the nation, 65 students (2021-25) have been employed in ARS, State Agriculture and Veterinary Universities, and State Animal Husbandry Departments. Four students were inducted in Agriculture Research System (ARS) during the period and 6 students were inducted in silk board as Scientist. There are no complaints received.

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D.Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Animal Nutrition

6.4. Self Study Report for the Programme: Master's Program in Animal Nutrition

6.4.1. Brief History of the Degree Programme:

The Division of Dairy Cattle Nutrition was established as a combined Division of Dairy Cattle Nutrition and Physiology in 1971, prior to which it was a section of the erstwhile Dairy Husbandry Division. In 1984, the Physiology Division was separated and the Division of Dairy Cattle Nutrition became an independent Division. The division again, renamed Animal Nutrition Division in last couple of years back as the faculty members are involved in non ruminant, wild and captive animals and clinical nutrition in addition to dairy animals feeding and nutrition.

Objectives:

- To fulfill the mandate of the Institute by conducting basic and applied research, undertaking post-graduate programmes of education and human resource development
- To participate in the process of extension education through various training programmes at NDRI, KVK, Dairy mela and farmers doorstep
- To develop field level applied technology for improvement of dairying and refinement of technologies as per the requirement under field condition

Accomplishments:

HRD

During last 5 years, 54 students were awarded Master's Degree from the division, among which almost all are engaged either with government/ corporate institutions private companies and higher studies. Conducted various training programme and winter school for dissemination of academic and applied knowledge in the field of Animal Nutrition.

Technologies developed

Following few technologies have been developed for dairy animals in last five years.

- Polyherbal feed supplement for improving dairy productivity and milk quality
- Techniques for straw treatment for improving quality
- Auto chthonous calves-origin probiotic *Limosilactobacillus Reuteri* BFE7
- Use of newer agro-industrial by products in the cattle feed.
- Anionic mix fortified with trace mineral mixture for prepartum high producing dairy animals.
- Bull specific trace mineral composition for semen producing bulls for better semen quality

- Cationic mix fortified with immunity booster for postpartum lactating animals to prevent Ca deficiency and productivity
- Probiotic culture to augment health of neonatal calves
- Project funding from external agencies
- Dept of Science & Technology, Dept of Biotechnology, Ministry of Environment, Forest & Climate Change, Indian Council of Agricultural Research has funded for conducting research in the area of Animal feeding, nutrition and management. Countries like USA also funded through their Institutes to this division for conducting research in Dairying. The projects are implemented in such a way that most of the master's students get exposure to the research trial, awarded degree and many cases they develop technologies for commercialization and patenting.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by The ICAR/ UGC/ VCI/ other regulatory bodies
1.	***Professor	5# + 3@@ + 1 SRS		
2.	**Associate Professor	1		
3.	*Assistant Professor	1		

***Principal Scientist Cadre, **Senior Scientist Cadre, *Scientist Cadre, #Head, @@ERS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other Regulatory bodies
1.	Technical	2		
2.	Administrative	1		
3.	Supporting Skilled Staff	6		

6.4.4. Class Rooms and Laboratories:

1. Class Rooms/Seminar Rooms

Sr. No.	Class Rooms	Numbers	Size (m ²)
1.	Class Room	1	18x24
2.	Class Room	1	18X36
3.	Students' Library	1	18x24

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	Feed quality control lab	01	15x20
2.	Applied Animal Nutrition lab	01	14x14
3.	Micro Nutrient Lab	02	14x14
4.	Fodder Preservation Lab	02	14x14
5.	Environmental Studies Lab	02	14x14
6.	Central Instrument Lab	02	14x14
7.	Rumen Microbiology Lab	02	14x14
8.	Methane Estimation Lab	02	14x14

3. List of Major Equipment

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Fodder Preservation Lab	Gas Chromatography	01
2.	Environmental Studies Lab	Gas Chromatography	01
3.	Central Instrument Lab	HPLC, GLC, Spectrophotometer, Ionchromatography	01 each
4.	Rumen Microbiology Lab	Anaerobic chamber, GC, Lyophiliser, Bio safety cabinet, Rotary evaporator, Refrigerated centrifuge, sonicator, Tissue homogenizer, Inverted microscope, microlate spectrophotometer, spectrophotometer, PCR machine	01 each
5.	Methane Estimation Lab	Gas Chromatography	01

The instruments/ equipments are sufficient to meet the requirement of students admitted to the Division. In addition to above mentioned equipments, other small instruments are present in the Division which fulfils the requirement of the scientist and students.

4. Instructional farm-Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation. The facilities include:

- Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- Azolla unit for its practical training.
- Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master's and doctoral students on all aspects of dairy and goat husbandry (Animal Nutrition, Genetics & Breeding, Physiology, Production and Management, Biotechnology, Bio-Chemistry, Microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

7. Theory and Practical batches

Sr. No.	Program	Theory batch	Practical batch
1.	M.Tech/MVSc	12	12

6.4.5. Conduct of Practical and Hands-on-Training: As on date, six scientific and 5 technical persons are involved in teaching and practical demonstrations to students and trainees admitted in the division. All the labs are well equipped with basic facilities for estimation of protein, fat, fibre, ash and acid insoluble ash. In addition, students working in specific area are exposed to specific equipment/ instruments in the particular lab they work. There are many multi-disciplinary projects going on, where students get chance to work in various labs.

6.4.6. Supervision of students in PG Programmes:

S. No.	No. of faculty	No. of eligible guide	No. of supervised students
1.	6	6	11

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): At regular intervals, conferences and seminars are organized where academia-industry- farmers meet is organized and students are the integral part of those meetings.

As per requirements of industry, academic institutions take up projects and at the end of session, one or two recommendation comes out to implement at societal level.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual students admitted in last five years (From session 2021-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
MVSc	12	11	12	10	10	0	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

Scientific personnel in the division are well versed with latest technology in the field of Animal Science and Animal Nutrition. In addition to black board demonstrations to deliver lecture and practical classes, specialized ICT tools are being used. Under normal circumstances, students and teachers are using tools of MS office viz., excel, Power Point and words for delivery of lectures. Sometime robotics from YouTube is also being used to demonstrate a topic of interest and content. For normal communication also teachers and students are using simple e mails for submission of assignments and practical's.

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1.to 6.4.9 are furnished as per the records available in the college, and degree awarding University.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Animal Physiology

6.4. Self Study Report for the Programme: Master Program in Animal Physiology

6.4.1. Brief history of the degree programme: NDRI became Deemed University in 1989 and is regularly providing Master's and Doctoral degree to the students.

Degree program initiated:

The Dairy Cattle Physiology was established as a section of combined Division of Dairy Cattle Nutrition and Physiology in 1971, prior to which it was a section of the erstwhile Dairy Husbandry Division. In 1984, the Physiology Division was separated and the Division of Dairy Cattle Physiology became an independent Division. The division again, renamed Animal Physiology Division in last couple of years back, since its establishment post graduate degrees are being awarded.

Objectives:

- To fulfil the mandate of the Institute by conducting basic and applied research, undertaking post-graduate programmes of education and human resource development.
- To participate in the process of extension education through various training programmes at farmers doorstep.
- To develop field level applied technology for improvement of dairying and refinement of technologies as per the requirement under field condition.

Accomplishments:

- In the last five years about 43 students have taken admission in Master's Programme.
- More than 90% students have qualified for National Eligibility Test.
- Package of practices developed to reduce adverse effect of thermal stress on cattle and buffaloes through custom designed shelter system and supplementation of feed additives.
- Identified unique traits in indigenous cattle at cellular levels for their resilience to thermal stress.
- Developed unique facilities for studying the impact of climate change livestock.
- Developed SCC index to identify the milk quality and udder health of cattle and buffaloes.
- Molecules on blood and milk neutrophils studied for using them as markers for subclinical mastitis and early pregnancy detection.

6.4.2. Faculty Strength:

All the faculty members mentioned in the following table are involved in the multiple programmes:

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by ICAR/ UGC/ VCI/ other regulatory bodies
1	Head	01	01	00	01
2	***Professor	00	00	00	00
3	**Associate Professor	01@@	01@	00	01@
4	*Assistant Professor	08	02	06	08

*** Principal Scientist Cadre, ** Senior Scientist Cadre, * Scientist Cadre, 01@

6.4.3. Technical and Supporting Staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/other regulatory bodies
1	Technical	3	-	ICAR
2	Administrative	1	-	ICAR
3	Supporting Skilled Staff	1	-	ICAR

6.4.4. Class Rooms and Laboratories:

1. Class Rooms

S. No.	Class Rooms	Numbers	Size (m ²)
1	Class Room	01	10.5 X 7
2	Class Room	01	7 X 7
3	Class Room cum Library	01	7 X 7

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Post-Graduation lab	02	10.5 X 7
2	Environmental Physiology lab	01	7x7
3	Lactation lab	01	7x7
4	Lactation and Immunophysiology lab	02	7x7
5	Tissue Culture lab	01	7x3.5
6	Lab no. 209	01	10.5 X 7
7	Reproductive Physiology lab	01	7x7

3. List of Major Instruments in Division:

S. No.	Name of Instruments	Number
1	Milko Tester	1
2	Dilute Dispenser	1
3	Refrigerated Centrifuge	2
4	ELISA micro plate reader	3
5	PC base ELISA reader	1

6	Lyophilizer	1
7	DNA/RNA Photometer	1
8	Hematology Analyzer	2
9	Blood Biochemical Analyzer	1
10	Gas analyzers	2
11	Deep freezer (- 80°C)	1
12	SCC counter	1
13	CO ₂ incubator	2
14	-20 degree deep freezer	6
15	Thermal Camera	1

The instruments/ equipments in the division are sufficient to meet the requirement of students admitted under various programmes. In addition to the above mentioned equipments, other small instruments are available in the Division which fulfills the requirement of students.

4. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	MVSc	10-12	10-12

6.4.5. Conduct of practical and Hands –on-training:

The laboratories and PG lab of division are well equipped with the latest equipments for conducting the practicals. Practical manuals are also developed by the faculty for the students. The students are exposed to latest equipments/ facilities like psychometric chamber for controlled climatic studies, RT –PCR, analysis of gases using gas analyzers, Benedict Roth – Spirometer for heat production measurement, surface integrator for measurement of surface area of animals, histological studies, SCC count and biochemical estimations in biological samples.

6.4.6. Supervision of students in PG/ Ph.D. programme:

S. No.	Year	No. of faculty	No. of eligible guides	No. of supervised students
1	2021-22	6	6	9
2	2022-23	5	5	10
3	2023-24	4	4	8
4	2024-25	3	3	12
5	2025-26	3	3	10

6.4.7. Feedback of stakeholders (Students, parents, industries, employees, farmers etc.): At the Institute level feedback of students and their parents are taken during the alumni meetings organized from time to time. Institute industry interface are also organized to discuss about the technologies developed at Institute levels with the industry officials. We are organizing dairy melas / scientists-farmers interaction

programs, farmer's awareness programmes at institute and village levels under adopted villages and MGMG programme. In addition to above, quarterly meetings with students and faculty have been conducted in routine to get the feedback of the students. The students under research remain with the guide for whole research period and fortnightly meeting of the students for research progress along with feedback is taken care off.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree	Programme Actual student's admitted in last five years					Attrition%				
Year	2021-22	2022-23	2023-24	2024-25	2025-26	2021-22	2022-23	2023-24	2024-25	2025-26
MVSc	6/5	00	8/6	8/8	3/3	16.7	00	25	00	00

6.4.9. ICT Application in Curricula Delivery:

Department of Animal Physiology is equipped with required ICT applications like computers, laptops, printers, scanners, software programs, data projectors etc. The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with white board and computer connected with projector in the all the lecture hall for students teaching. The classes and examination have been conducted through an online mode. The classes are mostly taken by using power point presentation and for better understanding videos are also being shared. `

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4.is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1.to 6.4.9 are furnished as per the records available in the college, and degree awarding University.



Signature of Dean of the College with Date and Seal

Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Livestock Production Management

6.4. Self Study Report for the Programme: Master Programme in Livestock Production Management

6.4.1. Brief History of the Degree Programme:

The Livestock Production Management (LPM) section came into existence in June, 2009 after being carved out of Dairy Cattle Breeding Division of the institute. Separate faculty of LPM along with board of studies was in existence since 1976 and the same year the post graduate degree programmes started in LPM and till date it is continuing. In 2021, Livestock Production Management section becomes Division.

Objective:

- To maintain elite germplasm repository of dairy animals of the identified breeds
- Development of state-of-art dairy animal management facilities and infrastructure for high yielding dairy animals.
- To carry out research, in collaboration with different divisions, in the upstream areas of dairy animal production
- To standardize the package of management practices and to demonstrate the state of the art dairy animal production system to clients
- To provide consultancy to the needy farmers and entrepreneurs for establishment of commercial dairy farms

Accomplishments:

- In last five years about 50 students have taken admission in Ph.D. Programme and remaining 40% students got job placement in govt. and private sector.
- More than 95% students qualified for National Eligibility Test.
- Management package of practices developed to reduce the age at puberty in female and age at semen collection in male.
- Package of practices developed to improve milk yield, semen quality, calf health, udder health, reproductive performance and milk let down in absence of calf.
- Housing and microclimate modification strategies developed to improve production performance of the animals.
- Behavioral indicators developed for welfare of dairy animals.
- Use of Infrared thermographic image processing for early identification of mastitis, lameness and precise estrus detection in dairy animals

6.4.2. Faculty Strength:

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position	Faculty Recommended by the ICAR/ UGC/ VCI/ other Regulatory bodies
1.	Head	1	0	1	1
2.	***Professor	0	2	0	-
3.	**Associate Professor	2	2*	1	2
4.	*Assistant Professor	4+1@+3@@	1*+1@+3@@	1	4+1@+3@@

***Principal Scientist Cadre, **Senior Scientist Cadre, *Scientist Cadre, @SRS, @@ERS Faculty of VG&O is part of this Division

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	1*	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3*	-	ICAR

6.4.4. Class Rooms and Laboratories:**1. Class Rooms:**

S. No.	Class Rooms	Numbers	Size (m ²)
1	Livestock Production Management	1	(6.35X9.60) 60.96m ²
2	Artificial Breeding Research Centre	1	(6.13 X6.13) 37.58m ²

2. Laboratories:

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Livestock Production Management Laboratory1	1	(9.00 X6.50) 58.50m ²
2	Livestock Production Management Laboratory 2	1	(10.00X6.00) 60.00m ²
3	Molecular Reproduction cum teaching Laboratory	1	(18.59X8.23) 153.00m ²
4	Andrology and Semen Lab	1	(7.41X6.46) 47.87m ²

The laboratory facility, instructional unit meet the requirement of the practical exposure of the students.

3. List of Major Equipments:

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Livestock Production Management Laboratory1	Fully Automatic Biochemistry Analyzer	1
		Somatic cell counter	1
		Milk analyzer	1

		Hematology analyzer	1
2.	Livestock Production Management Laboratory ²	Deep freezer	1
		Proximate analysis unit	1
		Hot air oven	1
3.	Andrology and Semen lab	Phase contrast microscope	3
		CO ₂ incubator	1
		Cold handling cabinet	1
		Straw printing machine	1
		Semen filling and sealing machine	1
		Biological freezer	1
		Laminar Flow hood	2
		-20 degree deep freezer	2
		-40 degree deep freezer	1
		Automatic digital Autoclave	1
		Refrigerated centrifuge	1
		Centrifuge	2
4.	Molecular Reproduction cum teaching laboratory	Refrigerated centrifuge	1
		Gel- Documentation System	1
		Colour Doppler ultrasound machine	1
		Ultrapure Water Purification system	1
		Fluorescent microscope	1
		Ultrasound machine	1
		Ultralow deep freezers(-80°C)	1

4. Instructional farm-Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation. The facilities include:

- Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- Azolla unit for its practical training.
- Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both masters and doctoral students on all aspects of dairy and goat husbandry (Animal Nutrition, Genetics & Breeding, Physiology, Production and Management, Biotechnology, Bio-Chemistry, Microbiology etc.). The centre has the following facilities:

- Artificial insemination and pregnancy diagnosis in dairy animals unit
- Animal health complex for treatment of various categories of animals
- The various shelter facilities for different categories of dairy animals
- The various types of milking parlour

7. Theory and practical batches for the Degree Programme:

S. No.	Program	Theory batch	Practical batch
1.	M.Sc./ M.V.Sc.	10 to 40	5 to 20 in one batch

Single batch for theory and practical class has been conducted in two batches

6.4.5. Conduct of Practical and Hands-on-Training:

The students have very good exposure of hands on training in the area of livestock production and management as the division had two instructional farm facilities i.e. Livestock Research Centre, Artificial Breeding Research Centre and four functional laboratories i.e. Livestock Production Management Laboratory 1, Livestock Production Management Laboratory 2, Molecular Reproduction cum teaching laboratory, and Andrology and Semen lab. The students become well versed in management of dairy animals and goat, machine milk operation, artificial insemination, semen processing, semen quality control, bull management, treatment and reproduction management. The students also have practical exposure of proximate analysis, milk quality and biochemical analysis. Practical exposure of statistical analysis is also there.

6.4.6. Supervision of students inPG/PhD Programmes:

S. No.	Year	No. of faculty	No. of eligible guide	No of supervised students
1.	2021-22	10*	10	07
2.	2022-23	11*	10	09
3.	2023-24	11*	11	09
4.	2024-25	11*	10	11
5.	2025-26	07*	07	09

3 Faculty members from ERS and 2 Faculty members from SRS

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Quarterly meetings with students and faculty have been conducted in routine to get the feedback of the students regarding teaching. The students under research remain with the guide for whole research period and fortnightly meeting of the students for research progress along with feedback has been taken care.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
	Y1	Y2	Y3	Y4	Y5 (Current Year)	Y1	Y2	Y3	Y4	Y5 (Current Year)
	2021-22	2022-23	2023-24	2024-25	2025-26	2021-22	2022-23	2023-24	2024-25	2025-26
Master's Programme	07	09	09	11	09	0	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with black board and computer connected with projector in the entire three lecture hall for students teaching. Under COVID19 situation all the classes and examination have been conducted through online mode. The classes mostly taken by using PowerPoint presentation and for better understanding video are also shared.

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1.to 6.4.9 are furnished as per the records available in the college, and degree awarding University.


Signature of Dean of the College with Date and Seal
 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 Joint Director (Academic) & Dean
 आ.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Master's Program in Animal Reproduction, Gynaecology & Obstetrics

6.4. Self Study Report for the Programme: Master Program in Veterinary Gynecology and Obstetrics

6.4.1. Brief History of the Degree Programme:

Animal Reproduction, Gynecology and Obstetrics (ARGO) section was initiated in year 2014. This section is actively involved in conducting research, teaching and extension in discipline of Animal Reproduction, Gynecology and Obstetrics since August 2014 under the Livestock Production Management Division. The PG programme was started in August 2014. Separate faculty of ARGO along with board of studies was in existence since 2014.

Objective:

- Development of state of art in dairy animal reproduction management facilities and infrastructure.
- To conduct research and teaching on reproductive management and fertility improvement of male and female dairy animals.

Accomplishment

- A structurally and functionally competent bubaline 3D-Endometrial Cell Culture system in terms of cellular integrity, alignment, stratification, glandular differentiation and prostaglandin production has been developed.
- Profiling of proteins during different stages of estrous cycle for identification of estrus specific proteins in saliva of buffalo has been undertaken.
- Gold-nanoparticle based in-solution colour assay developed targeting estrus candidate protein for accurate identification of estrus in buffaloes.
- Protocol developed for amelioration of heat stress and improvement of reproductive performance of buffaloes during low-breeding summer season through betaine, melatonin and herbal powder supplementation.
- Protocol developed for amelioration of heat stress and improvement of reproductive performance of post partum cows by zinc and betaine supplementation.
- Behavioural and biochemical markers identified for accurate prediction of parturition in Sahiwal cows and buffaloes.
- Biomarker proteins identified in serum of cows for accurate prediction of parturition in cows.
- Protocol for advancement of age of puberty and induction of estrus by exogenous Kisspeptin in buffaloes has been developed.
- Urinary pheromones of Sahiwal bulls have been identified and efficacy of bull urine in enhancing reproductive performance of Sahiwal cows has been explored.

- An *invitro* model has been developed for studying sperm oviduct binding in buffaloes.
- A sensitive immunoassay was developed for quantifying PDC-109 protein in bull seminal plasma, facilitating the classification of bulls with differential fertility and semen freezability.
- Protocol for low dose sperm preservation from high fertile cattle and buffalo bulls has been standardized.
- Protocol for amelioration of adverse effects of heat stress on semen quality of crossbred bulls by supplementation of Vitamin E and Selenium has been developed.
- Package-of-practice has been developed for quality semen production during low-breeding summer season in buffalo bulls by dietary supplementation.
- Strategy to mitigate adverse effect of vaccination stress on semen quality of crossbred bulls by supplementation of Vitamin E and Curcumin has been developed.
- Antimicrobial potency of Zinc oxide nanoparticles and cyclic hexapeptides antimicrobial peptide (c-WFW AMP) and their use as antimicrobial alternative in semen cryopreservation in place of conventional antibiotics was explored.
- A mobile App in Hindi “Dairy Pashu Prajanan” has been developed for farmers to inform them about reproductive management of dairy animals.

6.4.2. Faculty Strength:

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	***Professor	0	0	0	0
2.	**Associate Professor	01@ 01@@	01@ -	1@@	01@ 01@@
3.	*Assistant Professor	3+1@	3+1@	-	3+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, @SRS.@@ERS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended By the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	1	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1.	One classroom in LPM division	1	60.96
2.	One classroom in ARGO Building	1	60

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	Molecular Reproduction cum teaching Laboratory, NDRI, Karnal	1	153
2.	Animal Reproduction & Gynaecology Laboratory, NDRI, Karnal	1	47.87
3.	ABRC laboratory		200
4.	Theriogenology Laboratory, SRS, NDRI	1	120

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
01	Molecular Reproduction cum Teaching Laboratory	Fluorescent microscope	1
02	Molecular Reproduction cum Teaching Laboratory	Doppler ultra sound machine	2
03	Molecular Reproduction cum teaching Laboratory	Ultra-low deep freezers (-80°C)	1
04	Molecular Reproduction cum Teaching Laboratory	Ultrapure Water Purification system	1
05	Animal Reproduction & Gynaecology Laboratory	Refrigerated centrifuge	2
06	Animal Reproduction & Gynaecology Laboratory	Phase contrast microscope	3
07	Animal Reproduction & Gynaecology Laboratory	CO ₂ incubator	1
08	Animal Reproduction & Gynaecology Laboratory	UV Spectrophotometer	1
09	ABRC Laboratory	Semen processing and freezing unit	1
10	ABRC Laboratory	Computer Assisted Semen Analyzer	1
11	ABRC Laboratory	Phase contrast microscope	1
12.	ABRC Laboratory	Water Purification System	1
13.	ABRC Laboratory	Fluorescent microscope	1

ARGO Section student have got facility of 3 laboratories having all conventional and modern sophisticated equipment's. These equipment's are sufficient to meet the requirement of course curriculum.

4. Artificial Breeding Research Centre:

The center has been created in a premise spread over 15 acres land. In ABRC around 149 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

5. Livestock Research Centre (Cattle Yard):

The institute livestock research Centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal and Sanen-Beetle. It is equipped with all necessary equipment's and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The Centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit.
- b) Animal health complex for treatment of various categories of animals.
- c) The various shelter facilities for different categories of dairy animals.
- d) The various types of milking parlour.

6. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	M.V.Sc	8	8

7. Conduct of Practical and Hands-on-Training:

M.V.Sc students' gets very good exposure of hands on training in the area of Animal Reproduction Gynecology and Obstetrics as the LPM division, had two instructional farm facilities i.e. Livestock Research Centre and Artificial Breeding Research Centre and four functional laboratories i.e. Molecular Reproduction cum teaching laboratory, Animal Reproduction & Gynaecology Laboratory, ABRC laboratory and Theriogenology Laboratory at SRS, NDRI Bangalore.

8. Supervision of students in PG/PhD Programmes:

S. No.	Year	No of faculty	Number of eligible guide	No of supervised students
01	2021-22	6	6	7
02	2022-23	6	6	8
03	2023-24	6	6	9

04	2024-25	6	6	7
05	2025-26	6	6	6

*3 Faculty members from SRS & ERS

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Feedback of M.V.Sc students is always taken at the end of every semester in the division. Feedback of students has been very positive and encouraging. Moreover, interactive meet of teachers and M.V.Sc students are conducted at frequent intervals in which students' express their views and opinion to faculty regarding course curriculum.

6.4.8. Student in take and attrition in the programme for last five years:

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
	2021-22	2022-23	2023-24	2024-25	2025-26 (Current Year)	2021-22	2022-23	2023-24	2024-25	2025-26 (Current Year)
M.V.Sc in Veterinary Gynecology and Obstetrics	7	8	9	7	6	Nil	2	3	1	Nil

6.4.9. ICT Application in Curricula Delivery:

The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with black board and computer connected with projector in the two lecture hall for students teaching.

6.4.10. The information per training to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.


 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 संयुक्त निदेशक (शैक्षणिक) एवं डीन
 Joint Director (Academic) & Dean
 मा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Master's Program in Animal Biochemistry

6.4. Self- Study Report for the Programme: Master Program in Animal Biochemistry

6.4.1. Brief History of the Degree Programme:

The Division of Animal Biochemistry came into being in September 1984 with the merger of the discipline of Animal Biochemistry of the Dairy Chemistry Division and the Division of Human Nutrition and Dietetics. The Master's degrees were given in the discipline of Animal Biochemistry from the Deemed University from the Year 1998 onwards. Earlier, they were awarded by Kurukshetra University and Punjab University.

Objectives:

- To explore the biochemical and molecular mechanisms in bovine and non-bovine dairy animals.
- To provide biochemical, molecular and mitochondrial markers and their technologies for improving productive and reproductive traits of dairy animals.
- To explore nanostructures as drug delivery vehicles and conduct biosafety evaluations of nanomaterials.
- To explore processes for enhancing the bioavailability of milk based bioactive peptides and therapeutics for consumers' health.
- To facilitate the validation of the health benefit claims of dairy products.

Accomplishments:

Year: 2021-22

1. Organochlorine Pesticide Dieldrin Increases Estrogen Production by Upregulating Proximal Promoter (PII) Driven CYP19A1 Gene Expression in Granulosa Cells
2. Salivary Ferning based Estrus Identification Method Validated in a Large Population of Buffaloes in the Field Conditions
3. Tissue-specific Differences in Expression of Mitochondrial Protein Coding Genes from the Nuclear Genome and Mitochondrial Trnas in Buffalo
4. Mitochondria-associated miRNAs Expression Profiles in Buffalo
5. Mitochondrial DNA haplotypes Influence the Reproductive Efficiency of Buffaloes
6. MIR R-99a-5p in the Urine as a Potential Biomarker for Estrus Identification in Buffalo
7. Identification of Estrus Biomarker for Accurate Detection of Estrus/ Silent Estrus and Right Time Insemination in Buffaloes
8. Urine fern/ crystallization pattern analysis as a easy, non-invasive tool to identify estrus in buffaloes

9. Novel DPP-IV Inhibitory Peptides Isolated from Milk Proteins

10. *In Vitro* Immunomodulatory Activity of Custom Synthesized Peptides Derived from Lactobacillus Rhamnosus NCDC24 Fermented Milk**Awards:**

Name of the award	Sponsoring Agency	Name of the Scientist	Year
Young Investigator Poster Presentation Award	Gut Microbiota and Probiotic Science Foundation India	Ms. Ankita Kumari, Dr. Rajeev Kapila	2021
NAAS Fellow	NAAS	Dr. Dheer Singh,	2021

Year: 2022-23

1. A computer vision based App named as Mahishi Mitr (beta version) developed to identify estrus based on salivary fern patterns.
2. Purification of 80 kDa sperm motility-inhibitory protein of goat cauda epididymal plasma
3. Development of structurally and functionally competent 3D-granulosa cell culture model in buffalo
4. Effect of heat stress on granulosa cells morphology, growth characteristics, and function in a 3D granulosa cell culture model
5. Antidiabetic efficacy of fermented camel milk
6. Preparation of bio-functional lactic-yeast fermented milk

Year: 2023-24

1. Mitochondrial DNA D-Loop SNPs unveil molecular signatures of milk production variation in Murrah Buffalo
2. Comparative Studies in immunohistochemistry, localization and gene expression of aquaporins in reproductive system between ovine and caprine
3. Optimizing buffers for mitochondrial isolation in Indian buffalo uncovers tissue-specific variations and provides insights into functional assessments
4. Development of exosomes-encapsulated antibiotics-based therapeutics for mastitis
5. Development of a gold-nanoparticle based in-solution colour-based assay against estrus candidate proteins for accurate identification of estrus in buffaloes
6. Glycosylated mucin 1 is responsible for typical fern-like patterns in buffalo saliva at estrus
7. Purification of 80 kDa sperm-quiescent protein of buffalo cauda epididymal plasma and its functional characterization

8. Therapeutic efficacy of faecal microbiota transplantation on cadmium-induced testicular degeneration in rats
9. Effect of secondary microbial succession on combined heat and psychological stress-induced female infertility in murine model
10. Extraction and partial characterization of extracellular matrix components derived from probiotic lactobacill
11. Osteoprotective effect of casein-derived peptide(s) supplemented with calcium and vitamin D in OVX rats.
12. Milk casein and whey protein hydrolysates exhibited anti-obesity potential
13. Isolation of proline-rich polypeptides from colostrum of select indigenous cattle breed and evaluation of their nutraceutical potential
14. Antidiabetic efficacy of fermented camel milk and *Lactocaseibacillus rhamnosus*
15. Aflatoxin M1 influences intestinal epithelial integrity by decreasing the expression of genes encoding tight junction proteins

Awards:

Name of the award	Sponsoring Agency	Name of the Scientist	Year
Women Scientist Award	ICAR-CIARI, Port Blair	Dr. Suman Kapila	2023
Nomination to the SMRM-India Executive Committee	SMRM	Dr. Sadeesh E.M.	2024

Year: 2024-25

1. Buffalo milk extracellular vesicles' proteome reveals their possible role in muscle development.
2. An RT-LAMP assay was developed for lead and cadmium toxicity detection using the Heme Oxygenase 1 (HMOX1) gene of Hep G2 cells
3. Bioinformatics analyses deciphered critical molecular pathways in cancers caused by aflatoxin B1
4. Serum taurine concentration was found higher at the proestrus than the metestrus and diestrus stages of buffalo estrous cycle.
5. Mitochondrial dysfunction in cattle was examined, focusing on oxidative stress, apoptosis, and hormonal imbalances in retained placenta (RP). Mitochondrial DNA (mtDNA) variability across indigenous breeds (Sahiwal, Gir, and Tharparkar) and its potential link to milk production traits were also explored.
6. Surface exopolysaccharide (EPS) and proteins present on *L.fermentum* and *L. rhamnosus* respectively are non-toxic to intestinal epithelial cells. EPS and surface proteins of *L.fermentum* and *L.rhamnosus* were found effective in protecting intestinal epithelial cells against H₂O₂-induced oxidative stress respectively. Pre-incubation

of intestinal cells with ECM components extracted from respective lactobacilli reduced the activity of anti-oxidative enzymes significantly upon inducing H_2O_2 -mediated oxidative stress.

7. Simulated digested casein has considerably higher inhibition of enzymes (DPP-IV, α -glucosidase and ACE) than undigested casein irrespective of the milk obtained from cow, goat or donkey. Inhibition of key metabolic enzymes with standard drugs/inhibitors was 25-100 folds more than the digested casein fractions of milk tested. Donkey milk casein appeared to have least inhibition (IC_{50}) as compared to cow and goat milk.
8. Colostrum whey protein and proline-rich peptides (PRPs) exhibited antioxidative, antidiabetic, antiobesity, antihypertensive and immunomodulatory potential and biofunctional attributes of colostrum whey protein and PRPs of indigenous breeds were better than exotic and crossbred.
9. Feeding of colostrum, colostrum whey protein and colostrinin to rats helped in amelioration of complications induced due to metabolic syndrome and Sahiwal was better than Holstein Friesian in combating MS.
10. Camel milk casein protein PC hydrolysate (<3 KDa) and whey protein PTC hydrolysate (<3 KDa) exhibited maximum DPP-IV inhibition potential thereby exhibits the anti-diabetic potential.
11. Resource Generation in terms of Consultancy Services provided and sponsored research projects - a Summer Internship Training Program was organized for students, focusing on Mitochondrial Research Techniques. The program successfully generated revenue of ₹35,400.
12. A 687 bp buffalo CRISP-1 cDNA was cloned into pHis-TEV vector and bioactive recombinant CRISP-1 protein was successfully produced in *E. coli*
13. He 90 kDa sperm-quiescent protein of buffalo cauda epididymal plasma was identified to be lactotransferrin by MS-MS analysis
14. Buffalo recombinant SRY protein was successfully produced in *E. coli*. Immunohistochemistry analysis by using polyclonal antibody raised against the protein showed specific reaction at the apical part of head of about 50% mixed sperm population

Awards:

S No.	Name and Designation	Title	Organization/ Society	Date
1.	Dr Rajani Kr Paul, Sr.Scientist	APA Best Oral Presentation Award	APACON 2024 Animal Physiologists Association (APA)	01-02 March, 2024

Year: 2025-26

- Small milk extracellular vesicles potentiate β -lactam antibiotic activity for combating intracellular mastitis causing *Staphylococcus aureus*.
- Kangayam and Tharparkar cattle exhibit higher duplications in innate immune genes compared to Sahiwal, Gir, Karan Fries, and Holstein Friesian, an insight from array comparative genomic hybridization.
- Comparative transcriptome profiling of peripheral blood mononuclear cells suggests Protocadherin-1 (PCDH1) as a distinctive innate immunity signature in Sahiwal, Tharparkar and Gir compared to Karan Fries cattle.
- Complete mitochondrial genome sequencing of indigenous cattle showed that high milk yield links to conserved, mainly synonymous mtDNA variants in energy pathways, while low milk yield links to a higher density of non-synonymous SNPs, indicating that mitochondrial genome stability is linked to lactation efficiency.
- The CRISP-1 caused inhibition of sperm capacitation, protein tyrosine phosphorylation and modulation of nitric oxide, cAMP, and Ca^{2+} signalling pathways during *in vitro* sperm capacitation, indicating its possible application in prevention of cryocapacitation.
- The 80 kDa lactotransferrin (1.5 μM) isolated from buffalo cauda epididymis significantly inhibited both sperm motility and capacitation *in vitro*. The bovine milk lactoferrin at 100 $\mu\text{g/mL}$ also demonstrated significant inhibitory activity on sperm motility. Further, the LF from both the sources improved both progressive motility and functional integrity of sperm membrane following liquid preservation of semen.
- Donkey milk identified as a rich source of peptides with DPP IV inhibitory activity, a tripeptide produced by *in silico* digestion of DM casein identified as a potent, non-toxic DPP IV inhibitor.
- Camel milk protein hydrolysates (CMPHs) derived from casein and whey proteins, particularly D-WP-PTC < 3 kDa, possess strong therapeutic potential for managing diabetes and its complications by enhancing insulin secretion, improving antioxidant defense, regulating metabolism, and restoring reproductive health in diabetic rats.
- Goat Casein Protein (600 mg/kg bw) and Casein Protein Hydrolysate (360 mg/kg bw) results in the significant inhibition of pancreatic lipase in mice thereby excreting TGs in faeces.
- Anti-oxidative potential of exo-polysaccharide and surface proteins extracted from probiotic Lactobacilli were assessed as the most promising bio-protective attribute

under in vitro and in vivo milieu. ROS production and activity of anti-oxidative enzymes reduced significantly with increased survivability of intestinal epithelial cells in presence of H_2O_2 mediated oxidative stress with either of bacterial surface components. Likewise oral intubation of exo-polysaccharide (LF and LR) and surface proteins (LR) protected the experimental mice from ethanol-induced oxidative stress.

- On one hand, simulated digested cow, goat and donkey casein did not show difference in inhibition of α -glucosidase and DPP-IV enzymes but on the other simulated digested donkey whey showed significantly better inhibitory activity of both of these metabolic enzymes compared to cow and goat. Likewise simulated digested donkey casein and whey inhibited pancreatic lipase most efficiently with least IC_{50} than cow and goat.

Awards:

1. **Ms. Diksha Sharma** got best Oral presentation award for the paper entitled, 'Therapeutic Potential of Milk Fat Globule Membrane in Restoring Metabolic, Reproductive, and Bone Health in Polycystic Ovary Syndrome' authored by Diksha Sharma, Rajeev Kapila, Suman Kapila in the 12th International conference on Emerging Issues in Agricultural, Food Technology, Biological & Applied Sciences for Global Development (EIAFTBASGD-2025) during November 15-17, 2025 at Maharana Pratap University of Agriculture and Technology Udaipur, Rajasthan, India
2. **Ms. Priyanka Goyal** secured 3rd prize under the theme of Smart Livestock Farming for the poster entitled Harnessing the potential of bovine milk extracellular vesicles and their miRNAs in human health, a frontier science approach for a developed India by Priyanka Goyal, Roshan Mohiddin, Suneel K. Onteru and Dheer Singh (ASC2025/ABSTRACT0453) at XVII Agricultural Science Congress during 20-22 February, 2025 held at G.B. Pant University of Agriculture and Technology, Pantnagar.
3. **Dr. Rajani Kumar Paul** secured First Prize in Oral presentation titled "Functional Characterization of Recombinant Buffalo Cysteine-rich Secretory Protein 1 on Sperm Physiology (Presenter: Paul, R. K.)". In: 9th Annual Convention of SVBBI and National Symposium on "Advancing Animal Health and Production through Biochemical and Biotechnological Innovations" (SVBBICON 2025) on 28-29th Nov., 2025 at WBUAFS, Kolkata.
4. **Dr. Sunita Meena** received Excellence in teaching Award in Xth International Conference on Global Research Initiatives for sustainable Agriculture and Allied Sciences (GRISAAS-2025) in MPUAT, Udaipur, Rajasthan from October 5th to 7th 2025.

5. **Dr. Sadeesh E.M.** was appointed as an Editorial Board Member for the hybrid journal *Molecular Biology Reports* (Springer Nature) for an initial term of two years, effective July 2025.
6. **Dr. Suneel Kumar Onteru** secured 1st prize under the theme of Smart Livestock Farming for the poster entitled “Innate immunity in selected Indian cattle breeds traced from gene duplications and deletions” by Mayank Roshan, Ashutosh Vats, Kamlesh Kumari Bajwa, Sanjay Sharma, Menaka Thambiraja, Monika Sodhi, Dheer Singh, Ragothaman M. Yenamalli, Suneel Kumar Onteru (ASC2025/ ABSTRACT1110) at XVII Agricultural Science Congress during 20-22 February, 2025 held at G.B. Pant University of Agriculture and Technology, Pantnagar.

6.4.2. Faculty Strength:

S. No.	Faculty	Sanctioned strength	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1	Head	1	1	0	1
2	***Professor	0	0	0	0
3	**Associate Professor	1	0	1	1
4	*Assistant Professor	8 + 1@	8+2@	0	8+1@

***Principal Scientist Cadre, **Senior Scientist Cadre, *Scientist Cadre, SRS@

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant Position	Faculty recommended by the ICAR/ UGC/ VCI/other regulatory bodies
1.	Technical	2	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.4. Class Rooms and Laboratories:

1. Class Rooms

S. No.	Class Rooms	Numbers	Size (m ²)
1.	1	1	4 span

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Molecular Endocrinology, Functional Genomic and Systems Biology Laboratory.	1	11 span
2	Laboratory of Milk and Health	1	3 span
3	Immuno and Nutritional Biochemistry Lab	1	4 span

4	Laboratory of Mitochondrial Biology of Farm Animals	1	3 span
5	Semen Biochemistry Laboratory and Nano technology Lab	1	4 span
6	Functional Food and Therapeutics Laboratory	1	4 span
7	Central Instrument Room	1	4 span
8	UG/PG Laboratory	1	4 span
9	Small Animal House	1	22 span

3. List of Major Equipments

S. No.	Name of Laboratory	Name of Equipment	Numbers
1	Molecular Endocrinology, Functional Genomics and Systems Biology Laboratory	ELISA plate /Eon reader/ Laptop connecting with ELISA plate reader	1
		Dynamic light Scattering/ Dynamic LS Desktop Intel Core i5/ Desktop Computer	1
		Microscope (Towa Optics)	1
		Gel Documentation System	1
		Real-Time PCR Machine	1
		Orbital shaker	1
		Light cycler II (Real time PCR)	1
		Micro 22 R Refrigerated Table top Micro centrifuge with Rotor	1
		pH Meter	1
		Electrophoresis Apparatus	1
		Nanospectrophotometer	1
		Nanodrop	1
		Water jacketed CO2 Incubator	1
		Blood Biochemistry Analyzer	1
		Horizontal Gel Electrophoreses	1
		-20 Degree Refrigerator	1
		CO2 Gas Incubator Water Jacked	1
		Tower Server Model No LG 22" 1PS Monitor 22 MP48	1
		Bio Safety Cabinet -II	1
		CO ₂ Incubator	1
		Up gradation microscope modal Ti-s Towa optics	1
		Nanoparticle Tracking Analyzer (NTA)	1

2	Laboratory of Milk and Health	CO ₂ Incubator	1
		Biosafety cabinet	1
		Elisa plate/reader	1
		Microscope Inverted Tissue culture	1
		Fluorescent Spectrophotometer	1
3	Immuno and Nutritional Biochemistry Lab	CO ₂ Incubator	1
		Microscope Inverted Tissue culture	1
		ELISA plate/reader	1
4.	Laboratory of Mitochondrial Biology of Farm Animals	Low Temperature Freezer	1
		Hot air oven	1
		High precision electronic balance	1
		Water bath	1
		Refrigerator	1
		pH meter	1
		Tissue homogenizer with motor stand assembly	1
		Stereozoom microscope	1
		Tabletop centrifuge	1
		Horizontal electrophoresis unit with power supply	1
		Biosafety Cabinet	1
5.	Semen Biochemistry Laboratory and Nanotechnology Lab	CO ₂ Incubator	1
		Microscope Inverted Tissue culture	1
		Shaking Incubator	1
6	Functional Food and Therapeutics Laboratory	Biosafety Cabinet	1
		Gel Doc	1
		PCR	1
		Fluorescent Spectrophotometer	1
		GBox Cabinet Safety	1
7	Central Instrument Room	Foxy Jr. Fraction Collector	1
		Olympus Inverted Microscope with Accessories	1
		Olympus Inverted Microscope with Fluorescence	1
		Electronic Balance Shimadzu AUW120D	1
		Heto Freeze Dryer With Vacuum Concentrator	1
		Gel Documentation System Alpha Imager	1

		Refrigerated High Speed Centrifuge Model Z36HK	1
		Spectrofluorimeter	1
		Double Beam UV Visible Spectrophotometer UVD 3092	1
		Real Time PCR with Accessories	1
		Microscope with Phase Contrast Epifluorescence and Digital Image Analysis System	1
		Tissue Homogeniser	1
		Microprocessor Controlled Refrigerated Table Top Centrifuge Model Z446K	1
		Ice Flaking Machine Model BL-IMS-120	1
		pH Meter	1
		Ultrasonic Probe Sonicator	1
		3 Part WBC Differential Veterinary Hematology Analyser	1
		UV VIS Spectrophotometer UV Plus Motras	1
		Water Purification System	1
		PCR Machine	1
8	UG/PG Laboratory	Oven	1
		pH Meter	1
		Refrigerator Dual Temperature	1
		Spectrophotometer	1
		Spinwin	1
		Water bath	1
		Balance Analytical	1
		Balance Compact	1
		Test Tube Shaker	1
		Centrifuge	1
		Laminar Flow	1

4. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

5. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	Masters	20-40 per batch (depends on the course)	20 per batch

6.4.5. Conduct of Practical and Hands-on-Training:

Animal Biochemistry Division offers Practical classes for the following courses in both the semesters:

Master's Programme:

1. BCT-601 (2+0) Biophysical Chemistry
 - Dr. Varij Nayan
2. BCT-602 (2+0) Biochemistry of Biomolecules
 - Dr. Sunita Meena & Dr. Suman Kapila
3. BCT-603 (2+1) Enzymology
 - Dr. Sadeesh E.M.
4. BCT-604 (1+1) Analytical Techniques and Instrumentation in Biochemistry
 - Dr. Gautam Kaul, Dr. Sunita Meena & Dr. Ravikant
5. BCT-605 (2+1) Clinical Biochemistry of animals
 - Dr. Sadeesh E.M
6. BCT-606 (3+0) Intermediary Metabolism and Regulation
 - Dr. Suman Kapila & Dr. Rajani Paul
7. BCT-607 (2+1) Molecular Biochemistry
 - Dr. Suneel K. Onteru & Dr. Dheer Singh
8. BCT-608 (2+0) Nutritional and Industrial Biochemistry
 - Dr. Suman Kapila/ Dr. Rajeev Kapila/ Dr. Mamta Chauhan
9. BCT-609 (2+0) Endocrinology and Reproductive Biochemistry
 - Dr. Rajani Paul
10. BCT-611 (1+1) Introduction to Bioinformatics and Computational Biology
 - Dr. Suneel K. Onteru, Dr. Dheer Singh & Dr. Varij Nayan
11. BCT-612 (1+0) Master's Seminar
 - Dr. Sadeesh E.M
12. BIOCHEM-501 (3+1) Basic Biochemistry
 - Dr. Sunita Meena, Dr. Gautam Kaul & Dr. Rajani Paul
13. BIOCHEM-505 (2+2) Techniques in Biochemistry
 - Dr. Rajeev Kapila, Dr. Sunita Meena & Dr. Ravi Kant

6.4.6. Supervision of students in PG/PhD Programmes:

Break up Status of the number of students being supervised since 2021 (last five years) for Masters Programme:

S. No.	No of faculty	No of eligible guide	No of supervised students
1	8	8	18

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Time to time lab meetings are being conducted in the Division by respective supervisor. Every six months progress seminars are being conducted to assess their progress in research.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
	Y1 2021 -22	Y2 2022 -23	Y3 2023 -24	Y4 2024 -25	Y5 (Current year) 2025-26	Y1 2021 -22	Y2 2022 -23	Y3 2023 -24	Y4 2024 -25	Y5 (Current year) 2025-26
Master's	3	0	7	0	0	0	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

Yes the degree programme is meeting all the expectations for ICT.

All the bioinformatics software are being taught to the students in different courses so that they can use in their research work.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the Section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.


Signature of Dean of the College with Date and Seal
 Joint Director (Academic & Dean)
 Dr. Ashish Kumar Singh
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Master's Program in Animal Biotechnology

6.5. Self Study Report for the Programme: Master Program in Animal Biotechnology

6.5.1. Brief History of the Degree Programme:

NDRI, Karnal began working on biotechnology in the mid-1980s as part of a UNDP 'Centre of Excellence on Biotechnology' programme. The urgent need to apply recent biotechnological advances in reproduction and production to superior females of dairy breeds of ruminants in order to improve animal productivity in our country prompted the Department of Biotechnology to fund the establishment of a state-of-the-art Embryo Biotechnology Centre (EBC). The development of the Livestock Genome Lab and Molecular Biology Unit under the National Agricultural Research Project-II increased biotechnology even more. In June 1999, the Animal Biotechnology Centre was reformed, bringing together all of the infrastructural facilities built under several biotechnology programmes. The Centre also provides an M.Sc. Animal Biotechnology degree in addition to research in areas as important to biotechnology in dairy production and processing.

The proposed Division's goals are to: a) conduct biotechnology-oriented basic and applied research to improve animal productivity and develop innovative dairy processes to produce superior quality, safe, and wholesome dairy products; and b) train manpower in biotechnology applications in dairy production and processing for M.Sc. and Ph.D. degrees in biotechnology.

Degree program initiated:

Under a UNDP programme, the NDRI developed a 'Centre of Excellence on Biotechnology' in 1985. NDRI created the Embryo Biotechnology Centre (EBC) in 1992 to begin research in the frontiers of animal reproduction and embryo biotechnology. The Animal Biotechnology Centre was established in 1999 as a result of a consolidation of biotechnology research efforts (ABTC). The master's degree programme was initiated in 1999. The Animal Biotechnology Centre opened a new state-of-the-art facility in 2007.

Objective:

- Increase the number of genetically superior (elite) female cattle and buffaloes on farms and in the field by identifying and developing novel goods and techniques that could lead to significant increases in milk producing animals' economic features.
- To create sexed semen technologies in order to produce dairy animals of the desired sex.
- Develop animal herds capable of generating custom-made milk to meet people's individual demands.

- Discovering previously unknown new genes and dissecting their regulatory systems in order to utilize economically valuable features.
- To use dairy cultures/probiotics to make recombinant medicines, nutraceuticals, and vaccines.

Accomplishments:

- Gantantra and Basant, two elite buffalo male cloned calves produced in NDRI.
- India's first cloned cattle, named 'GANGA', was born in March 2023 at ICAR-NDRI Karnal.
- Myostatin gene-edited buffalo calf for double muscling was successfully produced, which is a huge leap towards gene edited animal production technology for Indian farm animals.
- Utilization of cloned cattle 'GANGA' for in-vitro production of OPU-IVF embryos
- Evaluation of commercial single-step embryo embryos, all media supported similar early culture media for in vitro production of development, though Vitrogen caused dish surface parthenogenetic, in vitro fertilized, and cloned adhesion. In IVF experiments, Vitrogen and GM-501 buffalo embryos
- Global DNA methylation profile of spermatozoa of cloned buffalo bulls
- Generation of oocyte-like cells from umbilical cord blood-mesenchymal stem cells in cattle
- Protein engineering to enhance stability of leucyl aminopeptidase (PepL) of *Lactococcus lactis*
- Production of engineered phage endolysin for improved bactericidal activity against *Escherichia coli*
- Antimicrobial resistance genes and associated mobile genetic elements in *Escherichia coli* from human, animal and environment - an in silico investigation
- Live birth of buffalo calf with β -lactoglobulin (BLG) gene knock out has been achieved.
- Successful pregnancy of cloned cow, Ganga, was established through OPU-IVF technology.
- Gene editing technology was perfected for development of NANOG-gene edited buffalo cells.
- First time the genotype of all Sahiwal cows was generated to study breed purity and climate resilience in dairy cattle.

- An RT-LAMP assay was developed for lead and cadmium toxicity detection using the gene expression of the Heme Oxygenase 1 (HMOX1) gene in HepG2 cells.
- Lipid profile of sperm plasma membrane in Sahiwal bulls was established in relation to male fertility.
- Mesenchymal stem cells were used to treat cattle and buffaloes' wounds.
- An antibody conjugated magnetic nanoparticles - based technology was developed for enriching X-spermatozoa in a given bovine semen sample. In in-vitro IVF trials, this method skewed sex ratio towards females (3 females: 1 male) in cattle
- An X-specific ligand was identified for enrichment of X-chromosome-bearing sperm that resulted in the production of 75% female-biased embryos in IVF trials
- A simple method was developed for the purification of lactoferrin from Ladakhi Yak colostrum. Shotgun proteomics of 0-day Ladakhi yak colostrum was used to identify key proteins in colostrum

6.5.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/ other regulatory bodies
1.	***Professor	0	1	1#
2.	**Associate Professor	2	1	3
3.	*Assistant Professor	6+1@	0	6+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, #Head, @ERS

6.5.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	4	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.5.4. Classrooms and Laboratories:

8. Classrooms:

S. No.	Classrooms	Numbers	Size (m ²)
1	Smart class rooms	2	30x2=60m ²
2	Conference Hall	1	95m ²
3	Seminar Room	1	30m ²

9. Laboratories:

S. No.	Name of Laboratories	Numbers	Size(m ²)
1.	Embryo Biotechnology Laboratory	01	160m ²
2.	Cloning Laboratory	01	160m ²
3.	Regenerative Biotechnology Laboratory	01	72m ²
4.	Cell Culture Laboratory	01	48m ²
5.	FACS Facility	01	16m ²
6.	Animal Genomics Lab-1	01	160m ²
7.	Animal Genomics Lab-2	01	160m ²
8.	Laboratory No-6	01	160m ²
9.	Cell Science Laboratory	01	160m ²
10.	Cell & Molecular Biology Laboratory	01	160m ²
11.	Proteomics Laboratory	01	16m ²
12.	Diagnostic Kit Development Laboratory	01	16m ²
13.	MS Facility	01	16m ²
14.	Fermentation Laboratory	01	16m ²
15.	Bioinformatics Laboratory	01	16m ²
16.	Centre of excellence of genome editing	01	16m ²

10. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Embryo Biotechnology Laboratory	Binocular Microscope Real Time PCR Machines PCR Machines Refrigerated Centrifuges Water purification system Gel Documentation Systems Electrophoresis Inverted Microscope Refrigerated centrifuges Laminar Flow Bench Centrifuges Western blotting system Gel Electrophoresis Stereo zoom Microscope Nano Spectro Photometer Hybridization oven	16
2.	Cloning Laboratory	Water purification Systems Ultrasound machine Refrigerated Centrifuges Ultra low Deep Freezers Sonicator Osmometer Inverted Microscope Refrigerated centrifuges Laminar Flow Bench Centrifuges	10

3.	Regenerative Biotechnology Laboratory	Microscope with Imaging System CO ₂ Incubators Sonicator Stereo zoom Microscope Oocyte Aspiration Pump Micro manipulator Electro fusion machine CO ₂ Analyzer	9
4.	Cell Culture Laboratory	Laminar Flow Cabinet Incubator Shakers CO ₂ Incubators Inverted Microscope Refrigerated centrifuges Centrifuges	6
5.	FACS Facility	FACS Aerosol Evacuation Stereozoom Microscope	3
6.	Animal GenomicsLab-1	Flow Cytometer Centrifuge High Speed Pulse field Gel Refrigerated Hi speed Nano Spectro Photometer PCR Realtime PCR Ultra low Deep Freezers	8
7.	Animal GenomicsLab-2	Electro manipulator optimizer Micro manipulator System Electro Fusion Apparatus Zoom Stereo Microscope Electrophoresis Unit Humidity Control Chamber Ultra low Deep Freezers DNA Sequencer	8
8.	Laboratory No-6	Health care bio services 2 Delectrophoresismodule Elisa Reader Herbaceous Multiuse	4
9.	Cell Science Laboratory	Nucleo factor Device Bio-safety Cabinet Embryo Respiratory Laparo scopic Instrument	4
10.	Cell & Molecular Biology Laboratory	Multidimensional Calorimetry Lyphilizer LIMS Cooling cabinet	5
11.	Proteomics Laboratory	Differential Scanning Calorimetry Cell Disruptor Shaking incubator OFF Gel Fraction Chromatography system Protein Purification System Protein Digester and spotter Protein Imager and Robotic Spot cutter PCR Machine Quix stand system	17

		Freeze Dryer (Lyophilizer) Crystallization Incubator Monochromator Hybridization Incubator Osmometer Ultra low Deep Freezers	
12.	Diagnostic Kit Development Laboratory	Bio-safety Cabinet Electro phoresis Bioanalyzer Centrifuge High Speed Vacuum Concentrator	4
13.	MS Facility	Mass spectrometer facility Dual Refrigerator shaker Bio Safety Cabinet	3
14.	Fermentation Laboratory	Bio Safety Cabinet Vacuum Concentrator Micro centrifuge Fermenters	4
15.	Bioinformatics Laboratory	Workstations	3

11. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

12. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- Artificial insemination and pregnancy diagnosis in dairy animals unit
- Animal health complex for treatment of various categories of animals
- The various shelter facilities for different categories of dairy animals
- The various types of milking parlour

13. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes.

14. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	M.Sc./M.V.Sc/M.Tech	1	1

6.5.5. Conduct of Practical and Hands-on-Training:

Animal Biotechnology Centre has a state of art facility for student research in the area of genomics, Proteomics and Embryo Biotechnology. Students are offered In-farm training in collaboration with LRC, NDRI Karnal. Additionally, it has Proteomics Lab, Bioinformatics Lab, Embryo Biotechnology Lab and Mass spectrometry Lab for hands on training and conducting research.

6.5.6. Supervision of students in PG/PhD Programmes:

Masters

S. No.	No of faculty	No of eligible guide	No of supervised students
1	11	11	9

*:Ten from NDRI, One from NBAGR

6.5.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

- We have a feedback system in place for PG/Ph.D students who have completed their graduate studies. Based on the feedback received, we will address these issues in the coming academic years in order to improve our teaching and student research.
- Animal Biotechnology Centre offers a variety of practical training programmes in the areas of animal genomics, proteomics, embryo biotechnology, and bio informatics. Senior students from postgraduate institutions, state agriculture universities, and animal science-related enterprises make up the majority of the participants (for eg. Animal feed industry, milk processing industry, disease diagnostic laboratories and animal vaccine production industry). We always obtain comments from the participants after the training term. The issues that have been mentioned are being addressed in order to strengthen our continuing academic and research efforts.

Customized service work for the dairy sector, animal husbandry department, and state agriculture universities is also available. We tailor or modify our academic and research efforts in response to customer feedback in order to attain excellence.

6.5.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five Years (From session 2021-26)					Attrition (%)				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
M.Sc./M.V.Sc/M.Tech	7	-	1	1	1	7	0	1	1	1

6.5.9. ICT Application in Curricula Delivery:

The topic fields in Animal Biotechnology are dynamic in nature. Every year, we must update and improve our existing teaching curricula in order to suit the needs of the present situation. For example, the CRISPR/cas9 system is a novel tool in genomic modification that was found in the last several years, and we need to incorporate related theory and practice into our present research efforts due to the demand for animal genetic manipulation. As a result, we must improve our research operations based on concurrent animal science discovery and development.

To grasp, remember, and answer the thematic questions in competitive tests, we create compatible reading material. Our professors compile study materials from the most recent publications, as well as review materials and books, to supplement the content taught in class. To address the most recent developments in animal biotechnology, we provide YouTube links and other updated information on various university websites. Our teaching strategies are as follows:

- a) Physical/offline mode to meet biological phenomenon knowledge
- b) Online mode to fulfill teaching curriculum during the Covid 19 epidemic time
- c) Online class room based (Google class rooms) on supplying reading material to students, collecting daily records, and monitoring subject them.

6.5.10. The information per training to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.5.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.5.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per there cords available in the college, and degree awarding university.

Signature of Dean of the College with Date and Seal


 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 संयुक्त निदेशक (शैक्षणिक) एवं डीन
 Joint Director (Academic) & Dean
 आ.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Master's Program in Dairy Technology

6.4. Self Study Report for the Programme: Master Program in Dairy Technology

6.4.1. Brief History of the Degree Programme:

The M.Sc. courses in different branches of dairy science including Dairy Technology were started in 1961 and facilities were also provided to research scholars for conducting research work for the PhD degree of different universities. The institute was initially affiliated with Punjab University and later with Kurushetra University. In 1989, status of Deemed University was conferred to the Institute for further strengthening the academic programme for human resource development. After which all courses in processing disciplines were designated as M.Tech. if the students have completed 4 years undergraduate programme.

Objective:

- To generate quality human resource for dairy sector
- To carry out research in the frontier areas of milk processing

Accomplishments:

- Technology for preparation of composite protein powders, energy efficient method for ghee preparation, 3D printed dairy desserts, process development of high-protein ice-cream, technology for low sodium cheese is developed.
- Basic research for identifying the volatile compounds as marker of freshness of khoa during storage as affected by packaging and storage conditions were identified. Time- temperature color-based freshness indicator packaged khoa is accomplished.
- Several students have received awards in National, International conferences/ Seminars/ Symposiums/Conventions.
- Mr. Raj Suwalke, Dr. Narender Raju Panjagari, Dr. Sangita Ganguly, Dr. Ashish Kumar Singh, Dr. Rajan Sharma and Dr. Raghu H.V. received Best oral presentation entitled Performance of On-package freshness indicator of set type dahi as affected by the starter cultures; at 10th International Conference on Fermented Foods, Health Status and Social Well-being, organized by SASNET-FF during December 17-18, 2021.
- Mr. Tamal Sarkar received First position in Poster presentation award at National Conference on Moringa Food Conclave-2021 organized by CSA University of Agriculture and Technology, Kanpur during September 28-29, 2021.
- Mr. Aakash Dadarao Wani, Dr. Writdhama Prasad, Dr. Ankit Deep, Dr. Kaushik Khamrui, Dr. Shaik Abdul Hussain received First Prize in Oral Paper Presentation entitled "Evaluation of selected solvents as an alternative for efficient milk fat extraction from ghee residue" in 10 th International Conference on Advancements

in Engineering and Technology, ICAET-2022, organised at Bhai Gurdas Institute of Engineering and Technology (BGIET), Sangrur, 11-12 November, 2022 though online mode.

- Mr. Aakash Dadarao Wani, Dr. Writdhama Prasad, Dr. Ankit Deep, Dr. Kaushik Khamrui, Dr. Shaik Abdul Hussain received First prize for oral presentation entitled “Evaluation of low toxicity solvent as an energy efficient alternative for milk fat extraction from Ghee residue” under theme “Emerging technologies in the field of dairy processing and quality control”, In: 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India” at Warud, Pusad (Maharashtra), 15-16 December 2022.
- Mr. Manas Sarkar, Dr. Writdhama Prasad and Dr. Kaushik Khamrui: Best poster (3rd) presentation award for the paper “Active Food Packaging through Electro hydrodynamic processing with natural fibres” presented in National Seminar on ‘Advanced Practices in Dairy Industry and Research’, held at West Bengal University of Animal and Fisheries Sciences, Mohanpur Campus, Nadia, West Bengal on 23rd December 2022.
- Ms. Sonam Kumari, Dr. Shaik Abdul Hussain, Dr. Writdhama Prasad and Dr. Yogesh Khethra: Best poster (3rd) presentation award for the poster entitled “Uchh koti ice cream ki banawat karyakarta aur sanvedi visheshtao par stabilizer mishran ka prabhav” presented during Hidi Ullas Mahotsava 2022 at ICAR-National Dairy Research Institute, Karnal on 29 Sep., 2022.
- Mr. Vjay Shende, Mr. Aakash Wani, Dr. Writdhama Prasad, Dr. Kaushik Khamrui and Dr. Shaik Abdul Hussain received Dr C.M. Singh Best research article award for the research paper entitled “Effect of glucan addition on complexed zinc concentration and physico-chemical attributes of buffalo milk paneer whey” during 2nd National Conference On Enhancing Farmer’s Income by Livestock, Poultry and Aqua Farming through Sustainable and Eco-Friendly Smart Technologies and Practices, held at BASU, Patna during February 28-29, 2024.
- Ms. Hency Rose, Dr. Heena Sharma, Dr. A. K. Singh, Dr. Yogesh Khethra, Ms. Fathima Shahna and Dr. D. N. Yadav received Best Oral Presentation award for the research paper entitled “Effect of admixture of goat and cow milk on the physico-chemical properties of feta” in 8th National Youth Convention on ‘New perspectives for sustainable Agriculture & Livelihood Security’ held at BHU, Varanasi during August 22-23, 2024
- Ms. Hency Rose, Dr. Heena Sharma, Dr. A. K. Singh, Dr. D. N. Yadav, Dr. Yogesh Khethra, Dr. Kanchanpally Saipriya and Dr. Poornima received Best Poster Presentation Award for the paper entitled “Evaluation of physico-chemical

composition and proteolytic changes during ripening of feta cheese prepared using Barbari goat milk” at International Conference on “Recent Trends and Future Perspective to improve the performance, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during April 24-26, 2024.

- Dr. Saipriya Kanchanpally, Dr. Heena Sharma, Dr. Ashish Kumar Singh, Dr. D. N. Yadav, Dr. Richa Singh, Dr. G. S. Meena, Dr. Diwas Pradhan, Dr. Sachin Kumar and Dr. Anusha Kishore received Second Best Poster Presentation Award for the paper entitled “Elucidation of difference in metabolite profile and physico-chemical characteristics of Barbari and Beetal goat milk” at International Conference on “Recent Trends and Future Perspective to improve the performance, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during April 24-26, 2024
- Mr. Alok Ahale, Dr. Neelam Upadhyay, Mr. Tamal Sarkar, Dr. Shaik Abdul Hussain, Dr. Ashish Kumar Singh and Dr. Suman Kapila received third prize for oral presentation for the paper titled “Functional processed cheese spread combining *Moringa oleifera*: Insights in physico-chemical characteristics and consumer acceptability” at the International Conference on Recent Advances in Food Science and Technology: A Way Forward organized by DSLD CHEFT Devihosur-Haveri and Karnataka Science and Technology Academy, DST, Government of Karnataka during 22-24 January 2025.
- Ms. Hency Rose, Dr. Heena Sharma, Dr. Ashish Kumar Singh, Dr. Gaurav Kr Deshwal and Dr. Yogesh Khetra received best Oral presentation award in XII Annual Convention of the Society for Veterinary Sciences and Biotechnology and International Conference on ‘Bridging Science and Society: Biotechnology for sustainable One Health held at LUVAS, Hisar during 3-5 December, 2025.
- Ms. Hency Rose, Dr. Saipriya K., Dr. Heena Sharma, Dr. Ashish Kumar Singh and Dr. Gaurav Kr Deshwal received Best Oral presentation award in National Conference of Indian Society for Sheep and Goat production and Utilization (ISSGPUCON 2025) on Transforming Small Ruminant Production: Empowering Precision Farming and Genomic Innovations for Enhanced Productivity and Sustainable Development’ held at ICAR-CIRG, Mathura, during 5-7 March, 2025.
- Dr. Poornima, Dr. Ashish Kumar Singh, Dr. Heena Sharma, Dr. P N Raju, Dr. Sumit Arora and Mr. Praveen Kumar Tiwari received Best Oral presentation Award in 3 days International Conference on Global Research Initiatives for Agriculture, Science and Technology “GRIAST-2025” held at IGKV, Raipur from 20-22 January, 2025.

- Mr. Kuntal Roy, Dr. Narender Raju Panjagari, Dr. Deep Narayan Yadav received Best Oral Paper Award at the National Conference on “Food Innovations, Food Allergies and Traditional Foods” (FIFATF-2025) held at Sant Longowal Institute of Engineering and Technology, Longowal, Punjab during December 11-12, 2025.
- Mr. Shubham Kar and Dr. Narender Raju Panjagari received 2nd Best Poster Award at the International Conference on Food Chemistry, Microbiology, and Process Engineering for Wellness & Health (FCMPE WellH 25) organized by the Birla Institute of Technology Mesra, Jharkhand during 10-12 July 2025.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	***Professor	1#	-	01#
2.	**Associate Professor	2DT	1FT	2DT+1FT
3.	*Assistant Professor	7DT+02FT+01LPT	6DT	13DT+2FT+01LPT

***Principal scientist cadre, **Senior Scientist Cadre 2DT+01FT, *Scientist cadre (13DT+02FT+01LPT), (#Head)

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	3		ICAR
2.	Administrative	2		ICAR
3.	Supporting Skilled Staff	2		ICAR

6.4.4. Class rooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1	PG Lecture Room First Floor DT Division	One	42.30
2	Divisional seminar room (DT)	One	58.27

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	PG Laboratory	One	168.0
2	By-Products Technology Laboratory Membrane Processing Plant	One	37.5 56.0
3	Cheese and Fermented Foods Laboratory	One	112.0
4	Food Packaging Laboratory	One	75.0

5	Food Technology Laboratory	One	121.5
6	Formulated Dairy Products Laboratory	One	178.0
7	Functional Ingredients and Applications Laboratory	One	149.0
8	Protein Analysis Laboratory	One	19.0
9	Sensory Evaluation Laboratory	One	56.0
10	Traditional Indian Milk Products Laboratory	One	112.0
11	Experiential Learning Laboratory-cum-Pilot Plant	One hall	376.0

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1	By- Products Technology Laboratory Membrane Processing Plant	Pilot scale UF Plant, MF Unit, Ovens, High shear disperser, Centrifuge, RO plant, Infra-red moisture analyzer, Density meter	One each
2	Cheese and Fermented Foods Laboratory	UV-Vis Spectrophotometer, Laboratory homogenizer, Microbalance, Ultraturax, Cheese knives, Cheese vats	One each
3	Food Packaging Laboratory	MAP Machine, Headspace Gas Analyzer, Electrospinning machine, Vacuum packaging machine, Vacuum dryer, BOD incubators,, Universaltesting machine, Bursting strength tester, Substance indicator, Micrometer, Cobbs apparatus, tearing strenght ester,UV treatment chamber, Ultrapure water purification system	One each
4	Food Technology Laboratory	Freeze dyer, Refrigerated centrifuge, Low temperature water bath, BOD incubator, Spectrophotometer, Abbe's Refractometer, Biosafety cabinet, Stomacher, Automatic Nitrogen analyzer, Soxtec, Modular MF-UF Plant	One each
5	Formulated Dairy Products Laboratory	Texture analyzer (2), Rapid Visco Analyzer(RVA), Rheometer, Water activity meter, Microfluidizer, Spectrophotometer (2), Prober Sonictior, Hunter colour lab, High shearmixer, BODincubator, Incubator shaker,	One each
6	Functional Ingredients and Applications Laboratory	Laminar flow, High shear mixer, Vacuum rotary evaporator, Table top centrifuge, Protein distillation unit, Hotair oven, BOD incubator	One each

7	Protein Analysis Laboratory	Kjedhal Digester, Semi-automatic protein distillation assembly. Muffle furnace	One each
8	Sensory Evaluation Laboratory	Modular Sensory Booths, Sample Preparation and storage accessories	One each
9	Traditional Indian Milk Products Laboratory	Vacuum and modified packaging machine, BOD incubator, Laminar airflow, Spectrophotometer, Turbidity meter, Colorimeter, Laboratory centrifuge, Microscope	One each
11	UG/PG Laboratory	Cream separator, Electronic balance, Centrifuge, Water bath, Autoclave Muffle furnace, Hotair Oven BOD incubator	One each
12	Experiential Learning Laboratory-cum-Pilot Plant	Bakery oven big, Coating pan, Bakery oven small, Planetary Mixer Big, Dough Molder, Planetary Mixer Smaller, Shrink Wrapping Machine, Wet Grinder, Single Screw, Extruder, Pulverizer, Cookie Dropper machine, Biscuit Packaging Machine, Flaking machine Snack Packaging Machine, Butter churner, Cheese vat, Powder packaging Machine, Modular Pasteurizer, Softy ice-cream freezer, Ice-cream fruit feeder, Modular Ice-cream unit, Spray dryer, Twin screw extruder, Paneer pressing unit, Cream separator, Pasta making machine, Paneer cube machine, Vacuum tray dryer, Tray dryer, Canning line, Fluidized bed dryer, Fermentation line, potato peeler	One each

4. Laboratory-cum-Pilot Plant at Business Planning and Development (BPD)

Unit:

Pilot plant at BPD has more than 30 equipments for small to medium scale processing of milk products, frozen foods and bakery products. All these equipments are available for research work of postgraduate and doctoral students of dairy processing disciplines.

5. Dairy Plants-

a. Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students

from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR-NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board.

It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 2,00,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 2,00,000 l/day milk, 2.5 MT/ day ghee and 150kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

6. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	M.Tech.	14	14

6.4.5. Conduct of Practical and Hands-on-Training:

Each course offered at PG level has adequate practical components. The duration of practical session vary from 3-5 hand students get an opportunity on product formulation, technological applications, analysis of developed products and engineering aspects of various processes. Besides these facilities and infrastructure mentioned above, PG programme is inter- disciplinary in nature. The faculty and facilities of allied disciplines of processing and National Referral Centre for Milk Quality & Safety (NRCMQS) is extensively provided to PG & Ph. D. students in carrying out quality research work.

PG students are offered minor courses in Dairy Engineering Disciplines which assist in improving their skills. It is evident by the number of students placed as Plant Executive in reputed dairy companies like Nestle, AMUL, TetraPak, Mother dairy, ITC, Britannia, Heinz, Verka etc. The research problems on which students work enhance their learning aptitude and thought process.

6.4.6. Supervision of students in PG/PhD Programmes:

1. M.Tech. (DT)

S. No.	No of faculty	No of eligible guide	No of supervised students
2021-22	17	15	17
2022-23	16	14	18
2023-24	17	13	21
2024-25	15	15	18
2025-26	14	14	20

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): The students are required to submit a feedback form after their degree to their guides for their overall experience during the course of study. There is a structure proforma developed by Dairy Science College which is provided to students after each academic years to get the feedback about the each course and faculty. The stakeholders including faculty, academicians, researchers, industry personnel, students, educationists and officials from the policy formulation and implementation departments have involved in curriculum development, modification both at ICAR and institute levels. The Placement Cell of the institute is also actively involved in providing the feedback and expectations of industry and other organizations employing our students.

6.4.8. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
M. Tech. (DT)	19	18	21	20	20	2	0	0	2	0

*Figures under bracket are for the students joined SRS of NDRI, Bengaluru

6.4.9. ICT Application in Curricula Delivery:

The classrooms are well-equipped with interactive board and internet connectivity. The involvement of students was ensured by random attendance during lectures, announced and un-announced quizzes, short answer questions, discussions on a specific topic related to subject, assignments, and presentations being regular part of the classroom teaching.

6.4.10. The information pertaining to 6.4.1.to 6.4.9.shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the Section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Dairy Technology (SRS)

6.4. Self Study Report for the Programme: Master's Program in Dairy Technology (SRS)

6.4.1. Brief History of the Degree Programme:

Degree program initiated:

- M. Tech (Dairy Technology) was started in SRS campus in August 2002
- PhD (Dairy Technology) research work was started in SRS campus in August 2003

Objective:

- To support the HRD requirements of dairy industry for highly qualified and skilled personnel.
- To meet students' requirement for opportunities to pursue higher studies in Dairy Technology.

Accomplishments:

- During the last five years, 23 Master's students and 5 Ph.D. students passed out of the SRS Campus and placed in various industries and academic institutions.
- Students have received many national and international awards and recognitions in the past 5 years
- 5 patents have been filed based on students research work (of which 2 have been granted) and several peer reviewed publications from student research work

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place					Vacant positions	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
		2021-22	2022-23	2023-24	2024-25	2025-26		
1	Professor	2\$	2\$	2\$	1	0	-	-
2	Associate Professor	-	-	3	3	3	-	-
3	Assistant Professor	3	3	1	1	1	-	-

***Principal Scientist Cadre, **Senior Scientist Cadre, *Scientist Cadre \$ - 1 Emeritus Scientist

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	01	-	ICAR
2.	Administrative	01	-	ICAR
3.	Supporting Skilled Staff	01	-	ICAR

6.4.4. Class Rooms and Laboratories:**1. Class Rooms/Seminar Rooms**

S. No.	Class Rooms	Numbers	Size (m ²)
1	Education Sec Seminar Room	1	40
2.	DT Section class room	1	55

2. Laboratories (*lab facility is common for both M Tech and PhD students)

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	PG lab-1 (Dr MHS)	1	75
2	PG lab-2 (Fine Instrument lab)	1	80
3	PG lab-3 (Dr HCD)	1	55
4	PG lab-4 (Dr MS)	1	50
5	Experimental Dairy	1	3000

3. List of Major Equipments

S. No.	Name of Lab	Name of Equipments	Numbers
1	PG lab-1	Rotating Viscometer	1
2		Kjeldahl Protein Analyzer	1
3		Rotary Vacuum Evaporator	1
4		Deep Fridge	1
5		Autoclave	1
6		Induction Sealer	1
7		Cooling Cabinet	1
8		Refrigerated Centrifuge	1
9	PG lab-2	Micro plate Reader	1
10		Fermentor	1
11		Incubator shaker	1
12		Freeze dryer	1
13		HPLC	1
14		Electrophoresis unit	
15	PG lab-3	Texture Analyser	1
16		Highshearmixer	1
17		Cup sealer	1
18		Water bath	1
19		Penetrometer	1
20		Hot air oven	1
21		Incubator	1
22	PG lab-4	Centrifuge	1
23		Microwave	1

24	PG lab-4	Induction heater	1
25		Refrigerator	1
26		Distillation unit	1
27		pH meter	1
28		Steam kettles	3
29		Homogeniser	1
30		HTST Pasteurizer	1
31		LTLT Pasteurizer	1
32		Tray drier	1
33		Cream Separators	2
34		Ghee boiler	1
35		Ghee clarifier	1
36		Cheese vats	3
37	Experimental Dairy	Ice cream freezer (batch)	1
38		Ice cream freezer (continuous)	1
39		Kulfi/candy making unit	1
40		Hardening Tunnel	1
41		Milk/beverage packaging machine	2
42		High viscous products packaging unit	1
43		Cheese mill	1
44		Vacuum pan	1
45		RO/UF/NF membrane plant	1
46		Butter churn	2

The above equipment alongwith several minor equipment/instruments are sufficient for meeting the course curricula.

4. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	M.Tech	5-6	5-6

6.4.5. Conduct of Practical and Hands-on-Training::

Students were made to have hands-on experience by allowing them operate the instruments themselves, which instilled confidence in them. Also, during the research work, they are operating high end instrument on their own, follow all cleaning protocols. Further, students also perform some analysis on a need – basis in laboratories of reputed institutions such as GKVK, Dairy Science College, Hebbal, IISc, etc.

6.4.6. Supervision of students in PG/PhD Programmes:

S. No.	No. of faculty	No. of eligible guide	No. of supervised students
M.Tech			
1	4	4	29
PhD			
1	4	4	11

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Feedback from students and industries is good. Most of the students have been placed in good industries and academic / research institutions, so they are happy and satisfied with the programmes being offered at the Station. Students felt whatever they learnt during their course work were helpful in solving industry problems and the industry also felt that the students employed are in general showed good performance.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
M.Tech (DT)	5 [#]	5	7	7	6	20	0	0	0	0
PhD (DT)*	2 ^{**}	0*	2*	3*	4*	0	0	0	0	0

*students enrolled at Karnal and reported at SRS, Bengaluru for research work ; # 1 student on physical exemption

6.4.9. ICT Application in Curricula Delivery:

- Lecture delivery through good quality PPT presentations.
- Online classes on MS teams and Google platforms.
- Use of Google forms for regular assessment and quizzes.
- Use of Youtube videos to display working of equipment and animations for concept grasping.
- Use of Spreadsheets for data analysis, design calculations and model fitting in practical classes.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
आ.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Dairy Engineering

6.4. Self Study Report for the Programme: Master Program in Dairy Engineering

6.4.1. Brief History of the Degree Programme:

Dairy Engineering as a discipline for post-graduate research and training/ post-graduate courses/M.Sc. (Dairying) started in the year 1972.

Degree program initiated: The degree programme in Dairy Engineering for Master's degree initiated in the year 1972. The aim of the program was to equip the students with knowledge of design and development dairy process equipment required for mechanization of Traditional Indian Dairy Products and to develop engineering database required in design of dairy process equipments/instruments

Objective:

- To develop engineering database required in design of dairy process equipments/instruments.
- Process mechanization for Indian dairy products.
- To design and develop the equipments/instruments to meet the requirement of dairy industry.
- Teaching/training to UG/PG students.
- Transfer of technology, technical training, and consultancy services etc.

Accomplishments:

Machines / Equipments / Technologies Developed:

- Three stage Scraped Surface Heat Exchanger (SSHE) for continuous manufacturer of Indigenous dairy products (Khoa, Burfi, Basundi, Kalakand, gajar-Pak, Ghee, Rabri).
- Two stage Scraped Surface Heat Exchanger (SSHE) for continuous production of Indigenous dairy products (Khoa, Burfi).
- Single stage scraped surface heat exchanger
- In-line system for production of Indigenous dairy products (Khoa, Burfi, Rabri, Basundi, Kheer, Ghee from cream, Ghee from butter)
- Multipurpose conical process vat
- Machine vision system Color Desk D1 for colour measurement of dairy products
- Machine vision system Color Station N1for colour measurement
- Program to view colour of the dairy and food products on the basis of CIE Lab values.

- Automatic endo-exo thermal unit for dahi
- Weight Based Metering and Filling System for Viscous Dairy Products
- Thermic fluid based hybrid heating system.
- Product transfer system for viscous dairy products
- Continuous cooling system for viscous dairy products
- Proto type of improved butter melting system (pipe network type)
- Continuous ghee making machine
- Continuous butter melter
- Paneer making gadget
- Proto type of ohmic milk heating system.
- Rice pre conditioning type kheer making equipment
- Whey dewatering mechanism for chhana
- Automated Paneer Press
- Thermic fluid based Rasgulla frying system
- Automated control stirred yoghurt making gadget
- Ice slurry based milk cooling system
- Sensor based system for determining electrical properties of dairy products

Patents details:

- Unit of Three-Stage Thin Film Scraped Surface Heat Exchanger for Continuous Manufacture of Khoa (Patent No. : 304816; Application No. : 583/DEL/2010; Date of Filing: 12/03/2010 and Date of Grant: 21/12/2018)
- Mechanized conical process vat (Agrawala SP, Sawhney IK and Bikram Kumar. 1987. Mechanized conical process vat. Patent No. 165440.)

Students completed degree (DE Division, ICAR-NDRI, Karnal): 2016-25

- 126 M.Tech.(DE) students and 18 PhD (DE) students

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Head	1	0	1
2.	***Professor	0	1	1
3.	**Associate Professor (ASPE)	1	2	3

4.	**Associate Professor (Electronics & Instrumentation)	1	0	1
5.	*Assistant Professor	4	2	6

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/other regulatory bodies
1.	Technical	6	-	6
2.	Administrative	1	-	1
3.	Supporting Skilled Staff	1	-	1

6.4.4. Classrooms and Laboratories:

1. Class rooms/Seminar rooms:

S. No.	Classrooms	Numbers	Size (m ²)
1	UG	0	-
2	PG	1	45

2. Laboratories:

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Design and Drawing Section	1	135
2	Electronic Workshop	1	67.5
3	Instrumentation Lab	1	67.5
4	Thermodynamics Lab	1	67.5
5	Engineering Properties Lab	1	67.5
6	Process Equipment Lab	1	67.5
7	CAD Lab	1	45
8	Process Engineering Lab	1	45
9	Machine Design Lab	1	45
10	Hydraulics Lab	1	67.5
11	Machine Vision Lab	1	22.5
12	Electrical Engineering Lab	1	112.5
13	Refrigeration Lab	1	67.5
14	Display Lab	1	190
15	Workshops (for DE only)	1	210

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1	Electronic Workshop	Multi-meter, voltmeter, power-meter, soldering machine, thermocouple welding machine	1 each
2	Instrumentation Lab	Pressure, temperature, displacement, thermal conductivity measurement equipment, Shell and tube heat exchanger, PHE, Flow-meter	1 each
3	Thermodynamics Lab	Model of Petrol Engine (Two-Stroke & Four-Stroke); IC injector; Model of Fuel Supply System of Petrol Engine; Model of Ignition System; Locomotive, Babcock & Wilcox; Mascot (Cochran boiler); Lancashire Boiler; Compound Steam Engine; Hand Refractometer; Induction Hot Plate;	1 each
4	Engineering Properties Lab	Hot air oven, Infrared thermometer, Anemometer, refractometer, Magnetic stirrer, Water bath, model of fluidized bed drier, infrared moisture tester	1 each
5	Process Equipment Lab	Viscometer, Water Activity Analyzer	1 each
6	Process Engineering Lab	Hot Air Oven	1 each
8	Machine Design Lab	Viscometer-IKA Lo-Vi with Adaptor	1 each
9	Hydraulics Lab	Venturimeter, Rotameter, Orifice meter, Pump models, Valve models, Flowmeters, Impellers, Workbenches	1 each
10	Machine Vision Lab	Color station, Color Desk	1 each
11	Electrical Engineering Lab	AC Slip-ring Induction Motor 5 HP, Single Phase Transformer (5 KVA – 3; 2 KVA-1), Synchronizing Panel for Alternator, Squirrel Cage Induction Motor-Gen. Set (Motor 7.5 HP; DC Generator 5 KW), AC Slip Ring Ind. Motor with Pony break 7.5 HP	1 each
12	Refrigeration Lab	Refrigeration and A.C. Tutor, Mechanical Heat Pump, Temperature Humidity Cabinet, SS PUF insulated cabinet (Endo-exothermal cabinet for dahi)	1 each
13	Display Lab	Walk-in-Cooler/ Cold Room 2x2x2m with 10 cm PUF insulation with complete refrigeration system, 3stage SSHE, Conical process vat	1 each
14	Workshops (for DE only)	Lathe Machine (Chamundi & Kirloskar), CNC lathe machine, Drilling Machine, Grinding Machine, Cutter HMT, Sheet Rolling, TIG welding, plate shearing, pico hydraulic press, plate shearing machine, hydraulic hack saw, hydraulic pipe bending machine	1 each

The above facilities are required for practical, experimentation and research and fabrication requirement of B.Tech., PG. and Ph.D. students.

4. Engineering R&D workshop:

R&D workshop in the Dairy Engineering building provides central facility for fabrication of research prototype equipments. The workshop is amply equipped to take up fabrication jobs such as sheet metal work, turning, welding, drilling, grinding, buffing, fitting and black smithy. The technical support in the workshop is competent enough to handle both mild steel and stainless steel fabrication. In addition to providing opportunities to the students of B.Tech. (DT) for practical training in engineering manufacturing processes, the workshop also helps postgraduate and doctorate engineering scholars in devising and fabricating the experimental research setups.

5. Laboratory-cum-Pilot Plant at Business Planning and Development (BPD) Unit:

Pilot plant at BPD has more than 30 equipments for small to medium scale processing of milk products, frozen foods and bakery products. All these equipments are available for research work of postgraduate and doctoral students of dairy processing disciplines.

6. Dairy Plants:

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues.

This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme

later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR_NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board.

It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 150,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 150,000 l/day milk, 0.8MT/ day ghee and 50kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

2. Theory and Practical batches

S. No.	Program	Theory batch (No. of students)	Practical batch (No. of Students per batch)
1	B. Tech. 1 st	1(45)	2(23)
2	B. Tech. 2 nd	1(52)	2(26)
3	B. Tech. 3 rd	1(47)	2(24)
4	M.Tech.	1(7)	1(7)

6.4.5. Conduct of Practical and Hands-on-Training: The students are provided with desired practical material and hands-on-training are conducted as per the curriculum on various set ups / equipments / instruments etc. in various facilities / laboratories and hence meeting above mentioned requirements

6.4.6. Supervision of students in M.Tech Programmes:

S. No.	Programme	No of faculty	No of eligible guide	No of supervised students
1	M.Tech.	6	6	4 (2019-21) 5 (2020-22) 3 (2021-23) 4 (2022-24) 5 (2023-25)

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): There is no such information (duly supported by the documents) to mention the feedback mechanism.

6.4.8. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2016-17 to 2020-21)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
M.Tech. (DE)	3	4	5	7	7	0	0	0	0	0

*The above data mentioned is for NDRI, Karnal campus only.

6.4.9. ICT Application in Curricula Delivery:

- Various internal examinations like quizzes, midterm exam and assignments are being conducted online for courses offered during current semester
- Faculty members have recently started taking live online classes both theory and practical's as well as selected sessions have been also recorded and published on YouTube for benefit to the students, as mentioned in table given below.

1. Video link so flectures shared on YouTube

S. No.	Title	Video Link
1.	Dairy Process Engineering – Aseptic Packaging	https://youtu.be/tP9RMYfYJZM
2.	Properties of packaging material Permeability	https://youtu.be/vee_G1oQwZY
3.	Iterative procedures	https://youtu.be/NgaqvD4A4sA
4.	Temperature control in baking operation: Part 1 type of heating	https://youtu.be/WVA6Rjg75jY
5.	Temperature control in baking operation: Part 2 Oven safety and monitoring	https://youtu.be/kptQXC6tS7s
6.	Temperature control in baking operation: Part 3 Effect of temperature	https://youtu.be/OYTdmSKJZ7g
7.	Temperature control in baking operation: Part 4	https://youtu.be/sb8ZHWWMuGs
8.	Temperature and moisture control in spray drying	https://youtu.be/WtqkAiIRIsU
9.	Viscometer	https://youtu.be/RohFLDypsFc
10.	General points of consideration for designing dairy plant	https://youtu.be/3vtItDvFb0g
11.	Different types of layouts	https://youtu.be/ane93UvdtcU
12.	Single or multilevel design	https://youtu.be/3g3Foqwl72U
13.	Service accommodation and siting of office	https://youtu.be/1NBz8HhLyng
14.	Arrangement of different sections Part 1	https://youtu.be/y88GwmILRAs
15.	Arrangement of different sections Part 2	https://youtu.be/4fAHqfBRsis
16.	Arrangement of different sections Part 3	https://youtu.be/0nUGS8iTKuo
17.	Service pipe-line layout	https://youtu.be/565csxSSuN0
18.	Equipment layout	https://youtu.be/iT-k_j1MNLU
19.	Layout of offices and workshops	https://youtu.be/VCWwTOMeFYE
20.	Workshop	https://youtu.be/nQ3Il_zgfHw

21.	Fermenter Design General consideration Lesson 1	https://youtu.be/0Q8Zosez1dk
22.	Fermenter Design mode of operation Lesson 2	https://youtu.be/pTYVCZKCt8I
23.	Fermenter Design criteria Lesson 3	https://youtu.be/dlnI6KXu9yA
24.	Fermenter Design Characteristics of different fermenter Lesson 4	https://youtu.be/gM2Ed9amzTw
25.	Fermenter Design Process design Lesson 5	https://youtu.be/6Y0ZcSKS418
26.	Fermenter Design Mechanical design Lesson 6	https://youtu.be/NWQ7fFRdX9s
27.	Fermenter Design scale up and scale down Lesson 7	https://youtu.be/ls-0JCLiUD0
28.	Fermenter design Instrumentation and control Lesson 8	In form of power point ppt file
29.	Types of bioreactor General classification Lesson 1	https://youtu.be/myP33Fo4uu0
30.	Types of bioreactor Stirred tank bioreactor Lesson 2	https://youtu.be/j5tQkF0VNYw
31.	Types of bioreactor Stirred tank bioreactor Lesson 3	https://youtu.be/SFnzzyn9NB8
32.	Types of bioreactor Bubble column and Airlift reactors Lesson 4	https://youtu.be/HDFYNFWyoO0
33.	Types of bioreactor Fluidized bed and packed bed Lesson 5	https://youtu.be/ytFrglfpuW8
34.	Types of bioreactor Immobilized cell bioreactor Lesson 6	https://youtu.be/Q9iUHU4i-QY

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master's Program in Dairy Engineering (SRS)

6.4. Self Study Report for the Programme: Master's Program in Dairy Engineering (SRS)

6.4.1. Brief History of the Degree Programme:

Degree program initiated:

- M. Tech (Dairy Engineering) was started in SRS campus in August 2012
- PhD (Dairy Engineering) was started in SRS campus in August 2012

Objective:

- To support the HRD requirements of the process engineering in industry for highly qualified and skilled personnel.
- To meet students' requirement for opportunities to pursue higher studies in Dairy Engineering.

Accomplishments:

- During the last five years, 18 Master's students and 13 Ph.D. students passed out of the SRS Campus and placed in various industries and academic institutions.
- Students have received many national and international awards and recognitions in the past 5 years
- 5 patents have been filed based on students research work (of which 2 have been granted) and several peer reviewed publications from student research work

6.4.2. Faculty Strength:

S. No.	Cadre	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other Regulatory bodies
1.	***Professor	-	-	-	-
2.	**Associate Professor	-	-	-	-
3.	*Assistant Professor	5	5	-	-

***Principal Scientist Cadre, **Senior Scientist Cadre, *Scientist Cadre

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Technical	-	-	ICAR
2.	Administrative	-	-	ICAR
3.	Supporting Skilled Staff	-	-	ICAR

6.4.4. Classrooms and Laboratories:**1. Classrooms/Seminar rooms**

S. No.	Classrooms	Numbers	Size (m ²)
1	DE classroom 1	1	70

2. Laboratories (*lab facility is common for both M Tech and PhD students)

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Lab1	1	70
2	Lab2	1	73
3	Lab3	1	72.5
4	Lab4	1	75
5	Lab5	1	72
6	Workshop	1	70

3. List of major equipments

S. No.	Name of lab	Name of Equipments	Numbers
1	DE Labs (1-5)	Particle size analyzer	1
2		Rheometer	1
3		Electrospinning unit	1
4		Ultracentrifuge	1
5		Double beam UV spectrophotometer	1
6		Minispray dryer	1
7		Thermal properties analyser	1
8		High shear mixer	1
9		FTIR	1
10		Brookfield viscometer	1
11		Differential Scanning Calorimeter	1
12		Biosafety Cabinet	1
13		Phase contrast Microscope	1
14		Lyophilizer	1
15		Bomb Calorimeter	1
16		Batch type torrefaction Reactor	1

The above equipment along with several minor equipment/instruments are sufficient for meeting the course curricula.

4. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	M.Tech	5-6	5-6
2	PhD	1-2	-

6.4.5. Conduct of Practical and Hands-on-Training:

Students were made to have hands-on experience by allowing them operate the instruments themselves, which instilled confidence in them. Further, students also perform some analysis on a need – basis in laboratories of reputed institutions such as GKVK, IISC, CUSAT etc.

6.4.6. Supervision of students in PG/PhD Programmes:

S.No.	No. of faculty	No. of eligible guide	No. of supervised students
M.Tech			
1	5	5	18
PhD			
1	5	4	13

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Feedback from students and industries is good. Most of the students have been placed in good industries and academic / research institutions, so they are happy and satisfied with the Programmes offered at the Station. Students felt what ever they learnt during their course work were helpful in solving industry problem sand the industry also felt that the students employed are in general showed good performance.

6.4.8. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	20-21	21-22	22-23	23-24	24-25	20-21	21-22	22-23	23-24	21-22
M.Tech (DE)	4	1	4	3	4	0	0	0	0	0
PhD (DE)*	3*	1*	2*	1*	-	0	0	0	0	0

*students enrolled at Karnal and reported at SRS for research work

6.4.9. ICT Application in Curricula Delivery:

- Lecture delivery through good quality PPT presentations.
- Online classes on MS teams and Google platforms.
- Use of Google forms for regular assessment and quizzes.
- Use of Youtube videos to display working of equipment and animations for concept grasping.
- Use of Spreadsheets for data analysis, design calculations and model fitting in practical classes.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh here by certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
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ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master Program in Dairy Chemistry

6.4. Self Study Report for the Programme: Master Program in Dairy Chemistry

6.4.1. Brief History of the Degree Programme:

The award of M.Sc. in Dairy chemistry by NDRI was started in the year of 1989. In 2008, the Dairy chemistry division started offering M.Sc. Dairy chemistry degree for 3 years bachelor degree holders and M.Tech (Dairy Chemistry) for 4 years bachelor degree holders. Students who join the department with 3 years bachelor degree, the course work is for 2 years and research work is for 1 year. However, students who join with 4 years bachelor degree, course work is for 1 year and research work is also for 1 year. All admitted students complete their course work at NDRI Karnal. After completion of course work the students complete their research work either at NDRI, Karnal or at SRS NDRI Bangalore.

Objectives:

- To empower students with latest technical knowledge and skills in Dairy Chemistry.
- To provide qualified and trained manpower to dairy industries especially in quality control labs.
- To prepare and motivate students for pursuing higher studies both at National and International level.

Accomplishments:

- More than 75% masters' students of Dairy Chemistry passed out in last 5 years are employed in dairy industries including both multinationals (Nestle, Tetra Pak, ITC, Gobia Ltd. etc) and cooperatives (GCMMF, Banas dairy, Panchmahal District Cooperative Milk Producers' Union, NDDB, Jammu and Kashmir Milk Producers Pvt Ltd. etc) while the remaining pursue higher studies.
- Students secured multiple national awards including Best Poster Awards (2022, 2024), Best Paper Award (2021–DST-GATI programme), and Oral Presentation Award (International Conference, 2021) for research in food authenticity, functional dairy products and packaging safety.
- Four research contributions in advanced analytical techniques such as Raman spectroscopy, GC-MS/MS, ATR-FTIR coupled with chemometrics, and nanoencapsulation technologies have been nationally recognized through competitive scientific forums and conferences

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	***Professor	4	0	1#
2.	**Associate Professor	2	0	2
3.	*Assistant Professor	3+2@	7	10+2@

*** Principal scientist cadre (Head), ** Senior Scientist Cadre, * Scientist cadre, #Head, @SRS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	2	2	4
2.	Administrative	1	0	1
3.	Supporting Skilled Staff	3	1	4

6.4.4. Classrooms and Laboratories:

The division is completely equipped with classrooms and laboratory, for conducting theory and practical classes of students. The theory classes are conducted in seminar room and committee room and practical classes are conducted in UG-PG laboratories and instrument room. The space and necessary equipments along with other necessary facilities are available for smooth functioning of classes. The cut off students in each batch of practical is 20. If any course has more than 20 students, practical classes are conducted in two batches.

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1.	Seminar Room	1	75
2.	Committee Room	1	25

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	UG-PG Laboratory	3	200
2.	Instrument Room	1	125

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Instrument Room	Analytical balance	1
2.		Digital Polarimeter	1
3.		Ultra Sonicator	1

4.		HPLC System	1
5.		Water purification system	1
6.		UV-Vis Spectrophotometer	2
7.		Gas Chromatography	1
8.		Particle Size Analyzer	1
9.		Circulatory Water Bath	1
10.		BOD Incubator	2
11.		Centrifuge	1
12.	UG-PG laboratory	Balance	2
13.		PH Meter	2
14.		Spectrophotometer	1
15.		Water bath	2
16.		Muffle furnace	1
17.		Kjeldah Nitrogen analyzer	1

4. Quality Control Laboratory: A quality control laboratory is attached to the Experimental Dairy and is equipped with all the necessary facilities for routine chemical and microbiological analysis of dairy products. All the dairy products manufactured by the Experimental Dairy are analysed in this laboratory before dispatch to milk parlour for sales. It also provides the analytical support for carrying out analysis of outside samples on consultancy basis and for training of students from other institutions / participants of various training courses conducted by KVK.

5. Dairy Plants

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving funds cheme for utilization of the idle processing capacity for generation

of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR_NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board.

It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 150,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 150,000 l/day milk, 0.8MT/ day ghee and 50 kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

6. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	M.Sc./M.Tech. (DC)	10	10

6.4.5. Conduct of Practical and Hands-on-Training:

Each course has active involvement of 2 teachers to ensure that every student is exposed to the techniques involved in various practical classes. Dairy Chemistry Division UG, PG laboratories and central instrument facility is equipped with basic as well as sophisticated equipments to provide in-depth practical exposure and hands on training to all the students. All the courses offered to master's Dairy Chemistry have component of practical which essentially covers the practical understanding of all theoretical concepts related to subject. The division devotes sufficient time in practical classes and if students opted more in particular course, practicals are conducted in two batches for providing hands-on-training to students. For practicals, students are taught how to use a wide variety of instruments and are given the freedom of working in a group or on their own. The laboratories are open 24 hours a day, seven days a week, including holidays, and the students are free to work when ever they like.

6.4.6. Supervision of students in PG Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students (2021-2026)
1.	9	9	46 (9+8+9+10+10)

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): The time-to-time feedback is received from students, parents, industries, employers etc. The student feedback is received through timely meetings with head of division. The faculty- student interaction is also conducted on quarterly basis. A whatsapp group is also active between students and faculty for interactions.

6.5.8. Student in take and attrition in the programme for the last five years:

N Name of the Degree Programme	Actual student admitted in last five years (2021–2025)					Attrition (%)				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
M.Tech. (Dairy Chemistry)	11	8	9	10	10	9	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

A smart classroom equipped with a high definition projector (SONY), latest configured CPU installed inside a smart podium, quality screen, sound output speakers along with provision for UPS and internet connections has been installed in the committee room of Dairy Chemistry division. The ICT tools installed in the division is an ideal solution for audio visual demonstration during delivery of lectures, presentations, speeches etc. It enables teachers and presenters to deliver quality content to the students in the most convenient manner. The ICT system in the division has also helped in teaching many courses during the times of COVID when the classes were run in online mode. In the division, all presentations, other resource materials are made available to students through virtual mode.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weight age for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.11. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.


Signature of Dean of the College with Date and Seal
 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 Joint Director (Academic & Dean)
 मा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Master Program in Dairy Microbiology

6.4. Self Study Report for the Programme: Master Program in Dairy Microbiology

6.4.1. Brief History of the Degree Programme:

The Master's Degree program for Dairy Microbiology erstwhile known as Dairy Bacteriology was first initiated in 1948 in NDRI (then known as Imperial Institute of Animal Husbandry and Dairying), Bangalore.

Objectives:

- To conduct teaching programme and conduct practical of Dairy Microbiology at UG and PG level for NDRI Deemed University.
- To serve as a center of excellence for carrying out basic and applied research in different areas of Dairy Microbiology both at the level of milk production and processing.
- To provide technical support and consultancy to dairy industry in all the areas related to microbiological aspects of milk and milk products and their value addition through intervention of micro-organisms for improving health and nutrition along with their safety and quality.

Accomplishments:

- Placement of students in milk cooperatives (AMUL, Verka etc.), regulatory agencies (FSSAI) and in different teaching (Assistant Professor), research positions (ARS) etc.
- Commercialization of several technologies *viz.* paper based rapid detection of Mastitis, Antibiotics, and pathogens etc. as well dairy based functional starter cultures to industry.
- More than 10 patents filed and 4 granted in past five years.
- Publications of numerous research papers in high impact factor journals.
- NABL accreditation achieved for National Referral Center for Milk Quality and Safety.
- Visit of divisional faculties to prestigious foreign universities/research organization for training and research presentations.
- Running of International projects in collaborations with ILRI and UK and National projects in collaborations with NIRRH, Mumbai, WBUAFS, ICAR-NBFGR, ICAR-IVRI, and National Centre for Cell Science (NCCS), Pune etc.
- Three of the divisional faculty was bestowed with Fellowship and one with Associateship of the prestigious National Academy of Agricultural Sciences, India in the past five years.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	***Professor	0	1	1(Head)
2.	**Associate Professor	2	1	3
3.	*Assistant Professor	6+2@	3	9+2@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, SRS@

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	2	-	2
2.	Administrative	1	-	1
3.	Supporting Skilled Staff	6	-	6

6.4.4. Classrooms and Laboratories:**1. Classrooms/Lecture halls/Seminar Rooms**

S. No.	Classrooms	Numbers	Size (m ²)
1.	Seminar Room	1	75

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	UG Lab	1	200
2.	PG lab	1	100

*Electron Microscopy Center; National Collection of Dairy Cultures (NCDC) (Demonstration of Freeze dried Culture preparation process).

3. List of Major Equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	UG Lab	Laminar Air Flow	2
2.	UG Lab	BOD Incubators	3
3.	UG Lab	Hot Air Oven	1
4.	UG Lab	Autoclave	2
5.	UG Lab	Microscopes	8
6.	UG Lab	Refrigerators	2
7.	UG Lab	Water Bath	3
8.	PG Lab	Laminar Air Flow	2
9.	PG Lab	BOD Incubators	3
10.	PG Lab	Incubator shaker	1

11.	PG Lab	Hot Air Oven	1
12.	PG Lab	Microscopes	4
13.	PG Lab	Trans-illuminator	1
14.	PG Lab	Deep Fridge	1
15.	PG Lab	Refrigerators	2
16.	PG Lab	Water Bath	1

The equipments are sufficient to meet the course curricula

4. Quality Control Laboratory: A quality control laboratory is attached to the Experimental Dairy and is equipped with all the necessary facilities for routine chemical and microbiological analysis of dairy products. All the dairy products manufactured by the Experimental Dairy are analysed in this laboratory before dispatch to milk parlour for sales. It also provides the analytical support for carrying out analysis of outside samples on consultancy basis and for training of students from other institutions / participants of various training courses conducted by KVK.

5. Dairy Plants

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

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It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 150,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 150,000 l/day milk, 0.8MT/ day ghee and 50kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

6. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

7. Theory and Practical Batches

S. No.	Program	Theory batch	Practical batch
1.	B.Tech. (DT)	40	20
2.	M.Tech. (DM)	11	11

6.4.5. Conduct of Practical and Hands-on-Training:

The faculty of Dairy Microbiology Division is involved in imparting practical knowledge as well as hands-on-training on all the practical classes of each course to the students of the degree programme. Each course has active involvement of 2 teachers to ensure that every student is exposed to the intricacies of the techniques involved in various practical classes. The students are taught to handle various instruments and also allowed to work independently on the practicals. The laboratories are open 24 hours as well as on holidays and the students have the liberty to work during their free hours. Demonstration on the use of Electron Microscopy and preparation of Commercial Freeze Dried Cultures are also given to the students.

6.4.6. Supervision of students in PG Programme:

S. No.	No of faculty	No of eligible guide	No of supervised students (2021-25)
1.	11	11	52

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Different groups of stakeholders (Students, parents, industries, employers, farmers etc.) on Whats App/ E-mail/in person have been made where all kinds of information

are exchanged and feedbacks are received. Regular meeting with the students are also held to receive their feedbacks and sort out any departmental issues.

6.4.8. Student in take and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
Masters in Dairy Microbiology	13	11	11	10	10	2	1	-	-	

6.4.9. ICT Application in Curricula Delivery:

A smart classroom equipped with a high definition projector, latest configured CPU installed inside a smart podium, quality screen, sound output speakers along with provision for UPS and internet connections has been installed in the classrooms of DM division. The ICT tools installed in the division is an ideal solution for audio visual demonstration during delivery of lectures, presentations, speeches etc. It enables teachers and presenters to deliver quality content to the students in the most convenient manner. The ICT system in the division has also helped in teaching many courses during the times of COVID when the classes were run in online mode.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
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ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master Program in Agronomy

6.4. Self-Study Report for the Programme: Master Program in Agronomy

6.4.1 Brief History of the Degree Programme

The doctoral programme in Agronomy was initiated in 2010–11 with the objective of developing skilled scientific human resources in agronomy, particularly in areas related to dairy farming and forage production. Graduates of the programme are currently serving in organizations such as NDDB, State Agricultural Universities (SAUs), Agricultural Research Services (ARS), and as technical experts in dairy and allied industries.

Objectives

- To develop skilled human resources in forage agronomy.
- To develop agro-techniques for enhancing fodder productivity and quality through efficient resource management.
- To disseminate improved forage crop production and management technologies to dairy farmers and extension functionaries.

Accomplishments

Teaching: Each year, 6 students completed the Master programme. Graduates generally pursue higher studies or secured positions in various organizations.

Research

- Treated sewage water irrigation enabled 20–30% fertilizer savings in berseem and 40–50% in oats without adverse effects on soil health.
- The oats–berseem (2:1) system with 100% RDF + PGPR + seaweed extract sprays improved fodder quality, net returns, and benefit–cost ratio compared with sole crops.
- Oats cv. JHO 851 performed best with 125% RDF and a seed rate of 105 kg ha⁻¹.
- Rice–berseem cropping system proved a viable option for partial diversification of the rice–wheat system.
- Maize–cowpea–wheat cropping system emerged as a promising alternative to the rice–wheat system for meeting green fodder needs.
- Crop diversification enhanced fodder yield, profitability, and soil health sustainability.
- Optimized application of salicylic acid and thiourea helped mitigate salinity and drought stress in the pearl millet–wheat system.
- Moringa cv. PKM-2 produced higher biomass and quality fodder (~90 t ha⁻¹) at 45 × 30 cm spacing.

- Integrated nutrient management using FYM, PGPR, and Panchagavya improved soil organic carbon, nutrient availability, microbial activity, fodder productivity, and economic returns in maize–berseem–cowpea systems.
- Combined use of inorganic and organic potassium sources with PGPR and nano-K spray enhanced fodder yield and quality of Chinese cabbage.
- Integrated nutrient management involving RDNPK, FYM, PGPR, zinc, and organic inputs improved growth, yield, and quality of fodder crops while reducing fertilizer requirements.
- Legume-based cropping systems demonstrated potential to save about 25% chemical fertilizers while maintaining productivity.
- Developed a Napier-based year-round green fodder production system under assured irrigation.
- Standardized plant density, fertility levels, zinc management, and cultivar selection for improved fodder maize productivity and quality.
- Identified suitable dual-purpose barley varieties for different sowing windows and harvesting management.
- Developed improved package of practices for baby corn under varying tillage and nitrogen management.
- Evaluated diversified forage-based cropping systems for higher productivity, profitability, and sustainability under assured irrigation.

Extension

Scientists and students actively participate in outreach activities, including FFP, VKSA, MGMG programmes, training programmes organized by KVK-NDRI, and agricultural exhibitions to promote improved forage production technologies.

6.4.2. Faculty Strength:

Position	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
***Professor	0	0	0	ICAR
**Associate Professor	1	2	-1	ICAR
*Assistant Professor	4	4	-1	ICAR

*** Principal scientist cadre, ** Senior Scientist Cadre, * Scientist cadre

* Dr Rakesh Kumar has been transferred, his cadre is Sr. Scientist

** Dr. Anurag Saxena is PS transferred to this institute in 2020-21, His cadre is Scientist

6.4.3 Technical and Supporting staff

Position	Sanctioned	Staff in place	Vacant position
Technical Staff	1	1	0
Supporting staff	2	2	0

6.4.4. Classrooms and Laboratories:

1. Classroom and seminar rooms

S. No.	Facilities	No.	Size (m ²)
1	Class Rooms/seminar	1	50

2. Laboratories

S. No.	Name of Laboratories	No.	Size (m ²)
1	Quality and sample processing lab	2	100 m ²

3. List of equipment available in Agronomy Section (FR&MC) (>2 lakh)

Sr. No.	Name	Make and Model	DOP	Price (Rs)
4.	Automatic nitrogen analyzer	Pelican	2019	249097.00
5.	Double beam UV-Vis spectrophotometer	Thermo-Fisher	2022	496999.00
6.	SPAD meter	LiCor	2022	251694.00
7.	Spectrophotometer		2023	674000.00
8.	Atomic Absorption Spectrophotometer	Analytic Jena	2023	2637000.00
9.	Root analysis system		2023	969120.00
10.	Canopy Analyzer		2023	437242.00

4. Forage Research and Management Centre

Laboratories are equipped with equipment viz. Kjeldhal apparatus, Nitrogen analyser, Flame photometer, Ovens, Weighing balances, Muffle furnace, Soxhlet apparatus, pH meter, EC meter, Double beam UV-Vis spectrophotometer, SPAD meter, Spectrophotometer, Atomic Absorption Spectrophotometer, Root analysis system, Canopy Analyzer, Flame photometer etc

5. Instructional Farm – Agronomy Section (FRMC):

The Agronomy Section instructional farm, covering approximately 10 acres, has been developed to support teaching and research activities for both Master's and Doctoral students. The facility focuses on practical training and research in nutrient management, weed management, conservation agriculture, organic farming, cropping systems, and varietal evaluation.

Facilities include:

- a) **Fodder Crop Cafeteria:** Used for practical training and identification of various annual and perennial forage crops, trees, and shrubs.
- b) **Azolla Unit:** Provides hands-on training in Azolla cultivation and management
- c) **Farm Operations Training:** Offers practical exposure to routine agricultural field operations

6. Theory and practical batches

S. No.	Program	Theory batch	Practical batch
1	Master	15 (students)	15 (students)

6.4.5 Conduct of Practical and Hands-on-Training:

1. Facilities are available for conducting doctoral research in nutrient management, weed management, conservation agriculture, organic farming, cropping systems research, and varietal evaluation of fodder crops.
2. A Fodder Crop Cafeteria is maintained for practical training and identification of annual and perennial forage crops, trees, and shrubs.
3. An Azolla unit is maintained to provide hands-on training in its cultivation and management.
4. The farm regularly conducts the following practical training activities:
 - a) Identification of major fodder crops, grasses, and weeds, along with practical training in farm operations for raising fodder crops.
 - b) Canopy measurement and yield estimation; identification of seeds and plants of common grasses, legumes, and economically important trees, particularly in silvipastoral systems.
 - c) Propagation and planting methods for grasses and trees in silvipastoral systems; fertilizer application in strip and silvipastoral systems; and estimation of protein content in loppings of major fodder trees.
 - d) Identification of important weeds and weed seeds; preparation of weed herbarium; weed surveys in crops and cropping systems; and crop–weed competition studies.
 - e) Preparation of herbicide spray solutions for high- and low-volume sprayers; operation of various spray pumps and nozzles; calculation of swath width; and estimation of herbicide requirements.
 - f) Seed sampling and evaluation of seed quality (purity and germination); rouging, detasseling, inspection, and maintenance of seed production fields of major crops.

- g) Measurement of soil water potential using tensiometers; preparation of soil-moisture characteristic curves; measurement of water flow using different devices; determination of irrigation requirements; calculation of irrigation efficiency; and estimation of infiltration rate.
5. Conducting study tours and field visits for technical exposure at different research institution and innovative farmer's fields.
6. Practical related to soil study and irrigation studies are conducted at sister institute ICARCSSRI and IARI.

6.4.6. Supervision of students in MSc Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students
1	6	6	25

6.4.7 Feedback from Stakeholders (Students, Parents, Industry, Employers, Farmers, etc.)

Feedback from stakeholders is collected through multiple structured channels to ensure continuous improvement of the programme:

1. Monthly meetings with students to review academic progress, research activities, and address concerns.
2. Digital communication platforms, including email, social media, and group forums, to gather regular feedback.
3. Periodic interactions between research guides, the Head of the Section, and parents to discuss student progress and welfare.
4. Ongoing engagement with dairy and agro-based industries by faculty members and the Head of the Section to facilitate placements and obtain industry feedback.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	21	22	23	24	25	21	22	23	24	25
MSc (Agronomy)	5	6	8	7	6	0	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

1. Developing teaching materials in PPT and visuals aids.
2. Delivering course curricula through online platform.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
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करनाल-132001/ KARNAL-132001

Master Program in Agricultural Economics

6.4. Self-Study Report for the Programme: Master Program in Agricultural Economics

6.4.1. Brief History of the Degree Programme:

The Master degree programme in Dairy Economics was started in 1972, under the DES&M division, Dairy Science College, NDRI. Since the year 2009 the nomenclature of the degree was changed to M.Sc/M.VSc/M.Tech in Agricultural Economics.

Objective:

- To develop highly skilled manpower in the field of Agricultural Economics to cater to the need of line departments, research and industry.
- To cultivate a dairy and agricultural economics research-oriented outlook in students.
- To inspire and encourage an out-of-the box approach vis-à-vis agricultural economics research among students.

Salient Achievements:

- More than 90 per cent of the passed out master students joined higher studies in ICAR deemed universities and State Agricultural Universities. The remaining students joined either banks or state government departments.
- The major areas of research of M.Sc. students have been (1) Production and utilization pattern of milk and milk products; (2) Estimation of cost of milk production & processing; (3) vulnerability of dairy farmers to risk and climate change; and (4) role of various institutions in dairy development.
- The publications made by the students from their thesis are about 20 in national research journal of NAAS rating.

6.4.2 Faculty strength:

S. No.	Discipline/ designation	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Agricultural Economics					ICAR
1.	Professor	-	1	0	1 (Head)
2.	Associate Professor	2	0	2	2
3.	Assistant Professor	6	2	4	6
Agricultural Statistics					
1.	Professor	-	-	-	
2.	Associate Professor	1	0	1	
3.	Assistant Professor	3	2	1	

Computer Application in Agriculture					
1.	Professor	-	-	-	
2.	Associate Professor	-	-	-	
3.	Assistant Professor	2	1	1	

*The Faculty assigned the responsibilities for the multiple programmes need to be clearly marked.

**Clearly mention the deviation in the Faculty position with respect to the recommendations of V Deans' Committee/VCI/BSMA/other regulatory bodies.

6.4.3 Technical and supporting staff :

S. No.	Technical staff	Sanctioned	In-place
1.	TO	2	1
2.	SSS	2	2
3.	Administrative staff	2	1
4.	Field staff	0	0

6.4.4 Classrooms and Laboratories:

There are two classrooms (one dedicatedly M.Sc. classroom, and one smart classroom) and one lab. There are 4 theory courses and 10 courses with practical. The details of the classrooms and lab are given below:

1. Classrooms

S. No.	Class Rooms	Number	Size (m2)
1.	PG Lecture Room	One	6.22×4.87
2.	Students' Cell with wifi internet connection	One	6.22×4.87
3.	Divisional seminar room	One	6.24×9.37

Particulars	M.Sc. Classroom	Smart Classroom
Dimension in meters	6.22 × 4.87	6.24 × 9.37
Seating capacity (no.)	30	20
Blackboard (no.)	1	1
White board (no.)	-	-
Air conditioner (no.)	1	2
Fan (no.)	2	5
Lectern (no.)	1	-
Smart lectern with projector output and speakers (no.)	-	1
Projector (no.)	-	1
Roll down projector screen (no.)	-	1
1 KVA UPS (no.)	-	1
CCTV Cameras (no.)	-	2

2. Major equipment in lab

The dimensions of **lab** are **6.23 m × 9.37 m**. Major equipment in the lab are given below:

Sr. N.	Equipment	No.
1.	Desktop computers with MS with MS Office and statistical and econometric software like SAS, SPSS, STATA, and E-views, etc., and internet connectivity	10
2.	Projector	1
3.	Roll down projector screen	1
4.	White board	1
5.	Air conditioner	2
6.	Fan	6
7.	Printer	1
8.	Photocopier	1
9.	Scanner	1
10.	5 KVA UPS	1
11.	Lectern/podium	1

3. Computer Centre

There is a well-established Computer Laboratory for students' learning, which is equipped with 64-bit i5 computer systems, together with multi-function laser printers. Besides this, the data processing unit of the Centre is equipped with a Line Matrix Printer. The computer systems are equipped with different software, such as operating systems Unix/Linux, MS-Windows; and licensed software (STATA) and open source statistical software. MS Office suite has also been installed in the PC Lab and it is used for teaching and research purposes.

4. Students' Cell

For research work, students have a **Students' Cell** with wifi internet connection and one wired internet connectivity in the division. The details of the students' cell are given below:

Sr. No.	Particulars	No.
1.	Seating capacity	16
2.	Air conditioners	2
3.	Fan	3
4.	Desktop computers	2
5.	Printer with scanner	2
6.	Water purifier	1
7.	Electric kettle	1
8.	Induction stove	1
9.	Landline telephone with intercom	1

6.4.5 Condu of Practical and Hand-on-Training:

S. No.	Course	Aspects/skills covered in hands-on and practical training
1.	AEC-502: Agricultural Production Economics	Estimation of production functions and interpretation of estimates like returns to scale, factor shares, elasticity of production; physical & economic optima, least cost combination&optimal product choice; cost function estimation, economic efficiency, yield gap analysis, technological change and decision making under risk and uncertainty.
2.	AEC-508: Linear programming	Maximization of objective function (Profit); Minimization of Cost function; Leontief input-output model, MS Excel and PHP simplex software; Game theory, transport model
3.	AEC-503: Agricultural Marketing & Price Analysis	Market structure analysis; marketing efficiency, marketable surplus; cost and returns to storage; price determination; time series analysis; technical and fundamental anaysis
4.	AEC-509: Research Methodology for Social Sciences	Problem identification, objective development, schedule development, sampling techniques, parametric and non-parametric tests, scalogram analysis
5.	STAT-502: Statistical Methods for Social Sciences	Testing for correlation; regression; t-test; z-test; multivariate analysis; non-parametric test; index number
6.	AEC-505: Econometrics	Dummy variables, rank and order of a matrix: identification problem conditions; testing for the presence of multicollinearity, heteroskedasticity and autocorrelation in data
7.	AEC-507: Agricultural Finance and Project Management	Financial and credit analysis techniques; Project appraisal techniques; Balance sheet analysis of different companies for lending and business performance analysis
8.	AEC-513: Natural Resource & Environmental Economics	Benefits and cost of public investment; social cost-benefit analysis; hedonic pricing; travel cost method
9.	STAT-511: Experimental Designs	Uniformity trial data analysis, formation of plots and blocks, Fairfield Smith Law, Analysis of data obtained from CRD, RBD, LSD, Analysis of factorial experiments, Analysis with missing data, Split plot and strip plot designs
10.	STAT-523: Multivariate Statistical Methods for Social Science Research	Hands on experience of following methods using SPSS/AMOS software: Selecting appropriate MVSM; Missing data analysis and outlier management; Testing assumptions of MVSM and data transformation; Assessing human preference structures using conjoint analysis; Assessment of adoption of agricultural technologies using limited dependent variable models – logit, probit and tobit; Multidimensional scaling; Multiple correlation and multiple regression; Discriminant analysis; Principal Component Analysis (PCA) and Common Factor Analysis; Structural Equation Modeling (SEM); Cluster analysis

6.4.6 Supervision of students in PG Programmes:

No. of faculty	No. of qualified faculty	No. of students being supervised
6	5	16 (10 students of 1st year; 6 students of 2nd year)

6.4.7 Feedback from Stakeholders (Students, Parents, Industry, Employers, Farmers, etc.): DES&M division's Facebook page; DES&M division's Whatsapp group; time-to-time meetings with students and classroom feedback

6.4.8 Student intake and attrition in the programme for last five years:

Actual students admitted (no.)					*Attrition percentage (%)				
21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
7	7	8	8	10	0	14	0	12	0

*Attrition percentage

6.4.9 ICT Applications in Curricula Delivery:

Sr. No.	ICT tool	Application
1.	Smart classroom with computer installed in lectern and projector output for Power point presentation	Teaching
2.	Office desktops equipped with internet and multimedia, and virtual meeting platforms like Google meet	Online classes when regular classrooms were suspended during pandemic
3.	SAS, along with SPSS, and STATA Statistical software	Practical application of statistical and econometric techniques in agricultural research
4.	Divisional and course-specific Whatsapp groups	Information sharing/updates/intimation

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Master Program in Agricultural Extension

6.4. Self Study Report for the Programme: Master Programin Agricultural Extension

6.4.1. Brief History of the Degree Programme:

The Division of Dairy Extension at the National Dairy Research Institute (NDRI) came into existence in May 1961. Postgraduate degree programme was started in 1972 and the nomenclature was MSc in Dairy Extension. Later, NDRI started awarding its MSc degree as MSc Dairying (Dairy Extension). Since 2010 the nomenclature has been renamed as M.V.Sc. (Veterinary Extension Education) for all those having under Graduate degree in BVSc & AH, and MSc (Agricultural Extension Education) for those with BSc (Ag) and BSc (Dairy Husbandry). Initially 04 students were enrolled every year, further student strength was increased upto 10 and 12 in 2008 and 2018 respectively.

Objective:

- To provide knowledge about the existing extension system in the country
- To provide an opportunity for students to acquire knowledge and skills in organizing field extension activities
- To meet the manpower requirement of extension personnel in the animal husbandry and dairy sector
- To provide a strong scientific background to students for higher academic research and development institutions
- To make them competent in providing efficient leadership in the field of animal husbandry and dairy development

Accomplishments:

- During the last five year (2021-22 to 2024-26) 59 students admitted and later on three student left their Master programme and remaining 56 students successfully completed their Master degree.
- After completing the Master's degree, 3 students were selected as State Civil Servants, 3 as Executive Officers, 1 in Agricultural Research Services (ARS), 1 as Subject Matter Specialist (SMS), 4 as Assistant Professors in agricultural universities, 1 as Agriculture Development Officer, and 1 as Product Development Officer.
- Remaining 42 students proceeded for higher education in different universities.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
	Head	0	1	01

1.	***Professor	01	0	01
2.	**Associate Professor	02	0	02
3.	*Assistant Professor	01	6	07

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	00	-	ICAR
2.	Administrative	01	-	ICAR
3.	Supporting Skilled Staff	01	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1.	Seminar Room	01	66.89
2.	Smart Class Room	01	45.81
3.	Class Room	01	40.87

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size(m ²)
1.	Photo Lab	01	60
2.	Audio Lab	01	20
3.	Audio Visual	01	20
4.	Visual Display (Exhibition)	01	200
5.	Multi Media Lab	01	20
6.	Field Farm Technician Lab	05	100
7.	Library	01	40.87
8.	Socio-climatology Lab	01	37.16

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Photo Lab	Camera (Digital, DSLR)	03
2.	Audio Lab	Audio Recording system	02
		Audio Mixture	02
		PAS systems	04
3.	Audio Visual Lab	Video camera	02
		Video Display System	04
		Audio-Visual mixing System	01

4.	Multi Media Lab	Computers with Multi Media software	02
		PAS	01
		Portable Camera	02
5.	Visual Display (Exhibition)	Computers	02
		Digital display panel	04
		Display panel	32
6.	Field Farm Technician Lab	Well-equipped AI&PD and veterinary First Aid treatment	05
7.	Library	Digital display unit (database)	01
8.	Socio-climatology Lab	Thermal imaging camera	02
		Arc GIS License	01
		Computers	03

The division of dairy extension have sufficient laboratory and associated equipment facilities for conducting theory and practical classes to meet the course curricula requirement of the discipline.

4. The details of the students' cell are given below:

Sr. No.	Particulars	No.
1.	Seating capacity	16
2.	Air conditioners	2
3.	Fan	3
4.	Desktop computers	2
5.	Printer with scanner	2
6.	Water purifier	1
7.	Electric kettle	1
8.	Induction stove	1
9.	Landline telephone with intercom	1

5. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	M.Sc./M.V.Sc.	12	12

6.4.5. Conduct of Practical and Hands-on-Training:

The students are being exposed about SOPs of each equipment and they are trained to organize extension activities at various levels. Practical classes are conducted at laboratories and in adopted villages to gain the hand on experience in rural setting. The students are also trained in making poster and banners for organizing different educational activities. The facilities of audio-Visual lab are being exposed to all the students of all the disciplines regarding utilization of advanced ICT tools in teaching and research.

6.4.6. Super vision of students in PG/PhD Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students
1.	09	08	56
2021-22=11,2022-23=12,2023-24=8,2024-25=13,2025-26=12			

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Students: Regular meeting among the faculty and student are being arranged to discuss the different academic and non-academic issues and resolved amicably.

Farmers: Regular field visits and kisan goshies are being arranged at institute as well as village level to discuss the various institutional extension activities.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
M.Sc.	12	10	13	11	12	8.33	0.00	15.38	0.00	0.00

6.4.9. ICT Application in Curricula Delivery:

The classroom, seminar room and laboratories are well equipped with advanced ICT tools like Interactive digital display board, touch screen lectern, multi media projectors, adjustable projection screen, public addressing systems. Multimedia educational modules are also being used for classroom teaching. Web-enabled interactive information delivery system, you tube channels, social media platform, SMS messaging portal for enhancing the students' knowledge in field of dairy and animal husbandry.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of U.G., P.G., and Ph.D. degree programmes separately and to be presented college-wise..

Yes, provided

6.4.11. The accreditation of Programme is related to the AllIndia Admission from ICAR and also having weightage for college accreditation,there forethe data present edinthe section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1.to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal
 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 संयुक्त निदेशक (अकादमिक) एवं डीन
 Joint Director (Academic) & Dean
 भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Doctoral Program in Program in Animal Genetics and Breeding

6.4. Self Study Report for the Programme: Doctoral Program in Animal Genetics and Breeding

6.4.1. Brief History of the Degree Programme:

ICAR-NDRI, Karnal was granted the status of Deemed University in the year 1989 and since then it is awarding the PhD degrees in the subject of Animal Genetics and Breeding. Animal Genetics and Breeding division, earlier known as Dairy Cattle Breeding (DCB) division was among the very first departments established at NDRI. However, even prior to that the subject was recognized by NDRI and was involved in imparting the Ph.D. degree through Kurukshetra University, Kurukshetra.

Objective:

- Research, Teaching and extension in the area of Animal Genetics and Breeding
- Human Resource development in the area of Animal Genetics and Breeding
- Imparting national and international all level training and consultancy.
- Development of superior germplasm and its dissemination to farmers and stakeholders involved in the dairy development in the country.

Accomplishments:

- A model was developed by assigning weights to different test days, where TD90, TD106, and TD150 can be used to predict lactation yield with 90% correlation with the International ICAR method
- Selection Index in Murrah buffalo was developed using production, reproduction and health traits. Selection Index based on Av. Daily Milk Yield, PY, SP, AFC and Female Fertility giving 48%, 30%, 1%, 1% and 20% weightage to the traits, respectively. $\text{INDEX VALUE} = 56.733 (\text{ADMY}) + 35.588 (\text{PY}) - 1.473 (\text{SP}) - 1.341 (\text{AFC}) - 23.407 (\text{FF})$
- Genetic polymorphism in LAP3, MASP2 and SIRT1 genes and their association with milk yield, composition traits and clinical mastitis in 140 Sahiwal and 145 Karan Fries cows were carried out. For Karan Fries cows, SNPs g.-267C>G, g.-239T>C, g.-229A>G, g.-71G>A and g.51T>G, g.24555A>G and g.24794C>T in LAP3 gene were significantly associated with 305d MY, while SNPs (g.-267C>G and g.51T>G) also significantly influenced LMY. With a logistic regression model, significant association of the SNPs g.25406C>T (Sahiwal) and g.-239T>C (Karan Fries) with incidence of clinical mastitis was determined.
- Genomic diversity in Sahiwal cattle of NDRI herd found to be moderate ($H = 0.33 \pm 0.19$). ROH analysis indicated a recent inbreeding event. Chromosome 1 had longest ROH (66.92 Mb, 1241 SNPs), covering 6.68% of chromosome; while Chromosome 5 had highest number of ROH segments ($n = 377$).

- Studies revealed that Sahiwal cows may be selected on the basis of these linear type traits (stature, body length, chest girth) having positive genetic correlation with production traits.
- The data on cattle genome were simulated for sex limited traits over 10 current generations (GPopSim tool). Impact of evolutionary forces on GEV prediction bias was also simulated. The studies indicated that Selection and High mutation and Recombination models rapidly accumulated inbreeding over generations.
- Tetra-primer ARMS-PCR protocols were developed for genotyping rs43722771 (ENSBTAT00000014098.6:c.1050+4197C>T) in CUX1 gene and all the three genotypes identified in Karan Fries. But Tharparkar animals showed monomorphic pattern with CC genotype. Breed wise variation existed in Surface Temperature and Respiration Rate in heat stress between Tharparkar and Karan Fries cattle.
- Genome-wide association identified a total of 11 genes viz. NCBP1, FOXN3, TPK1, ZBTB7C, XYLT2, CPXM2, HERC1, OPCML, PRTFDC1, PCDH9 and COBL were identified which have association with incidence of clinical mastitis in 96 Murrah buffaloes using the ddRAD approach.
- Genome wide association studies identified, GRIA3 and ZNF292 to be associated with milk yield in Murrah buffaloes. Potential genes involved in regulating fertility in Murrah were APC, PDP1, SLAMF6, GRID2, PDE11A, EDIL3, ERICH2, and EIF5A2.
- Two models, first multi-breed joint prediction model and second Single-Step model for shallow pedigree data typical to Indian dairy breeding structure were standardized for genomic evaluation so that unbiased and accurate estimates of genomic breeding values can be obtained.
- Multi-trait sire evaluation methodology using production (305DMY) and major linear type traits (Stature, chest girth, and body length), which may be introduced in the ICAR-NDRI herd for balanced and valuable selection of dairy animals for long-term benefits.
- The genomic diversity and population structure were assessed in Karan Fries cattle suggesting sufficient genetic variability. The population was stabilized at exotic inheritance of 61.7% and Tharparkar of 38.3% in KF crossbred cattle. This is the first genomic study and further work is in progress.
- Whole transcriptome analysis in Karan Fries and Tharparkar indicated pathways related to energy metabolism identified in Tharparkar cattle and 5508 miRSNPs of which 1103 were unique to Tharparkar cattle. Further, a total of 20 genes were found to be associated with QTLs of thermotolerance.

- The pedigree data of Sahiwal and Karan Fries crossbred were considered for estimating inbreeding coefficient and found most of the population is non-inbred in both Sahiwal (37.66%) as well as Karan Fries cattle (63.03%). The QTL are enriched for milk composition traits in both Sahiwal as well as Karan Fries cattle.
- Using sex sorted semen of genetically improved Sahiwal bulls at NDRI, 4 superior elite female calves were produced successfully.
- Based on the 15th set evaluation results (across all the coordinating units), Bull no. 6007 from NDRI ranked second and was declared as a proven bull and selected for nominated mating.
- During the year 2023, a total of 4844 artificial inseminations of the test Murrah bulls were performed at farmers' herds under field conditions under Field Progeny Testing program of Murrah Buffalo with and overall conception rate of 48.14%.
- During the year 2023, The EPD % superiority of the selected males was 5.89% with a range of 3.83 to 11.8 % and Dam's best Lactation Yield ranges from 3572-3710 kg. There at present 32 elite cows in the herd with the average best milk yield in first lactation being 2952 kg and 4012 kg best milk yield against herd average of 1794 kg and 3997 kg respectively.
- Whole genome assembly of threatened buffalo breed "Bhadawari" was created for the first time with 86.6% completeness.
- The mirSNPs identified in the miRNAs of btamiR- 2388 and bta-miR-1584 which were found to be associated with heat tolerance in KF and Tharparkar cattle, could be used for selection of animals for better heat tolerance.
- Transcriptome wide association studies were carried out to identify milk production and its composition related genes in Murrah buffaloes (*Bubalus bubalis*). Gene ontology of TWAS-identified genes was performed to understand the function of these genes, it was revealed that milk production and composition genes were mainly involved in Relaxin, AMPK, and JAK-STAT signaling pathway, along with CCRI, and several key metabolic processes
- Population structure analysis revealed that the Karan Fries cattle is stabilized with the genetic inheritance of 61.7% for exotic (Holstein Friesian) and 38.3% for zebu (Tharparkar) genetics.
- A total of 43 elite milch buffaloes were produced under Network Project on Buffalo Improvement during this year with an average total lactation milk yield (TLMY) of 2,747 kg.
- A total of 5,108 artificial inseminations were performed in Murrah buffaloes under field conditions, resulting in an overall conception rate of 46.38%. A total of 1,625

Murrah buffalo elite calves (943 males and 682 females) were born in farmer's herds.

- In Sahiwal cattle, the conception rate increased from 42% (set -I) to 48.66% in the current set. The Milk production performance showed increasing trend in first lactation 305-day milkyield. A total of 239 elite cows were produced since beginning out of which 103 were produced after introduction of AICRP and at present 35 elite cows are present in the herd.
- Technical input with regards to implementation of genomic selection is being given to the Kerala Livestock Development Board (KLDB) for enhancing productivity in crossbred cattle.
- Breed-specific copy number variation (CNVs) in 4 breeds of Indian buffaloes using exome sequencing.
- First ever Genomic characterization of pastoral breed in Haryana Belahi cattle was carried out indicating the Standalone genomic grouping of Belahi cattle, indicating no recent admixture and distinct evolution history as revealed by PCA, admixture and lineage
- Genomic association studies in Sahiwal/KF cattle for milk composition, milk production and stature; thermo resilient indicator traits and fertility traits
- Karan Fries was registered as a synthetic breed and have been published in the gazette of India.
- Genomic Selection was implemented in Indigenous Sahiwal Cattle herd of ICAR-NDRI
- Population structure of Karan Fries cattle along with parental breeds of HF and Tharparkar was studied using Principal component analysis (PCA) and plotted in R, showing clear-cut genetic clustering among three cattle populations based on SNP genotype data.
- Understanding Epigenomics during transition period in Goats: A study investigating the effects of dietary Rumen Protected Choline (RPC) supplementation on stress modulation, liver-kidney function, hematological and immunological status, and offspring performance in transitioning goats was conducted to record the epigenetics control and stress levels across the mother and its progeny in crossbred goats (Alpine × Beetal and Saanen × Beetal).
- Genomic characterization of camel breeds of India, indicating distinctive pattern for double humped camels and Karai breed.
- Novel method for estimation of heritability and genetic correlations for large dimensional genomic data

- Development of Genomic Evaluation Model for Field crossbred cattle using a Single-Step Random Regression Test-Day Model, with increased accuracy of genomic estimated breeding values showed higher accuracy (0.83) and reduced bias (0.92) compared to pedigree BLUP.
- A novel strategy for multibreed genomic evaluation for numerically small breeds using shared SNP effects across breed

6.4.2. Faculty Strength:

All the faculty mentioned in the AGB division all are engaged in Masters Course teaching. No deviation in the AGB Faculty position with respect to the recommendations of V Deans' Committee/VCI/BSMA/other regulatory bodies.

S. No.	Sanctioned Faculty	Faculty in Place	Vacant position	Faculty recommended by the ICAR/UGC/ VCI/ other regulatory bodies
1	Head	1	0	1
2	***Professor	1	0	1
3	**Associate Professor	2	1	3
4	*Assistant Professor	4	3	7

*** Principal scientist cadre, ** Senior Scientist Cadre, * Scientist cadre

6.4.3. Technical and Supporting staff:

Three technical and one supporting staff and one divisional clerk is engaged in research and teaching activities of the division.

S. No.	Sanctioned Technical and Supporting staff	Technical and Supporting Staff in Place	Vacant Position	Faculty recommended by the ICAR /UGC/VCI/ other regulatory bodies
1	Technical Officer	1	-	NA
2	Senior Technical Officer	1	-	NA
3	Technical	1	-	NA
4	Skilled Supporting Staff	1	-	NA
5	PS	1	-	NA

6.4.4. Classrooms and Laboratories:

The division has a sufficient infrastructure for taking classes of Master Degree program. There is one dedicated class room and one seminar room both are being used for taking Master degree classes.

1. Classrooms /Seminar rooms

S. No.	Class Rooms	Numbers	Size (m ²)
1	Class Room	1	40.6 m ²
2	Seminar Room	1	60.9 m ²

3	Divisional Library	1	81.2 m ²

The Divisional Library has 427 books, 298 MVSc thesis and 187 PhD thesis

2. Laboratories

S. No.	Classrooms	Numbers	Size (m ²)
1.	Molecular Genetics Lab	1	243.6m ²
2.	Buffalo Breeding Lab	1	60.9m ²
3.	Biometrical Lab	1	40.6m ²
4	Animal Breeding Lab	1	60.9 m ²

There are 4 research labs, Molecular genetics lab, Buffalo Breeding Lab and Biometrical Lab and Animal Breeding Lab to conduct the Master degree practical classes.

The entire practical is conducted in a single batch of 14 students.

3. Laboratories and equipment:

S. No.	Name of Laboratories	Name of Equipment	Numbers
1.	Buffalo Breeding Lab	1. Horizontal gel electrophoresis,	1each in No's
		2. Gel documentation system,	
		3. Ultra pure water systems,	
		4. incubator,	
		5. Realtime PCR machine,	
		6. Microwave,	
		7. Vertical gel electrophoresis,	
		8. Fridge (4degree).	
		Automatic nucleic acid system	
		9. Deep freezers	2
		10. PCR machine	5
		11. Refrigerated centrifuges	2
		12. Computers	4
		13. Workstation	1
2.	Biometrical Lab	Facilities for training in analysis of animal breeding data as well as bioinformatic analysis.	
3	Animal breeding Lab	14. PCR machine,	1each in No's
		15. Horizontal gel electrophoresis, Refrigerated centrifuges,	
		16. Deep freezer.	

4.	Molecular Genetics lab	17. Weighing Balance	1each in No's
		18. Magnetic Stirrer	
		19. pH Meter	
		20. Transilluminator	
		21. Horizontal Gel Electrophoresis	
		22. Gel Documentation System	
		23. Protein Documentation System	
		24. Refrigerated Centrifuges	
		25. Gradient PCR Machine	
		26. Ultrapure Water Systems	
		27. Deep Freezer	
		28. Laminar Air Flow	
		29. PCR machines	3

4. Instructional farm-Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation. The facilities include:

- a) Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- b) Azolla unit for its practical training.
- c) Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (CattleYard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals' unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

7. Theory and Practical batches

Sr No.	Program	Theory batch	Practical batch
1.	PhD	12-14	12-14

6.4.5 Conduct of Practical and Hands-on-Training:

The 3 laboratories of AGB division are well equipped with the latest equipment to conduct the practical classes in PhD as per ICAR syllabus. Besides wet lab experiments, in-silico computational biology practical are conducted using computers equipped with latest software and their standard operating procedures are provided hands on to all students. Work station is available in the division for hands on training for latest software use in Bioinformatic analysis. The PhD degree programmes are based on theory, practical and research dissertation, or hands on practice. The PhD programme has a research work for a minimum of 4 semesters (6 months each). Besides the above infrastructure the division has Livestock Record Room, Livestock Research Station, and Animal Breeding Research Centre of the institute to support the dairy production.

6.4.6. Supervision of students in PhD Programmes:

All the faculty members of the division are PhD degree holders and are eligible and competent to guide the PhD degree students in Animal Genetics and Breeding division. All the faculties are engaged in teaching and are taking classes both in physical and online mode.

S. No.	No. of faculty	No. of eligible guide	No. of students supervised / under supervision
1.	7	7	39*

*Out of 39 students 8 are allotted to the scientists of other sister institutes of ICAR.

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): At institute level feedback of students and their parents are taken during alumni meetings from time to time. Institute industry interface are also organized to discuss regarding need-based technologies in dairy sector. Technology developed by the animal genetics and breeding division was transferred to Mother Dairy, Delhi, for Detection of buffalo milk in cow milk using Hansa Test Cost of Technology. The AGB division has a direct linkage with the farmers and the division has adopted 20 villages under network program on buffalo improvement and under MGMG programme. Also developed various genomic prediction models in association with Livestock

development boards and NDDB, for the improvement in accuracy of prediction of breeding value.

6.4.8. Student in take and attrition in the programme for last five years:

Actual Sanctioned Strength in Animal Genetics and Breeding

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Actual intake of Ph.D. students in Animal Genetics and Breeding	12	13	13	7	12	0.0	0	7.0	14.0	0

6.4.9. ICT Application in Curricula Delivery:

Animal Genetics and breeding division is well equipped with ICT required to take the theory classes and seminar and discussion. The division has multiple computers with different generations including a work station to conduct the bioinformatics based research analysis. Animal Genetics and breeding division is well equipped with ICT required to take the theory classes and seminar and discussion. The division has multiple computers with different generations including three workstations to conduct the bioinformatics-based research analysis. Various software required in AGB practical like Wombat and BLUPF90 are freely loaded. The internet connectivity and latest scanners and printers are available with the division. The faculty from regional stations and other sister Institutes are taking online classes using online platforms like zoom. The Divisional Library has 428 books, 298 M.V.Sc and 187 PhD. theses, the access to CAB abstract and a national library in dairy science having online access to many worlds' best journal in dairying is available to the students. The degree for mis meeting the expectations of the post graduate students as very good placement rate in the nation, 65 students (2021-25) have been employed in ARS, State Agriculture and Veterinary Universities, and State Animal Husbandry Departments. Four students were inducted in Agriculture Research System (ARS) during the period and 6 students were inducted in silk board as scientist. There are no complaints received.

6.4.10. The information per training to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable of the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. To 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 संयुक्त निदेशक (शैक्षणिक) एवं डीन
 Joint Director (Academic) & Dean
 भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Doctoral Program in Program in Animal Nutrition

6.4. Self Study Report for the Programme: Doctoral Program in Animal nutrition

6.4.1. Brief History of the Degree Programme: The Division of Dairy Cattle Nutrition was established as a combined Division of Dairy Cattle Nutrition and Physiology in 1971, prior to which it was a section of the erstwhile Dairy Husbandry Division. In 1984, the Physiology Division was separated and the Division of Dairy Cattle Nutrition became an independent Division. The division again, renamed Animal Nutrition Division in last couple of years back as the faculty members are involved in non ruminant, wild and captive animals and clinical nutrition in addition to dairy animals feeding and nutrition.

Objectives:

1. To fulfill the mandate of the Institute by conducting basic and applied research, undertaking post-graduate programmes of education and human resource development
2. To participate in the process of extension education through various training programmes at NDRI, KVK, Dairy Mela and farmers doorstep
3. To develop field level applied technology for improvement of dairying and refinement of technologies as per the requirement under field condition

Accomplishments:

HRD

During last 5 years, 26 students awarded degree from the Division, among which almost all are engaged either with government/ corporate institutions, private companies and higher studies. Conducted various training programme and winter school for dissemination of academic and applied knowledge in the field of animal nutrition not only for the outsiders but also to the doctoral students to become ready for national services.

Technology developed

- Following few technologies have been developed for dairy animals in last five years.
- Polyherbal feed supplement for improving dairy productivity and milk quality
- Autochthonous calves-origin probiotic *Limosilactobacillus Reuteri* BFE7
- Techniques for straw treatment for improving quality.
- Use of new eragro-industrial by products in the cattle feed.
- Re-assessment of nutrient requirement of new improved breeds
- Feeding schedules for early productivity at an early age in buffaloes

- Improvement in silage making process
- Anionic mix fortified with trace mineral mixture for prepartum high producing dairy animals
- Bull specific tracemin composition for semen producing bulls for better semen quality
- Cationic mix fortified with immunity booster for post partum lactating animals to prevent Ca deficiency and productivity
- Probiotic culture to augment health of neon at calves
- Project funding from external agencies
- Dept of Science & Technology, Dept of Biotechnology, Ministry of Environment, Forest & Climate Change, National dairy Development Board, and Indian Council of Agricultural Research has funded for conducting research in the area of Animal feeding, nutrition and management. Countries like USA, Ireland and UK has also funded through their Institutes to this division for conducting research in Dairying. The projects are implemented in such a way that most of the masters students get exposure to the research trial, awarded degree and many cases they develop technologies for commercialization and patenting.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other Regulatory bodies
1.	***Professor	5# + 3@@ + 1 SRS		
2.	**Associate Professor	1		
3.	*Assistant Professor	1		

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, #Head, @@ ERS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	2		
2.	Administrative	1		
3.	Supporting Skilled Staff	6		

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1.	Classroom	1	18x24
		1	18X36

2. Laboratories

Sr No.	Name of Laboratories	Numbers	Size (m2)
1.	Feed quality control lab	01	15x20
2.	Applied Animal Nutrition lab	01	7x7
3.	Micro nutrient lab	02	14x14
4.	Fodder preservation lab	02	14x14
5.	Environmental studies lab	02	14x14
6.	Central instrument lab	02	14x14
7.	Rumen microbiology lab	02	14x14
8.	Methane Estimation Lab	02	14x14

3. List of major equipments

Sr No.	Name of Laboratories	Name of Equipments	Numbers
1.	Fodder preservation lab	Gas chromatography	01
2.	Environmental studies lab	Gas chromatography	01
3.	Central instrument lab	HPLC, GLC, Spectrophotometer, Ionchro matography	01 each
4.	Rumen microbiology lab	Anaerobic chamber, GC, Lyophilizer, bio safety cabinet, rotary evaporator, refrigerated centrifuge, sonicator, tissue homogenizer, inverted microscope, microplate spectro photometer, spectro photometer, PCR machine	01 each
5.	Methane Estimation Lab	Gas chromatography	01

The instruments/ equipments are sufficient to meet the requirement of students admitted to the Division. In addition to above mentioned equipments, other small instruments are present in the Division which fulfils the requirement of the scientist and students.

4. Instructional farm-Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation. The facilities include:

- a) Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- b) Azolla unit for its practical training.
- c) Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre(Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

7. Theory and Practical batches

Sr. No.	Program	Theory batch	Practical batch
1.	M.Tech/MVSc	12	12

6.4.5. Conduct of Practical and Hands-on-Training:

As on date, six scientific and 5 technical persons are involved in teaching and practical demonstrations to students and trainees admitted in the division. All the labs are well equipped with basic facilities for estimation of protein, fat, fibre, ash and acid insoluble ash. In addition, students working in specific area are exposed to specific equipments/instruments in the particular lab and they works. There are many multi disciplinary projects going on, where students are working in various labs.

6.4.6. Supervision of students in PG/PhD Programmes:

Sr No.	No of faculty	No of eligible guide	No of supervised students
1.	6	6	9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): At regular intervals, conferences and seminars are organized where academia – industry- farmers meet is organized and students are the integral part of those meetings. As per requirements of industry, academic institutions take up projects and at the end of session, one or two recommendation comes out to implement at societal level.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-26)					Attrition(%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
PhD	11	8	6	5	8	8	37	33	0	11

6.4.9. ICT Application in Curricula Delivery:

Scientific personnel in the division are well versed with latest technology in the field of animal science and animal nutrition. In addition to black board demonstrations to deliver lecture and practical classes, specialized ICT tools are being used. Under normal circumstances, students and teachers are using tools of MS office viz., excel, PowerPoint and words for delivery of lectures. Sometime robotics from YouTube is also being used to demonstrate a topic of interest and content. For normal communication also teachers and students are using simple e mails for submission of assignments and practical's.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.11. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.


 डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
 संयुक्त निदेशक (शैक्षणिक) एवं डीन
 School Director (Academic) & Dean
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Signature of Dean of the College with Date and Seal

Doctoral Program in Program in Animal Physiology

6.4. Self Study Report for the Programme: Doctoral Program in Animal Physiology

6.4.1. Brief history of the degree programme: NDRI became Deemed University in 1989 and is regularly providing Master's and Doctoral degree to the students.

Degree program initiated:

The Dairy Cattle Physiology was established as a section of combined Division of Dairy Cattle Nutrition and Physiology in 1971, prior to which it was a section of the erstwhile Dairy Husbandry Division. In 1984, the Physiology Division was separated and the Division of Dairy Cattle Physiology became an independent Division. The division again, renamed Animal Physiology Division in last couple of years back, since its establishment post graduate degrees are being awarded.

Objectives:

- To fulfil the mandate of the Institute by conducting basic and applied research, undertaking post-graduate programmes of education and human resource development.
- To participate in the process of extension education through various training programmes at farmers doorstep.
- To develop field level applied technology for improvement of dairying and refinement of technologies as per the requirement under field condition.

Accomplishments:

- In the last five years about 43 students have taken admission in Masters Programme.
- More than 90% students have qualified for National Eligibility Test.
- Package of practices developed to reduce adverse effect of thermal stress on cattle and buffaloes through custom designed shelter system and supplementation of feed additives.
- Identified unique traits in indigenous cattle at cellular levels for their resilience to thermal stress.
- Developed unique facilities for studying the impact of climate change livestock.
- Developed SCC index to identify the milk quality and udder health of cattle and buffaloes.
- Molecules on blood and milk neutrophils studied for using them as markers for subclinical mastitis and early pregnancy detection.

6.4.2. Faculty Strength: All the faculty members mentioned in the following table are involved in the multiple programmes:

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position's	Faculty recommended by ICAR/ UGC/ VCI/ other regulatory bodies
1	Head	01	01	00	01
2	***Professor	00	00	00	00
3	**Associate Professor	01@@	01@	00	01@
4	*Assistant Professor	08	02	06	08

*** Principal scientist cadre, ** Senior Scientist Cadre, * Scientist cadre, 01@

6.4.3. Technical and supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position's	Staff position's recommended by the ICAR/UGC/VCI/other regulatory bodies
1	Technical	3	-	ICAR
2	Administrative	1	-	ICAR
3	Supporting Skilled Staff	1	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Class rooms

S. No.	Class rooms	Numbers	Size (m2)
1	Class room	01	10.5 x 7
2	Class room	01	7 x 7
3	Class room cum library	01	7 x 7

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m2)
1	Post-Graduation lab	02	10.5 x 7
2	Environmental Physiology lab	01	7x7
3	Lactation lab	01	7x7
4	Lactation and Immuno physiology lab	02	7x7
5	Tissue Culture lab	01	7x3.5
6	Lab no. 209	01	10.5 x 7
7	Reproductive physiology lab	01	7x7

3. List of Major Instruments in Division:

S. No.	Name of Instruments	Number
1	Milko Tester	1
2	Dilute Dispenser	1
3	Refrigerated Centrifuge	2
4	ELISA micro plate reader	3
5	PC base ELISA reader	1

6	Lyophilizer	1
7	DNA/RNA Photometer	1
8	Hematology analyzer	2
9	Blood biochemical analyzer	1
10	Gas analyzers	2
11	Deep freezer (- 80°C)	1
12	SCC counter	1
13	CO2 incubator	2
14	-20 degree deep freezer	6
15	Thermal Camera	1

The instruments/ equipments in the division are sufficient to meet the requirement of students admitted under various programmes. In addition to the above mentioned equipments, other small instruments are available in the Division which fulfills the requirement of students.

4. Instructional farm- Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation.

The facilities include:

- a) Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- b) Azolla unit for its practical training.
- c) Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. . In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and

management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

7. Theory and Practical batches

Sr No.	Program	Theory batch	Practical batch
1	Ph.D.	10-12	10-12

6.4.5. Conduct of practical and Hands-on-training:

The laboratories and PG lab of division are well equipped with the latest equipments for conducting the practicals. Practical manuals are also developed by the faculty for the students. The students are exposed to latest equipments/ facilities like psychometric chamber for controlled climatic studies, RT –PCR, analysis of gases using gas analyzers, Benedict Roth – Spirometer for heat production measurement, surface integrator for measurement of surface area of animals, histological studies, SCC count and biochemical estimations in biological samples.

6.4.6. Supervision of students in PG/ Ph.D. programme:

S. No.	Year	No. of faculty	No. of eligible guides	No of supervised students
1	2021-22	6	6	9
2	2022-23	5	5	10
3	2023-24	4	4	8
4	2024-25	3	3	12
5	2025-26	3	3	10

6.4.7. Feedback of stakeholders (Students, parents, industries, employees, farmers etc.): At the Institute level feedback of students and their parents are taken during the alumni meetings organized from time to time. Institute industry interface are also organized to discuss about the technologies developed at Institute levels with the industry officials. We are organizing dairy melas / scientists-farmers interaction programs, farmer's awareness programmes at institute and village levels under adopted villages and MGMG programme. In addition to above, quarterly meetings with students and faculty have been conducted in routine to get the feedback of the students. The students under research remain with the guide for whole research period and fortnightly meeting of the students for research progress along with feedback is taken care off.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree	Programme Actual student's admitted in last five years					Attrition%				
Year	2021-22	2022-23	2023-24	2024-25	2025-26	2021-22	2022-23	2023-24	2024-25	2025-26
MVSc	5/3	6/2	4/4	2/2	2/2	40	33.33	0	0	0

6.4.9. ICT Application in Curricula Delivery:

Department of Animal Physiology is equipped with required ICT applications like computers, laptops, printers, scanners, software programs, data projectors etc. The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with white board and computer connected with projector in the all the lecture hall for students teaching. The classes and examination have been conducted through an online mode. The classes are mostly taken by using power point presentation and for better understanding videos are also being shared.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डा. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
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ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Livestock Production Management

6.4. Self Study Report for the Programme: Doctoral Program in Livestock Production Management

6.4.1. Brief History of the Degree Programme:

The Livestock Production and Management (LPM) section came into existence in June, 2009 after being carved out of Dairy Cattle Breeding Division of the institute. Separate faculty of LPM along with board of studies was in existence since 1976 and the same year the doctorate degree programmes started in LPM and till date it is continuing. In 2021, Livestock Production Management section becomes Division.

Objective:

- To maintain an elite germplasm repository of dairy animals of identified breeds
- Development of state-of-the-art dairy animal management facilities and infrastructure for high-yielding dairy animals.
- To carry out research, in collaboration with different divisions, in the upstream areas of dairy animal production.
- To standardize the package of management practices and to demonstrate the state-of-the-art dairy animal production system to clients.
- To provide consultancy to needy farmers and entrepreneurs for the establishment of commercial dairy farms.

Accomplishments

- In last five years, 42 students got placement in Agriculture Research Service, Assistant professor, SMS, Veterinary Assistant surgeon, Private organization.
- More than 95% students qualified for National Eligibility Test.
- Management package of practices developed to reduce the age at puberty in female and age at semen collection in male.
- Package of practices developed to improve milk yield, semen quality, calf health, udder health, reproductive performance and milk let down in absence of calf.
- Housing and micro climate modification strategies developed to improve production performance of the animals.
- Behavioral indicators developed for welfare of dairy animals.
- Dairy based integrated farming system model developed for small farmers.

- Use of Infrared thermographic image processing for early identification of mastitis, lameness and precise estrus detection in dairy animals

6.4.2. Faculty Strength:

S. No.	Faculty	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Head	1	0	1	1
2.	***Professor	0	2	0	-
3.	**Associate Professor	2	2*	1	2
4.	*Assistant Professor	4+1@+3@@	1*+2@+3@@	1	4+1@+3@@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, @SRS, @@ERS

^aFaculty of VG & Ois part of this Division

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	1	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms:

S. No.	Classrooms	Numbers	Size(m ²)
1	Livestock Production Management	1	(6.35X9.60) 60.96m ²
2	Artificial Breeding Research Centre	1	(6.13 X6.13) 37.58m ²

2. Functional laboratories available for the degree programme:

S. No.	Name of Laboratories	Numbers	Size(m ²)
1	Livestock Production Management Laboratory1	1	(9.00 X6.50) 58.50m ²
2	Livestock Production Management Laboratory2	1	(10.00X6.00) 60.00m ²
3	Molecular Reproduction cum teaching laboratory	1	(18.59X8.23) 153.00m ²
4	Andrology and Semen lab	1	(7.41X6.46) 47.87m ²

The laboratory facility, instructional unit meet the requirement of the practical exposure of the students.

3. List of major equipments:

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Livestock Production Management Laboratory 1	Fully Automatic Biochemistry Analyzer	1
		Somatic cellcounter	1
		Milk analyzer	1
		Hematology analyzer	1
2.	Livestock Production Management Laboratory 2	Deep freezer	1
		Proximate analysis unit	1
		Hot air oven	1
3.	Andrology and Semen lab	Phase contrast microscope	3
		CO ₂ incubator	1
		Cold handling cabinet	1
		Straw printing machine	1
		Semen filling and sealing machine	1
		Biological freezer	1
		Laminar Flow hood	2
		-20degree deep freezer	2
4.		-40degree deep freezer	1
		Automatic digital Autoclave	1
		Refrigerated centrifuge	1
		Centrifuge	2
5.	Molecular Reproduction cum teaching laboratory	Refrigerated centrifuge	1
		Gel- Documentation System	1
		Colour Doppler ultrasound machine	1
		Ultrapure Water Purification system	1
		Fluorescent microscope	1
		Ultrasound machine	1
		Ultralow deep freezers (-80°C)	1

4. Instructional farm-Agronomy Section (FRMC):

This farm facility covering 10 acre land has been created for teaching and research purpose for both Master's and Doctoral students on Nutrient management, Weed Management, Conservation Agriculture, Organic farming, Cropping System Research and Varietal evaluation. The facilities include:

- a) Fodder crop cafeteria used for practical training and identification of various annual and perennial forage crops/trees/shrubs.
- b) Azolla unit for its practical training.
- c) Practical training on farm operations

5. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

6. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- d) Artificial insemination and pregnancy diagnosis in dairy animals unit
- e) Animal health complex for treatment of various categories of animals
- f) The various shelter facilities for different categories of dairy animals
- g) The various types of milking parlour

7. Theory and practical batches for the Degree Programme:

S. No.	Program	Theory batch	Practical batch
1.	M.Sc./M.V.Sc.	10 to 40	5 to 20 in one batch

Single batch for theory and practical class has been conducted in two batches.

6.4.5. Conduct of Practical and Hands-on-Training:

The students have very good exposure of hands on training in the area of livestock production and management as the division had two instructional farm facilities i.e. Livestock Research Centre, Artificial Breeding Research Centre and four functional laboratories i.e. Livestock Production Management Laboratory 1, Livestock Production Management Laboratory 2, Molecular Reproduction cum teaching laboratory, and Andrology and Semen lab. The students become well versed in management of dairy animals and goat, machine milking operation, artificial insemination, semen processing, semen quality control, bull management, treatment and reproduction management.

The students also have practical exposure of proximate analysis, milk quality and biochemical analysis. Practical exposure of statistical analysis is also there.

6.4.6. Supervision of students in PG/PhD Programmes:

S. No.	Year	No. of faculty	No. of eligible guide	No of supervised students
1.	2021-22	10*	10	09
2.	2022-23	11*	10	10
3.	2023-24	11*	10	08
4.	2024-25	10*	07	12
5.	2025-26	07*	07	10

*3 Faculty members from ERS and 2 Faculty members from SRS

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Quarterly meetings with students and faculty have been conducted in routine to get the feedback of the students regarding teaching. The students under research remain with the guide for whole research period and fortnightly meeting of the students for research progress along with feedback has been taken care.

6.7.8. Student in take and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	Y1	Y2	Y3	Y4	Y5 (Current Year)	Y1	Y2	Y3	Y4	Y5 (Current Year)
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
PhD Programme	09	10	09	12	10	0	0	01	0	0

6.4.9. ICT Application in Curricula Delivery:

The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with black board and computer connected with projector in the entire three lecture hall for students teaching. Under COVID 19 situation all the classes and examination has been conducted through online mode. The classes mostly taken by using power point presentation and for better understanding video are also shared.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable othe verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Production & Management

6.4. Self Study Report for the Programme: Doctoral Program in Veterinary Gynecology and Obstetrics

6.4.1. Brief History of the Degree Programme

Animal Reproduction, Gynecology and Obstetrics (ARGO) section was initiated in year 2014. This section is actively involved in conducting research, teaching and extension in discipline of Animal Reproduction, Gynecology and Obstetrics since August 2014 under the Livestock Production Management Division. The PhD programme has been started in August 2014. Separate faculty of ARGO along with board of studies was in existence since 2014.

Objective:

- Development of state of art in dairy animal reproduction management facilities and infrastructure.
- To conduct research and teaching on reproductive management and fertility improvement of male and female dairy animals.

Accomplishment

- A structurally and functionally competent bubaline 3D-Endometrial Cell Culture system in terms of cellular integrity, alignment, stratification, glandular differentiation and prostaglandin production has been developed.
- Profiling of proteins during different stages of estrous cycle for identification of estrus specific proteins in saliva of buffalo has been undertaken.
- Gold-nanoparticle based in-solution colour assay developed targeting estrus candidate protein for accurate identification of estrus in buffaloes.
- Protocol developed for amelioration of heat stress and improvement of reproductive performance of buffaloes during low-breeding summer season through betaine, melatonin and herbal powder supplementation.
- Protocol developed for amelioration of heat stress and improvement of reproductive performance of post partum cows by zinc and betaine supplementation.
- Behavioural and biochemical markers identified for accurate prediction of parturition in Sahiwal cows and buffaloes.
- Biomarker proteins identified in serum of cows for accurate prediction of parturition in cows.
- Protocol for advancement of age of puberty and induction of estrus by exogenous Kisspeptin in buffaloes has been developed.
- Urinary pheromones of Sahiwal bulls have been identified and efficacy of bull urine in enhancing reproductive performance of Sahiwal cows has been explored.

- An *in vitro* model has been developed for studying sperm oviduct binding in buffaloes.
- A sensitive immunoassay was developed for quantifying PDC-109 protein in bull seminal plasma, facilitating the classification of bulls with differential fertility and semen freezability.
- Protocol for low dose sperm preservation from high fertile cattle and buffalo bulls has been standardized.
- Protocol for amelioration of adverse effects of heat stress on semen quality of crossbred bulls by supplementation of Vitamin E and Selenium has been developed.
- Package-of-practice has been developed for quality semen production during low-breeding summer season in buffalo bulls by dietary supplementation.
- Strategy to mitigate adverse effect of vaccination stress on semen quality of crossbred bulls by supplementation of Vitamin E and Curcumin has been developed.
- Antimicrobial potency of Zinc oxide nanoparticles and cyclic hexapeptides antimicrobial peptide (c-WFW AMP) and their use as antimicrobial alternative in semen cryopreservation in place of conventional antibiotics was explored.
- A mobile App in Hindi “Dairy Pashu Prajanan” has been developed for farmers to inform them about reproductive management of dairy animals

6.4.2. Faculty Strength:

S. No	Faculty	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	***Professor	0	0	0	0
2.	**Associate Professor	01@ 01@@	01@ -	1@@	01@ 01@@
3.	*Assistant Professor	3+1@	3+1@	-	3+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, @SRS. @@ERS,

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended By the ICAR/UGC/VCI/ other regulatory bodies
1.	Technical	1	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size(m ²)
1.	One class room in LPM division	1	60.96
2.	One classroom in ARGO Building	1	60

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	Molecular Reproduction cum teaching Laboratory, NDRI, Karnal	1	153
2.	Animal Reproduction & Gynaecology Laboratory, NDRI, Karnal	1	47.87
3.	Theriogenology Laboratory, SRS, NDRI	1	120

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
01	Molecular Reproduction cum teaching Laboratory	Fluorescent microscope	1
02	Molecular Reproduction cum teaching Laboratory	Doppler ultrasound machine	2
03	Molecular Reproduction cum teaching Laboratory	Ultra-low deep freezers (-80°C)	1
04	Molecular Reproduction cum teaching Laboratory	Ultrapure Water Purification system	1
05	Animal Reproduction & Gynaecology Laboratory	Refrigerated centrifuge	2
06	Animal Reproduction & Gynaecology Laboratory	Phase contrast microscope	3
07	Animal Reproduction & Gynaecology Laboratory	CO ₂ incubator	1
08	Animal Reproduction & Gynaecology Laboratory	UV Spectrophotometer	1
09	ABRC Laboratory	Semen processing and freezing unit	1
10	ABRC Laboratory	Computer Assisted Semen Analyzer	1
11	ABRC Laboratory	Phase contrast microscope	1
12.	ABRC Laboratory	Water Purification System	1
13.	ABRC Laboratory	Fluorescent microscope	1

ARGO Section student have got facility of 3 laboratories having all conventional and modern sophisticated equipment's. These equipment's are sufficient to meet the requirement of course curriculum.

4. Artificial Breeding Research Centre:

The is a central facility which has been created in a premise spread over 15 acres land. In ABRC around 149 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

5. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

1. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	PhD	7	7

6.4.5. Conduct of Practical and Hands-on-Training:

PhD students gets very good exposure of hands on training in the area of Animal Reproduction Gynecology and Obstetrics as the LPM division had two instructional farm facilities i.e. Livestock Research Centre and Artificial Breeding Research Centre and four functional laboratories i.e. Molecular Reproduction cum teaching laboratory, Animal Reproduction & Gynaecology Laboratory, ABRC laboratory and Theriogenology Laboratory at SRS, NDRI Bangalore.

6.4.6. Supervision of students in PG/PhD Programmes:

S. No.	Year	No of faculty	Number of eligible guide	No of supervised students
01	2021-22	6	6	7
02	2022-23	6	6	5
03	2023-24	6	6	6
04	2024-25	6	6	6
05	2025-26	6	6	4

*3 Faculty members from SRS

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Feedback of PhD students is always taken at the end of every semester in the division. Feedback of students has been very positive and encouraging. Moreover, interactive meet of teachers and PhD students are conducted at frequent intervals in which students express their views and opinion to faculty regarding course curriculum.

6.4.8. Student in take and attrition in the programme for last five years:

Name of the Degree Programme	Actual students admitted in last five years					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26 (Current Year)	21-22	22-23	23-24	24-25	25-26 (Current Year)
PhD in Veterinary Gynecology and Obstetrics	7	5	6	6	4	Nil	Nil	1	1	Nil

6.4.9. ICT Application in Curricula Delivery:

The faculty is well versed with the ICT application for basic teaching. The lecture halls are equipped with black board and computer connected with projector in the entire three lecture hall for students teaching. Under COVID 19 situation, all the classes and examination has been conducted through online mode via zoom, Google meet, MS team etc.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
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ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Animal Biochemistry

6.4. Self Study Report for the Programme: Doctoral Program in Animal Biochemistry

6.4.1. Brief History of the Degree Programme:

Degree program initiated: The Division of Animal Biochemistry came in to being in September 1984 with the merger of the discipline of Animal Biochemistry of Dairy Chemistry Division and the Division of Human Nutrition and Dietetics. The Ph.D. degrees were given in the discipline of Animal Biochemistry from the Deemed University from the Year 1998 onwards. Earlier they were awarded by Kurukshetra University and the Punjab University.

Objectives:

- Visibility of the division through high impact publication on a routine basis has been a forte of the division.
- Estrus detection in buffaloes,
- Bio safety evaluations of Nano materials
- Development of Probiotic foods, dairy nutraceuticals and their mechanism of action
- Validation of health benefit claims of Indian dairy products
- Characterization of genes related to fertility in buffalo, signal transduction mechanism in sperm functions, identification of fertility markers and bioinformatics researches.

Accomplishments:

Year: 2021-22

1. Organochlorine Pesticide Dieldrin Increases Estrogen Production by Upregulating Proximal Promoter (PII) Driven CYP19A1 Gene Expression in Granulosa Cells
2. Salivary Ferning based Estrus Identification Method Validated in a Large Population of Buffaloes in the Field Conditions
3. Tissue-specific Differences in Expression of Mitochondrial Protein Coding Genes from the Nuclear Genome and Mitochondrial Trnas in Buffalo
4. Mitochondria-associated miRNAs Expression Profiles in Buffalo
5. Mitochondrial DNA haplotypes Influence the Reproductive Efficiency of Buffaloes
6. miR-99a-5p in the Urine as a Potential Biomarker for Estrus Identification in Buffalo
7. Identification of Estrus Biomarker for Accurate Detection of Estrus/ Silent Estrus and Right Time Insemination in Buffaloes

8. Urine fern/ crystallization pattern analysis as a easy, non-invasive tool to identify estrus in buffaloes
9. Novel DPP-IV Inhibitory Peptides Isolated from Milk Proteins
10. In Vitro Immuno modulatory Activity of Custom Synthesized Peptides Derived from Lactobacillus Rhamnosus NCDC24 Fermented Milk

Awards:

Name of the award	Sponsoring Agency	Name of the Scientist	Year
Young Investigator Poster Presentation Award	Gut Microbiota and Probio Probiotic Science Foundation India	Ms. Ankita Kumari, Dr. Rajeev Kapila	2021
NAAS Fellow	NAAS	Dr. Dheer Singh,	2021

Year: 2022-23

1. A computer vision based App named as Mahishi Mittr (beta version) developed to identify estrus based on salivary fern patterns.
2. Purification of 80 kDa sperm motility-inhibitory protein of goat cauda epididymal plasma
3. Development of structurally and functionally competent 3D-granulosa cell culture model in buffalo
4. Effect of heat stress on granulosa cells morphology, growth characteristics, and function in a 3D granulosa cell culture model
5. Antidiabetic efficacy of fermented camel milk
6. Preparation of bio-functional lactic-yeast fermented milk

Year: 2023-24

1. Mitochondrial DNA D-Loop SNPs unveil molecular signatures of milk production variation in Murrah Buffalo
2. Comparative Studies in immuno histochemistry, localization and gene expression of aquaporins in reproductive system between ovine and caprine
3. Optimizing buffers for mitochondrial isolation in Indian buffalo uncovers tissue-specific variations and provides insights into functional assessments
4. Development of exosomes-encapsulated antibiotics-based therapeutics for mastitis
5. Development of a gold-nanoparticle based in-solution colour-based assay against estrus candidate proteins for accurate identification of estrus in buffaloes

6. Glycosylated mucin 1 is responsible for typical fern-like patterns in buffalo saliva at estrus
7. Purification of 80 kDa sperm-quiescent protein of buffalo cauda epididymal plasma and its functional characterization
8. Therapeutic efficacy of faecal microbiota transplantation on cadmium-induced testicular degeneration in rats
9. Effect of secondary microbial succession on combined heat and psychological stress-induced female infertility in murine model
10. Extraction and partial characterization of extracellular matrix components derived from probiotic lactobacill
11. Osteoprotective effect of casein-derived peptide(s) supplemented with calcium and vitamin D in OVX rats.
12. Milk casein and whey protein hydrolysates exhibited anti-obesity potential
13. Isolation of proline-rich polypeptides from colostrum of select indigenous cattle breed and evaluation of their nutraceutical potential
14. Antidiabetic efficacy of fermented camel milk and *Lactocaseibacillus rhamnosus*
15. Aflatoxin M1 influences intestinal epithelial integrity by decreasing the expression of genes encoding tight junction proteins

Awards:

Name of the award	Sponsoring Agency	Name of the Scientist	Year
Women Scientist Award	ICAR-CIARI, Port Blair	Dr. Suman Kapila	2023
Nomination to the SMRM-India Executive Committee	SMRM	Dr. Sadeesh E.M.	2024

2024-25

- Buffalo milk extracellular vesicles' proteome reveals their possible role in muscle development.
- An RT-LAMP assay was developed for lead and cadmium toxicity detection using the HemeOxygenase 1 (HMOX1) gene of HepG2 cells
- Bioinformatics analyses deciphered critical molecular pathways in cancers caused by aflatoxin B1

- Serum taurine concentration was found higher at the proestrus than the metestrus and diestrus stages of buffalo estrous cycle.
- Mitochondrial dysfunction in cattle was examined, focusing on oxidative stress, apoptosis, and hormonal imbalances in retained placenta (RP). Mitochondrial DNA (mtDNA) variability across indigenous breeds (Sahiwal, Gir, and Tharparkar) and its potential link to milk production traits were also explored.
- Surface exopolysaccharide (EPS) and proteins present on *L. fermentum* and *L. rhamnosus* respectively are non-toxic to intestinal epithelial cells. EPS and surface proteins of *L. fermentum* and *L. rhamnosus* were found effective in protecting intestinal epithelial cells against H₂O₂-induced oxidative stress respectively. Pre-incubation of intestinal cells with ECM components extracted from respective lactobacilli reduced the activity of anti-oxidative enzymes significantly upon inducing H₂O₂-mediated oxidative stress.
- Simulated digested casein has considerably higher inhibition of enzymes (DPP-IV, α -glucosidase and ACE) than undigested casein irrespective of the milk obtained from cow, goat or donkey. Inhibition of key metabolic enzymes with standard drugs/inhibitors was 25-100 folds more than the digested casein fractions of milk tested. Donkey milk casein appeared to have least inhibition (IC₅₀) as compared to cow and goat milk.
- Colostrum whey protein and proline-rich peptides (PRPs) exhibited antioxidative, antidiabetic, antiobesity, antihypertensive and immuno modulatory potential and biofunctional attributes of colostrum whey protein and PRPs of indigenous breeds were better than exotic and crossbred.
- Feeding of colostrum, colostrum whey protein and colostrinin to rats helped in amelioration of complications induced due to metabolic syndrome and Sahiwal was better than Holstein Friesian in combating MS.
- Camel milk casein protein PC hydrolysate (<3 KDa) and whey protein PTC hydrolysate (<3 KDa) exhibited maximum DPP-IV inhibition potential thereby exhibits the anti-diabetic potential.
- Resource Generation in terms of Consultancy Services provided and sponsored research projects - a Summer Internship Training Program was organized for students, focusing on Mitochondrial Research Techniques. The program successfully generated revenue of ₹35,400.
- A 687 bp buffalo CRISP-1 cDNA was cloned into pHis-TEV vector and bioactive recombinant CRISP-1 protein was successfully produced in *E. coli*
- The 90 kDa sperm-quiescent protein of buffalo cauda epididymal plasma was identified to be lactotransferrin by MS-MS analysis

Buffalo recombinant SRV protein was successfully produced in *E. coli*. Immunohistochemistry analysis by using polyclonal antibody raised against the protein showed specific reaction at the apical part of head of about 50% mixed sperm population

Awards:

S No.	Name and Designation	Title	Organization/ Society	Date
1.	Dr Rajani Kr Paul, Sr Sci	APA Best Oral Presentation Award	APACON2024 Animal Physiologists Association (APA)	01-02 March, 2024

2025-26

- Small milk extracellular vesicles potentiate β -lactam antibiotic activity for combating intracellular mastitis causing *Staphylococcus aureus*.
- Kangayam and Tharparkar cattle exhibit higher duplications in innate immune genes compared to Sahiwal, Gir, Karan Fries, and Holstein Friesian, an insight from array comparative genomic hybridization.
- Comparative transcriptome profiling of peripheral blood mononuclear cells suggests Protocadherin-1 (PCDH1) as a distinctive innate immunity signature in Sahiwal, Tharparkar and Gir compared to Karan Fries cattle.
- Complete mitochondrial genome sequencing of indigenous cattle showed that high milk yield links to conserved, mainly synonymous mtDNA variants in energy pathways, while low milk yield links to a higher density of non-synonymous SNPs, indicating that mitochondrial genome stability is linked to lactation efficiency.
- The CRISP-1 caused inhibition of sperm capacitation, protein tyrosine phosphorylation and modulation of nitric oxide, cAMP, and Ca^{2+} signalling pathways during *in vitro* sperm capacitation, indicating its possible application in prevention of cryocapacitation.
- The 80 kDa lactotransferrin (1.5 μM) isolated from buffalo cauda epididymis significantly inhibited both sperm motility and capacitation *in vitro*. The bovine milk lactoferrin at 100 $\mu\text{g}/\text{mL}$ also demonstrated significant inhibitory activity on sperm motility. Further, the LF from both the sources improved both progressive motility and functional integrity of sperm membrane following liquid preservation of semen.
- Donkey milk identified as a rich source of peptides with DPP IV inhibitory activity, a tripeptide produced by *in silico* digestion of DM casein identified as a potent, non-toxic DPP IV inhibitor.
- Camel milk protein hydrolysates (CMPHs) derived from casein and whey proteins, particularly D-WP-PTC < 3 kDa, possess strong therapeutic potential for

managing diabetes and its complications by enhancing insulin secretion, improving antioxidant defense, regulating metabolism, and restoring reproductive health in diabetic rats.

- Goat Casein Protein (600 mg/kg bw) and Casein Protein Hydrolysate (360 mg/kg bw) results in the significant inhibition of pancreatic lipase in mice thereby excreting TGs in faeces.
- Anti-oxidative potential of exo-polysaccharide and surface proteins extracted from probiotic Lactobacilli were assessed as the most promising bio-protective attribute under in vitro and in vivo milieu. ROS production and activity of anti-oxidative enzymes reduced significantly with increased survivability of intestinal epithelial cells in presence of H₂O₂ mediated oxidative stress with either of bacterial surface components. Likewise oral intubation of exo-polysaccharide (LF and LR) and surface proteins (LR) protected the experimental mice from ethanol-induced oxidative stress.
- On one hand, simulated digested cow, goat and donkey casein did not show difference in inhibition of α -glucosidase and DPP-IV enzymes but on the other simulated digested donkey whey showed significantly better inhibitory activity of both of these metabolic enzymes compared to cow and goat. Likewise simulated digested donkey casein and whey inhibited pancreatic lipase most efficiently with least IC₅₀ than cow and goat.

Awards:

1. **Ms. Diksha Sharma** got best Oral presentation award for the paper entitled, 'Therapeutic Potential of Milk Fat Globule Membrane in Restoring Metabolic, Reproductive, and Bone Health in Polycystic Ovary Syndrome' authored by Diksha Sharma, Rajeev Kapila, Suman Kapila in the 12th International conference on Emerging Issues in Agricultural, Food Technology, Biological & Applied Sciences for Global Development (EIAFTBASGD-2025) during November 15-17, 2025 at Maharana Pratap University of Agriculture and Technology Udaipur, Rajasthan, India
2. **Ms. Priyanka Goyal** secured 3rd prize under the theme of Smart Livestock Farming for the poster entitled Harnessing the potential of bovine milk extracellular vesicles and their miRNAs in human health, a frontier science approach for a developed India by Priyanka Goyal, Roshan Mohiddin, Suneel K. Onteru and Dheer Singh (ASC2025/ABSTRACT0453) at XVII Agricultural Science Congress during 20-22 February, 2025 held at G.B. Pant University of Agriculture and Technology, Pantnagar.

3. **Dr. Rajani Kumar Paul** secured First Prize in Oral presentation titled “Functional Characterization of Recombinant Buffalo Cysteine-rich Secretory Protein 1 on Sperm Physiology (Presenter: Paul, R. K.)”. In: 9th Annual Convention of SVBBI and National Symposium on “Advancing Animal Health and Production through Biochemical and Biotechnological Innovations” (SVBBICON 2025) on 28-29th Nov., 2025 at WBUAFS, Kolkata.
4. **Dr. Sunita Meena** received Excellence in teaching Award in Xth International Conference on Global Research Initiatives for sustainable Agriculture and Allied Sciences (GRISAAS-2025) in MPUAT, Udaipur, Rajasthan from October 5th to 7th 2025.
5. **Dr. Sadeesh E.M.** was appointed as an Editorial Board Member for the hybrid journal *Molecular Biology Reports* (Springer Nature) for an initial term of two years, effective July 2025.
6. **Dr. Suneel Kumar Onteru** secured 1st prize under the theme of Smart Livestock Farming for the poster entitled “Innate immunity in selected Indian cattle breeds traced from gene duplications and deletions” by Mayank Roshan, Ashutosh Vats, Kamlesh Kumari Bajwa, Sanjay Sharma, Menaka Thambiraja, Monika Sodhi, Dheer Singh, Ragothaman M. Yenamalli, Suneel Kumar Onteru (ASC2025/ ABSTRACT1110) at XVII Agricultural Science Congress during 20-22 February, 2025 held at G.B. Pant University of Agriculture and Technology, Pantnagar.

6.4.2. Faculty Strength:

S. No.	Faculty	Sanctioned strength	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
	Head	1	1	0	1
1.	***Professor	0	0	0	0
2.	**Associate Professor	1	0	1	1
3.	*Assistant Professor	8 + 1@	8+2@	0	8+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, SRS@

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Faculty in place	Vacant position	Staff positions recommended By the ICAR/UGC/VCI/ other regulatory bodies
1.	Technical	2		-	ICAR
2.	Administrative	1		-	ICAR
3.	Supporting Skilled Staff	3		-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1.	1	1	4span

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Molecular Endocrinology, Functional Genomic and Systems Biology Laboratory.	1	11span
2	Laboratory of Milk and Health	1	3span
3	Immuno and Nutritional Biochemistry Lab	1	4span
4	Laboratory of Mitochondrial Biology of Farm Animals	1	3span
5	Semen Biochemistry Laboratory and Nanotechnology Lab	1	4span
6	Functional Food and Therapeutics Laboratory	1	4span
7	Central Instrument Room	1	4span
8	UG/PG Laboratory	1	4span
9	Small Animal House	1	22span

List of Major Equipments

S. No.	Name of Laboratory	Name of equipment	Numbers
1	Molecular Endocrinology, Functional Genomics and Systems Biology Laboratory	ELISA plate /Eon reader/ Laptop connecting with ELISA plate reader	1
		Dynamic light Scattering/ Dynamic LS Desktop Intel Core i5/ Desktop Computer	1
		Microscope (Towa Optics)	1
		Gel Documentation System	1
		Real-Time PCR Machine	1
		Orbital shaker	1
		Light cycler II (Real time PCR)	1
		Micro 22 R Refrigerated Table top Micro centrifuge with Rotor	1
		pH Meter	1
		Electrophoresis Apparatus	1
		Nanospectro photometer	1
		Nanodrop	1
		Water jacketed CO ₂ Incubator	1
		Blood Biochemistry Analyzer	1

		Horizontal Gel Electrophoreses	1
		-20 Degree Refrigerator	1
		CO ₂ Gas Incubator Water Jacked	1
		Tower Server Model No LG 22” 1PS Monitor 22 MP48	1
		Bio Safety Cabinet -II	1
		CO ₂ Incubator	1
		Up gradation microscope modal Ti-s Towa optics	1
		Nanoparticle Tracking Analyzer (NTA)	1
2	Laboratory of Milk and Health	CO ₂ Incubator	1
		Biosafety cabinet	1
		Elisaplate/reader	1
		Microscope Inverted Tissue culture	1
		Fluorescent spectrophotometer	1
3	Immuno and Nutritional Biochemistry Lab	CO ₂ Incubator	1
		Microscope Inverted Tissue culture	1
		ELISApate/reader	1
4.	Laboratory of Mitochondrial Biology of Farm Animals	Low Temperature Freezer	1
		Hot air oven	1
		High precision electronic balance	1
		Water bath	1
		Refrigerator	1
		pH meter	1
		Tissue homogenizer with motor stand assembly	1
		Stereo zoom microscope	1
		Tabletop centrifuge	1
		Horizontal electrophoresis unit with power supply	1
		Biosafety Cabinet	1
5.	Semen Biochemistry Laboratory and Nanotechnology Lab	CO ₂ Incubator	1
		Microscope Inverted Tissue culture	1
		Shaking Incubator	1

6	Functional Food and Therapeutics Laboratory	Biosafety Cabinet	1
		Gel Doc	1
		PCR	1
		Fluorescent Spectrophotometer	1
		GBox CabinetSafety	1
7	Central Instrument Room	Foxy Jr. Fraction Collector	1
		Olympus Inverted Microscope with Accessories	1
		Olympus Inverted Microscope with Fluorescence	1
		Electronic Balance Shimadzu AUW120D	1
		Heto Freeze Dryer With Vacuum Concentrator	1
		Gel Documentation System Alpha Imager	1
		Refrigerated High Speed Centrifuge Model Z36HK	1
		Spectro fluorimeter	1
		Double Beam UV Visible Spectrophotometer UVD 3092	1
		Real Time PCR with Accessories	1
		Microscope with Phase Contrast Epifluorescence and Digital Image Analysis System	1
		Tissue Homogeniser	1
		Microprocessor Controlled Refrigerated Table Top Centrifuge Model Z446K	1
		Ice Flaking Machine Model BL-IMS-120	1
		pH Meter	1
		Ultrasonic Probe Sonicator	1
		3 Part WBC Differential Veterinary Hematology Analyser	1
		UV VIS Spectrophotometer UV Plus Motras	1
		Water Purification System	1
		PCR Machine	1

8	UG/PG Laboratory	Oven	1
		pH Meter	1
		Refrigerator Dual Temperature	1
		Spectrophotometer	1
		Spinwin	1
		Water bath	1
		Balance Analytical	1
		Balance Compact	1
		Test Tube Shaker	1
		Centrifuge	1
		Laminar Flow	1

3. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

4. Theory and Practical batches

S.No.	Program	Theory batch	Practical batch
1.	Ph.D	15-20	15-20

6.4.5 Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on-practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities.

Following courses are offered in Ph.D. Programme

1. BCT-701 (2+1) Applied Molecular Biochemistry and Systems Biology
Dr. Suneel K. Onteru, Dr. Dheer Singh & Dr. Varij Nayan
2. BCT-702(2+0) Membrane Biochemistry
Dr. Rajeev Kapila & Dr. Suman Kapila
3. BCT-705(2+1) Recent Trends in Biochemical Techniques and Instrumentation
Dr. Gautam Kaul, Dr. Rajeev Kapila Dr. Ravikant
4. BCT-707 (1+1) Bio informatics tools in Biochemistry
Dr. Varij Nayan
5. BCT-710 (2+0) Immuno-Biochemistry
Dr. Suman Kapila & Dr. Vedamurthy G.V.

6. BCT-712 (1+0) Doctoral Seminar
Dr. Sadeesh E.M.
7. BCT-713(1+0) Doctoral Seminar-II
Dr. Rajeev Kapila
8. RPE-700(1+1) Research and Publication Ethics
Dr. Suneel Kumar Onteru & Dr. Bharati Pandey (ABTC)

Animal Biochemistry Division offers Practical classes for the following courses in Ph.D. programme:

1. BCT-701 (2+1) Applied Molecular Biochemistry and Systems Biology
Dr. Suneel K. Onteru, Dr.Dheer Singh & Dr.Varij Nayan
2. BCT-705(2+1) Recent Trends in Biochemical Techniques and Instrumentation
Dr. Gautam Kaul, Dr. Rajeev Kapila Dr. Ravikant
3. BCT-707 (1+1) Bioinformatics tools in Biochemistry
Dr. Varij Nayan
4. RPE-700(1+1) Research and Publication Ethics
Dr. Suneel Kumar Onteru & Dr. Bharati Pandey (ABTC)

6.4.6. Supervision of students in PG/PhD Programmes:

Break up Status of the number of students being supervised since 2016 (last five years) for Ph.D. programme:

S. No.	No of faculty	No of eligible guide	No of supervised students
1	8	7	38

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): Time to time lab meetings are being conducted in the Division by respective supervisor. Every six months progress seminars are being conducted to assess their progress in research.

6.4.8. Student in take and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	Y1 21-22	Y2 22-23	Y3 23-24	Y4 24-25	Y5 (Current year) 25-26	Y1 21-22	Y2 22-23	Y3 23-24	Y4 24-25	Y5 (Current year) 25-26
Ph.D	7	6	4	3	1	50	42.85	25	0	0

6.4.9. ICT Application in Curricula Delivery:

1. Yes the degree programme is meeting all the expectations for ICT.
2. All the bioinformatics software are being taught to the students in different courses so that they can use in their research work.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Animal Biotechnology

6.4. Self Study Report for the Programme: Doctoral Program in Animal Biotechnology

6.4.1. Brief History of the Degree Programme:

NDRI, Karnal began working on biotechnology in the mid-1980s as part of a UNDP 'Centre of Excellence on Biotechnology' programme. The urgent need to apply recent biotechnological advances in reproduction and production to superior females of dairy breeds of ruminants in order to improve animal productivity in our country prompted the Department of Biotechnology to fund the establishment of a state-of-the-art Embryo Biotechnology Centre (EBC). The development of the Livestock Genome Lab and Molecular Biology Unit under the National Agricultural Research Project-II increased biotechnology even more. In June 1999, the Animal Biotechnology Centre was reformed, bringing together all of the infrastructural facilities built under several biotechnology programmes. The Centre also provides an M.Sc. Animal Biotechnology degree in addition to research in areas important to biotechnology in dairy production and processing. The doctoral programme began in 2003.

The proposed Division's goals are to: a) conduct biotechnology-oriented basic and applied research to improve animal productivity and develop innovative dairy processes to produce superior quality, safe, and wholesome dairy products; and b) train manpower in biotechnology applications in dairy production and processing for M.Sc. and Ph.D. degrees in biotechnology.

Degree program initiated:

Under a UNDP programme, the NDRI developed a 'Centre of Excellence on Biotechnology' in 1985. NDRI created the Embryo Biotechnology Centre (EBC) in 1992 to begin research in the frontiers of animal reproduction and embryo biotechnology. The Animal Biotechnology Centre was established in 1999 as a result of a consolidation of biotechnology research efforts (ABTC). The master's degree programme was initiated in 1999. The Animal Biotechnology Centre opened a new state-of-the-art facility in 2007. The doctoral programme began in 2003.

Objective:

- Increase the number of genetically superior (elite) female cattle and buffaloes on farms and in the field by identifying and developing novel goods and techniques that could lead to significant increases in milk producing animals' economic features.
- To create sexed semen technologies in order to produce creatures of the desired sex.
- Develop animal herds capable of generating custom-made milk to meet people's individual demands.

- Discovering previously unknown new genes and dissecting their regulatory systems in order to utilize economically valuable features.
- To use dairy cultures/probiotics to make recombinant medicines, nutraceuticals, and consumable vaccines..

Accomplishments:

- Gantantra and Basant, two elite buffalo male cloned calves produced in NDRI.
- India's first cloned cattle, named 'GANGA', was born in March 2023 at ICAR-NDRI Karnal.
- Myostatin gene-edited buffalo calf for double muscling was successfully produced, which is a huge leap towards gene edited animal production technology for Indian farm animals.
- Utilization of cloned cattle 'GANGA' for in-vitro production of OPU-IVF embryos
- Evaluation of commercial single-step embryo embryos, all media supported similar early culture media for in vitro production of development, though Vitrogen caused dish surface parthenogenetic, in vitro fertilized, and cloned adhesion. In IVF experiments, Vitrogen and GM-501 buffalo embryos
- Global DNA methylation profile of spermatozoa of cloned buffalo bulls
- Generation of oocyte-like cells from umbilical cord blood-mesenchymal stem cells in cattle
- Protein engineering to enhance stability of leucyl aminopeptidase (PepL) of *Lacticaei bacilluscasei*
- Production of engineered phage endolysin for improved bactericidal activity against *Escherichia coli*
- Antimicrobial resistance genes and associated mobile genetic elements in *Escherichia coli* from human, animal and environment - an in silico investigation
- Live birth of buffalo calf with β -lactoglobulin (BLG) gene knock out has been achieved.
- Successful pregnancy of cloned cow, Ganga, was established through OPU-IVF technology.
- Gene editing technology was perfected for development of NANOG-gene edited buffalo cells.
- First time the genotype of all Sahiwal cows was generated to study breed purity and climate resilience in dairy cattle.

- An RT-LAMP assay was developed for lead and cadmium toxicity detection using the gene expression of the Heme Oxygenase 1 (HMOX1) gene in HepG2 cells.
- Lipid profile of sperm plasma membrane in Sahiwal bulls was established in relation to male fertility.
- Mesenchymal stem cells were used to treat cattle and buffaloes' wounds.
- An antibody conjugated magnetic nanoparticles - based technology was developed for enriching X-spermatozoa in a given bovine semen sample. In *in-vitro* IVF trials, this method skewed sex ratio towards females (3 females: 1 male) in cattle
- An X-specific ligand was identified for enrichment of X-chromosome-bearing sperm that resulted in the production of 75% female-biased embryos in IVF trials
- A simple method was developed for the purification of lactoferrin from Ladakhi Yak colostrum. Shotgun proteomics of 0-day Ladakhi yak colostrum was used to identify key proteins in colostrum

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/other regulatory bodies
1.	***Professor	0	1	1#
2.	**Associate Professor	2	1	3
3.	*Assistant Professor	6+1@	0	6+1@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, #Head, @ERS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/other regulatory bodies
1.	Technical	4	-	ICAR
2.	Administrative	1	-	ICAR
3.	Supporting Skilled Staff	3	-	ICAR

6.4.4. Classrooms and Laboratories:

1. Classrooms:

S. No.	Classrooms	Numbers	Size (m ²)
1	Smart class rooms	2	30x2=60m ²
2	Conference Hall	1	95m ²
3	Seminar Room	1	30m ²

2. Laboratories:

S. No.	Name of Laboratories	Numbers	Size (m ²)
1.	Embryo Biotechnology Laboratory	01	160m ²
2.	Cloning Laboratory	01	160m ²
3.	Regenerative Biotechnology Laboratory	01	72m ²
4.	Cell Culture Laboratory	01	48m ²
5.	FACS Facility	01	16m ²
6.	AnimalGenomicsLab-1	01	160m ²
7.	AnimalGenomicsLab-2	01	160m ²
8.	LaboratoryNo-6	01	160m ²
9.	Cell Science Laboratory	01	160m ²
10.	Cell & Molecular Biology Laboratory	01	160m ²
11.	Proteomics Laboratory	01	16m ²
12.	Diagnostic Kit Development Laboratory	01	16m ²
13.	MS Facility	01	16m ²
14.	Fermentation Laboratory	01	16m ²
15.	Bioinformatics Laboratory	01	16m ²
16.	Centre of excellence of genome editing	01	16m ²

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Embryo Biotechnology Laboratory	Binocular Microscope, Real-Time PCR Machines, PCR Machines, Refrigerated Centrifuges, Water Purification System Gel Documentation Systems, Electrophoresis Inverted Microscope, Refrigerated Centrifuges, Laminar Flow Bench, Centrifuges Western Blotting System, Gel Electrophoresis, Stereo Zoom Microscope, Nano Spectrophotometer Hybridization Oven	16
2.	Cloning Laboratory	Water purification Systems Ultrasound machine Refrigerated Centrifuges Ultra low Deep Freezers Sonicator Osmometer Inverted Microscope Refrigerated centrifuges Laminar FlowBench Centrifuges	10

3.	Regenerative Biotechnology Laboratory	Microscope with Imaging System CO ₂ Incubators Sonicator Stereo zoom Microscope Oocyte Aspiration Pump Micromanipulator Electro fusion machine	9
		CO ₂ Analyzer	
4.	Cell Culture Laboratory	Laminar Flow Cabinet Incubator Shakers CO ₂ Incubators Inverted Microscope Refrigerated centrifuges Centrifuges	6
5.	FACS Facility	FACS Aerosol Evacuation Stereozoom Microscope	3
6.	Animal Genomics Lab-1	Flow Cytometer Centrifuge High Speed Pulse field Gel Refrigerated Hi speed Nano Spectro Photometer PCR Realtime PCR Ultralow Deep Freezers	8
7.	Animal Genomics Lab-2	Electromanipulator optimizer Micromanipulator System Electro Fusion Apparatus Zoom Stereo Microscope Electrophoresis Unit Humidity Control Chamber Ultralow Deep Freezers DNA Sequencer	8
8.	Laboratory No-6	Health care bio services 2 Delectrophoresis module Elisa Reader Herbaceous Multiuse	4
9.	Cell Science Laboratory	Nucleofector Device Bio-safety Cabinet Embryo Respiratory Laparoscopic Instrument	4
10.	Cell & Molecular Biology Laboratory	Multidimensional Calorimetry Lyophilizer LIMS Cooling cabinet	5

11.	Proteomics Laboratory	Differential Scanning Calorimetry Cell Disruptor Shaking incubator OFF Gel Fraction Chromatography system Protein Purification System Protein Digester and spotter	17
		Protein Imager and Robotic Spot cutter PCR Machine Quixstand system Freeze Dryer (Lyophilizer) Crystallization Incubator Monochromator Hybridization Incubator Osmometer Ultralow Deep Freezers	
12.	Diagnostic Kit Development Laboratory	Bio-safety Cabinet Electrophoresis Bioanalyzer Centrifuge High Speed Vacuum Concentrator	4
13.	MS Facility	Mass spectrometer facility Dual Refrigerator shaker Bio Safety Cabinet	3
14.	Fermentation Laboratory	Bio Safety Cabinet Vacuum Concentrator Microcentrifuge Fermenters	4
15.	Bioinformatics Laboratory	Workstations	3

4. Artificial Breeding Research Centre:

The centre has been created in a premise spread over 15 acres land. In ABRC around 114 male animals of Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo are maintained. Students have hands on exposure on semen collection, bull management and semen cryopreservation.

5. Livestock Research Centre (Cattle Yard):

The institute livestock research centre is spread over 40 acres land and houses nearly 2500 livestock mainly Karan Fries, Karan Swiss, Tharparkar, Gir, Sahiwal and Murrah Buffalo as well as Alpine-Beetal, Alpine-Sanen and Barbari goats. It is equipped with all necessary equipments and available for practical training and animal research experiments for both master and doctoral students on all aspects of dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.). The centre has the following facilities:

- a) Artificial insemination and pregnancy diagnosis in dairy animals unit
- b) Animal health complex for treatment of various categories of animals
- c) The various shelter facilities for different categories of dairy animals
- d) The various types of milking parlour

6. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

7. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	PhD	10-15	10-15

6.4.5. Conduct of Practical and Hands-on-Training:

Animal Biotechnology Centre has a state of art facility for student research in the area of genomics, Proteomics and Embryo Biotechnology. Students are offered In-farm training in collaboration with LRC, NDRI Karnal. Additionally, it has Proteomics Lab, Bioinformatics Lab, Embryo Biotechnology Lab and Mass spectrometry Lab for hands on training and conducting research.

6.4.6. Supervision of students in PhD Programmes:

Masters

S. No.	No of faculty	No of eligible guide	No of supervised students
1	11	10	11

*: Ten from NDRI, One from NBAGR

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

We have a feedback system in place for PG/Ph.D students who have completed their graduate studies. Based on the feedback received, we will address these issues in the coming academic years in order to improve our teaching and student research.

Animal Biotechnology Centre offers a variety of practical training programmes in the areas of animal genomics, proteomics, embryo biotechnology, and bio informatics. Senior students from postgraduate institutions, state agriculture universities, and animal science-related enterprises make up the majority of the participants (for eg. Animal feed industry, milk processing industry, disease diagnostic laboratories and animal vaccine production industry). We always obtain comments from the participants after the training term. The issues that have been mentioned are being addressed in order to strengthen our continuing academic and research efforts.

Customized service work for the dairy sector, animal husbandry department, and state agriculture universities is also available. We tailor or modify our academic and research efforts in response to customer feedback in order to attain excellence.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-26)					Attrition(%)				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
PhD	7	5	11	3	4					

6.4.9. ICT Application in Curricula Delivery:

The topic fields in Animal Biotechnology are dynamic in nature. Every year, we must update and improve our existing teaching curricula in order to suit the needs of the present situation. For example, the CRISPR/cas9 system is a novel tool in genomic modification that was found in the last several years, and we need to incorporate related theory and practice into our present research efforts due to the demand for animal genetic manipulation. As a result, we must improve our research operations based on concurrent animal science discovery and development.

To grasp, remember, and answer the thematic questions in competitive tests, we create compatible reading material. Our professors compile study materials from the most recent publications, as well as review materials and books, to supplement the content taught in class. To address the most recent developments in animal biotechnology, we provide YouTube links and other updated information on various university websites. Our teaching strategies are as follows:

- Physical/offline mode to meet biological phenomenon knowledge
- Online mode to fulfill teaching curriculum during the Covid 19 epidemic time
- Online classroom based (Google classrooms) on supplying reading material to students, collecting daily records, and monitoring subject themes.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh, hereby certify that the information contained in Section 6.4.1. to 6.4.9 are furnished as per the records available in the college and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Program in Dairy Technology

6.4. Self Study Report for the Programme: Doctoral Program in Dairy Technology

6.4.1. Brief History of the Degree Programme:

The Ph. D. courses in Dairy Technology were started in 1961 and facilities were also provided to research scholars for conducting research at the institute for the scholars of other universities. The institute was initially affiliated with Punjab University and later with Kurukshetra University. In 1989, status of Deemed University was conferred to the Institute for further strengthening the academic programme for human resource development. Ph. D. programme in Dairy technology is inter-disciplinary and students have liberty to opt minor course from Dairy Processing divisions or Animal Biochemistry or Animal Biotechnology divisions. NDRI is not only an important contributor of highly trained man power required by the Indian Dairy Industry but also it plays an important role in enhancing the teaching capabilities of the faculty of Dairy /Animal Science Departments at various State Agricultural Universities (SAUs). ICAR, has recognized the contribution and expertise available in field of Dairy technology by establishing the Centre of Excellence of the Institute as Center of Advanced Faculty Training in Dairy Technology.

Objective:

- To generate quality human resource for dairy sector including R&D institutes, academic universities, industry, government organizations and related organization
- To carry out basic and applied research in the cutting and frontier areas of milk processing and value added dairy products

Accomplishments:

- Several students received Best Research Paper, Best Poster paper and Oral presentation award in National, International conferences/Seminars/Symposiums/Conventions.
- A total of 16 faculty members were deputed for international training in 6 different universities located in USA and Netherlands under IDP-NAHEP project.
- Several students have received awards in National, International conferences/Seminars/ Symposiums/Conventions.
- Ms. Aparna V. P., Dr. Kaushik Khmarui, Dr. Writdhama Prasad and Mr. Kuntal Roy received Best (First) Oral Presentation Award at 8th International Conference on “The Future of Food Science & Technology: Innovations, Sustainability, and Health” held at Amity University, Noida, UP, during 27th & 28th March 2025.
- Ms. Maumita Adhikari, Dr. Kaushik Khamrui and Dr. Writdhama Prasad received Best (Second) Poster Presentation Award (online) at 8th International Conference

on “The Future of Food Science & Technology: Innovations, Sustainability, and Health” held at Amity University, Noida, UP, during 27th & 28th March 2025.

- Dr. Heena Sharma, Dr. Ashish Kumar Singh, Ms. Saipriya Kanchanpally, Ms. Lakshmi Priya P R and Dr. Richa Singh received 2nd Best Poster Presentation Award for paper entitled ‘Exploration of breed-specific candidate metabolites in Barbari and Jamunapari goat milk using gas chromatography-mass spectrometry based metabolomics approach in National Symposium on ‘Animal Production Systems and its role in sustainable use of AnGR’ held at NTR college of Veterinary Science, Gannavaram, Andhra Pradesh during February 15-16, 2024.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	***Professor	1#	-	01#
2.	**Associate Professor	2DT	1FT	2DT+1FT
3.	*Assistant Professor	7DT+02FT+01LPT	6DT	13DT+2FT+01LPT

***Principal scientist cadre, **Senior Scientist Cadre 2 DT+01 FT, *Scientist cadre (13 DT+02 FT+01 LPT), (#Head)

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	3	-	3
2.	Administrative	2	-	2
3.	Supporting Skilled Staff	2	-	2

6.4.4. Classrooms and Laboratories:

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size (m ²)
1	PG Lecture Room First floor DT Division	One	42.30
2	Divisional seminar room (DT)	One	58.27

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size(m ²)
1	PG Laboratory	One	168.0
2	By-Products Technology Laboratory Membrane Processing Plant	One	37.5 56.0
3	Cheese and Fermented Foods Laboratory	One	112.0

4	Food Packaging Laboratory	One	75.0
5	Food Technology Laboratory	One	121.5
6	Formulated Dairy Products Laboratory	One	178.0
7	Functional Ingredients and Applications Laboratory	One	149.0
8	Protein Analysis Laboratory	One	19.0
9	Sensory Evaluation Laboratory	One	56.0
10	Traditional Indian Milk Products Laboratory	One	112.0
11	Experiential Learning Laboratory-cum-Pilot Plant	One hall	376.0

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1	By-Products Technology Laboratory Membrane Processing Plant	Pilot scale UF Plant, MF Unit, Ovens, High shear disperser, Centrifuge, RO plant, Infra-red moisture analyzer, Densitymeter	One each
2	Cheese and Fermented Foods Laboratory	UV-Vis Spectrophotometer, Laboratory homogenizer, Microbalance, Ultraturax, Cheese knives, Cheesevats	One each
3	Food Packaging Laboratory	MAP Machine, Headspace Gas Analyzer, Electrospinning machine, Vacuum packaging machine, Vacuum dryer, BOD incubators,, Universal testing machine, Bursting strength tester, Substance indicator, Micrometer, Cobbs apparatus, tearing strength tester, UV treatment chamber, Ultrapure water purification system	One each
4	Food Technology Laboratory	Freeze dryer, Refrigerated centrifuge, Low temperature water bath, BOD incubator, Spectrophotometer, Abbe's Refractometer, Biosafety cabinet, Stomacher, Automatic Nitrogen analyzer, Soxtec, Modular MF-UF Plant	One each
5	Formulated Dairy Products Laboratory	Texture analyzer (2), Rapid Visco Analyzer (RVA), Rheometer, Water activity meter, Microfluidizer, Spectrophotometer (2), Prober Sonicator, Hunter colour lab, High shear mixer, BOD incubator, Incubator shaker,	One each

6	Functional Ingredients and Applications Laboratory	Laminar flow, High shear mixer, Vacuum rotary evaporator, Table top centrifuge, Protein distillation unit, Hotair oven, BO Dincubator	One each
7	Protein Analysis Laboratory	Kjedhal Digester, Semi-automatic protein distillation assembly. Muffle furnace	One each
8	Sensory Evaluation Laboratory	Modular Sensory Booths, Sample Preparation and storage accessories	One each
9	Traditional Indian Milk Products Laboratory	Vacuum and modified packaging machine, BOD incubator, Laminar air flow, Spectrophotometer, Turbidity meter, Colorimeter, Laboratory centrifuge, Microscope	One each
11	UG/PG Laboratory	Cream separator, Electronic balance, Centrifuge, Water bath, Autoclave Muffle furnace, Hotair oven BOD incubator	One each
12	Experiential Learning Laboratory-cum-Pilot Plant	Bakery oven big, Coating pan, Bakery oven small, Planetary Mixer Big, Dough Molder, Planetary Mixer Smaller, Shrink Wrapping Machine, Wet Grinder, Single Screw, Extruder, Pulverizer, Cookie Dropper machine, Biscuit Packaging Machine, Flaking machine Snack Packaging Machine, Butter churner, Cheese vat, Powder packaging Machine, Modular Pasteurizer, Softy ice-cream freezer, Ice-cream fruit feeder, Modular Ice-cream unit, Spray dryer, Twin screw extruder, Paneer pressing unit, Cream separator, Pasta making machine, Paneer cube machine, Vacuum tray dryer, Tray dryer, Canning line, Fluidized bed dryer, Fermentation line	One each

4. Laboratory-cum-Pilot Plant at Business Planning and Development (BPD)

Unit:

Pilot plant at BPD has more than 30 equipments for small to medium scale processing of milk products, frozen foods and bakery products. All these equipments are available for research work of postgraduate and doctoral students of dairy processing disciplines.

5. Dairy Plants

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR-NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board. It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 2,00,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 2,00,000 L/day milk, 2.5 MT/ day ghee and 150kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

6. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	Ph.D.	8	8

6.4.5. Conduct of Practical and Hands-on-Training:

The courses offered at Ph.D. level has lesser component of practical. However, the minor courses they enroll contain substantial components of practical. During their dissertation work the students get adequate exposure and opportunity on product formulation, technological applications, analysis of developed products and engineering aspects of various processes. Research problem is identified based on the recommendations of RAC, feedback from stakeholders and mostly are basic and applied in nature. Students are also deputed for advanced trainings on advanced processing technologies, analytical techniques and innovations. Students are also encouraged to actively participate in research conventions, seminars and workshops to braise with latest developments. Ph. Dscholar are also deputed as faculty for conducting the practical sessions with faculty members of UG classes. The research problems on which students work enhance their learning aptitude and thought process.

6.4.6. Supervision of students in PG/PhD Programmes:

Ph. D.(DT)

S. No.	Year	No of faculty	No of eligible guide	No of supervised students
1.	2021-22	17	14	4
2.	2022-23	16	13	9
3.	2023-24	17	11	14
4.	2024-25	15	14	14
5.	2025-26	14	14	14

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

The students are required to submit a feedback form after their degree to their guides for their overall experience during the course of study. There is a structure performa developed by Dairy Science College which is provided to students after each academic year to get the feedback about each course and faculty.

The stakeholders including faculty, academicians, researchers, industry personnel, students, educationists and officials from the policy formulation and implementation departments have been involved in curriculum development, modification both at ICAR and institute levels. The Placement Cell of the institute is also actively involved in providing the feedback and expectations of industry and other organizations employing our students.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021 to 2025)					Attrition(%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
Ph.D. (DT)	6	11	15	14	14	33.3	18.2	6.6	0	0

*Figures under bracket are for the students joined SRS of NDRI, Bengaluru

6.4.9. ICT Application in Curricula Delivery:

The classrooms are well-equipped with interactive board and internet connectivity. Involvement of students was ensured by random attendance during lectures, announced and un-announced quizzes, short answer questions, discussions on a specific topic related to subject, assignments, presentations being regular part of the classroom teaching. Research scholars can access library online for scientific literature survey as institute has subscribed reputed journals of Elsevier, Wiley, and Springer in the subject matter area. The text books and other reading materials available in library can be accessed from the laboratory and hostels.

6.4.10. The information per training to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in Section 6.4 is liable to verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh, hereby certify that the information contained in Section 6.4.1. to 6.4.9 are furnished as per the records available in the college and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Dairy Engineering

6.4. Self Study Report for the Programme: Doctoral Program in Dairy Engineering

6.4.1. Brief History of the Degree Programme: Dairy Engineering as a discipline for doctoral degree in Dairy Engineering started in the year 1977.

Degree program initiated: The degree programme in Dairy Engineering for Doctoral degree initiated in the year 1977. The aim of the program was to equip the students with knowledge of design and development dairy process equipment required for mechanization of Traditional Indian Dairy Products and to develop engineering database required in design of dairy process equipments/ instruments.

Objective:

- To develop an engineering database required in the design of dairy process equipment/instruments.
- Process mechanization for Indian dairy products.
- To design and develop equipment/instruments to meet the requirements of the dairy industry.
- Teaching/training to UG/PG/Ph.D. students.
- Transfer of technology, technical training, and consultancy services, etc.

Accomplishments:

Machines/Equipments/Technologies Developed

- Three-stage Scraped Surface Heat Exchanger (SSHE) for continuous manufacture of indigenous dairy products (Khoa, Burfi, Basundi, Kalakand, Gajar Pak, Ghee, Rabri).
- Two-stage Scraped Surface Heat Exchanger (SSHE) for continuous production of indigenous dairy products (Khoa, Burfi).
- Single-stage scraped surface heat exchanger.
- In-line system for production of indigenous dairy products (Khoa, Burfi, Rabri, Basundi, *Kheer*, Ghee from cream, Ghee from butter).
- Multipurpose conical process vat.
- Machine vision system ColorDesk D1 for color measurement of dairy products.
- Machine vision system ColorStation N1 for color measurement.
- Program to view color of dairy and food products on the basis of CIELab values.
- Automatic endo-exothermal unit for dahi.
- Weight-based metering and filling system for viscous dairy products.

- Thermic fluid-based hybrid heating system.
- Product transfer system for viscous dairy products.
- Continuous cooling system for viscous dairy products.
- Prototype of improved butter melting system (pipe network type).
- Continuous ghee making machine.
- Continuous butter melter.
- Paneer making gadget.
- Prototype of ohmic milk heating system.
- Rice preconditioning-type kheer making equipment.
- Lab-scale magnetic induction-based milk heating system.
- Improved bioreactor prototype for cattle waste management.
- Hybrid solar system for fermented dairy products.
- Inline milk coagulation cum coagulum pressing unit for paneer manufacturing.
- Chest freezer attachment for small-scale milk cooling applications.

Patents details:

- Unit of Three-Stage Thin Film Scraped Surface Heat Exchanger for Continuous Manufacture of Khoa (Patent No. : 304816; Application No. : 583/DEL/2010; Date of Filing: 12/03/2010 and Date of Grant: 21/12/2018)
- Mechanized conical process vat (Agrawala SP, Sawhney IK and Bikram Kumar. 1987. Mechanized conical process vat. Patent No. 165440.)

Students completed degree:

- 126 M.Tech. (DE) students and 18 PhD (DE) students

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Head	1	0	1
2.	***Professor	0	1	1
3.	**Associate Professor	1	3	1
4.	*Assistant Professor	4	2	6

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/ UGC/ VCI/ other regulatory bodies
1.	Technical	6	-	6
2.	Administrative	1	-	1
3.	Supporting Skilled Staff	1	1	2

6.4.4. Classrooms and Laboratories:**1. Classrooms/Seminar rooms**

S. No.	Classrooms	Numbers	Size(m ²)
1	Ph.D.	1	45

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size(m ²)
1	Design and Drawing Section	1	135
2	Electronic Workshop	1	67.5
3	Instrumentation Lab	1	67.5
4	Thermo dynamics Lab	1	67.5
5	Engineering Properties Lab	1	67.5
6	Process Equipment Lab	1	67.5
7	CAD Lab	1	45
8	Process Engineering Lab	1	45
9	Machine Design Lab	1	45
10	Hydraulics Lab	1	67.5
11	Machine Vision Lab	1	22.5
12	Electrical Engineering Lab	1	112.5
13	Refrigeration Lab	1	67.5
14	Display Lab	1	190
15	Workshops (for DE only)	1	210

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1	Electronic Workshop	Multi-meter, voltmeter, power-meter, soldering machine, thermocouple welding machine	1 each
2	Instrumentation Lab	Pressure, temperature, displacement, thermal conductivity measurement equipment, Shell and tube heat exchanger, PHE, Flow-meter	1 each

3	Thermodynamics Lab	Model of Petrol Engine (Two-Stroke & Four-Stroke); IC injector; Model of Fuel Supply System of Petrol Engine; Model of Ignition System; Locomotive, Babcock & Wilcox; Mascot (Cochran boiler); Lancashire Boiler; Compound Steam Engine; Hand Refractometer; Induction Hot Plate;	1 each
4	Engineering Properties Lab	Hot air oven, Infrared thermometer, Anemometer, refractometer, Magnetic stirrer, Water bath, model of fluidized bed drier, infrared moisture tester	1 each
5	Process Equipment Lab	Viscometer, Water Activity Analyzer	1 each
6	Process Engineering Lab	Hot Air Oven	1 each
8	Machine Design Lab	Viscometer-IKA Lo-Vi with Adaptor	1 each
9	Hydraulics Lab	Venturimeter, Rotameter, Orifice meter, Pump models, Valve models, Flowmeters, Impellers, Workbenches	1 each
10	Machine Vision Lab	Color station, Color Desk	1 each
11	Electrical Engineering Lab	AC Slip-ring Induction Motor 5 HP, Single Phase Transformer (5 KVA – 3; 2 KVA-1), Synchronizing Panel for Alternator, Squirrel Cage Induction Motor-Gen. Set (Motor 7.5 HP; DC Generator 5 KW), AC Slip Ring Ind. Motor with Pony break 7.5 HP	1 each
12	Refrigeration Lab	Refrigeration and A.C. Tutor, Mechanical Heat Pump, Temperature Humidity Cabinet, SS PUF insulated cabinet (Endo-exothermal cabinet for dahi)	1 each
13	Display Lab	Walk-in-Cooler/ Cold Room 2x2x2m with 10 cm PUF insulation with complete refrigeration system, 3 stage SSHE, Conical process vat	1 each
14	Workshops (for DE only)	Lathe Machine (Chamundi & Kirloskar), CNC lathe machine, Drilling Machine, Grinding Machine, Cutter HMT, Sheet Rolling, TIG welding, plate shearing, pico hydraulic press, plate shearing machine, hydraulic hacksaw, hydraulic pipe bending machine	1 each

The above facilities are required for practical, experimentation and research and fabrication requirement of B.Tech., PG. and Ph.D. students.

4. Engineering R&D workshop:

R&D workshop in the Dairy Engineering building provides central facility for fabrication of research prototype equipments. The workshop is amply equipped to

take up fabrication jobs such as sheet metalwork, turning, welding, drilling, grinding, buffing, fitting and black smithy. The technical support in the workshop is competent enough to handle both mild steel and stainless steel fabrication. In addition to providing opportunities to the students of B.Tech. (DT) for practical training in engineering manufacturing processes, the workshop also helps postgraduate and doctorate engineering scholars in devising and fabricating the experimental research setups.

5. Laboratory-cum-Pilot Plant at Business Planning and Development (BPD) Unit:

Pilot plant at BPD has more than 30 equipments for small to medium scale processing of milk products, frozen foods and bakery products. All these equipments are available for research work of postgraduate and doctoral students of dairy processing disciplines.

6. Dairy Plants

(a) Experimental Dairy(ISO-22000-2018certified) Plant

The Experimental Dairy was established at this Institute in 1961 with the objective of providing i) R&D facilities for the development of newer products and processes on semi commercial scale, ii) facilities for practical training to the under-graduate and post-graduate students in Dairy Plant Operations and iii) in- plant training to students from various educational institutions. It is also being utilized for providing training to the entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day. It is divided into different sections that are headed by section in-charge and the dairy itself is headed by the Dairy Superintendent. Equipments are available for manufacturing wide-range of concentrated and dried milk products, cheese and fermented milk products, fat rich dairy products, traditional dairy products and dairy by-products. These facilities also permit manufacture of an impressive range of formulated especially dietary and convenience dairy products.

The most outstanding feature of the Experimental Dairy is the successful implementation of a revolving fund scheme for utilization of the idle processing capacity for generation of revenues. This scheme was started through the support of the Council in form of core Grant of Rs.85 lakhs. This grant amount has since been paid back in full to the Council from the profits generated through the sale of milk and milk products. The success of this scheme later led the ICAR to evolve a broader concept of revolving fund schemes, which are being propagated in other institutes of the Council.

(b) Model Dairy Plant

The state-of-the-art Commercial Dairy Plant with capacity of 60000 litre/ day was established during 1995 at ICAR_NDRI, Karnal through the financial assistance of the World Bank and installed on turn key basis by the National Dairy Development Board.

It serves as an interface between the Institute and industry. The plant has been designed and upgraded now to handle 150,000 litres of milk per day. The plant has sufficient infrastructure for manufacturing various milk and milk products. Model dairy is currently processing/packing 150,000 l/day milk, 0.8MT/ day ghee and 50kg/day Pinni. The main objective of the Model Dairy Plant is to provide infrastructure for in-plant training of the B.Tech (Dairy Technology) students of the NDRI Deemed University and to instil confidence to manage the dairy plant operations independently.

7. Theory and Practical batches

S. No.	Program	Theory batch (No. of students)	Practical batch (No. of students per batch)
1	Ph.D.	1(3)	1(3)

6.4.5. Conduct of Practical and Hands-on-Training: It is important to have a sound grasp of the theory that underlies any professional degree. But there are some skills that can only be learned through hands-on-practice. It is important that much of the learning material in any given course should be provided in a way that allows students to get as involved as possible to increase their knowledge and abilities. The students are provided with desired practical material and hands-on-training are conducted as per the curriculum on various set ups / equipments / instruments etc. in various facilities / laboratories and hence meeting above mentioned requirements.

6.4.6. Supervision of students in PG/PhD Programmes:

S. No.	Programme	No of faculty	No of eligible guide	No of supervised students
1	Ph.D.	6	3	7 (degree completed in 2023) 2 (degree completed in 2024) 3 (degree completed in 2025)

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.): There is no such information (duly supported by the documents) to mention the feedback mechanism.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 2021-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
Ph.D. (DE)	3	4	4	2	3					

*The above data mentioned is for NDRI, Karnal campus only.

6.4.9. ICT Application in Curricula Delivery:

- Various internal examinations like quizzes, midterm exam and assignments are being conducted online for courses offered during current semester
- Faculty members have recently started taking live online classes both theory and practical's as well as selected sessions have been also recorded and published on YouTube for benefit to the students, as mentioned in table given below

1. Video links of lectures shared on YouTube

S. No.	Title	Video Link
1.	Dairy Process Engineering - Aseptic Packaging	https://youtu.be/tP9RMYfyJZM
2.	Properties of packaging material Permeability	https://youtu.be/vee_G1oQwZY
3.	Iterative procedures	https://youtu.be/NgaqvD4A4sA
4.	Temperature control in baking operation: Part 1 type of heating	https://youtu.be/WVA6Rjg75jY
5.	Temperature control in baking operation: Part 2 Oven safety and monitoring	https://youtu.be/kptQXC6tS7s
6.	Temperature control in baking operation: Part 3 Effect of temperature	https://youtu.be/OYTdmSKJZ7g
7.	Temperature control in baking operation: Part 4	https://youtu.be/sb8ZHWWMuGs
8.	Temperature and moisture control in spray drying	https://youtu.be/WtqkAiIRIsU
9.	Viscometer	https://youtu.be/RohFLDypsFc
10.	General points of consideration for designing dairy plant	https://youtu.be/3vtItDvFb0g
11.	Different types of layouts	https://youtu.be/ane93UvdtcU
12.	Single or multilevel design	https://youtu.be/3g3Foqwl72U
13.	Service accommodation and siting of office	https://youtu.be/1NBz8HhLyng
14.	Arrangement of different sections Part 1	https://youtu.be/y88GwmILRAs
15.	Arrangement of different sections Part 2	https://youtu.be/4fAHqfbRSis
16.	Arrangement of different sections Part 3	https://youtu.be/0nUGS8iTKuo
17.	Service pipe-line layout	https://youtu.be/565csxSSuN0
18.	Equipment layout	https://youtu.be/iT-k_j1MNLU
19.	Layout of offices and workshops	https://youtu.be/VCWwTOMeFYE
20.	Workshop	https://youtu.be/nQ3Il_zgfHw
21.	Fermenter Design General consideration Lesson 1	https://youtu.be/0Q8Zosez1dk
22.	Fermenter Design mode of operation Lesson 2	https://youtu.be/pTYVCZKCt8I

23	Fermenter Design criteria Lesson 3	https://youtu.be/dlnI6KXu9yA
24	Fermenter Design Characteristics of different fermenter Lesson 4	https://youtu.be/gM2Ed9amzTw
25	Fermenter Design Process design Lesson 5	https://youtu.be/6Y0ZcSKS418
26	Fermenter Design Mechanical design Lesson 6	https://youtu.be/NWQ7fFRdX9s
27	Fermenter Design scale up and scale down Lesson 7	https://youtu.be/lS-0JCLiUD0
28	Fermenter design Instrumentation and control Lesson 8	In form of power point ppt file
29	Types of bioreactor General classification Lesson 1	https://youtu.be/myP33Fo4uuu
30	Types of bioreactor Stirred tank bioreactor Lesson 2	https://youtu.be/j5tQkF0VNYw
31	Types of bioreactor Stirred tank bioreactor Lesson 3	https://youtu.be/SFnzzyn9NB8
32	Types of bioreactor Bubble column and Airlift reactors Lesson 4	https://youtu.be/HDFYNFWyoO0
33	Types of bioreactor Fluidized bed and packed bed Lesson 5	https://youtu.be/ytFrglfpuW8
34	Types of bioreactor Immobilized cell bioreactor Lesson 6	https://youtu.be/Q9iUHU4i-QY

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of U.G., P.G., and Ph.D. degree programmes separately and to be presented college-wise.

Yes, provided.

6.4.11. The accreditation of programme is related to the All India Admission from ICAR and also having weightage for college accreditation; therefore, the data presented in Section 6.4 is liable to verification at any stage.

Yes, agreed.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean, Dr. Ashish Kumar Singh, hereby certify that the information contained in Sections 6.4.1 to 6.4.9 is furnished as per the records available in the college and the degree-awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Doctoral Program in Dairy Chemistry

6.4. Self Study Report for the Programme: Doctoral Program in Dairy Chemistry

6.4.1. Brief History of the Degree Programme:

The award of Ph.D. in Dairy chemistry by NDRI was started in the year of 1989. Students who join the department with 3 years bachelor degree, the course work is for 2 years and research work is for 1 year. Students who join the department with 4 years bachelor degree, course work is for 1 year and research work is also for 1 year. All admitted students complete their course work at NDRI Karnal. After completion of course work the students complete their research work either at NDRI, Karnal or at SRS NDRI Bangalore.

Objectives:

- To empower students with latest technical knowledge and skills in Dairy Chemistry
- To produce qualified and trained Human resource for various agricultural universities
- To provide qualified and trained manpower for Research and Development

Accomplishments:

- In the last five years, 22 Ph.D. (Dairy Chemistry) students have been placed in diverse professional positions i.e., 8 students selected as Assistant Professors in dairy and agricultural universities, 6 students working in Central/State Government departments (FSSAI, Ministry of Agriculture & Farmers Welfare, State Government laboratories and departments), 3 students employed in private/ industrial and international sectors, while several others are engaged in academic and research institutions.
- During this period, 12 Ph.D. scholars qualified national competitive examinations, including ICAR-NET (12 students), ARS (2 students), and STO (1 student), reflecting strong academic competence and national-level selection success of the programme.
- In the last five years, 6 Ph.D. scholars received Best Poster/Oral Presentation Awards at national and international scientific conferences, highlighting the research quality and scientific contributions of the Dairy Chemistry doctoral programme.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	***Professor	4	0	1#
2.	**Associate Professor	2	0	2
3.	*Assistant Professor	3+2@	7	10+2@

*** Principal scientist cadre (Head), ** Senior Scientist Cadre, * Scientist cadre, #Head, @SRS

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Technical	2	2	4
2.	Administrative	1	0	1
3.	Supporting Skilled Staff	3	1	4

6.4.4. Classrooms and Laboratories:

The division is completely equipped with classrooms and laboratory, for conducting theory and practical classes of students. The theory classes are conducted in seminar room and committee room and practical classes are conducted in UG-PG laboratories and instrument room. The space and necessary equipments along with other necessary facilities are available for smooth functioning of classes. The cut off students in each batch of practical is 20. If any course has more than 20 students, practical classes are conducted in two batches.

1. Classrooms/Seminar rooms

S. No.	Classrooms	Numbers	Size(m ²)
1.	Seminar Room	1	75
2.	Committee Room	1	25

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size(m ²)
1.	UG-PG Laboratory	3	200
2.	Instrument Room	1	125

3. List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Instrument Room	Analytical balance	1
2.		Digital Polarimeter	1
3.		Ultra Sonicator	1
4.		HPLC System	1
5.		Water purification system	1
6.		UV-Vis Spectrophotometer	2
7.		Gas Chromatography	1
8.		Particle Size Analyzer	1
9.		Circulatory water Bath	1
10.		BOD Incubator	2
11.		Centrifuge	1

12.	UG-PG laboratory	Balance	2
13.		pH Meter	2
14.		Spectrophotometer	1
15.		Water bath	2
16.		Muffle furnace	1
17.		Kjeldahl nitrogen analyzer	1

4. Quality Control Laboratory:

A quality control laboratory is attached to the Experimental Dairy and is equipped with all the necessary facilities for routine chemical and microbiological analysis of dairy products. All the dairy products manufactured by the Experimental Dairy are analysed in this laboratory before dispatch to milk parlour for sales. It also provides the analytical support for carrying out analysis of outside samples on consultancy basis and for training of students from other institutions / participants of various training courses conducted by KVK.

5. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1.	PhD (DC)	5	5

6.4.5. Conduct of Practical and Hands-on-Training:

Each course has the active involvement of two teachers to ensure that every student is exposed to the techniques involved in various practical classes. The Dairy Chemistry Division's U.G. and P.G. laboratories, along with the central instrument facility, are equipped with both basic and sophisticated equipment to provide in-depth practical exposure and hands-on training to all students.

All courses offered in the Master's programme in Dairy Chemistry include a practical component that covers the applied understanding of theoretical concepts related to the subject. The division devotes sufficient time to practical classes, and when student enrollment in a particular course is high, practical sessions are conducted in two batches to ensure effective hands-on training.

During practicals, students are taught how to use a wide variety of instruments and are given the flexibility to work either in groups or independently. The laboratories remain open 24 hours a day, seven days a week, including holidays, allowing students to work at their convenience.

6.4.6. Supervision of students in PhD Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students (2021-2026)
1.	8	8	22 (6+5+4+3+4)

Feedback of stakeholders (Students, parents, industries, employers, farmers, etc.): Time-to-time feedback is received from students, parents, industries, employers, etc. Student feedback is obtained through regular meetings with the Head of the Division. Faculty–student interaction is also conducted on a quarterly basis. A WhatsApp group is active between students and faculty for continuous interaction.

6.4.8. Student intake and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (2021–2025)					Attrition (%)				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
PhD (Dairy Chemistry)	6	5	4	3	4	16	0	0	0	0

6.4.9. ICT Application in Curricula Delivery:

A smart classroom equipped with a high definition projector (SONY), latest configured CPU installed inside a smart podium, quality screen, sound output speakers along with provision for UPS and internet connections has been installed in the committee room of Dairy Chemistry division. The ICT tools installed in the division is an ideal solution for audio visual demonstration during delivery of lectures, presentations, speeches etc. It enables teachers and presenters to deliver quality content to the students in the most convenient manner. The ICT system in the division has also helped in teaching many courses during the times of COVID when the classes were run in online mode. In the division, all presentations, other resource materials are made available to students through virtual mode.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 shall be provided for each one of U.G., P.G., and Ph.D. degree programmes separately and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of programme is related to the All India Admission from ICAR and also has weightage for college accreditation; therefore, the data presented in Section 6.4 is liable to verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh, hereby certify that the information contained in Section 6.4.1. to 6.4.9 are furnished as per the records available in the college and degree awarding university.


Signature of Dean of the College with Date and Seal
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 संयुक्त निदेशक (शैक्षणिक) एवं डीन
 Joint Director (Academic) & Dean
 मा. कृ. अनु. प. – राष्ट्रीय डेयरी अनुसंधान संस्थान
 ICAR-National Dairy Research Institute
 करनाल-132001/ KARNAL-132001

Doctoral Degree Programme in Dairy Microbiology

6.4. Self-Study Report for the Programme: Doctoral Degree Programme in Dairy Microbiology

6.4.1. Brief History of the Degree Programme:

The Doctoral Degree Programme in Dairy Microbiology, erstwhile known as Dairy Bacteriology, was first initiated in 1948 at NDRI (then known as the Imperial Institute of Animal Husbandry and Dairying), Bangalore.

Objectives

- To conduct teaching programmes and practical training in Dairy Microbiology at the U.G. and P.G. levels for NDRI Deemed University.
- To serve as a centre of excellence for carrying out basic and applied research in various areas of Dairy Microbiology at both milk production and processing levels.
- To provide technical support and consultancy to the dairy industry in all areas related to the microbiological aspects of milk and milk products, and their value addition through microbial interventions for improving health, nutrition, safety, and quality.

Accomplishments

- Placement of students in milk cooperatives (e.g., AMUL, Verka), regulatory agencies (FSSAI), and various academic and research positions (Assistant Professor, ARS, Senior Technical Officer, etc.).
- Commercialization of several technologies, including paper-based rapid detection systems for mastitis, antibiotics, and pathogens, as well as dairy-based functional starter cultures for industry use.
- More than 10 patents filed and 4 granted in the past five years.
- Publication of numerous research papers in high-impact factor journals.
- NABL accreditation achieved for the National Referral Centre for Milk Quality and Safety.
- Faculty members have visited prestigious foreign universities and research organizations for training and research presentations.
- Execution of international projects in collaboration with ILRI (UK) and national projects with WBUAFS, ICAR-NBFGR, ICAR-IVRI, NIRRCH (Mumbai), etc.
- Three faculty members have been awarded fellowships and one has been elected as an associate of the prestigious National Academy of Agricultural Sciences, India.

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	***Professor	3	0	1(Head)
2.	**Associate Professor	3	0	3
3.	*Assistant Professor	3	4	9+2@

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre, SRS@

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	2	-	2
2.	Administrative	1	-	1
3.	Supporting Skilled Staff	2	-	2

6.4.4. Classrooms and Laboratories:**1. Classrooms/Lecture halls/Seminar Rooms**

S. No.	Class rooms	Numbers	Size(m ²)
1.	Lecture Hall	1	50
2.	Seminar Rooms	1	75

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size(m ²)
1	UG Lab	1	200
2	PG Lab	1	100

*Electron Microscopy Center; National Collection of Dairy Cultures (NCDC) (Demonstration of Freeze dried Culture preparation process)

3. List of Major Equipments

Sr. No.	Name of Laboratories	Name of Equipments	Numbers
1.	PhD/PG Lab	Laminar Air Flow	2
2.	PhD/PG Lab	BOD Incubators	3
3.	PhD/PG Lab	Incubator shaker	1
4.	PhD/PG Lab	Hot Air Oven	1
5.	PhD/PG Lab	Microscopes	4
6.	PhD/PG Lab	Trans-illuminator	1
7.	PhD/PG Lab	Deep Fridge	1
8.	PhD/PG Lab	Refrigerators	2
9.	PhD/PG Lab	Water Bath	1

The equipments are sufficient to meet the course curricula

4. Quality Control Laboratory: A quality control laboratory is attached to the Experimental Dairy and is equipped with all the necessary facilities for routine chemical and microbiological analysis of dairy products. All the dairy products manufactured by the Experimental Dairy are analysed in this laboratory before dispatch to milk parlour for sales. It also provides the analytical support for carrying out analysis of outside samples on consultancy basis and for training of students from other institutions / participants of various training courses conducted by KVK.

5. Small Animal House:

Small animal house built in 400 m² area has housing and feeding facilities for the small animals and provides small animals like rat, mice and rabbits for the experimental purposes

6. Theory and Practical Batches

Sr.No.	Program	Theory batch	Practical batch
1.	Ph.D.(DM)	8	8

6.4.5. Conduct of Practical and Hands-on-Training:

The faculty of Dairy Microbiology Division is involved in imparting practical knowledge as well as hands-on-training on all the practical classes of each course to the students of the degree programme. Each course has active involvement of 2 teachers to ensure that every student is exposed to the intricacies of the techniques involved in various practical classes. The students are taught to handle various instruments and also allowed to work independently on the practical's. The laboratories are open 24 hours as well as on holidays and the students have the liberty to work during their free hours. Demonstration on the use of Electron Microscopy and preparation of Commercial Freeze Dried Cultures are also given to the students.

6.4.6. Supervision of students in PhD Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students
1	11	9	29

2021-22:3;2022-23:7;2023-24:5;2024-25: 5;2025-26: 9

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

Different groups of stakeholders (Students, parents, industries, employers, farmers etc.) on WhatsApp/ E-mail/ in person have been made where all sorts of information are exchanged and feedbacks are received. Regular meeting with the students are also held to receive their feedbacks and sort out any departmental issues.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition(%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
Ph.D. in Dairy Microbiology	4	5	6	6	6	-	1 (20%)		1 (20%)	0

6.4.9. ICT Application in Curricula Delivery:

A smart classroom equipped with a high definition projector, latest configured CPU installed inside a smart podium, quality screen, sound output speakers along with provision for UPS and internet connections has been installed in the classroom of DM division. The ICT tools installed in the division is an ideal solution for audio visual demonstration during delivery of lectures, presentations, speeches etc. It enables teachers and presenters to deliver quality content to the students in the most convenient manner. The ICT system in the division has also helped in teaching many courses during the times of COVID when the classes were run in online mode.

6.4.10. The information per training to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

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संयुक्त निदेशक (शैक्षणिक) एवं डीन
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Doctoral Degree Programme in Agronomy

6.4. Self-Study Report for the Programme: Doctoral Programme in Agronomy

6.4.1 Brief History of the Degree Programme

The doctoral programme in Agronomy was initiated in 2014–15 with the objective of developing skilled scientific human resources in agronomy, particularly in areas related to dairy farming and forage production. Graduates of the programme are currently serving in organizations such as NDDB, State Agricultural Universities (SAUs), Agricultural Research Services (ARS), and as technical experts in dairy and allied industries.

Objectives

- To develop skilled human resources in forage agronomy.
- To develop agro-techniques for enhancing fodder productivity and quality through efficient resource management.
- To disseminate improved forage crop production and management technologies to dairy farmers and extension functionaries.

Accomplishments

Teaching

Each year, 2–3 students complete the doctoral programme. Graduates generally pursue higher studies/post-doctoral research or secure positions in academic, research, and industry organizations.

Research

- Treated sewage water irrigation enabled 20–30% fertilizer savings in berseem and 40–50% in oats without adverse effects on soil health.
- The oats–berseem (2:1) system with 100% RDF + PGPR + seaweed extract sprays improved fodder quality, net returns, and benefit–cost ratio compared with sole crops.
- Oats cv. JHO 851 performed best with 125% RDF and a seed rate of 105 kg ha⁻¹.
- Rice–berseem cropping system proved a viable option for partial diversification of the rice–wheat system.
- Maize–cowpea–wheat cropping system emerged as a promising alternative to the rice–wheat system for meeting green fodder needs.
- Crop diversification enhanced fodder yield, profitability, and soil health sustainability.
- Optimized application of salicylic acid and thiourea helped mitigate salinity and drought stress in the pearl millet–wheat system.

- Moringa cv. PKM-2 produced higher biomass and quality fodder ($\sim 90 \text{ t ha}^{-1}$) at $45 \times 30 \text{ cm}$ spacing.
- Integrated nutrient management using FYM, PGPR, and Panchagavya improved soil organic carbon, nutrient availability, microbial activity, fodder productivity, and economic returns in maize–berseem–cowpea systems.
- Combined use of inorganic and organic potassium sources with PGPR and nano-K spray enhanced fodder yield and quality of Chinese cabbage.
- Integrated nutrient management involving RDNPK, FYM, PGPR, zinc, and organic inputs improved growth, yield, and quality of fodder crops while reducing fertilizer requirements.
- Legume-based cropping systems demonstrated potential to save about 25% chemical fertilizers while maintaining productivity.
- Developed a Napier-based year-round green fodder production system under assured irrigation.
- Standardized plant density, fertility levels, zinc management, and cultivar selection for improved fodder maize productivity and quality.
- Identified suitable dual-purpose barley varieties for different sowing windows and harvesting management.
- Developed improved package of practices for baby corn under varying tillage and nitrogen management.
- Evaluated diversified forage-based cropping systems for higher productivity, profitability, and sustainability under assured irrigation.

Extension

Scientists and students actively participate in outreach activities, including FFP, VKSA, MGMG programmes, training programmes organized by KVK-NDRI, and agricultural exhibitions to promote improved forage production technologies.

6.4.2. Faculty Strength:

Position	Sanctioned Faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
***Professor	0	0	0	ICAR
**Associate Professor	1	2	-1	ICAR
*Assistant Professor	4	4	-1	ICAR

*** Principal scientist cadre, ** Senior Scientist Cadre, * Scientist cadre

*Dr Rakesh Kumar has been transferred, his cadre is Sr. Scientist

** Dr. Anurag Saxena is PS transferred to this institute in 2020-21, His cadre is Scientist

6.4.3 Technical and Supporting staff:

Position	Sanctioned	Staff in place	Vacant position
Technical Staff	1	1	0
Supporting staff	2	2	0

6.4.4. Classrooms and Laboratories:

1. Classroom and seminar rooms

S. No	Facilities	No.	Size(m ²)
1	Class Rooms/seminar	1	50

2. Laboratories

S. No	Name of Laboratories	No.	Size(m ²)
1	Quality and sample processing lab	2	100 m ²

3. List of equipment available in Agronomy Section (FR&MC) (>2 lakh)

Sr. No.	Name	Make and Model	DOP	Price (Rs)
4.	Automatic nitrogen analyzer	Pelican	2019	249097.00
5.	Double beam UV-Vis spectrophotometer	Thermo-Fisher	2022	496999.00
6.	SPAD meter	LiCor	2022	251694.00
7.	Spectrophotometer		2023	674000.00
8.	Atomic Absorption Spectrophotometer	Analytic Jena	2023	2637000.00
9.	Root analysis system		2023	969120.00
10.	Canopy Analyzer		2023	437242.00

4. Forage Research and Management Centre

Laboratories are equipped with equipment viz. Kjeldhal apparatus, Nitrogen analyser, Flame photometer, Ovens, Weighing balances, Muffle furnace, Soxlet apparatus, pH meter, EC meter, Double beam UV-Vis spectrophotometer, SPAD meter, Spectrophotometer, Atomic Absorption Spectrophotometer, Root analysis system, Canopy Analyser, Flame photometer etc

5. Instructional Farm – Agronomy Section (FRMC):

The Agronomy Section instructional farm, covering approximately 10 acres, has been developed to support teaching and research activities for both Master's and Doctoral students. The facility focuses on practical training and research in nutrient management, weed management, conservation agriculture, organic farming, cropping systems, and varietal evaluation.

Facilities include:

- a) **Fodder Crop Cafeteria:** Used for practical training and identification of various annual and perennial forage crops, trees, and shrubs.
- b) **Azolla Unit:** Provides hands-on training in Azolla cultivation and management
- c) **Farm Operations Training:** Offers practical exposure to routine agricultural field operations

6. Theory and practical batches

S. No	Program	Theory batch	Practical batch
1	Ph.D.	15 (students)	15 (students)

6.4.5. Conduct of Practical and Hands-on-Training:

1. Facilities are available for conducting doctoral research in nutrient management, weed management, conservation agriculture, organic farming, cropping systems research, and varietal evaluation of fodder crops.
2. A Fodder Crop Cafeteria is maintained for practical training and identification of annual and perennial forage crops, trees, and shrubs.
3. An Azolla unit is maintained to provide hands-on training in its cultivation and management.
4. The farm regularly conducts the following practical training activities:
 - Identification of major fodder crops, grasses, and weeds, along with practical training in farm operations for raising fodder crops.
 - Canopy measurement and yield estimation; identification of seeds and plants of common grasses, legumes, and economically important trees, particularly in silvipastoral systems.
 - Propagation and planting methods for grasses and trees in silvipastoral systems; fertilizer application in strip and silvipastoral systems; and estimation of protein content in loppings of major fodder trees.
 - Identification of important weeds and weed seeds; preparation of weed herbarium; weed surveys in crops and cropping systems; and crop–weed competition studies.
 - Preparation of herbicide spray solutions for high- and low-volume sprayers; operation of various spray pumps and nozzles; calculation of swath width; and estimation of herbicide requirements.
 - Seed sampling and evaluation of seed quality (purity and germination); rouging, detasseling, inspection, and maintenance of seed production fields of major crops.

- Measurement of soil water potential using tensiometers; preparation of soil-moisture characteristic curves; measurement of water flow using different devices; determination of irrigation requirements; calculation of irrigation efficiency; and estimation of infiltration rate.
- Conducting study tours and field visits for technical exposure at different research institution and innovative farmer's fields.
- Practical related to soil study and irrigation studies are conducted at sister institute ICARCSSRI and IARI.

6.4.6. Supervision of students in Ph.D. Programmes:

S. No	No of faculty	No of eligible guide	No of supervised students
1	6	6	10

6.4.7. Feedback from Stakeholders (Students, Parents, Industry, Employers, Farmers, etc.)

Feedback from stakeholders is obtained through multiple channels to support continuous improvement of the programme:

1. Monthly meetings with students to discuss academic progress, research activities, and concerns.
2. Feedback through digital platforms such as email, social media, and group communication channels.
3. Regular interaction of research guides and the Head of the Section with parents regarding student progress and welfare.
4. Continuous engagement of faculty and the Head of the Section with dairy and agro-based industries to facilitate student placement and obtain industry feedback.

6.4.8. Student intake and attrition in the programme for last five years:

Name of the Degree Programme	Actual student admitted in last five years					Attrition (%)				
	21	22	23	24	25	21	22	23	24	25
Ph.D (Agronomy)	4	4	7	7	6	25	0	0	29	0

6.4.9. ICT Application in Curricula Delivery:

1. Developing teaching materials in PPT and visuals aids.
2. Delivering course curricula through online plate form.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



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Doctoral Degree Programme in Agricultural Economics

6.4. Self-Study Report for the Programme: Doctoral Programme in Agriculture Economics

6.4.1. Brief History of the Degree Programme:

The doctoral programme in Dairy Economics was started in 1972 under the DES&M division, Dairy Science College, NDRI. Since the year 2009, the nomenclature of the degree programme was changed to Ph.D. in Agricultural Economics..

Objective:

- To develop highly skilled manpower in the field of Agricultural Economics to cater to the need of line departments, research and industry.
- To cultivate a dairy and agricultural economics research-oriented outlook in students.
- To inspire and encourage an out-of-the box approach vis-à-vis agricultural economics research among students.

Accomplishments

During the last five years, the students of Doctoral programme have been placed in various research and development organizations of repute. Some are working as Assistant Professors at State Agri. Universities, some cleared ARS and joined ICAR, a few are working at NITI Aayog, international research organization, FCI, and UNDP.

6.4.2 Faculty Strength:

S. No.	Discipline/ designation	Sanctioned faculty	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
Agricultural Economics					ICAR
1.	Professor	-	1	0	1 (Head)
2.	Associate Professor	2	0	2	2
3.	Assistant Professor	6	2	4	6
Agricultural Statistics					
4.	Professor	-	-	-	
5.	Associate Professor	1	0	1	
6.	Assistant Professor	3	2	1	
Computer Application in Agriculture					
7.	Professor	-	-	-	
8.	Associate Professor	-	-	-	
9.	Assistant Professor	2	1	1	

*The Faculty assigned the responsibilities for the multiple programmes need to be clearly marked.

**Clearly mention the deviation in the Faculty position with respect to the recommendations of V Deans' Committee/ VCI/ BSMA/ other regulatory bodies.

6.4.3 Technical and supporting staff for the programme:

S. No.	Technical staff	Sanctioned	In-place
1.	TO	2	1
2.	SSS	2	2
3.	Administrative staff	2	1
4.	Field staff	0	0

6.4.4 Classrooms and labs available for the programme:

1. Classrooms

There are two classrooms (one dedicatedly Ph.D. classroom, and one smart classroom) and one lab. There is 1 theory course and 7 courses with practical. The details of the classrooms and lab are given below:

Particulars	Ph.D. Classroom	Smart Classroom
Dimension in meters	6.42 × 4.26	6.24 × 9.37
Seating capacity (no.)	10	20
Blackboard (no.)	1	1
White board (no.)	-	-
Air conditioner (no.)	1	2
Fan (no.)	2	5
Lectern (no.)	1	-
Smart lectern with projector output and speakers (no.)	-	1
Projector (no.)	-	1
Roll down projector screen (no.)	-	1
1 KVA UPS (no.)	-	1
CCTV Cameras (no.)	-	2

2. Major equipment in lab

The dimensions of **lab** are **6.23 m × 9.37 m**. Major equipments in the lab are given below:

Sr. No.	Equipment	No.
1.	Desktop computers with MS with MS Office and statistical and econometric software like SAS, SPSS, STATA, and E-views, etc., and internet connectivity	10
2.	Projector	1
3.	Roll down projector screen	1
4.	White board	1
5.	Air conditioner	2
6.	Fan	6

7.	Printer	1
8.	Photocopier	1
9.	Scanner	1
10.	5 KVA UPS	1
11.	Lectern/podium	1

3. Computer Centre

There is a well-established Computer Laboratory for students' learning, which is equipped with 64-bit i5 computer systems, together with multi-function laser printers. Besides this, the data processing unit of the Centre is equipped with a Line Matrix Printer. The computer systems are equipped with different software, such as operating systems Unix/Linux, MS-Windows; and licensed software (STATA) and open source statistical software. MS Office suite has also been installed in the PC Lab and it is used for teaching and research purposes.

4. Students' Cell

For research work, students have a **Students' Cell** with wi-fi internet connection and one wired internet connectivity in the division. The details of the students' cell are given below:

Sr. No.	Particulars	No.
1.	Seating capacity	16
2.	Air conditioners	2
3.	Fan	3
4.	Desktop computers	2
5.	Printer with scanner	2
6.	Water purifier	1
7.	Electric kettle	1
8.	Induction stove	1
9.	Landline telephone with intercom	1

6.4.5. Practical and hands-on training given to students as per curriculum:

S. No.	Course	Aspects/skills covered in hands-on and practical training
1.	AEC-601: Advanced Microeconomic Analysis	Problems in consumer utility maximization; estimation of income & substitution effects; estimation of demand models; problem-solving in price determination
2.	AEC-603: Advanced Econometrics	Multiple regression analysis; Logit, Probit and Tobit; Chow test; Walds test; test for heteroskedasticity and robust standard error in STATA

3.	AEC-606: Advanced Agricultural Marketing and Price Analysis	The students are trained to use econometric software such as STATA to address marketing-oriented research questions. Hands-on training imparted on the estimation of demand/ supply, supply chain and value chain analysis, supply-response models, and time series analysis <i>viz.</i> , price integration, price discovery, price volatility estimation (ARCH and GARCH models), commodity price forecasting including ARIMA, and price index computation including seasonal price index construction.
4.	AEC-605: Operations Research	Various optimization techniques (advanced concepts/ deviations/computations) with specific application in dairy research/animal sciences
5.	AEC-604: Advanced Production Economics	Estimation of different forms of production functions; optimal input and product choice from estimated functions; estimation of cost functions; estimation of factor shares from empirical functions estimated; Decomposition analysis and incorporation of technology; Stochastic, probabilistic & deterministic frontier production functions; Goal programming
6.	AEC-607: Quantitative Development Policy Analysis	Estimation of price elasticities and Nerlovian supply Response model; Specification and estimation of household models and multi-market model (Partial equilibrium analysis); IO tables, Construction of a SAM and exposure of Computable General Equilibrium Models.
7.	STAT-522: Data Analysis using Statistical Packages	Use of software packages for summarization and tabulation of data, obtaining descriptive statistics, graphical representation of data; Testing the hypothesis for one sample t-test, two sample t-test, paired t-test, test for large samples - Chi-squares test, F test, one-way analysis of variance; Designs for Factorial Experiments, fixed effect models, random effect models, mixed effect models, estimation of variance components; Linear regression, Multiple regression, Regression plots; Discriminant analysis - fitting of discriminant functions, identification of important variables; Factor analysis. Principal component analysis - obtaining principal component

6.4.6 No. of students being supervised:

No. of faculty	No. of qualified faculty	No. of students being supervised
6	5	17 (4 students of 1 st year; 13 students of 2 nd year or higher)

6.4.7. Feedback mechanism: DES&M division's Facebook page; DES&M division's Whatsapp group; time-to-time meetings with students and classroom feedback

6.4.8 Student intake and attrition:

Actual students admitted (no.)					*Attrition percentage (%)				
21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
5	5	6	6	7	0	20	0	16	42

*Attrition percentage

6.4.9 ICT applications in curricula delivery:

Sr. No.	ICT tool	Application
1.	Smart classroom with computer installed in lectern and projector output for Power point presentation	Teaching
2.	Office desktops equipped with internet and multimedia, and virtual meeting platforms like Google meet	Online classes when regular classrooms were suspended during pandemic
3.	SAS, along with SPSS, and STATA Statistical software, and e-views econometric software	Practical application of statistical and econometric techniques in agricultural research
4.	Divisional and course-specific Whatsapp groups	Information sharing/updates/intimation

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided for each one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

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6.4.12. Certificate (Applicable when SSR is submitted for Programme)

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करनाल-132001/ KARNAL-132001

Doctoral Degree Programme in Agricultural Extension

6.4. Self Study Report for the Programme: Doctoral Program in Agricultural Extension

6.4.1. Brief History of the Degree Programme:

The Division of Dairy Extension at the National Dairy Research Institute (NDRI) came into existence in May 1961. Postgraduate degree programme was started in 1972 and the nomenclature was Ph.D. in Dairy Extension. Later, NDRI started awarding its Ph.D. degree as Ph.D Dairying (Dairy Extension). Since 2010 the nomenclature has been renamed as Ph.D. (Veterinary Extension Education) for all those having under Graduate degree in BVSc & AH, and MSc (Agricultural Extension Education) for those with B.Sc (Ag) and B.Sc (Dairy Husbandry). Initially 04 students were enrolled every year and subsequently student's strength was increased upto 10 and 12 in 2008 and 2018 respectively.

Objectives:

- To provide an opportunity for the students for acquiring knowledge and skill in organizing field extension activities.
- To meet the man power requirement of extension personnel in animal husbandry and dairy sector.
- To provide strong scientific background to the students for higher academic research and development institutions.
- To make them competent in providing efficient leadership in the field of animal husbandry and dairy development.

Accomplishments:

- During the last five-year (2021-22 to 2025-26) total 52 students were admitted and later one student left their Ph.D. degree programme and remaining 51 students successfully completed their Ph.D. degree.
- All the Ph.D. degree holder from NDRI selected/joined the government service (Scientist=14, Assistant professor=13 and remaining in other government services)

6.4.2. Faculty Strength:

S. No.	Sanctioned Faculty Positions	Faculty in place	Vacant position	Faculty recommended by the ICAR/UGC/VCI/other regulatory bodies
	Head	1	0	01
1.	***Professor	01	1	01
2.	**Associate Professor	02	0	02
3.	*Assistant Professor	01	06	07

***Principal scientist cadre, **Senior Scientist Cadre, *Scientist cadre

6.4.3. Technical and Supporting staff:

S. No.	Sanctioned Posts	Staff in place	Vacant position	Staff positions recommended by the ICAR/UGC/VCI/other regulatory bodies
1.	Technical	00	-	ICAR
2.	Administrative	01	-	ICAR
3.	Supporting Skilled Staff	01	-	ICAR

6.4.4. Classrooms and Laboratories:**1. Classrooms/Seminar rooms**

S. No.	Classrooms	Numbers	Size (m ²)
1.	Smart Class Room	01	45.81
2.	Seminar Room	01	66.89
3.	Class Room	01	40.87

2. Laboratories

S. No.	Name of Laboratories	Numbers	Size (m ²)
1	Photo Lab	01	60
2	Audio Lab	01	20
3	Audio Visual	01	20
4	Visual Display (Exhibition)	01	200
5	Multi Media Lab	01	20
6	Field Farm Technician Lab	05	100
7	Library	01	40.87
8	Socio-climatology Lab	01	37.16

List of major equipments

S. No.	Name of Laboratories	Name of Equipments	Numbers
1.	Photo Lab	Camera (Digital, DSLR)	03
2.	Audio Lab	Audio Recording system	02
		Audio Mixture	02
		PAS systems	04
3.	Audio Visual Lab	Video camera	02
		Video Display System	04
		Audio-Visual mixing System	01
4.	Multi Media Lab	Computers with Multi Media software	02
		PAS	01
		Portable Camera	02
5.	Visual Display (Exhibition)	Computers	02
		Digital display panel	04
		Display panel	32

6.	Field Farm Technician Lab	Well-equipped AI&PD and veterinary First Aid treatment	05
7.	Library	Digital display unit(database)	01
8.	Socio-climatology Lab	Thermal imaging camera	02
		Arc GIS License	01
		Computers	03

Justify if it is sufficient to meet the course curricula requirement:

The division of dairy extension have sufficient laboratory and associated equipment facilities for conducting theory and practical classes to meet the course curricula requirement of the discipline

4. The details of the students' cell are given below:

Sr. No.	Particulars	No.
1.	Seating capacity	16
2.	Air conditioners	2
3.	Fan	3
4.	Desktop computers	2
5.	Printer with scanner	2
6.	Water purifier	1
7.	Electric kettle	1
8.	Induction stove	1
9.	Landline telephone with intercom	1

5. Theory and Practical batches

S. No.	Program	Theory batch	Practical batch
1	Ph.D.	12	12

6.4.5. Conduct of Practical and Hands-on-Training:

The students are being exposed about SOPs of each equipment and they are trained to organize extension activities at various levels. Practical classes are conducted at laboratories and in adopted villages to gain the hand on experience in rural setting. The students are also trained in making poster and banners for organizing different educational activities. The facilities of audio-Visual lab are being exposed to all the students of all the disciplines regarding utilization of advanced ICT tools in teaching and research.

6.4.6. Supervision of students in PG/PhD Programmes:

S. No.	No of faculty	No of eligible guide	No of supervised students
1.	09	08	51
2021-22=10 2022-2023=10,2023-24=11,2024-25=10, 2025-2026=10			

Feedback of stakeholders (Students, parents, industries, employers, farmers etc.):

Feedback from students in any form including in meetings etc need to be mentioned briefly Students: Regular meeting among the faculty and student are being arranged to discuss the different academic and non-academic issues and resolved amicably.

Farmers: Regular field visits and kisan goshies are being arranged at institute as well as village level to discuss the various institutional extension activities.

6.4.8. Student in take and attrition in the programme for the last five years:

Name of the Degree Programme	Actual student admitted in last five years (From session 21-22 to 2025-26)					Attrition (%)				
	21-22	22-23	23-24	24-25	25-26	21-22	22-23	23-24	24-25	25-26
Ph.D.	10	11	11	10	10	0.00	9.09	0.00	0.00	0.00

6.4.9. ICT Application in Curricula Delivery:

The classroom, seminar room and laboratories are well equipped with advanced ICT tools like Interactive digital display board, touch screen lectern, multimedia projectors, adjustable projection screen, and public addressing systems. Multimedia educational modules are also being used for classroom teaching. Web-enabled interactive information delivery system, you tube channels, social media platform, SMS messaging portal for enhancing the students' knowledge in field of dairy and animal husbandry.

6.4.10. The information pertaining to 6.4.1. to 6.4.9. shall be provided to reach one of U.G., P.G. and Ph.D. Degree Programmes, separately, and to be presented college-wise.

Yes, provided

6.4.11. The accreditation of Programme is related to the All India Admission from ICAR and also having weightage for college accreditation, therefore the data presented in the section 6.4. is liable to the verification at any stage.

Yes, agreed

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean Dr. Ashish Kumar Singh hereby certify that the information contained in the Section 6.4.1. to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Signature of Dean of the College with Date and Seal

डॉ. अशीष कुमार सिंह / Dr. Ashish Kumar Singh
संयुक्त निदेशक (शैक्षणिक) एवं डीन
Joint Director (Academic) & Dean
भा.कृ.अनु.प.-राष्ट्रीय डेयरी अनुसंधान संस्थान
ICAR-National Dairy Research Institute
करनाल-132001/ KARNAL-132001

Self-Study Report of the College (PORTION – II)

6.5.1.1. College Dean's Office Establishment:

- The post of Joint Director (Academic) & Dean is sanctioned as per the ICAR Model Act.
- Date of selection of the incumbent Joint Director(Academic): 17.11.2022
- Mode of selection: Open merit by Agricultural Scientists' Recruitment Board (ASRB), New Delhi, Govt. of India.
- Tenure of post: 5years

Staff:

- The office of Dean is supported by
 - Academic Coordinator
 - Controller of examination
- Academic coordinator (Principal Scientist level officer): 01
- Controller of Examinations (Principal Scientist level officer): 01
- Private Secretary to Dean: 01
- Technical Officer: 01
- Administrative Staff: 06
- Supporting Staff: 03

List of Equipments: Well-equipped office with computers and Internet facilities, printing machines, Scanner, Photocopier, UPS, Safe locker/strong room

Table1: List of equipments in the Dean's establishment

S. No	Items	Quantity
1	Cabinet Steel (Filing-2 Drawers).	11
2	Almirah Godrej Steel (Small)	18
3	Book Case /Foot Door Book Case	02
4	Black Board(Small)	01
5	Chair Godrej	01
6	Cabinet(Filing)-4drawers	13
7	WallI stand teakwood with looking glasses	01
8	Trays(Paper)-(Wood/Steel)	16
9	Rack(Footrest)-Wooden	04
10	Stool creak Wood/Steel Square top /Revolving	02
11	Table for Officers	03
12	Table(PC)	02
13	Soft Board	01

14	Flower Vase	03
15	Tea Kettle (Aluminium / Steel)	02
16	Wall Clocks	05
17	Heat Convector	03
18	Door Closer	03.
19	Refrigerator	01
20	Fan(Pedestal)	08
21	Voltage Stabilizer	10
22	Almirah Glass/Shuttered	01
23	Heater Electric(Room)	05
24	Table Typist	01
25	Table Book Displayer	01
26	Table Center	02
27	Table with steel legs	01
28	Presto sign Board	05
29	Fan Ceiling	01
30	Heater Electric/Hotplate	01
31	Notice Display Board48"x32"	04
32	Locks (Big)	04
33	Locks (Small)	02
34	UPS 1400V.A/IK.V.A	03
35	UPS	04
36	Color Printer-HP-4650.	01
37	Printers	13
38	Paper Shredder	01
39	Visitor Chair	04
40	Sharer (Data)	01
41	Aqua guard RO+UV	01
42	Master Origination "NDRI" Holograms	01
43	Table Lamp	01
44	Soni LCD Projector CX-120	01
45	Document Scanner	02
46	Printer Canon(IP-4760) (for DVD)	03
47	Writing Board Ceramic White	01
48	Soni VIO Note Book	01
49	Chairs (for committee Room)	34
50	Conference Table (for Committee Room)	01
51	Xerox Machine(Ricoh)	02
52	UPS 1 KVA online	01

53	Murphy Richd Oil filled Radiator Heater	01
54	Chair(Revolving)	32
55	Biometric Machine	02
56	Hot Case	01
57	Almirah Godrej(Big)/Wooden	14
58	Lenovo Laptop	01
59	Computer	07
60	Electric kettle	01
61	Air Conditioner	07
62	Executive Chair	03
63	Office chair	08
64	Revolving Chair	01
65	Interactive Panel	01
66	Amplify fire	01
67	Chairman MIC	07
68	Speaker	01
69	LED Display Panel	16
70	Desktop Computer	03
71	Table	03
72	Conference Amplifier (1)	01
	Delegate unit CMD (12 nos.)	12
	Wall mount Speaker (4Nos.)	04
	Chairman Unit CMC (1)	01
	Conference Connecting Wire (5Nos.)	05
	Installed in committee Room	
73	Sofa	01

6.5.1.2 Monitoring Mechanism for Quality Education (On-line)

Internal Quality Assurance Cell (IQAC) was created with an aim to meet the diverse needs of the students and the faculty so as to help the institute in planning, guiding and monitoring of quality assurance and quality enhancement activities.

Strategies

- Ensuring timely, efficient and progressive performance of academic, administrative and financial tasks
- The relevance and quality of academic and research programs
- Equitable access to and affordability of academic programs for various sections of the society
- Optimization and integration of modern ICT for teaching and learning

- The credibility of evaluation procedures
- Ensuring the adequacy, maintenance and functioning of the support structure and services Research sharing and networking with other institutions in India and abroad.

Functions

- Establishment and application of quality benchmarks/parameters
- Dissemination of information on various quality parameters of higher education
- Implementation and Monitoring of various policies and guidelines in the university
- Conducting capacity building programmes for faculty members and administrative staff
- Documentation of the various programmes & initiatives leading to quality enhancement
- Periodic conduct of academic and administrative audit and follow-up thereon
- Acts as a nodal agency for various accreditations & rankings
- Preparation and submission of the Annual Quality Assurance Report as per the guidelines of NAAC

Objectives

- To ensure conscious, consistent and catalytic improvements in overall functioning of the University
- To create awareness about quality parameters with reference to National and International guidelines
- To implement quality policies to promote standardization of the processes
- To ensure timely, efficient and sustained delivery of academic and administrative responsibilities
- To develop a sense of accountability and ownership with respect to quality culture

Table 2: Composition of the IQAC

1.	Chairperson: Head of the Institution	Dr. Dheer Singh. Director & Vice Chancellor, ICAR-National Dairy Research Institute
2.	A few senior Administrative officers	Joint Director (Academic) Joint Director (Administration) & Registrar Comptroller Controller of Examination

3.	Three to eight teachers:	Dr. Suneel Onteru, PS ABC Division Dr. Shilpa Vij. Head, DM Division Dr. A. K. Mishra, PS, LPM Division Dr. Sumit Arora, PS, DC Division Dr. P. N. Raju, Senior Scientist, DT Dr. B. S. Meena, PS, Dairy Extension Dr. Naresh Selokar, Scientist (SS), ABT Division Dr. Richa Singh, Scientist, DC Division
4.	One Member from the Management:	Joint Director (Research)
5.	One / Two nominees from local Society	President, Student Union Council of ICAR-NDRI, Karnal Ph. D. Topper Student
6.	One/ Two nominees from Employers/Industrialists/ Stakeholders	Dr. Deepak Maun, Associate Professor, OP Jindal Global University, Sonipat Sh. R.P. Singh, Managing Director, Food & Biotech. Engg. Pvt. Ltd. Faridabad Mr. Manish Goyal, General Manager Mother Dairy, NewDelhi
7.	One of the senior teachers as the Coordinator of the IQAC	Dr. Anjali Aggarwal, PS & Academic Coordinator

6.5.1.3. Course Curriculum (CC) / Board of Studies:

The institute has Board of studies, standing committee on academics, and academic council in place to regulate academic affairs.

(a) Board of Studies:

Every specific discipline has a Divisional Board of Studies (DBOS). There are 14 disciplines in the University, and therefore, there are 14 Boards of Studies. The Board of Studies has the responsibility of reviewing the instructional programme of the discipline concerned in respect of each semester, preparing recommendations for revision, addition or deletion of courses, organizing the teaching courses in each semester considering all matters relating to improvement and conduct of post-graduate instructions and research in the discipline. It also discusses all academic matters of the discipline before they are sent to the Joint Director (Academic). The executive responsibility for implementation is that of the Head of the Division concerned.

The Divisional Board of Studies meets as often as necessary but at least once at the end of each semester to review progress of students, conduct of courses in the previous semester and other academic matters.

(b) Standing Committees:

The Academic Council is empowered to constitute various Standing Committees or other ad-hoc committees from time to time for examining issues relating to education and training. The Standing Committees consist of the faculty members drawn from all the disciplines/groups so as to consider the various academic issues.

(c) Standing Committee on Courses, Curricula and Academic**Functions:**

- Review of academic standards including syllabi, examinations etc.
- Matters regarding admissions to Ph.D., M.V.Sc. /M.Tech / M.Sc., B.Tech and Diploma courses.
- Matters relating to examinations, evaluation, teaching technique etc.
- Criteria for formulation of new courses for the approval of the Academic Council.
- Academic work load of Faculty Members.
- Matters regarding major fields of specialization and subjects in which a degree may be awarded.
- Rules regarding the award of degrees, medals etc.
- Standing Committee on Faculty, Student's Problems and Discipline

Functions:

- Formulation of guidelines regarding admission of faculty members, their duties, obligations and other related faculty matters.
- Guidelines regarding the composition and functions of the Board of Studies and Faculty in each discipline.
- To deal with representations from individual faculty members regarding allotment of students, constitution of advisory committee, teaching of courses, representation in Board of Studies, grant of laboratory and other facilities.
- Formulation of terms and conditions for the award of various scholarships and fellowships.
- Award of various scholarships-both with in and from outside the NDRI.
- Procedure for assistance from Student's Welfare Fund.
- Cases related to Students' Disciplines
- Standing Committee on Student's Welfare and Residence:

Functions:-

- Review of amenities in the hostels including food services.
- Organization of co-curricular and extra curricular activities.
- Rules regarding hostels including guests, overstay etc.
- Placement of students for employment.
- Medical attendance.
- Standing Committee on Inter-Disciplinary Facilities and Instructions Functions
- Coordination of teaching with the concerned Divisions in respect of the multi-disciplinary units.
- Allotment of students and organization of course relating to the multi-disciplinary units in the parent discipline.
- Use of facilities available in the multi-disciplinary units.
- Representations from students regarding the constitution of Advisory Committees, dropping/ adding of courses, relief from N.D.R.I., maximum period of absence on leave, striking off names from the rolls etc.
- Use of Institute facilities in terms of equipment, chemicals etc. by students.
- Standing Committee on Scholarships, Financial Assistance and Academic Progress Functions
- Procedure for reviewing the academic progress of students.
- Individual cases of students regarding extension of time limit for submission of thesis and also cases of poor academic progress.

Table 3: Details of Meeting of the Academic Council and Standing Committees

Sr. No.	Committee	Dates when meeting convened				
		2021-22	2022-23	2023-24	2024-25	2025-26
	Academic Council	06-04-2021	28-03-2022	06-01-2023 22-04-2023	13-03-2024	21-04-2025
	D- Board of Studies	01-01-2021 04-01-2021 18-01-2021 21-01-2021 22-01-2021 27-01-2021 02-02-2021	03-02-2022 07-02-2022 08-02-2022 10-02-2022 11-02-2022 18-02-2022 22-02-2022	27-01-2023 30-01-2023 31-01-2023 01-02-2023 07-02-2023 09-02-2023 10-02-2023	01-01-2024 03-01-2024 17-01-2024 08-02-2024 12-02-2024 14-02-2024 20-02-2024	07-01-2025 08-01-2025 17-01-2025 21-01-2025 07-02-2025 12-02-2025 18-02-2025

		08-02-2021	28-02-2022	14-02-2023	05-03-2024	03-03-2025
		10-02-2021	03-03-2022	15-02-2023	12-03-2024	05-03-2025
		12-02-2021	07-03-2022	21-02-2023	19-03-2024	25-03-2025
		16-02-2021	08-03-2022	22-02-2023	28-03-2024	28-03-2025
		20-02-2021	09-03-2022	01-03-2023	02-04-2024	02-04-2025
		26-02-2021	11-03-2022	02-03-2023	04-04-2024	03-04-2025
		27-02-2021	14-03-2022	03-03-2023	16-04-2024	15-04-2025
		08-03-2021	15-03-2022	07-03-2023	19-04-2024	17-04-2025
		16-03-2021	19-03-2022	09-03-2023	06-05-2024	24-04-2025
		01-04-2021	24-03-2022	17-03-2023	07-05-2024	25-04-2025
		15-04-2021	28-03-2022	23-03-2023	08-05-2024	01-05-2025
		17-04-2021	18-04-2022	28-03-2023	20-05-2024	03-05-2025
		17-05-2021	21-04-2022	03-04-2023	22-05-2024	04-05-2025
		22-05-2021	12-05-2022	05-04-2023	31-05-2024	06-05-2025
		27-05-2021	18-05-2022	06-04-2023	07-06-2024	07-05-2025
		02-06-2021	02-06-2022	13-04-2023	11-06-2024	09-05-2025
		09-06-2021	07-06-2022	26-04-2023	21-06-2024	16-05-2025
		14-06-2021	22-06-2022	28-04-2023	25-06-2024	22-05-2025
		26-06-2021	23-06-2022	12-05-2023	26-06-2024	06-06-2025
		29-06-2021	30-06-2022	16-05-2023	04-07-2024	17-06-2025
		28-07-2021	02-07-2022	26-05-2023	05-07-2024	18-06-2025
		10-08-2021	05-07-2022	30-05-2023	08-07-2024	30-06-2025
		11-08-2021	07-07-2022	01-06-2023	15-07-2024	01-07-2025
		19-08-2021	26-07-2022	05-06-2023	22-07-2024	18-07-2025
		21-08-2021	01-08-2022	06-06-2023	25-07-2024	23-07-2025
		02-09-2021	05-08-2022	15-06-2023	31-07-2024	29-07-2025
		29-09-2021	16-08-2022	16-06-2023	02-08-2024	30-07-2025
		30-09-2021	20-08-2022	20-06-2023	05-08-2024	05-08-2025
		11-10-2021	30-08-2022	13-07-2023	20-08-2024	12-08-2025
		23-10-2021	31-08-2022	19-07-2023	21-08-2024	09-09-2025
		01-11-2021	08-09-2022	26-07-2023	23-08-2024	10-09-2025
		11-11-2021	22-09-2022	28-07-2023	12-09-2024	17-09-2025
		09-12-2021	12-10-2022	01-08-2023	13-09-2024	23-09-2025
		27-12-2021	19-10-2022	09-08-2023	14-09-2024	21-10-2025
		30-12-2021	21-11-2022	11-08-2023	19-09-2024	
			15-12-2022	18-08-2023	08-10-2024	
			16-12-2022	22-08-2023	10-10-2024	
			18-12-2022	08-09-2023	14-10-2024	
			19-12-2022	09-10-2023	17-10-2024	
				17-10-2023	24-10-2024	

				18-10-2023 20-10-2023 03-11-2023 07-11-2023 09-11-2023 14-11-2023 16-11-2023 28-11-2023 01-12-2023 07-12-2023 08-12-2023 11-12-2023 12-12-2023 15-12-2023 18-12-2023 19-12-2023	25-10-2024 01-11-2024 25-11-2024 26-11-2024 29-11-2024 16-12-2024 24-12-2024 27-12-2024	
3	Standing Committee on Courses, Curricula and Academic Affairs Functions	17-03-2021	17-03-2022 14-12-2022	02-01-2023	05-06-2024 (99) 25-06-2024 (100) 17-10-2024 (101) 03-12-2024 (103)	21-03-2025 (104) 11-04-2025 (105) 04-07-2025 (106) 17-07-2025 (107) 29-07-2025 (108) 04-08-2025 (109) 17-10-2025 01-01-2026 05-02-2026
4	Standing Committee on Faculty, Student's Problems and Discipline Functions	20-03-2021	15-03-2022 22-06-2022 23-09-2022	15-01-2023 (89) 07-08-2023 (88)	15-01-2024 (89) 08-02-2024 (90) 24-06-2024 (91) 24-10-2024 (92) 30-12-2024 (93)	28-01-2025 (94) 30-04-2025 (95) 07-07-2025 (96) 16-07-2025 08-09-2025 15-09-2025 16-10-2025

5	Standing Committee on Student's Welfare and Residence: Functions	-	-	-	-	12-08-2025
6	Standing Committee on Inter-Disciplinary Facilities and Instructions Functions	-	-	-	-	-
7	Standing Committee on Scholarships, Financial Assistance and Academic Progress Functions	26-07-2021	19-03-2022	-	12-06-2024 (43)	16-07-2025 (44) 24-09-2025

Table 4: Details of the Academic Council meeting held

Name of the meeting (Academic Council)	Date
50 th	06.04.2021
51 th	28.03.2022
52 th	06.01.2023
53 rd	22.04.2023
54 th	13.03.2024
55 th	21.04.2025
56 th	19.03.2026

Table 4a: Recommendations of the Academic council and Action a Taken Report 50th meeting of Academic Council held on 06.04.2021

Agenda item no.	Agenda	Action taken
50.1	Confirmation of the proceedings of 49th meeting of Academic Council of NDRI held on 22.08.2020	Confirmed
50.2	Review of action taken on recommendations of the 49th meeting of the Academic Council held on 22.08.2020	Noted

50.3	Reconsideration of decision of the 47th meeting of the Academic Council held on 23.11.2019 regarding seats for candidates of NER states for admission to B.Tech. (DT) programme.	Decisions adopted/implemented
50.4	Consideration and approval of the recommendations made in the 92nd meeting of Standing Committee on Courses Curricula and Academic Affairs held on 17.03.2021.	
50.4.1	To consider the No. of seats for 2021-22 session for admission to various academic programmes at NDRI, Karnal.	
50.4.2	To consider the eligibility qualifications for 2021-22 session for admission to Master's degree programme.	
50.4.3	To consider the amendment in the existing rule 10.2 of Academic Rules & Regulations for B.Tech.(DT) students regarding academic probation	
50.4.4	To consider the amendment in the existing requirement of completion of comprehensive examination six months before the submission of thesis by Master's students	
50.4.5	To consider the discontinuance of M.Tech (Food Tech.) programme	
50.4.6	To consider the inclusion of faculty as member of Advisory Committee of Ph.D. students from outside the Institute.	
50.5	Consideration and approval of the recommendations made in the 78th & 79th meeting of Standing Committee on Faculty, Students Problem and Discipline held on 04.09.2020 and 20.03.2021& 30.3.2021 respectively.	
50.5.1	To consider the induction of Scientists to the PG Faculty.	
50.6	To celebrate Academic month from 22.03.2021 to 17.04.2021.	Celebrated
50.7	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Awarded during Convocation
50.8	To consider conferment of "Best Division Award"	
50.9	To consider the Best Thesis Award for Master's and Doctoral degree students	
50.10	To consider the Best Teacher Award for excellence in teaching	
50.11	To consider the conferment of Dr. S.K. Sirohi Memorial Outstanding Young Researcher Award for the year 2018.	
50.12	To consider the award of Degree without the convocation to students	
50.13	To approve the award of bachelor degree, master's degree and doctoral degree to the successful students and award of gold/ silver/bronze medals/ merit certificates/dean's honor award to eligible students for the year 2018-19 & 2019-20	

51th meeting of Academic Council held on 28.03.2022

Agenda item no.	Agenda	Action taken
51.3	Confirmation of the proceedings of 50 th meeting of Academic Council of NDRI held on 06.04.2021	Confirmed
51.3.1	Review of action taken on recommendations of the 50 th meeting of the Academic Council held on 06.04.2021	Noted
51.3	Consideration and approval of the recommendations made in the 93 RD meeting of Standing Committee on Courses Curricula and Academic Affairs held on 17.03.2022	Decisions Adopted / implemented
51.3.1	To consider the adoption of revised PG Syllabus as recommended by BSMA 2021.	
51.3.2.	Academic Year and Registration	
51.3.3	Credit requirements	
51.3.3.1	Framework of the courses	
51.3.3.2	Supporting courses	
51.3.3.3	Common Courses for PG Programme	
51.3.3.4	Mandatory Requirement of seminars	
51.3.4	Residential requirements	
51.3.5	Evaluation of course work and comprehensive examination	
51.3.6	Advisory System	Celebrated Decisions adopted/implemented
51.3.6.1	Advisory Committee	
51.3.7	Evaluation of research work	
51.3.7.1	Prevention of plagiarism	
51.3.8	Learning through online courses	
51.3.9	Internship during Masters programme	
51.3.10	Teaching assistantship	
51.3.11	Registration of project personnel (SRF/RA) for PhD	
51.3.12	Compliance with the National Education Policy-2020	
51.3.13	Definitions of academic terms	
51.4	To consider the No. of seats for 2022-23 session for admission to various academic programmes at ICAR-NDRI, Karnal	
51.5	To consider the amendment in clause 15.1.2 "Mode of allocation of M.Sc. students".	
51.6	To consider the discontinuance of Ph.D./M.Tech. (FSQA) programme	
51.7	To frame separate guidelines for inclusion of faculty of other ICAR Institutes in the Advisory Committee of a student(s).	
51.8	Consideration and approval of the recommendations made in the 81 st meeting of Standing Committee on Faculty, Students Problem and Discipline held on 15.03.2022	

51.8.1	To consider the induction of Scientists to the PG Faculty.	
51.9	Consideration and approval of the recommendations made in the meeting of Standing Committee on Scholarship, Financial Assistance and Academic Progress held on 19.03.2022	
51.9.1	To consider the expansion of Heads of Expenditure and limit of expenditure under Contingency Grant for each Head for Ph.D. scholars admitted from 2021-22 session to bring at par with the students admitted upto 2020-21 and getting Institute Scholarship	
51.10	To ratify the decisions of the competent authority	
51.10.1	Grant of Institute Scholarship	
51.10.2	Conducting Spot round counseling	

52th meeting of Academic Council held on 06.01.2023

Agenda item no.	Agenda	Action taken
52.1	Confirmation of the proceedings of 51 st meeting of academic council of ICAR-NDRI, Karnal held on 28.3.2022.	Confirmed
52.2	Review of the action taken on recommendation of the 51 st meeting of the Academic Council held on 28.03.2022	Noted
52.3	Consideration and approval of the recommendations made in the 94 th , 95 th and 96 th meeting of standing committee on courses curricula and academic affairs held on 14.12.2022 and 19.12.2022 and 02.01.2023	Decisions adopted/implemented
52.3.1	To consider the proposal for accreditation of Master's and Ph. D. Programme offered by ICAR-NDRI (Deemed University)	
52.3.2	To consider the revision of existing Fee structure	
52.3.3.	To consider the initiation of Certificate Courses as per National Education Policy-2020	
52.3.4.	Commencement of Academic Session (2022-23) for Newly Admitted Students	
52.3.5	To consider the amendment in Sub clause 1.3.2. Of Academic Rules and Regulations on Rectification of Results	
52.3.6.	Resolved to approve the amendment in sub clause 9.10(b) of B. Tech. (DT), 11.10(b) of M.Sc. And 6.10 (b) of Ph.D. Of academic rules and regulations on system of evaluation and examination procedure	
52.3.7.	To consider the amendment in existing provision of sanction of leave to PG and Doctoral Students	
52.3.8,	To consider the amendment in the existing provision in academic rules and regulation regarding requirements before the submission of thesis	
52.3.9.	To consider the amendment in Clause 6.4C for B.Tech. (DT), 8.4C for PG and 6.10 (B) for Ph.D. Regarding registration by B. Tech., PG and Ph. D. Students	

52.3.10.	To consider the amendment in Clause 16 of Academic rule and regulation on rate of Dearness Allowance (DA) to the students while on official tour	
52.3.11.	To make the provision of Diwali Break in Rules and Regulations for the students enrolled in various educational programme of ICAR-NDRI (Deemed University).	
52.3.12.	To consider the amendment in sub-clause 11.2 of clause 11.0 “Topic of Thesis” of Academic Rules and Regulations for Ph. D. Programme	
52.3.13.	Correction in Dairy Engineering subjects as per BSMA Guidelines	
52.4	Consideration and approval of the recommendations made in the 83 rd AND 84 th meeting of standing committee on faculty, students problem and discipline held on 23.09.2022 and 03.01.2023.	
52.4.1	To consider the induction of the scientists to the Post-Graduate Faculty	

53th meeting of Academic Council held on 22.04.2023

Agenda item no.	Agenda	Action taken
53.1	Confirmation Of The Proceedings Of 52nd Meeting Of Academic Council Of NDRI Held On 06.01.2023	Confirmed
53.2	Review Of Action Taken On Recommendations Of The 52 nd Meeting Of The Academic Council Held On 06.01.2023.	Noted
53.3	To Celebrate The Academic Month From 3 rd Week Of March To Onwards.	Celebrated
53.4	To Consider The Conferment Of Dr. D. Sundaresan, Dr. N.N. Dastur And Dr. K.K. Iya Memorial Oration Award.	Decisions adopted/implemented
53.5	To Consider The Conferment “Best Division Award”.	
53.6	To Consider The Best Thesis Award For Master’s And Doctoral Degree Students.	
53.7	To Consider The Conferment Of Dr, S.K. Sirohi Memorial Outstanding Young Research Award For The Year 2021 And 2022.	
53.8	To Consider The Award Of Degree Without The Convocation To Students.	
53.9	To Consider The Induction Of Scientists To The PG Faculty.	Awarded during Convocation
53.10	To Approve The Award Of Bachelor Degree, Master’s Degree And Doctoral Degree To The Successful Students And Award Of Gold, Silver/Bronze Medals / Dean’s Honour Award / Merit Certificates To Eligible Students For The Year 2020 And 2021.	

54th meeting of Academic Council held on 13.03.2024

Agenda item no.	Agenda	Action taken
54.1	Confirmation of the proceedings of 53 rd meeting of Academic Council of NDRI held on 22.04.2023	Confirmed
54.2	Review of action taken on recommendations of the 53 rd meeting of the Academic Council held on 22.04.2023.	Noted
54.3	To celebrate the Academic fortnight from 1 st to 15 th March, 2024	Celebrated
54.4	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Decisions adopted/implemented
54.5	To consider the conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians/Scientist during the 20 th Convocation of ICAR-National Dairy Research Institute, Karnal.	
54.6	To consider the conferment of “Best Division Award”.	
54.7	To consider the Best Thesis Award for Master’s and Doctoral degree students.	
54.8	To consider the award of Degree without the convocation to students.	
54.9	To consider the Induction of Scientists to the PG Faculty.	
54.10	To approve the award of bachelor degree, master’s degree and doctoral degree to the successful students and award of gold, silver/bronze medals / dean’s honour award / merit certificates to eligible students for the year 2022-23	Decisions adopted/implemented Awarded during Convocation
54.11	Consideration and approval of the recommendations made in the 98 th meeting of standing committee on courses curricula and academic affairs held on 1.2.2024.	
54.11.1	To consider the number of seats for 2024-25 session for admission to various Academic Programmes at NDRI, Karnal.	
54.11.2	To consider the eligibility qualification for UG Programme B.Tech.(DT), B.Tech.(Food Technology) and B.Tech.(Bio-Technology)	
54.11.3	To consider the revision in fee structure regarding correction charges, if mistake is not part of the university level/ International Hostel charges and continuation fees for students who are under physical exemption.	
54.11.4	To consider and start the New UG Courses/ Certificate/ Diploma courses from next academic session 2024-25 to comply with the NEP-2020.	
54.11.5	To start the course work and research work of LPM at SRS Bangalore from the next academic year 2024-25.	
54.11.6	To consider the direct admission of candidates having any external funding sponsorship or fellowship (e.g. DBT, UGC, CSIR etc) to pursue the Ph.D. at NDRI, Karnal.	

54.11.7	To consider Pre-requisite courses for Ph.D. Students admitted through entrance exam.	
54.11.8	To consider revised Evaluation System.	

55th meeting of Academic Council held on 21.04.2025

Agenda item no.	Agenda	Action taken
55.1	Confirmation of the proceedings of 54 th meeting of academic council of ndri held on 13.3.2024	Confirmed
55.2	To celebrate the academic fortnight from 4 th MARCH, 2025.	Celebrated
55.3	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Awards.	Decisions adopted/implemented
55.4	To consider the conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians /Scientist / Distinguished Alumni during the 21 st Convocation of ICAR-National Dairy Research Institute, Karnal	
55.5	To consider the conferment of “Best Division Award”.	
55.6	To consider the Gold, Silver and Bronze Medal awardee students of B. Tech. (DT), Master’s and Doctoral Degree Programme and Best Thesis Award for Master’s and Doctoral degree students.	
55.7	To approve the award of bachelor degree, master’s degree and doctoral degree to the successful students and award of Gold medal, Silver / Bronze medal/ Merit certificates to eligible students during the 21 st Convocation scheduled on 22 nd April, 2025.	
55.8	To consider the Induction of Scientists to the PG Faculty	
55.9	Consideration and approval of the recommendations of the Standing Committee on Course Curricula & Academic Affairs are placed before the Academic Council for its consideration.	
55.9.1	To consider the number of seats for 2025-26 session for admission to various Academic Programmes at NDRI, Karnal & its regional stations.	
55.9.2	To discuss applications of five Ph.D. Scholars for Teaching Assistantship	
55.9.3	To consider amendment in the rules & regulations regarding submission of synopsis and thesis, divisional seminar, advisory committee, etc.	
55.9.4	To consider the regularization of semesters of UG / PG / Ph. D. Programme	
55.9.5	Retention and Disposal of Evaluated Answer-Books	

55.9.6	To consider amendment in Rule 17 of Academic Rules & Regulations regarding vacation, mandatory presence of the student at the time of submission of loose bound thesis, submission of hard bound thesis within 7 days from viva-voce examination & matters related to shortage of attendance of UG, PG & Ph.D. students.	
55.9.7	To revise the guidelines for submission of Master's thesis	
55.9.8	Initiation of NSS programs for UG students as per the recommendations of 6 th Deans Committee report. Discussion on suggestive fee for NCC and NSS programme	

56th meeting of Academic Council held on 19.03.2026

Item No.	Item In Brief	Page No.
56.1	Confirmation of the proceedings of 55 th meeting of Academic Council of NDRI & held on 21.04.2025	Confirmed
56.2	To consider the Induction of Scientists to the PG Faculty.	Decisions adopted/implemented
56.3	Consideration and approval of the recommendations of the Standing Committee on Course Curricula & Academic Affairs are placed before the Academic Council for its consideration.	
56.3.1	To consider the number of seats for 2026-27 session for admission to various Academic Programmes at NDRI, Karnal & its regional stations.	
56.3.2	To amend the rules & regulations regarding Guidelines for allotment of Major Advisors (Guides) to Ph.D. students admitted as In-service candidates and Foreign Students	
56.3.3	To amend the rules & regulations regarding Fellowship 1. Fellowship after Submission of Loose-Bound Thesis 2. Switching Fellowship Schemes 3. Fellowship in Case of Medical Leave or Semester Drop	
56.3.4	To consider duration of semester for UG/PG/PhD students 1. To Consider regularization of UG/PG/Ph.D. Semesters 2. Extension of Second Semester – Academic Session 2024–25 3. Minimum Semester Duration for Students Engaged in Research Work 4. To consider the commencement of New Academic Session for Continuing Students (2025–26)	
56.3.5	To consider the New Education Policy-2020 implementation status 1. Initiation of PG Diploma Courses and Certificate Courses 2. Certificate Course on “Handling and Care of Laboratory Animals”	

56.3.6	To consider issues related to examinations 1. Conduct of Supplementary Examination 2. Guidelines for SGPA Improvement by Students 3. Clarification Regarding Physical Attendance of Repeat Students at SRS	
56.3.7	To consider amendments regarding submission of hard bound thesis 1. Timeline for Submission of Hard-Bound Thesis 2. Hard Bound Thesis Submission	
56.3.8	To consider the submission of Master's thesis 1. Last date of submission of Master's thesis 2. Thesis submission by Master's students	
56.3.9	To consider the Feedback Forms	
56.3.10	Regarding No Dues from ME Section at the Time of Thesis Submission	
56.3.11	Framing of Guidelines to Streamline and Regulate Student Involvement in Research Activities Supported by Externally Funded Projects 1. Alignment with Faculty Projects 2. Institute-Funded Research Proposals 3. Manpower Requirement in Externally Funded Projects & Clarity of Roles and Responsibilities 4. Allotment of Additional Students to Faculty Members having Externally Funded Projects	
56.3.12	To consider Enhancement of Contingency Amount of Books And Thesis Printing	
56.3.13	PhD students as Teaching Associate/Technical Associate	
56.3.14	To consider the Advisory Committee Constitution and Academic Compliance for Students Allotted to Other ICAR Institutes	
56.3.15	To consider Registration in backlog courses in place of SRP-III and permission to undertake SRP-III with them in-plant training in 4 th year II semester	
56.3.16	To consider Submission of PhD thesis without published paper	
56.3.17	To consider the qualification for eligibility in admission to Master's & PhD in Animal Biotechnology	
56.3.18	To consider the Guidelines & Qualification for Direct Admission of Scholarship Holder	

56.3.19	To consider the Cases of students for change of Guide/ Research station 1. Case of Mr. Vikas Kumar (23-M-DX-06) regarding rejoining after medical leave 2. Consideration of the request of Ms. Lohitha (24-B-DT-32), 2nd Year B. Tech student, for transfer from NDRI, Karnal to SRS, Bengaluru on medical grounds 3. Request of Mr. Abhishek Tiwari for Change of Guide 4. Guide allotment of Mr. Jejal Anand Dinesh, PhD student of Agronomy 5. Request of Ms Umang, Master's student of LPM to transfer from SRS, Bangalore to NDRI, Karnal on medical grounds	
56.3.20	To consider the various issues 1. Proposal for the Creation and Implementation of "Paid Seats" in Undergraduate Programmes at ICAR-NDRI 2. Approval of Guidelines for University-Level & "Spot Round" Admissions to Fill Vacant Seats	
56.4	To celebrate the Academic Fortnight from 26 th February, 2026	Celebrated
56.5	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Decisions adopted/ implemented
56.6	To consider the Conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians/Scientist / Distinguished Alumni during the 22 nd Convocation of ICAR-National Dairy Research Institute, Karnal.	
56.7	To consider the conferment of "Best Division Award".	
56.8	To consider the Gold, Silver and Bronze Medal awardee students of B. Tech. (DT), Master's and Doctoral Degree Programme To consider the Best Thesis Award for Master's and Doctoral Degree Students.	
56.9	To Approve the Award of Bachelor Degree, Master's Degree and Doctoral Degree To the successful students and award of Gold medal, Silver / Bronze medal/ Merit certificates to eligible students during the 22 nd Convocation scheduled on 20 th March, 2026	Awarded during Convocation

6.5.1.4. Anti-Ragging Cell:

The UGC Regulations on curbing the menace of ragging are followed. Anti-ragging squads comprising of faculty and Institute staff are formulated for curbing ragging and counselling the students before start of each academic year.

Head of the Institute, Joint Director and other Institute officials discuss with the constituted Anti-ragging squads and brief them about necessary measures to be taken

to curb ragging. Joint Director (Academic), Academic Coordinator and committee members regularly visit the Hostels to have proper check.

UGC Regulations are printed in the form of Poster and displayed on all points in the Hostels and campus (copy attached) for information of all the students, faculty and students.

A circular regarding Ban on ragging in Educational Institutions is also issued to all the students. In addition, anti-ragging Committee/squads are also constituted to have strict check on ragging activities.

Table 5: Anti-ragging Committee / quads for the year 2025-26

Anti-Ragging Committee (Overall)	Position
Dr Ashish Kumar Singh, Joint Director (Academic)	Chairman
Dr. Shilpa Vij, Head, DM Division	Member
Dr. Jai Kaushik, Head, ABT Division	Member
Dr. Gopal Sankhala, Head D. Extn. Division	Member
Dr. Suneel Onteru, Head, ABC Division	Member
Dr. Subhashis Mondal, Head, DES&M	Member
Dr. D. N. Yadav, Head, DT Division	Member
Dr A.K. Misra, Chief Hostel Warden	Member
Dr. Suman Kapila, PS & COE	Member
Mr. Dinesh Nagpal, Sr A.O. & Security Coordinator	Member
Mr. Sandeep Deswal, CTO, Sports Section Dr.	Member
Anjali Aggarwal, Academic Coordinator	Member Secretary
Anti-Ragging Squad for Hostel	
Dr Rajan Sharma, Joint Director (Research)	Chairman
Dr. A.K. Misra, Chief Hostel Warden	Member
Dr. Bharati Pandey, Scientist & Hostel Warden	Member
Dr. Rani Alex, Scientist, Scientist (SS), & Hostel Warden	Member
Dr. Shilpa Shree, Sr, Scientist & Hostel Warden	Member
Dr Satish Kumar, PS, ABT Division	Member
Dr. Gopal Kumar Gawane, PS & Hostel Warden	Member
Dr Hardev Ram, Sr Scientist, Agronomy	Member
Dr. M.K. Singh, Sr. Sci., ABTC & Hostel Warden	Member
Capt Sandeep Deswal, CTO, Sports Section	Member
Mr Ravi Rawat, Security Incharge	Member
Dr Yogesh Khetra, Sr Scientist, DT Division	Member Secretary
Anti-Ragging Squad for Campus	
Dr Jai Kaushik, Head, ABTD	Chairman
Dr. Subhashis Mandal, Head DESM Division	Member

Dr. Chand Ram, PS, DM Division	Member
Dr. Anuradha Bhardwaj, Principal Scientist. ABT Division	Member
Dr. Richa Singh, Sr. Scientist, DC Division	Member
Dr. P. N. Raju, Sr. Scientist, DT Division	Member
Dr. Gautam Mondal, PS, AN Division	Member
Dr. Naresh Selokar, Sr Scientist, ABT Division	Member
Dr. Priyanka, Scientist, DE Division	Member
Dr. Abdul Shaik Hussain, Sr Scientist, DT Division	Member Secretary

Table 6: Details of Meetings of Anti-ragging Committees Constituted

Sr. No.	Name of the Committees	Dates when meeting convened				
		2021-22	2022-23	2023-24	2024-25	2025-26
1.	Anti-Ragging Committee	--	--	10-11-2023	22-05-2024 24-10-2024	06-11-2025
2	Anti-ragging Squad for Hostel	--	--	--	13-11-2024	--
3	Anti-ragging Squad for campus	--	--	--	24-10-2024 01-11-2024	---

6.5.1.5. Biological waste disposal facility:

The institute has Review Committee on Genetic Manipulation (RCGM) and DBT designated Institute Bio safety Committee, which approves the project involving recombinant DNA manipulations, genetically modified organisms, and pathogen handling. The bio hazardous chemicals/bio-chemicals are disposed off in a locked pit created away from labs, human residential areas and animal sheds, while the pathogens and genetically live micro organisms are destroyed in an autoclave.

(Note: Institute has not received any proposal for approval that involves radioactive material) Biological waste at Livestock Research Centre / Animal sheds in farm is disposed-off as given below:

- All wastewater along with urine is sent through a sewer pipeline to the treatment plant for further recycling and used for irrigation on a fodder farm.
- Hazardous micro organism and DNA based genetic materials are disposed based on biosafety level requirements.
- All solid dung along with leftover feeding material is sent to the compost pit at the fodder farm to convert the waste into bio-fertilizer.
- All dead animal carcass at Livestock Research Centre is disposed off by burial method in the marked isolated area of the Institute. After deep burial, carcass is covered with slaked lime and crystal salt to address the environmental issues. An incinerator has been installed for disposing off the dead animal carcasses.

Institute Biosafety Committee:

Mandate of the committee:

In compliance with “Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989 (known as ‘Rules, 1989’) under the Environment (Protection) Act, 1986 (EPA 1986), an Institutional Biosafety Committee (IBSC) is to be constituted by every organisation engaged in research, use & applications activities related to GE organisms (organisms include microorganisms, animals, plants, arthropods, aquatic animals, etc.) and hazardous microorganisms (microorganisms include parasites, protozoa, algae, fungi, bacteria, virus, prions etc.) and products produced through exploration of such organisms. IBSC serves as the nodal point within an organization for implementation of the biosafety regulatory framework.

Institutional Biosafety Committee (IBSC) is solely responsible for the following:

- i. To implement and respond to institutional biosafety & biosecurity at the institution level and
- ii. Evaluation of applications/ reports related to rDNA technology work involving the GE organisms and non-GE hazardous microorganisms in an organization.

Table 7: Constitution of the Institute Bio safety Committee 2021-2026

Sr. No.	Name and designation	Position
	Dr. M. S. Chauhan, Director, ICAR-NDRI (till 2021) Dr. Dheer Singh, Director, ICAR-NDRI (w.e.f. 2022 to till date)	Chairman
	Dr. Manoj Kumar, SMO & Medical Consultant, HHC, NDRI, Karnal	Biosafety Officer
	Dr. RS Kataria, PS, ICAR-NBAGR, Karnal	DBT Nominee
	Dr. Naresh Kumar, PS, DM Div, ICAR-NDRI, Internal Member	Internal Member
	Dr. Rakesh Kumar, PS, ABT, ICAR-NDRI (till December 2021)	Internal Member
	Dr. Reena Arora, PS, ICAR-NBAGR, Karnal (w.e.f. December 2024)	External Member
	Dr. Jai K. Kaushik, PS & HoD, ABT Div, ICAR-NDRI (w.e.f. January 2022)	Internal Member
	Dr. Suneel K. Onteru, PS & HoD, ABC Div, ICAR-NDRI, Karnal	Internal Member

Dr. Jai K. Kaushik, PS, ABT Div, ICAR-NDRI (till December 2021)	Member -Secretary
Dr. Rakesh Kumar, PS, ABT Div, ICAR-NDRI (w.e.f, January 2022)	

Table 8: Details of the Institute Bio-Safety Committee held during 2021-26

Sr. No.	Meetings of the Institute Bio-Safety Committee held				
	2021-22	2022-23	2023-24	2024-25	2025-26
1	30-04-2021 17-08-2021 21-11-2021 31-01-2022	25-06-2022 03-01-2023 14-02-2023	31-01-2024	12-11-2024	08-07-2025 03-10-2025

6.5.1.6. Institutional Ethics Committee for Experiment on Animals:

The institute has constituted an Institutional Animal Ethics Committee (IAEC) approved by the Committee for Control and Supervision of Experiments on Animals (CCSEA) to ensure that all research experiments involving animals are conducted in accordance with established ethical principles and guidelines of CCSEA. The IAEC functions as a statutory and advisory body responsible for the humane care and use of animals within the Institute. It reviews, evaluates, and monitors all protocols involving animal experimentation to ensure that such studies are justified, scientifically valid, and designed to minimize pain, distress, and suffering. The CCSEA registration number of Animal House Facility of ICAR-NDRI is 1705/GO/ReBi/SL/13/CCSEA w.e.f 08.11.2024. The animal house facilities are inspected by the nominee of CCSEA during every physical IAEC meeting.

Table 9 : Members of IAEC, ICAR-NDRI

Sr. No.	Name and designation	Position
1.	Dr. Sachinandan De (Biological Scientist)	Chairman
2.	Dr. Nitin Tyagi (Scientist Incharge of Animal House Facility)	Member
3.	Dr. Goutam Mondal (Scientist from different discipline)	Member
4.	Dr. Suneel Kumar Onteru (Scientist from different discipline)	Member
5.	Dr. Sandeep Kr. Singh (Main Nominee)	Member
6.	Dr. Ashwini Kumar Singh (Link Nominee)	Member
7.	Dr. Gurleen Kaur (Scientist from outside the institute)	Member
8.	Mr. Naveen Malhotra (Socially Aware Nominee)	Member
9.	Dr. Rajani Kr. Paul (Veterinarian)	Member Secretary

Table 10: Details of Institutional Ethics Committee Meetings (2021-2026)

Sr. No.	Dates when Institutional Animal Ethics Committee Meeting was held				
	2021-22	2022-23	2023-24	2024-25	2025-26
1.	-	47th IAEC 07.04.2022	48th IAEC 26.09.2023	51st IAEC 16.03.2024	55th IAEC 27.03.2025
2.	-	-	49th IAEC 30.10.2023	52nd IAEC 21.05.2024	56th IAEC 06.10.2025
3.	-	-	50th IAEC 28.11.2023	53rd IAEC 30.09.2024	-
4.	-	-	-	54th IAEC 27.10.2024	-

Bio-waste Disposal Mechanism in SAH

- Bio-wastes generated from dead animals, carcasses and tissues after dissection are disposed off by incineration. The beddings including leftover feed and excreta of animals that are either not in experiments or in experiments involving no microorganism are sent to the compost pit at the fodder farm to convert the waste into bio-fertilizer.
- While, the beddings of animals that are used in experiments involving non-infectious microorganisms are autoclaved in closed bags before they are disposed off.
- The animal cages are autoclaved periodically and cleaned thoroughly before they are reused.

6.5.1.7 Committee for Prevention of Sexual Harassment of Women at Work Places:**Describe about the committee and role:**

At the Institute, the Women Grievance Redressal Committee (WGRC) has been constituted in accordance with statutory guidelines to address and redress complaints related to sexual harassment and gender-based discrimination at the workplace. The Committee functions as a safe, confidential, and impartial body to ensure a respectful, inclusive, and harassment-free working environment for all women employees and students. The primary role of the WGRC is to receive, examine, and inquire into complaints of sexual harassment in a time-bound and sensitive manner. The Committee is responsible for recommending appropriate corrective and disciplinary actions to the competent authority based on the findings of the inquiry. In addition to grievance redressal, the WGRC undertakes preventive and proactive measures such as creating awareness about workplace conduct, organizing sensitization and disseminating information on policies related to the prevention of sexual harassment. The Committee

also ensures confidentiality of proceedings, protection against victimization of complainants, and compliance with institutional frameworks. Through its functions, the WGRC plays a crucial role in promoting gender equality, dignity, and safety at the workplace, thereby strengthening institutional values and ethical governance.

Constitution: Members of the Committee have been nominated every year by the Director of the Institution.

Table 11: Details of Institute Women's Grievance Redressal Committee Meetings

Sr. No	Committee	Dates when meeting convened
	Dr.Latha Sabikhi, PS and Head, DC Division (Chairman) Mrs. Alka Gupta Singh (External Member) Dr. Vivek Sharma, PS, DC Division (Member) Dr. Suman Kapila, PS, ABC Division (Member) Dr. Yogesh Khetra, Scientist, DT Division (Member) Dr. Gunjan Bhandari, Scientist, DESM Division (Member) Dr. Priyanka, Scientist, DE Division (Member) Mr. Himanshu Nitant, Tech. Asst. Expt. Dairy (Member) Mr. Subhash Kumar, AAO, Purchase Section (Member) Ms. Sonika Yadav, Assistant E-1, (Member) Ms. Sai Priya, PhD student, DT Division (Member) Dr. Rubina K. Baithalu, Senior Scientist, LPM Division, Member Secretary	2021-22 Nil
	Dr. Bimlesh Mann, PS and Head, DC Division (Chairman) Mrs. Ashima Gakhar (External Member) Dr. Vivek Sharma, PS, DC Division (Member) Dr. Suman Kapila, PS, ABC Division (Member) Dr. Yogesh Khetra, Scientist, DT Division (Member) Dr. Gunjan Bhandari, Scientist, DESM Division (Member) Dr. Priyanka, Scientist, DE Division (Member) Mr. Himanshu Nitant, Tech. Asst. Expt. Dairy (Member) Mr. Subhash Kumar, AAO, Purchase Section (Member) Ms. Sonika Yadav, Assistant E-1, (Member) Ms. Sai Priya, PhD student, DT Division (Member) Dr. Rubina K. Baithalu, Senior Scientist, LPM Division, Member Secretary	2022-23 4 Meetings conducted on dated 04.07.2022, 07.07.2022, 01.08.2022, 29.08.2022,

	Dr. Shilpa Vij, PS and Head, DM Division (Chairman) Mrs. Ashima Gakhar (External Member) Dr. Subhasis Mondal, PS & Head, DESM Division (Member) Dr. Suman Kapila, PS, ABC Division (Member) Dr. Sanjeev Kumar, Scientist (Member) Dr. Rani Alex, Senior Scientist, AGB Division (Member) Dr. Priyanka, Scientist, DE Division (Member) Mr. Himanshu Nitant, Tech. Asst. Expt. Dairy (Member) Mr. Subhash Kumar, AAO, Purchase Section (Member) Ms. Sonika Yadav, Assistant E-1, (Member) Ms. Antra Gupta, PhD student, AN Division (Member) Dr. Rubina K. Baithalu, Senior Scientist, LPM Division, Member Secretary	2023-24
		Nil
	Dr. Shilpa Vij, PS and Head, DM Division (Chairman) Mrs. Ashima Gakhar (External Member) Dr. Subhasis Mondal, PS & Head, DESM Division (Member) Dr. Suman Kapila, PS, ABC Division (Member) Dr. Sanjeev Kumar, Scientist (Member) Dr. Rani Alex, Senior Scientist, AGB Division (Member) Dr. Priyanka, Scientist, DE Division (Member) Mr. Himanshu Nitant, Tech. Asst. Expt. Dairy (Member) Mr. Subhash Kumar, AAO, Purchase Section (Member) Ms. Sonika Yadav, Assistant E-1, (Member) Ms. Antra Gupta, PhD student, AN Division (Member) Dr. Rubina K. Baithalu, Senior Scientist, LPM Division, Member Secretary	2024-25
		One Meeting conducted on dated 24.07.2024
	Dr. Shilpa Vij, PS and Head, DM Division (Chairman) Mrs. Ashima Gakhar (External Member) Dr. Subhasis Mondal, PS & Head, DESM Division (Member) Dr. Suman Kapila, PS, ABC Division (Member) Dr. Sanjeev Kumar, Scientist (Member) Dr. Rani Alex, Senior Scientist, AGB Division (Member) Dr. Priyanka, Scientist, DE Division (Member) Mr. Himanshu Nitant, Tech. Asst. Expt. Dairy (Member) Mr. Subhash Kumar, AAO, Purchase Section (Member) Ms. Sonika Yadav, Assistant E-1, (Member) Ms. Antra Gupta, PhD student, AN Division (Member) Dr. Rubina K. Baithalu, Senior Scientist, LPM Division, Member Secretary	2025-26
		Two Meeting conducted on dated 27.04.2025 and 04.12.2025.

6.5.2. Faculty

6.5.2.1. Faculty strength

Table 12: Status of Total Faculty Positions at NDRI, Karnal and its Regional Stations

	Sanctioned	Imposition	Vacant
ICAR-NDRI, Karnal			
RMP	3	3	0
Head+ PS	15	10	5
SS	31	12	19
Scientist	108	69	39
Total (A)	157	94	63
SRS-NDRI, Bengaluru			
Head+PS	1	1	0
SS	2	2	0
Scientist	21	25	-04
Total (B)	24	28	-04
ERS-NDRI, Kalyani			
Head+PS	1	1	0
SS	3	2	1
Scientist	10	07	3
Total (C)	14	10	4
Grand Total (A+B+C)	195	132	63

Table 13: Faculty position year wise-Main campus and Centres

Year	Sanctioned	Imposition	Vacant
2021-22	195	139	56
2022-23	195	143	52
2023-24	195	142	53
2024-25	195	140	55
2025-26	195	137	63

6.5.4.2. Faculty profile

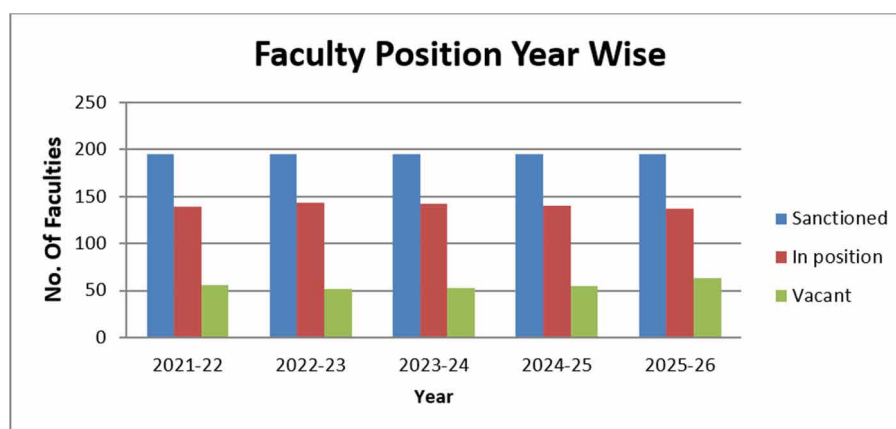


Figure 1 Scientist strength during last 5 years at the Main campus & its centres

Faculty Profile (Department wise)

Table 14: Present Division /Section-wise Faculty Profile at NDRI Deemed University

Division	Scientist			Highest degree i.e., Master Degree Obtained		Highest degree i.e., Ph.D Degree Obtained	
	Male	Female	Total	NDRI	From Outside NDRI	NDRI	From Outside NDRI
RMP	3*	0	3	1	2	2	1
DM	5	4	9	5	4	6	3
DC	6	2	8	8	0	8	0
DT	9	4	13	5	8	9	4
DE	4	2	6	2	4	2	3
ABT	6	2	8	4	4	3	5
ABC	6	2	8	5	3	5	3
AGB	5	2	7	3	4	6	1
AN	6	1	7	4	3	5	2
AP	2	2	4	3	1	3	1
LPM	3	2	5	3	2	3	2
DSE&M	3	2	5	1	4	3	2
D Extension	4	2	6	3	3	2	4
Forage Prod	5	0	5	0	5	0	5
ERS, Kalyani	7	2	9	7	2	8	1
SRS, Bengaluru	18	10	28	11	17	12	15
KVK NDRI	1	0	1	0	1	0	1
KVK ERS	1	0	1	0	1	0	1
Total	94	39	133	65	68	77	54

6.5.2.3. Credentials of the Faculty

Table 15: Animal Genetics & Breeding Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Vikas Vohra	Professor	Male	Ph.D	180	Regular
2.	Anupama Mukherjee	Professor	Female	Ph.D	144	Regular
3.	Sabyasachi Mukherjee	Professor	Male	Ph.D	336	Regular
4.	T.V. Raja	Professor	Male	Ph.D	144	Regular
5.	GR Gowane	Professor	Male	Ph.D	228	Regular

6.	RaniAlex	Associate Professor	Female	Ph.D	156	Regular
7.	Satish Kumar Rathee	Assistant Professor	Male	Ph.D	360	Regular

Table 16: Livestock Production & Management Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Madan Lal Kamboj	Professor	Male	Ph.D	348	Regular
2.	Ramesh Chandra	Associate Professor	Male	Ph.D	372	Regular
3.	Indu Devi	Assistant Professor	Female	Ph.D	96	Regular

Table 17: Animal Reproduction, Gynaecology & Reproduction Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Nishant Kumar	Professor	Male	Ph.D	192	Regular
2.	Rubina Baithalu	Associate Professor	Female	Ph.D	156	Regular

Table 18: Animal Physiology Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	AK Dang	Professor	Male	Ph.D	396	Regular
2.	Anjali Aggarwal	Professor	Female	Ph.D	420	Regular
3.	Sohanvir Singh	Professor	Male	Ph.D	408	Regular
4.	Karuna Prakash Bambode	Assistant Professor	Female	Ph.D	Focars Training	On probation

Table 19: Animal Nutrition Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Raman Malik	Professor	Male	Ph.D	396	Regular
2.	Ram Singh	Professor	Male	Ph. D	336	Regular
3.	ChanderDatt	Professor	Male	Ph.D	324	Regular
4.	NitinTyagi	Professor	Male	Ph.D	168	Regular
5.	Goutam Mondal	Professor	Male	Ph.D	168	Regular

6.	Sachin Kumar	Associate Professor	Male	Ph.D	132	Regular
7.	Ankita	Assistant Professor	Female	Ph. D	Focars Training	On probation

Table 20: Animal Biochemistry Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Gautam Kaul	Professor	Male	Ph.D	396	Regular
2.	Rajeev Kapila	Professor	Male	Ph.D	372	Regular
3.	Suman Kapila	Professor	Female	Ph.D	372	Regular
4.	Suneel Kumar Onteru	Professor	Male	Ph.D	168	Regular
5.	Varij Nayan	Professor	Male	Ph. D	204	Regular
6.	Sunita Meena	Assistant Professor	Female	Ph.D	180	Regular
7.	Sadeesh EM	Assistant Professor	Male	Ph.D	180	Regular
8.	Rajani Kumar Paul	Assistant Professor	Male	Ph.D	204	Regular

Table 21: Animal Biotechnology Centre

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Jai Kumar Kaushik	Professor	Male	Ph.D	372	Regular
2.	Satish Kumar	Professor	Male	Ph.D	324	Regular
3.	Rakesh Kumar	Professor	Male	Ph.D	324	Regular
4.	Anuradha Bhardwaj	Professor	Female	Ph.D	216	Regular
5.	Manoj Kumar Singh	Professor	Male	Ph.D	204	Regular
6.	Sudarshan Kumar	Associate Professor	Male	Ph.D	204	Regular
7.	Naresh Lalaji Selokar	Associate Professor	Male	Ph.D	156	Regular
8.	Bharati Pandey	Assistant Professor	Female	Ph.D	72	Regular

Table 22: Dairy Chemistry Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Sumit Arora	Professor	Male	Ph.D	360	Regular
2.	Vivek Sharma	Professor	Male	Ph.D	348	Regular
3.	Rajesh Bajaj	Professor	Male	Ph.D	348	Regular
4.	Richa Singh	Associate Professor	Female	Ph.D	144	Regular
5.	Shilpa Shree B.G.	Associate Professor	Female	Ph.D.	10	Regular
6.	Kamal Gandhi	Assistant Professor	Male	Ph.D	120	Regular
7.	Sonu K.S.	Assistant Professor	Male	Ph.D	48	Regular
8.	Priyae Brath Gautam	Assistant Professor	Male	Ph.D	Focars Training	On probation

Table 23: Dairy Technology Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Deep Narayan Yadav	Professor	Male	Ph.D	252	Regular
2.	Kaushik Khamrui	Professor	Male	Ph.D	192	Regular
3.	Narender Raju Panjagari	Associate Professor	Male	Ph.D	204	Regular
4.	Ganga Sahay Meena	Associate Professor	Male	Ph.D	204	Regular
5.	Yogesh Khetra	Associate Professor	Male	Ph.D	204	Regular
6.	Shaik Abdul Hussain	Associate Professor	Male	Ph.D	156	Regular
7.	Writdhama Prasad	Associate Professor	Male	Ph.D	132	Regular
8.	Ajay Yadav	Assistant Professor	Male	Ph.D	144	Regular
9.	Sangita Ganguly	Assistant Professor	Female	Ph.D	120	Regular
10.	HeenaSharma	Assistant Professor	Female	Ph.D	120	Regular
11.	Gaurav Kr Deshwal	Assistant Professor	Male	Ph.D	96	Regular

12.	Elizabeth Thomas	Assistant Professor	Female	Ph.D	Focars Training	On Probation
13.	Harshita Sonarathi	Assistant Professor	Female	Ph.D	Focars Training	On Probation

Table 24: Dairy Microbiology Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Shilpa Vij	Professor	Female	Ph.D	300	Regular
2.	Chand Ram Grover	Professor	Male	Ph.D	348	Regular
3.	Lata Jain	Professor	Female	Ph.D	216	Regular
4.	Pradip Vishnu Behare	Associate Professor	Male	Ph.D	180	Regular
5.	Raghu HV	Associate Professor	Male	Ph.D	204	Regular
6.	Diwas Pradhan	Associate Professor	Male	Ph.D	144	Regular
7.	Saurabh Kadyan	Assistant Professor	Male	Ph.D	96	Regular
8.	Manorama Kumari	Assistant Professor	Female	Ph.D	36	Regular
9.	Catherine Skyongzin Paul	Assistant Professor	Female	Ph.D	Focars Training	On probation

Table 25: Dairy Engineering Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Praduman Barnwal	Professor	Male	Ph.D	324	Regular
2.	Chitranayak	Professor	Male	Ph.D	312	Regular
3.	Prashant Sarabh Minz	Associate Professor	Male	Ph.D	204	Regular
4.	Ankit Deep	Assistant Professor	Male	M Tech	120	Regular
5.	Khusubu Kumari	Assistant Professor	Female	Ph.D	120	Regular
6.	Priyanka	Assistant Professor	Female	Ph.D	72	Regular

Table 26: Dairy Extension Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Gopal Sankhala	Professor	Male	Ph.D	384	Regular
2.	BS Meena	Professor	Male	Ph.D	468	Regular
3.	Raj Kumar	Associate Professor	Male	Ph.D	204	Regular
4.	Sanjit Maiti	Associate Professor	Male	Ph.D	204	Regular
5.	Sanchita Garai	Associate Professor	Female	Ph.D	192	Regular
6.	Maina Kumari	Assistant Professor	Female	Ph.D	Focars Training	On probation

Table 27: Dairy Economics, Statistics & Management Division

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Subhasis Mandal	Professor	Male	Ph.D	144	Regular
2.	Adesh Kumar Sharma	Professor	Male	Ph.D	432	Regular
3.	Ajmer Singh	Professor	Male	Ph.D	348	Regular
4.	Udita Chaudhary	Associate Professor	Female	Ph. D	204	Regular
5.	Gunjan Bhandari	Assistant Professor	Female	Ph. D	108	Regular

Table 28: Forage Research & Management Section

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Anurag Saxena	Professor	Male	Ph.D	420	Regular
2.	Magan Singh	Associate Professor	Male	Ph.D	228	Regular
3.	HardevRam	Associate Professor	Male	Ph.D	180	Regular
4.	Sanjeev Kumar	Associate Professor	Male	Ph.D	168	Regular
5.	Rajesh Kumar Meena	Assistant Professor	Male	Ph.D	132	Regular

Table 29: KVK, ICAR-NDRI, Karnal

Sr. No.	Name	Designation	Gender		Experience (In months)	Association type
1.	Pankaj Kumar Saraswat	Professor	Male		132	Regular

RMPs

Sr. No.	Name	Designation	Gender	Qualification	Experience (In months)	Association type
1.	Dheer Singh	Director	Male	Ph.D	384	Regular
2.	Ashish Kumar Singh	Joint Director (Academic)	Male	Ph. D	336	Regular
3.	Rajan Sharma	Joint Director (Research)	Male	Ph. D	348	Regular

Table 30: SRS, Bengaluru

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Arindam Dhali	Professor	Male	Ph.D	288	Regular
2.	Srinivas Bandla	Professor	Male	Ph.D	408	Regular
3.	Dayal Nitai Das	Professor	Male	Ph.D	360	Regular
4.	M C Arunmozhi Devi	Professor	Female	Ph.D	420	Regular
5.	Heartwin Amaladhas P	Professor	Male	Ph.D	336	Regular
6.	Rekha Ravindra Menon	Professor	Female	Ph.D	312	Regular
7.	S Jeyakumar	Professor	Male	Ph.D	312	Regular
8.	Maniandy Sivaram	Professor	Male	Ph.D	204	Regular
9.	A Kumaresan	Professor	Male	Ph.D	204	Regular
10.	Thirumala Rao Talluri	Professor	Male	Ph. D	216	Regular
11.	Mukund A Kataktaaware	Professor	Male	Ph.D	264	Regular
12.	Magdaline Eljeeva Emerald F	Professor	Female	Ph.D	180	Regular
13.	Mamta Chauhan	Associate Professor	Female	Ph.D	348	Regular
14.	S Subash	Associate Professor	Male	Ph.D	204	Regular

15.	A Manimaran	Associate Professor	Male	Ph.D	204	Regular
16.	Devaraja Hosapalya Chikkathimmaiah	Associate Professor	Male	Ph.D	192	Regular
17.	Sathish Kumar M H	Associate Professor	Male	Ph.D	192	Regular
18.	Laxmana Naik	Associate Professor	Male	Ph.D	144	Regular
19.	Monika Sharma	Associate Professor	Female	Ph.D	192	Regular
20.	Rashmi H. M.	Associate Professor	Female	Ph. D	180	Regular
21.	Priyanka Singh Rao	Associate Professor	Female	Ph.D	144	Regular
22.	Vedamurthy G V	Associate Professor	Male	Ph.D	132	Regular
23.	Manoj Kumar C. T.	Assistant Professor	Male	Ph. D	120	Regular
24.	Vairat Amita Dinkar	Assistant Professor	Female	Ph. D	132	Regular
25.	Sadvatha R. H.	Assistant Professor	Female	Ph. D	144	Regular
26.	Varalakshmi S	Assistant Professor	Female	M.V.Sc.	204	Regular
27.	Shivaswamy G.P.	Assistant Professor	Male	Ph. D	108	Regular
28.	Basavaprabhu H. N.	Assistant Professor	Male	Ph. D	36	Regular

Table 31: ERS, Kalyani

Sr. No.	Name	Designation	Gender	Qualification	Experience (in months)	Association type
1.	Santanu Banik	Professor	Male	Ph.D	204	Regular
2.	A Santra	Professor	Male	Ph.D	372	Regular
3.	C Bhakat	Professor	Male	Ph.D	348	Regular
4.	A Mandal	Professor	Male	Ph.D	336	Regular
5.	D K Mandal	Professor	Male	Ph.D	336	Regular
6.	A Chatterjee	Professor	Male	Ph.D	336	Regular
7.	M Mondal	Associate Professor	Male	Ph.D	288	Regular
8.	A Mohammad	Assistant Professor	Male	Ph.D	204	Regular

9.	SRai	Assistant Professor	Female	Ph.D	180	Regular

Table 31 a: KVK, ERS, Kalyani

Sr. No.	Name	Designation	Gender	Qualification	Experience (In months)	Association type
1.	Sanjay Kumar Ray	Sr. Scientist cum Head	Male	Ph. D	192	Regular

6.5.2.4. Technical and supporting staff**Table 32: Non-scientific staff (Medical Officers)**

Cadre	Sanctioned	Filled	Vacant
Senior Medical Officer	_____	_____	_____
Medical Officer	_____	_____	_____

Table 33: Non-scientific Staff (Administrative)

Cadre	Sanctioned	Filled	Vacant
Joint Director(Admin) & Registrar	1	1	0
Comptroller	1	1	1
Sr. A.O	2	2	0
Sr. F&AO	1	0	1
Deputy Director (OL)	1	1	0
FAO	2	1	1
Admin Officer	5	2	3
AFAO	2	2	0
AAO	18	17	1
Asst	44	31	13
UDC	21	12	09
LDC	20	17	03
PA	08	02	06
Total	126	89	38

Table 34: Non-Scientific Staff (Technical) at the Main Campus and Regional Centres

Year		Sanctioned	Imposition	Vacant
2021-22	Institute	317	175	142
	KVK	22	5	17
2022-23	Institute	317	165	152
	KVK	22	6	16
2023-24	Institute	215	163	52
	KVK	22	6	16

2024-25	Institute	209	149	60
	KVK	22	4	18
2025-26	Institute	204	152	52
	KVK	22	9	13

Table 35: Total-Non-scientific Staff (Group A and B)

Year	Sanctioned	Filled	Vacant
2021-22	50	37	13
2022-23	50	42	08
2023-24	48	36	12
2024-25	48	36	12
2025-26	41	29	13

Table 36: Total non-scientific (supporting staff) at NDRI Main Campus and Regional Centres

Year	Sanctioned	Imposition	Vacant
2021-22	384	268	116
2022-23	384	247	137
2023-24	374	228	146
2024-25	374	198	176
2025-26	3	176	198

Table 37: Division wise Distribution of Technical and Supporting Staff

Sr. No.	Name of the Division	No. of Technical Officers	No. of Technician	No. of Supporting Staff
1.	Dairy Microbiology	02	—	02
2.	Dairy Chemistry	01	01	03
3.	Dairy Technology	—	03	02
4.	Dairy Engineering	05	02	01
5.	Animal Biochemistry	01	01	04
6.	Animal Genetics & Breeding	02	—	01
7.	Animal Biotechnology	01	03	03
8.	Animal Nutrition	02		06
9.	Animal Physiology	03	01	01
10.	Livestock Production Management	01	—	04
11.	Dairy Economics Statistics & Management	01	—	02
12.	Dairy Extension	—	—	01
13.	Forage Research Management Centre	01	03	01

14.	Forage Production	01	—	14
15.	Livestock Research Centre	08	03	27
16.	Animal Health Centre	—	—	01
17.	Animal Breeding Research Centre	03	01	02
18.	Southern Regional Station, Bangalore	06	07	17
19.	Eastern Regional Station, Kalyani	04	02	01
	Total	42	27	93

6.5.3 Learning Resources

The strengthening of learning resources, including a rich collection of textbooks, reference books, print and electronic research journals, periodicals, videos, software, and other ICT-enabled materials, has been accorded top priority by the Institute. These repositories have been developed systematically and sustained over the years to ensure comprehensive academic support.

The resources are readily accessible to faculty members to facilitate effective teaching, mentoring, and guidance of students in their pursuit of knowledge and to meet their academic and research requirements. Detailed information pertaining to these resources is presented hereunder.



Fig.1: Front view of ICAR-NDRI Library

6.5.3.1. College Library (digital)

a) Library and Documentation Services

One of the primary mandates of ICAR-National Dairy Research Institute is to provide comprehensive access to information and scholarly resources in dairy science and allied

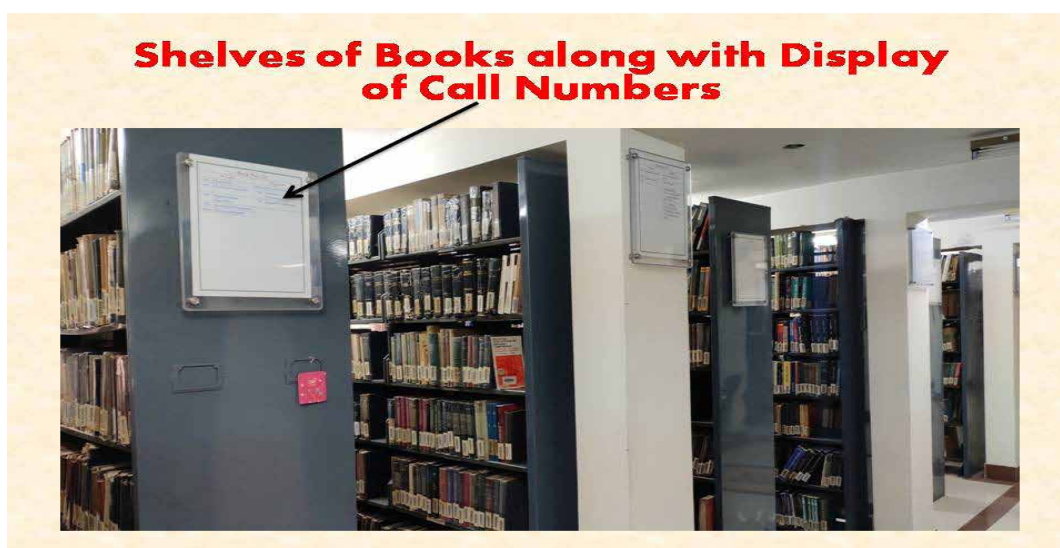
disciplines. The Institute Library serves as the principal knowledge hub in fulfilling this mandate.

The Library has consistently kept pace with advancements in scientific research and modern information management practices. Continuous efforts have been undertaken to broaden its scope and enhance service delivery through national digital initiatives and knowledge-sharing platforms such as Krishikosh: The Institutional Repository of the Indian National Agricultural Research System and One Nation One Subscription (ONOS).

Krishikosh platform facilitates seamless online access to theses, books, laboratory manuals, annual reports, newsletters, and a wide range of other academic resources of the National Agricultural Research and Education System (NARES). One Nation One Subscription (ONOS) initiative of Government of India provides full text access of about 13,000+ online journals of 27+ subject categories through national subscription mechanisms, thereby significantly strengthening the Institute's research and academic support system.

Up to 2025, the Consortium of e-Resources in Agriculture (CeRA) has played a significant role in strengthening agricultural research institutions and State Agricultural Universities (SAUs) by providing extensive access to peer-reviewed online journals and research articles. The consortium has substantially enhanced the availability of high-quality scholarly literature, thereby supporting teaching, research, and extension activities across the agricultural education and research system.

The Institute remains committed to achieving sustained quantitative and qualitative improvements in library infrastructure, collections, digital repositories, and user-centric services to effectively support teaching, research, and extension activities.



OBJECTIVES OF ICAR-NDRI LIBRARY

- **To support teaching, research, and extension activities** by providing timely access to relevant, authoritative, and up-to-date information resources in dairy science and allied disciplines.
- **To develop and maintain a balanced and need-based collection** of print and electronic resources, including books, e-books, journals, theses, reports, databases, and other scholarly materials.
- **To facilitate seamless access to digital resources** through institutional repositories and national knowledge platforms, thereby promoting wider dissemination and utilization of research outputs.
- **To promote effective use of library resources and services** through user orientation, information literacy programmes, and research support services.
- **To preserve and archive the Institute's intellectual output**, including theses, dissertations, research publications, and institutional documents, for long-term reference and academic use.
- **To adopt and integrate modern library technologies** for efficient resource management, automation, and enhanced user services.
- **To foster a research-oriented learning environment** by providing conducive study spaces and responsive information services.
- **To strengthen national and global information linkages** through collaboration, resource sharing, and participation in library networks and consortia.

View of Current Periodical Section



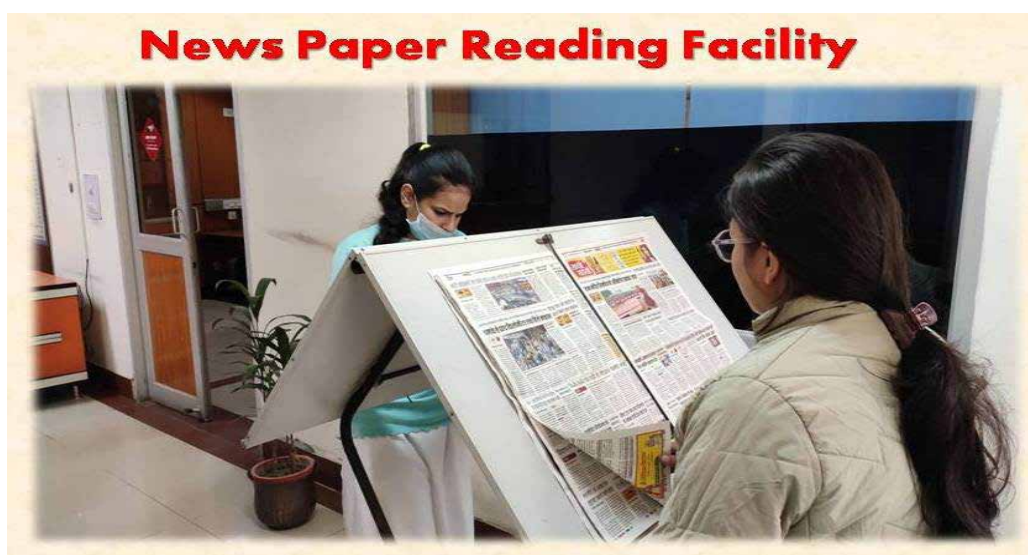
b) Library and other Learning Resources

The Library of ICAR-National Dairy Research Institute, popularly known as the **National Library in Dairying (NLD)**, is one of the oldest and most distinguished specialized libraries in the field of dairy science and animal husbandry in India. Established in 1936 as an integral part of the Imperial Dairy Institute at Bangalore, the library has grown in parallel with the Institute, continuously supporting its academic, research, and extension mandates.

In 1955, the Institute along with its library was relocated to Karnal, Haryana. A dedicated and modern library building was constructed, and the library was shifted to its present premises in December 1983. Over the decades, the NLD has evolved into a comprehensive knowledge resource centre catering to the needs of scientists, faculty members, postgraduate students, and research scholars.

The present library building has a storage capacity of approximately 1,50,000 volumes and provides seating accommodation for around 200 readers at a time. The infrastructure includes two reading halls, a current periodical section, personal book section, computer and digital access section, reference section and three floors of well-organized stack areas. In addition, a separate reading hall with a seating capacity of 50 users is available for 24×7 access to facilitate uninterrupted study for students and research scholars.

The National Library in Dairying continues to play a pivotal role in strengthening academic excellence, research productivity, and knowledge dissemination in dairy science and allied disciplines, thereby contributing significantly to the institutional goals and national agricultural development.



c) Library Collection, Resources and Services

The Library maintains a rich and specialized collection in the field of dairy science, animal husbandry, and allied agricultural sciences. The library presently houses more

than 1,00,000 specialized reading materials in diverse formats, including textbooks, reference books, monographs, journals, statistical and data publications, bulletins, review articles, advances, annual reports, pamphlets, theses, and reprints.

The collection comprises approximately:

- 58,916 printed books and other reading materials
- 34,115 back volumes of national and international journals
- 6,974 postgraduate and doctoral theses

The library continues to strengthen its holdings with an average annual addition of more than 1,000 new documents, ensuring updated and relevant resources for academic and research activities.

Electronic Resources

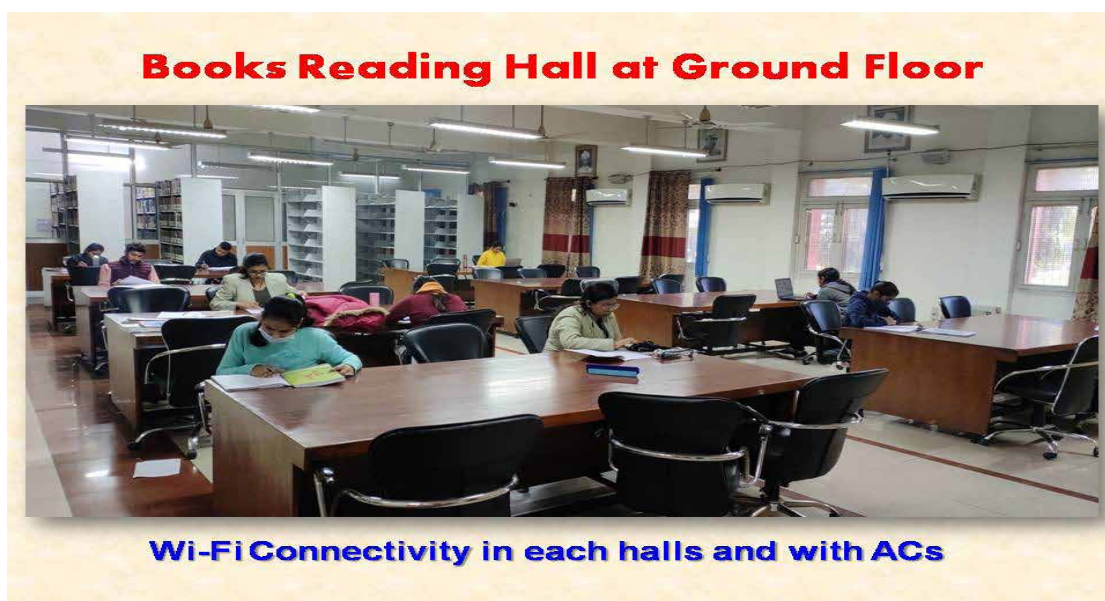
In addition to print collections, the library provides access to 2,339 e-books from reputed international and national publishers such as Springer, Elsevier, Taylor & Francis, CABI, SAGE Publications, Cambridge University Press, and Wiley-Blackwell, along with selected Indian publishers as ASAP, Astral International, NIPA-GENX and Agrobios. These e-books are available on IP-based perpetual access to students, faculty members, scientists, and staff within the NDRI campus. Some other e-Books (1174 e-Books) are also available for institute users through CeRA.

The library subscribes to a number of foreign and Indian print journals and also receives journals, reports, newsletters, and other informative publications on an exchange basis.

Library and Information Services

The library offers a comprehensive range of user-oriented services, including:

- Internet and email access
- Documentation and reference services
- Current Awareness Services (CAS)
- Literature search and scanning services
- Access to CD-ROM databases
- Photocopying, document scanning, and printing facilities
- Computerized circulation (issue-return) system
- Online Public Access Catalogue (OPAC)



The NDRI Library has been serving not only the scientists, faculty, and students of dairy science and animal husbandry but also professionals in allied agricultural and biological sciences. Over the decades, it has earned recognition as a national-level specialized facility and is widely regarded as one of the leading libraries in the world in the field of dairy science.

The library continues to upgrade its print and digital resources, services, and infrastructure in alignment with ICAR guidelines to support quality teaching, advanced research, and institutional excellence.

Table 38: Subscription of International/ National Print Journal at ICAR-NDRI Library

Year	Subscription of Journals			Through CeRA	Grand Total
	International	National	Total		
2021	25	19	44	20	64
2022	25	19	44	20	64
2023	21	18	39	-	-
2024	29	18	47	-	-
2025	11	7	18	-	-

Table 39: Collection of Books, Reports, Theses etc. at ICAR-NDRI Library

Year	Books Procured	Bound Journals Included	Theses, Reports etc. received
2021-22	676	990	220
2022-23	523	-	194
2023-24	487	-	298
2024-25	208	-	150
2025-26	269 (as on 11.03.2026)	-	223

d) Technical Processing of Books, Theses and Journals

The Library follows the Universal Decimal Classification (UDC) system for the systematic classification of its publications. For assigning book numbers, a special chronological schedule of the Colon Classification scheme is adopted to ensure uniformity and precision in arrangement.

The Library maintains a computerized catalogue in accordance with internationally accepted MARC cataloguing standards. Bibliographic records are made accessible to users through the Online Public Access Catalogue (OPAC) integrated with the KOHA Library Management System, thereby facilitating efficient search, retrieval, and access to library resources.

e) Procurement Trends of Print Books, E-Books and Journals

The Library adopts a systematic and need-based approach for the procurement of print books, e-books, and scholarly journals to support the teaching, research, and extension programmes of the Institute. The selection of resources is aligned with academic curricula, emerging research areas, and recommendations received from faculty and subject experts.

Table 40: Year-wise procurement of e-Books by the ICAR-NDRI

Year	No. of E-Books
2021-22	183
2022-23	195
2023-24	336
2024-25	160
2025-26	188 (as on 11.03.2026)

f) Reprography/ Printing Services

Library of ICAR-NDRI provides reprographic and printing facilities to its users on nominal charges. In addition, scanning services are made available free of cost to support academic and research activities.

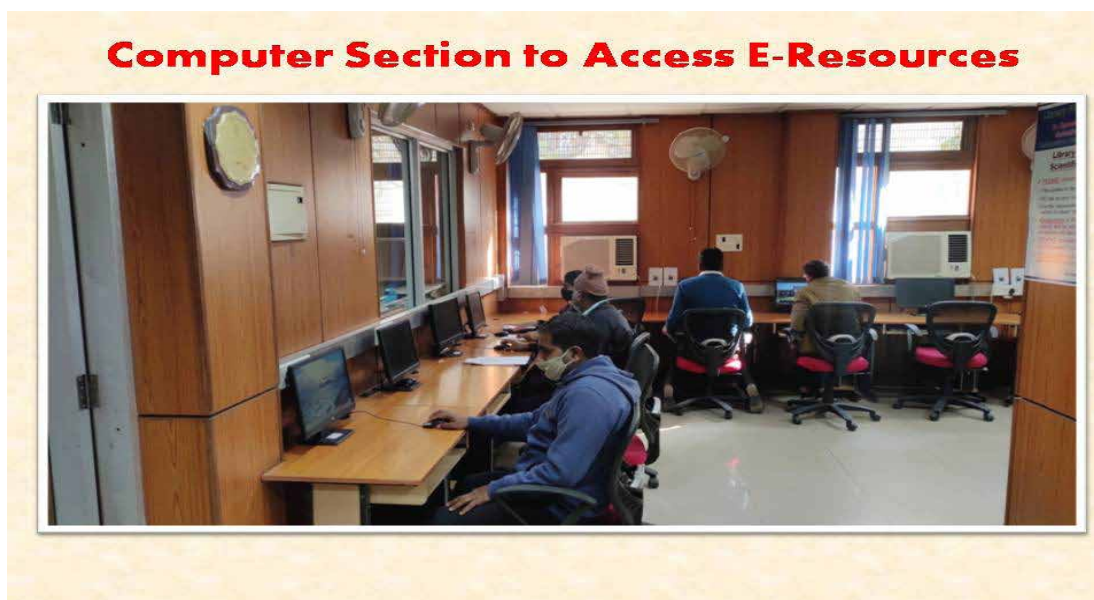


g) CD-ROM Search Facilities

ICAR-NDRI Library also provides access to leading abstracting and citation databases to support advanced research and literature review.

The following databases in CD-ROM have been subscribed and are available for access:

1. CABCD 1972+
2. FSTA 1969+
3. AGRIS 1975+
4. DERWENT BIOTECHNOLOGY
5. Indian Standards on CD
6. ISO Standards on milk and dairy products
7. ISO standards on food products



h) Library Automation through Koha Library Management System (LMS)

NDRI Library utilizes the **Koha Library Management System (LMS)** to efficiently manage its in-house library operations. Koha, an open-source integrated library management software, facilitates automation of core functions such as cataloguing, circulation, acquisition, serials control, and online public access catalogue (OPAC).

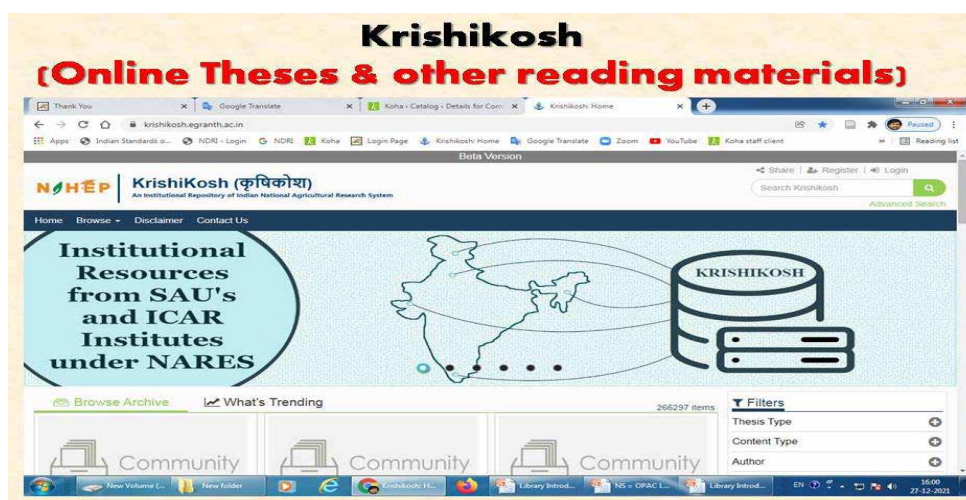
The implementation of Koha has enhanced operational efficiency, ensured accuracy in record management, and improved user access to library resources. It enables seamless tracking of holdings, real-time circulation status, and streamlined administrative processes, thereby strengthening overall library services.



i) Digital Repository and Knowledge Dissemination through Krishikosh

Library regularly uploads the Institute's intellectual output, including theses, annual reports, laboratory manuals, newsletters, and other scholarly publications, to the Krishikosh digital repository. This initiative ensures long-term preservation, wider visibility, and open access to the Institute's academic and research contributions, thereby promoting knowledge dissemination within the National Agricultural Research and Education System (NARES) and beyond.

Sr. No.	Type of document	No. of documents
1.	Annual reports	69
2.	News Letters	30
3.	Institutional Publications	294
4.	PG Theses	3935
5.	Ph.D Dissertations	1985
6.	Reprints	1175



6.5.3.2. Laboratories, Instructional farm, Workshops, Dairy Plant, Veterinary Clinic, Hatchery, Ponds etc.

Details of different facilities (laboratories, instructional farm, workshops, dairy plant, veterinary clinic, hatchery, ponds etc.) available in the institute with its numbers, space and specialty are presented in the following tables.

Table 41: Facilities Available in Divisions and Sections of the Institute

Sr. No.	Divisions/ Sections	Facilities	No	Area/ Space (m ²)	Special features to conduct Practical / hands on training
1.	Dairy Technology Division	By-Products Technology Laboratory Membrane Processing Plant	01 01	37.5 56.0	Pilot scale UF Plant, MF Unit, Ovens, High shear disperser, Centrifuge, Reverse Osmosis plant, Infra-red moisture analyser, Density meter
		Cheese and Fermented Foods Laboratory	01	112.0	UV-Vis Spectrophotometer, Laboratory homogenizer, Microbalance, High Shear mixer-Ultraturrax, Cheese knives, High Performance Liquid Chromatography (HPLC), Cheese vats
		Food Packaging Laboratory	01	75.0	Modified atmosphere packaging Machine (MAP), Headspace gas analyser, Electro spinning machine, Vacuum packaging machine, Universal testing machine, Vacuum dryer, BOD incubators, Bursting strength tester, Substance indicator, Micrometer, Cobbs's apparatus, Tearing strength tester, UV treatment chamber, Ultrapure water purification system
		Food Technology Laboratory	01	121.5	Freeze dryer, refrigerated centrifuge, Low temperature water bath, BOD incubator, Spectrophotometer, Abbe's Refractometer, Biosafety cabinet, Stomacher, Automatic Nitrogen analyzer, Soxtec, Modular MF-UF Plant
		Formulated Dairy Products Laboratory	01	178.0	Texture analyzer (2), Rapid Visco Analyzer (RVA), Rheometer, Water activity meter, Microfluidizer, Spectrophotometer (2), Probe Sonicator, Hunter colour lab, High shear mixer, BOD Incubator, Incubator shaker, Pulsed Electric Field (PEF)

		Functional Ingredients and Applications Laboratory	01	149.0	Laminar flow, High shear mixer-UltraTurrax, Vacuum rotary evaporator, Table top centrifuge, Microscope, Protein distillation unit, Hot air oven, BOD incubator
		Protein Analysis Laboratory	01	19.0	Kjedhal Digester, Semi-automatic protein distillation assembly, Muffle furnace
		Sensory Evaluation Laboratory	01	56.0	Modular Sensory Booths, Sample Preparation and storage accessories
		Traditional Indian Milk Products Laboratory	01	112.0	Vacuum and modified packaging machine, BOD Incubator, Laminar air flow, Spectrophotometer, Turbidity meter, Colorimeter, Laboratory centrifuge, Microscope, 3D Printer
		UG and PG Laboratory	02	168.0	Cream separator, Electronic balance, Centrifuge, Water bath, Autoclave, Muffle furnace, Hot air oven, BOD Incubator
	Pilot Plant	Experiential Learning Laboratory cum-Pilot Plant	01	376.0	Bakery oven-big, Coating pan, Bakery oven (Small), Planetary mixer-big, Dough moulder, Planetary mixer small, Shrink wrapping machine, Wet grinder, Single screw extruder, Pulverizer, Cookie dropper machine, Biscuit packaging machine, Flaking machine, Snack packaging machine, Butter churner, Cheese vat, Powder packaging machine, Modular pasteurizer, Softy ice-cream freezer, Ice cream fruit feeder, Modular Ice cream unit, Spray dryer, Twin screw extruder, Paneer pressing unit, Cream separator, Pasta making machine, Paneer cube machine, Vacuum tray dryer, Tray dryer, Canning line, Fluidized bed dryer, Fermentation line
2.	Dairy Economics statistics & management division	Computing Lab	01	55.76	Fifteen computers, one printer, scanner, photocopier machine and a projector. In all the computers, general purpose statistical software packages SAS,EAS, JMP and e-views are installed. The practical classes of courses offered by division are conducted in this lab. The lab is also being used to give SAS software training to participants in different summer/winter school.

		Student Cell	01	55.76	Used as a space to give hands on experience to the PG students on various analytical techniques and interpretation of data. It is equipped with internet and printing facilities.
3.	Dairy Chemistry Division	Milk protein and bioactive peptide lab	02	100	Refrigerated centrifuge, Multiplatereader, Akta purifier, Vacuum concentrator, DHanalyser, Shaking water bath, Electrophoresis unit, Stirredcell, Waterpurification system, Sortorius water filter unit
		Bioactive peptides and Functional Food lab	01	125	Freeze drier, membrane unit, UVlaminar flow, Electrophoresis unit
		Functional ingredients research and analysis Laboratory	01	125	Atomic Absorption Spectrophotometer, lab scale spray drier, Rancimat, pH-Stat, Freeze Drier
		Meta-bolomics Lab	01	125	Analytical balance, Multifunctional Ultrasonic cleanser, Multimode plate reader, Magnetic stirrer with hot plate, Rotospin, Hot plate Vortex
		Dairy Quality Diagnostics Lab	02	144	Lyophilizer/Freeze Drier, HPLC with Fluorescence Detector
		Milk lipids	01	150	Gas-Liquid Chromatography
		UGLab	01	100	Colorimeter, Keltech Nitrogen Unit, Electronic balances
		PGLab	01	100	Muffle furnace, Electronic balances, UV-Vis spectrophotometer, pH meter, Oven, Infra-red moisture balance.
		Instrument Room	01	125	Analytical balance, digital polai meter, ultra Sonicator, HPLC, Infra-Red Moisture balance, Single beam spectrophotometer, gas chromatography, UF unit, UV vis. Spectrophotometer, particle size analyzer, circulatory water bath, BOD incubator, LTD-2NSW 285lit.

4.	Dairy Engineering Division	Design and Drawing Section	01	135	Drawing Board and mini drafter for practical classes purpose; Facility of Nano CAD, attached computer with plotter for printing for lab experimentation and research.
		Electronic Workshop	01	67.5	Multi-meter, voltmeter, power-meter, soldering machine, thermocouple welding machine and other instruments for lab-experimentation, research and repair & maintenance
		Instrumentation Lab	01	67.5	Pressure, temperature, displacement, thermal conductivity measurement equipments, Shell and tube heat exchanger, PHE, Flow-meter and other instruments for lab -experimentation and research. SS PUF insulated cabinet (Endo-exo thermal cabinet for dahi)
		Thermodynamics Lab	01	67.5	Models of Petrol Engine (Two-Stroke & Four-Stroke); IC injector; Model of Fuel Supply System of Petrol Engine; Model of Ignition System; Locomotive, Babcock & Wilcox; Mascot (Cochran boiler); Lancashire Boiler; Compound Steam Engine; Science charts; Hand Refractometer; Weighing Balance; Induction Hot Plate; 3-Stage SSHE; Ghee Clarifier; Digital Thermometer; Digital Weighing Balance for teaching, research and experimentation
		Engineering Properties Lab	01	67.5	Sieve shaker, Hot air oven, Incubator, Viscometer, Anemometer, refractometer, Magnetic stirrer, Water bath for lab -experimentation and research.
		Process Equipment Lab	01	67.5	Viscometer, Water Activity Analyzer for research and experimentation purpose
		CAD Lab	01	45	Facility of Nano CAD and computers for experimentation and research.
		Process Engineering Lab	01	45	Hot Air Oven, Vacuum Oven, Refrigerator, Centrifuge for research and experimentation purpose
		Machine Design Lab	01	45	Viscometer - IKA Lo-Vi with Adaptor for research and experimentation purpose

		Hydraulics Lab	01	67.5	Venturimeter, Rotameter, Orifice meter, Pump models, Valve models, Flow meters, Impellers, Work benches for demonstration and experimentation purpose
		Machine Vision Lab	01	22.5	Color station, Color Desk
		Electrical Engineering Lab	01	112.5	AC Slip-ring Induction Motor 5 HP, Slip Ring, Induction Motor Starter (Automatic), Single Phase Transformer (5 KVA – 3; 2 KVA- 1), Synchronizing Panel for Alternator, Squirrel Cage Induction Motor –Gen. Set (Motor 7.5 HP; DC Generator 5 KW), AC Slip Ring Ind. Motor with Pony break 7.5 HP
		Refrigeration Lab	01	67.5	Refrigeration and A.C. Tutor, Mechanical Heat Pump, Temperature Humidity Cabinet
		Display Lab	01	190	Walk-in-Cooler/ Cold Room 2x2x2m with 10 cm PUF insulation with complete refrigeration system
		Workshops (for DE only)	01	210	Lathe Machine (Chamundi & Kirloskar), Shaper, Hardness testing machine, CNC lathe machine, Drilling Machine, Grinding Machine, Cutter HMT, Sheet Rolling, TIG welding, plate shearing, pico hydraulic press, plate shearing machine, hydraulic hacksaw, flaring and bending machine, motorized sheet shear, chop saw, flexible shaft grinder, hydraulic pipe bending machine for practical classes, lab-experimentation, fabrication, research and repair purpose
5.	Dairy Microbiology Division	Bacterial Metabolites Laboratory	01	175 m2	Stomacher, Spectrophotometer, Microscope, Incubator, Laminar air flow, Refrigerated centrifuge
		Techno functional Starter Laboratory	01	375 m2	Lab Scale Micro Filtration, Ultra Filtration, Spray drying unit, Fermentor, CO2 incubator, Inverted microscope, PCR Machine, Gel Documentation System, Centrifuge, Light Microscope
		National Collection of Dairy Culture	01	50	Refrigerated Centrifuge, Freeze Dryer

		Central Facility Electron Microscope	01	75	Scanning Electron Microscope and Transmission Electron Microscope
		Molecular Biology Unit & Biosafety Laboratory	01	350	BSL- cabinet equipped Biosafety Lab, Tissue culture lab with Inverted microscope, BSL-2 and CO2 incubator facility to carry out cell line work, Molecular Biology Lab equipped with Bead Beater, PCR machines, High speed refrigerated centrifuge, Vacuum Freeze drier, Agarose Gel Electrophoresis, Gel documentation system, ELISA reader and SDS-PAGE facilities to carry out molecular biology experiments
		UG Laboratory	01	200	Incubators, Refrigerators, Autoclave, Laminar air flow system, Hot air ovens, Water baths, Microscopes, Water purifier, Deep fridge, Weighing balance, Microwave oven.
		PG Laboratory	01	100	
		Synbiotic Functional Food Laboratory	01	200	BSL-II, Inverted microscope, Microscope with camera and display, High speed, Refrigerated centrifuge, PCR Machine, Gel electrophoresis units, SDS PAGE, Electronic balances, Autoclave, Hot air ovens, Incubators , vacuum pump, Microwave , refrigerators etc.
		Divisional library	01	25	Ph.D. and M. Tech Thesis of Dairy Microbiology
		Central Instrument Room	01	75	Inverted microscope, UV/ visible spectrophotometer, ELISA plate readers, RT-PCR machine, Ice flaking Machine, Water Purification System (Milli Q), Gel documentation system, Phase contrast microscope, Microscope with camera and display, High speed, refrigerated centrifuge, PCR Machine, Gel electrophoresis units, Shaker Incubator etc.
		Anaerobic Microbiology Laboratory	01	175	Anaerobic Workstation, Biosafety Cabinet type II, Incubators

		Functional Fermented Food Laboratory	01	175	Spectrophotometer, pH meter, fermenter, refrigerated centrifuge, HPLC, PCR, Gel doc. SDS PAGE, Electronic balances, Autoclave, Hot air ovens, Incubators , vacuum pump, Microwave , refrigerators, large size autoclave, microcentrifuge
		Microbial Biosensor Food Safety and quality Assurance	02	175	Biosafety cabinets (BSL-2) – 3 no's, Refrigerated shaker incubator, Microbiological plate reader, Electron multiplied coupled charged device, Lyophilizer, Eppendorf Centrifuge, BD Phoenix™ automated identification and susceptibility testing system
				1393.5	Biosafety level-2 containment, HVAC system, Biosafety 48 cabinets (A2 type- 3 nos), Biosafety cabinets (B2 type), VIDAS multiple pathogen detection system, Real-time PCR, D-count flow cytometer, Tecan multi-mode plate reader, Automated colony counter, Refrigerated shaker incubator, Eppendorf Centrifuge, Biacore Surface plasmon Resonance system, Charm 6602 system, Charm Rosa system
6.	Animal Bio-Chemistry Division	Molecular Endocrinology, Functional Genomics and Systems Biology Laboratory	01	250	CO2 Incubator, Low Temp freezer, Blood Biochemistry Analyzer, Elisa plate /reader, Dynamic light Scattering, Microscope Inverted - Tissue culture, Real Time PCR Machine, Gel Documentation system, Refrigerator, PCR
		Laboratory of Milk and Health	01	75	CO2 Incubator, Biosafety cabinet, Ultra Low freezer Elisa plate /reader Microscope Inverted - Tissue culture
		Immuno and Nutritional Biochemistry Lab	01	100	CO2 Incubator, Ultra Low Refrigerator, Microscope Inverted - Tissue culture Elisa plate /reader
		Laboratory of Mitochondrial Biology of Farm Animals	01	100	Low Temperature Freezer

		Semen Biochemistry Laboratory and Nano-technology Lab	01	100	CO2 Incubator, Microscope Inverted - Tissue culture, Shaking Incubator
		Functional Food and Therapeutics Laboratory	01	100	Biosafety Cabinet, Gel Doc, PCR, Fluorescent Spectrophotometer, G Box Cabinet Safety
		UG/PG Laboratory	01	125	Spectrophotometer, pH Meter, Hot air Oven, Water bath
		Seminar Room/ UG/ PG Class Room	01	100	Smart lecturn
		Central Instrument Room	01	150	Liquid scintillation Analyzer, Gamma counter, Inverted Microscope with flourecence, Double beam UV/ Visible scanning spectrophotometer, Analytical HPLC System, Freeze dryer with Vaccum Concentrator, Gas liquid chromatography system, Gel Documentation system, Gradient PCR Machine2 set, Microprocessor, Cont. High Speed Refrigerated Centrifuge, 50 Spectro florimeter, Real Time PCR, Microscope with Phase contrast Epifluorescence and digital Image analysis system, Water Purification System, Microprocessor Controlled Refrigerated Table Top Centrifuge
		Small Animal House	01	400	Provides small animals like rat, mice and rabbits for the experimental purposes Housing and feeding facility for the small animals
7.	Animal Physiology Division	Laboratories	03	90 each	Blood and milk cell counters, Milk analyzers, Inverted microscopes, Trans blot, Refrigerated Centrifuge, CO2 incubators, Nano-drop, PCR machines, Deep freezer (80°C), spectrophotometer, Laminar Flow etc.
		Environmen- tal Physiolo- gy lab	01	49	---
		Lactation lab	01	49	ELISA Micro Plate Reader with Washer, Dilutor Dispenser and Milko- Tester

		Lactation and Immunophysiology lab	02	49	Blood cell counter , CO2 incubator, Refrigerated Centrifuge, Deep freezer (-80 0 C), ELISA Reader, Inverted microscope, Milk analyser, PCR, Spectrophotometer UV 3000, Somatic cell analyser, Thermal Cyclor and Thermal Camera
		Tissue Culture lab	01	24.5	---
		Lab no. 209	01	73.5	Laminator Flow-Hood and Laboratory Scale Kit
		Reproductive physiology lab	01	49	Dry System (Lyophilizer), Dilutor Dispenser, Ice Flaking Machine and DNA/RNA Photometer
8.	Animal Genetics & Breeding Division	Buffalo Breeding Lab	1	60.9 m ²	PCR machine, Real time PCR machine, Horizontal gel electrophoresis, Automatic nucleic acid system, Refrigerated centrifuges, ultrapure water systems, deep freezers and facilities for training in analysis of animal breeding data as well as bioinformatic analysis.
		Molecular Genetics Lab	1	121.8 m ²	PCR machines (2), Horizontal gel electrophoresis, Gel Documentation System along with other equipment required for general work such as refrigerated centrifuges, ultrapure water systems, deep freezers, hot air oven, incubator, laminar air flow
		Animal Breeding Lab	1	60.9 m ²	PCR machine, Horizontal gel electrophoresis, centrifuge, QUBIT for DNA quantification and other equipment for related work
		Biometrical Lab	1	40.6m ²	Facilities for training in analysis of animal breeding data as well as bioinformatic analysis.
		Animal Genetics and Breeding office	01	20.3 m ²	To assist in the day-to-day affairs of the Division
		Class room	01	40.6 m ²	The class room is for taking daily classes for the PG as well as for PhD students.
		Seminar Hall	01	60.9 m ²	Seminar hall is provided with smart class room facilities for taking daily classes and arranging various training programmes

9.	Dairy Extension Facilities	Women Empowerment Laboratory	01	50	Eco Milk Testing Machine Refractometer pH Meter Moisture Balance
		Farm field technician Laboratories	01	25	Compute facilities for data storage
		Divisional Library	01	30	For MSc /PhD students for referring to thesis and selected reference books
		Research Scholar lab	01	20	Internet facilities
		Seminar room/ PG/ PhD Class Room	01	50	LCD projector, screen, public address system, automatic interactive lectern
		Smart Class Room	01	----	LCD projector, screen, public address system, automatic interactive lectern
		Socio-climatology Lab	01	37.16	2 Thermal imaging camera Arc GIS License 3 Computers
10	Artificial Breeding Research Centre			60702.8 (15 Acres)	One room for Farm In-charge, one room for Office of Farm In charge, Students lecture room, Three semen research laboratory, Two scientist seating cum laboratory space, Frozen semen database lab, Semen collection yard with bathing and cleaning facilities, Bull exerciser, Frozen semen processing lab, Frozen semen storage lab, Quality control of semen laboratory, Artificial Vagina preparation and sterilization laboratory, Bull weighing balance, Shed store for chemicals and consumables for semen processing and research facilities, iIndividual pen for 137 breeding bulls, Sick animal shed, Store room for feed and dry fodder, Green fodder chaffing area, Store room for farm implements, Labour room, Generator unit with two backup generator, Semen sale parlour,
				185.8 sq m.	• One AI Lab for Artificial insemination and reproductive treatment and data collection. • 1 lab for ultra-sonography of animals • Three lab for Semen collection and cryo preservation of semen of cattle buffaloes and goat

11	Livestock Research Center	Livestock Production Management Laboratory	01	60	Somatic cell counter along with vortex mixture, automatic pipette, keyboard and mouse, Automatic Biochemistry analyzer & Autoclave
		Molecular Reproduction cum teaching Laboratory	01	160	Fluorescent microscope, Refrigerated centrifuge, CO2 incubator, Ultrapure Water Purification system, Ultra low deep freezers (-80°C) & Gel-Documentation System
		Animal Reproduction Laboratory	01	65	Veterinary ultrasonography unit, Phase contrast microscopes, Dry bath, pH meter and Centrifuge
		Proximate analysis unit	01	70	Nitrogen analyzer, Fibre analyzer, Soxhlet apparatus, Distillation apparatus, Hot air oven, Deep freeze (-20°C) and Muffle furnace
		IFS Unit	01	10000 (one hectare)	Dairy unit, Fishery unit, Goatary unit, Poultry unit, Duckery unit, Vermicompost unit, Forage unit and Crop unit
		Livestock Production Management Laboratory	01	60	Somatic cell counter along with vortex mixture, automatic pipette, keyboard and mouse, Automatic Biochemistry analyzer & Autoclave
		Molecular Reproduction cum teaching Laboratory	01	160	Fluorescent microscope, Refrigerated centrifuge, CO2 incubator, Ultrapure Water Purification system, Ultra low deep freezers (-80°C) & Gel-Documentation System
		Animal Reproduction Laboratory	01	65	Veterinary Ultrasonography Unit, Phase contrast microscopes, Dry bath, pH meter & Centrifuge
12	Forage Research and Management Centre	Laboratories	02	100	Laboratories are equipped with equipment viz. Kjeldhal apparatus, Nitrogen analyser, Flame photometer, Ovens, Weighing balances, Muffle furnace, Soxlet apparatus, pH meter, EC meter, Double beam UV-Vis spectrophotometer, SPAD meter, Spectrophotometer, Atomic Absorption Spectrophotometer, Root analysis system, Canopy Analyser, Flame photometer etc.
13	Animal Nutrition Division	Precision instrument lab	5	150	Precision instrument room equipped with GLC, Spectrophotometer, Ionanalyser, centrifuge and NIRS for various sample analysis.

		Environmental studies lab	4	120	GC lab equipped with dual mode data station with FID, TCD for methane and SF6 determination. Equipped with instruments for chemical analysis of feeds and fodders, rumen fermentation parameters, pH analyser, Centrifugation facilities
		Rumen microbiology lab	4	120	Equipped with GLC, Anaerobic chamber, ELISA reader, Sonicator, RTPCR etc.
		Applied Animal Nutrition lab	3	90	Equipped with instruments for chemical analysis of feeds and fodders, Rumen fermentation parameters, pH analyser & Centrifugation facilities
		Micro-nutrient utilization lab	4	120	Equipped with instruments viz., Kjeldahl apparatus, Soxhlet apparatus, Refluxing facility, Oven and Furnace for chemical analysis of feeds and fodders, Rumen fermentation parameters, pH analyser and centrifugation facilities
		PGLab	4	120	Equipped with instruments for chemical analysis of feeds and fodders, rumen fermentation parameters, pH analyser, centrifugation facilities
		Feed Quality Control lab	2	60	Equipped with instruments for chemical analysis of feeds and fodders, Rumen fermentation parameters, pH analyser & Centrifugation facilities
		Precision nutrition lab	4	120	Equipped with instruments for chemical analysis of feeds and fodders, rumen fermentation parameters, pH analyser, Centrifugation facilities & GC fitted with all accessories
		Experimental shed	20	600	For feeding and management of almost 150 animals for experimental purpose
		Metabolic cages	4	120	For metabolic trial and collection of feed, fodder, urine and faeces from experimental animals
		Feedmill	20	600	For grinding mixing of concentrate mixture, block making for LRC and experimental purpose
		Feedmill	01	-	For grinding mixing of concentrate mixture, block making for LRC and experimental purpose
14	Animal Biotechnology Center	Embryo Biotechnology Laboratory	01	160	Embryo biotechnology, Stem cell biology, Transgenesis laboratory

		Cloning Laboratory	01	160	Assisted reproductive biotechnologies, Reproductive cloning, Gene editing (CRISPR), Transgenesis, Semen biology
		Centre of excellence of genome editing	01	16	Gene editing (CRISPR)
		Regenerative Biotechnology Laboratory	01	72	In Vitro fertilization, Somatic cell nuclear transfer, Transgenesis, OPU-IVF
		Cell Culture Laboratory	01	48	Mammalian cell culture & maintenance, Cryopreservation of cells for training purpose, Stem cell biology
		FACS Facility	01	16	Fluorescence-activated cell sorting & Analysis of mammalian cells.
		Animal Genomics Lab- 1	01	160	Functional genomics related to buffalo oocytes and early embryos, Circulatory miRNAs associated with pregnancy, Molecular determinants of Bull Fertility, Coding and non- coding carriage of extracellular vesicles
		Animal Genomics Lab - 2	01	160	Molecular genomics laboratory: To identify the genes and mutations in the DNA sequences affecting a phenotype or trait. Antimicrobial resistant bacteria causing mastitis in animal, Anti-viral immunity in dairy animal.
		Laboratory No - 6	01	160	Antimicrobial peptides/proteins, Sperm biology, Molecular biology, Recombinant protein experiments
		Cell Science Laboratory	01	160	IVF & Embryonic stem cell laboratory, Transgenesis Laboratory, Somatic cell nuclear cloning, Recombinant DNA laboratory for cloning and expression of gene
		Cell & Molecular Biology Laboratory	01	160	Cell culture, Peptidomic, Semen sexing laboratory
		Proteomics Laboratory	01	16	Purification of proteins, Gel based & Gel free proteomics, Western blotting
		Diagnostic Kit Development Laboratory	01	16	Immuno assay laboratory for pregnancy diagnosis in dairy animals. ELISA & LFA development laboratory

		MS Facility	01	16	Central facility for comparative proteome/ peptide analysis by mass spectrometry. Bio informative analysis of identified proteins and their possible role study in biological process.
		Fermentation Laboratory	01	16	High throughput bacterial fermentation laboratory for large scale production of recombinant protein.
		Bioinformatics Laboratory	01	140	Lab with high end workstation and computers for data analysis and developing AI models.
15	National Referral Center for milk Quality and safety	Chemistry Section	09	631	FTIR, Digital Refractometer, Particle size analyzer, GC-MS, Atomic absorption spectrophotometer, Lyophilizer, Elisa Reader, HPLC System, Refrigerated Centrifuge. Special features to conduct Practical / hands on training on: Mineral profile of dairy products, Aflatoxin M1 estimation in dairy products, Fatty acid profile of dairy products, Chemical testing of dairy products
		Microbiology Section	11	316	Biosafety Level-2, Electronic balance, Plate Reader (Monochromatic), Refrigerated Centrifuge, Media Preparatory & Sterilizer, VIDAS along with accessories, Automatic colony counter, D-Count SPR System 57 Biacore 3000, RTPCR, BD system Special features to conduct Practical / hands on training on: Testing of milk and milk products for hygiene and safety parameters as per FSSAI standards; Rapid testing of pathogens, antibiotics, pesticides; ID & AST of Bacteria Bio-sensor development work; Supply of Testing kits ;Hands on training in Specialized field of Food safety & Quality Assurance

		LMS Section	04	316	Ultra-High pressure liquid chromatography (UHPLC) system, Nano-liquid chromatography system (Nano LC), Electrospray Ionization Quadruple Time of Flight (ESI qTof) Mass Spectrometer, Liquid Chromatography-Triple quadruple system (LC-TQD). Special features to conduct Practical / hands on training on: Fractionation of proteins/ peptides, Determination of exact mass of proteins and peptides, Identification and screening of proteins / peptides in biological samples (Individual/ complex), Relative quantitation of proteins / peptides using high throughput proteomic approaches like, iTRAQ, TMT, Label free quantitation, LC-MS/MS based screening and quantitation of veterinary drugs
16	ERS, Kalyani	Cattle Section	01	2.5 Acre	Approx. 250 nos. Jersey Crossbreed cows of different age group are available for animal experimentation.
		Goat Section	01	0.25 Acre	Approx. 300 nos. Black Bengal goats of different age group are available for animal experimentation.
		Fodder Section	01	16 Hectare	Used for fodder production for farm animals (cattle and goats).
		Research Laboratories	06	330 m ²	Animal Physiology and Reproduction Lab, Animal Nutrition; Livestock Production Management lab; Animal Genetics and Breeding Lab; Animal Biotechnology Lab; Extension Education Lab
		Farmers' Hostel	01	197 m ²	For providing accommodation to trainee farmers/ other stakeholders
		Training hall / Seminar room	01	51 m ²	The training hall is equipped with state-of-the-art projection facilities, online meeting capabilities and video conferencing systems
		Bharati Seminar Hall	01	160 m ²	This hall, equipped with suitable audiovisual (A.V.) aids, is used for conducting large-scale training programmes, workshops and interactive sessions.
		Computer Centre	01	30 m ²	Computer for staff, students and other general activities
		Library	02	60 m ²	Books, Journals and periodicals

		KVK Nadia II (Addl)	01	Building & 30 Acre	As per all mandate of KVK of ICAR

Table 42: Instructional Farms

Facilities	No.	Area	Special features to conduct practical/ hands on training
Instructional farm- Agronomy Section (FRMC)	1	10 acre	- Facilities are available for conducting doctoral research programmes in areas such as nutrient management, weed management, conservation agriculture, organic farming, cropping systems research, and varietal evaluation of fodder crops. - A fodder crop cafeteria is maintained for practical training and identification of various annual and perennial forage crops, trees, and shrubs. - An Azolla unit is maintained to provide hands-on practical training. - The farm regularly conducts the following practical training activities: - Identification of important fodder crops, grasses, and weeds, along with practical training in farm operations for raising fodder crops. - Canopy measurement and yield estimation, and identification of seeds and plants of common grasses, legumes, and economically important trees, particularly in silvipastoral systems. - Methods of propagation and planting of grasses and trees in silvipastoral systems, fertilizer application in strip and silvipastoral systems, and estimation of protein content in loppings of major fodder trees. - Identification of important weeds and weed seeds, preparation of a weed herbarium, weed surveys in crops and cropping systems, and crop–weed competition studies. - Preparation of herbicide spray solutions for high- and low-volume sprayers, use of various spray pumps and nozzles, calculation of swath width, and estimation of herbicide requirements.

			- Seed sampling and evaluation of seed quality based on purity and germination, along with rouging, detasseling, inspection, and maintenance of seed production fields of important crops. - Measurement of soil water potential using tensiometers, preparation of soil-moisture characteristic curves, water flow measurement using different devices, determination of irrigation requirements, calculation of irrigation efficiency, and estimation of infiltration rate.
Cattle Farm-Livestock Research Centre	1	40 acre	a) Facilities for conducting animal research experiment trials for both master and doctoral students on dairy and goat husbandry (Animal nutrition, genetics & breeding, physiology, production and management, biotechnology, bio-chemistry, microbiology etc.) b) Artificial insemination and pregnancy diagnosis in dairy animals unit c) Animal health complex for treatment of various categories of animals . d) The various shelter facilities for different categories of dairy animals e) Following practical's are conducted regularly at LRC - In farm training of M.Sc. and Ph.D. students - The various types of milking parlour - Transition period management of cows/buffaloes - New born calf management - Data recording unit for maintain the animals record - Feed and fodder processing facilities - Goat rearing and management facilities

Table 43: Institutional Workshops

Sr. No.	Divisions/ Section	Facilities	No.	Area	Facilities Available
	Dairy Engineering Division	R&D workshop	01	210 m ²	R&D workshop in the Division provides central facility for fabrication of research prototype equipments designed in the division. The workshop is amply equipped to take up fabrication jobs such as sheet metal work, turning, welding, drilling, grinding, buffing, fitting and black smithy. The technical support in the workshop is competent enough to handle both mild steel and stainless steel fabrication. Besides providing the students of B.Tech. (DT) practical training in engineering manufacturing processes, the workshop helps postgraduate and doctorate engineering scholars in devising and fabricating the experimental research setups. Machinery available Lathe Machine (Chamundi & Kirloskar), Shaper, Hardness testing machine, CNC lathe machine, Drilling Machine, Grinding Machine, Cutter HMT, Sheet Rolling, TIG welding, plate shearing, pico hydraulic press, plate shearing machine, hydraulic hacksaw, flaring and bending machine, motorized sheet shear, chop saw, flexible shaft grinder, hydraulic pipe bending machine for practical classes, lab-experimentation, fabrication, research and repair purpose.
	Maintenance & Engineering Section	Mechanical Workshop	01	314 m ²	Welding Room, Hand press, Tool Grinder, Power Hexa Machine, Shaping Machine, Lathe Machine, Drill Machine, Do-all Machine, Working Bench, Hydraulic Press, Radial Drill Machine and tools for hands on training on manufacturing processes.
		Carpentry Workshop	01	185 m ²	Small, Band Saw, Big Band Saw and Carpentry tools for hands on training.
		Effluent Treatment Plant	01	904 m ²	200 m ³ / h capacity Sewage pumps, Aeration Tank, Equilizer Tank, USAB Reactor Tank, Sludge drying Bed, Clarifier, Generator shed, Grit Chamber, Screen Chamber, Clarifier Tank, Sludge Bed, Filtrate Pump for demonstration of effluent treatment processes.

		Electric Substation	01	443 m ²	Vacuum circuit Breaker (VCB), HT/ LT, 2 Transformers, ACB, 2 Generators, Capacitor Bank, MCCB Panel for demonstration of electric energy transportation and distribution.
		Generator House	01	627 m ²	Generators (110 KVA to 1000 KVA) 4 Nos for demonstration of working of electric generators.

Dairy Plant

(a) Experimental Dairy (ISO-22000-2018 certified) Plant

The Experimental Dairy was established at the Institute in 1961 with the objectives of: (i) providing R&D facilities for the development of new products and processes at a semi-commercial scale, (ii) offering practical training to undergraduate and postgraduate students in dairy plant operations, and (iii) facilitating in-plant training for students from various educational institutions. It also serves as a training platform for entrepreneurs. The dairy plant has a processing capacity of 10,000 litres of milk per day and is organized into different sections, each headed by a section in-charge, while overall operations are supervised by the Dairy Superintendent. It is equipped for the manufacture of a wide range of products, including concentrated and dried milk products, cheese and fermented products, fat-rich dairy items, traditional dairy products, and dairy by-products. These facilities also support the production of a diverse range of formulated, dietary, and convenience dairy products. A notable feature of the Experimental Dairy is the successful implementation of a revolving fund scheme to utilize idle processing capacity for revenue generation. Initiated with a core grant of 85 lakhs from the Council, the entire amount has been repaid through profits generated from the sale of milk and milk products. The success of this initiative subsequently led ICAR to expand the concept of revolving fund schemes across its other institutes.

(b) Quality Control Laboratory: A quality control laboratory is attached to the Experimental Dairy, equipped with essential facilities for routine chemical and microbiological analysis of dairy products. All products manufactured in the Experimental Dairy are tested in this laboratory prior to dispatch to the milk parlour for sale. The laboratory also provides analytical support for external samples on a consultancy basis and facilitates training for students from other institutions as well as participants of various KVK training programmes.

Table 44: Instruments and Physical Facilities Available at Experimental Dairy

Sr. No.	Dairy Plant Sections	Instrument/ Equipment	No.	Special features to conduct practical/ hands on training
1.	Market Milk Section	a) Cream Separator-5KL	01	All the sections are well equipped with the equipment and facilities to impart hands on training and in conducting practical classes for dairying students and professionals.
		b) HTST Pasteurizer	01	
		c) Mixer Grinder	01	
		d) Pouch Filling Machines	02	
		e) Milk Weighing Tank- 500kg	02	
		f) Dump Tank – 1500 L	01	
		g) Multi-Purpose Tanks (1000 L each)	03	
		h) Milk Storage Tanks (4000 L each)	03	
		i) BMC (3000 L)	01	
		j) BMC (500 L)	01	
		k) Incubation Chamber(10x10 ft)	01	
2.	Condensed and Drying Section	a) Triple Effect Evaporator with Cooling Tower	01	
		b) Roller Dryer	01	
		c) Spray Dryer Atomizer type - 40kg/h	01	
		d) Spray Dryer Nozzle type - 10kg/h	01	
		e) Double Effect Evaporator	01	
		f) Steam Heated Tilting type Khoya making Machines	04	
		g) Steam Heated Manual Khoya Kettles	03	
		h) Product Coding/Printing Machine	01	
		i) Hand Coding Machine	01	
		j) Powder Grinding Machine	01	
		k) Manual pouch sealer	01	

3.	Cheese & Butter Section	a) Ghee Kettle with Clarifier	01	
		b) Cleaning in Place Tanks (1000 L each)	03	
		c) Paneer & Cheese Vats (2000L, 800L, 200L, 200L)	04	
		d) Pneumatic Paneer Pressing Machine	01	
		e) Cheese Press	01	
		f) Cheese Grinder & Steam Heated Cheese Kettle	01	
		g) Cheese Milling Machine	01	
		h) Cheese Slicer	01	
		i) Butter Churn	01	
		j) Continuous Ice-cream Freezer with ice cream filling machine	01	
		k) Cream tank	01	
		l) Ice cream mix tank – 500 L	01	
		m) Vacuum Sealing Machine	01	
		n) Homogenizer	01	
		o) Cheese Grinder	01	
		p) Integrated Ghee Processing Unit	01	
4.	Workshop	a) Boilers 3 Tons	01	
		b) Refrigeration System with Ammonia Compressors	04	
		c) Air Compressors	02	
		d) DG Set – 200KVA with RECD	01	
		e) Welding machine	01	
		f) Drilling Machine	01	
		g) Sheet Cutter	01	
		h) Boiler 1.5 Ton Gas Fired	01	
		i) Freon Based IBT Tank (1500 L)	01	

		h) Vehicles – ESUZU Dmax Cab &Eicher Chassis with Milk Tanker	01 each	
		i) Bulk milk cooler IBT type at Cattle yard-3000 L	01	
		j) Cold Stores	05	
		k) Water Cooler	01	
		l) Water Softener Plant	01	
		m) HSD oil Storage Tanks – 35 KL & 15 KL	02	
5.	Milk Parlour	a) Deep Freezer	02	
		b) Hot Juice Dispenser	01	
		c) Cold Juice Dispenser	01	
		d) DG Set – 65KVA	01	
		e) Pizza Oven – 2 Nos	01	
		f) Cold Room	01	
		g) Refrigerator	01	
Products manufactured:				
Flavour Dairy Drink, Sweet and Salted Lassi, Cow Ghee, Roller dried milk powder, Gulab Jamun mix powder, Burfi, Kalakand, Ice-cream, Paneer, Masala Paneer Table Butter, Processed & Pizza Cheese etc.				
Total Covered Area of Plant = 2, 044 sq. m.				

(C) Model Dairy Plant

The state-of-the-art commercial dairy plant at ICAR-National Dairy Research Institute was established in 1995 with financial support from the World Bank and installed on a turnkey basis by the National Dairy Development Board. It functions as a vital interface between the Institute and the dairy industry. Originally designed for a capacity of 60,000 litres per day, the plant has since been upgraded to handle up to 200,000 litres of milk daily. It is well-equipped with modern infrastructure for the production of a wide range of milk and dairy products. At present, the Model Dairy Plant processes and packs approximately 200,000 litres of milk per day, along with 2.5 MT of ghee and 150 kg of pinni. The primary objective of the plant is to provide hands-on, in-plant training to B.Tech (Dairy Technology) students of the NDRI Deemed University and to equip them with the skills and confidence required to independently manage dairy plant operations.

Table 45: Different machineries procured under various sections

Sr. No.	Section	Name of the plant and machineries	No.	Special features to conduct practicals
1.	Milk Processing	Can Washer and Can Convey System	01	On the job training Conference room for interaction QA lab for practical training
		Inline Strainer	02	
		Raw Milk Chiller 20KLPH	01	
		Sour Milk Separator	01	
		Raw Milk Silo 60KL	02	
		Past. Milk Silo 40KL	03	
		Milk pasteuriser 10KLPH	02	
		Tripurpose Centrifuge 10KLPH	02	
		Tank For Almix (RCM)	01	
		Auto CIP Systems	01 set	
		Pasteurized Milk Chiller 10KLPH	01	
		Weigh bridge 50MT	01	
		Cream/Ice cream mix pasteuriser 5KLPH	01	
		Cream ripening tank 5KL	02	
		Butter churn 5TL	01	
		Homogeniser 10KLPH	01	
2.	Ghee Section	Ghee boiler 1MT	02	
		Ghee clarifier	01	
		Ghee storage tank MT	02	
		Ghee packing m/c	01	
		Ghee balance tank 100 litre	01	
3.	Milk Packing Section	Pouch crate washer with drier 800Crates/h	01	
		Milk Balance tank (Buffer Tank) 12MT	01	
		Buffer Tank 5MT	01	
		Pouch filling machine 6lt 14/Min	03	
		Pouch filling m/c(Mechanical) 500P/h	03	
		Pouch filling m/c(Mechanical) 10Th Pp/h	01	
		Pouch crate conveyor with auto loader	01 set	

4.	Ice Cream Section	Mixing cum heating vat 1MT	01
		Mixing cum heating vat 1MT	01
		Mix aging tank 2MT	01
		Flavour mixing tank 500 litre	02
		Continuous Freezer	02
		Continuous Freezer	01
		Fruit Feeder and vibrator	01
		Ice cream cup filling m/c	01
5.	Cheese Section	Cheese/Paneer vat	02
		Cheese press and hoops	02 sets
		Cheese culture vats	01
		Curd milling and cutting equipment	01
		Cheese cup filling m/c	01
		Cheese whey storage tank	01
		Cheese cooking kettle	01
		Std Milk tank for Paneer	02
		Milk heater	01
		Coagulant heating vat	01
		Paneer cooling vat	01
		Vacuum packaging M/c	01
		Paneer Press	01
6	Pinni Section	Steam jacketed kettle	02
		SS trays	01
		SS molds	01
		Coding machine 0.5kv	01
		Metal detector	01
7	QC Laboratory	Refrigerator	01
		Refrigerator	01
		B R Meter	01
		Water Bath (Circulating Pump)	01
		Water Bath (Digital Temp Indicator)	01
		OVEN for drying glassware	01
		Hot Air Oven	01
		Weighing Balance	01
		Weighing Balance	01
		ISE METER	01
		pH meter	01
		Incubator-Bacteriological	01

		Hot air oven	01	
		Water Bath (Digital Temp Indicator)	01	
		Water Bath Serological	2	
		Water Bath Serological	01	
		Gerber Centrifuge	01	
		Gerber Centrifuge	01	
		Heating mantle-Water Distillation	01	
		Water Bath	01	
		Autoclave (portable)	01	
		Autoclave-1	01	
		Autoclave-2	01	
		Heating assembly- Kjeldahl test	01	
		Hot Plate -1 35*40"	01	
		Hot Plate -2 35*40"	01	
		Hot Plate-3 (small)	01	
		Lab. All-purpose Stirrer	01	
		Vortex Mixer-1	01	
		Vortex Mixer-2	01	
		Remi Centrifuge	01	
		pH meter (Electrode Based)	01	
		Flame Photometer	01	
		Incubator	01	
		Water bath	01	
		BOD incubator	01	
		Bacteriological Incubator	01	
		Olympus compound microscope	01	
		Compound microscope	01	
		Incubator for antibiotics residue	01	
		Incubator for Alfa toxin/melamine	01	
		Lovibond comparator 2000	01	
		Colony Counter	01	
		Magnetic Stirrer	02	
		Laminar Air Flow	01	
8	Engineering Section	Electrical Section		
		HT Panel (1+2) Panel type	01	
		Power transformer	02	
		HT Voltage Stabiliser 750KVA	01	
		LT panel	01	

		Diesel generating set 400KVA	01	
		DG Set 750KVA	01	
		Power capacitor bank	20	
		Refrigeration Section		
		Reciprocating compressor with motor KC-4	03	
		Reciprocating compressor with motor KC-2	03	
		Oil separator	01set 6 nos	
		Receiver with valves and gauges	01	
		Liquid gas cooler	01	
		Condenser	02	
		Cooling towers	set nos	
		Boiler Section		
		Oil fired boiler complete with accessories and mountings 2.5MT	01	
		Softner	01	
		Boiler (Agro waste) 2 Mt	01	
		Air compressor	01	
		Hydro flow tanks	02	
		Water softening plant	1set	
		Raw Water tube well	03	
		Air compressor with air drier(ref. type)	02	
		Workshop tools	1lot	
		Air compressor with motor	01	
		Effluent Treatment Plant	1 set	
Products manufactured: Pasteurised Milk (polypacked)- Toned, Double Toned, Cow, Full cream, Supet-T, Premium Full cream variants in 170mL/250mL/500mL/1000mL/2000mL/6000mL Ghee – in 1kg; 5Kgs; 15 Kgs packaging Pinni – in 200 g ½ kg and 1kg 4. Pinni Variants (Besan Pinni): in 200 g, ½ kg and 1kg 5. Kulfi; Softy (Chocolate and Vanilla). Total Covered Area of Plant = Total Open Area 75388 sq. m., Covered area 4862 sq. m.				

Table 46: Veterinary Clinic, Hatchery and Pond

Sr. No.	Section	No.	Area	Special features to conduct Practical/ Hands on training
	Livestock Research Centre (Cattle Yard)	1	10 acre	- Facilities are available for conducting doctoral research programmes in areas such as nutrient management, weed management, conservation agriculture, organic farming, cropping systems research, and varietal evaluation of fodder crops. - A fodder crop cafeteria is maintained for practical training and identification of various annual and perennial forage crops, trees, and shrubs. - An Azolla unit is maintained to provide hands-on practical training. - The farm regularly conducts the following practical training activities: - Identification of important fodder crops, grasses, and weeds, along with practical training in farm operations for raising fodder crops. - Canopy measurement and yield estimation, and identification of seeds and plants of common grasses, legumes, and economically important trees, particularly in silvipastoral systems. - Methods of propagation and planting of grasses and trees in silvipastoral systems, fertilizer application in strip and silvipastoral systems, and estimation of protein content in loppings of major fodder trees. - Identification of important weeds and weed seeds, preparation of a weed herbarium, weed surveys in crops and cropping systems, and crop-weed competition studies.

				• Preparation of herbicide spray solutions for high- and low-volume sprayers, use of various spray pumps and nozzles, calculation of swath width, and estimation of herbicide requirements. • Seed sampling and evaluation of seed quality based on purity and germination, along with rouging, detasseling, inspection, and maintenance of seed production fields of important crops. • Measurement of soil water potential using tensiometers, preparation of soil-moisture characteristic curves, water flow measurement using different devices, determination of irrigation requirements, calculation of irrigation efficiency, and estimation of infiltration rate.
2	Carp Hatchery System	01	400m ²	KVK is equipped with a carp hatchery system to facilitate capacity building of trainees through hands-on training and demonstration. The hatchery unit includes a fish pairing tank, where brooders are kept overnight during the breeding period after hormone injection. In addition, the unit is equipped with four hatching tanks fitted with a water circulation and showering system, where fertilized eggs hatch and develop into spawn.
Fish Farming Ponds				
3	a) Nursery Ponds	03	3000 m ²	Ponds are used for rearing 6-day-old spawn for about one month, during which they grow into fry. A portion of the fry is sold as fish seed based on demand. The remaining fry are then transferred to rearing ponds, where they are cultured for an additional 2–3 months until they reach fingerling size, making them ready for stocking in grow-out ponds. Additionally, these ponds are used for conducting OFTs.
	b) Grow out Ponds	02	10000 m ²	There are two grow out ponds of approximately 5,000m ² size. Fingerlings are stocked in Grow out ponds and cultured for 8 to 10 months. Marketable sized fishes from these grow out ponds are sold during winter season

	c) Brooders Pond	01	1800 m ²	The brooders pond is used for maintaining 2–3-year-old mature male and female fish. These brooders are provided with a specialized diet formulated to enhance reproductive performance, ensuring the production of high-quality sperm and eggs.
4	Apiculture/Bee keeping	15 boxes	0.25 Acre	For capacity building of trainees with hands-on experience, one Apiculture/Bee keeping unit is being maintained with 15 colonies of <i>Apis mellifera</i> , which is a known for non- or less migratory behavior.
5	Vermicompost production unit	01	0.5 Acre	For promotion of organic matter recycling and enrichment in agriculture, one 5 beds unit is being maintained for demonstration of vermicompost production.
6	Horticulture/ Agro-forestry unit	01	2 Acre	Guava, Aonla, Citrus and Ber plants are being maintained in orchard demonstration unit
7	Technology demonstration on field crops	01	3 Acre	For assessment of production potential of different Crops on farm testing (OFT) is conducted with latest technology at KVK premises. One crop cafeteria for demonstration of Production technology of different fields' crops in different season is also being maintained.
8	Seed production programme	01	32 Acre	Seed production programme is conducted for major rabi and kharif crops. The seeds are made available to ATIC for further sale after processing and packaging.
9	Custom hiring centre of crop residue management machine for Karnal district	02		One custom hiring centre has been developed for ensuring adoption of resource conserving technologies through in-situ crop residue management at farmers' field wherein self-help group and unemployed rural youth are encouraged to take up custom hiring of conservation agriculture machines as a profession. Different machines available at the centre are- Shrub Master (2), Zero Tillage (7), Rotavator (1), Happy Seeder (5), MB Plough (3) and Mulcher (4).

6.5.3.3. Student READY/ In-Plant Training / Internship / Experiential Learning Programmes

Four Student Ready Programs are implemented as a part of the B.Tech (Dairy Technology) curriculum.

Table 47: Student READY programme implemented at the Institute for undergraduate students

Sr. No.	Course Name	Year	Course No.	Credits
1.	Student READY Rural Dairy Work Experience Programme-I	During Summer Break between 1 st and 2 nd years	DT-122	0+5
2.	Student READY Rural Dairy Work Experience Programme-II	During Summer Break between 2 nd and 3 rd years	DT-223	0+5
3.	StudentREADY Experiential Learning	Fourth Year, First Semester	DT-413	0+10
4.	Student READY In-Plant Training	Fourth Year, Second semester	DT-421	0+20

During the initial phase of the Student READY programme, students receive introductory lectures on dairy farming delivered by subject experts, along with practical exposure at the Institute Livestock Farm. An indicative syllabus for this component is provided in the table below.

Table 48: Student READY Rural Dairy Work Experience Programme-I Schedule (4 weeks)**B.Tech. (Dairy Technology) 1st year**

Days	Time	Topic
1	09.30 - 11.00 AM	Introduction to training program
	11.00 - 11.45 AM	Group formation and distribution of topic
	12:00 – 1.00 PM	Orientation visits
	1.00 – 02.00 PM	Lunch
	02.00 – 3:45 PM	Preliminary literature survey for project work
	04.00 – 5:00 PM	Submission of project outlines
2	09.30 - 10.45 AM	Guidelines for preparation of training/project report
	10.45 -1.00 PM	Vermicomposting
	1.00 – 02.00 PM	Lunch
	02.00 - 05.00 PM	Importance and scope of commercial dairy farming
3	09.30- 1:00 PM	Farm mechanization (Visit to farm & LRC section)
	01.30 – 02.15 PM	Lunch
	02.00 – 04.00 PM	Important breeds of dairy animals suitable for commercial dairy farming
	04.00 - 05.00 PM	Interaction with participants (Topic distribution)
4	09.30 -12.00 AM	Introduction to basic aspects of animal nutrition
	12.00 - 01.00 PM	Visit to Feed Mill
	01.00 – 02.00 PM	Lunch
	02.00 - 03.30 PM	Peri-urban dairy farming system

	03.30 - 05.00 PM	Identification of Dairy Breeds (Practical Demonstration)
5	09.30-11.30 A.M.	Theoretical Aspects of Artificial Insemination
	11.45 – 1.00 PM	Semen collection, its examination, processing and preservation (freezing), handling and transport
	01.05-02.00 P.M	Lunch
	2.05-3.30 PM	Common diseases of dairy animals: their symptoms, control and preventive measures including vaccination and deworming
	3.45 – 5.00 PM	Waste management at dairy farm
6	09:30 – 11:00 AM	Shelter requirements of dairy animals and layouts of dairy farm building
	11.15-1.00 PM	Preparation of dairy farm project reports
	01.05-02.00 P.M	Lunch
	2.05-5.00 PM	Waste Management (Practical on vermin-composting)
7	09:30 - 11:30 AM	Raw Milk quality, issues and strategies
	11.30 - 01.00 PM	Milking Management: Milking practices, systems of milking, milking parlour and sanitation of milking equipment (Theory and practical)
	01.00 – 02.00 PM	Lunch
	02.00 - 03.30 PM	Importance of Mineral & Feed Supplement in live stock
	03.30-05.00 PM	Ration balancing for dairy animals -1 (Theory & Practical)
9	09:30 - 11:00 AM	Nutritional management of metabolic disorder in dairy animals
	11.00 – 1.00 PM	Practical on AI: Female reproductive system, normal estrus cycle, estrus symptoms, right time of insemination, AI equipment and AI procedure, preparation of heat expectancy chart
	01.00 – 02.00 PM	Lunch
	02.00 - 03.00 PM	Health Management of Dairy Animals
	03.00-05.00 PM	Visit to NBAGR
10	09.30 – 1.00 PM	Visit to dairy farm
	01.00 – 02.00 PM	Lunch
	02.00 - 05.00 PM	Software based training on preparation of concentrate mixture for different categories of dairy animals (Library)
11	09:30 - 11:00 AM	Clean Milk Production
	11.00 – 1.00 PM	Integrated Farming system (Visit to CSSRI, Karnal)
	01.00 – 02.00 PM	Lunch
	02.00 - 03.00 PM	Concept of genomics and phonemics
	03.00-05.00 PM	Basics of photography/Videography (Theory)
12	10 AM- 4 PM	Rural Work Experience (RWE); Self-Directed Learning; Swachhata Abhiyan

13	09:30 - 11:00 AM	Clean Milk Production
	11.00 – 1.00 PM	Integrated Farming system (Visit to CSSRI, Karnal)
	01.00 – 02.00 PM	Lunch
	02.00 - 03.00 PM	Basics of making poster/folders/pamphlets (Theory)
	03.00-04.00 PM	Management Practices of Dairy Animals for Protection Against Climatic Stress
	04.00-05.00 PM	Understanding of milk biosynthesis
14	9.30-11.00 AM	Economics of milk production
	11.00-1.00 PM	Reproductive Disorders in Dairy Animals
	1.00-2.00 PM	Lunch
	2.00-3.30 PM	Milk Procurement (Route selection, Activities at Milk collection Centres)
	3.30-5.00 PM	Working and designing aspects of Bulk Milk Coolers
15-22	9.30 AM – 5 PM	Hands-on-training module (Different Sections of LRC)
23-24	9.30 AM- 5 PM	Village Attachment/Farm Attachment/Milk Processing Unit Attachment)
25	09:30 - 1:00 PM	Group presentation on assigned Topics
26	09:30 - 1:00 PM	Evaluation of Trainee (Written & Practical Examination)
	2.00-5.00 PM	Report Submission & Faculty Interaction

(a) Student Ready Rural Dairy Work Experience Programme-I

(Hands on Training on Animal Management, Village Attachment, Deputation at Milk Collection Centre)

The programme facilitates a better understanding of animal management and clean milk production practices through deputation of students to villages, commercial dairy farms, and milk collection centres, along with interactions with line departments. This exposure enables students to address diverse issues related to milk productivity and quality. They are also trained to develop comprehensive solutions for challenges faced by dairy farmers and the industry in sourcing quality milk, and to prepare brochures, extension literature, and videos on assigned topics.

(b) Student READY Rural Dairy Work Experience Programme-II

Students are assigned to research laboratories for a period of four weeks to gain exposure to the Institute's research programmes, including their origin, conceptualization, formulation and execution. During this period, they are also given small projects to undertake, enabling hands-on experience of the functioning of a research laboratory.

(c) Student READY Experiential Learning Module

The Experiential Learning Module has been introduced in line with the 5th Deans' Committee recommendations, with the primary objective of providing hands-on training in milk and milk product processing to enhance the technical and managerial

competencies of B.Tech (Dairy Technology) students. The programme aims to develop essential skills such as leadership, teamwork, interpersonal communication, analytical problem-solving, and entrepreneurial/business ethics, which are often inadequately addressed in conventional teaching methods. Under this module, students are organized into teams of eight and engage in brainstorming for new product or process development. Each team establishes a business entity and works through stages including prototype development (R&D), pilot-scale trials, test marketing, process refinement and the development of a comprehensive business model canvas, under the mentorship of a faculty expert. The students have developed technologies and business models for products such as Feta cheese, whey drink, cream cheese, bal mithai, cottage cheese. Consumer acceptance studies were conducted and formulations and processing parameters were refined based on feedback. Additionally, all students prepared Detailed Project Reports (DPRs) for setting up product-specific processing units. This included determining plant capacity based on raw material availability and market potential at selected locations, along with planning infrastructure, plant and machinery specifications, utilities, support systems, and procurement strategies as part of the comprehensive exercise.

(d) Student READY In-Plant Training

Students' resumes are circulated to dairy plants nationwide, which shortlist candidates through written tests, group discussions, and telephonic, virtual, or in-person interviews. Selected students undergo six months of in-plant training from January to June in their final year. At the end of this period, a viva voce examination is conducted by an external examiner along with institute faculty to assess the training, knowledge, and experience gained.

Table 49: In Plant Training Details during 2021-2026

Year	Major dairy plants where students undertook training	Average monthly stipend (Rs.)
2021-22	Model Dairy Plant, Karnal Zydus Wellness Hector Beverages Mother Dairy	3622.00
2022-23	Jharkhand Milk Federation, Ranchi Model Dairy Plant, Karnal Ecolab Mother Dairy, Delhi Zydus Wellness Sakhi Mahila, Ajmer JKMPCL, Srinagar	7520.00

	Kaira Milk Union, Anand GEA, Gurgaon Paras Dairy, Sahibabad Parle Agro, Ahmednagar	
2023-24	Cargill India The Jharkhand state co-operative Milk Producers' Federation Limited Model Dairy Plant, NDRI, Karnal Panchmahal Dairy Ujjain Zydus Wellness Aligarh Amulfed Dairy, Gandhinagar Milma Dairy COMFED, Bihar	4946.00
2024-25	The Jharkhand state co-operative Milk Producers' Federation Limited Model Dairy Plant, NDRI, Karnal Panchmahal Dairy Ujjain Zydus Wellness Aligarh Amulfed Dairy, Gandhinagar Milma Dairy COMFED, Bihar Nestle India FSSAI, Kolkata Modern Dairies Karnal	9329.00
2025-26	The Jharkhand state co-operative Milk Producers' Federation Limited Model Dairy Plant, NDRI, Karnal COMFED, Bihar Nestle India Lactalis India NDDB Dairy Services TetraPak	13281.00

6.5.3.4: Curricula Delivery through IT (smart classrooms / interactive board etc.)

Table 50: Number of smart class rooms in various Divisions.

Sr. No.	Divisions/ Sections	Smart classrooms	No	Whether upgraded or created new	Space of each	Facilities available

	Dairy Chemistry	Lecture room	01	Upgraded	75m2	LED projector, podium with computer Interactive board Mike and speakers fitted.
	Dairy Technology Division	Divisional Seminar room (DT)	01	Upgraded & Renovated	75 m2	Multimedia projector Torch screen lectern Speakers' Sound system Internet connection Interactive board Air Conditioners
		B. Tech. class rooms	04	Upgraded & Renovated	75 m2 75 m2 100 m2 50 m2	Multimedia projector Torch screen lectern Speakers Interactive board Internet connection Air conditioned
		PG Lecture Room	01	Upgraded	50 m2	Multimedia projector Lectern, Internet connection Interactive board Air conditioners
	Dairy Economics statistics & management division	Smart classroom	01	Upgraded with CCTV camera	50 m2	Audio-video system, LCD Projector, Interactive board board Facility available for teaching, training and conducting examinations.
	Dairy Engineering Division	Class room	01	Upgraded	45 sq mt	LED projector, podium with computer & Interactive board Mike and speakers fitted.
	Dairy Microbiology Division	Seminar Rooms and Lecture room	02	Upgraded	75 m2 50 m2	Advanced Projector Facility, Speaker System For Proper Sound, Advance Lecture Stand.

	Animal Bio-Chemistry Division	Smart classrooms	02	Upgraded	30 x 2 = 60 m ²	LED, AC, Smart Podium, interactive board
		Conference Hall	01	Upgraded	95 m ²	LED, AC, Smart Podium, interactive board
		Seminar Room	01	Upgraded	30 m ²	LED, AC interactive board, computer etc
	Animal Physiology Division	Smart classrooms	01	Upgraded	50 m ²	Overhead projector and internet connectivity, conference table and smart podium
	AG & B	Seminar Hall	01	Upgraded	75 m ²	Seating capacity ~30 persons Digital touch podium with internet facility Projector Conference room Microphone system Power back up Interactive board
	Dairy Extension Facilities	Smart Class Room	01	Upgraded	75 m ²	Interactive board, sound system, LED projector, lectern with computer and display facilities, UPS
	Animal Nutrition Division	Smart Classroom	02	Upgraded in last 5 years	125m ²	LCD Projector fitted with computer, Interactive board etc.
	Animal Bio-technology Center	Smart classrooms	02	Upgraded	30 x 2 = 60 m ²	LED, AC, Smart Podium, interactive board
		Conference Hall	01	Upgraded	95 m ²	LED, AC, Smart Podium, interactive board
		Seminar Room	01	Upgraded	30 m ²	LED, AC interactive board, computer etc
	ERS, Kalyani	Seminar Room	01	Upgraded	44.60 m ²	Interactive board
	SRS					

	Education Section	PG classroom	01	Upgraded	47	LED projector, podium with computer Interactive board with mike and speakers fitted
		UG classroom		Upgraded	43	LED projector, podium with computer
	Dairy Engineering Section	UG classroom	01	Upgraded	73	LED projector, podium with computer Interactive board with mike and speakers fitted
	Dairy Production	UG classroom	01	Upgraded	51	LED projector, podium with computer Interactive board with mike and speakers fitted
	RKVY building	Seminar room	01	Created	136	LED projector, podium with computer Interactive board with mike and speakers fitted

6.5.4. Student Development

6.5.4.1 Student Intake and Attrition

Table 51: Student Intake and Attrition during 2021-26

Year	Student Intake			Attrition (%)		
	UG	PG	PhD	UG	PG	PhD
2021	39	166	81	7.5	9.63	4.8
2022	38	142	77	5	4.22	5.54
2023	39	106	89	4.5	6.6	9.2
2024	91	91	69	2.9	12.08	2.2
2025	113	130	80	5.2	0.76	2.80

6.5.4.2 Number of students in theory and practical classes

Table 52:

Year	Total Intake			Batch of students in Theory Class			Batch of students in Practical Class		
	UG	PG	PhD	UG	PG*	PhD*	UG [#]	PG*	PhD*
2021	39	166	81	39	12	09	20	12	09
2022	38	142	77	38	10	07	19	10	07
2023	39	106	89	39	09	07	20	09	07
2024	30	91	69	40	10	06	15	10	06
2025	41	130	80	41	10	06	21	10	06

*Average number of students in each of the different disciplines

[#]Practicals conducted in two batches to facilitate hands-on-experience

6.5.4.3 ADMISSION RULES / PROCESS

4.1 ACADEMIC PROGRAMMES

At present the following programme, are being offered:

1. B. Tech. (Dairy Technology)
2. B. Tech. (Biotechnology)
3. B. Tech. (Food Technology)
4. Masters Programme
5. Doctoral Programme

Commensurate with the potential requirement of the expanding Dairy Industry of the country, the Institute admits approximately 100 seats in B. Tech. (Dairy Technology, Biotechnology & Food Technology) programme and about 10-15 students in each of the 14 disciplines for Master Programmes and about 10-15 students in each of the 14 disciplines of Ph.D. programmes.

(A) B. Tech programme (Dairy Technology, Food Technology & Biotechnology)

The duration of the B. Tech. programme is four years. All courses are given under semester system. One academic year consists of two Semesters each of about 18weeks duration. During seventh and eighth semester the students shall undergo In-plant Training on dairy plant operation and management at Model Dairy Plant located at Institute's premises and in any of the commercial dairy plants as organized by Head DT, Division.

Eligibility for Admission to B.Tech. programme

- a) The eligibility for admission is 10+2 or its equivalent examination with Physics, Chemistry, Mathematics or Physics, Chemistry, Biology and English from a

Board/University recognized by the Institute. Only those candidates who have obtained at least 50% marks or equivalent G.P.A. in the aggregate are eligible for admission to B.Tech. programme. The requirement of marks in the case of candidates belonging to Scheduled Cast/Tribe and PH is 40% or equivalent GPA.

- b) The candidate should have completed age of 16 years for the particular year of admission. No relaxation is admissible regarding the minimum age limit.

Entrance Examination

The admissions to B.Tech. programme are done through an All India Entrance Examination CUET (ICAR-UG) conducted by the NTA (National Testing Agency). The Ministry of Education, Government of India (GOI), has established the National Testing Agency (NTA) as an independent autonomous and self-sustained premier testing organization under Society Registration Act, 1860 for conducting efficient, transparent and international standards tests in order to assess the competency of candidates for admissions to premier higher education institutions. The candidates are selected for admission on the basis of the merit in the combined examination (CUET) and counselling conducted by the ICAR.

Reservation

1. There would be reservation of seats for admission to the extent of 15% for Scheduled Caste and 7.5% for Scheduled Tribe candidates in different disciplines. The reservation of seats among SC/ST categories is interchangeable i.e., if sufficient number of candidates are not available to fill up the seats reserved for ST candidates, these can be filled up from among suitable SC candidates and vice versa in a given subject as per merit-rank in examination. The original SC/ST certificate in prescribed form as per NTA Information Bulletin CUET (UG)-2024 is required to be produced for verification at the time of admission. Depending on merit and choice, such candidates can also take seat from the General / Unreserved Category.
2. Reservation for candidates belonging to Central OBC (NCL) category would be available in all Agricultural Universities (including hubs, if any) as notified by the ICAR (File No: Agril. Edn. 12(30) /2023-A&P (e-251195) Dated: 2nd November 2023) as per the latest Government of India directives applicable at the time of counselling and Hon'ble SC Judgment dated 18th August, 2011 and communication of final seats by these universities at the time of counselling. Candidates claiming admission under this category have to produce a Central OBC (NCL) certificate as per standard format of Govt. of India.
3. Reservation of seats for EWS shall be in accordance with the Gazette Notification No. DL- (N)/04/0007/2003-19, dated 12th January, 2019, Ministry of Law and

Justice (Legislative Department), Govt. of India or any further related Govt. of India directive(s) applicable at the time of counselling. The provision shall be applicable for admission in all Agricultural Universities eligible for ICAR quota seats under the ICAR-AU system and as notified by the ICAR [File No: Agril. Edn. 12(30) /2023-A&P (e-251195) Dated: 2nd November 2023]. The certificate for EWS candidates is required as per standard format of Govt. of India.

4. Five percent seats are reserved horizontally across the categories in different subjects, for Persons with Benchmark Disability (PwBD) suffering from low vision, hearing impairment, locomotors disability or cerebral palsy with appropriate medical certificate having at least 40% disability and found suitable by the Counselling Committee/University official.
5. Reservation for Remote and Under Privileged States/UT (UPS) Two percent (2%) seats under each discipline would be reserved, horizontally across categories, for the candidates of the remote and under privileged States/UTs namely (i) Andaman & Nicobar Islands, (ii) Arunachal Pradesh, (iii) Dadra and Nagar Haveli, (iv) Daman & Diu, (v) Goa, (vi) Lakshadweep, (vii) Manipur, (viii) Meghalaya, (ix) Mizoram, (x) Nagaland, (xi) Sikkim (xii) Tripura and (xiii) Ladakh; where educational facilities in Agriculture and Allied Science subjects either do not exist or have no SAU(s) and who qualify this examination. UPS candidates will have to produce domicile certificate issued by the competent authority at the time of admission. There will not be any State quota within this quota.

Definition of Physically Handicapped

Candidates having permanent disability of not less than 40 % provided the candidate is otherwise fit for admission. Such candidates will have to bring a certificate as appended in the Information Bulletin from the Chief Medical Officer of the District to which the candidate belongs.

Such candidates will also have to appear before the Medical Board constituted by the Director for determining the percentage of disability and for assessment whether they are fit to carry out the duties despite being handicapped.

MASTER'S PROGRAMME

Masters Degree is offered at the main campus at NDRI, Karnal and also at SRS, Bangalore and ERS Kalyani in the following 14 disciplines:

1. Dairy Microbiology;
2. Dairy Chemistry;
3. Dairy Technology;
4. Dairy Engineering;

5. Animal/Veterinary Biochemistry;
6. Animal Genetics and Breeding;
7. Livestock Production and Management;
8. Animal Nutrition;
9. Animal/Veterinary Physiology;
10. Agricultural Economics;
11. Agricultural Extension Education
12. Animal/Veterinary Biotechnology.
13. Agronomy
14. Animal Reproduction, Gynaecology and Obstetrics

Duration of the Programme

The duration of the Master programme is minimum 3 academic years (six semesters) for students graduated with 3 years degree programme and 2 years (four semesters) for graduates with four years professional degrees. The maximum duration for completion of Master's degree programme is five years (ten semesters).

In case a student fails to complete the degree programme within the maximum duration of residential requirement, his/ her admission shall stand cancelled. The requirement shall be treated as satisfactory in the cases in which a student submits his/ her thesis any time during the 4th and 6th semester of his/ her resident ship at the University for Masters' programme.

Qualifications & Eligibility Requirement for Admission

- Qualifications for admission to Master programmes are a Bachelor's degree from any university recognized by the Institute, in the relevant subject. The details of eligibility requirement and qualifications are published in the Information Bulletin for All India Entrance Examination for M.Sc. Admissions published every year by the ICAR.
- Candidates possessing some of the above qualifications may have to undergo certain deficiency courses (Pre-requisite courses) in addition to the courses prescribed for the Master programmes.

Age limit

The candidate should have completed age of 19 years in the particular year of admission. No relaxation is admissible regarding the minimum age limit.

Entrance Examination

The admissions to Master degree programme are done through an All India Entrance Examinations conducted by the NTA (National Testing Agency) under Ministry of Education, Government of India (GOI). The examination is held at various centres of the country in the month of May/June. The information for examination is advertised on NTA/ICAR website. The candidates are selected for admission on the basis of merit in the Entrance Examination and Counselling conducted by ICAR.

Reservation

A. SC/ST/OBC-(NCL)/EWS/PwBD in each Category

(i) There would be reservation of seats as well as ICAR-PG Scholarship to the extent of 15% for Scheduled Caste and 7.5% for Scheduled Tribe candidates in different disciplines. The reservation of seats among SC/ST categories is interchangeable i.e., if sufficient number of candidates are not available to fill up the seats as well as PG Scholarship reserved for ST candidates, these can be filled up from among suitable SC candidates and vice-versa in a given subject as per merit-rank in examination. The original SC/ST certificate in prescribed form is required to be produced for verification at the time of admission. Depending on merit and choice, they can also take seat from the General/Unreserved Category.

(ii) Reservation for candidates belonging to Central OBC (NCL) category would be available in all Agricultural Universities (including hubs, if any) as notified by the ICAR (File No: Agril. Edn.12(30)/2023-A&P (e-251195) Dated:2nd November 2023) as per the latest Government of India directives applicable at the time of counselling and Hon'ble SC Judgment dated 18th August, 2011 and communication of final seats by these universities at the time of counselling. Candidates claiming admission under this category have to produce a Central OBC (NCL) certificate.

(i) Reservation of seats for EWS shall be in accordance with the Gazette Notification No. DL- (N)/04/0007/2003-19, dated 12th January, 2019, Ministry of Law and Justice (Legislative Department), Govt. of India or any further related Govt. of India directive(s) applicable at the time of counselling. The provision shall be applicable for admission in all Agricultural Universities eligible for ICAR quota seats under the ICAR-AU system and as notified by the ICAR [File No: Agril. Edn. 12(30) /2023-A&P (e-251195) Dated:2nd November 2023]. The certificate for EWS candidates is required.

(ii) Five percent (5%) seats are reserved, horizontally across the categories in different subjects, for Persons with Benchmark Disability (PwBD) candidates suffering from low vision, hearing impairment, locomotors disability or cerebral palsy with appropriate medical certificate having at least 40%

disability and found suitable by the Counselling Committee/University official. The candidate applying for admission under this category should submit a copy of the certificate about being PwBD from a Govt. Hospital/Medical Board at the time of admission in allotted University. The criteria for assessing the degree of handicap could be variable from one subject to another. The decision of the University allotted will be final in this regard. If seat is not available in a particular Category to which the PwBD candidate belongs, then the same would be drawn from General Category/Unreserved Category depending upon the availability.

(B) Reservation For Remote and Under Privileged States/UT (UPS)

Two percent (2%) seats under each discipline would be reserved, horizontally, across categories for the candidates of the remote and underprivileged States/UTs namely

- i. Andaman & Nicobar Islands
- ii. Arunachal Pradesh
- iii. Dadra and Nagar Haveli
- iv. Daman & Diu
- v. Goa
- vi. Lakshadweep
- vii. Manipur
- viii. Meghalaya
- ix. Mizoram
- x. Nagaland
- xi. Sikkim
- xii. Tripura
- xiii. Ladakh

where educational facilities in agriculture and allied science subjects either do not exist or have no SAU(s) and who qualify this examination. UPS candidates will have to produce domicile certificate issued by the competent authority at the time of admission. There will not be any State quota within this quota.

Definition of Physically Handicapped

Candidates having permanent disability of not less than 40 % provided the candidate is otherwise fit for admission. Such candidates will have to bring a certificate as appended in the Information Bulletin from the Chief Medical Officer of the District to which the candidate belongs.

Such candidates will also have to appear before the Medical Board constituted by the Director for determining the percentage of disability and for assessment whether they are fit to carry out the duties despite being handicapped.

Foreign students

Foreign students seeking admission at this Institute shall have to submit their applications through their respective Embassies at New Delhi or the respective Indian Missions in their countries to the Govt. of India, Department of Agricultural Research and Education, Krishi Bhavan, New Delhi-110001 and the candidature of foreign students shall be considered only if they are sponsored with financial support by (a) their respective Governments (b) the Governments of India.

The nominees of foreign countries should have the equivalent qualifications required for admission. In their cases, the percentage of marks will not be insisted. They should possess the requisite Bachelor's degree in the concerned discipline. A good knowledge of English is essential. A certificate of the candidate's proficiency in English, issued by the respective Indian Mission abroad, should accompany their application for admission. Further, the foreign students are required to be in possession of student visa.

All the foreign students other than those sponsored by the Government of India with suitable fellowship such as Colombo Plan ITEC program, General Cultural Scholarship and Cultural Technical Exchange will be charged Institutional Economic Fee @ US \$ 400 p.m. or US \$ 4000 per annum per student. This fee will be over and above other usual charges of the University.

Last date for receipt of application, results and mark sheet from the foreign applicants will be the same as prescribed for the applicants who are Indian citizens.

As per directive from the Govt. of India, Ministry of Health, New Delhi, health check for foreign students including that for AIDS has been introduced. It has been laid down that foreign students will subject themselves for health check within one month of arrival and till the results are known the students will be provisionally admitted. Their admission is to be confirmed on production of fitness certificate from the competent authority.

C. Ph.D. PROGRAMME

The Institute offers Ph.D. Programme at NDRI, Karnal and also at SRS, Bangalore/ERS Kalyani in the following 14 disciplines:

1. Dairy Microbiology
2. Dairy Chemistry
3. Dairy Technology
4. Dairy Engineering

5. Animal/ Veterinary Biochemistry
6. Animal Genetics & Breeding
7. Livestock Production & Management
8. Animal Nutrition
9. Animal/ Veterinary Physiology
10. Agricultural Economics
11. Agricultural Extension Education.
12. Animal/ Veterinary Biotechnology
13. Agronomy
14. Animal Reproduction, Gynaecology and Obstetrics

Duration of Programme

The duration of the course for the degree of Doctor of Philosophy shall be at least six 3 academic years (6 semesters) for the students who have undergone 4 years UG programme and 2 years of PG programme (4+2). Their minimum duration of programme will be 3 academic year (6 semester). The maximum duration will be 7 academic years (14 semesters).

The students admitted to Ph.D. programme who have undergone 3 years UG programme and 2 years of PG programme(3+2)will have to undergo one year pre-requisite course work and their minimum duration of the programme will be 4 academic years (8 semesters). The maximum duration will be 8 academic years (16 semesters).

Qualification & Eligibility Requirements for Admission

Qualification for admission to Ph.D. programme is a Master's degree from any university recognized by the Institute, in the relevant subject. The details of eligibility requirement and qualifications are published in the Information Bulletin for All India Entrance Examination for Ph.D. Admissions published every year by the ICAR.

Age Limit

Minimum age limit for PhD candidates shall be 21 years. There will be no maximum age limit for Doctoral Programme. No relaxation is admissible regarding the minimum age limit.

In-Service Candidates

1. The in-service candidates will qualify for admission only if they come in the overall merit list of their concerned Subject and produce the Sponsorship Certificate/ Declaration by their employer for verification at the time of counselling.

2. The in-service candidates must be working in ICAR Institutes, ICAR-DUs, SAUs, CAUs, CUs having faculty of agriculture, Central Government/State Government Departments dealing in Agriculture and Allied Sectors and Public Sector Undertakings dealing with Agriculture and Allied Sectors.
 3. At ICAR-IARI, New Delhi under (i) ICAR In-Service Scheme, and (ii) Faculty Upgradation Scheme, the Scientists working in ICAR Institutes and the Faculty Members of SAUs, respectively only are eligible for admission.
 4. The in-service candidates qualifying for admission will arrange for study leave/leave of the kind due from their respective organizations themselves and NDRI/ICAR will not intervene in this regard.
 5. In-service candidates must retain the computer generated hard copy of confirmation page of the application along with Sponsorship Certificate, in original, for showing to the university officials in the event of their qualifying the examination and recommendation for admission to the concerned university.
 6. In no case, the computer generated hard copy of confirmation page of the application and Sponsorship Certificate (Declaration by the employer) should be sent by the candidate either to NTA or ICAR.
 7. The counselling of in-service candidates seeking admission on seats reserved for the purpose at ICAR-DUs (ICAR-IARI, ICAR-IVRI, ICAR-NDRI and ICAR-CIFE) will be done at respective ICAR- DU level only. Such candidates are, therefore advised to remain in touch with the respective ICAR-DU's website for further details such as no. of seats, eligibility requirements, counselling schedule, etc.
 8. The in-service candidates shall be entitled to get Institute scholarship as per the rules laid down for in-service candidates.
- 4.5. The admission of in-service candidate will be decided on merit obtained in the entrance examination conducted by the ICAR. Vacant seats in one discipline may be transferred to other disciplines, without changing the total number of seats for in-service candidates. They should send their applications through proper channel duly completed and other required documents directly on or before the closing date and time notified by the Institute. Photo copy of the application shall not be accepted.

Foreign Students

Foreign students seeking admission at this Institute shall have to submit their applications through their respective Embassies at New Delhi or the respective Indian Missions in their countries to the Govt. of India, Department of Agricultural Research and Education, Krishi Bhavan, New Delhi-110001 and the candidature of foreign students shall be

considered only if they are sponsored with financial support by (a) their respective Governments (b) the Governments of India.

The nominees of foreign countries should have the equivalent qualifications required for admission. In their cases, the percentage of marks will not be insisted. They should possess the requisite Bachelor's degree in the concerned discipline. A good knowledge of English is essential. A certificate of the candidate's proficiency in English, issued by the respective Indian Mission abroad, should accompany their application for admission. Further, the foreign students are required to be in possession of student visa.

All the foreign students other than those sponsored by the Government of India with suitable fellowship such as Colombo Plan ITEC program, General Cultural Scholarship and Cultural Technical Exchange will be charged Institutional Economic Fee @ US \$ 400 p.m. or US \$ 4000 per annum per student. This fee will be over and above other usual charges of the University.

Last date for receipt of application, results and mark sheet from the foreign applicants will be the same as prescribed for the applicants who are Indian citizens.

As per directive from the Govt. of India, Ministry of Health, New Delhi, health check for foreign students including that for AIDS has been introduced. It has been laid down that foreign students will subject themselves for health check within one month of arrival and till the results are known the students will be provisionally admitted. Their admission is to be confirmed on production of fitness certificate from the competent authority.

Health Care

A human Hospital is attached to the Institute and is kept under the charge of a qualified Senior medical Officer. The students will have to take a group insurance policy every year. The Institute will facilitate the students in arranging insurance policy.

Definition of Physically Handicapped

Candidates having permanent disability of not less than 40 % provided the candidate is otherwise fit for admission. Such candidates will have to bring a certificate as appended in the Information Bulletin from the Chief Medical Officer of the District to which the candidate belongs.

Such candidates will also have to appear before the Medical Board constituted by the Director for determining the percentage of disability and for assessment whether they are fit to carry out the duties despite being handicapped.

Right to Refuse Admission

The Director reserves the right to refuse admission of any candidate even though he/she may fulfill the academic requirements of admission on the basis of criteria laid down in

the regulations, and/or may otherwise be eligible for admission on the basis of entrance examination without assigning any reason thereof. The decision of the Director shall be final and legally binding.

Summary Cancellation of Registration

The Director may summarily cancel the registration of any student or group/batch/class who indulge (s) in act (s) of indiscipline, misconduct, violation of rules and regulations of the Institute, strike or ragging, in whose case the Director has reasons to believe that his/her/their continuance in the Institute would not be in the best interest of the Institute.

The students, who have been permanently dropped from the Institute either on account of poor academic performance or on account of act of indiscipline, shall not be eligible to make an application for admission.

It is the responsibility of the candidates to furnish full and correct information on the application form.

Any admission made on the basis of wrong information supplied by candidates or through a clerical mistake in the University Office and detected subsequent to the admission and joining of the candidate, would be cancelled at the cost and risk of the student.

Registration

Students must report for registration on the due date mentioned in the admission letter, failing which offer for admission is liable to be withdrawn.

At the time of registration, the students must produce the following documents:

- a) Original certificates and mark sheets of all examinations passed (10th onwards) and other required certificates
- b) In case of SC/ST candidate, a certificate from a first class Magistrate of a District/ Competent Authority indicating that the candidate belongs to a particular SC/ST category which is included in the latest list appended to the constitution of India, SC/ST 1950.
- c) Three passport size photographs (which should not be more than 6 months old) for the preparation of Identity card/Hostel Forms.

General

The selected candidates should join the course by the date indicated by the University office.

Candidates coming from Universities other than this Institute should produce Migration Certificate from the university from which they have obtained the last degree.

The Institute reserves the right of admission and also right to cancel the admission of a candidate at any stage if it is found that the information furnished by the candidate is not true or it is incomplete.

6.5.4.4. Conduct of Practical and Hands-on Training

Practical classes are conducted along with theory classes in most of the courses in all the degree programmes. There are dedicated laboratories for conducting practical for post graduate students in all the disciplines at the institute, where practical classes are offered to the students of that particular discipline. Besides this, whenever a practical exercise requires use of specialized equipments in any other laboratory, students are allowed to use them under supervision of the faculty and the technical officers. Undergraduate students carry out their practical exercises in UG laboratories maintained for them in the related dairy processing disciplines. Besides this, the Institute has central facilities for hands on training to the students. These include Experimental Dairy having 10,000 LPD plant, Model Dairy plant with installed capacity of 60,000LPD (upgraded to handle 1,50,000 LPD), Business Planning 82 and Development Unit, National Referral Lab, Livestock Research Centre, Artificial Breeding Research Centre and Forage Research Farm at the main campus. The campus at SRS of Bengaluru has a Dairy Plant and Livestock Research Centre and the regional station at ERS of NDRI has Livestock Research Centre.

6.5.4.5. Examination and Evaluation Process

- The Evaluation Pattern of UG & PG Students as per New Education Policy-2020 and 6th Dean Committee Report is (20+20+20+40=100) which means two internal assessments of 20% each, final practical of 20% and final examination 40% weightage, respectively.
- The evaluation pattern will be applicable to the students admitted in the first semester of 2024-25 academic session.

6.5.4.5.1 Evaluation pattern for UG, PG & PhD

The Evaluation Pattern of UG Students as per New Education Policy-2020 and 6th Dean Committee Report is (20+20+20+40=100) which means two internal assessments of 20% each, final practical of 20% and final examination 40% weightage, respectively.

S. No.	Examination	UG, PG/Doctoral courses with practicals	UG, PG/Doctoral courses without practicals	UG, PG/Doctoral courses with practicals only
1	Mid-term I	15	20	20
2	Mid-term II	15	20	-

3	Quiz/ Assignment/ Presentation	10	20	-
4	Final Practical	20	-	40 + 40 *
5	Final Theory (External)	40	40	-
6	Total	100	100	100

* Including Theory component

6.5.4.5.2 For skill development courses distribution of marks is as follows:

- i) Internal 30 marks
- ii) Quiz/Assignments/Presentation 20 marks
- iii) Final practical exam 50 marks
(including theory component)

6.5.4.5.3 For compulsory Common Courses:

- i) Internal 30 marks
- ii) Quiz/Assignments/Presentation 20 marks
- iii) Final Theory exam 50 marks
 - For the students who did not appear for the said examination due to genuine reasons like illness etc. a 'make- up' examination will be conducted within 7 days of completion of mid-term examination.
 - The student requesting for make-up examination shall have genuine reasons. If he/she is sick, he/she has to produce a medical certificate signed by Medical Officer of the Institute or competent Medical Officer if he/she falls sick.
 - If a course is offered simultaneously at NDRI, Karnal and its Regional Stations at SRS, Bangalore and ERS, Kalyani in the same semester, the question paper in that course shall be common to all the centres.
 - The examiner for setting the common question paper shall be approved by Joint Director (Academic) from among the teachers of that course at all the centre's.
 - The answer books of the semester-end final examination shall be shown to students on request within 7 days after commencement of the next semester and kept with teacher till the end of next semester.

The minimum marks required to pass a course shall be 65% separately in theory and practical.

If a student fails to obtain pass marks in theory and practical separately in a course, he/she shall be declared 'FAIL' in the course.

- a) If a candidate does not have the required percentage of attendance in theory and/or practical or if a student who does not appear in theory and/or practical semester-end examination for any reason, he/she shall repeat the course during the subsequent years when the course is being offered, along with the regular students.
- b) Repeat means he/she will register himself/herself for the course and shall attend the classes.
- c) Such candidates will be awarded “R” grade in the concerned semester/course
- d) If a candidate has the required percentage of attendance, and has appeared in the semester end examination, but fails to secure 60 percent marks in the theory and/or practical (in other words, fails in the course), he/she will be allowed to take the examination both in theory and practical in subsequent semester when the course is being offered to regular students.
- e) The student shall attend the classes again and appear in mid-term examination again.
- f) No carry over of previous year will be permitted. Such candidates will be awarded ‘RE’ grade in the concerned semester course.
- g) c) In case of reappear, if the maximum credit hours are to be increased, it may be decided at the level of Head of Division concerned.

6.5.4.5.4 Re-evaluation may be allowed with fee of Rs. 1500/- per course provided the application for re-evaluation is received by the Controller of Examination within 7 days after the declaration of result. Controller of examination will arrange to get the answer-book (s) of the concerned student (s) of the particular course (s) from the HOD of the concerned division and get the re-evaluation of the answer book (s) of that particular student (s), who have submitted application. The Joint Director (Academic) will take a decision regarding the modalities for the re evaluation of the copies. Application for re-totalling to be received by the Controller of Examination within 7 days after declaration of result. Controller of Examination will arrange to get the answer books of all the students of that particular course from the HOD of the concerned division and get the re-totalling of the answer-book (s) of that particular student, who has submitted application. The Joint Director (Academic) will decide the modalities on case to case basis. Re-totalling will be done with a fee of Rs. 1000/- per course only to see if the marks awarded to various answers have been correctly added and all the answers have been marked by the Examiner. If any mistake is discovered as a result of checking

of answer book, the Controller of Examination shall have power to rectify the result.

A student shall have to attain the Overall Grade Point Average of 6.5 for the Degree. Students failing to obtain the OGPA shall not qualify for the degree. The overall performance of the students will be classified on the basis of OGPA as given below.

OGPA	PERFORMANCE
Less than 6.5	Fail
6.5 to 6.99	Second Class
7.0 to 8.49	First Class
8.5 and above	Distinction

- 6.5.4.5.5** The grading of students shall be done on a 10 point scale. The students will be awarded grade point on the basis of their performance in each course. The grade point when multiplied by 10 will give the equivalent marks in percentage. The grade point obtained in a course will be rounded off to two decimal place. The minimum grade point to be secured for the successful completion of a course will be 6.0.
- 6.5.4.5.6** All non credit courses viz. Hindi, Physical Education/NCC, Educational tour will be awarded Satisfactory(S) / Unsatisfactory (US) grade.
- 6.5.4.5.7** Every candidate shall be examined in each course he had attended during the semester according to the syllabus approved by the Academic Council.
- 6.5.4.5.8** The medium of instruction and examinations shall be English.
- 6.5.4.5.9** As soon as possible after termination of each Semester Examination, the Controller of Examination shall publish the result of all candidates.
- 6.5.4.5.10** Every student will be issued Grade cards for each semester end examination. A certificate of having passed a semester examination shall be granted only after a student has passed in all the courses of the Semester concerned and also those of the previous semester.
- 6.5.4.5.11** The transcripts in the existing format shall be issued to all the under graduate students passing out from NDRI Deemed University at the end of completion of the programme and Transcript Fee @ 600/- shall be charged at the time of admission.

6.5.4.6 NCC/ NSS/ RVC Units

National Dairy Research Institute, Karnal is the first ICAR Deemed University which has introduced NCC and Physical Education course as mandatory for all undergraduate students, first year post graduate and doctoral students since 2009-10. NDRI, Karnal is affiliated to 7th Haryana Battalion of NCC, Karnal.

REPORT – 2026 (NCC & Sports)

No of Students who passed NCC B and C Certificate Examination

S. No.	Year	No of Students who passed NCC B Certificate Examination	No of Students who passed NCC C Certificate Examination
	2021	Boys-06 + Girls-06, Total=12	Boys-12 + Girls-04, Total=16
	2022	Boys-14 + Girls-03, Total=17	Boys-06 + Girls-06, Total=12
	2023	Boys-18 + Girls-05, Total=23	Boys-13 + Girls-02, Total=15
	2024	Boys-06 + Girls-08, Total= 14	Boys-18 + Girls-06, Total=24
	2025	Boys-10 + Girls-07, Total=17	Boys-06 + Girls-08, Total=14
		Total=83	Total=81

Details of NCC Camps Attended By NDRI B.Tech Students from 2021-2026

S. No.	Year	NCC Camp	No. of Students
	2021	NCC Camp (CATC-125) from 3 rd Feb. to 07 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD-12, SW-04) Total = 16
	2021	NCC Camp (CATC-126) from 8 th Feb. to 10 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-06, SW-06) Total = 12
	2021	NCC Camp (CATC-145) from 22 nd to 28 th OCT. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD-06, SW-06) Total = 12
	2021	NCC Camp (CATC-146) from 08 th to 12 th Nov. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-14 SW-03) Total = 17
	2022	NCC Camp (CATC-145) from 28 th May to 06 th June 2022 at NCC Academy Ropar, Punjab	B.Tech (DT) 2 nd Yr (SD-14 SW-02) Total = 16
	2022	NCC Camp (CATC-146) from 11 th to 18 th November 2022 at Doon Valley of Education, Karnal	B.Tech (DT) 3 rd Yr (SD-00 SW-01) B.Tech (DT) 2 nd Yr (SD-18 SW-05) Total = 24
	2023	NCC Camp CATC-177 at KV No. 2, Ambala Cantt from 20 th to 29 th October 2023	B.Tech (DT) 3 rd Yr (SD-17, SW-05) Total = 22
	2023	NCC Camp CATC-179 at JNV Chuharpur, Yamuna Nagar, Haryana from 09 th to 18 th November 2023	B.Tech (DT) 2 nd Yr (SD-06, SW-08) Total = 14

2024	CATC-124 at NCC Academy Ropar, Punjab from 15 th to 24 th September 2024	B.Tech (DT) 3 rd Yr(SD-06 SW-08) B.Tech (DT) 2 nd Yr(SD-10 SW-07) Total = 31
2025	CATC -136 at Sanik School Kunjpura, Karnal Haryana From 19 th to 28 th December 2025	B.Tech (DT) 3 rd Yr (SD-10, SW-07) = 17 B.Tech (DT) 2 nd Yr (SD-15, SW-08) = <u>23</u> Total = <u>40</u>

NCC Achievements from 2021-2026

NCC Achievements 2021

Combine Annual NCC Training Camp (CATC-145) which was organised from 22nd October to 28th October 2021 at Govt. PG College Sec 14 Karnal. In this camp around 300 NCC SD/SW Cadets from all over Haryana State have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

English Declamation Competition SD/SW Cadets

S. No	Class	Name	Position
1.	B. Tech IIIyr.	VAISHALI SINGH	1st position

NCC Achievements 2022

Combine Annual NCC Training Camp (CATC-146) which was organized at DOON VALLEY OF EDUCATION, KARNAL From 11th to 18th November 2022. In this camp around 500 NCC SD/SW Cadets from all over Haryana State have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

English/Hindi Declamation Competition SD/SW Cadets

S. No	Class	Name	Position
1.	B. Tech IIyr.	SREEHARI S	1 st position
2.	B. Tech IIyr.	VAIBHAV TIWARI	1 st position

Tug of War Competition SW

S. No	Class	Name	Position
1.	B. Tech IIyr.	KIRTI	2 nd position

NCC Achievements 2023

Combined Annual Training Camp -179 was organised at JNV Chuharpur, Yamunanagar, Haryana From 09th to 18th November 2023. Total 14 (Fourteen) SD/SW NCC Cadets of our institute will attend this camp. In this camp around 600 NCC SD/SW Cadets from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Volley Ball Competition Senior Wing Girls

S. No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	SHAMBHAVI PRIYA	1 st position
2.	B.Tech DT 2 nd Yr	ANUSHREE SAINI	2 nd position

Appreciation Award for Discipline in Senior Wing Girls

S. No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	KUMARI SHREYA	1 st position

Cultural Programme Senior Wing Girls

S. No.	Class	Event	Position
1.	B.Tech DT 2 nd Yr	Group Dance	1 st position
2.	B.Tech DT 2 nd Yr	Group Song and Solo Song	Prizes & Gifts

Tug of War Competition Senior Wing Girls

S. No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	SHWETA	1 st position
2.	B.Tech DT 2 nd Yr	SIDDHI KUMARI	NDRI Team

Basketball Competition Senior Division Boys

S. No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	AMIT RAGHUWANSHI	1 st position
2.	B.Tech DT 2 nd Yr	DHARMENDRA JANGIR	NDRI Team
3.	B.Tech DT 2 nd Yr	ISHAN SACHDEVA	
4.	B.Tech DT 2 nd Yr	NIKHIL JHAJHARIA	
5.	B.Tech DT 2 nd Yr	RAHUL MAHALA	
6.	B.Tech DT 2 nd Yr	RAJIV KUMAR	

NCC Achievements 2024

Combined Annual Training Camp -124 was organised at NCC Academy Ropar, Punjab From 15th to 24th September 2024. Total 31 (Thirty One) SD/SW NCC Cadets of our institute will attend this camp. In this camp 464 NCC SD/SW Cadets 07 ANO's 12 CTO's 10 PI Staff from all over Haryana have participated. NCC Students of NDRI

Karnal have achieved following positions in various competitions held during this Camp.

Line Area Maintenance Competition SD Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	AMIT RAGHUWANSHI	2 nd position	
		DHARMENDRA JANGIR	2 nd position	
		ISHAN SACHDEVA	2 nd position	
		NIKHIL JHAJHARIA	2 nd position	
		RAHUL MAHALA	2 nd position	
		RAJIV KUMAR	2 nd position	
2.	B.Tech DT 2 nd Yr	AJAY SAHU	2 nd position	
		ANKAJ KUMAR	2 nd position	
		ANSHUL DUTTA	2 nd position	
		ARJUN MEENA	2 nd position	
		HIMANSHU	2 nd position	
		MANOJ KUMAR	2 nd position	
		RISHI SHARMA	2 nd position	
		SACHIN	2 nd position	
		SOMENDRA SHARMA	2 nd position	
		SURYANSH RATHORE	2 nd position	

Group Song SD Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Ballet Dance SD Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Poster Making Competition of Senior Wing Girls

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	NEHA	1 st position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	
3.	B.Tech DT 3 rd Yr	ANUSHREE SAINI	1 st position	
4.	B.Tech DT 3 rd Yr	KHYATI	1 st position	

Speech for Social Activity in Senior Wing Girls

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	

KHO-KHO Competition Senior Wing Girls

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	2 nd position	
3.	B.Tech DT 2 nd Yr	MONA MAURYA	2 nd position	
4.	B.Tech DT 2 nd Yr	PAWANI	2 nd position	
5.	B.Tech DT 2 nd Yr	PURVA	2 nd position	
6.	B.Tech DT 2 nd Yr	RIMJHIM RAGHUWANSHI	2 nd position	
7.	B.Tech DT 3 rd Yr	KHYATI	2 nd position	
8.	B.Tech DT 3 rd Yr	KUMARI SHREYA	2 nd position	
9.	B.Tech DT 3 rd Yr	NEHA	2 nd position	
10.	B.Tech DT 3 rd Yr	SHAMBHAVI PRIYA	2 nd position	
11.	B.Tech DT 3 rd Yr	SIDDHI KUMARI	2 nd position	

Line Area Maintenance Competition SW Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	SHWETA	2 nd position	
2.	B.Tech DT 3 rd Yr	KASHISH	2 nd position	
3.	B.Tech DT 2 nd Yr	VANSHIKA	2 nd position	
4.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	

NCC Achievements 2025

Combined Annual Training Camp -136 was organised at Sanik School Kunjpura from 19th to 28th December 2025. Total 40 (Forty SD/SW NCC Cadets of our institute will attend this camp. In this camp 400 NCC SD/SW Cadets 03 ANO's 01 CTO's 20 PI Staff from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Slogan Writing Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	1 st position
2.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	2 nd position
3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Poster Making Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	2 nd position

3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Declamation Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	2 nd position

Running Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

KHO-KHO Competition Senior Wing Girls

S. No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227898	MONA MAURYA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position
7.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
8.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	1 st position
9.	HR2024SWIA6080872	ANJALI	B.Tech FT 2 nd Yr	1 st position
10.	HR2024SWIA6080875	DHEERJA VERMA	B.Tech DT 2 nd Yr	1 st position

Drill Competition Senior Wing Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	3 rd position

Tent Pitching Competition SD Cadets

S. No	Registration No.	Name	Class	Position
1.	HR/23/SDA/ 227903	AJAY SAHU	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SDA/ 227906	ARJUN MEENA	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SDA/ 227907	HIMANSHU	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SDA/227909	RISHI SHARMA	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SDA/227910	SACHIN	B.Tech DT 3 rd Yr	1 st position
7.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	1 st position
8.	HR2024SDIA6080867	KARAN KUMAR	B.Tech DT 2 nd Yr	1 st position

Tent Pitching Competition SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	1 st position
4.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
5.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position

Camp Senior SD Boys

S.No	Registration No.	Name	Class	Position
1.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	Camp Senior B2

Camp Senior SW Girls

S. No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	Camp Senior G2

Cultural Events SD/SW Cadets

S. No.	Registration No.	Name	Class	Position
1.	HR2024SWIA6080886	KOMAL MEENA	B.Tech FT 2 nd Yr	Solo Song
2.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	Duet Dance
3.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	Duet Dance
4.	HR2024SDIA6080882	DURAIBABU KAVADI CHETHAN	B.Tech BT 2 nd Yr	Group Dance
5.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2 nd Yr	Solo Dance
6.	HR2024SDIA6080887	ARPIT CHOUDHARY	B.Tech DT 2 nd Yr	Duet Dance
7.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	Duet Dance
8.	HR2024SDIA6080873	GOURI PRASAD ROUT	B.Tech DT 2 nd Yr	Solo Dance
9.	HR2024SDIA6080879	DEEPANSHU KUMAR	B.Tech FT 2 nd Yr	Solo Song

Cultural Events Competition SD/SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2 nd Yr	3 rd position

Overall Camp In charge

S.No	Registration No.	Name	Class	Position
1.	NCC/12110238	Capt. Sandeep Deswal	Associate NCC Officer	Camp Adjutant

6.5.4.7. Language Laboratory

The University has recently set up a modern Language Laboratory with state-of-the-art audio visual equipment to aid in imparting language skills to the students. The laboratory has been set up to be effectively utilized by the students for various self-enhancement and soft skill development activities. The language laboratory of the institute is equipped with master computer with high end advanced configuration, an interactive touch display with 75" screen size, digital touch pad, video conferencing camera with built-in microphone, licensed modules of 25 languages with LAN based digital interactive language lab software of latest version, comprising of different language modules including English, French, German, Spanish, etc. The laboratory has been set up with 24 computers and adequate number of furniture. The software installed in the laboratory provides the following features:

- The software is able to generate each student's performance report and the teacher will be able to view student's performance report at any given time.
- The system has a media library area which enables a teacher to upload audio, video and texts-based content and integrate into customized study modules, which enables a multi teacher access facility for sharing, and collaborating content resources remotely across the campus.
- The teacher is be able to create session modules for students to access content management library on the media activity dashboard for self-study even when the teacher is not present in class.
- The teaching materials have a minimum of 3 levels i.e., Basic, Intermediate and Advance. The basic level use various scenarios to help students communicate.
- The students are able to record their own voices and check the level of the accuracy of their pronunciation.
- The software has feature to help develop public speaking by way of recording each 88 student's video while giving a speech. The teacher will be able to evaluate the videos and send back the feedback through the software.
- The facility can be used as a virtual classroom facility to connect an instructor remotely located to undertake a teaching session through seamless video conferencing.

- The software has capabilities of Listening, Recording and Comparing of Speech patterns both via audio and visual. The software has speech spectrograph for visualization.

6.5.4.8. Cultural Centre

The institute is well equipped with all the facilities required for organizing cultural and sports events. Well furnished rooms are available in Dr D Sundaresan Auditorium to facilitate students rehearse and organize activities related to cultural events. A furnished room in the Exhibition Unit and a part of facilities existing in the Staff Club are also made available to students if there are multiple concurrent sessions. Foundation program of the institute seeds interest among the students to actively participate in various cultural activities of the institute. Every year, student union organizes ‘Vasantotsava’, which is an Intra-university Festival, wherein students from all degree programs participate enthusiastically in various competitive events related to cultural, literary, sports, etc. Award winning performers from ‘Vasantotsava’ then participate in ‘Reverie’, which is an Inter-University cultural fest organized every year by the student union of the institute. Various teams from SAUs participate in this event on regular basis. Besides, institute also have facilities for outdoor games viz. cricket, hockey, volleyball, football, basketball, lawn tennis and other athletic events. Facilities for indoor games such as badminton, table tennis, carom and chess are also available in each hostel. A Sports Day is organized in addition to the cultural events, where all the students participate in various sports events and showcase their talent in athletics and games. All these cultural and sports activities provide students a platform to showcase their co-curricular skills.

6.5.4.9. Personality Development

The institute has a dedicated Student Empowerment Unit, which was established to realise the vision of NDRI to produce excellent and accomplished human resource by helping students become healthy, informed, aware and committed individuals. This unit provides a platform for students to pursue both their professional and personal goals with greater self-awareness, self-esteem, understanding and focus. Hence, this programme entails imparting ‘knowledge with ethics’ to enable the students to fully utilize vocational/occupational services in the best possible manner to achieve social and economic self-sufficiency.

The Student Empowerment Unit seeks to create and sustain a campus environment that supports the holistic development of each student and contributes to their optimal academic success by facilitating and supporting identity development, community responsibility, wellness, multicultural as well as self-awareness, social justice, and career development. In doing so, the Student Empowerment Unit seeks to support the University’s overarching mission of being a ‘world-class’ institution by helping students

become healthy, informed, aware and committed citizen-scholars. To achieve this goal, the unit has organized various workshops and special lectures at the Institute. Several of these events are enlisted below:

- Workshop cum Interactive Session on ‘The Art of Understanding Reasoning and Argumentation
- Workshop cum Interactive Session on ‘Beyond a Life in Classrooms - 8 Must Know Truths for Success
- Workshops cum Interactive Sessions on Mastering Public Speaking and Communication Skills
- Workshops and Sessions on Leadership and Team Work
- A Special Lecture under the ‘Rally for Rivers’ Campaign
- N-Reach program to impart Leadership Skill to B.Tech. (Final) year students jointly organised by Nestle India and Student Empowerment Unit
- A Talk on ‘Leadership’ by Mr Suresh Narayanan, Chairman and Managing Director, Nestle India.
- An online Workshop on ‘Women Empowerment’.

Foundation Program for Freshers’:

ICAR-NDRI introduced foundation program for the fresher students. The Foundation Program aims at tapping the innate talents of the students by providing them enabling and vibrant academic environment and nurturing them into outstanding professionals and accomplished human beings. During this programme, the students were exposed to multifarious extra-curricular group activities such as Theatre & Dramatics, Dance, Music, Art & Craft, Literary, Soft Skills and Yoga. It was made mandatory for all new comers to choose and participate in any event/s as per their interest, aptitude and liking, thus, throwing open to them a world of avenues for expressing their hidden talents and creativity. Besides academics, the month long Foundation Program included workshops on Mastering Public Speaking; Team Building; Climbing the Leadership Curve; Effective Ways to Communicate in English; Improving Professional Communication and Spoken English; Gender Equality & Environmental Awareness; Stress Management and Social and Ethical Issues. These sessions were planned to mentor the students on public speaking; team spirit; developing the power of belief and unlocking human potential; overcoming distractions and bad habits; and leadership development. The entire batch of newly admitted students was also made to compulsorily participate in physical exercise & yoga sessions as a part of the Foundation Programme for their balanced intellectual, physical, and emotional development. Through participatory approach other programmes including English & Hindi Diagnostic Tests, Team Building

Exercises/ Games, Workshops on ‘Competition and Excellence’; ‘Communication Skills’; ‘Peer Pressure’; ‘Personality Development’; ‘Soft Skills’; ‘Entrepreneurial Skills’; ‘Leadership and Management’; ‘Gender Equality’ and sessions on Poetry writing were also arranged for the newly inducted students.

The outcome of the program was a grand success. Within a short span of time, the students from diverse social and cultural backgrounds could mingle and interact on a single platform in a unique way. They could overcome their stage inhibitions and could express their inner strengths freely. The usefulness of the programme was evident from the feedbacks expressed by the students. For most of them this month long exercise was rejuvenating, eye opening and discovering a new way to enjoy academics.

Deeksharambh: Induction-cum-Foundation Course

ICAR–National Dairy Research Institute (ICAR-NDRI), Karnal organized the **“Deeksharambh: Induction-cum-Foundation Course”** for newly admitted students of B.Tech., M.Tech., and M.Sc. programmes to facilitate their smooth transition into the academic environment of the institute.

The primary purpose of Deeksharambh was to help students become familiar with the institutional ecosystem, academic structure, research opportunities, student support systems, and campus life. The programme aimed to inculcate the ethics, values, and culture of the institution while promoting a sense of belonging among students.

It also focused on strengthening interaction between students, faculty members, and staff, thereby creating a supportive academic atmosphere. Special emphasis was given to personal well-being, discipline, professional ethics, and preparation for future academic and career growth in alignment with the recommendations of the 6th Dean’s Committee Report and the guidelines of the National Education Policy (NEP) 2020.





Deeksharambh

(Induction-cum-foundation course)

2025-26

for

(B.Tech. [Dairy Tech, Food Tech
& Biotech], M.Tech/M.Sc), PhD
DA-100 (0+2)

Course Coordinators:

**Dr. Anjali Aggarwal, Dr. P.Narender Raju
Dr. Richa Singh and Dr.Bharati Pandey**

CHIEF PATRON

Dr Dheer Singh
Director & Vice-Chancellor

PATRON

Dr Ashish Kumar Singh
Joint Director (Academic)
& Dean

PATRON

Dr Rajan Sharma
Joint Director (Research)

Organized by:

**ICAR-National Dairy Research Institute
Karnal - 132001 (Haryana)**



www.ndri.res.in

Deeksharambh (Induction-cum-Foundation Course) (0+2) (2025-26)

(B.Tech. [Dairy Tech, Food Tech & Bio Tech], M.Tech/M.Sc, Ph.D.)

Venue: Dr. D. Sundaresan Auditorium

Expected Learning Outcomes

- Enhanced understanding of NDRI's academic, research, and extension ecosystem.
- Improved communication, leadership, and teamwork abilities.
- Awareness of sustainable development, biodiversity, and cultural inclusivity.
- Strengthened life skills and personality traits conducive to professional and personal success.
- Sense of belongingness, institutional pride, and motivation for innovation-driven learning.



12.11.2025

Academic Orientation (Overall coordinator: Dr Bharti Pandey)

9.15 AM to 1.00 PM	Welcome Address by Dr. Ashish Kumar Singh, Joint Director (Academic) & Dean Address By Dr. Rajan Sharma, Joint Director (Research) Address by Sh. Kamrajbhai Chowdhary, CEO, Banas Dairy, Palanpur, Gujarat. Implementation of National Educational Policy (NEP-2020) at ICAR-NDRI: Dr. Sumit Arora, Nodal Officer NEP Implementation Library Orientation & Digital Resources: Dr. JK Kaushik, Head, NDRI Library Services DigiLocker & Academic Bank of Credits by Dr. Suman Kapila, Controller of Examinations Hostel Rules and Regulations, by Dr. A.K. Mishra, Chief Hostel Warden	Coordinator: Dr Richa Singh To know about academic rules and regulations, Credit system, and Evaluation To know about the NEP 2020 implementation at NDRI To give an overview of library facilities available To know about the DigiLocker & academic bank of credits To know about the hostel rules and regulations

1.00 PM – 2.00 PM

LUNCH BREAK

2.00 PM to 5.30 PM	- UG & PG Academic Programmes & Curriculum - B.Tech. (DT/FT) by Dr. D.N. Yadav, Head, DT Division - B.Tech. (BT) by Dr. J.K. Kaushik, Head, ABT - BSMA Guidelines for PG and PhD programmes by Dr. Ashish Kumar Singh, Joint Director (Academic) & Dean - Ice-breaking / Socialization	Coordinator: Dr Bharti Pandey Dr Gopal Sankhla, Dr Subhasis Mandal
6.00 PM to 7.30 PM	Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode, & Mr. Sandeep Deswal

13.11.2025

Research & Innovation Ecosystem (Overall Coordinator: Dr. Shaikh Abdul Hussain)

6.00 AM to 7.15 AM	Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal Students will attend Yoga and exercise

9.15 AM to 11.00 AM	♦ Achievements and Impact of NDRI Research on by Dr. Rajan Sharma , Joint Director (Research)	Coordinator: Dr. M.K. Singh Student's Council of NDRI
11.00 to 12.00 PM 12.00 to 1.00 PM	♦ Talk on "Innovation and Interdisciplinary Research in Dairying for Students" by Dr. A.K. Singh , Joint Director (Academics) & Dean Interaction with Student's Council of NDRI	
1.00 PM – 2.00 PM LUNCH BREAK		
2.00 PM to 5.30 PM	♦ Visit to Livestock Farm ♦ Visit to Forage Research Centre ♦ Visit to Experimental Dairy Plant ♦ Visit to ABI/TBI/F&V Processing Unit ♦ Visit to Model Dairy Plant	Coordinator: Dr. Shaikh Abdul Hussain
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal
14.11.2025 Inaugural Session & Institutional Overview (Overall coordinator: Dr Heena sharma)		
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Students will attend Yoga and Mr. Sandeep Deswal exercise
9.15 AM to 11.15 AM	♦ Address by Dr. A.K. Singh , Joint Director (Academics) & Dean ♦ Address by Dr. Rajan Sharma , Joint Director (Research) ♦ Inaugural Address by Chief Guest, Dr. Dheer Singh, Hon'ble Director & Vice Chancellor, ICAR-NDRI Deemed University	Coordinator: Dr. Bharti Pandey
11.15 AM to 1.00 PM	♦ Self-introduction of newly admitted students	
1.00 PM – 2.00 PM LUNCH BREAK		
2.00 PM to 5.30 PM	♦ Session on "Anti-Ragging Policy of ICAR-NDRI" by Dr. A.K. Singh , Joint Director (Academics) & Dean ♦ Presentation by Heads of the Divisions (AGB, LPM, AP, AN, DM, DC, DE, ABC, ABT, LPM, DESM, & DX) ♦ Campus Tour (Academic, Residential, Sports, and Research Facilities)	Coordinators: Dr. P. Narender Raju Dr. Yogesh Khetra
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal
15.11.2025 Swacchh Bharat Abhiyaan and Extension & Outreach Activities (Overall coordinator: Dr Sachin Kumar)		
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal Students will attend Yoga and exercise
9.15 AM to 11.15 AM	♦ "Swacchhta Hi Seva" : Cleanliness drive	Coordinator: Dr. Writdhama Prasad
11.30 AM – 1.00 PM	♦ Overview of Krishi Vigyan Kendra (KVK) activities by Dr. Pankaj Saraswat, Head, KVK, Karnal	Coordinator: Dr. Sanjit Maiti

- ♦ Overview of Agricultural Technologies and Information Centre (ATIC) activities and Technology Dissemination by Dr. B.S. Meena, Principal Scientist & Incharge, ATIC

1.00 PM – 2.00 PM**LUNCH**

2.00 PM – 5.30 PM

- ♦ Group Formation for Hobby Clubs (Literary, Music, Fine Arts, & Theatre)

Coordinator:
Dr. Sangita Ganguly, Dr. Nishant Kumar
Dr. Sachin Kumar

6.00 PM to 7.30 PM

- ♦ Sports activities at NDRI Playground

Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bamode & Mr. Sandeep Deswal

Sports activities

16.11.2025**Sunday****17.11.2025****Communication & Presentation Skills (Overall coordinator: Dr Sanchita Garai)**

6.00 AM to 7.15 AM

- ♦ Yoga and Exercise at NDRI Playground

Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal

Students will attend Yoga and exercise

9.15 AM to 1.00 PM

- ♦ Workshop on Verbal Communication by Dr. Udit Chowdhary, Senior Scientist, DESM Division
- ♦ Workshop on Non-Verbal Communication by Dr. P. Narendra Raju, Senior Scientist, DT Division
- ♦ Non-verbal communication (Dumb charades) game (agricultural and animal sciences theme)

Coordinator: Dr. Sanchita Garai

faculty and staff

1.00 PM – 2.00 PM**LUNCH BREAK**

2.00 PM – 5.30 PM

- ♦ Student Activity: Extempore / Public Speaking / Podcast
- ♦ Student Reflections
- ♦ Talk on Women's Health , Preventive Care and Holistic Counselling by "Dr Bharti Kalra, Obstetrician and Gynaecologist

Coordinator: Dr. Diwas Pradhan and SSC members

6.00 PM to 7.30 PM

- ♦ Sports activities at NDRI Playground

Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bamode & Mr. Sandeep Deswal

Sports activities

18.11.2025**Team Building & Leadership (Overall coordinator: Dr Sangita Ganguly)**

6.00 AM to 7.15 AM

- ♦ Yoga and Exercise at NDRI Playground

Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal

Students will attend Yoga and exercise

9.15 AM to 1.00 PM

- ♦ "Leadership and Motivation in Academic Life" lecture by Dr. Suman Kapila, Principal Scientist & Controller of Examinations
- ♦ "Value-based Education" lecture by Dr. Suneel Kumar Onteru, Head, Animal Biochemistry Division
- ♦ Teambuilding Games and Group Tasks

Coordinator: Dr. Heena Sharma
Dr. Gaurav Deswal
Dr. Yogesh Khetra

1.00 PM to 2.00 PM**LUNCH BREAK**

2.00 PM to 5.30 PM

- ♦ Group Presentation on Team Outcomes

Coordinator: Dr Ajay Yadav

6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities

19.11.2025**Personality Development & Time Management (Overall coordinator: Dr Manorma Kumari)**

6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Viksit Bharat-2047: Your Journey & Nation's Destiny" by Dr. Sanjit Maiti , Senior Scientist, Dairy Extension Division ♦ "Your Degree, Our World: Aligning Your Ambitions with the Global Goals" by Dr. P. Narender Raju , Senior Scientist, DT Division ♦ Session on Emotional Intelligence by Sh. Atul Jain (Guest Speaker)	Coordinator: Dr. Manorama Kumari Coordinator: Dr Anuradha Bhardwaj	

1.00 PM – 2.00 PM**LUNCH BREAK**

2.00 PM to 5.30 PM	♦ The live webcast of the Hon'ble Prime Minister's event, hosted at ICAR-NDRI. During the programme, the Hon'ble Prime Minister released the 21st instalment of PM-KISAN	Coordinators: Dr. Manorama Kumari	

- ♦ Practical Activity: Goal Setting Workshop
- Dr. Rani Alex
Dr Bharti Pandey

6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities

20.11.2025**Sustainable Development Goals (SDG-2030) & Viksit Bharat-2047 (Overall coordinator: Dr Sanjit Maiti)**

6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Workshop on "Personality Traits" by Dr. Udit Chowdhary, Senior Scientist, DESM Division ♦ "Building Self-Worth and Self-Esteem- Especially When Things Don't Go as Planned" by Ms. Pulak Kaushik (Guest Speaker)	Coordinator: Dr. Priyanka	

1.00 PM – 2.00 PM**LUNCH BREAK**

2.00 PM – 5.30 PM	♦ Student Group Activity: "Design Your SDG Project" by Dr. Sanjit Maiti ♦ Student Reflections ♦ "Metabolic Health and Preventive Lifestyle Counselling" by Dr. Sanjay Kalra, DM (Bharti Hospital, Karnal)	Coordinator: Dr. Sanjit Maiti	
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities

21.11.2025 Indian History, Culture & Diversity (Overall coordinator: Dr Ankit Deep)			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Talk: "Cultural Plurality and Inclusivity in Indian Education" ♦ Film/Documentary Screening: "Unity in Diversity"	Coordinator: Dr. Ankit Deep	
1.00 PM – 2.00 PM LUNCH BREAK			
2.00 PM – 5.30 PM	♦ Student Activity: Cultural Mapping of India (cuisine group, festival group, art group, language group) ♦ Student Reflections: Digitization of "The Great NDRI Students Cultural Map-2025"	Coordinator: Dr. Anupama Mukherjee, Dr. Udit Chowdhary, Dr. Gunjan Bhandari	
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities
22.11.2025 Tribal Culture & Indigenous Knowledge (Overall coordinator: Dr Sanchita Garai)			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Lecture: "Tribal Heritage and Livelihoods in India" - Dr. Gopal Gawane ♦ "Bridging Wisdom & Science: A tribal knowledge exchange", students group discussion on role of ITKs / Indigenous Wisdom in Agriculture and Animal Husbandry, natural pharmacy, natural storage of grains/seeds, Dairy Tribe, etc. ♦ Quiz on "Indian Tribes and Tribal Affairs"	Coordinator: Dr. Gopal Gawane	
1.00 PM – 2.00 PM LUNCH BREAK			
Gender Equity in Agricultural Sciences			
2.00 PM – 5.30 PM	♦ "Cultivating Change: Women Leading the Future of Agricultural Sciences" ♦ "Issues, Challenges, and Opportunities for Women in Agriculture" Dr. Tanuja S, Sr. Scientist, ICAR-CIWA, Bhubaneswar ♦ Cultivating Change: Women Leading the Future of Agricultural Sciences by Dr. Sanchita Garai	Coordinator: Dr. Sanchita Garai	
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities
23-11-2025 Sunday			
24.11.2025 Biodiversity & Environmental Awareness (Overall coordinator: Dr Gautam Mondal)			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise

9.15 AM to 1.00 PM	♦ “Biodiversity Conservation & Climate Resilience” by Dr. Goutam Mandal, Principal Scientist, Animal Nutrition Division. ♦ “Academic Evaluation using Bloom’s Taxonomical Evaluation” by Dr. P. Narender Raju.	Coordinator: Dr. P. Narender Raju
	♦ Introduction to Academic Programmes, Credit System, and Evaluation: Dr. Anjali Aggarwal, Academic Coordinator ♦ Campus Plantation / Eco-walk ♦ Waste Segregation & Green Campus Initiative ♦ Innovative ideas to make NDRI campus pollution free and sustainable environment	
1.00 PM – 2.00 PM	LUNCH BREAK	
	Agri-business, Entrepreneurship Development & Start-Ups	
2.00 PM – 5.30 PM	♦ “From Farm to Fortune: Success Stories of Agribusinesses and Startups in India” by Dr. Subashis Mandal, Head, DESM Division ♦ “Growing Businesses and Building Futures: Activities of Agri- Business Incubation Centre of NDRI” by Dr. Shaikh Abdul Hussain, Senior Scientist & In-charge, ABI Centre ♦ Livestock Biodiversity and its Conservation by Dr. N. H. Mohan, Director, ICAR-NBAGR ♦ “Innovative Technologies for prospective Dairy Entrepreneurs” by Dr. Pradip Behare, Senior Scientist & In-charge, ITMU	Coordinator: Dr. Rakesh Kumar
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bamode & Mr. Sandeep Deswal Sports activities
25-11-2025 Life Skills for Success (Overall coordinator: Dr Anuradha Bhardwaj)		
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Session on Heartful Communication by Sh. Atul Jain (Guest Speaker) ♦ Session on Mental Health and Resilience by Sh. Atul Jain (Guest Speaker) ♦ Seeds of Strength: Cultivating Resilience and Well-Being with Heartfulness by Mr CS Patil ♦ Interactive Session: “Decision Making, Critical Thinking & Adaptability”	Coordinator: Dr. Anuradha Bhardwaj
1.00 PM – 2.00 PM	LUNCH BREAK	
2.00 PM – 5.30 PM	♦ Interaction with Innovative Farmers from Crop / Dairy Farm / Dairy Processing / Fisheries sectors ♦ Mr Jagbir Singh Sandhu, Sugarcane seed production and technology innovative farmer and ♦ Mr Rajinder Singh with gender centric farming specialization ♦ Interaction with eminent sports persons	Coordinator: Dr. Pankaj Saraswat, Dr. Bharati Pandey

♦ Diversification from “Sports to Startup”- Growth without boundaries by Mr. Anirudh Singh Rana, ♦ Success story by Mr. Adarsh Singh, 25M RAPID FIRE SHOOTER			
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities
26.11.2025 National Milk Day / National Dairy Festival			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Joining the celebrations of the National Milk Day and the first ever National Dairy Festival		
1.00 PM – 2.00 PM		LUNCH BREAK	
2.00 PM – 5.30 PM	♦ Career opportunities in Dairy, Food and Biotechnology	Coordinator: Dr. Yogesh Khetra	
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground		Sports activities
27.11.2025 Science, Literature & Creativity (Overall coordinator: Dr Nishant Kumar)			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Lecture: “Science Communication through Literature & Art” ♦ Creative Writing/Poetry/Poster Competition		
1.00 PM – 2.00 PM		LUNCH BREAK	
2.00 PM – 5.30 PM	♦ Interaction with Distinguished Scientists		
6.00 PM to 7.30 PM	♦ Sports activities at NDRI Playground	Coordinators: Dr. Diwas Pradhan, Dr. Gaurav Deswal, Dr. Priyanka, Dr. Shilpashree B.G., Dr. Karuna Bambode & Mr. Sandeep Deswal	Sports activities
28.11.2025 Talent Hunt: Student Activities (Overall coordinator: Dr Pradip Behare)			
6.00 AM to 7.15 AM	♦ Yoga and Exercise at NDRI Playground	Coordinator: Dr. R.K. Meena, Mr. Sandeep Deswal	Students will attend Yoga and exercise
9.15 AM to 1.00 PM	♦ Talent Hunt (Cultural & Literary) ♦ “My Institute, My Pride” – Group Presentations		
1.00 PM – 2.00 PM		LUNCH BREAK	
Valedictory & Experience Sharing			
2.00 PM – 6.30 PM	Valedictory Session	Coordinator: Dr. Ajay Yadav	
	♦ Student Reflections and Feedback ♦ Group Presentation of Learning Outcomes ♦ Address by Chief Guest ♦ Presidential Address by Dr. Dheer Singh, Hon’ble Director ♦ Certificate Distribution and Vote of Thanks		



6.5.5. Physical Facilities

6.5.5.1. Hostels

1. Number of hostels: 6+1*(International Hostel and Married Hostel)
2. Number of hostels (boys): 4+1
3. Number of hostels (girls): 02
4. Total capacity=869

NDRI, Karnal campus has a total of six hostels, four for boys and two for girl students. International students and married students are housed separately in international hostel and married quarters, respectively. All the hostels are well ventilated and rooms fully equipped with needed furniture and bathrooms have provisions for adequate number of geysers. Each hostel has its own dining hall and sanitary kitchens for students' dining. Water coolers are installed in each wing of the hostel to provide clean water to the students. Cleaning staff assigned to the hostels aid in maintaining the basic hygienic conditions. Besides these, reading rooms, TV rooms and sports room are also available for entertainment and fitness of the students. Indoor sports facilities (such as badminton courts) have also been provided in the hostel premises.

Table 60: Details of Hostel Facilities Available

S. No.	Name of the hostel	Total capacity	No of Rooms	Students per room	Mess facility	Drink-ing water (water coolers)	Indoor games and other facilities	Clean-ing workers	Transport facility	Emergency medical facility	Total area (m2)
1.	Kaveri Hostel (Old wing, Amravati wing, Hemavati wing)	158 (41 suites, 26 rooms with attached toilets)	129	1-2	Two dining halls, 70 seating capacity	2	Yes, two bad-minton courts, 1 TV room, 1 guest room, 1 reading room and 1 visitor room	4	One institute vehicle is available 24 hours for any kind of emergency condition.	Students can avail the facilities available in Human Health Complex located inside the NDRI campus for any kind of medical emergency at any time.	1227
2	Alakhnanda Hostel	88 (28 suites)	88	2	One dining hall, 20 seating capacity	1	No	One			

3	Braham-putra Hostel	176	80	1-3	One dining hall, 1 Kitchen, 50 seating capacity	2	1 TV room, 1 reading room and 1 sports room	One			7668
4	Sutlej	163 (150 suites)	103	1-3	One dining hall, 4 kitchen, 60 seating capacity	2	One TV room and 1 reading room	One			3619
5	Narmada	152	152	1	One dining hall, 60 seating capacity	2	1 TV room and 1 reading room	One			
6	Krishna	90 (All suites)	104	1	Two dining halls, 4 kitchen, 60 seating capacity	1	One sports room	One			6667
7	International Hostel + Married hostel	12+30 (All suites)	12+30	12	NIL	1	1 TV room, 1 guest room and 1 reading room	One			840+ 1285
8	Students' Hostel, SRS of NDRI, Bengaluru	138	69 rooms	2	Worker: 2 Sitting Capacity: 30	RO-filtered water	-	Contractual – 3	-	Medical officer available at Staff dispensary located in the campus	2510 sq. Meter (built area) and 3.35 acre land area



Fig.9: Sutlej Hostel



Fig.10: Narmada Hostel



Fig.11: Kaveri Hostel (Old Wing)





Fig.13: Alaknanda Hostel



Fig.14: International Hostel

6.5.5.2 Examination Hall

Table 53: Number of examination halls with their capacities and other facilities.

S. No	Examination hall	Capacity of each hall	Facilities
	Hall No 1	68 benches (136 students)	Fully Air conditioned & Ventilation
	Hall No 2	80 benches (160 students)	Fully Air conditioned & Ventilation
	ASRB Online examination Centre (Two rooms)	Ground Floor: 65 First floor: 55	Computers, Biometric, CCTV surveillance
	Lecture Halls (Located First Floor Experimental Dairy)	Class room 1: 64 seater Class room 2: 56 seater Class room 3: 96 seater Class room 4: 40 seater Total Capacity: 256	AC rooms, CCTV
	DESM Division First Floor	Class Room 1: 20 Statistics Lab: 20 Total: 40	Air conditioned
SRS of NDRI, Bengaluru			
	Three	40 each	Individual chairs with writing pad, LCD projector, ceiling fans, proper lighting and ventilation
	One	30	Double seated tables, LCD projector, ceiling fans, proper lighting and ventilation



6.5.5.3 Sports and recreation facilities

Outdoor Sports Facilities at NDRI Karnal

Outdoor Sports Complex is in Approx. 14 acres of area, (Length 1117ft. (372.33yards) Width 548 ft. (182.66 yards) area = 68012.88 sq. yards i.e. 14.52 acres) with the stadium shed having the seating capacity of 500 persons in the stairs form. The building includes two rooms for office, two urinals for ladies and gents and one store room for placing sports equipments. The sports complex is well equipped with Six High Mast Lights all around enables students and staff members of NDRI to play during late hours along with the boundary wall, two side opening and road surrounding it. Outdoor stadium includes the following sports facilities.

S. No	Name of Sports Facility	Location	Number	Remarks
1.	400 mt. Standard Athletics Track with 8 lanes (Grass)	Outdoor Sports Complex	01	
2.	Cricket Field (With Turf Wicket)	Outdoor Sports Complex	02	
3.	Cricket Practice half Wicket (Concrete)	Outdoor Sports Complex	01	
4.	Cricket Practice half Wicket (Turf)	Outdoor Sports Complex	01	
5.	Football Field	Outdoor Sports Complex	01	
6.	Handball Ground	Outdoor Sports Complex	02	
7.	Basketball Ground (Synthetic)	Outdoor Sports Complex	01	
8.	Basketball Ground (Concrete)	Outdoor Sports Complex	01	
9.	Volley Ball (Smashing)	Outdoor Sports Complex	02	
10.	Volley Ball (Shooting)	Outdoor Sports Complex	02	
11.	Tennis (Hard Court)	Outdoor Sports Complex	01	
12.	Kho-Kho Ground	Outdoor Sports Complex	01	
13.	Kabaddi Ground (Synthetic)	Outdoor Sports Complex	01	
14.	Kabaddi Ground (Mud)	Outdoor Sports Complex	01	
15.	Tennis (Hard Court)	Brahmputra Hostel	01	
16.	Volley Ball (Smashing)	Narmada Hostel	01	
17.	Badminton Court (Outdoor)	Sutlej & Krishana Hostel	02	
18.	Outdoor Gym	Kaveri Hostel	01	
19.	Outdoor Gym	Staff Club Children Park	01	

Indoor Sports Facilities at NDRI Karnal

Indoor Sports Complex (Kalki Bhawan) is 100'X150'=1500 sq. ft. of area two urinals and changing rooms for ladies and gents and one store room for placing sports equipment's. Kalki Bhawan is well equipped with Lights & fans all around and at the top enables

students and staff members of NDRI to play during late hours. Kalki Bhawan includes the following indoor sports facilities.

S. No	Name of Sports Facility	Location	Number	Remarks
1.	Badminton Court (Synthetic)	Kalki Bhawan	06	
2.	Indoor Gym (Machines)	Kalki Bhawan	15	
3.	Billiards Pool Table	Kalki Bhawan	01	
4.	Badminton Court (Wooden Flooring)	Staff Club (Indoor Hall)	01	
5.	Table Tennis Court	Kalki Bhawan	04	
6.	Steam Bath	Kalki Bhawan	01	
7.	Sauna Bath	Kalki Bhawan	01	
8.	Table Tennis Court	Krishana & Narmada Hostel	02	
9.	Treadmills	Kalki Bhawan	02	

SSR REPORT – 2026 (NCC & Sports)

4. No of Students who passed NCC B and C Certificate Examination

S.No	Year	No of Students who passed NCC B Certificate Examination	No of Students who passed NCC C Certificate Examination
	2021	Boys-06 + Girls-06, Total=12	Boys-12 + Girls-04, Total=16
	2022	Boys-14 + Girls-03, Total=17	Boys-06 + Girls-06, Total=12
	2023	Boys-18 + Girls-05, Total=23	Boys-13 + Girls-02, Total=15
	2024	Boys-06 + Girls-08, Total= 14	Boys-18 + Girls-06, Total=24
	2025	Boys-10 + Girls-07, Total=17	Boys-06 + Girls-08, Total=14
		Total=83	Total=81

5. Details of NCC Camps Attended By NDRI B.Tech Students from 2021-2026

S.No	Year	NCC Camp	No. of Students
	2021	NCC Camp (CATC-125) from 3 rd Feb. to 07 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD- 12, SW-04) Total 16
	2021	NCC Camp (CATC-126) from 8 th Feb. to 10 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-06, SW-06) Total 12
	2021	NCC Camp (CATC-145) from 22 nd to 28 th OCT. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD-06, SW-06) Total 12
	2021	NCC Camp (CATC-146) from 08 th to 12 th Nov. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-14 SW-03) Total 17

	2022	NCC Camp (CATC-145) from 28 th May to 06 th June 2022 at NCC Academy Ropar, Punjab	B.Tech (DT) 2 nd Yr (SD-14 SW-02) Total 16
	2022	NCC Camp (CATC-146) from 11 th to 18 th November 2022 at Doon Valley of Education, Karnal	B.Tech (DT) 3 rd Yr (SD-00 SW-01) B.Tech (DT) 2 nd Yr (SD-18 SW-05) Total = 24
	2023	NCC Camp CATC-177 at KV No. 2, Ambala Cantt from 20 th to 29 th October 2023	B.Tech (DT) 3 rd Yr (SD-17, SW-05) Total = 22
	2023	NCC Camp CATC-179 at JNV Chuharpur, Yamuna Nagar, Haryana from 09 th to 18 th November 2023	B.Tech (DT) 2 nd Yr (SD-06, SW-08) Total = 14
	2024	CATC-124 at NCC Academy Ropar, Punjab from 15 th to 24 th September 2024	B.Tech (DT) 3 rd Yr (SD-06 SW-08) B.Tech (DT) 2 nd Yr (SD-10 SW-07) Total = 31
	2025	CATC -136 at Sanik School Kunjpura, Karnal Haryana From 19 th to 28 th December 2025	B.Tech (DT) 3 rd Yr (SD-10, SW-07) = 17 B.Tech (DT) 2 nd Yr (SD-15, SW-08) = <u>23</u> Total = <u>40</u>

6. NCC Achievements from 2021-2026

NCC Achievements 2021

Combine Annual NCC Training Camp (CATC-145) which was organised from 22nd October to 28th October 2021 at Govt. PG College Sec 14 Karnal. In this camp around 300 NCC SD/SW Cadets from all over Haryana State have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

3. English Declamation Competition SD/SW Cadets

S.No	Class	Name	Position
1.	B. Tech IIIyr.	VAISHALI SINGH	1 st position

NCC Achievements 2022

Combine Annual NCC Training Camp (CATC-146) which was organized at DOON VALLEY OF EDUCATION, KARNAL From 11th to 18th November 2022. In this camp around 500 NCC SD/SW Cadets from all over Haryana State have participated. NCC

Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

3. English/Hindi Declamation Competition SD/SW Cadets

S.No	Class	Name	Position
1.	B. Tech IYr.	SREEHARI S	1 st position
2.	B. Tech IYr.	VAIBHAV TIWARI	1 st position

4. Tug of War Competition SW

S.No	Class	Name	Position
1.	B. Tech IYr.	KIRTI	2 nd position

NCC Achievements 2023

Combined Annual Training Camp -179 was organised at JNV Chuharpur, Yamunanagar, Haryana From 09th to 18th November 2023. Total 14 (Fourteen) SD/SW NCC Cadets of our institute will attend this camp. In this camp around 600 NCC SD/SW Cadets from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

5. Volley Ball Competition Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	SHAMBHAVI PRIYA	1 st position
2.	B.Tech DT 2 nd Yr	ANUSHREE SAINI	2 nd position

6. Appreciation Award for Discipline in Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	KUMARI SHREYA	1 st position

7. Cultural Programme Senior Wing Girls

S.No	Class	Event	Position
1.	B.Tech DT 2 nd Yr	Group Dance	1 st position
2.	B.Tech DT 2 nd Yr	Group Song and Solo Song	Prizes & Gifts

8. Tug of War Competition Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	SHWETA	1 st position
2.	B.Tech DT 2 nd Yr	SIDDHI KUMARI	NDRI Team

9. Basketball Competition Senior Division Boys

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	AMIT RAGHUWANSHI	1 st position
2.	B.Tech DT 2 nd Yr	DHARMENDRA JANGIR	NDRI Team
3.	B.Tech DT 2 nd Yr	ISHAN SACHDEVA	

4.	B.Tech DT 2 nd Yr	NIKHIL JHAJHARIA	
5.	B.Tech DT 2 nd Yr	RAHUL MAHALA	
6.	B.Tech DT 2 nd Yr	RAJIV KUMAR	

NCC Achievements 2024

Combined Annual Training Camp -124 was organised at NCC Academy Ropar, Punjab From 15th to 24th September 2024. Total 31 (Thirty One) SD/SW NCC Cadets of our institute will attend this camp. In this camp 464 NCC SD/SW Cadets 07 ANO's 12 CTO's 10 PI Staff from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Line Area Maintenance Competition SD Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	AMIT RAGHUWANSHI	2 nd position	
		DHARMENDRA JANGIR	2 nd position	
		ISHAN SACHDEVA	2 nd position	
		NIKHIL JHAJHARIA	2 nd position	
		RAHUL MAHALA	2 nd position	
		RAJIV KUMAR	2 nd position	
2.	B.Tech DT 2 nd Yr	AJAY SAHU	2 nd position	
		ANKAJ KUMAR	2 nd position	
		ANSHUL DUTTA	2 nd position	
		ARJUN MEENA	2 nd position	
		HIMANSHU	2 nd position	
		MANOJ KUMAR	2 nd position	
		RISHI SHARMA	2 nd position	
		SACHIN	2 nd position	
		SOMENDRA SHARMA	2 nd position	
		SURYANSH RATHORE	2 nd position	

Group Song SD Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Ballet Dance SD Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Poster Making Competition of Senior Wing Girls

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	NEHA	1 st position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	
3.	B.Tech DT 3 rd Yr	ANUSHREE SAINI	1 st position	
4.	B.Tech DT 3 rd Yr	KHYATI	1 st position	

Speech for Social Activity in Senior Wing Girls

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	

KHO-KHO Competition Senior Wing Girls

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	2 nd position	
3.	B.Tech DT 2 nd Yr	MONA MAURYA	2 nd position	
4.	B.Tech DT 2 nd Yr	PAWANI	2 nd position	
5.	B.Tech DT 2 nd Yr	PURVA	2 nd position	
6.	B.Tech DT 2 nd Yr	RIMJHIM RAGHUWANSHI	2 nd position	
7.	B.Tech DT 3 rd Yr	KHYATI	2 nd position	
8.	B.Tech DT 3 rd Yr	KUMARI SHREYA	2 nd position	
9.	B.Tech DT 3 rd Yr	NEHA	2 nd position	
10.	B.Tech DT 3 rd Yr	SHAMBHAVI PRIYA	2 nd position	
11.	B.Tech DT 3 rd Yr	SIDDHI KUMARI	2 nd position	

Line Area Maintenance Competition SW Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	SHWETA	2 nd position	
2.	B.Tech DT 3 rd Yr	KASHISH	2 nd position	
3.	B.Tech DT 2 nd Yr	VANSHIKA	2 nd position	
4.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	

NCC Achievements 2025

Combined Annual Training Camp -136 was organised at Sanik School Kunjpura from 19th to 28th December 2025. Total 40 (Forty SD/SW NCC Cadets of our institute will attend this camp. In this camp 400 NCC SD/SW Cadets 03 ANO's 01 CTO's 20 PI Staff from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Slogan Writing Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	1 st position
2.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	2 nd position
3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Poster Making Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	2 nd position
3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Declamation Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	2 nd position

Running Competition

S. No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

KHO-KHO Competition Senior Wing Girls

S. No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227898	MONA MAURYA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position
7.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
8.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	1 st position
9.	HR2024SWIA6080872	ANJALI	B.Tech FT 2 nd Yr	1 st position
10.	HR2024SWIA6080875	DHEERJA VERMA	B.Tech DT 2 nd Yr	1 st position

Drill Competition Senior Wing Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	3 rd position

Tent Pitching Competition SD Cadets

S. No	Registration No.	Name	Class	Position
1.	HR/23/SDA/ 227903	AJAY SAHU	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SDA/ 227906	ARJUN MEENA	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SDA/ 227907	HIMANSHU	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SDA/227909	RISHI SHARMA	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SDA/227910	SACHIN	B.Tech DT 3 rd Yr	1 st position
7.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	1 st position
8.	HR2024SDIA6080867	KARAN KUMAR	B.Tech DT 2 nd Yr	1 st position

Tent Pitching Competition SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	1 st position
4.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
5.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position

Camp Senior SD Boys

S.No	Registration No.	Name	Class	Position
1.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	Camp Senior B2

Camp Senior SW Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	Camp Senior G2

Cultural Events SD/SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080886	KOMAL MEENA	B.Tech FT 2 nd Yr	Solo Song
2.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	Duet Dance
3.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	Duet Dance
4.	HR2024SDIA6080882	DURAIABABU KAVADI CHETHAN	B.Tech BT 2 nd Yr	Group Dance

5.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2 nd Yr	Solo Dance
6.	HR2024SDIA6080887	ARPIT CHOUDHARY	B.Tech DT 2 nd Yr	Duet Dance
7.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	Duet Dance
8.	HR2024SDIA6080873	GOURI PRASAD ROUT	B.Tech DT 2 nd Yr	Solo Dance
9.	HR2024SDIA6080879	DEEPANSHU KUMAR	B.Tech FT 2 nd Yr	Solo Song

Cultural Events Competition SD/SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2 nd Yr	3 rd position

Overall Camp In charge

S.No	Registration No.	Name	Class	Position
1.	NCC/12110238	Capt. Sandeep Deswal	Associate NCC Officer	Camp Adjutant

Sports Achievements from 2021-2026

S. No	Year	Host Institute	Events	No. of Students	Remarks
	2022	All India Veterinary Colleges' Badminton, Table Tennis tournaments and Professional Quiz Competition held from October 31 to November 02, 2022 at GBPUA&T Pantnagar	Badminton(M&W) Table-Tennis(M&W)	Boys-07 Girls-07 Total=14	
	2023	XXI All India Inter Agricultural Universities Sports & Games Meet, 2022-23 organized by CCS Haryana Agriculture University Hisar Haryana from 20 th to 24 th February 2023	Athletics, Badminton Kabaddi, Football Table- Tennis and Volley Ball	Boys-30 Total=30	

Yoga Activities from 2021-2026

International Day of Yoga 2021

On the occasion of the 7th International Day of Yoga held on 21st June, 2021, a Yoga Shiver was organized from 18.06.2021 to 21.06.2021 at ICAR- National Dairy Research Institute, Karnal from 6:00 AM to 7:00 AM. A team of experts from Patanjali Yog Samiti, Karnal and Bharat Swabhimani Trust, Haridwar trained the participants. The

Shivir was organized as per the protocol of Ayush Mantralaya and advisories issued by the government. Arrangements have been made to follow physical distancing in view of COVID-19. The basic objective of the Shivir is to improve the immunity of the participants through various Yoga Asanas.

ICAR-National Dairy Research Institute, Karnal celebrated the International Yoga Day on 21st June 2021. This event was organized at Sports Complex of the institute between 6:00 AM to 7:15 AM. The employees and their family members, students of the institute, trainees and members of Yoga club actively participated in this event. The Yoga experts of “Patanjali Yog Samati and Bharat Swabhiman Trust” conducted the Yoga Session as per the Protocol and Guidelines of Ayush Department. The session was begin with the lighting of lamp by Director ICAR-NDRI, Karnal and experts of Yoga team followed by light warm up session. Thereafter, importance of yoga in life, the correct way of performing yoga with live demonstration of different Yoga positions/postures were explained by experts of Yoga team. The session was ended with the chanting of OM. Beside International Yoga Day celebration at ICAR-NDRI, Karnal campus, Students and NCC cadets of NDRI (Deemed University) also participated Online Yoga celebration organized on 21st June, 2021.

The glimpse of the organized event can be seen from the following photographs.



International Day of Yoga 2022

On 8th International Day of Yoga on 21st June, 2022, a Yoga Shivir is being organized from 20.06.2021 to 21.06.2021 as per the time schedule and venue given below. A team of experts from Patanjali Yog Samiti, Karnal and Bharat Swabhiman Trust, Haridwar will train the participants about Yog. The Shivir will be organized as per the protocol of Ayush Mantralaya and advisories issued by the government. Arrangements have been made to follow social distancing in view of the pandemic COVID-19. The basic objective of the Shivir is to improve the immunity of the participants through various Yoga Asanas.

Yoga Competitions of NDRI Students International Day of Yoga 21st June 2022

S. No	Name	Class	Division	Position	Remarks
	Girls	M.Sc/M. Tech/M.VSc			
1	G. Sreeja Reddy	---do---	Dairy Extension	1 st Position	8978114993
2	Shreepali Bhardwaj	---do---	---do---	2 nd Position	9078692287
3	Hiral Thakur	---do---	AGO	3 rd Position	8347168494
		Ph.D			
1	Momita Adhikary	---do---	Dairy Technology	1 st Position	9932587712
2	G.Poojitha	---do---	Dairy Chemistry	2 nd Position	9742616416
3	Sravani	---do---	Animal Nutrition	3 rd Position	6281663924
	Boys	M.Sc/M. Tech/M.VSc			
1	Anil .V	---do---	Dairy Technology	1 st Position	8217344128
2	Akhil K	---do---	Animal Nutrition	2 nd Position	7012099457
3	PritamPal	---do---	AGB Division	3 rd Position	9529911725
		Ph.D			
1	M B Reddy	---do---	Agronomy	1 st Position	9381110684
2	Mukund Ramesh	---do---	AGB Division	2 nd Position	9284458760
3	Vaibhav Arya	---do---	Animal Nutrition	3 rd Position	9897804615



International Day of Yoga 2023

ICAR- National Dairy Research Institute, Karnal celebrated the 9th International Yoga Day on 21st June 2023. This event was organized at Kalki Bhawan Indoor Sports Complex of the institute between 6:00 AM to 7:15 AM. The employees and their family members, students of the institute, trainees and members of Yoga club actively participated in this event. The Yoga experts of “Patanjali Yog Samati and Bharat Swabhimani Trust” conducted the Yoga Session as per the Protocol and Guidelines of

Ayush Department. The session was begin with the lighting of lamp by Director ICAR-NDRI, Karnal Dr. Dheer Singh. Experts of Yoga team started the yoga session with light warm up. Thereafter, the correct way of performing Yoga Asanas with live demonstration of different Yoga positions/postures were explained by them. The session was ended with the chanting of OM. Director NDRI Dr. Dheer Singh explained the importance of yoga in our life and advised everyone to make it part of life to remain fit. The glimpse of the organized event can be seen from the following photographs.



International Day of Yoga 2024

ICAR- National Dairy Research Institute, Karnal celebrated the 10th International Day of Yoga on 21st June 2024. This event was organized at Kalki Bhawan Indoor Sports Complex of the institute between 5:00 AM to 6:30 AM. Around 350 employees, their family members, students and trainees of the institute have actively participated in this event. The session was begin with the lighting of lamp by Director ICAR-NDRI, Karnal Dr. Dheer Singh. Experts of Yoga team started the yoga session with light warm up. Thereafter, the correct way of performing Yoga Asanas with live demonstration of different Yoga positions/postures were explained by them. The session was ended with the chanting of OM. Director NDRI Dr. Dheer Singh explained the importance of yoga in our life.



International Day of Yoga 2025

ICAR-NDRI is a premier institute under the Indian Council of Agricultural Research (ICAR), dedicated to advancing dairy science and promoting health through sustainable and scientific practices. On the occasion of International Yoga Day on 21st June 2025, we are pleased to invite Dr. Dheer Singh Director & Vice- Chancellor to lead a Yoga session at our campus. Dr Shalini Mehta, who is an Internationally Certified Yoga Trainer RYT200 from Bodhi School of Yoga. She is a competent Eye surgeon of Haryana, working at Civil Hospital Panipat. Besides this, she is Music Vocalist and

an Artist who paints Acrylic and Oil paintings on canvas. , She have conducted Yoga workshop with Yoga Day Protocol.

9. Outdoor Sports Facilities at NDRI Karnal

Outdoor Sports Complex is in Approx. 14 acres of area, (Length 1117ft. (372.33yards) Width 548 ft. (182.66 yards) area = 68012.88 sq. yards i.e. 14.52 acres) with the stadium shed having the seating capacity of 500 persons in the stairs form. The building includes two rooms for office, two urinals for ladies and gents and one store room for placing sports equipments. The sports complex is well equipped with Six High Mast Lights all around enables students and staff members of NDRI to play during late hours along with the boundary wall, two side opening and road surrounding it. Outdoor stadium includes the following sports facilities.

S. No	Name of Sports Facility	Location	Number	Remarks
1.	400 mt. Standard Athletics Track with 8 lanes (Grass)	Outdoor Sports Complex	01	
2.	Cricket Field (With Turf Wicket)	Outdoor Sports Complex	02	
3.	Cricket Practice half Wicket (Concrete)	Outdoor Sports Complex	01	
4.	Cricket Practice half Wicket (Turf)	Outdoor Sports Complex	01	
5.	Football Field	Outdoor Sports Complex	01	
6.	Handball Ground	Outdoor Sports Complex	02	
7.	Basketball Ground (Synthetic)	Outdoor Sports Complex	01	
8.	Basketball Ground (Concrete)	Outdoor Sports Complex	01	
9.	Volley Ball (Smashing)	Outdoor Sports Complex	02	
10.	Volley Ball (Shooting)	Outdoor Sports Complex	02	
11.	Tennis (Hard Court)	Outdoor Sports Complex	01	
12.	Kho-Kho Ground	Outdoor Sports Complex	01	
13.	Kabaddi Ground (Synthetic)	Outdoor Sports Complex	01	
14.	Kabaddi Ground (Mud)	Outdoor Sports Complex	01	
15.	Tennis (Hard Court)	Brahmputra Hostel	01	

16.	Volley Ball (Smashing)	Narmada Hostel	01	
17	Badminton Court (Outdoor)	Sutlej & Krishana Hostel	02	
18.	Outdoor Gym	Kaveri Hostel	01	
19.	Outdoor Gym	Staff Club Children Park	01	

Indoor Sports Facilities at NDRI Karnal

Indoor Sports Complex (Kalki Bhawan) is 100'X150'=1500 sq. ft. of area two urinals and changing rooms for ladies and gents and one store room for placing sports equipment's. Kalki Bhawan is well equipped with Lights & fans all around and at the top enables students and staff members of NDRI to play during late hours. Kalki Bhawan includes the following indoor sports facilities.

S. No	Name of Sports Facility	Location	Number	Remarks
1.	Badminton Court (Synthetic)	Kalki Bhawan	06	
2.	Indoor Gym (Machines)	Kalki Bhawan	15	
3.	Billiards Pool Table	Kalki Bhawan	01	
4.	Badminton Court (Wooden Flooring)	Staff Club (Indoor Hall)	01	
5.	Table Tennis Court	Kalki Bhawan	04	
6.	Steam Bath	Kalki Bhawan	01	
7.	Sauna Bath	Kalki Bhawan	01	
8.	Table Tennis Court	Krishana & Narmada Hostel	02	
9.	Treadmills	Kalki Bhawan	02	

6.5.5.4 Auditorium

Table 54: Details of Auditorium and Conference Halls at NDRI, Karnal

S. No	Name of the auditorium	Year of construction	Seating capacity	Number of programmes conducted	Updates/ modifications in facilities (2021-2026)
1.	Dr.D. Sundaresan	1997	598-Ground floor 302-Balcony	90	1. CCTV cameras have been installed in the auditorium for effective monitoring and security purposes. (2023) 2. Replacement of old, worn-out

					chairs and carpet in the auditorium with new ones has been carried out. (2024) 3. A Wi-Fi HDMI extender has been installed for proper 4K display on the existing projector at a distance of 60 meters. (2025) 4. New flood lights have been installed in the auditorium to enhance visibility and lighting conditions. (2025) 5. A new operating system with monitoring facilities has been installed for seamless conduct of all events in hybrid mode. (2025)
			Total-900		
2.	Dr. N. N. Dastur Hall	2007	150	227	1. The existing projector display system has been replaced with an LED wall to provide enhanced clarity and better viewing experience. (2025) 2. A new audio system has been installed with a sound mixer to ensure clear sound, along with phantom microphones on the podium and stage. (2026)

3.	Pinaki Hall	2008	54	NA	NA
4.	Jayanti Hall	2009	24	NA	NA
5.	Matangi Hall	2009	14	NA	NA
6.	Hannu Varta Hall	2009	06	NA	NA

The Communication center of the Institute has in-position facilities for digital photography/videography, State-of-the-art projection systems, displays of achievements and technologies of various Divisions of the Institute along with Dr. D. Sundaresan Hall (Main Auditorium) and Dr. N. N. Dastur auditorium (Mini- Auditorium) to organize various functions and events of the Institute.

The details of the infrastructure provided in these facilities areas follows:

Main Auditorium -Dr. D. Sundaresan Hall

The main auditorium has a seating capacity of 900 with the following facilities:

- Soundproof hall with acoustic and sound reducing furnishings and panels, fully air-conditioned with Green Rooms.
- Digital sound reinforcement system with feedback eliminators.
- Multimedia projection facilities.
- Stage furnishing with motorized curtains and cyclorama projection screens.
- Computerized management of stage functions.
- Fire sensors and smoke and flame detectors.
- Standby power.
- It has one conference hall of 48 seats.
- Fully enabled Wi-Fi.



Fig. 19: Main Auditorium-Dr. D. Sundaresan Hall

Dr. N.N. Dastur Mini Auditorium

This institute also has a fully air-conditioned Mini Auditorium with a seating capacity of 150 persons with all audio-visual facilities. Multimedia projection facilities, fire sensors, smoke and flame detectors, and air conditioners are provided in the auditorium. The hall is used for IRC meetings, Academic week related activities, Hindi Goshti, Debate and other extracurricular activities of the students.



Fig. 20: Mini Auditorium- Dr. N. N. Dastur Hall

Pinaki Hall

This institute also has a fully air-conditioned Pinaki Hall with seating capacity of 54 persons with all the audio-visual facilities, multimedia projection facilities (three sides) and conference mic system. The facility is used for conducting the official meetings, briefing to important delegations and other important meetings.



Fig. 21: Pinaki Hall

Jayanti Hall

This institute has a fully air-conditioned Jayanti hall with seating capacity of 24 persons with the all audio-visual facilities, multimedia projection facilities and conference mic system. Hall is used for the administrative meetings of Dairy Science College etc.



Fig. 22: Jayanti Hall

Matangi Hall

Matangi Hall is fully air-conditioned with seating capacity of 14 persons with the all audio- visual facilities.



Fig. 23: Matangi Hall

Hannu Varta Hall

A fully air-conditioned, Hannu Varta hall, is also available with seating capacity of 06 persons with the all audio-visual facilities.



Fig. 24: Hannu Varta Hall

Committee Room

Institute has a separate fully air-conditioned committee room with a seating capacity of 30 persons. It has one multi-media projector, two air-conditioners and 6 wall mounted fans. The room is mainly used for conducting the interdisciplinary seminars of PhD students and other administrative meetings of dairy science college etc.



Fig. 25: Committee Room

6.5.5.5 Exhibition Hall / Museum

The Institute has a dedicated exhibition building housing exhibition space, fully furnished hall and other facilities.

Table 65: Details about the exhibition Hall at NDRI, Karnal

S. No	Name of the exhibition hall	Special events being conducted during last 5 years	Updates/modifications in facilities (2016-2021)
1.	Exhibition unit (50 seating capacity)	1149	A new LED wall has been installed in the museum for better visibility for visitors.(2025
2.	Photo Lab	1800	NA

Exhibition Unit

The institute also has a fully air-conditioned Exhibition Hall with seating capacity of 50 persons with all audio-visual facilities. Exhibition unit is having one gallery, two display rooms and one store room.

**Fig. 26: Exhibition Unit**

Museum

A new building, Museum of Dairy Science is being constructed in a plinth area of 237.93 square meters. A budget of Rs 93,32,300/- has been sanctioned under Development grant (Strengthening and Development of Higher Agricultural Education in India). It would have one big display room for all the achievements of NDRI.

Photo Lab

The photography section plays a vital role in providing photographic aid to the scientists for research and students for dissertations. Practical training in photography is also imparted to the students of extension education. This section is also responsible for providing photographs for NDRI publications like Annual Report, Newsletter and other institute publications for highlighting the extension and research achievements. It

also supplies photographs to the NDRI Museum and exhibition Unit for making posters and other displays. Further a photographic collection of All Indian/Exotic breeds of cattle and foddors are available in the section. Thousands of black and white negatives and photographs pertaining to research work of the scientists have been recorded and preserved division wise for future reference

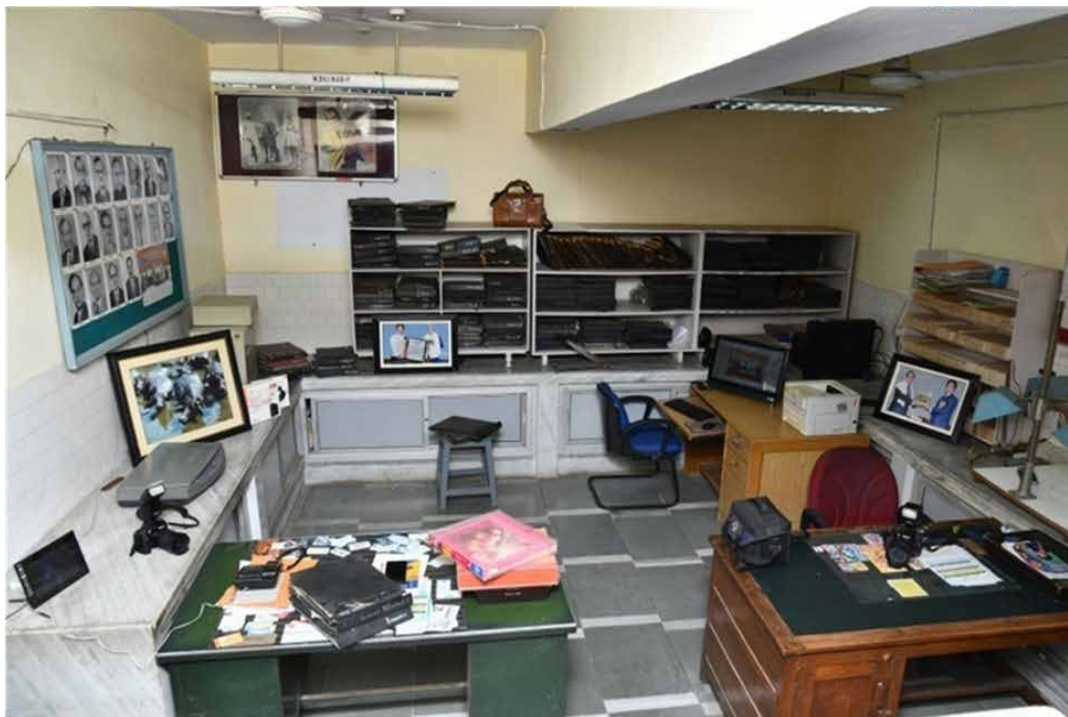


Fig. 27: Photo Lab

Video Lab

Audio Visual Lab is the central facility of the institute which is equipped with latest and modern equipment of A.V. aids like video editing, VCR, video editing central unit, video camera, colour TV monitors 16 mm movie projectors, amplifiers, 35 mm. slide projectors, overhead projectors, epidiascopes, LCD projectors, audio recording equipment's which are handled by well trained, experienced technical persons. The main objectives of this unit are:

- To provide the facilities of A.V. aids during seminars, meetings, conferences and other important functions of the Institute
- To educate scientists and students of graduate and postgraduate level regarding the preparation and uses of A.V. aids and their operations.
- To propagate the research findings of the Institute to the dairy farmers, village level workers, and farm ladies using various A.V. aids.
- To produce video films on different aspects of dairying for the upliftment of dairy farmers. To produce video films on research projects.



Fig. 28: Video Lab

6.5.6 Research Facilities

6.5.6.1. Postgraduate Laboratories and Equipments

Table 55: List of equipments available indifferent Research Laboratories of NDRI, Karnal (Equipments costing ≥ 2 lakhs only)

Sr. No.	Name of equipment	Make and Model	Year of purchase	Cost (Rs in lakhs)
Dairy Technology				
	Thermoforming Machine	Sri Sai Thermoformers, Delhi; Model: Autocycle Blister Forming Machine	2026	2.32
	Pulse Electric Field Machine	Sure View Instrument LLP (A2603059)	2026	80.47
	Automatic Round Labeling Machine	Global Marketing Empire	2026	2.69
	MF-UF unit	Microfilt, India	2026	4.99
	Refrigerated centrifuge	Model: FC5830R: Make: OHASUS, Germany	2025	14.5
	Carbonation Unit	Madanlal Yadav & Sons	2025	3.19
	HPLC	Shimadzu P Series LC 20 AD; RID 20A	2025	19.97
	Bioreactor	BioAge, Bio-Spin -03A	2025	4.70
	3D printer	Advance Mechanical Service Model: Engine SR	2024	9.5
	Rheometer	Model: 102e: Make: Anton Paar, Austria	2024	45
	Headspace Gas Analyser	Industrial Physics Product Integrity Ltd., UK (Systech Illinois) Model: GS6600	2024	9.79

	Protein/Nitrogen Analyzer	FOSS, Kjeltex 8100	2024	9.91
	Skid mounted NF plant	Permionics	2022	6.99
	High shear mixer	Ross	2022	6.98
	Waterbath	Gant	2021	3.19
	Spectrophotometer	Thermo-scientific	2021	7.87
	UV Visible double beam spectrophotometer	Aarson Scientific Works(RSCH-366C)	2021	3.85
	Batch Ice Cream Freezer	Goma Engineering Pvt. Ltd. (FGCFR00219)	2021	5.10
	Fermentation Line for Dahi & Yoghurt	Goma Engineering Pvt. Ltd. (FAMP000423)	2021	15.0
	Homogenizer	Goma Engineering Pvt. Ltd. (FGHPH05809)	2021	2.80
	Nano Drop Spectrophotometer	Thermo Fisher (AZY2121868)	2021	7.90
	Universal testing Machine	Scientific & Digital Systems	2021	12.90
	Texture Analyzer	TA50/650L	2020	19.70
	Water Activity Meter	Scientific & Digital Systems 4TE (Part No. 40910) with Software	2020	6.60
	Moisture Analyzer	SHIMADZU (MOC-120H)	2020	5.00
	Solubility Index Mixer	LABINCO (B.V. L295)	2020	2.70
	Probe Sonicator	Sonics, USA	2019	3.80
	UV-VIS Spectrophotometer	Shimadzu, Japan	2019	4.20
	Incubator Shaker	IKA (KS 3000 IC)	2017	4.50
	Electro Spinning Apparatus	Physicoequipment, Chennai	2017	8.61
	Spray Drier	Techno Search Instruments (PSD5-D)	2017	10.28
	Freeze drier Labcono	Labcono	2013	5.77
	Freeze Dryer	Labcono	2013	6.00
	Ice cream plant	Goma Engineering Pvt. Ltd.	2012	11.84
	Rheometer	Anton Paar (MCR 52)	2012	13.70
	Vacuum Packaging Machine	Winner Electronics	2012	2.50
	Stomacher	Lab Technologies	2012	2.00
	Spectrophotometer	Beckman	2011	2.18

Dairy Chemistry				
	Gas Liquid Chromatography	Shimadzu, Japan GLC-2010 Plus AF (Dual FID)	2018	12.2
	High speed Table top refrigerated centrifuge	Hermele Labortechnik, Germany, Z 326 K	2015	3.90
	Spraydrier	Techno search, Model-SPD-P-111	2017	7.70
	Water Purification System with accessories	BIO-AGE, Lab Pure Series-Direct Ultra-TUVF-5	2017	2.60
	Electrochemical Workstation	CHI660E	2016	10.90
	Spectrophotometer for microlitre volume (Nanodrop)	Biochrom, BioDrop	2016	3.30
	Refrigerated centrifuge	Kubota6500	2015	8.00
	Lyophiliser/freeze-drier	Labconco, Freezone plus	2014	8.50
	Refrigerated Centrifuge	Kubota, Kubota Centrifuge 6500	2014	7.90
	DH analyser	SI Analytics GmbH Germany Titroline 7000	2014	8.53
	Waterpurificationsystem	Saratorius Arium	2014	4.73
	ElisaReader	Biotek,EON	2014	2.22
	Refrigerated centrifuge along with Accessories	Kubota,6500	2014	7.69
	Atomic absorption spectrophotometer	Shimadzu, AA-7000	2011	9.30
	HPLC	Waters -515, Binary Gradients HPLC System	2010	18.7
	Rancimat	Metrohm, Rancimat 743	2010	7.90
	UV-Vis spectrophotometer	Shimadzu, 2550	2009	5.480
	pH-Stat	Metrohm Indian Pvt. Ltd.	2022	8.0
	Multimode Plate Reader	Agilent Bio tek synergy LX	2022	15.0
	HPLC with Fluorescence Detector	Shimatzu	2024	42.0
(c) Dairy Microbiology				
	CO2 incubator	M/s H. biomedical Ltd. HF-90	2020	3.06
	Inverted microscope	M/s Radical Scientific, RTC-7	2019	3.26
	Centrifuge Refrigerated	Hermle	2016	3.66

	Thermocycler (PCR)	Biorad	2016	2.99
	Research Microscope	Dewinter	2016	2.42
	Biosafety Cabinet type II	Model No. AC2-4ES	2014	2.90
	PCR with Gel documentation	Applied Biosystem	2014	5.31
	HPLC	SHIMA DZU	2014	17.04
	Fermenter	New Brunswick CelliGen 115	2014	22.00
	Centrifuge refrigerated	Thermoscientific Heraeus Multifuge xIR	2014	4.75
	UV Spectrophotometer	SHIMADZU UV-1800	2014	3.44
	Lab Scale Micro Filtration, Ultra Filtration	Ms GE Health care Biosciences pvt. Ltd.	2014	6.88
	Spray drying unit	Lab Spray drier, Spray Mate	2014	6.99
	Fermenter	New Brunswick scientific co. inc 175.fresh water BVD Enfield; CT06082USA	2013	14.24
	Spectrostar Nano	BMG Labtech	2013	5.84
	Carbon-dioxide Incubator	NU5700	2013	3.04
	Biosafety Cabinet	ESCO Class-II BSCAerotream	2013	2.73
	Anaerobic Workstation	IMSET	2012	5.65
	Biological Safety Cabinet Class II	Locomo Delta Series	2012	5.44
	Inverted Microscope with computer Controlled Photographic System	Tawa	2012	11.72
	ELISA Reader (Microplate Reader System)	Biotek Synergy H1	2012	18.06
	Carbon -dioxide Incubator	NAUIRE USA	2012	3.54
	Gel Documentation System	M/s Alpha Info Tech Corporation	2011	4.10
	Stomacher	Seward	2011	2.47
	Ultra-Low Deep Freezer	New Brunswick C760-86	2008	4.65
	Speed Vac System	Labcomo 7740030	2008	4.09
	Table top High Speed Refrigerated Centrifuge	Sigma Sertoriud Model 6K15	2008	8.93
	Thermal Cycler (PCR Machine)	Eppendorf Netheler-Hinz Gmbh	2008	3.70
	Ultra-Low Deep Freezer	Sanyo MDF-U73V	2007	3.23

	ICE MATIC FLAKER	INOX 230/50/1	2006	2.30
	Real Time PCR Machine	Cepheid Smart	2006	20.94
	Thermal Cycler	Applied Biosystem Model#9902	2006	4.17
	UV Transilluminator	Mini BIS M-101-0-00	2005	4.26
	Refrigerated Centrifuge	Sigma3-18K	2005	3.41
	Biosafety cabinet	ESCO Class-IIBSC Aerotream	2005	3.71
	Bench top Refrigerated Incubator Shaker	Innova 4230	2005	4.53
	PCR Machine	Eppendorf	2003	2.92
	Water Purification system	Q-Gard F7MA62475	2001	5.73
	Ultrasonic Processor	Fast Prep-24 15063297	2001	2.35
	Vertical Autoclave	AC-48 New Brunswick	2001	2.83
	- 85°C Ultra Low Freezer	New Brunswick US7085	2000	4.44
	Thermocycler	Master Cycler 014708	2000	3.36
	Freeze Dryer	Modlyo 4 K Freeze dryer base unit; F101-01-000	1994	3.16
(d) Animal Biochemistry				
	Nanoparticle Tracking Analyzer	PMX-130-640	2025	5182700/-
	Ultra Low Temp. Deep Freezer (-86oC)	Towa optics	2005	470536/-
	Gel Documentation system	Syngene (1985/2010)	2010	3.9
	CO ₂ Incubator	Thermo Fisher	2016	4.95
	Tower Server Model No LG 22" 1PS Monitor 22 MP48	Netweb technologies	2017	3.34
	Blood Biochemistry Analyzer	Midray (Model: BS200)	2016	7.47
	Elisa plate /Eon reader	BioTek instruments	2014	8.82
	Dynamic light Scattering	Malvern	2015	24.34
	Microscope Inverted Tissue culture	Olympus	1991	5.47
	Gradient PCR Machine		2008	8.63
	CO ₂ Indicator	Esco Biotech	2017	4.61
	Fluorescence spectrophotometer	Varian	2011	7.9
	Gel Documentation system	Syngene(1985/2010)	2010	3.9
	Glove Box	PLAS Labs 819-SS/GB	2010	7.7

	PCR	Applied Biosystems(9700)	2010	2.8
	Phase Contrast Microscope with computer	BP-BA310E	2023	300000/-
	Computer Assisted Semen Analyzer (Software & Camera)	MC60	2023	995000/-
	Manual Rotary Microtome	Microtome (HM325)	2026	496650/-
	Tissue Embedding Station with Cold plate	(Model No. MTC – TECP Make :Medi-Meas)	2026	389975/-
	Automatic Tissue Processor (Bio-Base)	Bio-Base, China	2026	398500/-
	BSL-II Biosafety Cabinet	NA4 FAT –C 26010000 2A IG-C11A 242G	2026	525100/-
	Research Microscope with Digital Camera and Computer	Karl zeiss (Axiacam 208)	2026	488000/-
	-20 oC Freezer	-		
	Biosafety Cabinet	-		
	Liquid scintillation Analyser	model 1600-CA	1990	450000/-
	Cobra Gamma Counter	Packard Instrument Company model 5005	1996	776467.73
	Olympus inverted microscope with fluorescence	Olympus Singapore Pvt. Ltd. Model ek-40	2000	399090.00/-
	Heto Freeze Dryer with Vacuum Concentrator	Heto Holsten Denmark	2016	351507.00
	Turbo Cyclor 2 Thermal Cyclor	Innova Bio life, Blue ray	2026	380500.00
(e) Dairy Engineering				
1	Viscometer, IKA Lo-Vi with Adaptor	IKA and Lo-Vi	2021	3.4
2	Viscometer	Haake	2017	7.5
(f) Dairy Extension (Community Centre)				
1.	Interactive Panel Ultra Plus 86 inch	BRIO	2023	34.72
2.	Interactive Panel Ultra Plus 86 inch	Infralab	2023	2.28
3.	Vectra LCD Data Wall Display (Digital Standee)	Vectra	2023	3.2
4.	MEPL Smart TV 86 Inch 4K	MEPL	2023	3.31

5.	VD T 800 nits LED Display System P 1.5 Indoor Visual Display Unit(8.4 Ft x 4.2 ft)	VDT	2025	9.98
6.	Desktop with 27" FHD LED	Lenova 90RC00N1NR7	2023	2.01
7.	Digital Camera with 24-105 mm Lens	Canon Rs	2024	3.69
8.	Canon Digital Camera (Body)	Canon Eos R-5	2025	2.6
9.	Video Camera	Canon XF 605	2025	3.72
(g) Livestock Production Management				
1	Lactoscan milk SCC Analyzer	SCCS-CA-007407	17.02.2021	4,14,750 /-
2	Biochemistry Analyzer	EM 200	22.03.2021	5,22,900 /-
(h) Animal Physiology				
	Fans	--	28.07.2014	1975.00
	Air conditioner	--	29.03.2016	49000.00
	Book Cabin	--	21.05.2012	1399.84
	Biochemical Analyzer	--	17.03.2012	147000.00
	Water bath	--	31.03.2004	7975.00
	Microscope	--	28.03.2006 26.03.2021	65100.00 160650.00 24990.00
	Aluminium test tube stand	--	10.01.1980	84.00
	Aluminium test tube stand	--	02.11.1981	212.00
	Tray Enamel surgical	--	16.01.1982 28.01.1994	233.35
	Analytical Electronic Balance	--	04.01.2005	88500.00
	Sphygmomanometer	--	25.04.1984	169.35
	Stool Wooden	--	28.03.2001	9000.00
	Lab. Table sunmica	--	05.01.1985	
	Chemical Racks	--	05.01.1985	
	Chemical Racks	--	05.01.1985	
	Spectrophotometer	--	16.05.1996	63800.00
	Table Steel	--	-----	-----
	Refrigerated Centrifuge	--	18.03.2024	134950.00
	Almirah big size steel	--	02.02.2010	13950
	Hot Plate	--	25.01.2016	4885.00
	Refrigerator	--	28.08.1999	16600.00

	Water bath	--	20.01.2011	11600.00
	UPS	--	02.06.2012	4000.00
			24.03.2011	4977.86
	Micro centrifuge	--	14.03.2013	19000.00
	Spinnet digital magnetic stirrer	--	14.03.2013	15550.00
	Heating mantle cap	--	15.01.2008	2121.00
	Micro plate shaker	--	26.03.2013	17000.00
	Lab. Stool	--	03.02.2014	19500.00
	Water Dispenser	--	13.06.2012	8350.00
	Computer Table	--	11.01.2019	2542.00
	Incubator Digital	--	27.11.2019	24906.00
	pH Meter	--	18.09.2019	21489.00
	Printer HP	--	31.03.2009	
	Rain Gauge	--	24.09.1999	
	Vortex Mixture	--	26.03.2013	25400.00
	Computer	--	28.05.2021	

(i) Animal Biotechnology Centre

	Gel Doc System	VILBER	2020	5.73
	Inverted Fluorescence	Radical	2020	12.86
	Refrigerated Centrifuge	HERMLE	2019	8.76
	CO ₂ Analyzer	ESCO	2019	3.93
	Workstation	DELL	2025	9.9
	Workstation	Tyrone	2024	7.3
	Computer Server	-	2025	6.8
	Water Purification System	-	2021	7.20
	Zoom Stereo Microscope	-	2023	6.90
	Spectrophotometry	-	2023	9.68
	Biosafety Cabinet	-	2026	5.60

(j) Animal Genetics & Breeding (AGB) Division

	Refrigerated Centrifuge	Eppendorf	2020	7.0
	PCR MACHINE	Eppendorf	2020	6.0
	GEL DOC SYSTEM	VILBER	2020	
	Real time PCR	Applied Biosystems	2013	13.0
	Automatic nucleic acid system	Genetix Biotech Asis	2025	5.0
	Workstation	Tyrone	2023	4.0
	Wokstation (2)	Fusionstor	2025	16.0
	PCR machine	Applied Biosystems	2019	2.36

(k) Animal Nutrition				
	Homogenizer	IKA-Tio Basic Ultra	2019	2.0
	Biosafety Cabinet	Thermo scientific 1300 Series	2018	5.0
	Vacuum Rotary pump	DLAB DE 100 Pro	2018	4.0
	Anaerobic Chamber	Make:Bactron	Model: BA-CLITE-2	2016
	Autoclave	TOMY SX-500	2012	3.5
	Gas Chromatography	Bruker 450-GC	2012	17.0
	Anaerobic Chamber	Laboratory Product Ltd. COY	2010	6.0
	Inverted Microscope	Nikon ECLIPS Ti	2010	5.0
	Refrigerator Centrifuge	Hermile Z326K	2010	4.0
	Ion Chromatography	Compect IC 882	2010	8.0
	Atomic absorption spectrometer	Model: AA6880 F	2019	16.80
	Trans-esterification unit (50 L Cap)	Extraction Industries, Shivamogga	2019	7.50
	Nitrogen distillation apparatus	Pelicon Equipments: Model: Kel Plus	2016	3.50
	High Performance Liquid Chromatography	Make: Waters, Model : 515 series,	2011	20.0
	Atomic absorption spectrometer Atomic absorption spectrometer Atomic absorption spectrometer	Make: Shimadzu: Model: AA6880; Model: AA6880 F	2019	16.80
l) Agronomy				
	Automatic nitrogen analyzer	Pelican	2019	249097.00
	Double beam UV-Vis spectrophotometer	Thermo-Fisher	2022	496999.00
	SPAD meter	LiCor	2022	251694.00
	Spectrophotometer		2023	674000.00
	Atomic Absorption Spectrophotometer	Analytic Jena	2023	2637000.00
	Root analysis system		2023	969120.00
	Canopy Analyzer		2023	437242.00
(m)ARGO				
	Gradient PCR	Proflex PCR, Applied Biosystem	2024	4.71
	Inverted Microscope	Eclipse Ti, Nikon	2013	11.98

	Ultrapure Water Purification System	Elix Essential 5, Mili-Q	2019	6.1
	Deep Freezer (- 80 °C)	906GP, Thermo Scientific	2019	5.6
	CO ₂ gas incubator	4131 Forma Series 3 Water Jacketed, Thermo Scientific	2018	6.1
	Refrigerated Centrifuge	Z236K, Hermle	2013	3.2

List of equipments available in different Research Laboratories of ERS of NDRI, KALYANI (Equipments costing ≥2 lakhs only)

Sr. No	Name of equipment	Make & Model	Year of purchase	Cost (Rs in Lakhs)
1	Interactive Panel	Infralab LCD infrared optical 3840 × 2160 interactive panel	2024	2.49
2	Atomic Absorption Spectrophotometer (with accessories)	Agilent Technologies G8431AA (003, 210)	2015	20.70
3	ELISA Reader	Globe Scientific/GSI-1060	2023	2.48
4	Veterinary Biochemistry Analyzer	Globe Scientific/GSI-2100	2024	11.92
5	Gas liquid Chromatography (GC)	Neutel ® Model: Ultima 2100	2008	4.67
6	Hot air oven	Memmert ® Model: UF-160	2015	2.22
7	Sonicator	Hielscher® Model: UP200HT	2017	3.89
8	Fat analyzer (Soxhlet apparatus)	Tulin ®	2024	2.05

List of equipments available in different Research Laboratories of SRS of NDRI, Bengaluru (Equipments costing ≥2 lakhs only)

Sr. No	Name of equipment	Make and Model	Year of purchase	Cost (Rs in lakhs)
Dairy Production Section - SRS				
1	Biosafety cabinet	M/s Heal force, HFsafe-1200LC	3.71175	2022
2	Rotary Evaporator	M/s Heidolph, Hei- VAP Core HL and Rotavac Valve Tec	3.48333	2023
3	Water purification system	M/s Merck, Direct-Q® 8	6.07764	2023

4	Conductivity meter	M/S Metrohm India Pvt Ltd., 912 Laboratory Conductivity Meter	2.49981	2025
5	PH Meter	Sartorius group PB-30L, 314171	0.39	2022
6	Analytical Balance	Sartorius group QUINTIX224-10IN S/N: 0042801152	1.07	2023
7	Refrigerated Centrifuge	Genetix GX8007R SN:TB101438	2.48	2024
8	Automated Cell Counter	Biogenuix	2.95 lakhs	2023
9	Gel documentation system	Igene	4.98 lakhs	2024
10	Microcentrifuge	Genetix Biotech	2.4 lakhs	2023
Dairy Engineering Lab - SRS				
11	Lyophilizer	Venchal Scientific	April 2023	8.85
12	Bomb Calorimeter	Toshniwal Technologies PVT. Limited- CC01/M3	2025-26	5.69,940
13	Torrefaction reactor (Custom Fabricated)	M/S Falcon Scientific Co.	2024-25	2.49
14	Biosafety cabinet	Inkarp Instruments	March 2021	3.99
15	FTIR	Perkin Elmer	02-06-2022	18.5
16	Phase contrast microscope	Olympus	29-03-2022	5,35,185
17	DSC	Perkin Elmer	June 23022	19.55
Dairy Processing Section - SRS				
18	HPLC	Agilent India Pvt Ltd	2022	16.9
19	Trinocular Microscope	Olympus Trinocular LED microscope, model CX33	2024	2.45
20	Biosafety cabinet class -II	Igene, IG-CIIA2322	2025	3.999
21	Refrigerated Centrifuge	Agile Lifesciences Technologies India Pvt Ltd, Rotanta 460R	2025	10.6
22	Autoclave	Equitron Medica Pvt Ltd, 7441SLE-DOC-SS	2025	4.7
23	Biosafety cabinet class -II/Type A2	Thermo fisher Scientific 1500 Series A2, model-1386, HSN-84213990	2025	6.99

24	Inverted Microscope	Lab systems. IOX-106 FL	2025	3.99
25	CO2 Incubator	Micro measures & instruments	2026	3.82
26	Lab scale fermenter	IKA India Pvt Ltd, Habitat	2026	23.54
Experimental Dairy Plant - SRS				
30	Kulfi/candy making and hardening unit	Select Best solutions Pvt Ltd	2025	4.99

Table 56: List of equipments available in the Central Instrumentation Facility at NDRI (Equipments costing ≥2 lakhs)

Sr. No.	Name of the Equipment	Make and model	Price (Rs)	Year of Purchase	Location
	Ultracentrifuge	Beckman Coulter, High Speed Optima Max XP	21,00,000/-	2023	NCIF (under JDR Office)
	HPLC System with PDA & RID	Shimadzu, P series	30,68,000/-	2024	
	Multimode Plate Reader	Agilent, BioTek Synergy H1	18,39,620/-	2024	
	High Speed Refrigerated centrifuge	Hermle, Z36 HK	13,41,188/-	2024	
	Spectrophotometer	Lasnay, L1-2800 Ex	4,82,000/-	2024	
	Water Purification System	Bio-Age Equipment	5,91,000/-	2026	
	Particle Size Analyser	Malvern, Nano ZS-90	17,83,854/-	2014	
	Confocal Microscope	Olympus, FV 4000	1,63,43,000/-	2025	
	Rotary Evaporator with chiller and vaccum pump	S.S scientific instruments work	4,25,000/-	2026	
	Benchtop NMR	Magritek, Spinsolve 80	1,32,16,000/-	2026	
	-80° C Freezer (2 in No's)	Seltis	23,55,280/-	2026	
	Freez dryer	Labconco, Freezone	30,00,000/-	2026	

	Vaccum manifold with vaccum pump (Solid phase extraction unit)	KLABS, KMF-48	3,51,998/-	2026	
	Ultrasonic Probe Sonicator	LABWAN	4,95,635/-	2026	
	Horizontal Autoclave	Zenotrex	19,78,000/-	2026	
	Digital droplet PCR machine	Qiagen, QIAcuity One 5 plex	36,69,633/-	2026	

6.5.6.2. Research Contingency

The Institute provides financial support for research activities through annual research contingency grants allocated to each Division/Section under the operational head. The allocation is made by a committee chaired by the Director based on the number of projects and scientists in each division. Additional support is also provided under SC-SP funds for research projects focused on solving problems of the Scheduled Caste population.

These funds are utilized by scientists for supporting postgraduate (M.Tech./M.Sc./M.V.Sc.) and Ph.D. students in laboratory work, field experiments, purchase of consumables, data collection, and other research-related activities. Along with this, students also receive fellowships under schemes such as Institute Fellowship, ICAR-JRF/SRF, UGC, ICMR, INSPIRE, DST/DBT, and NFST/NFSC, which include provisions for research contingency.

During 2021–2025, a total expenditure of ₹410 lakh was incurred towards research contingency for PG and Ph.D. students.

Table 57: Research Contingency for PG (M.Tech/MSc/M.V.Sc) and Ph.D students

Name of fellowship	Type	M.Tech/MSc/MVSc	Ph.D
Institute	Fellowship	Rs. 7,560/- p.m.	First and Second Year Rs. 31,000/- p.m. Third Year Rs. 35,000/- p.m.
	Research Contingency	Rs. 6,000/- p.a.	Rs. 10,000/- p.a.
ICAR (PGS) / ICARJRF/SRF	Fellowship	Rs. 12,640/- p.m.	Rs. 37,000/- p.m. for 1 st & 2 nd year pg lab (Rs. 42,000/- p.m. (fixed) for 3rd year
	Research Contingency	Rs. 6,000/- p.a.	Rs. 10,000/- p.a.

UGC	Fellowship	-	Rs.37,000/- p.m. for initial two years Rs.42,000/- p.m. for remaining tenure
	Research Contingency		1 ST Two year 10,000 P.A 3 rd Year 25000 p.a.
INSPIRE	Fellowship	-	Rs.37,000/- p.m. for initial two years Rs.42,000/- p.m. for remaining tenure
	Research Contingency	-	Rs. 20,000/- p.a.
ICMR	Fellowship		Rs.37,000/- p.m. for initial two years Rs.42,000/- p.m. for remaining tenure
	Research Contingency	-	Rs. 20,000/- p.a.
NFST/NFSC	Fellowship	-	Rs.37,000/- p.m. for initial two years Rs.42,000/- p.m. for remaining tenure
	Research Contingency	-	Rs.25,000/- p.a. for initial two years Rs.25,000/-p.a. for remaining tenure

RESEARCH CONTINGENCY (2021-2025)

During the last five years (2021–2025), the following expenditure was incurred towards research contingency for postgraduate students (M.Tech./M.Sc./M.V.Sc.) and Ph.D. scholars to support their academic and research activities.

The year-wise expenditure on research contingency is presented below:

Year	Funds Expenditure(₹) (in Lakhs)
2021	85.2
2022	61.3
2023	86.2
2024	88.1
2025	89.2
Total	410

The research contingency grant supported students in conducting laboratory experiments, field research, procurement of consumables, data collection, and other

research-related activities, thereby contributing to the overall improvement in the quality of postgraduate and doctoral research at the Institute.

Development Grant

To further strengthen students' research activities, financial assistance is also provided through the Development Grant of the Institute. These funds are mainly utilized for the purchase of research consumables, laboratory inputs, equipment support, and facilitating academic and research-related requirements.

Details of Development Grant Funds Received and Utilized

The details of funds received and utilized under the Development Grant are as follows:

Year	Funds Received (₹)	Funds Utilized (₹)
2020–21	21,54,3,886	17,80,0094
2021–22	N.A.	N.A.
2022–23	12,02,0,000	11,93,9,086
2023–24	12,20,0000	12,18,1964
2024–25	16,55,00,000	12,02,09,426
2025–26	24,85,0000	22,74,9262

Note: Data for the year 2021–22 is not available due to disruptions caused by the COVID-19 pandemic..

Fellowship Expenditure Including SRS/ERS (2020–2025)

The Institute also incurs expenditure on various fellowships including Institute Fellowship, JRF, SRF, CSIR, ICMR, DBT, and DST-INSPIRE to support students and scholars across disciplines.

Year-wise Fellowship Expenditure

Regarding information for different fellowship expenditure including SRS/ERS from 2020-2025							
Year	Instt.	JRF	SRF	CSRI	ICMR	DBT	DST Inspire
2020-2021	89719000	8116587	0	23489	6304654	4134563	362986
2021-2022	90174000	9667320	6045308	0	3491200	2930833	0
2022-2023	77537000	7854223	10950227	132063	4585109	9822873	115500
2023-2024	74622000	5853659	9337103	21932	3496240	5051782	397058
2024-2025	74465000	7199114	7997618	0	9042954	6214838	392017
Total	406517000	38690903	34330256	177484	26920157	28154889	1267561

6.5.7. Outcome/Output

6.5.7.1 Year wise & discipline wise information for the NET/SRF/JRF/ARS/ Other national exams

Table 58: List of students who have been successful in qualifying NET/SRF/JRF/ARS/Other national exams during 2021-26 is placed below :-

Name of the students	Registration No.	Division	Year	Exam cleared during Last 5 Years
AGB				
Dharamshaw C A	22-P-AG-05	AG & B	2021	UGC-NET 2021, Joint CSIR-UGC NET - 2021, MANF JRF 2021, Joint CSIR-UGC JRF 2022, ICAR-NET 2023
Kangabam Bidyalaxmi	20-P-AG-01	AG & B	2021	ASRB NET-2021
Shivam Bhardwaj	20-P-AG-08	AG & B	2021	ASRB NET-2021
Nidhi Sukhija	20-P-AG-11	AG & B	2021	ASRB NET-2021
Aishwarya Dash	20-P-AG-12	AG & B	2021	ASRB NET-2021
Vishakha Uttam	20-P-AG-13	AG & B	2021	ASRB NET-2021
Rangasai Chandra Goli	21-P-AG-01	AG & B	2021	ASRB NET-2021
Jigyasha	21-P-AG-02	AG & B	2021	ASRB NET-2021
Pallavi Rathi	21-P-AG-03	AG & B	2021	ASRB NET-2021
Kashif Dawood Khan	21-P-AG-04	AG & B	2021	ASRB NET-2021
Surati Utsavbhai Shaileshkumar	21-P-AG-05	AG & B	2021	ICAR NET-2023; ASRB NET - 2021
Kiyevi G Chishi	21-P-AG-06	AG & B	2021	ASRB NET-2021
Vikas Diwakar	21-P-AG-07	AG & B	2021	ASRB NET-2021
Dipankar Paul	21-P-AG-09	AG & B	2021	ASRB NET-2021
Lalmuansangi	21-P-AG-10	AG & B	2021	ASRB NET-2021
Aaluri Ashwitha	20-M-AG-01	AG & B	2023	ASRB NET 2023
Anuka Yadav	20-M-AG-02	AG & B	2023	ASRB NET 2023
Ashish Yadav	20-M-AG-03	AG & B	2023	ASRB NET 2023
Ayushi Singh	20-M-AG-04	AG & B	2023	ASRB NET 2023
Gaurav Dutta	20-M-AG-05	AG & B	2023	ASRB NET 2023
Ravina	20-M-AG-07	AG & B	2023	ASRB NET 2023
S T Vanzampuii	20-M-AG-08	AG & B	2023	ASRB NET 2023
Yaser Mushtaq Wani	20-M-AG-11	AG & B	2023	ASRB NET 2023
Arthiya K	20-M-AG-15	AG & B	2023	ASRB NET 2023

Sourav Das	20-M-AG-19	AG & B	2023	ASRB NET 2023
Rajesh Kumar	20-M-AG-20	AG & B	2023	ASRB NET 2023
Ishmeet Kumar	20-M-AG-21	AG & B	2023	ASRB NET 2023
Prashanthini S R	21-M-AG-01	AG & B	2023	ASRB NET 2023
Dibyasha Kar	21-M-AG-02	AG & B	2023	ASRB NET 2023
Sarath Kumar T	21-M-AG-03	AG & B	2023	ASRB NET 2023
Kalairaj K	21-M-AG-04	AG & B	2023	ASRB NET 2023
Karan Mahar	21-M-AG-06	AG & B	2023	ASRB NET 2023
Anmol	21-M-AG-07	AG & B	2023	ASRB NET 2023
Pritam Pal	21-M-AG-08	AG & B	2023	ASRB NET 2023
Amritanshu Upadhyay	21-M-AG-09	AG & B	2023	ASRB NET 2023
Pradyut Das	21-M-AG-10	AG & B	2023	ASRB-NET - 2023 ; Joint CSIR-UGC-NET - 2024 ; Joint CSIR- UGC-NET - 2025
Nunhlupuii	21-M-AG-11	AG & B	2023	ASRB NET 2023
Suryawanshi Pooja Vijaykumar	21-M-AG-13	AG & B	2023	ASRB NET 2023
Vaibhav Patel	21-M-AG-14	AG & B	2023	ASRB NET 2023
V N Sahana	22-P-AG-08	AG & B	2023	ASRB Net: 2023
Misal Snehal Suresh	22-M-AG-01	AG & B	2025	ASRB NET 2025
Ilayaraja I	22-M-AG-04	AG & B	2025	ASRB NET 2025
Sanchitpal Singh	22-M-AG-05	AG & B	2025	ASRB NET 2025
Sonu	22-M-AG-08	AG & B	2025	ASRB NET 2025
Sakshi Poonia	22-M-AG-10	AG & B	2025	ASRB NET 2025
Lourembam Newton Singh	23-M-AG-03	AG & B	2025	ASRB NET 2025
Akilan M	23-M-AG-09	AG & B	2025	ASRB NET 2025
Chandrika Tripathi	23-M-AG-11	AG & B	2025	ASRB NET 2025
Hira Arif	24-P-AG-04	AG & B	2025	ASRB NET 2025
Phoebe C. Lalremruati	23-P-AG-09	AG & B	2025	UGC-NET 2024; ASRB-NET 2025
Chandana Sree Chinnareddyvari	22-P-AG-09	AG & B	2025	Asrb net 2023 and asrb net and prelims 2025
Pooja	24-P-AG-01	AG & B	2025	ASRB NET 2025
Lalmalsawmi Colney	23-P-AG-10	AG & B	2025	ASRB NET-2025
Animal Nutrition				
Bhagat Jagruti Dilip	20-M-AN-01	AN	2021	PO, NABARD

Arulkumar S	20-P-AN-04	AN	2023	ARS, CSWRI, Avikanagar
Prasanth M Nair	21-P-AN-11	AN	2023	Scientist –B , Silk Board, NET & ARS Prelims
Vinay V V	19-P-AN-01	AN	2025	Net & ARS Prelims cleared
Antony Johnson T	19-P-AN-03	AN	2025	ARS Scientist
Naliyapara Hardikkumar Bhupatbhai	19-P-AN-09	AN	2025	NET cleared
Parsana Yash Dineshbhai	20-M-AN-03	AN	2025	Net & ARS Prelims
Prabhakar	20-M-AN-05	AN	2025	Net & ARS Prelims
Shanmugasundaram M	20-M-AN-06	AN	2025	Net & ARS Pre
Ankit Kumar	20-M-AN-13	AN	2025	Net & ARS Pre
Vibhor Agrawal	20-M-AN-14	AN	2025	Net & ARS Pre
Nutan Chauhan	20-P-AN-05	AN	2025	NET & ARS prelims
Rashika Srivastava	20-P-AN-06	AN	2025	NET & ARS prelims
Simran Kamboj	21-M-AN-09	AN	2025	NET & ARS Prelims
Yamini Khatri	21-M-AN-12	AN	2025	NET & ARS prelims
Harneet Kour	21-P-AN-02	AN	2025	NET & ARS Prelims
Balaga Sravani	21-P-AN-05	AN	2025	NET & ARS Prelims
Komal Chauhan	21-P-AN-08	AN	2025	NET & ARS Prelims
Sreeja SJ	21-P-AN-09	AN	2025	NET & ARS Prelims
Jannat Saini	22-M-AN-01	AN	2025	NET & ARS Prelims
Sangale Prajakta Kailas	22-M-AN-04	AN	2025	NET & ARS Prelims
Ojal Singh	22-M-AN-06	AN	2025	NET & ARS Prelims
Priyanka Patir	22-M-AN-07	AN	2025	NET & ARS Prelims
Neha Sahu	22-M-AN-08	AN	2025	NET & ARS Prelims
Lovely Anant	22-M-AN-09	AN	2025	NET & ARS Prelims
Sarita Kaushal	22-P-AN-02	AN	2025	NET
Vibhor Agrawal	22-P-AN-03	AN	2025	NET & ARS Prelims
Rahul Singh Chandel	22-P-AN-05	AN	2025	NET & ARS Prelims
Antra Gupta	22-P-AN-06	AN	2025	Scientist –B , Silk Board, NET & ARS Prelims
Shweta	22-M-AN-10	AN	2025	NET and ARS Prelims
Leander Toijam	23-M-AN-06	AN	2025	NET & ARS Prelims
Trivedi Tejaskumar Maheshbhai	23-M-AN-07	AN	2025	NET
Garima Chaudhary	23-M-AN-08	AN	2025	NET & ARS Prelims

Nikita Mahna	23-P-AN-01	AN	2025	NET & ARS Prelims
Ankita Patel	23-P-AN-02	AN	2025	NET & ARS Prelims
Simran Kamboj	23-P-AN-03	AN	2025	NET & ARS Prelims
Yamini Khatri	23-P-AN-05	AN	2025	NET & ARS prelims
Jannat Saini	24-P-AN-03	AN	2025	NET & ARS Prelims
Sudheesh Phogat	24-P-AN-04	AN	2025	NET & ARS Prelims
Sahil Sharma	25-P-AN-01	AN	2025	NET & ARS Prelims
Animal Physiology				
Nikita Bhalakiya	19-P-AP-10	AP	2022	NET
Afreed	21-M-AP-01	AP	2023	NET
Manisha	23-P-AP-03	AP	2025	NE T
Aabid Hassan	24-M-AP-05	AP	2025	JRF
Pratap Gore	20-M-AP-01	AP	2025	NET
Aditiya Deshpande	17-M-AP-01	AP	2025	NET
Jaskiran Kaur	20-M-AP-05	AP	2025	NET
LPM				
Deepak Chopra	21-P-LP-01	LPM	2021	NET&Institutional Fellowship
Amit Roy	21-P-LP-02	LPM	2021	NET &Institutional Fellowship
Divyanshu Singh Tomar	21-P-LP-03	LPM	2021	SRF/NET
Tejeshwari Satpute	21-P-LP-04	LPM	2021	NET&Institutional Fellowship
Pratibha Jareda	21-P-LP-05	LPM	2021	NET & SRF (UGC)
Aamir Ahmad Raina	21-P-LP-06	LPM	2021	NET &Institutional Fellowship
Durge Ajay Bhagwanrao	21-P-LP-07	LPM	2021	SRF (UGC)/NET
Birendra Singh	21-P-LP-08	LPM	2021	NET&Institutional Fellowship
Parmod Dodamani	21-P-LP-10	LPM	2021	Institutional Fellowship
Mageshwaran M	21-M-LP-01	LPM	2021	NET &&Institutional Fellowship
Shruti Arya	21-M-LP-02	LPM	2021	NET&&Institutional Fellowship
Anshul Gautam	21-M-LP-03	LPM	2021	NET&Institutional Fellowship
Radhika Warhade	21-M-LP-06	LPM	2021	NET&Institutional Fellowship
Tsewang Youdol	21-M-LP-07	LPM	2021	NET&Institutional Fellowship

Pradeep Singh	21-M-LP-08	LPM	2021	NET&Institutional Fellowship
Sunita Didel	21-M-LP-11	LPM	2021	NET&Institutional Fellowship
Anamika Sharma	22-P-LP-01	LPM	2022	NET&Institutional Fellowship
Jagpal Jogi	22-P-LP-02	LPM	2022	NET & Institutional Fellowship
Rimee Dhakad	22-P-LP-03	LPM	2022	NET & Institutional Fellowship
Prachi Chandrakar	22-P-LP-04	LPM	2022	NET & Institutional Fellowship
Priyanka Meena	22-P-LP-05	LPM	2022	NET & Institutional Fellowship
Shivendra Agrawal	22-P-LP-06	LPM	2022	NET & Institutional Fellowship
Akanksha	22-P-LP-07	LPM	2022	NET & Institutional Fellowship
Sajad Ahmad Sheikh	22-P-LP-08	LPM	2022	NET & Institutional Fellowship
Satyabrata Roy	22-P-LP-10	LPM	2022	NET & Institutional Fellowship
Subhankar Paul	22-P-LP-11	LPM	2022	NET & Institutional Fellowship
Martha Pasar	22-M-LP-01	LPM	2022	NET & Institutional Fellowship
Navnath Pundlik Khaire	22-M-LP-02	LPM	2022	NET & Institutional Fellowship
Neelam Purohit	22-M-LP-04	LPM	2022	NET & Institutional Fellowship
Parmar Ankit Kumar Dineshbhai	22-M-LP-05	LPM	2022	NET & Institutional Fellowship
Bhosale Ankita Ramesh	22-M-LP-06	LPM	2022	NET & Institutional Fellowship
Shruti Gupta	22-M-LP-07	LPM	2022	NET & Institutional Fellowship
Shifa Shafi	22-M-LP-08	LPM	2022	Institutional Fellowship
Neha	22-M-LP-09	LPM	2022	NET & Institutional Fellowship
Khushi Ram Dhakar	22-M-LP-10	LPM	2022	NET & Institutional Fellowship
S. Nagesh	23-P-LP-01	LPM	2023	NET & Institutional Fellowship

Manoj Sharma	23-P-LP-02	LPM	2023	NET & Institutional Fellowship
U. Tony	23-P-LP-04	LPM	2023	NET & Institutional Fellowship
Harsimar Preet Kour	23-P-LP-05	LPM	2023	NET & Institutional Fellowship
Sunita Didel	23-P-LP-08	LPM	2023	NET & Institutional Fellowship
Manisha Tyagi	23-P-LP-06	LPM	2023	NET & Institutional Fellowship
Rupendra Kumar	23-P-LP-07	LPM	2023	NET & Institutional Fellowship
Priyanka Maurya	23-P-LP-09	LPM	2023	NET & Institutional Fellowship
Sanjeet Kumar Verma	23-M-LP-01	LPM	2023	NET & Institutional Fellowship
Rahul Singh Yadav	23-M-LP-02	LPM	2023	NET & Institutional Fellowship
Mani kanta Sanabam	23-M-LP-03	LPM	2023	NET & Institutional Fellowship
Shreya Shristi Kerketta	23-M-LP-04	LPM	2023	NET & Institutional Fellowship
Vaishali Singh	23-M-LP-05	LPM	2023	Institutional Fellowship
Ram Niwas	23-M-LP-06	LPM	2023	NET & Institutional Fellowship
Radha Mittal	23-M-LP-07	LPM	2023	NET & Institutional Fellowship
Deepesh Garg	23-M-LP-08	LPM	2023	Institutional Fellowship
Ujjwal	23-M-LP-09	LPM	2023	Institutional Fellowship
Divyanshu Sharma	24-P-LPM-01	LPM	2024	NET & Institutional Fellowship
Bhupender	24-P-LPM-02	LPM	2024	NET & Institutional Fellowship
Kanta Godara	24-P-LPM-03	LPM	2024	NET & Institutional Fellowship
Sourav Barman	24-P-LPM-04	LPM	2024	NET & Institutional Fellowship
Martha Pasar	24-P-LPM-05	LPM	2024	NET & Institutional Fellowship
Gudaparthi Jahnvi	24-P-LPM-06	LPM	2024	NET & Institutional Fellowship
Awanish Kumar	24-P-LPM-07	LPM	2024	Institutional Fellowship

Anupam Soni	24-P-LPM-08	LPM	2024	NET & Institutional Fellowship
Hridita Deb	24-P-LPM-09	LPM	2024	NET & Institutional Fellowship
Kanakaraja	24-P-LPM-10	LPM	2024	NET & Institutional Fellowship
Neha Meena	24-P-LPM-11	LPM	2024	NET & Institutional Fellowship
Gajula Saipriya	24-P-LPM-12	LPM	2024	NET & Institutional Fellowship
Amrita Gupta	24-M-LPM-01	LPM	2024	Institutional Fellowship
Ayushi Sathe	24-M-LPM-02	LPM	2024	Institutional Fellowship
Taniya Qamar	24-M-LPM-03	LPM	2024	Institutional Fellowship
Ritu Akoijam	24-M-LPM-04	LPM	2024	Institutional Fellowship
Shardhanjali Behera	24-M-LPM-05	LPM	2024	Institutional Fellowship
Umang	24-M-LPM-06	LPM	2024	Institutional Fellowship
Deva Kumar Barman	24-M-LPM-07	LPM	2024	Institutional Fellowship
Deeksha Patel	24-M-LPM-08	LPM	2024	Institutional Fellowship
Chirag	24-M-LPM-09	LPM	2024	Institutional Fellowship
Srikarthika P.	24-M-LPM-10	LPM	2024	Institutional Fellowship
Deepak Kumar	24-M-LPM-11	LPM	2024	Institutional Fellowship
Samta Sadashiv welekar	25-P-LP-01	LPM	2025	Institutional Fellowship
Sonawane Yash Balnath	25-P-LP-02	LPM	2025	Institutional Fellowship
Sanjeet Kumar Verma	25-P-LP-03	LPM	2025	NET & Institutional Fellowship
Vikas Kumar Meena	25-P-LP-04	LPM	2025	NET & SRF
Pushpa	25-P-LP-05	LPM	2025	NET & Institutional Fellowship
Avinash Kumar Mishra	25-P-LP-06	LPM	2025	Institutional Fellowship
Manoj Kumar	25-P-LP-07	LPM	2025	NET & Institutional Fellowship
Santana Das	25-P-LP-08	LPM	2025	NET & Institutional Fellowship
Abishek Chhetri	25-P-LP-09	LPM	2025	Institutional Fellowship
Rahul Singh Yadav	25-P-LP-10	LPM	2025	SRF (UGC)
Mansuraj	25-M-LP-01	LPM	2025	Institutional Fellowship
Sourabh yadav	25-M-LP-02	LPM	2025	Institutional Fellowship
Kiran SV	25-M-LP-03	LPM	2025	Institutional Fellowship
Ankita Pal	25-M-LP-04	LPM	2025	Institutional Fellowship
Aabha Rawal	25-M-LP-05	LPM	2025	Institutional Fellowship
Rhitwik Gyanam bora	25-M-LP-06	LPM	2025	Institutional Fellowship

Pankaj Kotuwal Chhetri	25-M-LP-07	LPM	2025	Institutional Fellowship
Malti Khatri	25-M-LP-08	LPM	2025	Institutional Fellowship
Ekata Biswas	25-M-LP-09	LPM	2025	Institutional Fellowship
ARGO				
Dr. Mohsin Ahmad	21-P-GO-03	ARGO	2021	ICAR-NET
Dr. Aparna Raj	21-M-GO-01	ARGO	2023	ICAR-NET
Dr. Hiral	21-M-GO-02	ARGO	2023	ICAR-NET
Dr. Surajit Das	21-P-GO-04	ARGO	2023	ICAR-NET
Dr. Manisha Sethi	22-P-GO-02	ARGO	2023	ICAR-NET
Dr. Dipti	21-P-GO-03	ARGO	2023	ICAR-NET
Dr. Chirag Pruthi	22-P-GO-01	ARGO	2023	ICAR-NET CSIR-NET
Dr. Rishipal	21-P-GO-01	ARGO	2023	ICAR-NET
Dr. Akter	23-P-GO-02	ARGO	2023	ICAR-NET
Dr. Vishwas Gohil	22-M-GO-07	ARGO	2025	ICAR-NET
Dr. Aparna Raj	23-P-GO-03	ARGO	2025	ICAR-NET
Dr. Kishan Fataniya	24-P-GO-06	ARGO	2025	ICAR-NET
Dr. Pankaj Kumar	23-P-GO-06	ARGO	2025	ICAR-NET
Dr. Aashish	23-M-GO-06	ARGO	2025	ICAR-NET
Dr. Ravi Kumar Yadav	23-M-GO-07	ARGO	2025	ICAR-NET
Dr. Anoop Kumar	24-P-GO-04	ARGO	2025	ICAR-NET
Animal Biochemistry				
Deepak Chopra	18-P-AB-11	ABC	2021	DBT (JRF)
Sabapathi	20-P-AB-02	ABC	2021	ASRB-NET
Suman Rani	19-P-AB-03	ABC	2021	ASRB-NET
Ankita Kapri	17-P-AB-01	ABC	2022	ICMR-SRF
Omprakash	17-P-AB-09	ABC	2022	ICMR-SRF
Sunny Kalyan	18-P-AB-03	ABC	2022	ICMR-SRF
Jitendra Kumar	18-P-AB-01	ABC	2022	ICMR-RA
Mansi	21-P-AB-02	ABC	2022	DBT-JRF
Diksha	21-P-AB-01	ABC	2023	ASRB NET
Roshan Mohiddin	22-P-AB-03	ABC	2023	ASRB NET
Diksha	21-P-AB-01	ABC	2024	CSIR NET (JRF)
Roshan Mohiddin	22-P-AB-03	ABC	2024	UGC NET
Deepak Chopra	18-P-AB-11	ABC	2025	UGC (NET) Environment Science CSIR NET (JRF)
Suman Rani	19-P-AB-03	ABC	2025	ASRB-NET
Diksha	21-P-AB-01	ABC	2025	ASRB NET

Mansi	21-P-AB-02	ABC	2025	ASRB NET
Anugya Mangal	24-P-AB-02	ABC	2025	DHR ICMR BRET JRF
Animal Biotechnology				
Navkiran Kaur	20-P-BT-07	ABT	2020	CSIR-JRF
Navkiran Kaur	20-P-BT-07	ABT	2021	DBT
Navkiran Kaur	20-P-BT-07	ABT	2021	Qualified GATE Biotechnology and GATE Life Sciences (2021)
Navkiran Kaur	20-P-BT-07	ABT	2021	ICAR-NET (ASRB)
Shweta Yadav	22-P-BT-05	ABT	2020	Qualified GATE Biotechnology and GATE Life Sciences (2021)
Ritika	22-P-BT-02	ABT		Qualified GATE Biotechnology and GATE Life Sciences (2021)
Manya Mathur	21-P-BT-03	ABT	2021	Qualified GATE Biotechnology and GATE Life Sciences (2021)
Manya Mathur	21-P-BT-03	ABT	2021	Qualified ARS-NET (2021)
Manya Mathur	21-P-BT-03	ABT	2021	Qualified CSIR-NET (2021)
Vitika Chauhan	23-P-BT-07	ABT	2021	Qualified GATE Life Sciences
Ritika	22-P-BT-02	ABT	2021	Qualified GATE Biotechnology and GATE Life Sciences
Renu Rani	20-P-BT-06	ABT	2022	Qualified CSIR-NET JRF (2022)
Ritika	22-P-BT-02		2022	DBT
Manya Mathur	21-P-BT-03	ABT	2023	CSIR-NET JRF
Shweta	22-P-BT-02	ABT	2023	CSIR-JRF
Ritika	22-P-BT-02	ABT	2023	ICMR
Renu Rani	20-P-BT-06	ABT	2024	Qualified ARS-NET
Vitika Chauhan	23-P-BT-07	ABT		Qualified GATE Biotechnology
Ritika	22-P-BT-02	ABT	2025	CSIR-JRF

Shweta Yadav	22-P-BT-05	ABT	2025	ICAR-NET (ASRB)
Ritika	22-P-BT-02	ABT	2025	ICAR-NET (ASRB)
Navkiran Kaur	20-P-BT-07	ABT	2025	ICAR-NET (ASRB)
Manisha	23-P-BT-07	ABT	2025	ICAR-NET (ASRB)
Shweta Yadav	22-P-BT-05	ABT	2025	ICMR Scientist B (2025)
Vitika Chauhan	23-P-BT-07	ABT	2025	ICAR-NET (ASRB)
Dairy Technology				
Aakash Wani	19-M-DT-10	DT	2020	ICAR-NET
Raj Suwalka	19-M-DT-01	DT	2020	FSSAI Exam for CFSO, STO in ICAR
Aman	19-M-DT-16	DT	2020	FSSAI Exam for CFSO
Sangita	19-M-DT-07	DT	2020	FSSAI Exam for CFSO
Shailesh Meena	20-P-DT-05	DT	2020	ICAR-NET, UGC-NET
Poornima	20-P-DT-11	DT	2020	ICAR - NET
Himanshu Kumar Singh	20-P-DT-05	DT	2020	ICAR-NET, UGC-NET
Gautam Kumar	20-M-DT-04	DT	2021	Dairy Field Officer (Bihar State)
Mamta Kumari	20-M-DT-05	DT	2021	Dairy Field Officer (Bihar State)
Deepak Kumar	21-P-DT-03	DT	2021	ICAR-NET
Sonam Kumari	21-P-DT-02	DT	2021	ICAR-NET
Maumita Adhikary	21-P-DT-01	DT	2021	ICAR-NET, UGC-NET
Aakash Gill	21-P-DT-06	DT	2021	ICAR-NET
Manan Preet Singh	21-M-DT-01	DT	2022	ICAR-NET
Manoj Mehla	21-M-DT-02	DT	2022	ICAR-NET, UGC-NET, Haryana Group C Examination
Ron Roy	21-M-DT-16	DT	2022	Dairy Extension Officer, Kerala
Shubhalaxmi Shailesh Pande	21-M-DT-07	DT	2022	ICAR-NET, UGC-NET
Vivek Kumawat	21-M-DT-03	DT	2022	ICAR-NET
Ridhi Pandey	22-P-DT-01	DT	2022	ICAR-NET, UGC-NET & Fellowship
Avinash C. Gautam	22-P-DT-03	DT	2022	ICAR-NET
Kuntal Roy	22-P-DT-07	DT	2022	ICAR-NET

Hency Rose	22-P-DT-08	DT	2022	ICAR-NET
Ankur Trivedi	22-P-DT-10	DT	2022	ICAR-NET
Aparna VP	22-P-DT-11	DT	2022	ICAR-NET
Ashritha B	22-P-DT-06	DT	2022	ICAR-NET
Harsh Jindal	22-M-DT-01	DT	2023	ICAR-NET
Ankit Bihola	23-P-DT-04	DT	2023	ICAR-NET
Saptaneel Ghosh	23-P-DT-11	DT	2023	UGC-NET
Asif Ali T S	23-P-DT-06	DT	2023	ICAR-NET
Arul Kumar	23-P-DT-10	DT	2023	UGC-NET
Mahendra Kumar	23-P-DT-12	DT	2023	ICAR-NET
Shefali Sirame	23-P-DT-09	DT	2023	ICAR-NET, UGC-NET
Sohan Lal Bajya	23-P-DT-13	DT	2023	ICAR-NET, UGC-NET
Ankit	23-M-DT-21	DT	2024	ICAR-NET
Bhumkar Prajwal Vilas	23-M-DT-15	DT	2024	ICAR-NET
Amandeep Singh	24-P-DT-01	DT	2024	Dairy Development Inspector, Punjab
Vikram	24-P-DT-02	DT	2024	ICAR-NET, UGC-NET
Nandagopal P	24-P-DT-03	DT	2024	ICAR-NET, UGC-NET
Sneha Raj Sharma	24-P-DT-05	DT	2024	UGC-NET
Deepak Kumar Singh	24-P-DT-06	DT	2024	ICAR-NET, UGC-NET
Sankar Lal	24-P-DT-07	DT	2024	ICAR-NET, UGC-NET & Fellowship
Shashank R Kiran	24-P-DT-10	DT	2024	UGC-NET
Nitin Samuel Kujur	24-P-DT-13	DT	2024	UGC-NET
Dairy Engineering				
Sumit	20-M-DE-02	DE	2021	UGC NET, ASRB
Harshitha	20-M-DE-05	DE	2021	UGC - NET
Sumit	21-M-DE-07	DE	2021	UGC NET, ASRB
Robin Kaura	21-P-DE-06	DE	2021	UGC NET
Harshitha	21-M-DE-09	DE	2021	UGC NET
Arijit Ray	23-M-DE-13	DE	2023	UGC - NET
Vinod Kumar Sharma	23-M-DE-08	DE	2023	Ph.D
Puja N Bhagat	23-P-DE-09	DE	2023	UGC NET
Amit Juneja	22-M-DE-05	DE	2023	UGC NET , ASRB
Abhinash P.	22-M-DE-02	DE	2023	UGC NET

Nagaratna	22-M-DE-05	DE	2023	UGC NET, ASRB
Satya Prakas Chaudary	23-P-DE-12	DE	2023	-
Arijit Ray	23-P-DE-13	DE	2023	UGC - NET
Vinod Kumar Sharma	23-P-DE-05	DE	2023	-
Gaurav Sharma	23-P-DE-07	DE	2023	-
Hitesh K Rohit	24-M-DE-02	DE	2024	-
Chirag	24-P-DE-04	DE	2024	UGC NET
Nitin	25-M-DE-02	DE	2025	Ph.D
Ankit Deshmukh	25-M-DE-05	DE	2025	UGC NET
Nitin Jaglan	25-P-DE-02	DE	2025	-
Sonali Kumari	25-P-DE-05	DE	2025	UGC NET
Atish	26-M-DE-02	DE	2026	-
Nishant	26-M-DE-05	DE	2026	-
Dairy Chemistry				
Shinde Shailja	21-M-FQ-01	DC	2021	ICAR-NET
Payal Singh	17-P-FQ-02	DC	2021	ICAR-NET
Vinay Kashyap	19-M-DC-11	DC	2021	ICAR-NET
Bumbudia Mitul Kumar	17-P-DC-03	DC	2022	ICAR-NET, ARS
Sonu KS	19-P-DC-01	DC	2022	ICAR-NET, ARS
Diksha Bhardwaj	20-M-DC-03	DC	2022	ICAR-NET, STO
Chandrakanta	20-P-DC-03	DC	2023	ICAR-NET
Karra Madhavi latha	21-P-DC-01	DC	2024	ICAR-NET
Priyae Brath Gautam	18-P-DC-01	DC	2024	ICAR-NET, ARS
Aiswarya VG	22-P-DC-03	DC	2025	ICAR-NET
Sapna	22-P-DC-01	DC	2025	ICAR-NET
Jyoti Rani Yadav	23-M-DC-07	DC	2025	ICAR-NET
Dairy Microbiology				
Mariya Divanshi	20-P-DM-02	Dairy Microbiology	2020	2021 state PSC exam for the post of Dairy Extension Officer, Dairy Development Department, Kerala
Mariya Divanshi	20-P-DM-02	Dairy Microbiology	2020	UGC NET- ICAR 2021
Mariya Divanshi A S Admission	20-P-DM-02	Dairy Microbiology	2020	2021 state PSC exam for the post of Dairy Extension Officer, Dairy Development Department, Kerala -

Reshab Majumder	21-M-DM-01	Dairy Microbiology	2021	ASRB NET 2023
Salini S V	22-P-DM -05	Dairy Microbiology	2022	ICAR SRF
Mohammad Rizwan	17-P-DM-07	Dairy Microbiology	2022	UGC-NET 2022
Ankita Rawat	18- M- FQ- 03	FSQA	2022	Central food safety officer FSSAI
Ankita Rawat	18- M- FQ- 03	FSQA	2022	Assistant Manager NABARD- 2024
Prashanth S	18-M-DM-01	Dairy Microbiology	2020	Junior manager R&D IFFCO, DUBAI
Likith HD	18-M-DM-08	Dairy Microbiology	2020	Balanda food industries , Qatar
Manorama Kumari	18-P-DM-02	Dairy Microbiology	2023	ARS NET Scientist
Basava Prabhu	19-P-DM-01	Dairy Microbiology	2023	ARS NET Scientist
Aishwarya Velekat	24-P-DM- 06	Dairy Microbiology	2023	UGC NET JRF
Nishchal Thakur	20-P-DM-06	Dairy Microbiology	2023	ICAR-NET 2023
Reshab Majumder	21-M-DM-01	Dairy Microbiology	2023	ICAR-NET 2023
Bidisha Senapati	20-P-DM-01	Dairy Microbiology	2023	Food Safety Officer, Govt. of West Bengal
Shruti Nayyar	18-M-DM-06	Dairy Microbiology	2023	ASRB-NET Qualified
Soumya Sangam	21-P-DM-01	Dairy Microbiology	2023	ASRB-NET-STO Qualified
Divya Madhukar Jadhav	21-M-DM-02	Dairy Microbiology	2023	ASRB-NET Qualified
Ravikant V. Vinchurkar	22-P-DM-03	Dairy Microbiology	2023	ASRB-NET Qualified
Aiswarya Velekat Santhosh	24-P-DM-06	Dairy Microbiology	2023	UGC NET JRF December
Shweta Kelkar	23-P-DM-01	Dairy Microbiology	2023	ICAR-SRF (PhD) (2023); ASRB NET (2023) FSSAI Junior Food Analyst (2022)
Bakeeru Lakshmaiah	22-P-DM-01	Dairy Microbiology	2023	ASRB-NET

Rahul Bhardwaj	23-M-DM-03	Dairy Microbiology	2023	ICAR AIEEA PG - AIR 6 (JRF PG scholar award)
Jaya Kerketta	23-P-DM-02	Dairy Microbiology	2025	UGC-NET
Sapna Rani	25-M-DM-04	Dairy Microbiology	2025	ICAR- JRF
Nishchal Thakur	20-P-DM-06	Dairy Microbiology	2026	State level exam Dairy Development Inspector Grade -2 in Dairy Development Dept. Punjab
Agronomy				
Mr. Tuhin Singha Mahapatra	21-M-FP-01	Agronomy	2021	Bank AO, Odisha
Mr. Kapil Nagar	21-M-FP-02	Agronomy	2021	SDAO, Haryana
Mr. Vikash Kumar	21-M-FP-03	Agronomy	2021	Bank AO, Uttarakhand
Mr. Lakhmichand	21-M-FP-04	Agronomy	2021	BAO, Bihar Govt.
Ms. Stuti Kumari	21-M-FP-05	Agronomy	2021	SDAO, Bihar Govt.
Ms. Anjali Mehta	22-M-FP-02	Agronomy	2022	SRF, NET(ICAR), NET UGC
Mr. Anil Yadav	22-M-FP-03	Agronomy	2022	SRF, NET(ICAR)
Ms. Susmita Sarkar	22-M-FP-04	Agronomy	2022	Bank AO, West Bengal
Mr. Shubham Pal	22-M-FP-05	Agronomy	2022	NET(ICAR)
Ms. Samiksha Pandey	22-M-FP-06	Agronomy	2022	SRF, NET(ICAR), NET and JRF (UGC)
Mr. Vinay Upadhyay	23-M-FP-02	Agronomy	2023	NET(ICAR)
Mr. Sunny Kumar	23-M-FP-03	Agronomy	2023	BAO, Bihar Govt.
Mr. Ajit Kumar Dhaker	23-M-FP-05	Agronomy	2023	Agri. Supervisor, Raj Govt
Mr. Kamlesh Kumar Meena	23-M-FP-06	Agronomy	2023	SRF, NET(ICAR)
Ms. Supriya	21-P-FP-01	Agronomy	2021	NET, JRF UGC, BAO, Bihar Govt.
Mr. Avaneesh Kumar	21-P-FP-02	Agronomy	2021	NET, STO, ICAR Barapani
Mr. Marthala Bhuvaneswar Reddy	21-P-FP-03	Agronomy	2021	NET, STO, ICAR IVRI, Bareilly
Mr. Shreyas Bagrecha	22-P-FP-01	Agronomy	2022	NET (ICAR), and JRF (UGC)
Ms. Shivangi Kaith	23-P-FP-01	Agronomy	2023	NET UGC
Mr. Guglawath Ashwin Kumar	23-P-FP-03	Agronomy	2023	NFST, SRF & NET ICAR,

Ms. Veda T V	23-P-FP-04	Agronomy	2023	NET, SRF ICAR
Ms. Kothuru Bhanusri	23-P-FP-05	Agronomy	2023	NET ICAR,
Mr. Rohit Yadav	23-P-FP-06	Agronomy	2023	SDAO, Bihar Govt.
Mr. Devendra Kumar Dadhich	23-P-FP-07	Agronomy	2023	NET, SRF ICAR, and JRF (UGC)
Ms. Muskan	24-P-FP-01	Agronomy	2024	NET, SRF ICAR, NET UGC
Mr. Jejal Anand Dinesh	24-P-FP-02	Agronomy	2024	DST INSPIRE Fellowship, NET UGC
Mr. Kamsali Sukeswara Achari		Agronomy	2024	NET UGC
Ms. Tejaswini Chandrakar	24-P-FP-04	Agronomy	2024	NET, SRF ICAR, and JRF (UGC)
Ms. Pooja Meena	24-P-FP-07	Agronomy	2024	NET, SRF ICAR, NET UGC
Mr. Parvendra Patel	25-P-FP-01	Agronomy	2025	SRF ICAR, AGTA (UP), NET ICAR
Mr. Rohitash Meena	25-P-FP-02	Agronomy	2025	SRF & NET ICAR
Ms. Supreet Kaur	25-P-FP-03	Agronomy	2025	SRF & NET ICAR
Ms. Aishani Chowdhury	25-P-FP-04	Agronomy	2025	SRF ICAR
Ms. Bipasa Baur	25-P-FP-05	Agronomy	2025	SRF & NET ICAR, NET UGC
Mr. Devraj Singh Dohre	25-P-FP-06	Agronomy	2025	SRF & NET ICAR
Agricultural Economics				
Santosh Kumar Bijakal	21-M-ES-07	DESM	2021	ICAR-JRF
P Shruti	21-P-ES-04	DESM	2021	ICAR- SRF
Abhinandan	21-P-ES-01	DESM	2021	UGC
Deepak	21-P-ES-03	DESM	2021	SRF
Satya Prakash	21-P-ES05	DESM	2021	SRF
Pritam Roy	22-P-ES-01	DESM	2022	UGC
Tusoing Alphone Houmai H	22-P-ES-02	DESM	2022	UGC
Ashish Yadav	22-P-ES-03	DESM	2022	UGC
Srishti Sanwal	23-M-ES-03	DESM	2023	ICAR- JRF
Monika Sharma	23-PES-01	DESM	2023	Inspire
Deepika B	23-P-ES-03	DESM	2023	UGC
Swati Singh	23-P-ES-04	DESM	2023	ICAR- SRF
Snigdha Swaroop	23-P-ES-06	DESM	2023	UGC
Akshath S	23-P-ES-02	DESM	2023	UGC
Aniket Ashwin	24-M-ES-05	DESM	2024	ICAR- JRF

Ayushi Bhatt	24-M-ES-01	DESM	2024	ICAR- JRF
Debaprya Barman	24-M-ES-04	DESM	2024	ICAR- JRF
Athulay S	24-P-ES-05	DESM	2024	ICAR-SRF
Christin Mathew	25-M-ES-01	DESM	2025	ICAR- JRF
Anaswara Krishna D.U.	25-M-ES-02	DESM	2025	ICAR- JRF
Anushree SJ	25-M-ES-09	DESM	2025	ICAR- JRF
E Avinash	25-M-ES-05	DESM	2025	ICAR- JRF
Tarun Gandhi	25-P-ES-05	DESM	2025	ICAR-SRF
Agricultural Extension				
Awadesh Dixit	19-M-DX-01	Ag. Extension	2021	ICAR- PhD/SRF
Vipin Kumar	19-M-DX-02	Ag. Extension	2021	ICAR- PhD/SRF
Saurabh Tiwari	19-M-DX-03	Ag. Extension	2021	ICAR- PhD/SRF
Waris Ali	19-M-DX-04	Ag. Extension	2021	ICAR- PhD/SRF
Sweety mukherjee	19-M-DX-07	Ag. Extension	2021	ICAR- PhD/SRF
Amandeep Ranjan	19-M-DX-09	Ag. Extension	2021	ICAR- PhD/SRF
Chimi Yangzom	19-M-DX-11	Ag. Extension	2021	ICAR- PhD/SRF
Abhishek K M	20-M-DX-01	Ag. Extension	2022	ICAR- PhD/SRF
Jagadeesh Naik Kimavath	20-M-DX-02	Ag. Extension	2022	ICAR- PhD/SRF
Saurbh Pandey	20-M-DX-04	Ag. Extension	2022	ICAR- PhD/SRF
Sruthi CO	20-M-DX-05	Ag. Extension	2022	ICAR- PhD/SRF
Subhash Kumar Saurav	20-M-DX-06	Ag. Extension	2022	ICAR- PhD/SRF
Bikram Barman	20-M-DX-08	Ag. Extension	2022	ICAR- PhD/SRF
Mekela Pratyusha	20-M-DX-09	Ag. Extension	2022	ICAR- PhD/SRF
Pushpendra Yadav	20-M-DX-10	Ag. Extension	2022	ICAR- PhD/SRF
Shelly Sharma	20-M-DX-11	Ag. Extension	2022	ICAR- PhD/SRF
Anu .J	21-M-DX-01	Ag. Extension	2023	ICAR- PhD/SRF
Sheetal Berry	21-M-DX-02	Ag. Extension	2023	ICAR- PhD/SRF
Neha padaliya	21-M-DX-03	Ag. Extension	2023	ICAR- PhD/SRF
Mebom Timba	21-M-DX-04	Ag. Extension	2023	ICAR- PhD/SRF
Boggavarpapu Guru Sri	21-M-DX-05	Ag. Extension	2023	ICAR- PhD/SRF
Surya K.T	21-M-DX-06	Ag. Extension	2023	ICAR- PhD/SRF, ARS
Gongalla sreeja Reddy	21-M-DX-11	Ag. Extension	2023	ICAR- PhD/SRF
Shreyasi Samaddar	22-M-DX-02	Ag. Extension	2024	ICAR- PhD/SRF
Briti Sil	22-M-DX-03	Ag. Extension	2024	ICAR- PhD/SRF
Geetikirti Sahoo	22-M-DX -04	Ag. Extension	2024	ICAR- PhD/SRF
Parjanya Pavan	22-M-DX-05	Ag. Extension	2024	ICAR- PhD/SRF
Mansi Raj	22-M-DX -06	Ag. Extension	2024	ICAR- PhD/SRF
Dhananjay Kumar B V	22-M-DX -07	Ag. Extension	2024	ICAR- PhD/SRF

Deeksha B.V.	22-M-DX-10	Ag. Extension	2024	ICAR- PhD/SRF
G. Madhusudan	22-M-DX-11	Ag. Extension	2024	ICAR- PhD/SRF
Shaik Tanveer Ahmed	23-M-DX-01	Ag. Extension	2025	ICAR- PhD/SRF
Rakesh Chodhary	23-M-DX-02	Ag. Extension	2025	ICAR- PhD/SRF
Kt. Vahhoihim Khongrai	23-M-DX-03	Ag. Extension	2025	ICAR- PhD/SRF
Supriti Chatterjee	23-M-DX-05	Ag. Extension	2025	ICAR- PhD/SRF
Shrutik Kulkarni	23-M-DX-08	Ag. Extension	2025	ICAR- PhD/SRF
SivaSankar. M	23-M-DX-09	Ag. Extension	2025	ICAR- PhD/SRF
Anirban Das	23-M-DX-10	Ag. Extension	2025	ICAR- PhD/SRF
Richal L.	23-M-DX-11	Ag. Extension	2025	ICAR- PhD/SRF
Jesika	23-M-DX-12	Ag. Extension	2025	ICAR- PhD/SRF
Southern Region				
Mr. Deepak Sharma	16-P-LP-14	LPM	2021	
Ammu V K	18-P-DE-01	Dairy Engineering	2021	ASRB-NET
Naveen Jose	19-P-DE-01	Dairy Engineering	2021	ASRB-NET-ARS
Priyanka B N	19-P-DX-05	Dairy Extension	2021	ASRB-NET
Seethu B G	20-P-DE-03	Dairy Engineering	2021	ASRB-NET
Shivanagouda Patil	20-P-GO-08	ARGO	2021	ASRB NET
Dayananda Patil	20-P-DX-10	Dairy Extension	2021	ASRB NET
Dr Gunashekhar H	20-P-DX-02	Dairy Extension	2021	ASRB NET
Jeevapriya A	21-P-DX-07	Dairy Extension	2021,	UGC-NET,
Sharath. S	21-P-DC-03	Dairy Chemistry	2021	NFST Fellowship
Helna Pious	22-P-DC-02	Dairy Chemistry	2022	UGC NET, ASRB NET
Sampreetha HN	22-P-DX-07	Dairy Extension	2022	UGC NET
Meshram Pankaj Moreshwar	21-P-DX-02	Dairy Extension	2022	UGC-NET
Ammu V K	18-P-DE-01	Dairy Engineering	2022	UGC-NET
Gaurav Sharma	23-P-DE-04	Dairy Engineering	2022	GATE
Harshit Saroha	21-P-GO-07	ARGO	2023	ASRB-NET

Ashritha B	22-P-DT-06	Dairy Technology	2023	ASRB-NET
Ravi Prakash	16-P-DE-01	Dairy Engineering	2023	ASRB-NET-ARS
Ammu V K	18-P-DE-01	Dairy Engineering	2023	SMS-STO
Meshram Pankaj Moreshwar	21-P-DX-02	Dairy Extension	2023	ASRB-NET
Jeevapriya A	21-P-DX-07	Dairy Extension	2023	ASRB-NET
Anand kumar yadav	22-P-GO-03	ARGO	2023	ASRB NET
Aditya P Sukumar	20-P-DE-01	Dairy Engineering	2023	ANRF-Overseas Visiting Doctoral Fellowship (OVDF)
Jagpal Jogi	22-P-LP-02	LPM	2023	ASRB NET
Sampreetha HN	22-P-DX-07	Dairy Extension	2023	ASRB NET
Annoff Mary Felix	23-P-ES-05	Agri. Statistics	2023	UGC and ASRB Net
Meshram Pankaj Moreshwar	21-P-DX-02	Dairy Extension	2023	ASRB-NET
Harshit Saroha	21-P-GO-07	ARGO	2024	UGC-NET
Ashritha B	22-P-DT-06	Dairy Technology	2024	INSPIRE-JRF
PRIYANKA	23-P-DC-04	DAIRY CHEMISTRY	2024	ASRB NET CLEARED
Prem kiran Battu	23-P-DX-06	Dairy Extension	2024	UGC-NET JRF
Dr.Aparna Raj	23-P-GO-01	ARGO	2024	ASRB NET, DST-INSPIRE FELLOWSHIP (JRF)
Ankit Ekka	23-M-DE-09	Dairy Engineering	2024	UGC-NET
Saurabh Tainaan	23-M-DE-03	Dairy Engineering	2024	UGC-NET
Harshitha M	21-P-DE-04	Dairy Engineering	2024	UGC-NET
Chedarla Mounika Leena	24-P-DX-04	Dairy Extension	2025	UGC-NET
Neha Meena	24-P-LP-11	LPM	2025	ASRB NET
Priyanka Meena	22-P-LP-05	LPM	2025	ASRB NET
Jagpal Jogi	22-P-LP-02	LPM	2025	ASRB NET
Anand kumar yadav	22-P-GO-03	ARGO	2025	ASRB NET

Sampreetha HN	22-P-DX-07	Dairy Extension	2025	ASRB NET
Prem Kiran Battu	23-P-DX-06	Dairy Extension	2025	ASRB-NET
Pratibha Khangembam	24-P-DX-05	Dairy Extension	2025	ASRB-NET
P Nandagopal	24-P-DT-03	Dairy Technology	2025	ASRB-NET
Briti Sil	24-P-DX-11	Dairy Extension	2025	UGC-NET,
Eastern Region				
Ms. Chimi Yangzom Lepcha	19-M-DX-11	Ag.Ext.Edu.	2021	SRF
Ms. Lalmuansangi	19-M-AG-02	AGB	2021	UGC-NET
Ms. Melody Lalhriat Puii	17-P-AN-06	AN	2021	ARS
Mr. Asish Debbarma	19-P-LP-10	LPM	2021	ICAR-ASRB NET
Mr. Asish Debbarma	19-P-LP-10	LPM	2021	ARS
Mr. Sangram Keshari Swain	19-M-LP- 05	LPM	2021	ICAR-ASRB NET
Amit Roy	21-P-LP-02	LPM	2021	ICAR-ASRB NET
Mr. Sangram Keshari Swain	19-M-LP- 05	LPM	2022	Odisha Public Service Commission- (VAS)
Mr. Bikram Barman	20-M-DX-08	Ag.Ext.Edu.	2022	SRF
Ms. Neelkusum Xess	21-P-DX-06	Ag.Ext.Edu.	2022	ICAR-ASRB NET
Mr. Ajoy Das	20-M-LP- 02	LPM	2022	SRF
Mr. Ajoy Das	20-M-LP- 02	LPM	2023	ICAR-ASRB NET
Mr. Ajoy Das	20-M-LP- 02	LPM	2023	Combined STO-SMS Exam, ICAR-ASRB
Mr. Shubham Singha	20-P-GO-04	ARGO	2023	UGC-NET
Ms. Sylvia Lalhmingmawii	22-P-AG-04	AGB	2023	ICAR-ASRB NET
Ms. Sylvia Lalhmingmawii	22-P-AG-04	AGB	2024	UGC NET
Mr. Santosh Kr. Sahoo	24-P-DX-02	Ag. Ext. Edu	2024	UGC-NET-JRF
Ms. Wonchibeni K Ezung	21-M-AP-09	AP	2024	UGC-NET
Mr. Indranil Mukherjee	19-M-AP-06	AP	2024	UGC-NET
Mr. Souvik Ghosh	22-M-DX-08	Ag. Ext. Edu.	2024	SRF
Mr. Amanish Kumar	23-P-DX-10	Ag. Ext. Edu	2024	UGC NET
Mr. Santosh Kr. Sahoo	24-P-DX-02	Ag. Ext. Edu	2025	ICAR-NET
Ms. Neelkusum Xess	21-P-DX-06	Ag. Ext. Edu	2025	UGC NET (JRF)
Mr. Amanish Kumar	23-P-DX-10	Ag. Ext. Edu	2025	ICAR-ASRB NET

Ms. Supriti Chatterjee	23-M-DX-05	Ag. Ext. Edu	2025	UGC-NET
Mr. Vibhor Agrawal	22-P-AN-03	AN	2025	ICAR-ASRB NET
Mr. Sushil Kr. Yadav	18-P-AN-05	AN	2025	ICAR-ASRB NET
Ms. Yora Reena	19-P-AN-08	AN	2025	ICAR-ASRB NET
Mr. Sourav Barman	24-P-LP-04	LPM	2025	ICAR-ASRB NET
Ms. Hridita Deb	24-P-LP-09	LPM	2025	ICAR-ASRB NET
Mr. Nagesh Sable	23-P-LP-01	LPM	2025	ICAR-ASRB-NET
Ms. Martha Pasar	24-P-LP-05	LPM	2025	UGC-NET
Ms. Martha Pasar	24-P-LP-05	LPM	2025	ICAR-ASRB NET
Ms. Lalmalsawmi Colney	23-P-AG-10	AGB	2025	ICAR-ASRB NET
Mr. Akilan M	23-M-AG-09	AGB	2025	UGC-NET
Mr. T. Kham Suan	23-M-AP-06	AP	2025	UGC-NET

6.5.7.2 Students placement profile

Placement of students during 2021-26

Name of the students	Registration No.	Division	Year of exam clearing	Exams cleared during last 5 years
Anuka Yadav	20-M-AG-02	AGB	2023	veterinary officer
Ayushi Singh	20-M-AG-04	AGB	2023	veterinary officer
Ravina	20-M-AG-07	AGB	2023	veterinary officer
S T Vanzampuii	20-M-AG-08	AGB	2023	Veterinary officer
Yaser Mushtaq Wani	20-M-AG-11	AGB	2023	AP in Private college
Sourav Das	20-M-AG-19	AGB	2023	veterinary officer
Prashanthini S R	21-M-AG-01	AGB	2023	veterinary officer
Dibyasha Kar	21-M-AG-02	AGB	2023	veterinary officer
Kalairaj K	21-M-AG-04	AGB	2023	veterinary officer
Nunhlupuii	21-M-AG-11	AGB	2023	veterinary officer
Suryawanshi Pooja Vijaykumar	21-M-AG-13	AGB	2023	veterinary officer
Sakshi Poonia	22-M-AG-10	AGB	2025	AP in Private college
Kangabam Bidyalaxmi	20-P-AG-01	AGB	2022	veterinary officer
Purohit Pravinbhai Babubhai	20-P-AG-02	AGB	2023	Scientist in Silk Board
Kamble Madhuri Anil	20-P-AG-03	AGB	2024	AP in Private college
Ameya Santhosh	20-P-AG-04	AGB	2023	veterinary officer
Ymberzal Koul	20-P-AG-05	AGB	2023	veterinary officer
Kanaka K K	20-P-AG-07	AGB	2023	ARS
Shivam Bhardwaj	20-P-AG-08	AGB	2023	Scientist in Silk Board

Dinesh Kumar Sunwasiya	20-P-AG-09	AGB	2024	Veterinary officer
Indrajit Gayari	20-P-AG-10	AGB	2024	AP in Private college
Nidhi Sukhija	20-P-AG-11	AGB	2023	Scientist in Silk Board
Aishwarya Dash	20-P-AG-12	AGB	2023	veterinary officer
Vishakha Uttam	20-P-AG-13	AGB	2024	ARS
Jigyasha	21-P-AG-02	AGB	2023	veterinary officer
Kashif Dawood Khan	21-P-AG-04	AGB	2025	veterinary officer
Surati Utsavbhai Shaileshkumar	21-P-AG-05	AGB	2025	Assitant Professor
Vikas Diwakar	21-P-AG-07	AGB	2025	AP in Private college
Dipankar Paul	21-P-AG-09	AGB	2022	veterinary officer
Supriya	19-P-Ag-01	AGB	2022	ICAR-Scientist
Linda george	19-P-Ag-02	AGB	2022	veterinary officer
Nandhini PB	19-P-Ag-03	AGB	2023	Postdoc
Oshin	19-P-AG-11	AGB	2023	Scientist in Silk Board
Joel Devadasamn M	19-P-AG-05	AGB	2024	veterinary officer
MokidurRahman	19-P-AG-06	AGB	2024	veterinary officer
Animal Nutrition				
Punithkumar G V	19-M-AN-09	AN	2021	Higher Studies
Preston Anderson	19-P-AN-10	AN	2021	International student
Suvarna Suresh	21-M-AN-03	AN	2024	Higher Studies
Nare Swathi	21-M-AN-04	AN	2024	Higher Studies
Indresh N R	21-M-AN-06	AN	2024	Higher Studies
Kiran	18-P-AN-02	AN	2021	VO Haryana
Aadil Majeed Khan	18-P-AN-03	AN	2021	VO Jammu
Neeru Jaglan	18-P-AN-04	AN	2021	VO Haryana
Kartik Chaudhary	19-M-AN-01	AN	2021	VO Himachal Pradesh
Rachala Dinesh Reddy	19-M-AN-03	AN	2021	Corporate Job
Anil	19-M-AN-06	AN	2021	VO Tamil Naidu
Dahiphale Gangasagar Baburao	19-M-AN-08	AN	2021	VO Maharashtra
Vishal Gohar	19-M-AN-12	AN	2021	VO Punjab
Bhagat Jagruti Dilip	20-M-AN-01	AN	2021	PO, NABARD
Hunny Sharma	18-P-AN-01	AN	2022	VO Jammu
Gopal Madhav Kedare	18-P-AN-08	AN	2022	VO Maharashtra
Sachin Tripura	18-P-AN-09	AN	2022	VO Tripura
Parul Kuraichya	19-M-AN-05	AN	2022	VO Uttar Pradesh

Sukanshi Yadav	19-M-AN-11	AN	2022	VO Madhya Pradesh
Kuldeep Dudi	19-P-AN-05	AN	2022	KVK, Panipat
Dhaigude Vaibhav Dilip	19-P-AN-07	AN	2022	Godrej Pvt. Ltd.
Manish Yadav	20-M-AN-09	AN	2022	VO Madhya Pradesh
Vaibhav Arya	21-P-AN-03	AN	2022	VO , Uttar Pradesh
Sushil Kumar Yadav	18-P-AN-05	AN	2023	VO Uttar Pradesh
Dakore Satish Venkati	18-P-AN-07	AN	2023	VO Maharashtra
Rakesh Chouraddi	19-M-AN-07	AN	2023	VO, KVK, Karnataka
Prateek Singh	19-P-AN-11	AN	2023	VO Uttar Pradesh
Deepesh Bharat Mishra	19-P-AN-12	AN	2023	VO Uttar Pradesh
Vikas Verma	20-M-AN-07	AN	2023	VO Uttar Pradesh
Maheswari M	20-P-AN-01	AN	2023	VO, Puducherry
Arulkumar S	20-P-AN-04	AN	2023	ARS, CSWRI, Avikanagar
Gokul T	21-M-AN-01	AN	2023	Ph.D
Akhil K	21-M-AN-02	AN	2023	Kemin Pvt. Ltd.
Asif Ali	21-M-AN-08	AN	2023	VO , Jammu & Kashmir
Khant Rajeshbhai Somabhai	21-P-AN-07	AN	2023	VO, Ujjain
Prasanth M Nair	21-P-AN-11	AN	2023	Scientist –B , Silk Board, NET & ARS Prelims
Yella Pragada Eswara Sai Phaneendranath	19-M-AN-10	AN	2024	VO Karnataka
Yora Reena	19-P-AN-08	AN	2024	VO , Arunachal Pradesh
Chamadia Bilal	20-P-AN-10	AN	2024	Alltech Pvt. Ltd.
Parul Rana	20-P-AN-11	AN	2024	Self employed
Gatkal Ashish Rajendra	22-M-AN-05	AN	2024	VO Maharashtra
Vinay V V	19-P-AN-01	AN	2025	Net & Pre- cleared
Antony Johnson T	19-P-AN-03	AN	2025	ARS Scientist
Naliyapara Hardikkumar Bhupatbhai	19-P-AN-09	AN	2025	Assistant Professor Kamdhenu University, Gujarat
Parsana Yash Dineshbhai	20-M-AN-03	AN	2025	Net & ARS Pre
Prabhakar	20-M-AN-05	AN	2025	Net & ARS Pre
Shanmugasundaram M	20-M-AN-06	AN	2025	Net & ARS Pre
Ankit Kumar	20-M-AN-13	AN	2025	Net & ARS Pre

Vibhor Agrawal	20-M-AN-14	AN	2025	Net & ARS Pre
Nutan Chauhan	20-P-AN-05	AN	2025	VO Uttar Pradesh, NET & ARS prelims
Rashika Srivastava	20-P-AN-06	AN	2025	VO Uttar Pradesh, NET & ARS prelims
Simran Kamboj	21-M-AN-09	AN	2025	NET & ARS Prelims, Haryana VO
Yamini Khatri	21-M-AN-12	AN	2025	NET & ARS prelims
Harneet Kour	21-P-AN-02	AN	2025	Assistant Professor, GADVASU, NET & ARS Prelims
Balaga Sravani	21-P-AN-05	AN	2025	NET & ARS Prelims
Komal Chauhan	21-P-AN-08	AN	2025	NET & ARS Prelims
Sreeja S J	21-P-AN-09	AN	2025	VO Kerela, NET & ARS Prelims
Jannat Saini	22-M-AN-01	AN	2025	NET & ARS Prelims
Sangale Prajakta Kailas	22-M-AN-04	AN	2025	NET & ARS Prelims , Godrej Pvt Ltd.
Ojal Singh	22-M-AN-06	AN	2025	NET & ARS Prelims, VO Madhya Pradesh
Priyanka Patir	22-M-AN-07	AN	2025	NET & ARS Prelims
Neha Sahu	22-M-AN-08	AN	2025	NET & ARS Prelims
Lovely Anant	22-M-AN-09	AN	2025	NET & ARS Prelims
Sarita Kaushal	22-P-AN-02	AN	2025	VO Madhya Pradesh, NET
Vibhor Agrawal	22-P-AN-03	AN	2025	NET & ARS Prelims
Rahul Singh Chandel	22-P-AN-05	AN	2025	NET & ARS Prelims
Antra Gupta	22-P-AN-06	AN	2025	Scientist –B , Silk Board, NET & ARS Prelims
Shweta	22-M-AN-10	AN	2025	VO Punjab & NET and ARS Prelims
Leander Toijam	23-M-AN-06	AN	2025	NET & ARS Prelims
Trivedi Tejaskumar Maheshbhai	23-M-AN-07	AN	2025	NET , Natural Remedies Pvt.
Garima Chaudhary	23-M-AN-08	AN	2025	NET & ARS Prelims
Nikita Mahna	23-P-AN-01	AN	2025	NET & ARS Prelims
Ankita Patel	23-P-AN-02	AN	2025	NET & ARS Prelims
Simran Kamboj	23-P-AN-03	AN	2025	NET & ARS Prelims
Yamini Khatri	23-P-AN-05	AN	2025	NET & ARS prelims
Kumar Shubham	24-M-AN-08	AN	2025	VO , Bihar
Jannat Saini	24-P-AN-03	AN	2025	NET & ARS Prelims
Sudheesh Phogat	24-P-AN-04	AN	2025	NET & ARS Prelims

Sahil Sharma	25-P-AN-01	AN	2025	NET & ARS Prelims
Animal Physiology				
Yallappa Mallappa Somagond	17-M-AP-08	AP	2022	ARS scientist, ICAR-National Research Centre on Mithun, Mejipphema, Nagaland
Nishtha Kushwah	20-P-AP-03	AP	2022	AP, NDVSU, Jabalpur
Shital Nagar Goje	20-P-AP-01	AP	2022	LDO, Maharashtra
Nikita Bhalakiya	19-P-AP-10	AP	2022	Assistant Professor (State Veterinary University- Gujarat)
Priyanka Maruti Kittur	21-P-AP-04	AP	2023	Deputy Director, (Veterinary), Bangalore
Karuna P. Bambode	14.M-AP-10	AP	2024	ARS, ICAR-National Dairy Research Institute, Karnal
Lija S	21-P-AP-02	AP	2025	V.O., Kerala
Priyanka Kumari	20-M-AP-07	AP	2023	V.O., Rajasthan
Aditiya Deshpande	17-M-AP-01	AP	2025	ARS
Afreed	21-M-AP-01	AP	2025	Assistant Professor (State Veterinary University- Kerala)
LPM				
Aamir Ahmad Raina	21-P-LP-06	LPM	2021-22	State veterinary Officer
Jyotimala Sahu	18-P-LP-04	LPM		AP, State University
Aditya Chandrakar	20-M-LP-01	LPM		State veterinary Officer
Radhika Warhade	21-M-LP-06	LPM		State veterinary Officer
Manmohan Singh	19-P-LP-03	LPM		State veterinary Officer
Akanksha	20-M-LP-03	LPM		SMS, Sikkim
Jaswant Kumar Regar	18-P-LP-10	LPM		AP, State University
Sajad Ahmad Sheikh	20-M-LP-11	LPM		State veterinary Officer
Parinita Prashar	19-M-LP-10	LPM		State veterinary Officer
Neha	22-M-LP-09	LPM	2022-23	State veterinary Officer
Shivendra Agrawal	22-P-LP-06	LPM		
Suneel Dutt	20-P-LP-02	LPM		State veterinary Officer
Deepak Chopra	21-P-LP-01	LPM		State veterinary Officer
Garima Kansal	20-P-LP-05	LPM		State veterinary Officer
Pradeep Singh	21-M-LP-08	LPM		State veterinary Officer
Ritu	19-P-LP-04	LPM		State veterinary Officer
Khushi Ram Dhakar	22-M-LP-10	LPM		FSO, Rajasthan

Davender Singh Kalmani	20-M-LP-09	LPM		Manager Tech. Services Intracare Pune (Private)
Satyabrata Roy	22-P-LP-10	LPM	2023-24	State veterinary Officer
Rupendra Kumar	23-P-LP-07	LPM		State veterinary Officer
Manoj Sharma	23-P-LP-02	LPM		State veterinary Officer
Neelam Purohit	22-M-LP-04	LPM		State veterinary Officer
Teswang Youdol	21-M-LP-07	LPM		State veterinary Officer
Pawan Kumar	23-P-LP-03	LPM		State veterinary Officer
Ragulraj S.	20-P-LP-04	LPM	2024-25	STO (ICAR)
Shwetambri Jamwal	20-P-LP-11	LPM		AP, GADVASU
Divyanshu Singh Tomar	21-P-LP-03	LPM		VO (MP), SMS(MP), AP (Jhansi)
Tejeshwari Satpute	21-P-LP-04	LPM		SMS, CIAE, Bhopal
Chinmayee Sahu	20-P-LP-01	LPM		SMS, NDRI
Sadhna Tiwari	20-P-LP-10	LPM		State veterinary Officer
Divya Patel	20-P-LP-07	LPM		State veterinary Officer
Sriranga KR	19-P-LP-14	LPM		SMS (ICAR)
Sanjay Choudhary	18-P-LP-02	LPM		ARS (ICAR)
Gayathri S. Lal	19-P-LP-08	LPM		ARS (ICAR)
Nripendra Singh Rawat	19-P-LP-07	LPM		ARS (ICAR)
Dhawal Kant Yadav	19-P-LP-02	LPM		ARS (ICAR)
Ninad Bhatt	19-P-LP-13	LPM		ARS (ICAR)
Bhupender Singh	24-P-LP-02	LPM	2025	State veterinary Officer
Anupam Soni	24-P-LP-08	LPM		State veterinary Officer
ARGO				
Dr. Mohsin Ahmad	19-M-GO-03	ARGO	2022	Veterinary Officer (Animal Husbandry Department, Jammu-Kashmir))
Raju Kumar Dewry	17-P-GO-03	ARGO	2023	Assistant professor (College of Veterinary and Animal Sciences, Kishanganj, Bihar)
Pratyush Kumar	19-P-GO-10	ARGO	2023	Assistant professor (College of Veterinary and Animal Sciences, Kishanganj, Bihar)
Dipti	21-P-GO-02	ARGO	2023	Assistant professor (GADVASU, Ludhiana, Punjab)

Shivanagoda Patil	20-P-GO-08	ARGO	2023	Assistant professor (KVAFSU, Bidar, Karnataka)
Arsha Shaji	19-M-GO-01	ARGO	2023	Veterinary officer (Kerala)
Shubham Singha	20-P-GO-04	ARGO	2023	Veterinary officer (West Bengal)
Surajit Das	21-P-GO-04	ARGO	2023	Veterinary officer (West Bengal)
Dr. Rishipal	21-P-GO-01	ARGO	2023	Veterinary Officer (Animal Husbandry Department, Haryana)
Dr. Anju Rohilla	19-M-GO-04	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Haryana)
Dr. Sanchi Kamal	23-P-GO-04	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Haryana)
Dr. Manisha Yadav	21-M-GO-07	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Haryana)
Dr. Yogesh Soni	20-P-GO-03	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Rajasthan)
Dr. Vishal Yadav	22-P-GO-04	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Rajasthan)
Hanuman	16-P-GO-03	ARGO	2024	Assistant professor (DUVASU, Mathura, UP)
Suryaprakash Pannu	19-P-GO-03	ARGO	2024	Veterinary Officer (Animal Husbandry Department, Rajasthan)
Dr. Chirag Pruthi	22-P-GO-01	ARGO	2024	Veterinary Surgeon, Government Veterinary Polyclinics, Panipat, Haryana
Dr. Anand Kumar Yadav	22-P-GO-03	ARGO	2024	Veterinary Officer, Veterinary Hospital, Dist-Alwar, Rajasthan
Dr. Kishan Kumar Gordhan Fataniya	24-P-GO-06	ARGO	2025	University Veterinary Officer, College of Veterinary science and Animal Husbandry, Sardarkhushinagar, Gujarat

Dr. Deepti Arya	22-M-GO-01	ARGO	2025	Veterinary Surgeon, Government Veterinary Hospital, Durgadhar, Uttarakhand
Dr Aktar Rasool	23-P-GO-02	ARGO	2025	Veterinary Officer, VD, Kunjdhora Reasi, Jammu & Kashmir
Dr. Hiral	21-M-GO-02	ARGO	2025	Veterinary Officer, Kamdhenu University, Himmatnagar (Gujarat)
Animal Biochemistry				
Lal Krishan	16-P-AB-04	Animal Biochemistry	2022	Postdoctoral Research Associate at the University of Missouri- Columbia and the University of Rochester Medical Center (URMC)
Surya Kant Verma	16-P-AB-08	Animal Biochemistry	2021	Postdoctoral Research Associate at IVRI
Monika Vashist	16-P-AB-02	Animal Biochemistry	2021	Postdoctoral Research Associate UPMC Hillman Cancer Center, Pittsburgh, Pennsylvania
Shalakha Bhawal	15-P-AB-02	Animal Biochemistry	2021	Project scientist in Dr. Reddy's laboratory
Ankita Kumari	15-P-AB-04	Animal Biochemistry	2021	Project scientist in Dr. Reddy's laboratory
Ritu	19-M-AB-04	Animal Biochemistry	2021	Veterinary Officer
Suman Kumari	15-P-AB-01	Animal Biochemistry	2021	Postdoctoral Research Associate, USA
Mahesh Kumar	P-15-AB-06	Animal Biochemistry	2022	ARS-ICAR
Sabapathi	20-P-AB-02	Animal Biochemistry	2022	STO-IVRI
Mahesh Kumar	P-15-AB-06	Animal Biochemistry	2022	ARS-ICAR
Sabapathi	20-P-AB-02	Animal Biochemistry	2022	STO-IVRI
Deeksha Sharma	17-P-AB-02	Animal Biochemistry	2022	Postdoctoral Research Associate, USA

Naveen Swaroop	18-P-AB-08	Animal Biochemistry	2022	Assistant Professor, NTR Vety. College
Sunil Mahapatra	18-P-AB-05	Animal Biochemistry	2022	Veterinary Assistant Surgeon, Orissa
Sameni Deepika	19-P-AB-02	Animal Biochemistry	2022	Veterinary Assistant Surgeon, Orissa
K Suman	19-M-AB-05	Animal Biochemistry	2022	Job in Bioinformatics firm
Amit Kumar	21-P-AB-04	Animal Biochemistry	2022	TA, ICMR-NIV
Ampadi	21-M-AB-01	Animal Biochemistry	2022	Analyst in Quality Council of India
Sanjay Sharma	18-P-AB-02	Animal Biochemistry	2023	Project Research Scientist at PGIMER, Chandigarh
Rohit Shukla	15-P-AB-07	Animal Biochemistry	2023	Lecturer in an Institute
Bhagraj	22-P-AB-07	Animal Biochemistry	2023	Veterinary Officer
Madhuri L Satish	20-P-AB-11	Animal Biochemistry	2023	Research scientist at PRADO
Kalpana Jorasia	22-P-AB-01	Animal Biochemistry	2023	Assistant Professor, C.V.Sc., RAJUVAS
Meet Thumar	20-M-AB-12	Animal Biochemistry	2023	Assistant Professor, C.V.Sc., Junagarh
Sudip Konar	17-P-AB-04	Animal Biochemistry	2023	Research scientist, Lifesenz Cancer research lab, Mumbai
Vijay Kumar Maurya	18-P-AB-07	Animal Biochemistry	2025	Senior resident at AIIMS, Rishikesh
Amir Kumar Samal	17-M-AB-06	Animal Biochemistry	2025	Scientist at ICAR-IVRI
Priyanka Goyal	19-P-AB-05	Animal Biochemistry	2025	Project Research Scientist at PGIMER, Chandigarh
Divya	20-P-AB-09	Animal Biochemistry	2025	Assistant Professor, HPSC

Animal Biotechnology				
Subham Loat	19-P-BT-08	ABT	2023	ARS
Sakshi	14-P-BT-12	ABT	2023	ARS
Aman	19-P-BT-14	ABT	2023	Technical Officer
Sumit	15-P-BT-03	ABT	2021	Technical Officer
Mr. Amrita Parmanik	22-P-BT-03	ABT	2024	Patent Examiner
Anjan	18-P-BT-02	ABT	2024	Patent Examiner
Prem Kumar	19-P-BT-13	ABT	2024	Technical Officer
Manish Tiwari		ABT	2024	ARS
Sonal Gupta	16-P-BT-17	ABT	2024	Embryologist, AIIMS Bhatinda
DT				
Aakash Gill	19-M-DT-05	Dairy Technology	2021	Pursuing PhD, ICAR-NDRI
Manjeera	19-M-DT-08	Dairy Technology	2021	Patent Officer
Sangita	19-M-DT-07	Dairy Technology	2021	CFSO, FSSAI
Aakash Wani	19-M-DT-10	Dairy Technology	2021	Technical Officer, Panchmahal Union (Amul)
Aman	19-M-DT-16	Dairy Technology	2021	CFSO, FSSAI
Deepak	19-M-DT-03	Dairy Technology	2021	Pursuing PhD, ICAR-NDRI
Raj Suwalka	19-M-DT-01	Dairy Technology	2021	STO, IVRI
Rakesh Yadav	19-M-DT-04	Dairy Technology	2021	Executive (QA), GCMMF
Sandeep N	19-M-DT-06	Dairy Technology	2021	Associate Scientist, Sealed Air Corporation
Sonam	19-M-DT-02	Dairy Technology	2021	Assistant Professor, BASU, Patna
Tamal Sarkar	19-M-DT-09	Dairy Technology	2021	Research Scientist, Dabur
Aditya Dutta	20-M-DT-01	Dairy Technology	2022	Executive (QA), GCMMF
Deepak Kumar	20-M-DT-03	Dairy Technology	2022	Executive (QA), GCMMF
Gautam Kumar	20-M-DT-04	Dairy Technology	2022	DFO, Govt. of Bihar
Mamta Kumari	20-M-DT-05	Dairy Technology	2022	DFO, Govt. of Bihar

Nilesh Rathod	20-M-DT-06	Dairy Technology	2022	Executive (QA), GCMMF
Dharmik Patel	20-M-DT-07	Dairy Technology	2022	Executive (QA), GCMMF
Piyush Poharkar	20-M-DT-08	Dairy Technology	2022	Process Engineer, Tetra Pak
Ashish Solanki	20-M-DT-09	Dairy Technology	2022	Executive (QA), GCMMF
Suresh C T	20-M-DT-10	Dairy Technology	2022	Executive (QA), GCMMF
Alok Ahale	20-M-DT-12	Dairy Technology	2022	Production Planning Officer, Kuwaiti Danish Dairy (KDD), Kuwait
Aditya Suroshe	21-M-DT-05	Dairy Technology	2023	Scientist- Formulation Development, CavinKare
Ajay karmale	21-M-DT-06	Dairy Technology	2023	Senior Executive, Umang dairy Ltd
Anil V	21-M-DT-14	Dairy Technology	2023	Scientist- Formulation Development, CavinKare
Hameedur Rehman	21-M-DT-10	Dairy Technology	2023	Production Officer, Nestle
Harish Tawde	21-M-DT-08	Dairy Technology	2023	Assistant Manager, Zydus
Manan Preet Singh	21-M-DT-01	Dairy Technology	2023	Executive (QA), GCMMF
Manoj Mehla	21-M-DT-02	Dairy Technology	2023	Assistant Manager, Vita
Manos Sarkar	21-M-DT-04	Dairy Technology	2023	Executive (QA), GCMMF
Ron Roy	21-M-DT-16	Dairy Technology	2023	Dairy Development Officer, Kerla
Shubhalaxmi Shailesh	21-M-DT-07	Dairy Technology	2023	Technical Officer, Kaira Dairy (AMUL)
Vikram	21-M-DT-09	Dairy Technology	2023	Pursuing PhD, ICAR-NDRI
Vivek Kumawat	21-M-DT-03	Dairy Technology	2023	Executive (QA), GCMMF
Dishant Kumar Sahu	22-M-DT-08	Dairy Technology	2024	Executive (QA), GCMMF
Fathima Shahna	22-M-DT-06	Dairy Technology	2024	Production Officer, Banas Dairy

Harsh Jindal	22-M-DT-01	Dairy Technology	2024	Production Officer, Banas Dairy
Jitendra Sharma	22-M-DT-13	Dairy Technology	2024	Executive (QA), GCMMF
Manoj	22-M-DT-14	Dairy Technology	2024	Executive Production, Mother dairy
Omkar Mane	22-M-DT-11	Dairy Technology	2024	Technical Officer, Panchmahal Union (Amul)
Rahul Sharma	22-M-DT-03	Dairy Technology	2024	Executive (QA), GCMMF
Rajat Patel	22-M-DT-07	Dairy Technology	2024	Executive (QA), GCMMF
Shivanjali	22-M-DT-02	Dairy Technology	2024	Executive (QA), GCMMF
Shubham Kalbande	22-M-DT-12	Dairy Technology	2024	Production Officer, Banas Dairy
Ankit	23-M-DT-21	Dairy Technology	2025	Shift Officer, Germany
Bhaskara K G	23-M-DT-17	Dairy Technology	2025	Executive (QA), GCMMF
Bhumkar Prajwal Vilas	23-M-DT-15	Dairy Technology	2025	Technical Officer, Panchmahal Union (Amul)
Deepak Kalwaniya	23-M-DT-05	Dairy Technology	2025	Executive (QA), GCMMF
Mayank	23-M-DT-04	Dairy Technology	2025	Executive (QA), GCMMF
Preeti Rani	23-M-DT-02	Dairy Technology	2025	Executive (QA), GCMMF
S David Haokip	23-M-DT-01	Dairy Technology	2025	Executive corporate QA, Mother dairy
Shailesh Annadate	23-M-DT-20	Dairy Technology	2025	Production Officer, Banas Dairy
Shanthamani H S	23-M-DT-18	Dairy Technology	2025	Executive (QA), GCMMF
Shivaraj H R	23-M-DT-19	Dairy Technology	2025	Technical Officer, Panchmahal Union (Amul)
Shubham Kar	23-M-DT-03	Dairy Technology	2025	Junior officer Production, Mother dairy

Taniya Harchandani	23-M-DT-12	Dairy Technology	2025	Junior officer Production, Mother dairy
Varsha A M	23-M-DT-14	Dairy Technology	2025	Shift Officer, Germany
Dairy Engineering				
Harshitha M	21-P-DE-04	DE	2021-26	Ph. D scholar
Parameshwari	22-P-DE-02	DE		Dairy extension officer
Sudipto Mondal	21-P-DE-06	DE		Ph. D scholar (working as Assistant professor) (Contractual) Kamareddy Dairy Technology College, Telengana
Satya Prakash	23-P-DE-01	DE		Ph. D scholar
Akhila V	24-P-DE-01	DE		Ph. D 2nd year (in service)
Abhinash P	19-P-DE-08	DE		Assistant Professor, Department of Dairy Engineering, Kerala Veterinary and Animal Sciences University
Banashree Naskar	19-P-DE-09	DE		Assistant Professor (Contractual), Dairy Engineering Division, SKUAST-J, Jammu
Sharanabasava	15-M-DE-06,	DE		Central Food Safety Officer
Shruthi P A	20-P-DE-04	DE		Ph. D Scholar
Vinay Kumar	19-M-DE-02	DE	2021	GEA
Bharat Raj Chhimpia	19-M-DE-03	DE	2021	GEA
Shubham Bhotmange	19-M-DE-04	DE	2021	HERITAGE
Ajitharun K L	19-M-DE-05	DE	2021	TETRAPACK
Shubham Kawale	19-M-DE-06	DE	2021	-
Parmeshwari	20-M-DE-02	DE	2022	Food safety officer
Somveer	20-M-DE-05	DE	2022	Asstt. Manager , VITA
Rahul	20-M-DE-08	DE	2022	Teacher
Manoj K. N.	20-M-DE-09	DE	2022	TETRAPACK
Santosh Chopde	18-P-DE-02	DE	2022	PUSAD
Gurshrn Singh	18-P-DE-14	DE	2022	Asstt. Professor , GAADVASU
Bhavesh B. Chavhan	20-P-DE-15	DE	2023	Assistant Professor, Parul University

Nisha bose	22-M-DE-17	DE	2024	SPX
Rushikesh	22-M-DE-11	DE	2024	TETRAPACK
Naveen	22-M-DE-09	DE	2024	GCMF
Sharanabasava	20-P-DE-16	DE	2023	ASRB
Banashree N.	20-P-DE-14	DE	2023	Assistant Professor
Nagaratna	20-P-DE-08	DE	2023	Assistant Professor, REVA University, Bangalore
Prateek	21-M-DE-05	DE	2023	TETRAPACK
Mukul Sain	20-P-DE-07	DE	2024	Assistant Professor, Rayuvas, Bikaner
Akhila	21-P-DE-05	DE	2024	Assistant Professor
Rishi shringi	23-M-DE-13	DE	2025	job
Kiran	23-M-DE-09	DE	2025	GEA, Vadodara
Shivam patel	23-M-DE-11	DE	2025	GEA, Vadodara
Shivam pandey	23-M-DE-15	DE	2025	TETRAPACK
Aman Nain	22-P-DE-14	DE	2025	ASRB
Srijan	23-M-DE-12	DE	2026	GCMF
Ronald	23-M-DE-06	DE	2026	Banas
Yash	24-M-DE-07	DE	2026	MDS
Gurdeep	24-M-DE-11	DE	2026	MDS
Ajay	24-M-DE-09	DE	2026	BANAS
Dairy Chemistry				
Hardik Vasava	19-M-DC-10	Dairy Chemistry	2021	Country Delight
Farin Sayyad	19-M-DC-02	Dairy Chemistry	2021	Food Analyst, Nestle R&D
Vinay Kashyap	19-M-DC-12	Dairy Chemistry	2021	FSO, FSSAI
Apurva Pandav	19-M-DC-05	Dairy Chemistry	2021	Senior Executive, Gobia Ltd., Ireland
Asif Kureshi	19-M-DC-08	Dairy Chemistry	2021	NDDB
Tanushree	19-M-DC-01	Dairy Chemistry	2021	Quality Assurance Officer (Executive) at GCMF, AMUL
Amrutha	19-M-DC-03	Dairy Chemistry	2021	Junior Research Fellow, SRS, Bangalore

Shreya Jaiswal	19-M-DC-04	Dairy Chemistry	2021	Quality Assurance Executive Parag Milk Foods (Gowardhan) Chittoor, Andhra Pradesh, India
Sulaxana Kumari	15-P-DC-02	Dairy Chemistry	2021	State Government Lab, Faridabad
Yugal Kishor Naik	18-P-DC-08	Dairy Chemistry	2021	Dairy Science College, Raipur
Parnali Nikam Balkishna	17-P-DC-04	Dairy Chemistry	2021	Assistant Professor, Raipur
Sachin Wangdare	16-P-FQ-02	Dairy Chemistry	2021	FSO, FSSAI
Sonia Sangwan	15-P-DC-	Dairy Chemistry	2021	Assistant Professor, Sonipat
Soma Maji	15-P-DC-03	Dairy Chemistry	2021	State Government Lab, Faridabad
Priti Saha	14-P-DC-07	Dairy Chemistry	2021	Dairy Science College, Raipur
Hemant Gawande	17-P-DC-03	Dairy Chemistry	2021	Assistant Professor, Raipur
Vivek Somvanshi	20-M-DC-08	Dairy Chemistry	2022	Quality Assurance Officer (Executive) at GCMMF
Mayur Dhale	20-M-DC-02	Dairy Chemistry	2022	Senior Executive (QC), Jammu and Kashmir Milk Producers Co-operative
Utkarsh	20-M-DC-01	Dairy Chemistry	2022	Process Engineer, Tetra Pak, Pune
Ranjith	20-M-DC-05	Dairy Chemistry	2022	Quality Assurance Officer (Executive) at GCMMF
Navneetha	20-M-DC-04	Dairy Chemistry	2022	FSO, FSSAI
Diksha Bharadwaj	20-M-DC-03	Dairy Chemistry	2022	Technical officer, NDRI
Payal Singh	17-P-FQ-07	Dairy Chemistry	2022	Senior Food Technologist in R&D, Rich Products Private Limited, Pune, Maharashtra
Payal Karmakar	18-P-DC-04	Dairy Chemistry	2022	Postdoc Fellow, University of Minnesota, DFSN

Srishti	17-P-FQ-09	Dairy Chemistry	2022	Energy Pricing Analyst, London
Harshita C.G	18-P-FQ-01	Dairy Chemistry	2022	FSO, FSSAI
Nishi Singh	16-P-FQ-01	Dairy Chemistry	2022	Teaching Assistant Delhi University, New Delhi
Ankita Hooda	17-P-DC-06	Dairy Chemistry	2022	Assistant Professor, BHU
Yashwant Atbhaiya	18-P-DC-07	Dairy Chemistry	2022	Assistant Professor, Bihar
Srushty Patil Omprakash	16-P-DC-02	Dairy Chemistry	2022	Assistant Professor, DUVASU, Mathura
Abhay Pandey	21-M-DC-09	Dairy Chemistry	2023	Executive Quality Assurance, GCMMF Amul
Nishi Gandha Nand Kishor Deshmukh	21-M-DC-02	Dairy Chemistry	2023	Executive Quality Assurance, GCMMF Amul
Rajesh Deshmukh	21-M-DC-04	Dairy Chemistry	2023	Executive Quality Assurance, GCMMF Amul
Jitendra Kr. Patel	21-M-DC-02	Dairy Chemistry	2023	Lecturer Polytechnic, UP
Bhuwal Deshmukh	21-M-DC-07	Dairy Chemistry	2023	Senior Executive (Central Quality Assurance) Jharkhand State Laboratory
Nikhil Galbale	21-M-DC-05	Dairy Chemistry	2023	Technical Officer, Panch Mahal District Cooperative
Chaitali Gajanan	21-M-DC-01	Dairy Chemistry	2023	Research and Development Executive, Reliance Retail
Shubham Mastud	21-M-DC-06	Dairy Chemistry	2023	Trainee Officer, AMUL, Anand
Sushma P.S.	20-M-FQ-02	Dairy Chemistry	2023	Jammu and Kashmir Milk Producers Pvt Ltd.
Shailja Shinde	21-M-FQ-02	Dairy Chemistry	2023	R&D Manager Suryan Organics, Ahmedabad
Pannala Sai Charan Reddy	21-M-FQ-01	Dairy Chemistry	2023	Product Development Executive Location: ITC - Life Science & Technology Centre, Peenya, Bengaluru.

Mamta Vaishnav	22-M-DC-02	Dairy Chemistry	2024	Executive, Quality Assurance, GCMMF Amul
Rohit Bothra	22-M-DC-04	Dairy Chemistry	2024	Amul Fed Dairy, Bhat, Gandhinagar
Sumit Pawar	22-M-DC-05	Dairy Chemistry	2024	Executive, Quality Assurance, GCMMF Amul
Onkar Gaikwad	22-M-DC-06	Dairy Chemistry	2024	Executive, Quality Assurance, GCMMF Amul
Kaviya P	22-M-DC-03	Dairy Chemistry	2024	Executive, Quality Assurance, GCMMF Amul
Akshay Rajesh Bai Ramani	20-P-DC-05	Dairy Chemistry	2024	NDDB, Gujarat
Chanderakanta	20-P-DC-03	Dairy Chemistry	2024	Dr. Chandrakanta Sen, Marketing Officer, Govt. of India, Ministry of Agriculture & Farmers Welfare, Directorate of Marketing & Inspection, Head Office, CGO Complex, NH-IV, Faridabad, 121001
Nisha	23-M-DC-01	Dairy Chemistry	2025	Executive, Quality Assurance GCMMF Amul
Akshay Sopan Dhore	23-M-DC-03	Dairy Chemistry	2025	GCMMF Amul
Saya Deshmukh	23-M-DC-04	Dairy Chemistry	2025	Schribber Dynamics dairy, Baramati
Anurag Gadhave	23-M-DC-05	Dairy Chemistry	2025	BANAS
Sapna Yashwant Ingole	23-M-DC-06	Dairy Chemistry	2025	BANAS
Jyoti Rani Yadav	23-M-DC-07	Dairy Chemistry	2025	Heritage Foods, Telangana
Puneeth M	23-M-DC-08	Dairy Chemistry	2025	Panch Mehal
Jessica Pahsyntiew	23-M-DC-09	Dairy Chemistry	2025	Germany
Rahul Pradhan	23-M-DC-02	Dairy Chemistry	2025	GCMMF, Amul

Sukithija M.P	20-P-FQ-01	Dairy Chemistry	2025	Assistant Professor, Horticulture College, Karnataka
Pavel Rout	20-P-DC-04	Dairy Chemistry	2025	Dairy Science College, Raipur
Dairy Microbiology				
Dr. Chandhni PR	18-P-DM-03	Dairy Microbiology	2021-2026	Asstt. Prof., Kerala Univ, Kerala
Dr Chander Shekhar	18-P-DM-01	Dairy Microbiology		Assistant Professor, Central University, Odissa
Ankita Rawat	18- M- FQ- 03	FSQA,		Assistant Manager NABARD
Manorama Kumari	18-P-DM-02	Dairy Microbiology		Scientist ASRB
Shruti Nayyar	18-M-DM-06	Dairy Microbiology		Havmor Icecream (2021) Nestle India (2023)
Kiran Kisan Surya	19-M-DM-05	Dairy Microbiology		Associate QC Officer, Schreiber Dynamix (2022)
Pratiksha Wajge	19-M-FQ-02	FSQA	2021-2026	Territory Manager Process lead at General Mills Nashik
Basava Prabhu	19-P-DM-01	Dairy Microbiology		Scientist ASRB
Soniya Ranveer	19-P-DM-02	Dairy Microbiology		STO, ASRB
Amarlapudi Monica Rose	19-P-DM-04	Dairy Microbiology		Scientist-I, NDDDB, Anand
Umang	19-M-DM-01	Dairy Microbiology		FSSAI as a CFSSO.
Jitesh Tarak	19-P-DM-05	Dairy Microbiology		Richs products & solutions Pvt. Ltd
Sonali Singh	19-P-DM-06	Dairy Microbiology		Farelab's private Ltd, Gurugram Scientist C, R&D Microbiology Department Salary 10 Lakhs CTC Joining 2025
Nishchal Thakur	20-P-DM-06	Dairy Microbiology		Dairy Development Inspector Grade -2 ,pANJAB

Bidisha Senapati	20-P-DM-01	Dairy Microbiology		Food Safety Officer, Govt. of West Bengal
Ms. Neha Ravi Walde	20-M-DM-09	Dairy Microbiology		Schreiber Dynamix Dairies Pvt. Ltd , Baramati designation : Associate quality control Manger Deptt. UHT CTC 6 Lakhs , Baramati
Mariya Divanshi	20-P-DM-02	Dairy Microbiology		Dairy Development officer
Pradeep Jaybhave	20-M-DM-06	Dairy Microbiology		Executive (Quality), GCMMF, Anand
Dr. Vaibhav Bharat Rokade	20- P- FQ- 02	FSQA Dairy Microbiology		Assistant Manager, Food Regulatory Affairs (International Business) at Orkla India Limited
<u>Harmeet Singh,</u>	20-P-DM-04	Dairy Microbiology		<u>Asstt. Prof. GND Univ. Amritsar</u>
Dipti Waghmore	21-M-DM-08	Dairy Microbiology		Britannia Pvt. Ltd
Dr. Soumya Sangam,	21-P-DM-01	Dairy Microbiology		Head of Microbiology Department, Srimad Rajchandra Animal Hospital & Research Centre, Gujarat-
Reshab Majumder	21-M-DM-01	Dairy Microbiology		JSCMPFL
Rudrakshi Bajaj	21-M-DM-03	Dairy Microbiology		GCMMF
Ajith Kumar	21-M-DM-05	Dairy Microbiology		AMUL
Banoth Soumya	21-M-DM-07	Dairy Microbiology		AMUL
Akshay kumar	21-M-DM-06	Dairy Microbiology		Assistant Professor in the department of dairy microbiology, Dairy Science College, Kalaburagi
Aishwarya M	22-M-DM-10	Dairy Microbiology		Banas dairy, Palanpur
Sunita Kumari	22-M-DM-02	Dairy Microbiology		Verka Dairy, Haryana
Deepa Pauli	22-M-DM-07	Dairy Microbiology		anchmahal Dairy, Godhra Gujarat.

Harshitha P R	22-M-DM-02	Dairy Microbiology		Executive (Quality), GCMMF, Anand
Angela Joseph	22-M –DM-05	Dairy Microbiology		Quality Officer at Andechser Molkerei Scheitz GmbH Andechs Germany
Payal Nirala	22-M –DM-11	Dairy Microbiology		Quality Officer at Andechser Molkerei Scheitz GmbH Andechs Germany
Rahul Bhardawaj	22-M-DM-06	Dairy Microbiology		Executive (QA), Amul, GCMMF
Nunavath Pallavi	22-M-DM-02	Dairy Microbiology		Senior Executive at Heritage Foods Limited, IDA Uppal, Hyderabad-
Adrija	23-M-DM-08	Dairy Microbiology		Junior Officer at Banas Dairy, Gujarat
Jaichandru S	23-M-DM-06	Dairy Microbiology		Technical Officer at Kwality Milk Foods Limited-
Vanisha Rajendra	24-M-DM-09	Dairy Microbiology		Deputy manager, NDDB, Anand
Yogendra Sahu	24-M-DM-06	Dairy Microbiology		Dairy technologist at Andechser Molkerei Scheitz
Agronomy				
Parkash Varma	--	Agronomy	2022-23	AD , Rajasthan Govt.
Chethan Babu R T	--	Agronomy	2022-23	STO , ICAR-IVRI
Dinesh Kumar	--	Agronomy	2023-24	Asst. Prof CAU, Imphal
Suryakanta Kashyap	--	Agronomy	2023-24	National Associate, ICARDA, Bhubaneshwar
Praveen BR	--	Agronomy	2023-24	Scientist, Tea Board
Tuhin Singha Mahapatra	--	Agronomy	2023-24	AFO, Union Bank of India, Odisha
Kapil Nagar	--	Agronomy	2023-24	ADO, Agriculture Department, Haryana
Deepak Bhardwaj	--	Agronomy	2023-24	SDAO, Agriculture Department, Haryana
Maneesha Verma	--	Agronomy	2023-24	SDAO, Agriculture Department, Haryana
Prakash	--	Agronomy	2023-24	SDAO, Agriculture Department, Haryana

Bisworanjita Biswal	--	Agronomy	2023-24	AAO, Agriculture Department, Odisha
Brijesh Kumar	--	Agronomy	2023-24	PGT, UP Govt., Lucknow
Subhradip Bhattacharjee	--	Agronomy	2023-24	RA, CCARI, Goa
Rohit Yadav	--	Agronomy	2024-25	(Assistant Director, Bhojpur)
Birendra Kumar	--		2024-25	(SDAO), Bihar Govt.
Supriya	--	Agronomy	2024-25	(BAO)
Sunny Kumar	--	Agronomy	2024-25	(BAO)
Lakhmi Chand Goswami	--	Agronomy	2024-25	(BAO)
Stuti Kumar	--	Agronomy	2024-25	(Assistant Director)
Avaneesh Kumar	--	Agronomy	2024-25	(STO)
Ajit kumar	--	Agronomy	2024-25	Dhakad (Ag. Supervisor, Raj Govt.)
Rakesh Kumar	--	Agronomy	2025-26	(Scientist B, Bhojpur)
Susmita Sarkar,	--	Agronomy	2025-26	AFO, UCO Bank, WB
Deepak Bhardwaj,	--	Agronomy	2025-26	SDAO,
Pramod Tiwari,	--	Agronomy	2025-26	BAO, Agriculture Department, Bihar
Vipin Kumar	--	Agronomy	2025-26	BAO, Agriculture Department, Bihar
Shubham Pal,	--	Agronomy	2025-26	RAEO, Agriculture Department, M.P.
Deepankar Pandey,	--	Agronomy	2025-26	AGT, IFFCO
Agricultural Economics				
Mr. Thejesh S	19-M-ES-06	DESM	2021	Karnataka Govt
Abhinandan Kumar	19-M-ES-03	DESM	2021	NDRI, Karnal
Shripati Dwivedi	19-M-ES-01	DESM	2021	RPCAU, Pusa
Subhakar Biswas	19-M-ES-05	DESM	2021	BCKV, Mohanpur
Chaitanya Ashok Adhav	19-M-ES-02	DESM	2021	GBPUA&T, Pantnagar
Haritha K	19-M-ES-08	DESM	2021	IARI, New Delhi
Mr. Aghyadeep Das	17-P-ES-04	DESM	2021	Asst. Prof, UP
Mr. Raj Jaiswal	19-P-ES-03	DESM	2021	Asst. Prof, BHU
Ms. Induga Vamsi	20-M-ES-02	DESM	2022	AFO
Shashikala	20-M-ES-02	DESM	2022	FCI
Inderjit Mondal	20-M-ES-07	DESM	2022	IARI, New Delhi
Shahin Aktar Munshi	20-M-ES-06	DESM	2022	IARI, New Delhi

Snighda Potwari	20-M-ES-06	DESM	2022	IARI, New Delhi
Mr. Adeeth Cariappa	18-P-ES-01	DESM	2022	CIMMYT
Ms. Majisha Sinha	17-P-ES-03	DESM	2022	NITI Ayog
Mr. Jagruti Das	17-P-ES-05	DESM	2022	VIA, Tamil Nadu
Ms. Darshna B.	17-P-ES-02	DESM	2022	Consultant IRRI
Subrata Barman	21-M-ES-01	DESM	2023	IARI, New Delhi
K. Ramanjaneya Reddy	21 -M-ES-03	DESM	2023	IARI, New Delhi
Krishan Ahuja	21 -M-ES-04	DESM	2023	CCS HAU , Hisar
Mr. Amit Thakur	19-P-ES-01	DESM	2023	ARS
Ms. Soumaya Mahapatra	20-P-ES-01	DESM	2023	ARS
Mr. Banda Sainath	20-P-ES-04	DESM	2023	ARS
Mr. Kamlesh Acharya	19-P-ES-02	DESM	2023	RA
Mr. Mandeep Singh	21-P-ES-02	DESM	2023	FCI
Mr. Anirudh K.C.	20-P-ES-05	DESM	2023	UNDP
Abhinandan Kumar	21-P-ES-01	DESM	2024	Block Development Officer
Krishan Ahuja	21 -M-ES-04	DESM	2024	Junior Commercial Executive
Ravi Kumar	22-M-ES-02	DESM	2024	Block Development Officer
Debabrat Sethi	22-M-ES-07	DESM	2024	Assistant Agricultural Officer
Santoshkumar Bijakal	21-M-ES-07	DESM	2024	Management Trainee
Mr. Nithin Raj. K (PhD)	20-P-ES-07	DESM	2024	Young Professional
Vinuthraj M J	21-M-ES-06	DESM	2024	Junior Commercial Executive
Dhasarathan M	22-M-ES-01	DESM	2024	IARI,New Delhi
Mrinmoy Das	22-M-ES-03	DESM	2024	IARI,New Delhi
Sweta Brahma	22-M-ES-05	DESM	2024	IARI,New Delhi
R. V. Ananshya	22-M-ES-04	DESM	2024	IVRI, Izatnagar
Vishwanath	24-P-ES-03	DESM	2025	Probationary Officer
Swati Singh	23-P-ES-04	DESM	2025	Marketing Officer (Group I)
Deepika Bonigala	23-P-ES-03	DESM	2025	Marketing Officer (Group I)
Sahin Aktar Munshi	20-M-ES-06	DESM	2025	Marketing Officer (Group I)
Santosh Kumar Bijkal	21-M-ES-07	DESM	2025	Marketing Officer (Group I)

Krishan Ahujha	21 –M-ES-04	DESM	2025	Marketing Officer (Group I)
Subrata Barman	21 –M-ES-03	DESM	2025	Marketing Officer (Group I)
Mandeep Kumar	21-P-ES-02	DESM	2025	Assistant Professor, HPSC
Srishti Sanwal	23-M-ES-03	DESM	2025	IARI, New Delhi
Ashoka Basavaraja Valmiki	23-M-ES-02	DESM	2025	IARI, New Delhi
Soumili Bera	23-M-ES-01	DESM	2025	BHU, Varanasi
Thahira shirin M	23-M-ES-05	DESM	2025	BHU, Varanasi
Agricultural Extension				
Arathy Ashok	19-P-DX-15	Ag. Extension	2021	Scientist (ARS), ICAR - National Institute of Agricultural Economics and Policy Research, New Delhi
Priyojay Kar	17-P-DX-05	Ag. Extension	2021	Scientist (ARS), ICAR-Indian Institute of Maize Research, Ludhiana
Neela Madhav Paitnaik	17-P-DX-02	Ag. Extension	2021	Scientist (ARS), Indian Council of Agricultural Research
Pavithra K	19-P-DX-10	Ag. Extension	2021	Scientist (ARS), Indian Council of Agricultural Research
Ruchi Yadav	18-P-DX-08	Ag. Extension	2021	Assistant Professor, Nanaji Deshmukh Veterinary Science University, Jabalpur
Saravjeet Kaur	20-P-DX-06	Ag. Extension	2021	Assistant Professor, Bihar Animal Science University, Patna
Kalyan Mandi	18-P-DX-03	Ag. Extension	2021	Assistant Professor, Birsa Agricultural University, Ranchi
Sunil Kumar	17-P-DX-04	Ag. Extension	2021	Assistant Professor, Agricultural University, Jodhpur
Sashikant Goeal	19-P-DX-08	Ag. Extension	2021	Assistant Professor, UP Higher Education Board
Khushboo Kumari	18-P-DX-06	Ag. Extension	2021	Assistant Professor, UP Higher Education Board

Chandan Kumar Rai	16-P-DX-02	Ag. Extension	2021	Assistant Professor, UP Higher Education Board
Chetan Patil	19-P-DX	Ag. Extension	2021	Assistant Professor, Lovely Professional University, Jalandhar
Deepak Chand Meena	19-P-DX-03	Ag. Extension	2021	Assistant Professor, Lovely Professional University, Jalandhar
Elizabeth Jose	18-P-DX-07	Ag. Extension	2021	Assistant Professor, Malla Reddy Foundation, Hyderabad
Dasarath Doddamani	16-P-DX-11	Ag. Extension	2021	Teaching Assistant, Private College, New Delhi
Ashok Kumar	16-P-DX-05	Ag. Extension	2021	Faculty, Galaxy Academy, Salem
Shubhrajyoti Behera	18-M-DX-07	Ag. Extension	2021	State Civil Servant, Govt of Odisha
Ditty Maria Dominic	18-P-DX-05	Ag. Extension	2021	Consultant, M. S. Swaminathan Research Foundation (MSSRF), Chennai
Shubham Mishra	20-M-DX-12	Ag. Extension	2021	Executive Officer, National Seed Corporation
Neela Madhav Paitnaik	17-P-DX-02	Ag. Extension	2022	Scientist (ARS), ICAR- MGIFRI, Motihari, Bihar
Pavithra K	19-P-DX-10	Ag. Extension	2022	Scientist (ARS), ICAR- IISS, Mau, UP
Sunil Kumar	17-P-DX-04	Ag. Extension	2022	Assistant Professor, Veterinary University, Bikaner
Saravjeet Kaur	20-P-DX-06	Ag. Extension	2022	Assistant Professor, Bihar Animal Science University
Jeeban Jyoti Behera	17-M-DX-05	Ag. Extension	2022	Assistant Professor, OUAT, Bhubaneswar
D Anil Kumar Reddy	19-P-DX-12	Ag. Extension	2022	Academic Associate, MANAGE, Hyderabad
Thogata. NagaRaju	22-P-DX-10	Ag. Extension	2022	Grade A Officer, NABARD, Mumbai
Ankit Mahapatra	21-P-DX-05	Ag. Extension	2022	State Civil Service, Govt. of Odisha

Meherunnisa Begum	16-M-DX-08	Ag. Extension	2022	State Civil Service, Govt of Karnataka
Swati Suman	21-M-DX-09	Ag. Extension	2022	Executive Officer, Food Corporation of India
Manjunath KV	19-P-DX-04	Ag. Extension	2022	Consultant, MANAGE Hyderabad
Alagu Niranjana	18-P-DX-02	Ag. Extension	2022	Consultant, CRISP, Hyderabad
Sai Pabba Akshit	20-P-DX-08	Ag. Extension	2022	Teaching Associate, SKL Telangana State Horticultural University
Manish Parmar	20-P-DX-05	Ag. Extension	2022	Assistant Manager, NABARD, Patna
Manjusree RV	21-P-DX-03	Ag. Extension	2022	Agricultural Officer, Govt of Kerala
Neha Singh	19-P-DX-17	Ag. Extension	2022	SMS, KVK, BAU, Sabour
Sreeja Sinha	15-M-DX-08	Ag. Extension	2022	Executive Officer, National Cooperative Union of India, New Delhi
Madhulatha C	19-P-DX-01	Ag. Extension	2022	Consultant, MANAGE. Hyderabad
Rahul Belagi	19-P-DX-21	Ag. Extension	2022	Executive, Centre for Multi-Disciplinary Development Research, Karnataka
Chethan Patil N D	19-P-DX-	Ag. Extension	2023	Scientist (ARS), Central Sheep & Wool Research Institute, Avikanagar, Jaipur, Rajasthan
D Anilkumar Reddy	19-P-DX-12	Ag. Extension	2023	Scientist (ARS), ICAR-IVRI, Bareilly, UP
Surjya Kanta Roy	17-M-DX-11	Ag. Extension	2023	Scientist (ARS), ATARI, Calcutta
Gayathri G N	18-P-DX-04	Ag. Extension	2023	Scientist (ARS), ICAR-Indian Institute of Spices Research, Kozhikode, Kerala
Shravani Sahani	20-P-DX-07	Ag. Extension	2023	SMS, KVK Namsai, Arunachal Pradesh
Mounika Booram	21-P-DX-08	Ag. Extension	2023	SMS, KVK Cuttack, Odisha
Surjya Kanta Roy	17-M-DX-11	Ag. Extension	2023	SMS, KVK Imphal, Manipur

Deepak C Meena	19-P-DX-19	Ag. Extension	2023	Assistant Professor, DUVASU, Mathura
Shreepali Bharadwaj	21-M-DX-10	Ag. Extension	2023	State Civil Service, Govt. of Odisha
Bogaravarapu Gurusree	21-M-DX-05	Ag. Extension	2023	Bank, State Bank of India
Neha Singh	19-P-DX-17	Ag. Extension	2023	SMS, KVK, BAU, Sabour
Amanish Kumar	23-P-DX-10	Ag. Extension	2023	RAEO, Govt. of Madhya Pradesh
Manjunath K V	19-P-DX-07	Ag. Extension	2025	Scientist B, Central Silk Board
Vani Chandran	19-P-DX-20	Ag. Extension	2025	Scientist B, Central Silk Board
Gunasekhar S	20-P-DX-02	Ag. Extension	2025	Scientist B, Central Silk Board
Keesam Manasa	21-P-DX-09	Ag. Extension	2025	Scientist B, Central Silk Board
Shruthi C O	20-M-DX-05	Ag. Extension	2025	Assistant Professor, Sardar Khushinagar Dantiwada Agricultural University, Gujarat
Dayanand Patil	20-P-DX-09	Ag. Extension	2025	Junior Liaison Officer, Coffee Board
C.V.S. Bharat	22-P-DX-08	Ag. Extension	2025	Junior Liaison Officer, Coffee Board
Bidyut Pritom Gogoi	22-P-DX-03	Ag. Extension	2025	Agriculture Development Officer, Department of Agriculture, Govt. of Assam
Jahnavi Singh	24-P-DX-07	Ag. Extension	2025	Technical Assistant (Gr-III) Officer, Food Corporation of India
Anirban Das	23-M-DX-10	Ag. Extension	2025	Agriculture Development Officer, Department of Agriculture, Govt. of Assam
Souvik Ghosh	22-M-DX -08	Ag. Extension	2025	Product Development Officer, ITC Limited
Tahir Hussain	22-M-DX-09	Ag. Extension	2025	Farm Manager, SKUAST-Kashmir, KVK Kulgam

R. Vasanth	24-M-DX-11	Ag. Extension	2025	Field representative trainee, KRIBHCO Limited
Shreeja Sinha	15-M-DX-01	Ag. Extension	2025	Lead, Agricultural and Environment and Cooperative Education, International Cooperative Alliance, Asia Pacific
SRS				
Nilendu Paul	18-P-GO-02	GO	2021-22	Senior Technical Officer
Devikrishna	18-M-DE-06	DE	2021	Teaching Assistant
Prajapati Chiragbhai Sureshbhai	18-M-DE-07	DE	2021	Assistant Professor, Parul University
Pradeep Nag	17-P-GO-01	GO	2021-22	Post Doctoral Researcher
Nilendu Paul	18-P-GO-02	GO	2021-22	Senior Technical Officer
Pradeep Nag	17-P-GO-01	GO	2021-22	Post Doctoral Researcher
Apoorva Verma	20-M-GO-05	GO	2021-22	Veterinary Assistant Surgeon
Shivli Jha	19-M-DC-09	DC	2021-22	R&D Officer, Manorama Industries, Raipur
Gururaj Makkarabbi	16-P-ES-04	ES	2021-22	Scientist
Vipin Kumar	19-M-DX-02	DX	2022-22	YP-2 TOT Unit ICAR-CIRB Hisar Haryana Dairy Start-up, Delhi NCR
Ms. Amanchi A Sangma	19-M-DT-17	DT	2021-22	Assistant Manager
Mr. Anjal Katiyar	19-M-DT-11	DT	2021-22	Executive Quality assurance and New product development
Dr. Indresh, N. R.	21-M-AN-06	AN	2021-2022	Animal Nutritioninst,
Harsh Kulkarni	19-M-DE-04	DE	2021	Alfa Laval
Vipin Jeengar	19-M-DE-07	DE	2021	GEA
Amrik Hazra	19-M-DE-09	DE	2021	Associate Sales Engineer
Dr. Zahid Farooq	19-M-GO-07	GO	2021	Veterinary Assistant, Surgeon
Dr. Sushmita Baishya	19-M-LP-01	LP	2021	Veterinary Officer, Assam State Govt

Dr. S. Kaniamuthan	17-M-LP-04	LP	2021	Veterinary Assistant Surgeon, Dept of AHVS, Tamil Nadu
Nishigandha Deshmukh	21-M-DC-05	DC	2022-23	Quality Executive, GCMMF, Gujarat
Dr. Niribili Rajbangshi	20-M-GO-04	GO	2022	Veterinary Officer Dept of AHVS, Assam
Dr. Kaushik Majumder	20-M-GO-02	GO	2022	Veterinary Assistant Surgeon, Tripura
Raval Kathan Bhanubhai	19-P-GO-09	GO	2022-23	Deputy Manager
Elango K	19-P-GO-02	GO	2022-24	Post Doctoral Researcher
Thejesh	19-M-ES-06	ES	2022	Sub-inspector of Police
Jagadeesh Naik, K.	20-M-DX-02	DX	2023	Research Associate Fellow
Ankit Chauhan	20-M-DC-09	DC	2022-23	Technical officer ,Bharuch co-operative,
Sonu K. S	19-P-DC-01	DC	2023	Scientist, ICAR-NDRI, Karnal
Abhijit Das	19-P-ES-07	ES	2023	Assistant Professor
Ms. Pavithra	19-P-DX-10	DX	2022-23	Scientist
Mr. Abhishek Singh Kanwar	20-M-DT-13	DT	2022	Technical officer
Sahin Aktar Munshi	20-M-ES-04	ES	2022-23	Higher Studies
Mr. Anmandeep Singh	20-M-DT-02	DT	2022	Executive Quality assurance
Ms. Harshita Sonarathi	18-P-DT-10	DT	2022-23	Guest Faculty
Mr Karan Patial	15-P-DT-09	DT	2022	Marketing incharge, Gujarat Enterprises, Ahmedabad
Abhisek Ohja	20-M-DE-07	DE	2020-2022	
Manisha Meena	20-M-DE-01	DE	2020-2022	Teaching Assistant
Soumyadip Dey	20-M-DE-05	DE	2020-2022	Junior Engineer
Dr. Teja Allu	19-P-GO-07	SRS	2022	Associate Professor and Head SVVU, Tirupathi
Rajasekhar Tellabati	18-P-DE-02	DE	2022	Assistant Professor
Ravi Prakash	16-P-DE-01	DE	2022	Scientist

Dr Akanksha	20-M-LP-03	LP	2020-2022	SMS (LPM), KVK EAST SIKKIM RANIPOOL ICAR-NEH, UMIAM, MEGHALAYA
Deepak	21-M-DT-19	DT	2023-24	QA Executive, GCMMF, Gujarat
Dr. Sakhare Abhijeet Chandrakant	21-M-GO-04	GO	2023	Veterinary Officer Maharashtra Govt.
Dinesh Kumar Sunwasiya	20-P-AG-09	AG	2023-24	Assitant Professor Rajasthan University of Veterinary & Animal Science, Bikaner.
Thakor Hiralben Prabhatsinh	21-M-GO-02	GO	2023-24	Veterinary Assistant Surgeon, AH Department, Gujarat
Shivanagouda Patil	20-P-GO-08	GO	2023-24	Assitant Professor KVAFSU, Karnataka
Arsha Shaji	20-P-GO-08	GO	2023-24	Veterinary Surgeon , AH Department, Kerala
B. Guru Sri	21-M-DX-05	DX	2024	Agriculture Finance Officer (AFO), Central Bank of India
Ms. G Sreeja Reddy	21-M-DX-11	DX	2022-24	Higher Studies , PhD at ICAR-IARI, New Delhi
Mr Santosh	22-M-DT-15	DT	2024	Executive , Mr Santosh
Dr Pritee Sutar Sanjay	20-P-DT-06	DT	2024	Dr Pritee Sutar Sanjay
Mr. Nidawanbiang	21-M-DT-15	DT	2023	Senior Research Fellow , ICAR- NDRI
Mr. Ashar Noman Khan	21-M-DT-18	DT	2022-23	Executive - Quality Assurance ,GCMMF -
Dr. Sushil Sharma	22-M-AG-09	AG	2023-24	Veterinary Officer Rajasthan Govt. Veterinary Service.
Mr. Guruparan K	22-M-DT-04	DT	2023-24	Executive - Quality Assurance GCMMF - Gujarat Cooperative Milk Marketing Federation Limited, Anand, Gujarat
Mr. Ahale Mayank Preetin	22-M-DT-18	DT	2023-24	Graduate Trainee Engineer, SFX Flow Pvt. Ltd., Odhav Road, Ahmedabad - 33241

S. Praveen	20-P-LP-08	LP	2023-24	Veterinary Assistant Surgeon , Department of Animal Husbandry and veterinary Services, Govt. of Tamil Nadu
Ms M. Anupama	18-P-DT-02	DT	2023	Contract Teacher, SVVU, Tirupathi, AP , SV Vetrinary Univ., Tirupathi, A.P.
Shriramulu	18-P-DE-04	DE	2023	Teaching Assistant , College of Agriculture, Gangavathi
Lekhan M N	21-M-DE-04	DE	2023	Service Engineer ,Tetra Pak
Dr. M. Lavanya	20-P-GO-06	GO	2023	Veterinary Officer Dept of AHVS, Tamil Nadu
Dr. Himani Tewari	14-P-LP-11	LP	2014-2023	Veterinary Officer UP State Govt.
Ammu V.K.	18-P-DE-01	DE	2024	Teaching Assistant , Kerala Veterinary and Animal Sciences University, College of Dairy Science & Technology, Mannuthy
Seethu B.G.	19-P-DE-03	DE	2024	Teaching Assistant , Kerala Veterinary and Animal Sciences University, College of Dairy Science & Technology, Mannuthy
Rahul Pradhan	23-M-DC-02	DC	2024-25	Quality Excutive GCMMFL, Anand
Sapna Yashwant Ingole	23-M-DC-06	DC	2024-25	Junior Officer , Banas Dairy, Palanpur
Raje Saurabh Sanjay	22-M-DE-01	DE	2022-2024	Tetra Pak
Ritvik	22-M-DE-07	DE	2023-2024	Executive - Quality Assurance , GCMMF - Gujarat Cooperative Milk Marketing Federation Limited, Anand, Gujarat
A. Monica Rose	19-P-DM-04	DM	2019-2024	Scientist , NDDB

Dr. Sakshi Payasi	22-M-GO-04	GO	2023-24	Asst Professor (contract) MP
Ravi Kumar	22-M-ES-02	ES	2024-2025	Block Agricultural Development Officer , Bihar State Government
Yogendra Nagar	22-M-DE-06	DE	2022-2025	Param Dairy
Thangboy R Marak	22-M-DT-16	DT	2024-25	Production incharge , Dairy Villa
Neha Petare	23-M-DT-09	DT	2024-25	Banas Dairy
Pratik Vijay Raut	23-M-DT-10	DT	2024-25	QA Executive GCMMFL, Anand
Mr. Tanashu	23-M-DT-11	DT	2024-25	Verka Dairy,
Mr. Dhananjya S	23-M-DT-13	DT	2024-25	QA Executive GCMMFL, Anand
Ms. Anila	23-M-DE-08	DE	2024-25	Dairy Technologist Andechser Molkerei Scheitz, Germany
Ms. Payal	23-M-DM-11	DM	2024-25	Dairy Technologist Andechser Molkerei Scheitz, Germany
Mr. Anurag Kumar	23-M-DT-06	DT	2024-25	Dairy Technologist Andechser Molkerei Scheitz, Germany
Dr. Abhonkar Rohit Mahendra	23-M-GO-03	GO	2024-25	Private Practice
Dr. Devanna	23-M-AG-06	AG	2024-25	Private Practice, Karnataka
Dr Gunashekhar H	20-P-DX-02	DX	2025-26	Scientist-B, Central Silk Board , Central Silk Board, Bangalore
Sahin Aktar Munshi	20-M-ES-04	ES	2025-26	Marketing Officer (Group-I), Ministry of Agriculture and Farmers Welfare
ERS				
Ms. Bhagat Jagruti Dilip	20-M-AN- 01	AN	2021	Assistance Manager, NABARD, Maharashtra
Mr. Anil	19-M-AN- 06	AN	2022	Assistance Professor, Veterinary Collage, Karnataka
Mr. Amit Kumar Singh	19-P-LP-09	LPM	2022	SMS KVK-ANDUAT, Govt. of UP

Mr. Sangram Keshari Swain	19-M-LP- 05	LPM	2022	Veterinary Officer, Govt. of Odisha
Ms. Piyali Kuri	18-P-AP-04	AP	2022	Assistance Professor, <i>Siksha o Anusandhan</i> (Private Veterinary Collage), Bhubaneshwar, Odisha
Mr. Prakash Chandra	14-P-BT-08	ABT	2022	Livestock Extension Officer, Govt. of Uttarakhand
Ms. Kiran Prava Mohanta	19-M-LP-06	LPM	2022	Veterinary Officer, Govt. of Odisha
Mr. Sourav Das	20-M-AG- 19	AGB	2022	Veterinary Officer, Govt. of Odisha
Mr. Manoj Kumar	20-M-AN-10	AN	2023	Veterinary Officer, BSF
Mr. Debajyoti Sarkar	19-P-GO-06	ARGO	2023	Veterinary Officer, Govt. of Tripura
Ms. Yora Reena	19-P-AN-08	AN	2023	Assistance Professor, <i>Siksha o Anusandhan</i> (Private Veterinary Collage), Bhubaneshwar, Odisha
Mr. Sushil Kr. Yadav	18-P-AN-05	AN	2023	Veterinary Officer, Govt. of U.P.
Mr. Ajoy Das	20-M-LP- 02	LPM	2023	STO (T-6), IVRI, Izatnagar, UP.
Mr. Sajad Ahmad Sheikh	20-M-LP- 11	LPM	2023	Veterinarian (Private), Mobile Veterinary Unit, Kashmir
Mr. Shamshad Ali	20-M-AP- 12	AP	2023	Veterinary Officer, Govt. of Bihar
Ms. Jayashree Gogoi	19-P-AP-05	AP	2023	Assistance Professor, <i>Siksha o Anusandhan</i> (Private Veterinary Collage), Bhubaneshwar, Odisha
Ms. Nunhlupuii	21-M-AG-11	AGB	2023	Veterinary Officer, Govt. of Mizoram
Mr. Mokidur Rahman	19-P-AG-06	AGB	2023	Veterinary Officer, Govt. of Assam
Ms. Ruthi Lalramchansangi	21-M-GO - 03	ARGO	2023	SRF, Veterinary Collage CAU, Aizawl, Govt. of Mizoram
Ms. Melody Lalhriat Puii	17-P-AN-06	AN	2024	Scientist, ICAR-NIANP, Bangalore

Mr. Vipin	18-P-AN-06	AN	2024	SMS in KVK, Govt. of U.P.
Mr. Sachin Tripura	18-P-AN-09	AN	2024	Veterinary Officer, Govt. of Tripura
Mr. Asish Debbarma	19-P-LP-10	LPM	2024	Scientist, ICAR-National Research Centre on Yak, Arunachal Pradesh
Mr. Indrajit Gayari	20-P-AG-10	AGB	2024	Assistance Professor, <i>Siksha o Anusandhan</i> (Private Veterinary Collage), Bhubaneswar, Odisha
Mr. Kinkar Debbarma	19-M-GO-02	ARGO	2024	Veterinary Executive The West Assam Milk Producers' Co-operative Union Ltd. (Private), Assam
Mr. Shubham Singha	20-P-GO-04	ARGO	2024	Veterinary Officer, Govt. of West Bengal
Ms. Chimi Yangzom Lepcha	19-M-DX-11	Ag. Ext. Edu	2024	A.D.O., Govt. of Tripura
Mr. Souvik Ghosh	22-M-DX-08	Ag. Ext. Edu	2024	ITC, Kolkata (Private)
Ms. Upali Kisku	20-P-DX-01	Ag. Ext. Edu	2025	Assistance Professor, Birsa Agricultural University, Jharkhand
Mr. Sacchidananda Bera	19-P-BT-06	ABT	2025	Bovine Embryologist, Tropical Animal Genetics (Private), Gujarat
Mr. Menda Rajender	18-P-BT-10	ABT	2025	Animal National Institute of Animal Biotechnology Project to Research Scientist-1, Govt. of India
Mr. Ashutosh Mahalle	23-M-AN-02	AN	2025	Assistance Professor, Veterinary Collage (Private), Rajasthan
Ms. Shardhanjali Behera	24-M-LP-05	LPM	2026	Veterinary Officer, Govt. of Odisha (empanel)

6.5.7.3 Awards / recognitions / certificates (2021-26)

2021

Institute Award

- ICAR-NDRI ranked first among 72 Agricultural Universities and Deemed Universities consecutively five times for the year 2020 conferred in 2021 by the Education Division of Indian Council of Agricultural Research, New Delhi.
- ICAR-NDRI was conferred Global Water Award on August 22, 2021 for work carried out on water saving and reuse technologies in 5th World Water Summit 2021.



- Team NDRI (Puniya AK (Team Leader), Dasriya V, Dhillon HS and Chaudhary V) won ‘Zonal Level Technical Evaluation’, KRITAGYA (HACKATHON 2.0) for the year 2021 organized by ‘National Agricultural Higher Education Project (NAHEP)’ and Animal Science Department of Indian Council of Agricultural Research, New Delhi.

ICAR Awards/ Best Teacher Award

- **Dr. Sanchita Garai**, Senior Scientist (Extension) received “**Swami Sahajanand Saraswati Outstanding Extension Scientist Award 2020** from Indian Council of Agricultural Research, New Delhi on July, 2021.
- **Dr. K. Ponnusamy** Principal Scientist (Dairy Extension) and **Dr. Nishant Kumar**, Senior Scientist (Veterinary Gynaecology and Obstetrics) received Best Teacher Award of the Institute at 18th Convocation held on August 24, 2021.
- **Dr Anurag Saxena** received Best Teaching Award, Global Teaching Excellence Award 2021.
- **Dr. P. Barnwal**, PS and Acting Head, DE Division received “Engineering Excellence Award-2021” from The Institution of Engineers (India) Rajasthan State Centre, Jaipur” on the occasion of 75th Independence Day on August 15, 2021 at Jaipur.



- **Dr. Rakesh Kumar** was awarded Dr. Sarvepalli Radhakrishnan Best Teacher Award 2021 in Agronomy on September 5, 2021 by Center for professional advancement (A unit of MGRF Registered with Govt. of India NITI Aayog NGO Darpan), Vijayawada, India.

Best Oral Presentation Award

- **Bharti Deshmukh, Archana Verma, Ishwar Dayal Gupta and Neeraj Kashyap** received Best Oral Paper Award for the paper “Identification of Single Nucleotide Polymorphisms in SPAG11 Gene and their association with Fertility Traits in Murrah Bulls” (Theme-2: Breeding and Genetics) in the National Symposium of Indian Society for Buffalo Development held at GADVASU Ludhiana during December 10-11, 2021.
- **Dr. Sakshi Kaith**, Ph.D. student of Dr. J. K. Kaushik, Animal Biotechnology Centre was given Best Oral Presentation Award at the Virtual Conference on Proteomics in Agriculture and Healthcare, organized by University of Hyderabad, March 13-14, 2021.
- **Nidhi Sukhija, Anoop Anand Malik, Aishwarya Dash, Kangabam Bidyalaxmi, Anjali Choudhary, Rekha Sharma, I.D. Gupta, Jayakumar Sivalingam and Archana Verma** received Best Oral Presentation Award on ‘Genome-wide identification of selective sweeps and diversity in Gir and Tharparkar cattle’ during V Annual Convention of SVBBI and National Symposium organized by Department of Veterinary Biochemistry, College of Veterinary Science and Animal Husbandry, DUVASU, Mathura during March 24-25, 2021.
- **Thamizan, P., Chander Datt, Shambhvi, Kuldeep Dudi, Anupam Thakuria, Prateek Singh, Goutam Mondal and Veena Mani** received First prize for oral presentation on “Influence of supplementary nickel on feed intake and nutrient utilisation in Murrah buffalo calves” during National Symposium of Indian

Society for Buffalo Development (ISBD) On “Scientific Interventions To Address Challenges For Sustainable Buffalo Production” at GADVASU, Ludhiana-141004, Punjab, India during December 10-11, 2021.



Dr. Chander Datt Receiving Best Oral Presentation Award (On behalf of his team) From : Mr. K. S. Sangha (IAS) MD, Milkfed, Punjab on Dec. 11th, 2021 during ISBD, Symposium - 2021 held at : GADVASU, Ludhiana, Punjab, India

- **S. Ragulraj, M. Bhakat, T.K. Mohanty, S. Maiti, G.S. Lal, M.S. Rajput, N. Shah and R. Dewery** received Best Presentation Award (Oral) on “Early prediction of neonatal calf diarrhoea in Murrah buffalo through daily infrared temperature monitoring” in the National Symposium organized by C.V.Sc. (Ludhiana), GADVASU, in National symposium of ISBD on Scientific Interventions to address challenges for sustainable buffalo production during December 10-11, 2021.
- **Atul S. Rajput, Mukesh Bhakat and T.K. Mohanty** received Best Oral Presentation in the online conference Emerging trends in agriculture and biological sciences (January 14-15, 2022) organized by Society for Bioinformatics and Biological Sciences and Applied Research and Development Organization, India under session VIII: Veterinary Sciences-III on the title “Identification of estrus using infrared thermography in indigenous dairy animals”.
- **Dr. Sandeep Kumar** got Best Oral Presentation Award entitled, ‘Bifunctional HPrK/P enzyme: A potential target for antibiotics discovery against resistant *Enterococcus faecalis* in the International Conference on Emerging Strategies in Antimicrobial Agents and Bio-innovation’ organized by the Department of Microbiology, School of Science, RK University on December 18-19, 2020.
- **Reenu Kashyap and Shilpa Vij** received First Prize for oral presentation on “Buffalo colostrum proteins derived formulation for management of diarrhea in immune compromised patients. 27th International conference on Advances in Food Science and Technology (October 26-28, 2021) Meghalaya, India.
- **M. Kumari and P. V. Behare** received Best Oral Presentation Award for Imuno modulatory potential of exopolysaccharide produced by *Streptococcus thermophilus* NCDC399 at 10th International Conference on Fermented Foods,

Health Status and Social Well-being held on December 17-18, 2021 at the Faculty of Agriculture, University of Peradeniya, Sri Lanka.

- **Dr. Shivaswamy G.P.**, Scientist, received RT Doshi Best Paper Presentation Award for a research paper, “An assessment of magnitude and drivers of India’s virtual water trade in major food products” in the 29th Annual Conference of Agricultural Economics Research Association, held at OUAT, Bhubaneswar during October 27-29, 2021.
- **Dr. S. Subash** received Two ‘Best Paper Presentation Awards –II Place’ for a paper presented in the “International Virtual Conference “Transforming Agricultural Advisory Services to Mitigate the Effects of the Pandemic for Farmers Welfare”– (ICTAAS-2021) Jointly Organized by VIT, TANUVAS, Bule Hora University, Ethiopia and Al Neelain University, Sudan held during November 12-13, 2021.
- **Suwalke R., Panjagari N.R., Ganguly S., Singh A.K., Sharma R. and Raghu H.V.** received Best oral presentation entitled ‘Performance of On-package freshness indicator of set type dahi as affected by starter cultures’ at 10th International Conference on Fermented Foods, Health Status and Social Well-being. Organized by the University Research Council of University of Peradeniya, Sri Lanka in collaboration with SASNET-FF at December 17-18, 2021 (virtual mode).
- **Kathan Raval, Manish Kumar Sinha, Elango Kamaraj, Nilendu Paul, Thirumala Rao Talluri, Pradeep Nag, Ebenezer SKPJ, Arumugam Kumaresan** received Best Young Scientist Award (2021) by ISSAR for the paper “RNA Sequencing Unveils Alteration in Gene Expression Involved in Important Biological Processes Related to Fertility in Crossbred Bull Semen with High DNA Damage”.
- **Manish Kumar Sinha, Arumugam Kumaresan, Thirimala Rao Talluri, John Peter Ebenezer Samuel King, Mani Arul Prakash, Aranganathan V** received Best Young Scientist Award (2021) by ISSAR (2021) for the paper “SNP study related to genomics differences for fertility in crossbred bull spermatozoa”.
- **Kamini Sharma, Heena Sharma, A K Singh, G K Deshwal and S. Kadyan** received Third Prize for the Oral Presentation in 4th International Conference on Food and Nutrition organized by Universal Society of Food and Nutrition (USFN) on September 23-24, 2021.
- **Singh, N; Mann, B; Sharma, R; Raju, P N; Verma, A; Gandhi, K.** received Third Prize in Oral Presentation for the paper Identification of intentionally and non-intentionally added substances in milk packaging materials by GC-MS/MS. Orally presented at the International Conference on “Convergence of Technology and Policy for Sustainable Meat Production” organized by the Association of Meat

Scientists and Technologists (AMST) and Meat Technology Unit and Dept. of LPT, Kerala Veterinary and Animal Sciences University (KVASU) in association with Association of Food Scientists and Technologists (India) and Indian Dairy Association (Kerala Chapter) in October, 2021.

Best Paper Award

- **Pradeep Nag, Kumaresan A., Ankur Sharma, Nilendu Paul** received Best Research Paper Award (2021) by ISSAR for the paper “DNA fragmentation is associated with alterations in sperm phenome and oviduct binding ability in cattle”.
- **Kamaraj Elango, Arumugam Kumaresan, Ankur Sharma, Pradeep Nag, Mani Arul Prakash, Manish Kumar Sinha, Ayyasamy Manimaran, Ebenezer Samuel King John Peter, Sakthivel Jeyakumar, Sellappan Selvaraju, Kerekoppa P. Ramesha and Tirtha K. Datta** received Dr. G. B. Singh Memorial Award (2021) for the best research paper published in International Journal entitled “Sub-fertility in crossbred bulls: deciphering testicular level transcriptomic alterations between zebu (*Bos indicus*) and crossbred (*Bos taurus* x *Bos indicus*) bulls”.
- **Mr. Narendra Singh Rohila, Mr. B. P. Singh, Mr. Satyavir and Mr. Lakshman** received “Best Paper Award” for the presentation of their paper “Zotero: A Personal Research Assistant for Researchers” during International Conference on “Management of Knowledge Resource Centre in the Networked Digital Environment: Trends, Challenges and Opportunities” jointly organised by University of Agricultural Science and Association of Agricultural Libraries and Documentalists of India (AALDI) held at University of Agricultural Science, Bengaluru during February 25-26, 2021.
- **Meena, D. C., Garai, S., Maiti, S., Dutta, S., Meena, B. S. and Kadian, K. S.** received Best research paper award on the paper of “Migration pattern of *Raika* pastoralists of Marwar region of Rajasthan. *Range Management and Agroforestry*”, 42(1): 167-174.
- **Paul, R.K., Chandel R., Onteru S.K.** received Best Article Award for the paper titled “Male reproductive tract origin sperm-quiescent proteins: prospects in semen cryopreservation of livestock species” published in Animal Reproduction Update, Vol I, doi: 10.48165/aru.2021.
- **Dr. Udit Chaudhary** received Best Article Award for the article “Gender Discrimination in Labour Markets in India” (Article ID 10086, published in Vol. 3, Issue 1 (January, 2021) of Agriculture and Food e-Newsletter (ISSN: 25818317).

Best Poster Award

- **S. Chhotaray, Vikas Vohra, G.R. Gowane, Rani Alex, A. Mukherjee, Archana Verma and S.M. Deb** received Best Poster Presentation Award for the paper “GWAS in Indian buffalo unmasks novel genes for lactation” (Theme-2: Breeding and Genetics) in the National Symposium of Indian Society for Buffalo Development held at GADVASU, Ludhiana during December 10-11, 2021.
- **S. Chhotaray, Vikas Vohra, G.R. Gowane, Rani Alex, A. Mukherjee, Archana Verma and S.M. Deb** received Best Poster Presentation Award for the paper for the paper “GWAS unravels novel genes for lactation yield and persistency in Murrah buffalo” in the National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- **Pooja Joshi, Archana Verma, Rani Alex, I.D. Gupta, Destaw Worku and G.R. Gowane** received Best Poster Presentation Award for the poster “Estimation of co(variance) components for growth traits in Murrah buffaloes” in Technical Session I during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- **Nidhi Sukhija, Anoop Anand Malik, Kousalya Devi M, Jayakumar Sivalingam and Archana Verma** received Best Poster Presentation Award for the poster “Adaptational Consequences of Selective Sweeps in Gir and Tharparkar cattle” in Technical Session II during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- **Ravi Kumar D, Archana Verma, Nandhini P B, Joel Devadhasan M, I D Gupta, S K Niranjana, R S Kataria M S Tania and Jayakumar Sivalingam** received Best Poster Award on ‘Identification of genomic regions associated with reproduction traits in Indian Murrah buffalo using single-step gBLUP’ under the Technical Session- Molecular Genetic techniques for Animal Breeding and Improvement in the Virtual International Conference on “Promising Genetic and Genomic Technologies – Frontier in Selection and Animal Improvement” jointly organized by Department of Animal Genetics and Breeding, Veterinary College and Research Institute, Orathanadu and Department of Animal Genetics and Breeding, College of Veterinary and Animal Sciences, Pookode during January 27-28, 2021.

- **Pandey, Y., Panda, B.S.K., Somagond, M. and Dang, A.K.** received Best Poster Award on the paper entitled, “Isolation, characterization and LC-MS exosomes in dairy cows” in the APA CON-2021, held at DUVASU, Mathura, India.
- **Dipti, T.K. Mohanty, M. Bhakat, R. Dewery, M. Sethi and N. Shah** received Best Presentation Award (Poster) on “Combination of semen additives improves sperm cryopreservability and *In-vitro* sperm functionality test in Murrah buffalo” in the National Symposium organized by C.V.Sc. (Ludhiana), GADVASU, in National symposium of ISBD on Scientific Interventions to address challenges for sustainable buffalo production on December 10-11, 2021.
- **R. K. Dewry, T.K. Mohanty, M. Bhakat, S. Nath, H. P. Yadav, S. Tiwari, N. Shah and M. Sethi** received Best Young Scientist in respect of poster presentation of scientific paper entitled “Prediction of bull fertility based on *in-vitro* sperm function tests and seasonal semen quality variables in Sahiwal bulls” in National seminar on innovative biotechnological approaches for enhancing fertility, health and productivity of livestock to boost the farmers economy and VIII annual convention of the society for veterinary science and biotechnology held at ANDUAT, Kumarganj, Ayodhya (UP) during December 17-18, 2021.
- e-Poster entitled ‘Lactic acid bacteria isolated from indigenous were conferred Best Poster Award in the Convener Coordinator Organizing Secretary Ref. No. GADVASU/DM/2021/443 International e-Symposium on Probiotics, Prebiotics and Gut Microbiome : Key Regulators for Human and Animal Health” organized by Department of Dairy Microbiology, College of Dairy Science and Technology, Guru Angad Dev Veterinary and Animal Sciences University on November 11, 2021 under the aegis of Probiotic Association of India.
- **Rakesh Chouraddi, Sachin Kumar and Vinay VV** et al., received Best Poster Award (First Place) from Probiotic Association of India, 2021.
- **K.Ponnusamy** was awarded best poster award for the topic Success story of women empowerment through value addition in milk and milk products in Hindi Ullas Mahotsv-2021 at NDRI, Karnal.
- Best Poster Award (2021) by ISSAR to **Nilendu Paul, Talluri T R, Raval Kathan, Kamaraj Elango, Verma A., Kumaresan A** for the poster on “Nanopurification of bull semen for enrichment of functionally competent spermatozoa”.
- **Ms. Ankita Kumari** was awarded “Young Investigator Poster Presentation Award” for presentation entitled “Probiotic *Lactobacillus fermentum* mediates its immunoregulatory function by targeting epigenomic modulations” in 11th India Probiotic symposium “ Role of Gut Microbiota and Probiotics in reducing viral

infections –Mechanisms to combat them” organized by the Gut Microbiota and Probiotic Science Foundation (India) in online mode from March 13-14, 2021.

- **Dr. Dhruba Malakar** was awarded Best poster award at National Conference on “Animal Breeding Strategies in the Era of Genomics and Phenomics” at NBAGR, Karnal December 17-18, 2021.
- **Nidhi Sukhija, Kousalya Devi M, Ravi Kumar D, Anoop Anand Malik, Anjali Choudhary, Aishwarya Dash, Kangabam Bidyalaxmi, Rekha Sharma, I.D. Gupta, Jayakumar Sivalingam and Archana Verma** received Second best poster award received for Genome wide identification of selective sweeps and QTL intersection in Gir cattle in the XVIII Annual Convention and National Webinar on Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability, organized by Society for conservation of Domestic Animal Biodiversity (SOCDAB), Karnal and ICAR-National Bureau of Animal Genetic Resources, Karnal, India, February 11-12, 2021.
- **Tamal Sarkar** received First position in Poster presentation award at National Conference on *Moringa* Food Conclave-2021 organized by CSA University of Agriculture and Technology, Kanpur during September 28-29, 2021.
- **Dr. A. Maniaran Secured** second prize in poster presentation for research paper entitled “Salivary biochemical parameters discriminate energy balance based on average blood glucose level in early lactating cows” during third Animal Physiologist Association (APA) conference at DUVASU Mathura during September 24-25, 2021.
- **Shivam Bhardwaj, Sanjeev Singh, Indrajit Ganguly, A. K. Bhatia and S.P. Dixit** received Second Best Poster Presentation Award for the poster presentation “Deciphering Genomic Basis of Local Adaptation of Native Indian Cattle (*Bos indicus*) Breeds using Landscape Genomics” in Technical Session IV during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- **Rizwan M, Upma V, Cahndhni PR, Daraksha I and Shilpa Vij** received Third prize for poster presentation on topic “Isolation of Lactobacillus strain with α -glucosidase inhibitory and DPP-IV inhibitory activities from camel milk” in 27th International Conference of International Academy of physical sciences (CONIAPS XXVII) on “Advances in Food Science and Technology” October 26-28, 2021.

Fellows and Other Individual Awards

- **Dr. Dheer Singh**, Joint Director (Research) secured NAAS Fellow-2021.
- **Dr Anurag Saxena** received Fellow Award-2021 conferred by Agricultural and Environmental Technology Development Society (AETDS) during GIAFAS-2021 at Dehradun in recognition of outstanding contribution and recognition in Agronomy.
- **Dr Ashish Kumar Singh** received Award of Fellow of NAAS, India on January 1, 2021.
- **Dr. A. Manimaran** was conferred with Associate Fellow of Indian Society of Veterinary Pharmacology and Toxicology (2021).
- **Dr. Chitranayak**, PS, DE Division received National Academy of Dairy Science (INDIA) NADSI Fellow Award.
- **Dr. Nishant Kumar** received membership of the National Academy of Veterinary Sciences, India (NAVSI) on September 25, 2021
- **Dr. Dhruba Malakar** was awarded “Lifetime Achievement Award” in the International Scientist Awards on Engineering, Science and Medicine. ALPHA Scientist Award 2021 Chennai, India.
- **Dr. Dhruba Malakar** was awarded “Outstanding Achievement Award-2021” from Advances in Agriculture, Environmental and Biosciences for Sustainable Development August 5-7, 2021.



Best poster award was presented at National Conference in NBAGR, Karnal 18 December, 2021.

- **Dr. Gopal Gowane**, Senior Scientist, AG&B Division attended 'First breeding value estimation committee' as ICAR nominee for Rashtriya Gokul Mission at NDDDB, Anand on December 17, 2021.
- Certificate of appreciation was awarded to the animal cloning team for successful production of cloned calves under project "Production of multiple copies of elite buffalo bulls using animal cloning technology" by the Director, ICAR-NDRI, Karnal.
- **Vinod K Gupta, Tushar K Mohanty, Mukesh Bhakat, Raju K Dewry, Nadeem Shah, Dipti Nain, Manisha Sethi and Sapna Nath** received Best Article of the Month Award for the article entitled Managemental Practices and Preventive Measures to Avoid Abortion in Bovines in Vigyan Varta: An International e-Magazine for Science Enthusiasts for the month of June, 2021.
- **Mukesh Bhakat** received certificate of appreciation from *International Journal of Livestock Research* in recognition of an outstanding contribution to quality of the journal in year 2020-21.
- **Mukesh Bhakat** received Samman Patra from Surya Foundation for delivering lecture on online dairy training camp.
- **Dr. Sachin Kumar** received PAI Young Scientist Award from the Probiotic Association of India, 2021.
- **Dr. R.K. Meena**, Scientist, Agronomy Section received "Dr. Sarvepalli Radhakrishnan Best Scientist Award 2021" by Centre for Professional Advancement, a unit of International Multidisciplinary Research Foundation, Vijayawada, A.P., India.
- **Dr. R.K. Meena**, Scientist, Agronomy Section received "Appreciation award" for delivering a lecture in International online training on "Advances in Agripreneurship and skill development for reshaping future of Indian Agriculture" during August 1-5, 2021 organized by Just agriculture and AEEFWS society, Punjab.
- **Dr Anurag Saxena** received International Scientist Award on Engineering, Science and Medicine at Pondicherry on August 7, 2021.
- **Dr Anurag Saxena** received Agri-Extension Awards 2021 Excellence in Dissemination from Lab to Farm 2021 by *Agriculture Today*.
- **Dr Anurag Saxena** received Eminent Scientist Award 2021 by Samagra Vikas Welfare Society (SVWS).
- **Dr Anurag Saxena** received PEARL Foundation Educational Excellence Award for Higher Education in India 2020.

- **Dr Sanjeev Kumar** received Excellence in Teaching Award from *Society for Scientific Development in Agriculture and Technology* (SSDAT), Meerut. In: International Web Conference on Global Research Initiatives for Sustainable Agriculture and Allied Sciences (GRISAAS-2021) during December 13-15, 2021 held at SKRAU, Jobner-Rajasthan.
- Dr Hardev Ram received Excellence in teaching awards 2021 by Society for Scientific Development in Agriculture and Technology, Meerut UP.
- Dr Hardev Ram received Dr. Sarvepalli Radhakrishnan Best Scientist Award-2021 by Center for Professional Advancement (A unit of MGRF Regd with Govt of India NITI Aayog NGO Darpan), Vijayawada, India.
- **Dr Rakesh Kumar** was awarded third best book award by NARACAS, Karnal for the book, *Vagyanik vidhi se pasupalan*.
- **Ms. Taruneet Kaur**, Ph. D student of Animal Biochemistry Division received Best Thesis Award in Processing Group of NDRI for her Ph.D. entitled, 'Deciphering the role of miRNAs induced by Milk Derived Peptide in regulation of Osteoblast differentiation and Osteoporosis'.
- **Chandhni PS** was awarded with ICMR SRF Fellowship.
- **Dr. Shilpa Vij** nominated as Review Editor for Frontiers in Microbiology and Frontiers in Bioengineering and Biotechnology.
- **P. V. Behare** received ILSI India Young Scientist Award 2021 by International Life Science Institute (ILSI), India, Headquarters at Washington DC, USA.
- **Puniya A K** nominated as Associate Editor(s), Frontiers in Microbiology (Systems Microbiology) and Frontiers in Veterinary Science (Animal Nutrition and Metabolism).
- **Puniya A K** nominated as Editor, Indian Journal of Microbiology (Springer).
- **Puniya A K** nominated as Member National Core Group and Convener of National Level Committee; BSMA (Basic Subject Matter Area) for "Restructuring of Master's and Ph.D. Curriculum and Syllabi" of Dairy Science and Technology; ICAR-Agricultural Education Division, New Delhi.
- **Puniya AK** nominated as Member of Faculty of Agriculture (Department of Dairy Science and Food Technology), Banaras Hindu University, Varanasi, UP.
- **Puniya AK** nominated as Member, Board of Studies, School of Agricultural and Bioengineering (Department of Dairy Technology) Session 2021-22; Centurion University of Technology and Management, Odisha.

- **Puniya AK** nominated as Member, Scientific Panel, Milk and Milk Products, Food Safety and Standards Authority of India, New Delhi.
- **Puniya AK** nominated as Outstanding Associate Editor (2021), Frontiers in Microbiology (Systems Microbiology).
- **Raghu H V.** awarded NADSI (National Academy of Dairy Science, India) Associate Fellowship for the year 2020-21.
- **Rashmi H M** awarded NADSI (National Academy of Dairy Science, India) Associate Fellowship for the year 2020-21.
- **Shilpa Vij** nominated as External Expert representative of PGBOS Member (board of studies) of Department of Microbiology, Kurukshetra University.
- **Shilpa Vij** nominated as External Member of committee of courses, MPAUT, Udaipur.
- **Dr. Rajan Sharma and Dr. Bimlesh Man** received Biotech product and process development and Commercialization Award 2020 from Department of Biotechnology, Ministry of Science and Technology, Govt. of India on February 26, 2021.
- **Bimlesh Mann** associated as Editorial board member of Applied Food Research published by Elsevier.
- **Dr. Ganga Sahay Meena** received Award of Associate Fellowship of National Academy of Dairy Science, India on May 26, 2021.
- **Dr Heena Sharma** received Award of Associate Fellowship of National Academy of Dairy Science, India on May 26, 2021 in Virtual Mode.
- **Rohit Hitesh Kumar, Mukul Sain and Chitranayk Sinha,** Won Third Prize in National Level *Hackathon* on Smart and Remunerative Farming on March 5, 2022 at NAU, Navsari under NAHEP Project,
- **K. Ponnusamy, Latha Sabikhi and Ganga Sahay Meena** were awarded best bulletin award for the topic Technology of Value Added Milk Products for Skill Building of Rural Women in Hindi (2020-21) at NDRI, Karnal.
- **K. Ponnusamy, Latha Sabikhi and Ganga Sahay Meena** were awarded second prize for the bulletin on the topic Technology of Value Added Milk Products for Skill Building of Rural Women in Hindi (2020-21) by Town Official Language Implementation Committee, Karnal.
- **Dr. Sanchita Garai,** Senior Scientist conferred the associate Fellowship of the National Academy of Dairy Science (India) on May 26, 2021.

- **Sanjit Maiti** was elected as an Associate of the West Bengal Academy of Science and Technology (WAST).
- **Dr. Yogesh Kumar** and others received Utkrisht Award for the folder “Jalwayu parvarthan ka krishi par parbhav” by Raj Basha Karyawan Samiti, Karnal for 2020-21.
- **Dr. F. Magdaline Eljeeva** Emerald was conferred with Associate Fellowship of National Academy of Dairy Science India in the 6th Convocation on May 26, 2021.

2022

Team Awards

- The students’ team of **Sumit Kumar Singh, Rohit Kumar and Anju Nagpal**, PhD students (Mentor: Dr. Sudarshan Kumar) was awarded the Biotechnology Industry Research Assistance Council (BIRAC)’s award at National Bio Entrepreneurship Competition 2022. The team got the top position and earned a cash prize of Rs. 3.0 lakhs and a certificate.
- The students’ team of **Dasriya V, Dhillon HS and Chaudhary V** (Mentor: Dr. A. K. Puniya) was awarded KRITAGYA (National HACKATHON 2.0) organized by ‘National Agricultural Higher Education Project (NAHEP)’ and Animal Science Department of Indian Council of Agricultural Research, New Delhi.



- **Dr Neelam Upadhayay, Dr Ashish Kumar Singh, Mr. Shailesh Meena, Dr. Ganga Sahay Meena, Dr Ravinder Malhotra:** FSSAI EAT RIGHT RESEARCH AWARD AND GRANT Under Team Category Theme: Eat sustainable.

Best Oral Presentation /Best Paper/ Poster Award

- **P. Narender Raju** received Best Paper Presentation Award for the paper entitled, “Development of an On-Package Freshness Indicator for Misti Dahi, an Eastern Indian Fermented Dairy Product” at 3 days International Conference on “Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security” held at University of Kashmir, Srinagar, J&K from Sept. 28-30, 2022.
- **Dr Satish Kumar M H** received Best Oral Presentation Award (1st Prize) in International Conference on Advances in Agriculture and Food System Towards Sustainable Development Goals, held at GKVK, Bengaluru during 22-24 Aug 2022.
- **Tiwari, S., Lathwal, S.S. and Dang, A.K.** awarded First prize in oral presentation in 1st National Conference of Association of Mastitis on “Implications of Mastitis” held at DUVASU, Mathura on October 19-20, 2022.
- **Dr. S.V. Singh** received Best Oral Paper Presentation Award on “Effect of supplementation of Cumin and molasses on Physiological, morphological parameters and antioxidants markers under field condition” during “19th Biennial International Conference of Animal Nutrition Society of India on Nutritional Technologies to Augment Livestock, Poultry, Canine, Fish Production for Global Competitiveness” held at GADVASU, Ludhiana from Nov 16-18, 2022.
- **Bhavesh B Chavhan, P Barnwal, Ankit Deep, Pooja Bhagat, Vinod K Sharma** received First prize in Oral Paper Presentation entitled “Chemical kinetic modelling of in-package microwave treated pindi khoa for shelf life prediction” under theme “Tech-engineering interventions in milk production and processing”, in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, at Warud, Pusad (Maharashtra), 15-16 December 2022.
- **Aakash Dadarao Wani, Writdhama Prasad, Ankit Deep, Kaushik Khamrui, Shaik Abdul Hussain** received First Prize in Oral Paper Presentation entitled “Evaluation of selected solvents as an alternative for efficient milk fat extraction from ghee residue” in 10th International Conference on Advancements in Engineering and Technology, ICAET-2022, organised at Bhai Gurdas Institute of Engineering and Technology (BGIET), Sangrur, 11-12 November, 2022 via online mode.
- **Dr. Nishant Kumar** received Best Oral Presentation award for the research paper entitled “Elucidating the efficacy of Sodium alginate as antimicrobial alternative in cryopreservation of Sahiwal bull semen” in National Conference on

“Fostering One Health for Food Safety and Security through Sustainable Animal Husbandry & Aquaculture Practices” organized by Society for Promotion of Farm and Companion Animals at Bihar Veterinary College, Bihar Animal Science University, Patna from 10–11 November 2022

- **Dr. Nishant Kumar** received Best Oral Presentation award for the research paper entitled “Effect of Boron Supplementation on Physiological and Biochemical attributes of peripartum crossbred cows under heat stress condition” in International Conference on Contemporary Multidisciplinary Issues in Applied Sciences, Humanities, Agriculture, Animal Health and Production (ASHAA-2022) at Rajiv Gandhi South Campus, Banaras Hindu University, Mirzapur, Uttar Pradesh from 14-15 November 2022
- **Dr. R. K. Baithalu** received Best Oral Presentation award in XIX Annual Convention and National Symposium on “Contemporary Technology for Animal Genetic Resource (AnGR) Management” from 21-22 September 2022 held at ICAR-NBAGR, Karnal.
- **Dr. R. K. Baithalu** received Best Oral Presentation award in International Conference on “Advances in Agricultural, Veterinary and Allied sciences for Improving Livelihood and Environmental Security” from 28-30 Sep., 2022 held at University of Kashmir, J&K.
- **Aakash Dadarao Wani, Writdhama Prasad, Ankit Deep, Kaushik Khamrui, Shaik Abdul Hussain** received First prize for oral presentation entitled “Evaluation of low toxicity solvent as an energy efficient alternative for milk fat extraction from Ghee residue” under theme “Emerging technologies in the field of dairy processing and quality control”, In: 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India” at Warud, Pusad (Maharashtra), 15-16 December 2022.
- **Gayathri, S.L. and Bhakat, M.** received Young Scientist Award for the paper Assessment of mastitis using thermal image analysis among dairy breeds during autumn and winter season in National Symposium on Contemporary Technology for Animal Genetic Resource (AnGR) Management organized by Society for Conservation of Domestic Animal Biodiversity & ICAR-National Bureau of Animal Genetic Resources, Karnal during September 21- 22, 2022.
- **Gupta, V.K., Mohanty, T.K., Dewery, R.K., Nain, D., Aye, S. and Yadav, R.** received Young Scientist Award for the poster presentation on “Lessening the negative effect of vaccination stress in Sahiwal breeding bulls with the use of levamisole and antipyretics”, in National symposium on optimizing animal reproduction through recent techniques of biotechnology, nutraceuticals

and alternative medicine & XXXVII annual convention of ISSAR from November 16-18, 2022.

- **S. Ragulraj, M. Bhakat, T.K. Mohanty, S. Maiti, A. Fernandes and P.B. Nandhini.** received A. Lakshman Rao received Award for the paper entitled “Application of infrared thermography for identification of estrus, calf health and tick infestation in dairy animals in National Livestock Conference UTKARSHA organized by ISAPM in Visakhapatnam, Andhra Pradesh from April 11-13, 2022.
- **Elizabeth Jose and K.Ponnusamy** were awarded best oral presentation award for the topic Efficiency of Farm Diversification in Haryana in 4th National Conference of Society of Veterinary & Animal Husbandry Extension (SVAHE) on the theme “Pluralistic Approaches for Livestock Development – An Extension Call” at the CSK Himachal Pradesh Agricultural University, Palampur, Himachal Pradesh during 06-08 May 2022. ATMA, Dept of Agriculture, Karnal and Panipat and HAMETI, Jind.
- **Dr. Nishant Kumar** received 2nd Best Oral Presentation award for the presentation entitled “Effect of Vitamin E and Selenium supplementation on performance of crossbred bulls under induced heat stress condition” in 22nd Indian Veterinary Congress, XXIX Annual Conference of IAAVR & National Symposium on advancement in Veterinary Medical Research contributing to one health for betterment of Animal Health & their Welfare organized at C.V.Sc Udaipur, RAJUVAS, Bikaner from 8-9 April 2022.
- **Dr. Nishant Kumar** received 2nd Best Oral Presentation award for the presentation entitled “Effect of supplemental Boron on performance of peri-parturient Karan Fries cows under heat stress condition” in International Conference on Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES-2022) organized by University of Kashmir, Hazratbal, Srinagar, Kashmir from 28–30 September 2022.
- **Dr Monika Sharma** received second Prize for oral presentation on Valorization of ghee residue for development of value-added food products in International Conference on “Food Sustainability: Challenges and Opportunities for The Future” 5th AMIFOST – 2022 from 29- 31 March 2022.
- **Dr Monika Sharma** received Best Poster award for Malted finger millet -milk based composite probiotic beverage. 28th ICFOST EAT-SAFE organized from 20-22 Jan 2022.
- **Dr Monika Sharma** received Best Poster award for Utilization of ghee residue for extraction of phospholipids through pulsed electric field technique. National

Dialogue on “Innovations in Reshaping the Indian Dairying “ at DUVASU, Mathura on 29 October 2022.

- **Gayathri S. L., Bhakat, M. and Mohanty T. K.** received Best Poster Presentation (Second Prize) on “Short-milking-tube thermograms as mastitis detection tool in dairy animals” in 14th Kerala Veterinary Science Congress on One-health approaches in the management of animal health care- New paradigms organized by Indian Veterinary Association, Kerala, from 12.11.2022 to 13.11.2022.
- **Poonam Rani and Rakesh Kumar** received Best Poster award in SOCDAB at NBAGR, September 21-22, 2022.
- **Gurpreet Kaur, Navkiran Kaur, Neha Sarova, K. Siddharth Singh, Sudershan Kumar, and Jai K. Kaushik** won the first Best Poster Award during the 6th Biennial PAi Conference and International Symposium on “Psychobiotics and Gut: Potential in the neurological disorders organized by NDRI during 5-6 Dec 2022.
- **Apeksha Ukey, S.V. Singh, A.K. Misra, Gaurav Kumar, Nikita Bhalakiya and Jaskiran Kaur** received Best Poster Presentation Award on “Impact of concentrate replacement with Moriga Olifera on stress indicators and metabolic hormones of Barbari goats in different seasons” during National Seminar and Annual Conference on “Prospects and Potential of Small Ruminants Production for Enhancing Income under Changing Scenario” held at ICAR-CSWRI, Avikanagar (Rajasthan) from 10-12 November, 2022.
- **Akash, Monica Rose Amarlapudi, Hemlata Singh, Chandrasekhar B., Ganga Gulati, Ngangyola Tuikhar, Amit Yadav, Raghu H. V., Diwas Pradhan, Nishant Kumar, Dhiraj Dhotre, Rashmi H M** received Best Poster Award (Second) for poster entitled “Characterization of Antibiotic Resistant Bacteria from Dairy Production System” by in the VII Convocation of National Academy of Dairy Science (India) and National Symposium on Innovation in Reshaping Indian Dairying on October, 29, 2022 at DUVASU, Mathura.
- **Rashmi H M, Sree Niharika Erwa, Bidisha Senapati, Saurabh Kadyan, Diwas Pradhan** received award for presentation on “Integrated omics (Metagenomics and Culturomics) approach to reveal the microbial signatures of Dahi” in the VII Convocation of National Academy of Dairy Science (India) and National Symposium on Innovation in Reshaping Indian Dairying on October, 29, 2022 at College of Veterinary Science and Animal Husbandry, Mathura.
- **Ravikant V Vinchurkar, Heena Parveen, Hogarehalli Mallapa Rashmi and Diwas Pradhan** received Best Poster Award entitled ‘Prevalence of Antibiotic Resistance in Dairy based Enterococcus strains using in vitro and WGS approach’

in the 6th Probiotic Association of India Biennial e-Conference and International e-Symposium on 'Psychobiotics and Gut: Potential in Neurological Disorders' on Dec 5-6, 2022.

- **Abhinash P, Chitranayak, Minz, P.S., Suresh, D., Sharanabasava, John, H., and Priyanka** received First prize for Poster Presentation entitled “Development of Isothermal Bioreactor for the Generation of Biogas from Cow Dung” under theme “Application of Nanotechnology, Artificial Intelligence, Machine Learning and I-O-T and Design of New Processes or Equipment for Mechanisation in the Dairy Industry”. in 12th Convention of Indian Dairy Engineers' Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, Warud, Pusad (Maharashtra), 15-16 December 2022.
- Ms. Swetha Damodharan P.V., Sangita Ganguly, Ashish Kumar Singh, P.N.Raju 2nd Best Paper Presentation Award for paper entitled 'Fermentation Dynamics of selected probiotic organisms in milk-flaxseed based composite substrate' in International Conference on 'Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES-2022) held during September 28-30, 2022 at University of Kashmir, India.
- Rohit, H.K. and Mukul, S received Third Prize for the presentation on 'Development of Ice Slurry Based Milk Cooling System', (Mentor: Dr. Chitranayak) in National Level Hackathon under the IDP-NAHEP Project on “Smart and Remunerative Farming”, held at Navsari Agricultural University (NAU), Navsari, on 5th March 2022.
- Dr. R. K. Baithalu received best oral presentation award in International conference on “Contemporary Multidisciplinary issues in Applied Sciences, Humanities, Agriculture, Animal Health and Production” held at Banaras Hindu University from 14-15 Nov. 2022.
- Aakash Wani, Writdhama Prasad, Kaushik Khamrui, Shaik Abdul Hussain and Ankit Deep awarded Best Paper (1st) for the paper 'Evaluation of selected solvents as an alternative for efficient milk fat extraction from ghee residue' presented in 10th International conference compendium on Advancements in Engineering and Technology, held at Bhai Gurdas Institute of Engineering and Technology, Sangrur, Punjab, during 11-12 Nov 2022.
- Aakash Wani, Writdhama Prasad, Kaushik Khamrui, Shaik Abdul Hussain and Ankit Deep awarded best paper (1st) for the paper 'Evaluation of low toxicity solvents as an alternative for efficient milk fat extraction from ghee residue' presented in 12th Convention of IDEA and national seminar on 'Engineering

interventions in Dairy Processing for self-reliant India', held at College of Dairy Technology, Warud (Pusad) during 15-16 Dec, 2022.

- Manas Sarkar, Writdhama Prasad and Kaushik Khamrui: Best poster (3rd) presentation award for the paper “Active Food Packaging through Electro hydrodynamic processing with natural fibres” presented in National Seminar on ‘Advanced Practices in Dairy Industry and Research’, held at West Bengal University of Animal and Fisheries Sciences, Mohanpur Campus, Nadia, West Bengal on 23rd December 2022.
- Sonam Kumari, Shaik Abdul Hussain, Writdhama Prasad and Yogesh Kheta: Best poster (3rd) presentation award for the poster entitled “Uchh koti ice cream ki banawat karyakarta aur sanvedi visheshtao par stabilizer mishran ka prabhav” presented during Hidi Ullas Mahotsava 2022 at ICAR-National Dairy Research Institute, Karnal on 29 Sep 2022.
- M. Sathiyabarathi received Best Paper Presentation Award under the Session: III Livestock Production and Artificial Intelligence during the National Livestock Conference and 28th Annual Convention of ISAPM held at Vizac between 11 and 13 April 2022.
- Oral presentation award by Hi-Tech Horticultural Society to Talluri, T.R., Kumaresan, A., Sinha, M.K., Paul, N., Ebenezer Samuel King, J.P. and Datta, T.K for the paper “Integrated multi-omics analyses reveals molecules governing sperm metabolism potentially influence bull fertility” published in Scientific Reports during the seminar on 9th October 2022
- First Prize for Best Poster Presentation for the paper “Economic impact of COVID-19 pandemic on dairy supply chain” authored by Das, A, Mushi, S,A, Shivaswamy, G,P, Subash, S, Sivaram, M was received during International Conference of Indian Dairying – Sustainability and Nutritional Security held at Coimbatore on 14th October 2022.
- Naveen Jose has secured First prize in poster presentation for presenting poster on “Dry-Crystallization: A Novel Approach for Development of Convenience Mixes” at International Conference on Advances in Agriculture and Food System Towards Sustainable Development Goals (AAFS2022) held at University of Agricultural Sciences, Bangalore between 22nd-24th August, 2022
- Gajanan P Deshmukh has been awarded Best Poster Award In: 12th convention of Indian Dairy Engineering Association held at Pusad, Maharashtra for the topic “Process optimization of pumpkin powder incorporated lassi” by Sawale P. D., Deshmukh, G. P., Meshram B. D., Patil, P. S., Dhotre, A. V. and Wasnik, P. G.

- Gajanan P Deshmukh was awarded with Best Oral Presentation award (First Prize) at 12th convention of Indian Dairy Engineering Association held at Pusad on December 15-16, 2022 for topic entitled “Design and development of mechanical Unit for dry-crystallisation of PaladaPayasam- Indian Sweet Delicacy”.
- Rupesh Datir was awarded second prize in Best Paper award category for the paper entitled “Preparation and optimization of processed cheese spread in a small volume dispenser unit” under the theme Techno-engineering interventions in Milk production and processing, during the 12th Convention of IDEA and National seminar held at the College of Dairy Technology, Warud (Pusad), Maharashtra during December 15,16-2022.
- Das, A, Mushi, S, A, Shivaswamy, G, P, Subash, S, Sivaram, M was awarded First Prize for Best Poster Presentation for the paper “Economic impact of COVID-19 pandemic on dairy supply chain” during International Conference of Indian Dairying – Sustainability and Nutritional Security held at Coimbatore on 14th October 2022.
- Nutan Chauhan won best oral presentation award for her work titled “Effects of Lactic Acid Bacteria and Propionic Acid Additives on the Fermentation Quality and Aerobic Stability of Sugarcane Tops Silage” in 19th Biennial International Conference on Nutritional Technologies to Augment Livestock, Poultry, Canine, and Fish Production for Global Competitiveness.
- Deepesh Misra won best oral presentation at National conference conducted by NAVNAW in 2022 for abstract titled “Ensiling of paddy straw at specific time intervals with agro industrial byproducts and additives for the preparation of straw age”.
- Deepesh Misra won best oral presentation at ANSICON 2022 in Ruminant Nutrition session.
- Dr. Nitin Tyagi won Second Best Oral Presentation Award in National Conference conducted by National Academy of Veterinary Nutrition and Animal Welfare in September 2022
- Naliyapara H.B, Raman Malik, Dhaigude V. D., Rana Parul, Chander Datt, Kuldeep Dudi, Harneet Kour and Ojha L. won First Prize for poster presentation on “Inclusion of varying levels of feed aromas in paddy straw based TMR and their effects on feed preference and intake of crossbred calves” during “Nutritional Technologies to Augment Livestock, Poultry, Canine and Fish Production for Global Competitiveness” & 19th Biennial International Conference of Animal Nutrition Society of India, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, from Nov. 16-18, 2022.

- Thamizhan, P, Chander Datt, Shambhvi, Veena Mani and Goutam Mondal received First Prize for poster presentation on “Influence of supplementary nickel on mineral balances, plasma mineral profile and blood metabolites in Murrah buffalo calves” (during “Nutritional Technologies to Augment Livestock, Poultry, Canine and Fish Production for Global Competitiveness” & 19th Biennial International Conference Of Animal Nutrition Society of India organized by Department of Animal Nutrition, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, Punjab-141004 from Nov. 16-18, 2022.
- P. Thamizhan, Chander Datt, Shambhavi, A Thakuria, Veena Mani and G. Mondal received Second Prize for poster presentation on “Influence of supplementation of nickel on antioxidant status in Murrah buffalo calves” during “Coordinated nutrition, health and extension approach for sustainable livestock production” organised by College of Veterinary Science and Animal Husbandry, NDVSU, Jabalpur (M.P.) from 21-22 Sept. 2022.
- Richa Singh, Ravali Parvatam, Anusha Kishore received Second Prize in oral presentation (2022). “Effect on environmental temperature in metabolites in milk of Sahiwal cows” during “National Symposium on Contemporary Technology for Animal Genetics Resources management and XIX Annual Convention of Society for Conservation of Domestic Animal Biodiversity (SOCDAB)” September, 21-22 2022 at National Bureau of Animal genetics and Breeding, Karnal.
- Anusha Kishore and Richa Singh received Second best poster award on “Metabolite alterations in whole raw milk of dairy cows with respect to season” by in National Seminar on “Innovations and advances in valorization of functional dairy products” held on 25-26 November 2022 at BHU, Banaras.
- Dr. Dhruba Malakar was awarded the “second-Best Poster Award” in the SOCDAB, NBAGR, Karnal, 2022.
- Swetha Damodharan P.V., Sangita Ganguly, Ashish Kumar Singh, P. N. Raju awarded 3rd Best Poster for paper entitled ‘Development of a base model for probiotic formulations in milk-flaxseed- based composite substrate through fermentation kinetics study’ in National Dialogue on “Innovations in Reshaping the Indian Dairying” held on October 29, 2022 at Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan (DUVASU), Mathura, UP.
- S. Praveen, Ramesh Chandra, Nishant Kumar, Manisha Yadav, Sanchi Kamal, and Ashutosh received “Third Best Poster Presentation Award” for their poster paper entitled “Effect of Boron supplementation on performance of Karan Fries cows during heat stress condition” in Hindi Ullas Mahotsav held at ICAR-National Dairy Research Institute, Karnal on September 29, 2022.

- Diptesh Das, Nikunj Tyagi, Sudarshan Kumar and Jai K. Kaushik won the third Best Poster Award during the 6th Biennial PAi Conference and International Symposium on “Psychobiotics and Gut: Potential in the neurological disorders organized by NDRI during 5-6 Dec 2022.
- Deshmukh, A.K., Talwar, G., Mehta, S., Chandla, N.K. received Second prize for Poster presentation entitled “Effect of ultrasonication on mechanical properties of biodegradable cup” under theme “Emerging Technologies in the Field of Dairy Processing and Quality Control” in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud, Pusad (Maharastra), 15-16 December 2022.
- Mehta, S., Minz, P.S., Deshmukh, A., Rohit, H.K., Chitranayak, Kumari, S. received Third prize for Poster presentation entitled “Energy Benchmarking: A useful tool for energy conservation in dairy processing plant” in “Techno-engineering interventions in milk production and processing” in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud, Pusad (Maharastra), 15-16 December 2022.
- Mehta, S., Minz, P.S., Deshmukh, A., Rohit, H.K., and Chitranayak. Third prize for Poster presentation entitled “Python based simulation tool for prediction of rheological behaviour during bioreactor operation” In: 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud (Pusad), Dist-Yavatmal (Maharastra), 15-16 December 2022.
- Third Best poster award for the poster entitled “High yield paneer formulation using buffalo milk protein coprecipitate by Hemant Gawande, Sumit Arora, A.K.Singh, G.S.Meena and Vivek Sharma presented in the third 12th convention of IDEA and National Seminar on “engineering interventions in dairy processing for self reliant India”, 15-16 Dec 2022 at CDT, Warud (Pusad), Dist- Yavatmal (Maharashtra)
- Teja Allu, Ph.D student (ARGO) was awarded “Young Scientist Award” during the XXXVII Annual Convention of Indian Society for the Study of Animal Reproduction (ISSAR) – 2022
- Mani Arul Prakash, Arumugam Kumaresan, Ebenezer Samuel King John Peter, Pradeep Nag, Ankur Sharma, Manish Kumar Sinha, Elango Kamaraj, Tirtha

Kumar Datta received Prof. Nils Lagerlof Memorial Award by the Indian Society for Study of Animal Reproduction for the research paper “Comparative Transcriptomic Analysis of Spermatozoa from High- and Low-Fertile Crossbred Bulls: Implications for Fertility Prediction” published in Frontiers in Cell and Developmental Biology during ISSAR conference on 16th November 2022

Fellows and Other Individual Awards

- Dr. A. Kumaresan was awarded NAAS Fellowship on 4th June 2022 in New Delhi.
- Dr. A. Kumaresan was awarded with VASVIK Industrial Research Award in the field of Agricultural Science and Technology in Mumbai on 5th May 2022.



- Dr. Dhruva Malakar was awarded the “Rashtriya Shiksha Gaurav Puraskar 2022” by the Centre for Education Growth and Research, New Delhi.
- Dr. Dhruva Malakar was awarded the “Dr. D.S. Balain Memorial Award- 2022” in the SOCDAB, NBAGR, Karnal.
- Dr. Dhruva Malakar was awarded the “Lifetime achievement award-2022” in the Society for Technology, Environment, Science & People, Kozhikode, Kerala, India ICASTESP-2022.
- Dr Sohan Vir Singh was awarded as Fellow of Society for Conservation of Domestic Animal Diversity during XIX Annual Convention and National Symposium on Contemporary Technology for Animal Genetic Resources (AnGR) Management during 22-23 April, 2022 at ICAR-NBAGR, Karnal.
- Dr. Sanjit Maiti was selected as the Associate Fellow of the National Academy of Dairy Science (India)
- Dr. K. Ponnusamy received Distinguished Alumnus Award of Tamil Nadu Agricultural University, Coimbatore.

- Dr. Monika Sharma awarded with Associate Fellowship of National Academy of Dairy Science (India) on October 29, 2022 in the VII Convocation of NADS(I) at DUVASU, Mathura.



- Dr. Sangita Ganguly was awarded Associate Fellowship of National Academy of Dairy Science, India on October 29, 2022.
- Dr. Nishant Kumar received Gaon Gyan Paritoshik Award at 22nd Indian veterinary Congress, XXIX Annual Conference of IAAVR & National Symposium on advancement in Veterinary Medical Research contributing to one health for betterment of Animal Health & their Welfare organized at C.V.Sc Udaipur, RAJUVAS, Bikaner from 8-9 April 2022.
- Dr. R. K. Baithalu received Distinguished Scientist Award on the occasion of International Conference on “Advances in Agricultural, Veterinary and Allied sciences for Improving Livelihood and Environmental Security” from 28-30 Sep., 2022 held at University of Kashmir, J&K.

Recognitions

- Dr. A. K. Puniya nominated as Member, Scientific Panel, Milk and Milk Products, Food Safety and Standards Authority of India, New Delhi
- Dr. A. K. Puniya nominated as Member National Core Group and Convener of National Level Committee; BSMA (Basic Subject Matter Area) for “Restructuring of Master’s & Ph.D. Curriculum & Syllabi” of Dairy Science & Technology; ICAR-Agricultural Education Division, New Delhi
- Dr. Raghu H V., certified as FSSAI food analyst declared by Food Analyst Board constituted by FSSAI for the year 2022 under the provision of Food safety standards Act., 2006.
- Dr. Naresh Kumar was nominated as member secretary codex committee of ICAR-NDRI to attend international codex meeting on food hygiene in virtual

mode in management of biological foodborne outbreaks chaired by Denmark from 28th February -4th March and 9th March 2022.

- Dr. Naresh Kumar contributed in development as FAD-19 Member of IS: 17945:2022 standard on food for special medical purpose intended for infants – Specifications - Standard was approved and released in BIS gazette dated 28th September 2022

2023

Animal Biotechnology

1. Sachinandan De, selected as the ‘National Professor’ by ICAR Agricultural Education Division, Krishi Anusandhan Bhawan-II, New Delhi -110012.
2. Sachinandan De, elected as Fellow of the National Academy of Agricultural Sciences, New Delhi (2023).
3. Sachinandan De, elected as Fellow of the National Academy of Veterinary Sciences, (India) (2023).
4. Sudarshan Kumar, Senior Scientist was selected for Fulbright-Nehru Academic and Professional Excellence Fellowship 2022-23.
5. Naresh Selokar, Manoj Kumar Singh, Ajay Aswal, SS Lathwal, Subhash Chand, Ranjit Verma, Kartikey Patel, and MS Chauhan received appreciation letter from Hon’ble Union Minister of Agriculture and Farmers’ Welfare, Shri. Narendra Singh Tomar for the production of India’s first cloned cow, GANGA.
6. Best oral presentation award to Aseem Tara, master’s student of Dr. Naresh Selokar, ABT Division, received at the XXVII Annual Convention of ISVIB and National Conference of Immunology and Biotechnology on “Leveraging Emerging Biotechnologies for One Health” held at SKUAST of Kashmir, Shuhama, Srinagar during July 27-29, 2023. Authors: Tara A, Singh P, Gautam D, Tripathi G, Malhotra S, De S, Singh MK, Selokar NL.
7. Dhruba Malakar received the “Research Excellence Award” in recognition of his outstanding professional & research achievements in the fields of Animal Biotechnology from the Institute of Researchers, Wayanad, Kerala.
8. Dhruba Malakar chaired a session on Veterinary and Chemical Science at the National Conference on Gau Vigyan (NCGV) –May 2023, IIT Guwahati, Assam.
9. Bharati Pandey received “Young Scientist Award” on account of her overall achievements and accomplishment in the Agriculture & Allied Sector by Dr. Ram Awatar Shiksha Samiti (DRASS) (2023).

10. 1st position in oral presentation for paper entitled “Comparative peptidome analysis of low molecular weight endogenous peptides extracted using different extraction protocol” to Priti Panchal, Reetu Rani, Rohit Kumar, Nikunj Tyagi, Sudarshan Kumar at 8th International Conference on Recent Advances in Agriculture, Animal Husbandry, Sciences & Technology for Sustainable Entrepreneurship (RAAAHSTSE-2023) held during March 26-28, 2023.
11. 3rd position in poster presentation for poster entitled ‘Temporal changes in immune related proteins present in colostrum of Ladakhi Yak’ to Reetu Rani, Priti Panchal, Rohit Kumar, Nikunj Tyagi and Sudarshan Kumar at 8th International Conference on Recent Advances in Agriculture, Animal Husbandry, Sciences & Technology for Sustainable Entrepreneurship (RAAAHSTSE-2023) held during March 26-28, 2023,
12. Anju Nagpal (PhD student) was awarded Young Scientist Award for outstanding contribution in the field of Animal Biotechnology during 2 days International Conference “current advances in Agriculture, Animal Husbandry and Allied sciences” (CAAAAS-2023) during June 10 to 11, 2023.
13. Anju Nagpal (PhD student) received 2nd prize in the extempore competition on the theme of women and IP: accelerating innovation and creativity.

Animal Genetics & Breeding

- Dr. Supriya Chhotaray and Vikas Vohra. 2023. Best Thesis Award (Ph.D.) conferred during 19th Convocation of ICAR-National Dairy Research Institute, Karnal held on 24th April 2023.
- Dr. Supriya Chhotaray. 2023. Best Student Award (Gold). conferred during 19th Convocation of ICAR-National Dairy Research Institute, Karnal held on 24th April 2023.
- Chhotaray S., Vohra V., Uttam V., Santhosh A., Diwakar V., and Gowane G., Best Oral Presentation Award 2023 on “Comparison of transcriptome prediction methods for delineating important genes for milk compositions in Murrah buffaloes” in National Conference of Indian Society for Buffalo Development (ISBD) and Symposium on Modern approaches for sustainable buffalo production in the scenario of climate change during October 27-28, 2023.
- Ameya Santhosh, Vikas Vohra, Supriya Chhotaray, Vishakha Uttam, Vikas Diwakar, and Vaibhav Patel. 1st prize for poster presentation on “Comparative assessment of de novo genome assemblers reveals Celera assembler as the most suitable one for Illumina short reads” in National Symposium on Animal Genetic resource Management on Rural livelihood enhancement and XX Annual

convention of society for conservation of Rural domestic animal biodiversity (2023).

- Vishakha Uttam, Supriya Chhotaray, Ameya Santhosh, Rajesh Kumar, Vikas Diwakar, Vaibhav Patel and Vikas Vohra. Best Oral Presentation on “Exome-wide profiling revealed performance trait related genes in Chilika Buffalo” in VIIIth International conference on Wildlife Bioscience Biotechnological Innovations and Avant-grade Genetic Technologies (WBBIGT) organised by DUVASU Mathura.
- Second Best poster Award: Rani Alex, Gopal R Gowane, Fathima Jasmin A T, Ashutosh and Vikas Vohra. In Insilico genome wide identification and validation of a functional miRSNP associated with heat stress response in Karan Fries and Tharparkar cattle in XVII National conference on “Advances in Genetics and Genomics for Sustainable Livestock Transformation” at ICAR-NBAGR, Karnal (16-17th November, 2023).
- Second best poster Award: Gopal R Gowane, Rani Alex, Anupama Mukherjee, Kasif Khan, Vikas Vohra Development of Genomic Selection Models to address the loose structured dairy cattle breeding in Indian conditions in XVII National conference on “Advances in Genetics and Genomics for Sustainable Livestock Transformation” at ICAR-NBAGR, Karnal (16-17th November, 2023).

Recognitions

- Dr. Vikas Vohra, nominated as Member, in the Sectional Committee on ‘Biodiversity’, SSD 20 of Bureau of Indian Standards (BIS). New Delhi.
- Dr. Vikas Vohra, nominated as Expert Reviewer for Biotechnology Ignition Grant (BIG) Scheme of BIRAC, Department of Biotechnology, Ministry of Science and Technology.
- Dr. Vikas Vohra, nominated as Member, Research Council, Bihar Animal Science University (BASU), Patna, Bihar.
- Dr. Vikas Vohra, nominated as Member, Committee for selection of Murrah bulls under Network project on Buffalo Improvement by ICAR-CIRB, Hisar.
- Dr. Vikas Vohra, nominated Expert Member for Institute Research Committee of ICAR-Central Institute for Research on Buffalo, Hisar.
- Dr. Vikas Vohra, nominated as Advisor for selection of ARS (AGB) at Agricultural Scientist Recruitment Board, New Delhi

Participation in Workshop/ Title of Workshops/ Seminar/ Conferences etc. (Name & Designation / Title of workshops, conferences/ symposium/ seminars etc. in 2023)

- Dr. Vikas Vohra, attended National Conference of Indian Society for Buffalo Development (ISBD) and Symposium on Modern approaches for Sustainable buffalo production in the scenario of climate change at Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan (DUVASU), Mathura (UP) on Oct 27- 28th2023.
- Dr. Sabyasachi Mukherjee, participated in the training programme “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding” in the AGB Division, ICAR-NDRI, Karnal during August 21-September 01, 2023
- Dr. Sabyasachi Mukherjee, participated online in the training programme entitled Big Data Analysis in the Agriculture, 9-10 March 2023
- Participated online in the workshop entitled “Hybrid Livestock Epigenomics” showcasing current research in livestock and selected human studies, 31 March 2023.
- National Symposium entitled “Recent Biotechnological Advances in Health and Management of Livestock, Poultry and Companion Animals” organized at College of Veterinary Sciences and Animal Husbandry, Mhow (M.P.) from 5th -7th Oct 2023.
- Dr. Anupama Mukherjee and Dr. Rani Alex attended National Conference on “Advances in Genetics and Genomics for Sustainable Livestock Transformation” and XVII Annual Convention of Indian Society of Animal Genetics & Breeding held at ICAR-NBAGR from 16th and 17th Nov 2023

Workshops/ Seminars/ Summer Institutes/ Farmers’ Day etc. organized at the Institute during 2023

- Participated in the Scientists-Farmers interaction meeting and input distribution programme in the field units of Buffalo Network Project under SC-SP programme

Training and Capacity Building

- **Training Organized:** AGB Department organized the International Workshop on the topic Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding from 21stAugust to 1stSeptember, 2023 at ICAR-National Dairy Research Institute, Karnal under IDP-NAHEP, ICAR-NDRI, Karnal.

Training Manual

- Training manual on “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding.” Edited by Alex, R., Gondro, C and Vohra,

V. 2023. Published by IDP-NAHEP, ICAR-National Dairy Research Institute, Karnal, 132001 (Haryana) India. pp 1-289.

Foreign Scientist Visited AGB, NDRI, under IDP-NAHEP

- Cedric Gondro, Professor of Computational and Quantitative Genomics Department of Animal Science College of Agriculture and Natural Resources Michigan State University 474 South Shaw Lane 1205G Anthony Hall East Lansing, MI 48824 (1) 517 432 1387 gondroce@msu.edu Visited ICAR-NDRI under IDP-NAHEP at AGB Division from 21st August to 02nd September 2023.

Patent Granted:

- Dr. Rani Alex, obtained Patent No. 474562 -Development of an in-house built lamp assay for rapid detection of cow components adulterated in buffalo milk/meat

Animal Physiology

1. Second best award to the Hindi article entitled “ Pashudhan Ka Itihash Me Mahatav Tatha Adhunik Yug Me Khadya Suraksha Me Mehataav” published in Dugdh Ganga (Rajbhasha Patrika 2021-22). (Auhor: Singh, S.V.)
2. First Best Paper award to the article entitled “Role of meteorological forecast in improving livestock management practices and welfare” published in Indian Dairyman, awarded during 49th Dairy Industry Conference by held at Helipad Exhibition Centre, Gandhinagar, Gujarat from 16-17-18 March 2023 (Authors: Singh, S.V., and S.C. Bhan).
3. Fellow of Society for Conservation of Domestic Animal Diversity (SOCDAB) awarded during XIX Annual Convention and National Symposium on Contemporary Technology for Animal Genetic Resources (AnGR) Management during 22-23 April, 2022 at ICAR-NBAGR, Karnal.
4. Young Scientist Award to Ph.D. Student Dr. Gaurav Kumar during International Conference, on Multidisciplinary Approaches in Eng. Science, Agriculture and Social Studies (MAESASS-2023) held at B.R. Ambedkar University, Agra from June 3-4, 2023
5. Second Best Poster presentation Award (2023) to Gaurav Kumar, Singh, S.V., Rajkumar, Nikita Bhalakiya and Apeksha Ukey for the Research Paper entitled “Effect of Supplementation of Cumin and Molasses on Physiological and Antioxidant Levels in Lactating Murrah Buffaloes during Summer Season Under Field Conditions” National conference of Indian Society for Buffalo Development (ISBD) & Symposium on modern approaches for sustainable buffalo production in the scenario of climate change held at DUVASU, Mathura from October 27-28, 2023.

Animal Nutrition

- Dr. Chander Datt conferred with Fellow of Animal Nutrition Association, ICAR Bareilly, Izatnagar, UP, India during “ XII Biennial Conference of Animal Nutrition Association on New horizons of animal nutrition research: Combating the challenges of productivity, health and welfare of animals” held at DUVASU, Mathura, Uttar Pradesh, India from Feb. 16-18, 2023.
- Dr. Chander Datt received appreciations Eminent Speaker on the Occasion of World Milk Day at India Dairy Summit held at Radisson Hotel, Dwarka, New Delhi, India on (June 1, 2023).
- Dr Sachin Kumar acted as an Expert to the Food and Agriculture Organization (FAO) of the United Nations expert meeting on “Alternative and advanced feed practices to promote the responsible use of antimicrobials” at FAO Headquarters, Rome, Italy during 11-14 July, 2023)
- Dr. Sachin Kumar received “International Travel Grant” from Science and Engineering Research Board, Department of Science and Technology, Government of India, New Delhi, 2023.
- Dr Sachin Kumar received Dr. U. B. Singh Memorial Young Scientist Award at DUVASU, Mathura on February 16, 2023.
- Dr Sachin Kumar received Dr. S. K. Sirohi Memorial Outstanding Young Researcher Award at ICAR-NDRI, Karnal on April 24, 2023.

Dr. Sachin Kumar as reviewer for

- ‘Heliyon’ Weight gain and nutrient utilization efficiency of Moringastenopetala leaves with and without cafeteria leftover in tropical goats fed conventional concentrate and hay-based diets
- Scientific Reports entitled “Impact of cow, buffalo, goat or camel milk consumption on immune response in male and female Sprague dawley rats post weaning time”
- Reviewer of manuscript entitled ‘Flavonoids from citrus peel display synergistic effects on inhibiting rumen methanogenesis and ammoniogenesis: A microbiome perspective’ for Environmental Science and Pollution Research.

Best oral/ poster presentation Awards

- Rashika Srivastava, Bilal Chamadia, Deepesh B. Mishra, Vinay V V, Komal, Chauhan, Sachin Kumar and Nitin Tyagi, for paper titled “Characterisation of indigenous thermo-tolerant lactic acid bacteria isolated from different silages for potential application as silage inoculants” presented during XII Biennial Conference of Animal Nutrition Association on the theme ‘New Horizons Of Animal Nutrition Research: Combating The Challenges Of Productivity, Health And Welfare Of Animals’ held at DUVASU, Mathura on 16-18th February, 2023

- Vishal Goher, Rashika Srivastav, Deepesh Bharat Mishra, Nitin Tyagi. for “Value addition of paddy straw by ensilage with suitable agro-industrial byproducts and additives” presented during XII Biennial Conference of Animal Nutrition Association on the theme ‘New Horizons Of Animal Nutrition Research: Combating The Challenges Of Productivity, Health And Welfare Of Animals’ held at DUVASU, Mathura on 16-18th February, 2023
- Rashika Srivastava, Bilal Chamadia, Deepesh Bharat Mishra, Sachin Kumar, Goutam Mondal, Ashutosh and Nitin Tyagi, for “Fasal Avshesh Ke Supachan Mein Bharatiya Jalvayu Ke Anukul Naye Swadeshi Jeevanuon Ki Upyogita” in Hindi Shodhpatra Poster Pradarshan, 2023, conducted by ICAR-National Dairy Research Institute, Karnal on 22nd September 2023.
- Deepesh Bharat Mishra, Rashika Srivastava, Bilal Chamadia and Nitin Tyagi. Consolation award for poster presentation for paper titled “Jeevan Chakra Mulyankan Paddhati Ko Apnate Hue Haryana Ke Dairy Farmon Ke Utpaadan Ke Aadhar Par Greenhouse Gas Ke Utsarjan Ka Aankalan” in Hindi Shodhpatra Poster Pradarshan, 2023, conducted by ICAR-National Dairy Research Institute, Karnal on 22nd September 2023.

Animal Biochemistry

- Dr. Suman Kapila received **Women Scientist Award** in 2nd International Conference on Prospects and Challenges of environment and biological sciences in food production system for livelihood security of farmers (ICFPLS-2023) during 18-20 September, 2023 at ICAR-CIARI, Port Blair, A & N Islands.
- Diksha Sharma, Abhijit Gajanan Lande, Deepika Sameni, Deep Narayan Yadav, Rajeev Kapila and Suman Kapila got best oral presentation award for the paper entitled, ‘Microbial extraction method for enhancing lipolysis capacity of plant proteins from agricultural waste(oil-seed cakes): A cutting-edge strategy for managing obesity’ in 2nd International Conference on Prospects and Challenges of environment and biological sciences in food production system for livelihood security of farmers (ICFPLS-2023) during 18-20 September, 2023 at ICAR-CIARI, Port Blair, A & N Islands.
- Praveen Kumar Tiwari, Shaik Abdul Hussain, Suman Kapila and K. Srujan Kumar received second Prize for the poster entitled ‘Encapsulation of protein hydrolysates from Indian indigenous cow milk in double emulsion’ under the theme significance of the Dairy Sector in Health and Nutritional Security during the poster session on September 29, 2023 in the 10th National Seminar organized by NDRI Graduate Association & ICAR-NDRI held at ICAR-NDRI, Karnal.
- Dr. Rajani Kumar Paul and R. Singh received **Second Prize in Poster presentation** entitled “**Synergistic effect of carboxymethyl cellulose and glycerol during cryopreservation of ram semen in** Proceedings of 7th Annual Convention of SVBBI

and international symposium on “Multiomics to One Health: Challenges and Way Forward in Biomedical Research” held at IVRI, Bareilly on 14- 15 Dec., 2023.

- **Dr. Sadeesh E.M** is honored with a nomination to the SMRM-India Executive Committee, serving as a Member (January 2024 - December 2027), according to the intimation dated 19.12.2023.

Dairy Microbiology

- Dr. Chand Ram was conferred upon the Fellowship of “Society for Advancement of Biological Sciences, Bangalore (Karnataka) on 24th August, 2023 at inaugural day of conference on Eco-restoration for natural resources Management (ICER-NaRN-2023) organized by S.T. Hindu College, Nagercoil, Kanniyakumari (TN) for his meritorious contribution to teaching, Research and extension activities.
- Dr. Raghu H V., Senior Scientist, Dairy Microbiology Division has received best Technology award for the technology entitled **“PANI-PEC paper strip sensor for detection of aerobic plate count in milk”** during ICAR 95th foundation day and Technology day celebrations held 16-18th July 2023 at Bharat Ratna C. Subramaniam Auditorium, NASC Complex, Pusa, New Delhi.



- **Dr. Raghu H. V.**, Senior Scientist, Dairy Microbiology Division was given ‘Dr. S.K. Sirohi Memorial Outstanding Young Researcher Award 2022’, at the 19th Convocation of the ICAR-NDRI on April 24, 2023, at ICAR-NDRI, Karnal.



1. **Dr. Reenu Kashyap** PhD (Dairy Microbiology) was awarded best thesis award for outstanding research work on the topic entitled **“Buffalo colostrum proteins and peptides derived formulation for diarrhoea management in weaning mice” under the guidance of Dr. Shilpa Vij.,** Principal Scientist and HOD (Dairy Microbiology) for the academic session 2021-22 at the **19th Convocation held on 24th April 2023** at ICAR-NDRI, Karnal.
2. **Mr. Akash, M.Tech (Dairy Microbiology)** Scholar awarded with best thesis award for outstanding research work on the topic entitled **“Isolation and characterization of antibiotic resistant bacteria from organized dairy production system” under the guidance of Dr. Rashmi H M.,** Senior Scientist (Dairy Microbiology) for the academic session 2021-22 at the **19th Convocation held on 24th April 2023** at ICAR-NDRI, Karnal.
3. Saha S., Mariya D. A. S., Ajith A., Tarak J., Kumar N., Rashmi H M. and **Raghu H. V. (2023). Colorimetric paper strip assay for the detection of aerobic plate count in milk. Awarded best poster (first prize).** Food safety and Quality Assurance innovations. During 10th National Seminar on Indian Dairy & Food Industry in Amrit Kaal: Opportunities and Challenges from September 29-30, 2023, at ICAR-NDRI, Karnal.
4. Bajaj, R., Kumari, M., Singh, R., Puniya, A. K. and Behare, P. V. (2023) **Best poster award (First Prize),** Elevating Vitamin B12 in Fermented Milk with Lactic Acid Bacteria Bio-Fortification: Nutritional Innovation. National Seminar on Indian Dairy & Food Industry in Amrit Kaal: Opportunities and Challenges from September 29-30, 2023, at ICAR-NDRI, Karnal.
5. Priya Kalyan, Naresh Kumar, **Raghu H. V,** Pushpalatha. K. (2023). **Strip based Biosensor for Detection of Subclinical and Clinical Mastitis in Milk. Awarded best poster (Second prize).** Food safety and Quality Assurance innovations. During 10th National Seminar on Indian Dairy & Food Industry in Amrit Kaal: Opportunities and Challenges from September 29-30, 2023, at ICAR-NDRI, Karnal.
6. Pulli Venkateswarlu, Jitesh Tarak, Mariya Divanshi, Shreya Saha and **Raghu H. V. (2023). Isolation and Characterization of bacteriophages to control MDR Pathogen in Dairy and food products. Awarded best poster (Third prize).** Food safety and Quality Assurance innovations. During 10th National Seminar on Indian Dairy & Food Industry in Amrit Kaal: Opportunities and Challenges from September 29-30, 2023, at ICAR-NDRI, Karnal.
7. Vaishali Dasriya, Rudrakshi Bajaj, Pradip V. Behare and Dr. Anil Kumar Puniya; 2023. Won the **Second Best Poster Presentation Award during the 49th Dairy Industry Conference** held at Gandhinagar, Gujarat from 16-18 March 2023.



8. Vaishali Dasriya, Ph.D. scholar of Anil Kumar Puniya, DM division won **Third Position as Young Investigator in the 13th India Probiotic Symposium**, “Science Based Evidence on Benefits of Probiotics for Human Health”, organized by Gut Microbiota and Probiotic Science Foundation on 25-26th March 2023.
9. Basavaprabhu, H. N. and Behare, P. V. DM Division won **Third Position in Poster Presentation** on the topic “Probiogenomic-based safety assessment of an indigenous probiotic *Limosilactobacillus fermentum* NCDC 400 and its toxicity evaluation in an immuno-compromised mice model” in International SASNET conference 21-22, Nov. 2023 held at Shilong Meghalaya.
10. Dr. Raghu H V., Received certificate appreciation by Synnex group for his contribution as an eminent speaker during 7th Indian Food Safety and Nutrition Summit held on 13-14th Dec 2023 at Hotel Radisson Blu, Mahipalpur, Delhi organized by Synnex Group.
11. Dipti A. Waghmode, Mohammad Rizwan, Shilpa Vij 2023 Fifth prize winner in the Poster Presentation on ‘Process optimization for preparation of finger-millet-based composite fermented drink’ held on 21st-23rd September 2023 in the ICMANES-2023.
12. दीप्ती अनिल वाघमोडे, मोहम्मद रिज़वान 2023 हिंदी राष्ट्रभाषा पखवाड़ा प्रतियोगिता 13.10.2023 में, रागी आधारित मिश्रीत किन्चित पेय की तयारी के लिए प्राक्रिया अनुकुलन, प्रोत्साहन पुरस्कार विजेता।



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- ## Dairy Chemistry

- ICAR-NDRI

Order **File No.S&S/SSC-SP&SC/2022** dated 24th February, 2023 (Sumit Arora, Principal Scientist)

Dairy Technology

- Dr. Yogesh Khetra Received Young Scientist Award by Swedish South Asian Network on Fermented Foods (SASNET-FF) during 21-23 November 2023
- Dr. Yogesh Khetra Received Best Oral Presentation Award at Eleventh International Conference on Fermented Foods, Health Status and Social Well-being organized by North-Eastern Hill University (NEHU) and Swedish South Asian Network on Fermented Foods (SASNET-FF) during 21-23 November 2023
- Dr. Writdhama Prasad (Scientist, DT) received best oral presentation award for the paper ‘Physico-chemical characterization and energy requirement for clarified butter fat (ghee) preparation’ presented in 6th AMIFOST “International Conference on Multidisciplinary Approach for Healthy and Sustainable Foods” held at Amity Institutes of Food Technology, Amity University, Uttar Pradesh, Noida during 13-14th April 2023.
- Mr. Shubham Gote, Dr. Kaushik Khamrui and Dr. Writdhama Prasad received best (second) paper award for the paper ‘Physicochemical, antioxidant and in-vitro release behaviour of burfi added with curcumin as a source of functional ingredient’ published in Indian Journal of Dairy Science in the year 2020 during 49th Dairy Industry Conference (2023) held during 16-18 March, 2023 at Gandhinagar, Gujarat.
- Dr. P. Narender Raju, Senior Scientist, Dairy Technology Division bagged Best Poster Award at the 16th Agricultural Science Congress held during 10-13 October, 2023 at Kochi under the theme “Livestock Sector Transformation for Food Security” for the research poster “*Microbial Smart Time-Temperature Indicator (TTI) for determining Thermal Abuse of Packaged Paneer*”.



- Poornima, Singh AK, Sharma H, Raju PN, Arora S . Received Best Poster Award (First Place) for झल्ली पुरस्कार मध्यस्थता से बकरी के दूध आधारित चेडर चीज की गुणवत्ता में सुधार at Hindi oral Poster presentation held on 22nd September 2023 at ICAR-NDRI, Karnal during Rajbhasha Hindi Pakhwada-2023.
- Poornima, Singh AK, Sharma H, Raju PN and Arora S received Best Poster Award (First Place) for the research poster entitled “Membrane Processing Mediated Quality Improvement of Goat Milk based Cheddar type Cheese” at the 2 Days International Conference on “Current Advances in Agriculture, Animal Husbandry and Allied Sciences (CAAAAS-2023)” jointly organized by Agricultural Research Council of Nigeria, Mabushi, Abuja, Nigeria and National Agriculture Development Cooperative Ltd. Baramulla, J&K at Matrika Auditorium, Shri Mata Vaishno Devi University, Katra, India during July 10 to 11, 2023.
- Saipriya K, Lakshmipriya P R, Heena Sharma, A K Singh, S A Hussain and Richa Singh. Best Oral Presentation for “Development and characterization of goat milk based high protein dessert added with blueberry crush” during 2 Days International Conference on “Current Advances in Agriculture, Animal Husbandry and Allied Sciences (CAAAAS-2023)” held at Shri Mata Vaishno Devi University, Katra from July 10 to 11, 2023

Dairy Engineering

Best Paper Presentation Awards

1. Deep A., Barnwal P, Bhagat PN. 3rd Best Paper Presentation award for Paper presentation on ‘Studies on hold up volume of three stage scraped surface heat exchanger’ System’ under the theme “Robotics, Artificial intelligence, and IoT applications in dairying” during the 13th IDEA convention and International Conference at College of Dairy Science and Technology, GADVASU, Ludhiana, during 13-14th October, 2023
2. Priyanka, Narsaiah, K. 3rd Best Paper Presentation award for Paper presentation on ‘Heat Transfer Modelling of Gulabjamun Frying Using Computational Food Dynamics’ System’ under the theme “Engineering for sustainable Dairying” during the 13th IDEA convention and International Conference at College of Dairy Science and Technology, GADVASU, Ludhiana, during 13-14th October, 2023
3. Hitesh K. Rohit, Shubham Thakare, Chitranayak, PS Minz, Mukul Sain, Arijit Ray. 2nd Best Paper Presentation award for Paper presentation on “Milk cooling technology: new approaches” in International Conference on Emerging Technologies in Food Processing-III (ETFP-2023) at Ghani Khan Choudhury

Institute of Engineering and Technology, Malda, West Bengal during 26-27 September, 2023.

Best Poster Awards

1. Priyanka, Barnwal, P., Parameswari, P.L. Deep, A., Vij, S., Writdhama, P. 3rd Best poster Presentation award for poster presentation on 'Heating Pattern Studies on a Thermic Fluid-based Prototype System' under the theme "Engineering for sustainable Dairying" during the 13th IDEA convention and International Conference at College of Dairy Science and Technology, GADVASU, Ludhiana, during 13-14th October, 2023.
2. Priyanka, Parmeshwari, P. L., Barnwal, P. 2nd Best poster Presentation award for poster presentation on 'भोजन बनाने/तलने के प्रयोजनों के लिए ऊष्मा-माध्यम के रूप में थर्मिनोल-55 का मूल्यांकन' in "Hindi Shodh-Patra Pradarshan Pratiyogita (2023) ICAR-NDRI, Karnal on 22 September 2023.
3. Priyanka, P.L. Parameswari and P. Barnwal. 3rd Best poster Presentation award for poster presentation on "Evaluation of therminol-55 as heating medium for cooking/frying purposes" in 10th National Seminar of NGA (NDRI Graduates Association) and ICAR-NDRI, Karnal during 29-30 September, 2023.
4. Chitranayak, AK Singh, Prashant Minz, Khushbu Kumari, Jitender Dabas, Priyanka, Ankit Deep and Hima John. 1st Best poster Presentation award for poster presentation on "Dairy Prasanskaran me Swachalanva Endo-exo Taknik dwara Dahi banana ki Vidhi" in "Hindi Shodh-Patra Pradarshan Pratiyogita (2023) ICAR-NDRI, Karnal on 22 September 2023.
5. Hitesh K. Rohit, Chitranayak, PS Minz, JK Dabas, Sumit Mehta, Ankit K. Deshmukh. 2nd Best poster Presentation award for poster presentation on "Development of a hybrid phase change material based milk cooling system" in 10th National Seminar of NGA (NDRI Graduates Association) and ICAR-NDRI, Karnal during 29-30 September, 2023.

Honours:

6. Er. Ankit Deep, scientist (Sr. Scale) was invited to record two lectures at ICAR-NAARM, Hyderabad for the development of MOOC on Technology of Traditional Indian Dairy Products on 22nd December 2023.
7. Best PhD Thesis Award: Dr. Sharanabasava, PhD Scholar, (Major Adviror, Dr. Chitranayak), Dairy Engineering Division, awarded Best PhD Thesis Award in International Conference at Malla Reddy University, Hyderabad during 21-23 June, 2023.

Dairy Economics

SN	Award Description	Awarding Body	Year
	Dr. Udit Chaudhary, Sr. Scientist DES&M Division, was awarded Best Oral Presentation Award for presentation of paper “Benefits of Membership of Dairy Farmer Collectives in Gujarat” at the International Conference on Identification and Extension of Science-tech-Research for Sustainable Development (ICIESSD-2023) organized at Shobhit Institute of Engineering & Technology (SIET), Shobhit Deemed University Meerut.	New Age Mobilization Society, New Delhi & SIET Meerut	Feb. 21-22, 2023
	Ms. Haritha K., M.Sc. Scholar under the supervision of Dr. Gunjan Bhandari, Scientist, DES&M Division was awarded “Best Thesis Award” in “Social Science and Management”.	19 th Convocation of ICAR-NDRI Deemed University, Karnal.	Apr. 24, 2023
	Dr Subhasis Mandal, Head, DES&M appointed in Editorial Board as Subject Editor of Agricultural Economics in Pantnagar Journal of Agricultural research, Pantnagar	Pantnagar Journal of Research, GBPUA&T, Pantnagar	Dec. 6, 2023

Dairy Extension

8. Dr. Sanjit Maiti received “Young Scientist Award” from the Indian Society of Extension Education, New Delhi in the ISEE National Seminar on ‘Evolving Extension Science towards Secondary Agriculture for Sustainable Development’ held at the University of Agricultural Sciences, Bangalore, India during June 22-24 June, 2023.
9. Amitava Panja, Siddhesh Zade, Sanchita Garai and Sanjit Maiti, received ‘Best Poster Presentation Award’ for their research paper entitled “Change in Cropping System: An Adaptation Strategy for Cyclone affected Coastal West Bengal” in the 5th International Conference on ‘Climate Change and its Impacts’ (CCI 2023) organised by Agricultural & Environmental Technology Development Society (AETDS) in Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST-K), Srinagar, Jammu and Kashmir, India during June 9-11 June, 2023
10. Apoorva Veldandi, Siddhesh Zade, Sanchita Garai and Sanjit Maiti, received ‘Best Poster Presentation Award’ for their research paper “Farm Women and Climate Change: Closing Gender Gap for Strengthening Climate Resilience and Adaptation” in the 5th International Conference on ‘Climate Change and its Impacts’ (CCI 2023) organised by Agricultural & Environmental Technology Development Society (AETDS) in Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST-K), Srinagar, Jammu and Kashmir, India during June 9-11 June, 2023

11. Amitava Panja, Sanchita Garai, Sanjit Maiti, B. S. Meena, Mukesh Bhakat and Gopal Sankhala received 'Best Oral Presentation Award' for their paper entitled "Can Fuzzy Cognitive Mapping add a New Dimension to Methodology for Agricultural Extension Research?" in the ISEE National Seminar on 'Evolving Extension Science towards Secondary Agriculture for Sustainable Development' organised by Indian Society of Extension Education, New Delhi at the University of Agricultural Sciences, Bangalore, India during June 22-24 2023
12. Sheetal Berry, Arijit Ray, K.S. Kadian and Sanjit Maiti for securing 1st position in Technical Session 2nd Millets and other indigenous crops for environment and nutritional security Session in the International Conference 'Technology Driven Agriculture To Face The Imminent Future Challenges' (ICTA 2023) held from 19-21 December, 2023 at Galgotias University, Greater Noida.
13. Dr. Gopal Sankhala, Seema Sheoran and Sandeep Kumar are jointly awarded 1st Prize for Hindi Book entitled "रबी फसलो में बीज उत्पादन तकनीकी" in Scientist and Technology Hindi Written Scheme under 'Hindi Book' Competition.
14. Dr. B.S.Meena, awarded 'Certificate of Appreciation' by Society of Extension Education, Agra, Bharat for esteemed contribution as chairman of technical session in organising First International Extension Education Congress-2023 (December 18-20, 2023) at Rajasthan Agricultural Research Institute, Durgapura Jaipur.

SRS, Bengaluru

SOCIETY AWARDS

- Dr. A. Kumaresan was awarded with Prof. Nils Lagerlof Memorial Award (2023) by the Indian Society for Study of Animal Reproduction in recognition of his meritorious contribution to the research in Animal Reproduction on 06.12.2023 during the 38th ISSAR Annual Convention held at College of Veterinary Science, Mannuthy, Kerala.
- Dr. Arindam Dhali was awarded with G.B.Singh Memorial Award (2023) by the Indian Society for Study of Animal Reproduction in recognition of his contribution to the research in Animal Reproduction on 06.12.2023 during the 38th ISSAR Annual Convention held at College of Veterinary Science, Mannuthy, Kerala.
- S. Subash has received 'Best Extension Scientist Award' during the International Conference on 'Global Insights on Research and Development in Agriculture, Horticulture and Allied Sciences' held during 05th-07th October, 2023 jointly organized by G .H. Rasoni University and Just Agriculture Education Group.

Best paper and best poster presentation awards to faculties and their students

1. Dr. Ananta V. Dhotre received the Best Thesis Award by Indian Dairy Engineers Association organized by College of Dairy Science and Technology, Guru Angad Dev Veterinary and Animal Science University, Ludhiana 13-14th October 2023 under the guidance of F. Magdaline Eljeeva Emerald.
2. Er. P. Aditya Sukumar was selected for the SERB-Overseas Visiting Doctoral Fellowship program in University of Alberta, Canada (Guide: F. Magdaline Eljeeva Emerald)
3. Best Paper Award: Research paper entitled “Comparative evaluation between atmospheric and sub-baric processing of Gulabjamun” by Sharanabasava, Menon Rekha R, Praveen Kumar YS, M Manjunatha, G Mahesh Kumar and BS Nath, published in the Indian Journal of Dairy Science has been adjudged as the First Best Research Article in the category of “Dairy Processing” for the year 2019 during the 49th Dairy Industry Conference (DIC) at Gandhinagar (Gujarat) on 18th March, 2023.
4. Best Research Paper award for Vishal Jadhao, Sathish Kumar M H*, and Jayaraj Rao (2021). Enhancement of barrier properties of coconut shell- An eco friendly packaging. Indian Journal of Dairy and Bioscience, vol. 31, for the year 2020 was conferred in the annual general body meeting on 11-4-2023 by Alumni Association of ICAR-NDRI.
5. Dr Sathish Kumar, M. H. was conferred with “Best Oral Presentation Award (Second)” by Council for Promotion, Research and Trade in Traditional Foods, New Delhi in the Global Traditional Foods Summit, 2023, on 29 April 2023.
6. Second Best Research Paper award for Vishal S Pandule, Monika Sharma*, Devaraja, HC, Menon Rekha Ravindra and B Surendra Nath (2021). Temporal changes in the physicochemical, textural and sensory attributes of butter fortified with vegetarian source of omega-3 fatty acid. Indian Journal of Dairy Science, For the year 2021 was conferred in 49th Dairy Industry Conference (DIC) on 18-3-2023 by Indian Dairy Association.
7. Dr Monika Sharma was conferred with “Best Researcher Award” by INSO in the International Research Awards on Science, Technology, and Management on 31 Jan 2023.
8. Pragati International Scientific Research Foundation (PISRF) -Award 2023 for “Best Book” was conferred to Handbook of Research on Food Processing and Preservation Technologies: 5 Volume set under Book series: Innovations in Agricultural and Biological Engineering. Megh Goyal, Preeti Birwal and Monika Sharma (Eds.). Apple Academic Press (with exclusive worldwide distribution by

- CRC press), USA. Hard ISBN: 9781774630365, E-Book ISBN: 9781003184812, Pages: 1698pp.
9. Dr Priyanka Singh Rao was conferred with “Best Oral Presentation Award by Council for Promotion, Research and Trade in Traditional Foods, New Delhi in the Global Traditional Foods Summit, 2023, on 29 April 2023.
 10. Basavaprabhu H N and Pradip Behare received Young Investigator Award in 13th India Probiotic Symposium-2023 “Science based evidence on the benefits of probiotics for human health” organized by Gut Microbiota and Probiotic Science Foundation (India), and won a cash award of Rs. 30,000.
 11. Basavaprabhu H N received Best Poster award in International Conference on Clinical and Applied Microbiology Organized by BioLEAGUES
 12. Basavaprabhu H N and Pradip V. Behare received Best Poster award during 11th International Conference on Fermented Foods, Health Status, and Social Well being organized by SASNET-FF at North-Eastern Hill University, Meghalaya during November 21-22, 2023
 13. Young Scientist award to Dr. Nilendu Paul (Major Advisor – Dr. A. Kumaresan) for best research work on “Combo nano purification of semen: a novel approach for superior sperm selection” on 06.12.2023 during the 38th ISSAR Annual Convention held at College of Veterinary Science, Mannuthy, Kerala.
 14. Awarded Second best prize for the research work “Identification of Key SNPs within Quantitative Trait Loci for Primary Fertility Traits in a Crossbred Bull through Sequencing” in the 15th Kerala Veterinary Science Congress and International Seminar on “Exploring the boundless Horizons of Veterinary Profession- Unleashing a New Era Worldwide” on 19.11.2023
 15. Shivaswamy GP and Muniandy Sivaram received best paper presentation award for the research paper ‘Dairy Development in India: Insights from Household and District level analysis’ presented in National Seminar on ‘Indian Agriculture @ 75 – Achievements, Challenges, and Way Forward’ to be held at Pondicherry University during July 20-21, 2023.
 16. Best poster award to Indresh, N. R., Sreeja, S. J., and Srinivas, B. 2023. Impact of the synthetic and herbal sources of RPC and RPM on substrate fermentation kinetics. XII Animal Nutrition Conference on “New Horizons of Animal Nutrition Research: Combating the challenges of the productivity, health and welfare of animals”. February 16-18, 2023. College of Veterinary Science and Animal Husbandry, DUVASU, Mathura & Animal Nutrition Association, India. ()
 17. Best presentation award to Indresh, N. R., Sreeja, S. J., and Srinivas, B. 2023. The resilience of rumen-protected synthetic and herbal sources of choline from

- anaerobic fermentation. XII Animal Nutrition Conference on “New Horizons of Animal Nutrition Research: Combating the challenges of the productivity, health and welfare of animals”. February 16-18, 2023. College of Veterinary Science and Animal Husbandry, DUVASU, Mathura & Animal Nutrition Association, India.
18. SS Guraya Young Scientist Award to Dr. Teja Allu, Ph.D. under the guidance of Dr. S. Jeyakumar was awarded for part of his PhD dissertation work topic entitled “Infrared thermal imaging of vulval skin surface temperature as an indicator of the onset of calving process in water buffaloes (*Bubalus bubalis*)”, A. Teja, S. Jeyakumar, K. Anand Rao, A. Kumaresan, K.P. Ramesha, K. Narayanan, M. Sivaram, C.G. Varma, Vedamurthy, GV, Lavanya, M., M.A. Kataktalware, D.N. Das, Kaushik Majumder and Niribili Rajabangshi during the International Conference on Reproductive Health with Emphasis on Innovations in Reproductive Sciences and Technologies: Hope, and Risk and Responsibilities and XXXIII Annual Meeting of Indian Society for the Study of Reproduction and Fertility (ISSRF) – 24 to 26th February 2023, held at Ravenshaw University, Cuttack, Odisha.
 19. Best Young Scientist Award-2023 to Dr M. Lavanya, Ph.D., scholar under the guidance of Dr. S. Jeyakumar for the research paper entitled “Electrohydrodynamic encapsulation of progesterone pullulan nanofibers for controlled breeding in cattle: Fabrication, characterization, and in vitro release behaviour” co-authored by Jeyakumar. S, Vedamurthy. G. V, Pushpadhas. H. A, Ramesha. K. P, Kumaresan. A, Manimaran. A and Magdaline. F. E in the scientific session Reproductive Biotechnology (Oral) of 38th Annual convention and International Symposium on “Frontiers in Theriogenology Research and Practice” by Indian Society for Study of Animal Reproduction.
 20. Best Young Scientist Award to Dr. Sakhare Abhijeet M.V.Sc., scholar under the guidance of Dr. S. Jeyakumar for the research paper entitled “Letrozole: A non-steroidal alternative for estrus synchronization in cattle” co-authored by Lavanya. M, Jeyakumar. S, Harshit. S in the scientific session: Bovine Gynaecology and Obstetrics (Oral) of 38th Annual convention and International Symposium on “Frontiers in Theriogenology Research and Practice” by Indian Society for Study of Animal Reproduction.
 21. Certificate of Merit/Best oral paper presentation award to Dr. Allu Teja, Ph.D. scholar under the guidance of Dr. S. Jeyakumar was awarded for his part of his PhD dissertation work entitled “Pre and peri parturient behaviour as an indicator of onset of the calving process in Murrah Buffaloes, A. Teja, S. Jeyakumar, K.A. Rao, A. Kumaresan, K.P. Ramesha, K. Narayanan, M. Sivaram, C.G. Varma, Vedamurthy, GV, Lavanya, M., M.A. Kataktalware, D.N. Das, Kaushik Majumder and Niribili Rajabangshi during the National Conference on Futuristic Approach to Viable

Animal Production vis-à-vis Climate and Calamity Challenges and 29th Annual Convention of Indian Society of Animal Production and Management-2023, held at College of Vety. Sciences & AH, OUAT, Bhubaneswar during 18-20th January 2023.

ERS, Kalyani

- Dr. Santanu Banik, Head, ERS has been awarded Fellow of Indian Society of Animal Genetics and Breeding during the National Conference on “Advances in Genetics and Genomics for Sustainable Livestock Transformation” organized by Indian Society of Animal Genetics & Breeding held on 16-17th Nov., 2023 at ICAR National Bureau of Animal Genetic Resources, Karnal.
- Best poster presentation award (Second prize) on the topic ‘Socio-spatial variation in livelihood security and resilience to extreme weather events among dairy farmers in different agro-climatic zones of lower Gangetic plain’ in the International Conference on ‘Natural Farming for Revitalizing Environment and Resilient Agriculture (NF-RERA – 2023)’ during 17-19 March 2023 at College of Agriculture, Iroisemba, Central Agricultural University, Imphal, Manipur.
- Best oral presentation award (Third prize) on the topic ‘Divulging the magnitude of livestock-based farming system combination in securing livelihood at Sundarbans region of India’ in the International Conference on ‘Natural Farming for Revitalizing Environment and Resilient Agriculture (NF-RERA –2023)’ during 17-19 March 2023 at College of Agriculture, Iroisemba, Central Agricultural University, Imphal, Manipur.
- Received first prize for Hindi article ‘भारत के उत्तरपूर्वी क्षेत्र में कोविड महामारी के तत्पश्चात लॉकडाउन के परिप्रेक्ष्य में स्थायी आजीविका के लिए एक वैकल्पिक रूप में डेयरी की स्थिति और अवसर’ published in Dugdh Ganga (2021-22) vide office order हर्द्वी तकनकी पुरस्कार /12-6 /राडे अनुसं/21-22/23 dated 14.11.2023.
- Yora Reena, A. Chatterjee, T.K. Dutta, A. Mohammad, S. Rai, C. Bhakat, D.K. Mandal and S.K. Das received ‘Best Oral Presentation Award’ 3rd in the XII ANA Conference (ANACON 2023) held from February 16-18, 2023, in COVS &AH, DUVASU, Mathura, UP
- Yora Reena, A. Chatterjee, T.K. Dutta, A. Mohammad, S. Rai, A. Mandal, C. Bhakat and D.K. Mandal received ‘Best Poster Presentation Award’ 2nd in the XII ANA Conference (ANACON 2023) held from February 16-18, 2023, in COVS &AH, DUVASU, Mathura, UP
- Dr. M. Mondal awarded with the following:

- Nominated as a member of the Indian Expert Panel for Joint Indo-UK Panel to review proposals under Indo-UK joint calls on Farm Animal Disease & Health (FADH) of DBT, GOI for three-year term
- Acting as a Govt. of India Nominated member for Institutional Biosafety Committee (IBSC) of IIT, Kharagpur.
- Associate Editor, Frontiers in Animal Science
- Peer Reviewer of the Council for The Nobel Laureate Meetings, Kuratorium **für die** Tagungen der Nobelpreisträger in Lindau, 88131 Lindau, Germany. www.lindau-nobel.org
- Mentor for the Young Researchers worldwide under “Physiology & Medicine Category” as an Alumnus of the Council for The Nobel Laureate Meetings, Kuratorium **für die** Tagungen der Nobel preisträger in Lindau, 88131 Lindau, Germany. www.lindau-nobel.org

2024

Animal Genetics & Breeding

- **Fellow ISAGB Award:** Dr. Vikas Vohra, Head Animal Genetics and Breeding Division, was conferred with ISAGB Fellow Award 2024 from Indian Society for Animal Genetics & Breeding, during the 18th Annual Convention of ISAGB held at BASU, Patna.
- **Best Paper:** (Oral presentation: Third prize (Technical session-I)) Ashish Yadav et al. 2024. Exploring the dimensionality of genomic information for numerically small breeds. National Conference of Indian Society of Animal Genetics and Breeding (ISAGBICON) on “New Vistas in Harnessing Genetic Resources for Sustainable Animal Production” and XVIII Annual Convention of the Indian Society of Animal Genetics & Breeding (ISAGB) during November 21-22, 2024. Bihar Veterinary College, Bihar Animal Sciences University (BASU), Patna. PP. 197
- **Best Poster:** (First prize technical session-II), Kashif Khan et al. 2024. Presented by Ashish Yadav: Optimisation of genomic evaluation models for crossbred cattle in smallholder production systems in India. National Conference of Indian Society of Animal Genetics and Breeding (ISAGBICON) on “New Vistas in Harnessing Genetic Resources for Sustainable Animal Production” and XVIII Annual Convention of the Indian Society of Animal Genetics & Breeding (ISAGB) during November 21-22, 2024. Bihar Veterinary College, Bihar Animal Sciences University (BASU), Patna. PP. 253.

Animal Biotechnology

- Fanny Josan, Sonam Yadav, Seema Karanwal, Vikrant Gaur, Aditya Patel, Prasanna Pal, Mukesh Bhakat, Tirtha Kumar Datta, Rakesh Kumar, 2024 won the 2nd Best Paper Award in XXXII Annual Conference of SAPI & International Symposium on advances in physiological research in omics era for sustainable animal Production and livelihood security under the changing climatic scenarios organised by ICAR-Central Institute for Research on Cattle, Meerut, UP & SAPI during November 27-29, 2024.
- Dr. D. Malakar was awarded Dr. APJ Abdul Kalam Memorial NABS Life Time Achievement Award in September, 2024 from NABS University of Madras, Chennai, Tamil Nadu.
- Dr. D. Malakar was conferred on as an Honorary Fellow of the Association of Biotechnology and Pharmacy- 2024 from Mangalayatan University, Aligarh, UP.
- First position in the Oral presentation, during National Conference on Indian association of Veterinary microbiologist Immunologist and specialists in Infectious diseases (IAVMICON-2024) 35th Annual conference of IAVMI at (CSKHHPKV) Palampur HP Antimicrobial Potential on “urine-derived peptides from buffalo against disease-causing microbes” Anju Nagpal, Sudarshan Kumar, June 7, 2024.
- Sudarshan Kumar delivered a lecture in the workshop on Pioneering the Future of Healthcare and Diagnostics using 4D Omics organized by IIT Bombay on November 12th at the Victor Menezes Convention Centre (VMCC) at IIT Bombay.
- Sudarshan Kumar presented a lead lecture on “Proteomics: Transforming Milk and Reproductive Science in Livestock” in the XXXII Annual Conference of Society of Animal Physiologists of India (SAPI) & International Symposium on Advances in Physiological research in omics era for sustainable Animal Production and Livelihood security under the changing climatic scenario held during November 27-29, 2024 at ICAR-Central Institute for Research on Cattle Grass Farm Road, Meerut.

Animal Physiology

- **Best M.V.Sc thesis award:** Awarded to Dr. Afreed Muhammed NV by Animal Physiologists Association during 4th Annual convention of Animal Physiologists Association and National Conference held during March 1-2, 2024 at ICAR-Central Sheep and Wool Research Institute, Avikanagar (Rajasthan).
- **ICAR Award:** Developed Technology “*Salinity Expert: Mobile Enabled Decision Support System for Sodic Agro ecosystems*” awarded by the Hon’ble Minister of Agriculture and Farmers welfare and Rural Development during the ICAR Foundation Day on July 16, 2024 at New Delhi (lead Developer: Parvender Sheoran

and Associate Developers: Ranjay K. Singh, R.K. Yadav, Satyendra Kumar, S.K. Sanwal, Arvind Kumar, Arijit Barman, R. Raju, K. Ponnusamy, SohanVir Singh, Anshuman Singh, P.C. Sharma).

- **Fellow Award:** Awarded to Dr. Sohan Vir Singh by Society of Animal Physiologist of India on November 27, 2024 during 32nd Annual Conference of SAPI & International Symposium on “Advances in Physiological Research in Omics Era for sustainable Animal Production and Livelihood Security under Changing Climate Scenario” organized by ICAR-CIRC, Meerut in collaboration with Society of Animal Physiologist of India during November 27-29, 2024.

Forage Research & Management Center

- Dr. Sanjeev Kumar received Best Paper Award 2024 for *Organic Carbon Management for Soil Health in Fodder Based Systems* published in *Agri Journal World* Volume 04 issue 02 published by Leaves and Dew Publication.
- Dr R.K. Meena received Best Research paper award by the society for Sugarcane Research and Development (SSRD, SBI, Coimbatore, TN for the article entitled “Genetic variability for fodder quality traits among high biomass energy cane feedstock under rainfed condition authored by M.R. Meena, P. Govindraj and R.K. Meena
- Dr. R.K. Meena received Best Agronomist award conferred by Agri meet foundation and CCSHAU, Hisar during International conference on “Recent Advances in Agriculture for Aatmanirbhar Bharat” during April 19-21, 2024
- Tenth Dr. Gopal Pandey Memorial Award (2024) conferred to Dr. Magan Singh by the Society of Biological Sciences and Rural Development, Prayagraj (U.P.) on July 27, 2024 during 10th Dr. Gopal Pandey Memorial Lecture Function.
- Dr. Magan Singh Received Fellow Award (2022-23) of Indian Association of Hill Farming (IAHF) on November 29, 2024 at ICAR-RC-NEHR, Nagaland Centre, Jharnapani, Medziphema, Nagaland.

Animal Biochemistry

Sl. No.	Name and Designation	Title	Organization/ Society	Date
1.	Dr Rajani Kr Paul, Sr Sci	APA Best Oral Presentation Award	APACON2024 Animal Physiologists Association (APA)	March 1-2, 2024

Dairy Microbiology

- Dr. Anil Kumar Puniya, Principal Scientist, Dairy Microbiology Division, was awarded Scientific High Level Visiting Fellowships (SSHN) 2024 by Institute of French in India (IFI) and French Embassy in India.



Dr. AK Puniya interacting with French Host, Prof. Diego Morgavi at UMR Herbivores Centre, Clermont Auvergne, France

- Pradip Vishnu Behare, Senior Scientist received NASI-Membership 2024 (Biological Sciences, Biochemistry, Biophysics, and Biotechnology) in 2024.



- Raghu H V., Senior Scientist, Dairy Microbiology Division, Received certificate of appreciation in recognition for his contribution as an Eminent speaker at India Food Summit and wards 2024 held at Dwarka, New Delhi during December 5-6, 2024 organised by Synnex.



- Raghu H. V., Senior Scientist, Dairy Microbiology Division nominated and received a certificate of appreciation for exceptional contribution as a Jury in Smart India Hackathon (SIH), 2024 held at IES, Bhopal, Madhya Pradesh during 11-15, 2024 organized by AICTE-MIC Innovation cell, Ministry of Education, Govt. of India.



- Anjali M. K., Mohit Singh Shah, G. Bharath, Raghu H.V. (2024) received best paper presentation award on the topic entitled “Development of Rapid conducting polymer based colorimetric sensor for detecting total bacterial count and *E. coli* in milk” during 15th National Women’s Science Congress held at Karnataka Samskrit University, Bengaluru held during December 6-8, 2024.



- Vaibhav Bharat Rokade presented a poster on “The Influence of Biomimetic Synthesized Magnesium Oxide Nanoparticle on *Listeria monocytogenes* Virulence and Biofilm forming properties” during 21st International Symposium on Problems of *Listeria* and Listeriosis (ISOPOL), Hosted by Quadram Institute at the University of East Anglia, Norwich, United Kingdom, during September 10-13, 2024. Received a bursary of approximately £1000 from the UK Food

Safety Research Network (FSRN) and Microbiology Society UK for attending the symposium.



- A. Jagan Mohan, Ph.D. Scholar was conferred upon 1st Best Business Idea Award in Innovation & Creativity Contest-2024, organized as Part of Academic Fortnight of ICAR- NDRI, Karnal-13200, under the aegis of Agri Business Incubation Centre.



- Dr. A. K. Puniya, Member, 'National Advisory Committee', Ministry of Fisheries, Animal Husbandry & Dairying. New Delhi
- Dr. A.K. Puniya, Member, Scientific Panel on Milk & Milk Products: Food Safety & Standards Authority of India, Ministry of Health & Family Welfare, Government of India, New Delhi
- Dr. A.K. Puniya, Member, Sectoral Expert Committee on Biomanufacturing; Subsector: Functional Foods, Department of Biotechnology (DBT), Ministry of Science & Technology, New Delhi
- Dr. A.K. Puniya, Principal Member, FAD 31 (Food & Agriculture Division), Sectional Committee, Bureau of Indian Standards, New Delhi

Dairy Technology

SN	Name of the Faculty/ Students	Awards description
1.	Hency Rose, Heena Sharma, A. K. Singh, Yogesh Kheta, Fathima Shahna and D. N. Yadav	Received Best Oral Presentation for the paper entitled ‘ Effect of admixture of goat and cow milk on the physic-chemical properties of feta cheese in 8th National Youth Convention on ‘New prespectives for sustainable Agriculture & Livelihood Security’ held at BHU, Varanasi during August 22-23, 2024
2	Hency Rose, Heena Sharma, A. K. Singh, D. N. Yadav, Yogesh Kheta, Kanchanpally Saipriya and Poornima	Received Best Poster Presentation Award for the paper entitled “Evaluation of physico-chemical composition and proteolytic changes during ripening of feta cheese prepared using Barbari goat milk” at International Conference on “Recent Treands and Future Prespective to improve the eprformace, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during 24-26 April, 2024
3	Saipriya Kanchanpally, Heena Sharma, Ashish Kumar Singh, D. N. Yadav, Richa Singh, G. S. Meena., Diwas Pradhan, Sachin Kumar and Anusha Kishore	Received Second Best Poster Presentation Award for the paper entitled “Elucidation of difference in metabolite profile and physic-chemical characteritics of Barbaria dn Beetal goat milk” at International Conference on “Recent Treands and Future Prespective to improve the eprformace, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during 24-26 April, 2024
4	Heena Sharma, Ashish Kumar Singh, Saipriya Kanchanpally, Lakshmi priya P R and Richa Singh	2nd Best Poster Presentation Award for paper entitled ‘Exploration of breed-specific candidate metabolites in Barbari and Jamunapari goat milk using gas chromatography-mass spectrometry based metabolomics approach in National Symposium on ‘Animal Production Systems and its role in sustainable use of AnGR’ heald at NTR college of Veterinary Science, Gannavaram, Andhra Pradesh during February 15-16, 2024.
5	Kaviya, P., Rajesh Kumar Bajaj, Parvesh, Abdul Hussain Shaik, Poojitha, G., Aiswarya V.G. and Rajan Sharma	Secured 1st Best Poster Award for the research work titled “Evaluation of nanoencapsulated curcumin for preparation of functional yoghurt” at 11 th National Seminar on “Indian Dairy & Food Industry in Viksit Bharat: Development & Innovation held at ICAR-National Dairy Research Institute, Karnal, Haryana during September 27-28, 2024.
6	Vjay Shende, Aakash Wani, Writdhama Prasad, Kaushik Khamrui and Shaik Abdul Hussain	Dr. C.M. Singh Best research article award during 2nd National Conference On Enhancing Farmer’s Income by Livestock, Poultry and Aqua Farming through Sustainable and Eco-Friendly Smart Technologies and Practices, held at Bihar Animal Sciences University, Patna during February 28-29, 2024.

7	Dr. Narender Raju Panjagari, Senior Scientist, Dairy Technology	International Travel Grant for attending the 17th International Hydrocolloids Conference held at the Riddet Institute, Massey University, New Zealand during November 12-15, 2024 and presenting an oral paper by the Anusandhan National Research Foundation (former SERB), DST, Govt. of India.

Dairy Engineering

Best Poster Awards

- Arijit Ray, Chitranayak, Kiran Goyat, P.S. Minz, J.K. Dabas, Hima John & Khushbu Kumari (2024). First Best poster presentation award for poster presentation on “Solar powered hybrid automatic yogurt processing system” in International Conference on Emerging Technologies in Food Processing, (ETFP-2024), organized at Ghani Khan Choudhury Institute of Engineering and Technology, Narayanpur, Malda, West Bengal.
- Arijit Ray, Chitranayak, Rishi Shringi, Khushbu Kumari, P.S. Minz, J.K. Dabas (2024). 1st Best poster presentation award for poster presentation on “Unnat engineering taknik va swachalan prasansakan dwara dahi banana ka set up” in “Hindi Shodh-Patra Pradarshan Pratiyogita, ICAR-NDRI, Karnal on September 23, 2024.
- Chitranayak, P. S. Minz, A.K. Singh, J. K. Dabas, Arijit Ray, Nisha Bose (2024). Second Best Poster presentation award for poster presentation on ‘Solar-Powered Automation for Curd Fermentation: A Hybrid Approach’ in 11th National Seminar by NGA on “Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovation” during September 27-28, 2024 at ICAR-NDRI, Karnal.
- Hima John, P. Barnwal, Khushbu Kumari, & Banashree N. (2024). Third Best Poster presentation award for poster presentation on ‘Magnetic induction: a sustainable milk heating solution’ in the attended 11th National Seminar on “Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovation” during September 27-28, 2024 at ICAR-NDRI, Karnal.

Honours:

1. Dr. P. Barnwal, Head (Dairy Engineering Division), acted as Chairman, BIS of Dairy Equipment Sectional Committee, FAD-33.
2. Dr. Chitranayak, acted as BIS Member of Dairy Equipment Sectional Committee, FAD-33.
3. Dr. P. S. Minz, acted as BIS Member of Dairy Equipment Sectional Committee, FAD-33.

4. Er. Ankit Deep, Scientist (Sr. Scale) acted as an invited member of FAD-33/ panel-1, BIS, New Delhi.
5. Er. Ankit Deep, Scientist (Sr. Scale) acted as an invited member of FAD-33/ panel-2, BIS, New Delhi.
6. Dr. Chitranayak acted as expert regarding Assessment case of Technical Staff (Category-II) at ICAR- NBAGR, Karnal.

Awards

- Dr. Chitranayak received third prize for “INDIA- General Knowledge Test” ICAR- NDRI Raj Bhasha at ICAR-NDRI, Karnal on September 30, 2024.

Dairy Economics

- As Co-developer, Dr. Subhasis Mandal received certificate for the following ICAR technologies and offered association with Pantnagar Research Journal as Subject Editor for Agricultural Economics,
 - i. Green technology for achieving net zero emission through reduced tillage with residue retention in coastal low land rice based cropping system.
 - ii. Zero tillage potato cultivation by using paddy straw mulching in coastal saline soils.
 - iii. Appointment as Subject Editor Agricultural Economics for Pantnagar Journal of Research.

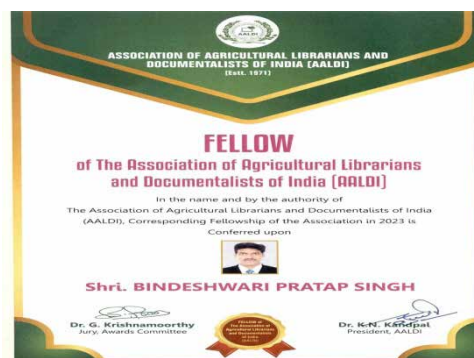


National Library in Dairying

- ICAR-NDRI Library received the award for “*Best e-Resource Sharing*” through the CeRA@J-Gate (Consortium of e-Resources in Agriculture) platform among deemed universities, state agricultural universities, and central agricultural universities for 2023. The award was presented by Prof. Nazir Ahmad Ganai, Vice-Chancellor of Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Kashmir, on September 2, 2024, during the CeRA Workshop for the Northern Region held at SKUAST in Srinagar, Kashmir.



- Bindeshwari Pratap Singh, Chief Technical Officer (Library) received the award for the Fellow of the Association of Agricultural Librarians and Documentalists of India (AALDI) for the years 2023 and 2024. The award was presented by Prof. K. C. Veeranna, Vice-Chancellor of Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU), Bidar on November 23, 2024, during the International Conference of Agricultural Librarians & User Community (ICALUC-2024) on Technological Transformation in Agricultural Library and Information Systems and Services in the Artificial Intelligence (AI) Era Organised by Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar and Association of Agricultural Librarians and Documentalists of India (AALDI).





ERS, Kalyani

Dr. Santanu Banik, Pr. Scientist and Head

- Member, National Advisory Committee for Animal Husbandry and Dairying sector for Piggery by Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, GoI
- Member, General Body, Paschim Banga Go-Sampad Bikash Sanstha, West Bengal
- Acted as Section Editor, The Indian Journal of Animal Sciences
- Acted as Member, Editorial Board, Indian Journal of Animal Health
- Acted as Member, Editorial Board, The Indian Journal of Animal Genetics and Breeding
- Member, DPC, Assessment under CAS for Animal Science and Fisheries Science Scientist, ICAR-Central Island Agricultural Research Institute, Port Blair, Andaman and Nicobar Islands
- Appointed as Examiner for the Evaluation of Ph.D thesis in Department of Animal Science, Palli Siksha Bhavana, Visva-Bharati

Dr. S.K.Das, Principal Scientist

- Appointed as External Examiner for the Ph.D thesis viva-voce examination, in Department Veterinary Biochemistry, F/o Veterinary and Animal Sciences, WBUAFS, Kolkata.
- Appointed as Examiner for the Evaluation of M.V.Sc thesis, in Department Veterinary Biochemistry, F/o Veterinary and Animal Sciences, WBUAFS, Kolkata.
- Appointed as External Examiner for the M.V.Sc thesis viva-voce examination, in Department Veterinary Biochemistry, F/o Veterinary and Animal Sciences, WBUAFS, Kolkata.

Dr. Ajoy Mandal, Pr. Scientist

- Awarded “First Best Paper Award” for the article “Application of Smart Technologies in Livestock Management” published in Indian Dairyman, 2022 by the Indian

Dairy Association during the 50th Dairy Industry Conference held at Hyderabad on dated March 4-6, 2024.

- Awarded Fellow of Indian Society of Animal Genetics and Breeding for the year 2024.
- Awarded Fellow of Society for Conservation of Domestic Animal Biodiversity for the year 2025.

Dr. Mohan Mandal, Sr. Scientist

- Nominated as a member of the Indian Expert Panel for Joint Indo-UK Panel to review proposals under Indo-UK joint calls on Farm Animal Disease & Health (FADH) of DBT, GOI for three-year term
- Acting as a Govt. of India Nominated member for Institutional Biosafety Committee (IBSC) of IIT, Kharagpur.
- Associate Editor, Frontiers in Animal Science
- Peer Reviewer of the Council for The Nobel Laureate Meetings, Kuratorium für die Tagungen der Nobel preisträger in Lindau, 88131 Lindau, Germany. www.lindau-nobel.org
- Mentor for the Young Researchers worldwide under “Physiology & Medicine Category” as an Alumnus of the Council for The Nobel Laureate Meetings, Kuratorium für die Tagungen der Nobel preisträger in Lindau, 88131 Lindau, Germany. www.lindau-nobel.org

Dr. T.K. Dutta, Dr. A. Chatterjee, Principal Scientist

- Second Best Paper Award (Oral Presentation) for the paper “Assessment of Arsenic Contamination Chain and Cancer risk in human residing near in Murshidabad of West Bengal” Authored by Dr. Sushil Kumar Yadav, T.K. Dutta, A. Chatterjee, Sneha Dutta, and Vibhor Agarwal, at the 20th Biennial International Conference of Animal Nutrition Society of India (January 23 to 25, 2024) held at Madras Veterinary College, Chennai.

Livestock Production & Management

- Dr. Pawan Singh awarded with distinguished Extension Worker Award- 2024 by the Indian Society for Buffalo Development in its National Symposium on “Innovative Approaches for Boosting Buffalo Productivity” (December 16-18, 2024) organized at College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand.
- First Prize in Oral presentation in National Symposium of Indian Society for Buffalo Development on “Innovative Approaches for Boosting Buffalo

Productivity” (December 16-18, 2024) organized by College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand – 388001- Title – Effect Of Supplementary Feeding on Testicular Thermoregulation of Murrah Buffalo Bulls and its Relation with Semen Quality” presented by Satpute, T., Singh, P., Ukey, A., Sriranga, K. R. and Singh, S. V.

- Third Prize in Oral presentation in National Symposium of Indian Society for Buffalo Development on “Innovative Approaches for Boosting Buffalo Productivity” (December 16-18, 2024) organized by College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand – 388001- Title – “Assessment Of Seasonal Impacts And Temperature Humidity Index On Blood Biochemical Parameters And Semen Quality In Murrah Bulls” presented by Ukey, A., Singh, S. V., Satpute, T., Singh, P., Sharma, R. and AfreedMuhhamad, N. V.
- Indu Devi received best (second) oral presentation award on ‘Development of a deep learning and computer vision – based model for automated appraisal of linear traits in Sahiwal cows’. National Conference on ‘*Optimization of livestock farming for sustainable development in the era of climate change & 30th annual convention of ISAPM 2024*’ during February 22-24, 2024 at Madras Veterinary College, Chennai – 600 007, Tamilnadu, India.
- Indu Devi received best (first) oral presentation award on ‘Development of a deep learning aided computer vision system for automated measurement of linear traits in Sahiwal cow’ in 11th National Seminar on ‘Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovations’ during September 27–28, 2024, at ICAR-NDRI Karnal.
- ‘Second best oral presentation award’ for ‘Effect of age on sperm kinematics, viability and mitochondrial membrane potential in Murrah Buffalo’ authored by Mir Muneeb Rafiq, Surender Singh Lathwa, Pawan Singh, Indu Devi, Atul S Rajput, Manoj Sharma, Nadeem Shah and Hitesh K Bagri. 2024. *National Conference on ‘Optimization of livestock farming for sustainable development in the era of climate change & 30th annual convention of ISAPM 2024*’ during February 22-24, 2024 at Madras Veterinary College, Chennai – 600 007, Tamilnadu, India.
- Indu Devi received best (first) oral presentation award on ‘Development of a deep learning aided computer vision system for automated measurement of linear traits in Sahiwal cow’ in International symposium “*Advances in Physiological Research in omics era for sustainable animal production and livelihood security under the changing climate scenario*” from November 27–29, 2024, at ICAR-CIRC, Meerut– 250001, UP (India).
- **RK. Baithalu** received best oral presentation award in International Symposium and XXXII Annual Conference of SAPI on “Advances in Physiological Research

in Omics Era for Sustainable Animal Production and Livelihood Security under the changing climate scenario” held at ICAR-CIRC, Meerut, India from November 27-29, 2024.

- A. Raj, **R.K. Baithalu**, M. Pandey S.P. Pannu, M. Akram, R. Sharma and T.K. Mohanty received second best oral presentation award in National symposium of ISBD on “Innovative approaches for boosting buffalo productivity” held at CoVS&AH, Kamdhenu University from 16-18 December.
- **Best Ph.D. thesis award** (production group)- 2022-23. Dr. Gayathri S Lal (19-P-LP-08). Thesis entitled «Assessment of mastitis using thermal image analysis and development of herbal post teat dip solution for dairy animals» on 20th Convocation, ICAR-NDRI, Karnal, Haryana, India on March 15, 2024.
- **Best M.V.Sc. Thesis award**, on the occasion of International Conference” Current Innovations and Technological Advances in Agriculture and Allied Sciences”(CITAAS-2024), Organised by Guru Kashi University, Talwandi Sabo(ICAR Accredited) and Just Agriculture Education Group and ISASTR, Noida at GKU, Talwandi Sabo, August 29-31, 2024.
- **Best Presentation Award (oral)** paper presentation entitled “Assessment of Transient stress in FMD vaccination using Infrared thermography (IRT) in dairy animals” authored by **Rajput, A.S.**, Bhakat, M., Mohanty, T.K., Mondal, G., Mir, A.A. and Rajput, M.S. in the 30th Annual convention and national conference on “optimization of livestock farming for sustainable development in the era of climate change” held during February 22-24, 2024 at Madras Veterinary College, Chennai.
- **Shri. A. Lakshman Rao Award** for fresh M.V.Sc. Research paper entitled “Infrared thermal image analysis for estrus identification in Murrah buffaloes”. authored by **Ragulraj, S.**, Bhakat, M., Mohanty, T.K., Maiti, S., Fernandes, A., Nandhini. P.B., Sahu, C., Patil, G.S. and Vikram, R. in the 30th Annual convention and national conference on “optimization of livestock farming for sustainable development in the era of climate change” held during February 22-24, 2024 at Madras Veterinary College, Chennai.
- **First Prize for oral presentation**, “Impact of FMD vaccination on bull seminal plasma fertility-related proteins”. by **Arunkumar, R.**, Mohanty, T.K., Kumaresan, A., Baithalu, R.K., Bhakat, M. and Gupta, V.K. in National Conference on “Challenges in Animal Health and Production amidst Climate change: Innovative, Sustainable solutions and their Translation”-VIBCON2024, Madras Veterinary College, Chennai during September 26-28, 2024.

- **Second Prize for oral presentation** entitled “Optimizing mitigation strategies for reducing the impact of Foot and Mouth Disease Vaccination induced stress on semen production performance” by **Arunkumar, R.**, Mohanty, T.K., Baithalu, R.K., Bhakat, M. and Selvaraj Kumaresan in the 30th Annual Convention ISAPM and National Conference on “Optimization of Livestock Farming for Sustainable Development in the Era of Climate Change”, held during February 22-24, 2024 at Madras Veterinary College, TANUVAS, Chennai
- **First Best Poster Presentation Award** in the Andrology, Semenology and Artificial Insemination Session(Poster Presentation) for the paper entitled, “Evaluation of testicular blood perfusion and its association with temperature gradient and semen quality in dairy bull during summer”, **Dr. Divyanshu Lakhanpal**, T.K. Mohanty, Ramaswamy Arunkumar, Dipti Nain, Mukesh Bhakat and Rubina Kumari Baithalu in the 39th Annual Convention of the Indian Society for study of Animal Reproduction(ISSAR), and National Symposium on “Challenges in Enhancing Reproductive Efficiency of Livestock: An Indian Perspective” organised by Dept. VGO, College of Veterinary Science, GADVASU, Ludhiana (Punjab), November 29, 2024 to December 1, 2024.
- **Savitribai Phule Excellence Award 2024, Dr Manisha Sethi**, Ph.D., Scholar (ARGO), ICAR-NDRI, Karnal, Haryana, for in National Level Essay Writing Competition held on the Birth Anniversary of SAVITRIBAI PHULE, “First Female Teacher of India” on 3rd January and Presented on the Indian Republic Day, January 26, 2024.
- **3rd Best Oral Presentation Award. Gayathri S. L.**, Bhakat, M., Mohanty, T. K., presented by M. Bhakat. For the paper “Assessment of moringa-based herbal post-teat dip solution via goat trial”. Technical session: Advances in small ruminant therapeutics and ethno-veterinary practices. International conference of the Indian Society for Sheep and Goat Production and Utilization (ISSGPUCON 2024) on recent trends and future perspectives to improve the performance, health and welfare of small ruminants under changing climate scenario held at Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry during April 24-26, 2024.
- **First Best Oral Presentation Award. Gayathri S. L.**, Bhakat, M., Mohanty, T. K., presented by M. Bhakat. For the paper “Seasonal assessment of mastitis using thermal image analysis in Goats”. Technical session: Newer perspectives in sheep and goat welfare. International conference of the Indian Society for Sheep and Goat Production and Utilization (ISSGPUCON 2024) on recent trends and future perspectives to improve the performance, health and welfare of small ruminants under changing climate scenario held at Rajiv Gandhi Institute of Veterinary

Education and Research (RIVER), Kurumbapet, Puducherry during April 24-26, 2024.

- **Second position in Oral presentation** entitled “Seasonal assessment of mastitis using thermogram analysis in Gir Cows” 6th International Conference on Holistic Innovation and Technological Advances for Sustainable Agriculture (HITASA-2024) Organized by Indian Society of Agriculture & Horticulture Research Development, (ISAHRD) Chandigarh, School of Agriculture (SOA), SR University, Warangal and Just Agriculture Education Group at SR University, Warangal during March 4-6, 2024.
- Sanchi Kamal, **Nishant Kumar**, T.K. Mohanty and D. K. Yadav **received Best Paper Award** in 24th Indian Veterinary Congress & 31st Annual Conference of IAAVR & National Symposium on “Livestock Health and Poultry: A Paradigm Change to Maximize Productivity for Sustainable Farmers’ Livelihood” organized by College of Veterinary & Animal Sciences, LUVAS, Hisar (Haryana) during February 7-8, 2024.
- Manisha Yadav, **Nishant Kumar** and Ashutosh **received 2nd best paper award** in 24th Indian Veterinary Congress & 31st Annual Conference of IAAVR & National Symposium on “Livestock Health and Poultry: A Paradigm Change to Maximize Productivity for Sustainable Farmers’ Livelihood” organized by College of Veterinary & Animal Sciences, LUVAS, Hisar (Haryana) during February 7-8, 2024.
- Manisha Sethi, Tushar Kumar Mohanty, Nadeem Shah, Mukesh Bhakat, Dilip Kukar Swain, Dileep Kumar Yadav, Nishant Kumar and Rubina Kumari Baithalu recieved **Best Oral Paper Presentation Award** at 32nd Annual Conference of SAPI & International Symposium on “Advances in Physiological Research in Omics Era for Sustainable Animal Production and Livelihood Security under the Changing Climatic Scenario” organized by ICAR-CIRC, Meerut (UP) during November 27-29, 2024.

Animal Nutrition

- Best Paper Award during (2024). Vinay, V.V., Kumar, S., Tyagi, N. and Samanta, A.K. (2024). Impact of electrohydrodynamically microencapsulated probiotics vs in-feed antibiotics on nutrient utilization, faecal microbiota and rumen fermentation profile of indigenous cattle calves, In: Proc. of 20th Biennial Animal Nutrition Society of India Conference, January 23-25, 2024, Chennai, India, p. 457.
- Best Paper Award (2024). Vinay, V.V., Kumar, S., Balaga, S., Rashmi, H.M. and Jangir, B.L. (2024). Oral delivery of electrodynamically encapsulated *Lactiplantibacillus plantarum* CRD7 modulates gut health, antioxidant activity and

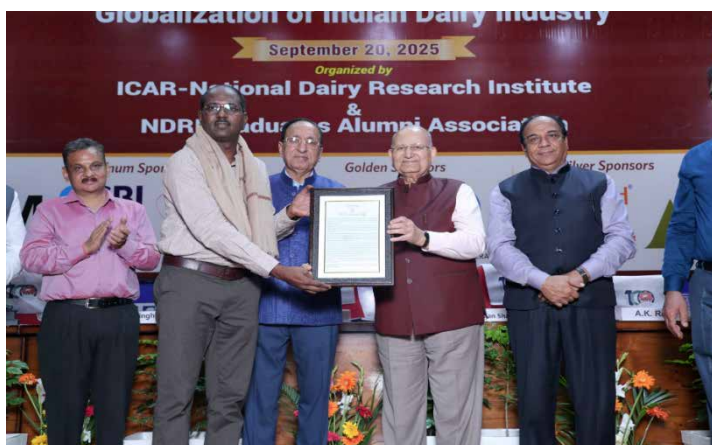
cytokines-related inflammation and immunity in mice, In: Proceedings of 20th Biennial Animal Nutrition Society of India Conference, January 23-25, 2024, Chennai, India, p. 347.

- Bestowed with Fellow of Animal Nutrition Association (FANA) to Dr. Goutam Mondal, Principal Scientist, Animal Nutrition Division.

2025

DAIRY TECHNOLOGY

- Ankit, Shaik Abdul Hussain, Ajay Yadav and Rajesh Kumar Bajaj received **Third Best Poster Presentation Award** for the paper titled “दूध प्रोटीन आधारित संपुटित करक्यूमिनोइड्स पूरकता का पनीर की गुणवत्ता पर प्रभाव” at the **Hindi Poster Presentation Competition** organized by Hindi Cell, ICAR-NDRI, Karnal, on September 23, 2025.
- Alok Ahale, Neelam Upadhyay, Tamal Sarkar, Abdul Hussain, Ashish Kumar Singh and Suman Kapila received **Third Prize (Oral Presentation)** for the paper titled “Functional processed cheese spread combining Moringa oleifera: Insights in physico-chemical characteristics and consumer acceptability” at the **International Conference on Recent Advances in Food Science and Technology: A Way Forward** organized by DSLD CHEFT, Devihosur-Haveri and Karnataka Science and Technology Academy, DST, Government of Karnataka, during January 22–24, 2025.
- Dr. Heena Sharma was conferred with **NAAS Associate** by the National Academy of Agricultural Sciences.
- Hency Rose, Heena Sharma, Ashish Kumar Singh, Gaurav Kr Deshwal and Yogesh Khetra received **Best Oral Presentation Award** at the **XII Annual Convention of the Society for Veterinary Sciences and Biotechnology and International Conference on “Bridging Science and Society: Biotechnology for Sustainable One Health”** held at LUVAS, Hisar, during December 3–5, 2025.
- Poornima, Ashish Kumar Singh, Heena Sharma, P. N. Raju, Sumit Arora and Praveen Kumar Tiwari received **Best Oral Presentation Award** at the **International Conference on Global Research Initiatives for Agriculture, Science and Technology (GRIAST-2025)** held at IGKV, Raipur, during January 20–22, 2025.
- Dr. Narendra Raju Panjagari received **Best Teacher Award** from Dr. R. S. Paroda, Chairman, TAAS and former Secretary, DARE & DG, ICAR, New Delhi, at the **12th National Seminar organized by NDRI Graduates Alumni Association**, on September 20, 2025.



- Kuntal Roy, Narender Raju Panjagari and Deep Narayan Yadav received **Best Oral Paper Award** at the **National Conference on “Food Innovations, Food Allergies and Traditional Foods (FIFATF-2025)”** held at Sant Longowal Institute of Engineering and Technology, Punjab, during December 11–12, 2025.
- Shubham Kar and Narender Raju Panjagari received **Second Best Poster Award** at the **International Conference on Food Chemistry, Microbiology, and Process Engineering for Wellness & Health (FCMPE WellH 25)** organized by Birla Institute of Technology, Mesra, Jharkhand, during July 10–12, 2025.
- Shubham Kar, Narender Raju Panjagari, Taniya Harchandani, Karpurapu Uma, Sangita Ganguly, Ashish Kumar Singh and Adesh Kumar Sharma received **First Best Poster Award** at the **51st Dairy Industry Conference** organized by the Indian Dairy Association, held at Patna, Bihar, during March 6–8, 2025.
- Aparna V. P., Kaushik Khmarui, Prasad and Kuntal Roy received **First Best Oral Presentation Award** at the **8th International Conference on “The Future of Food Science & Technology: Innovations, Sustainability, and Health”** held at Amity University, Noida, Uttar Pradesh, during March 27–28, 2025.
- Maumita Adhikari, Kaushik Khamrui and Writdhama Prasad received **Second Best Poster Presentation Award (Online)** at the **8th International Conference on “The Future of Food Science & Technology: Innovations, Sustainability, and Health”** held at Amity University, Noida, Uttar Pradesh, during March 27–28, 2025.
- Taniya Harchandani, Narender Raju Panjagari, Shubham Kar, Sangita Ganguly and Adesh Kumar Sharma received **Second Best Poster Award (Offline)** at the **14th IDEA Convention & National Seminar** organized by the Indian Dairy Engineers Association, held at Verghese Kurien Institute of Dairy and Food Technology, Mannuthy, Thrissur, Kerala, during May 8–9, 2025.
- Shubham Kar, P. Narender Raju, Taniya Harchandani, Karpurapu Uma, Sangita Ganguly, Ashish Kumar Singh and Adesh Kumar Sharma received **Second**

Best Oral Paper Award (Online) at the 14th **IDEA Convention & National Seminar** organized by the Indian Dairy Engineers Association, held at Verghese Kurien Institute of Dairy and Food Technology, Mannuthy, Thrissur, Kerala, during May 8–9, 2025.

DAIRY CHEMISTRY

- The ICAR–NDRI technology titled “A New Strip-Based Test for Detection of Urea in Milk” was recognized among the **Top Five Technologies of the Animal Science Division (2025)**. The certificate was received by **Dr. Rajan Sharma**, Joint Director (Research), from Shri Shivraj Singh Chouhan, Hon’ble Union Minister of Agriculture & Farmers Welfare and President of the ICAR Society, during the 96th ICAR Foundation Day celebrations held in New Delhi.
- **Dr. Rakendhu Saji** was awarded the **Second Best Poster Award** at the Southern Dairy Summit–2025, organized by the Indian Dairy Association (South Zone), held at NIMHANS Convention Centre, Bengaluru, from January 9–11, 2025.
- **Dr. Rakendhu Saji** was awarded the **Best Paper Presentation Award** for the paper titled “Detection of Flunixin Residues in Milk Using ATR–FTIR Spectroscopy Coupled with Chemometrics” at the International Conference on Transformative Multidisciplinary Research (ICTMR–2025), held at St. Thomas College, Thrissur, Kerala, from February 6–7, 2025.
- **Dr. Rakendhu Saji** was awarded the **First Best Paper Award** for the article “Veterinary Drug Residues in Indian Milk: Detection and Safety Measures”, published in Indian Dairyman (2024), during the 51st Dairy Industry Conference held at Patna, Bihar, from March 6–8, 2025.

DM

- **Dr. Diwas Pradhan** was awarded the **Young Scientist Award–2025** for his contribution to the field of fermented foods at the 12th International Conference of SASNET–FF on “Fermented Foods, Health Status and Social Well-being”, organized jointly by SASNET–FF and the West Bengal University of Animal & Fishery Sciences, Mohanpur, Nadia, West Bengal, during December 19–20, 2025.



- **Dr. Raghu H. V.** received a **Certificate of Appreciation** from WBUAFSASNETCON-2025, the 12th International Conference on “Fermented Foods, Health Status and Social Well-being”, for contributing as a speaker in the technical session, held during December 19–20, 2025.
- **Naresh Kumar, Kriti Dua, Bhawani N., and Raghu H. V.** received an **ICAR Technology Certificate** for the technology titled “Strip-based technology for early detection of sub-clinical and clinical mastitis” during ICAR Foundation Day, held at New Delhi on July 16, 2025 (ICAR-AS-NDRI-2025-029).
- **Naresh Kumar, A. Khan, S. Arora, Raghu H. V., M. Balhara, P. K. Sharma, and S. Shaikh** received an **ICAR Technology Certificate** for the technology titled “Spore-based kit for detection of antibiotic residues in milk at dairy farm” during ICAR Foundation Day, held at New Delhi on July 16, 2025 (ICAR-AS-NDRI-2025-032).
- **Naresh Kumar, N. Tehri, R. Gopaul, P. K. Sharma Morab, and Raghu H. V.** received an **ICAR Technology Certificate** for the technology titled “Paper strip assay for rapid detection of pesticide residues” during ICAR Foundation Day, held at New Delhi on July 16, 2025 (ICAR-AS-NDRI-2025-031).
- **Naresh Kumar, Anand S. P., Shukla R., Suman, P. K. Sharma, and Raghu H. V.** received an **ICAR Technology Certificate** for the technology titled “Paper strip-based assay for detection of antibiotic residues in milk” during ICAR Foundation Day, held at New Delhi on July 16, 2025 (ICAR-AS-NDRI-2025-030).
- **Dr. Chand Ram** serves as a **Member of the Editorial Board** of the International Journal of Medical and Allied Health Sciences (ISSN: 2583-1879), in 2025.
- **Dr. Raghu H. V.** delivered an **Invited Extramural Lecture** titled “Direct Vat Set Starters Production by Spray Drying: Boon to Dairy Sector” at the Faculty of Science, Maharaja Sayajirao University of Baroda, Vadodara, on November 24, 2025.
- **Soumya Sangam** received the **Best Oral Presentation Award** at the International Conference on “Recent Advances in Food Science and Technology: A Way Forward” for the presentation titled “Recent Advances in Food Science and Technology”, organized by DSLD CHEFT and Karnataka Science and Technology Academy, during January 22–24, 2025.
- **Soumya Sangam** received the **Best Oral Presentation Award** at the XII Annual Convention of the Society for Veterinary Sciences and Biotechnology (SVBT) and International Conference for the presentation titled “Integrative metagenomic and metabolomic analysis of milk fat globule membrane from Sahiwal, Jamunapari

and human in DSS-induced colitis mice model”, held at LUVAS, Hisar, during December 3–5, 2025.

- **Soumya Sangam** received the **Best Oral Presentation Award** at the XII Annual Convention of the Society for Veterinary Sciences and Biotechnology (SVBT) and International Conference for the presentation titled “Milk fat globule membrane from cow, goat and human differentially modulate LGG: proteomic insights from human MFGM”, held at LUVAS, Hisar, during December 3–5, 2025.



Soumya Sangam received the **Best Oral Presentation Award** in the National Conference of the Indian Society for Sheep and Goat Production and Utilization (ISSGPUCON 2025), on Transforming Small Ruminant Production: Empowering Precision Farming and Genomic Innovations for Enhanced Productivity and Sustainable Development, held at ICAR-Central Institute for Research on Goats, held at ICAR-CIRG, Mathura, during March 5–7, 2025.



- Mansi Sahu, Diwas Pradhan, Raghu H. V., and Namita Narwal received the **Best Poster Award** at AMRNCON-2025 (National Conference on “Strengthening One Health Synergy: Combating Antimicrobial Resistance through Cross-Sectoral Innovation and Integration”) for the poster titled “Characterization of antimicrobial resistance in Staphylococcus aureus from raw milk”, held at Kamdhenu Vishwavidyalaya, Durg. Chattisgarh during October 6–7, 2025.



- The work titled “Indigenous Vitamin B12 producing probiotic *Limosilactobacillus reuteri* NCDC 958 strain” secured First Position in poster presentation at **WBUAFSASNETCON-2025**, the 12th International Conference on “Fermented Foods, Health Status and Social Well-being”, held during December 19–20, 2025.



- Mansi Singh, P. V. Behare, and Manorama Kumari secured First Position in poster presentation at **WBUAFSASNETCON-2025**, the 12th International Conference on “Fermented Foods, Health Status and Social Well-being”, for the poster titled “Vitamin-producing probiotics as a sustainable strategy for nutrient-rich fermented foods”, held during December 19–20, 2025.



- Nishchal Thakur and Shilpa Vij received the **Best Oral Presentation Award** at the 66th Annual International Conference and Research Conclave of the

Association of Microbiologists of India (AMI) for the presentation titled “Integrating fermentation, peptidomics, and molecular simulations to identify cow colostrum whey-derived antifungal peptides effective against mucormycosis pathogens”, held during November 12–15, 2025, at Dev Bhoomi Uttarakhand University, Dehradun.

- Nishchal Thakur, Mohammad Rizwan, and Shilpa Vij received the **Best Oral Presentation Award** at the Xth International Conference GRISAAS-2025 for the presentation titled “Cow colostrum-derived lactoferrin and colostrum whey-derived peptides fermented with probiotic *Lactocaseibacillus rhamnosus* C25: An anti-mucor study”, held during October 5–7, 2025, at MPUAT, Udaipur.
- Nishchal Thakur, Mohammad Rizwan, and Shilpa Vij (2025) secured **Third Prize in poster** presentation at the XVIIth Agricultural Science Congress for the poster titled “Cow colostrum whey-derived proteins and peptides against mucormycosis-causing molds: In silico and in vitro study”, held at G.B. Pant University of Agriculture and Technology, Pantnagar, during February 20–22, 2025,
- Dr. Raghu H. V. served as Member, FAD 19/Panel IV ‘Review of Indian Standards on Dairy Products’, Bureau of Indian Standards, New Delhi, in 2025.
- Dr. Raghu H. V. served as Committee Member, ISO/TC 34/SC 9/WG 33 – “Detection of *Cronobacter*” (BIS appointee), in 2025.
- Dr. Diwas Pradhan served as Member, FAD 31 (Food & Agriculture Division), Sectional Committee, Bureau of Indian Standards, New Delhi, in 2025.
- Dr. Diwas Pradhan served as Treasurer, Probiotics Association of India (PAi), in 2025.
- **Dr. Raghu H. V.**, Senior Scientist, Dairy Microbiology Division, was appointed as External Examiner for the 10th Food Analyst Practical Examination 2025 conducted by Food Safety and Standards Authority of India (FSSAI), New Delhi, in 2025.
- **Dr. Raghu H. V.**, Senior Scientist, Dairy Microbiology Division, served as Section In-charge, Microbiology Section, NRCMQS, ICAR–NDRI, Karnal up to August 12, 2025.
- **Dr. Raghu H. V.**, Senior Scientist, Dairy Microbiology Division, served as Technical Manager, Microbiology Section, NRCMQS, ICAR–NDRI, Karnal for NABL accreditation activity as per ISO 17025:2017, up to August 12, 2025.
- **Dr. Shilpa Vij**, Principal Scientist & Head, Dairy Microbiology Division, served as Nodal Officer, Women Grievance Redressal Committee, ICAR–NDRI, Karnal, in 2025.

DE

- Sharanabasava, Chitranayak, Nagaratna, Kiran N., Minz P. S. and Hima John received **Second Best Oral Presentation Award** for the paper titled “Advancements in Fermentation Technology: Integrating Renewable Energy for Yogurt & Dahi” at the International Conference organized by DSLD, CHEFT, University of Horticultural Sciences, Bagalkot, Karnataka, during January 22–24, 2025.
- Hitesh K. Rohit, Chitranayak, P. S. Minz, Hima John, J. K. Dabas and Ravi Prajapati received **First Best Oral Presentation Award** for the paper titled “Study on Ice Slurry Based Milk Cooling System” at the 14th IDEA Convention & National Seminar on ‘Engineering Challenges & Strategies for Sustainable Growth in Dairy & Food Processing’ held at VKIDFT, KVASU, Mannuthy, Kerala, during May 8–9, 2025.
- P. Barnwal, Ankit Deep, Tamanna Chambyal and Ravi Kumar received **First Best Oral Presentation Award** for the paper titled “Recent Innovations in Mechanization of Animal Husbandry” at the 59th Annual Convention of Indian Society of Agricultural Engineers and International Symposium on ‘Mechatronics and Robotics in Pre and Post Production Agriculture’ held at ICAR-CIAE, Bhopal, during November 10–12, 2025.
- Kiran Goyat, Ankit Deep and Nishant Kumar received **First Best Poster Presentation Award (Student Category)** for the poster titled “Development of a Horizontal Compact Thawing Device for Bovine Semen Straws” at the 14th IDEA Convention & National Seminar on ‘Engineering Challenges & Strategies for Sustainable Growth in Dairy & Food Processing’ held at VKIDFT, KVASU, Mannuthy, Kerala, during May 8–9, 2025.
- Rishi Shringi, Khushbu Kumari, Chitranayak and Anand Kishore received **Third Best Poster Presentation Award (Faculty Category)** for the poster titled “Milk Source Based Electrical Characterisation of Yoghurt” at the 14th IDEA Convention & National Seminar on ‘Engineering Challenges & Strategies for Sustainable Growth in Dairy & Food Processing’ held at VKIDFT, KVASU, Mannuthy, Kerala, during May 8–9, 2025.
- Shivam Kumar Pandey, P. S. Minz, Chitranayak and J. K. Dabas received **Third Best Poster Presentation Award (Student Category)** for the poster titled “Thermal Analysis of Liquid-Solid Interface for Rapid Milk Cooling” at the 14th IDEA Convention & National Seminar on ‘Engineering Challenges & Strategies for Sustainable Growth in Dairy & Food Processing’ held at VKIDFT, KVASU, Mannuthy, Kerala, during May 8–9, 2025.

- Kiran Goyat, Gurdeep Singh, Ankit Deep, Nishant Kumar and Chitranayak Sinha received **First Best Poster Presentation Award (Hindi)** for the poster titled “Portable Vigalan Upkaran: Dugdh Pashupalan me Prajanan Dakshata ki Kunji” at the Rajbhasha Pakhwara organized at ICAR-NDRI, Karnal, on September 23, 2025.
- Arijit Ray, Chitranayak, J. K. Dabas, P. S. Minz, Khushbu Kumari, Kiran Goyat and A. K. Sharma received **Third Best Poster Presentation Award (Hindi)** for the poster titled “Saur Urja Aadharit AI Niyantrit Swachalit Tapiya Modulation Pranali tatha Samanvit Gunavatta Nigarani Ekayee” at the Rajbhasha Pakhwara organized at ICAR-NDRI, Karnal, on September 23, 2025.
- Arijit Ray, Chitranayak Sinha, Berry S., Khamrui K., Dabas J. K. and Goyat K. received **First Best Poster Presentation Award** for the poster titled “Solar-Powered Hybrid Fermentation System with Deep Learning–Enabled Automated Process Control for Sustainable Yoghurt Production” at the **12th International Conference ICAVRI-2025**, during November 16–18, 2025.
- Dr. P. Barnwal served as Chairman, BIS Dairy Equipment Sectional Committee (FAD 33).
- Dr. Chitranayak served as Member, BIS Dairy Equipment Sectional Committee (FAD 33).
- Dr. P. S. Minz served as Member, BIS Dairy Equipment Sectional Committee (FAD 33).
- H. K. Rohit received **Second PhD Thesis Award** at the 14th IDEA Convention & National Seminar on ‘Engineering Challenges & Strategies for Sustainable Growth in Dairy & Food Processing’ held at VKIDFT, KVASU, Mannuthy, Kerala, during May 8–9, 2025.
- Dr. Ravi Kumar received **Gold Medal (Football), Gold Medal (4×100 m Relay), Silver Medal (100 m Race) and Silver Medal (200 m Race)** at the **ICAR-North Zone Sports Tournament 2024** organized at ICAR-NDRI, Karnal, during February 2–5, 2025.
- Mr. Anil Thakur secured **Third Position in 800 m and 1500 m races** at the **ICAR-North Zone Sports Tournament 2024** organized at ICAR-NDRI, Karnal, during February 2–5, 2025.

DESM

- Dr. Subhasis Mandal received a **Co-Developer Certificate** for the ICAR technology titled “A Modified Spectral Index Approach for Delineating Coastal Soil Salinity” (ICAR–NRM–CSSRI–2025–107), developed in collaboration with

Dr. U. K. Mandal (Lead Developer), Dr. T. D. Lama, Dr. D. Burman, Dr. K. K. Mahanta, and Dr. S. Rout, in 2025.

- Dr. Subhasis Mandal received a **Co-Developer Certificate** for the ICAR technology titled “A Novel System for Boosting Land Productivity and Income of Smallholder Farmers by Intercropping Vegetables in Waterlogged Paddy Fields (Rice + Veg Tech)” (ICAR–NRM–CSSRI–2025–046), developed in collaboration with Dr. M. Maniruzzaman, Dr. M. Mainuddin, Dr. J. C. Biswa, Dr. R. W. Bell, Dr. M. B. Hossain, Dr. P. L. C. Paul, Dr. Md. J. Kabir, Dr. S. Digar, Dr. S. Mandal, Dr. B. Maji, Dr. D. Burman, Dr. U. K. Mandal, and Dr. K. K. Mahanta, in 2025.
- Dr. Subhasis Mandal was nominated as **Associate Editor** of the journal “Agricultural Economics Research Review”, effective January 20, 2025.
- Dr. Subhasis Mandal, Principal Scientist & Head, DES&M Division, was nominated as a Member of the 42nd Advisory Committee/Governing Body Meeting of AERC, Visva-Bharati University, Shantiniketan, West Bengal, in 2025.



- **Dr. A. K. Sharma** was nominated as a **Member (Alumni/Industry Professional)** of the Board of Undergraduate Studies in Statistics and Operations Research at Kurukshetra University, Kurukshetra, for a two-year tenure effective from April 2025.
- भा.कृ.अनु.प.–राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल की वैज्ञानिक एवं तकनीकी विषयों पर हिंदी में प्रकाशित प्रकाशनों की पुरस्कार योजना के अंतर्गत “पुस्तिका श्रेणी” में डॉ. अजय कुमार डांग, डॉ. हीना शर्मा, डॉ. चाँद राम एवं डॉ. आदेश कुमार शर्मा द्वारा प्रकाशित “दूध में दैहिक कोशिकाओं

की संख्या कम करने और उच्च गुणवत्ता प्राप्त करने के लिए प्रयासों का पैकेज” नामक पुस्तिका को प्रथम पुरस्कार प्रदान किया गया।

- डॉ. ए. के. शर्मा एवं सह-लेखकों को भा.कृ.अनु.प.–राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल में हिंदी पखवाड़ा (सितंबर 23, 2025) के दौरान आयोजित हिंदी शोधपत्र/पोस्टर प्रतियोगिता में “सौर ऊर्जा आधारित AI नियंत्रित स्वचालित तापीय मॉड्यूलेशन प्रणाली तथा समन्वित गुणवत्ता निगरानी इकाई” शीर्षक पोस्टर के लिए तृतीय पुरस्कार प्रदान किया गया।
- **Dr. A. K. Sharma**, along with co-authors, secured **Second Prize** in the Student Poster Presentation for the poster titled “Machine Learning–Driven Shelf-Life Detection of Sandesh, a Milk-Based Confection, Using On-Package Freshness Indicators” at the International Conference on Food Chemistry, Microbiology, and Process Engineering for Wellness & Health (FCMPE WellH–2025), held at Birla Institute of Technology, Mesra, Ranchi, Jharkhand, from July 10–12, 2025.
- **Dr. A. K. Sharma** shared **Second Prize (Student Category)** for the poster titled “Quantitative Evaluation of Freshness Indicator of Packaged Sandesh Using Image Analysis and Machine Learning Models” at the 14th IDEA Convention and National Seminar on “Engineering Challenges and Strategies for Sustainable Growth in Dairy and Food Processing”, organized by the Verghese Kurien Institute of Dairy and Food Technology, Mannuthy, Thrissur, Kerala, from May 8–9, 2025.
- **Mrinmoy Das, P. Sruthi, and Gunjan Bhandari** were awarded a **Consolation Prize** for a Hindi article published in Dugdh Ganga on September 22, 2025.
- **Dr. Gunjan Bhandari** was awarded the **Best Poster Award (First Prize)** during the poster session at the 12th National Seminar organized by NDRI Graduates Alumni Association and ICAR–NDRI on September 12, 2025.
- The research paper titled “Impact of COVID-19 Pandemic on Household Consumption Pattern of Dairy Products in India” by Gunjan Bhandari, Priyanka Lal, and Binita Kumari was awarded the **Best Research Article Prize** during the 51st Dairy Industry Conference held at Patna on March 8, 2025.
- **Mr. Mrinmoy Das**, M.Sc. scholar under the supervision of Dr. Gunjan Bhandari, was awarded the **Best Thesis Award (Social Science and Management)** during the 21st Convocation of ICAR–NDRI Deemed University.
- **Mr. Mrinmoy Das** received the **Second Prize (Best Oral Presentation)** at the National Conference on “Digital Interventions and Sustainable Livelihoods in Hill Ecosystem Towards Vision Viksit Bharat 2047”, organized by the Department of Agricultural Economics, Visva-Bharati, Sriniketan, West Bengal, and ICSSR, New Delhi, from January 10–11, 2025.

DAIRY EXTENSION

- Sanchita Garai received the **Young Women Scientist Award** at the *12th National Seminar on “Futuristic Agriculture: Technology, Sustainability and Beyond”* organized by Society for Community Mobilization for Sustainable Development (MOBILIZATION) in collaboration with CAU Imphal and ICAR-Research Complex for NEH Region, Umiam, Meghalaya, India, **May 22–24, 2025**.



- Maiti S., Manjunath K.V., Garai S., Kumar R., Mondal G., Aggarwal A., and Sankhala G. received the **Best Oral Presentation Award** for the paper titled “*NDRI Climate Services: An Extension Model for Promoting Climate Smart Dairy Farming in Haryana*” at the *12th National Seminar on “Futuristic Agriculture: Technology, Sustainability and Beyond”* organized by MOBILIZATION in collaboration with CAU Imphal and ICAR-Research Complex for NEH Region, Umiam, Meghalaya, India, **May 22–24, 2025**.
- Garai S., Lakshmi S., Veldandi A., Maiti S., Panja A., and Sankhala G. received the **Best Oral Presentation Award** for the paper titled “*Achieving Dairy Aspiration in Climate Realities: Women-Centric Climate Adaptation Plan for Rural Haryana using Fuzzy Cognitive Approach*” at the *12th National Seminar on “Futuristic Agriculture: Technology, Sustainability and Beyond”* organized by MOBILIZATION in collaboration with CAU Imphal and ICAR-Research Complex for NEH Region, Umiam, Meghalaya, India, **May 22–24, 2025**.
- Veldandi A., Zade S., Panja A., Pavan P., Chandel A.S., Garai S., and Maiti S. received the **First Best Poster Presentation Award** for the paper titled “*Sustaining Livelihoods: Climate-responsive Livestock Rearing Practices in Eastern India*” at the *National Seminar on “Progressive Agriculture–Vikshit Bharat: Preparedness for Eastern Region”* held at ICAR-Research Complex for Eastern Region, Patna, India, **February 21–23, 2025**.
- Veldandi A., Reddy A.K., Sirilakshmi Y., Garai S., and Maiti S. received the **First Best Poster Presentation Award** for the paper titled “*Mapping Impacts and*

Adaptation: A Cognitive Approach to Women Farmers' Climate Resilience" at the *Global Conference on "Innovations to Impact: Gender Transformative Approach for Sustainable Agri-Food System"* held at ICAR-Central Institute for Women in Agriculture, Bhubaneswar, India, **March 8–10, 2025**.

- Veldandi A., Zade S., Panja A., Sirilakshmi Y., Pavan P., Garai S., and Maiti S. received the **Best Oral Presentation Award** for the paper titled *"Cognitive Mapping of Perceived Climate Resilience of Dairy Production System of Women Dairy Farmers in Coastal Region of Andhra Pradesh"* at the *2nd International Conference on "Frontiers in Science and Technology for Agricultural Transformation"* held at ICAR-National Academy for Agricultural Research Management, Hyderabad, India, **September 25–26, 2025**.
- Veldandi A., Garai S., Zade S., Pavan P., Chandel A.S., Panja A., and Maiti S. received the **First Best Oral Presentation Award** for the paper titled *"Adaptation Effectiveness of Dairy Production System of Women Dairy Farmers across the Coastal Region of Andhra Pradesh"* at the *Second International Extension Education Congress (IEEC)* organized by the Society of Extension Education at SOA, Bhubaneswar, Odisha, India, **November 24–26, 2025**.

ANIMAL BIOCHEMISTRY

- Ms. Diksha Sharma received **Best Oral Presentation Award** for the paper titled *"Therapeutic Potential of Milk Fat Globule Membrane in Restoring Metabolic, Reproductive, and Bone Health in Polycystic Ovary Syndrome"* authored by Diksha Sharma, Rajeev Kapila and Suman Kapila at the *12th International Conference on Emerging Issues in Agricultural, Food Technology, Biological & Applied Sciences for Global Development (EIAFTBASGD)* held at Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India, during **November 15–17, 2025**.
- Ms. Priyssanka Goyal secured **Third Prize (Poster Presentation)** under the theme *"Smart Livestock Farming"* for the poster titled *"Harnessing the Potential of Bovine Milk Extracellular Vesicles and their mRNAs in Human Health: A Frontier Science Approach for a Developed India"* authored by Priyanka Goyal, Roshan Mohiddin, Suneel K. Onteru and Dheer Singh at the **XVII Agricultural Science Congress (ASC)** held at G.B. Pant University of Agriculture and Technology, Pantnagar, during February 20–22, 2025.
- Dr. Rajani Kumar Paul secured **First Prize (Oral Presentation)** for the paper titled *"Functional Characterization of Recombinant Buffalo Cysteine-rich Secretory Protein 1 on Sperm Physiology"* at the *9th Annual Convention of SVBBI and National Symposium on "Advancing Animal Health and Production through*

Biochemical and Biotechnological Innovations” (SVBBICON) held at WBUAFS, Kolkata, during November 28–29, 2025.

- Dr. Sunita Meena received **Excellence in Teaching Award** at the **Xth International Conference on Global Research Initiatives for Sustainable Agriculture and Allied Sciences (GRISAAS)** held at MPUAT, Udaipur, Rajasthan, during October 5–7, 2025.
- Dr. Sadeesh E. M. was appointed as an **Editorial Board Member** for the journal *Molecular Biology Reports* (Springer Nature) for an initial term of two years, effective July 2025.
- Dr. Suneel Kumar Onteru secured **First Prize (Poster Presentation)** under the theme “Smart Livestock Farming” for the poster titled “Innate Immunity in Selected Indian Cattle Breeds Traced from Gene Duplications and Deletions” authored by Mayank Roshan, Ashutosh Vats, Kamlesh Kumari Bajwa, Sanjay Sharma, Menaka Thambiraja, Monika Sodhi, Dheer Singh, Ragothaman M. Yenamalli and Suneel Kumar Onteru at the **XVII Agricultural Science Congress (ASC-2025)** held at G.B. Pant University of Agriculture and Technology, Pantnagar, during February 20–22, 2025.

AP

- Dr. Sohan Vir Singh was conferred with **ANSI Fellow Award** during the 21st Biennial International Conference on “Global Resilience in Animal Nutrition: Innovations for a Sustainable Future” organized by the Department of Animal Nutrition, College of Veterinary Science & Animal Husbandry, Acharya Narendra Deva University of Agriculture and Technology (ANDUAT), held at Ayodhya, Uttar Pradesh, India, during November 19–21, 2025.
- Dr. Sohan Vir Singh was conferred with **ISBD Outstanding Extension Worker Award** by the Indian Society for Buffalo Development during the National Conference on “Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future” organized at ICAR–Indian Veterinary Research Institute (IVRI), Izatnagar, Uttar Pradesh, India, during December 15–16, 2025.
- Dr. Sohan Vir Singh’s Ph.D. student Dr. Apeksha K. Ukey received **PPKS Best Ph.D. Thesis Award** conferred by the National Academy of Veterinary Nutrition and Animal Welfare during the 7th Annual Convention and National Conference organized at ICAR–National Institute of Animal Nutrition and Physiology (NIANP), Bengaluru, Karnataka, India, during October 16–17, 2025.
- Dr. Sohan Vir Singh’s M.V.Sc. student Dr. Roohani Sharma received **Sushila Memorial Award for Best M.V.Sc. Thesis–2025** conferred by the National Academy of Veterinary Nutrition and Animal Welfare during the 7th Annual Convention and

National Conference organized at ICAR–NIANP, Bengaluru, Karnataka, India, during October 16–17, 2025.

- Dr. Sohan Vir Singh along with Apeksha Ukey, T. Satpute, P. Singh and M. Vaidya received Best Oral Presentation Award for the research titled “Exploring the Impact of Similar Range of Temperature–Humidity Index on Testicular Thermal Profiles and Semen Quality Parameters of Murrah Bulls under Heat Stress” at the National Conference of Indian Society for Buffalo Development on “Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future” organized at ICAR–IVRI, Izatnagar, Uttar Pradesh, India, during December 15–16, 2025.
- Dr. Sohan Vir Singh received Second Prize under Excellent Hindi Article category for the article titled “पशुधन पर मौसम की चरम घटनाओं का प्रभाव और उनकी सुधारात्मक रणनीतियाँ” during Hindi Diwas Programme organized at ICAR–National Dairy Research Institute (NDRI), Karnal, Haryana, India, on September 22, 2025.
- Dr. Sohan Vir Singh along with Nikita Bhalkiya, Pawan Singh, Gaurav Kumar and Apeksha Ukey received Second Prize under Excellent Hindi Article category for the article titled “भूतापीय ऊर्जा: पृथ्वी का सर्वोत्तम उपहार” during Hindi Diwas Programme organized at ICAR–NDRI, Karnal, Haryana, India, on September 22, 2025.
- Dr. Sohan Vir Singh along with Nirnal Singh and Rajkumar received First Prize in Hindi Poster Presentation Competition for the poster titled “Technological Intervention for Enhancing Farmers’ Income under Farmer FIRST Project” during Hindi Pakhwada organized at ICAR–Central Soil Salinity Research Institute (CSSRI), Karnal, Haryana, India, during September 14–18, 2025.
- Dr. Sohan Vir Singh’s Ph.D. student Dr. Apeksha Ukey received Young Scientist Award–2025 conferred by the Society of Agriculture, Allied Sciences and Technology during the Second International Conference on Modern Agriculture and Allied Sciences (ICMAAS–2025) organized at West Bengal University of Animal and Fishery Sciences (WBUAFS), Kolkata, West Bengal, India, during December 20–21, 2025.

AGB

- **Dr. Vikas Vohra** was conferred the **Distinguished Scientist Award (Agricultural Category)** by the Scientific Laurels Society, operated by Peritus Hive Research and Innovations, Government of India.

AGRONOMY

- **Dr. Sanjeev Kumar** was conferred the **Distinguished Scientist Award** for outstanding contributions in the field of agronomy by the Society for Scientific Development in Agriculture and Technology during the 10th International

Conference on “Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS)”, organized by Astha Foundation, Meerut held at Udaipur from October 5–7, 2025.

- **Dr. Anurag Saxena** was conferred the **Dr. M. S. Swaminathan Award** by the Indian Society of Agricultural Science & Technology Research (ISASTR) during the 12th International Conference on Agriculture and Veterinary Sciences on “Transformative Approaches, Research, and Innovations”, held at Goa from November 16–18, 2025.
- **Singh, H., Kumar, S., Fiskey, V. V., Dadhich, D. K., Setia, S., and Singh, M.** presented a research paper titled “Effect of Organic Amendments on Yield and Quality of Maize + Cowpea Intercropping for Sustainable Dairy Farming” in the Proceedings of the 10th International Conference on “Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS)”, organized by Astha Foundation, Meerut, held at Udaipur, during October 5–7, 2025.
- **Fiskey, V. V., Chethan, C., Kamsali, S. A., Chandrakar, T., and Kumar, S.** presented a research paper titled “Synergistic Effect of Organic Nutrient Management on Yield and Nutritive Value of Organic Fodder” in the Proceedings of the 10th International Conference on “Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS)”, organized by Astha Foundation, Meerut, held at Udaipur, during October 5–7, 2025.
- **Dr. Sanjeev Kumar** served as **Co-Chairman of a Technical Session** at the 10th International Conference on “Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS)”, held at Udaipur, during October 5–7, 2025.

LPM

- **Tejeshwari Satpute, Pawan Singh, A. Ukey, M. Chitkara, A. Gurao and R. S. Kataria** received **Second Prize (Oral Presentation)** for the paper titled “Optimizing Semen Quality through Microclimatic Modification and Nutritional Strategies with Insights into Heat-Stress Related Gene Expression in Murrah Buffalo Bulls” at the National Conference of Indian Society for Buffalo Development (ISBD) on “Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future” organized by ICAR-IVRI, Izatnagar, Uttar Pradesh, during December 15–16, 2025.
- **Anusmita Baishya, Pawan Singh, Manishi Mukesh and Ramesh Chandra** received **Third Prize (Oral Presentation)** for the paper titled “Proteome Driven Insights into Thermotolerance: A Roadmap for Climate-Smart Buffalo Breeding” at the National Conference of Indian Society for Buffalo Development (ISBD) on

“Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future” organized by ICAR-IVRI, Izatnagar, Uttar Pradesh, during December 15–16, 2025.

- **Dr. Nishant Kumar** received **Associate Fellowship of National Academy of Veterinary Sciences, India (NAVSI)** at the XXIII Convocation cum National Scientific Convention on “Strategic Framework for Transformation of India’s Livestock, Poultry and Meat Sector for Viksit Bharat @ 2047” held at Bihar Animal Sciences University, Patna, during December 22–23, 2025.
- **Dr. Alok Kumar** received **APA Best PhD Thesis Award** (Major Advisor: Dr. Nishant Kumar) at the 5th Annual Conference of Animal Physiology Association and National Symposium on “Next Generation Physiological Approaches for Climate Adaptive Livestock Production (APACON-2025)” held at KVAFSU, Bidar, Karnataka, in 2025.
- **Sanchi Kamal, Nishant Kumar, Richa Singh, Anusha Kishore, Indu Devi and T. K. Mohanty** received **Young Scientist Award** for the research titled “Pheromonal Bio-stimulation Accelerates Postpartum Ovarian Cyclicity and Enhances Reproductive Efficiency in Sahiwal Cows” at the 40th Annual Convention of ISSAR and International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities” held at Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Puducherry, during December 10–12, 2025.
- **Dr. Dileep Kumar Yadav** received **Best PhD Thesis Award** (Major Advisor: Dr. Nishant Kumar) at the 4th International Conference on Recent Advances in Agriculture, Food Security, Veterinary and Allied Sciences for Livelihood and Environmental Sustainability held at University of Agricultural Sciences, Raichur, Karnataka, during April 25–27, 2025.
- **Rubina K. Baithalu** received **Best Oral Presentation Award** at the International Symposium and XXXX Annual Convention of ISSAR held at Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry, during December 10–12, 2025.
- **Deepti Arya, Rubina K. Baithalu, M. Akram, V. Gohil, A. Fernandes, C. Purthi and S. Ruhil** received **Third Prize (Oral Presentation)** at the XII Annual Convention of the Society for Veterinary Sciences and Biotechnology and International Conference on “Bridging Science and Society: Biotechnology for Sustainable One Health” held at LUVAS, Hisar, during December 3–5, 2025.
- **A. Fernandes, Rubina K. Baithalu, C. Purthi, M. Pandey, A. Akram and T. K. Mohanty** received **Third Prize (Oral Presentation)** at the National Conference

of Indian Society for Buffalo Development (ISBD) on “Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future” held at ICAR-IVRI, Izatnagar, Bareilly, Uttar Pradesh, during December 15–16, 2025.

- **Rubina K. Baithalu** received **Appreciation Certificate** for delivering an expert lecture titled “Biomolecules Discovery in Biofluid for Developing Diagnostic Assay for Effective Monitoring of Reproductive Health of Dairy Animals” at the 10 Days International e-Refresher Course on “Latest Innovative Reproductive Techniques in Veterinary Science” organized by Bihar Animal Sciences University, Patna, during April 21–30, 2025.
- **Rubina K. Baithalu** received **Certificate of Honour** for serving as Co-Chairman in a technical session at the International Symposium and XXXX Annual Convention of ISSAR held at Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry, during December 10–12, 2025.
- **S. K. Verma, Indu Devi, Bharati Pandey, Vikas Vohra and Pawan Singh** received **Second Best Oral Presentation Award** for the paper titled “Development of Deep Learning Based Biometric System for Automated Individual Identification of Cows Using Muzzle Images” at the 12th National Seminar on “Globalization of Indian Dairy Industry” organized by NGAA and ICAR-NDRI, Karnal, on September 20, 2025.
- **Sadhna Tiwari, S. S. Lathwal, Indu Devi and Rimee Dhakad** received **First Best Poster Presentation Award** for the paper titled “Effect of Maternal Programming through Nutritional Supplementation on Behavioural and Productive Performance of Transition Murrah Buffaloes” at the VI Annual Convention of VIPM and National Symposium on “Revolutionizing Veterinary Medicine in Climate Crisis: Harnessing AI for Animal Health (VIPMCON)” held at NDVSU, Jabalpur, during October 8–10, 2025.
- **Shruti Arya, Indu Devi, Divyanshu Singh Tomar, Man Singh, T. K. Mohanty, Radhika Warhade and Anshul Gautam** received **Best Research Paper Award (Dairy Production Category)** for the paper titled “Development of a Lightweight Deep Learning Model for the Identification and Classification of Indigenous Cattle Breeds” published in Indian Journal of Dairy Sciences, in 2025.
- **Shruti Arya, Indu Devi, D. S. Tomar and Radhika Warhade** received **Third Prize (Excellent Hindi Article Publication)** for the article titled “Role of Renewable Energy in Dairy Farming: Need of Hour” published in Dugdh Ganga Rajbhasha Magazine, in 2025.
- **Neelam Purohit, Indu Devi, Ankita Bhosale and Pawan Singh** received **First Prize (Excellent Hindi Article Publication)** for the article titled “Effect

- of Drinking Water Temperature on Dairy Animals Production Performance” published in *Dugdh Ganga Rajbhasha Magazine*, in 2025.
- **Sanjeet Kumar Verma, Indu Devi, H. P. Kour and Radha Mittal** received **First Prize (Excellent Hindi Article Publication)** for the article titled “Advanced Methods for Animal Identification” published in *Dairy Samarika Magazine*, in 2025.
 - **Indu Devi and S. K. Verma** received **Second Prize (Hindi Poster Presentation)** for the poster titled “Bovine Biometrics for Individual Animal Identification Using Muzzle Images” at the **Hindi Pakhwada-2025** organized at ICAR-NDRI, Karnal, in 2025.
 - **Kiran Goyat, Gurdeep Singh, Ankit Deep and Nishant Kumar** received **First Prize (Hindi Shodh Patra Poster Pratiyogita)** at the Rajbhasha Vibhaag event organized at ICAR-NDRI, Karnal, on September 23, 2025.
 - **ANIMAL BIOTECHNOLOGY**
 - Dr. Bhararti Pandey received the prize for Hindi article titled “डेयरी फार्मों में कृत्रिम बुद्धिमत्ता (AI) के उदाहरण और अवसर” published in *Dugdh Ganga (ICAR-NDRI, Karnal), Issue 13(1), pp. 80–82 (2023)*, awarded in 2025.
 - **Ritika, Shavi, Hanshika Pal, N.L. Selokar, and M.K. Singh** received the **2nd Best Oral Presentation Award** for the paper titled “*Induced pluripotent stem (iPS) cells of cattle: generation and their characterization*” at the *40th Annual Convention & International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities”* held at Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry, **December 10–12, 2025**.
 - **Dr. Seema Karanwal, PhD student under Dr. Rakesh Kumar**, received the **Prof. N.R. Moudgal Young Scientist Award** for her outstanding contribution in PhD research in reproductive health at the *International Conference of Medicine organized by ISSRF, February 14–16, 2025*.
 - **Manya Mathur, Reetu Rani, Nikunj Tyagi, J.K. Kaushik, and Sudarshan Kumar** received the **First Prize in Poster Presentation** for the paper titled “*Identification of Differentially Expressed lncRNAs Shaping the Regulatory Pathways Associated with Milk Production in Sahiwal Cattle*” at the *XII Annual Convention of the Society for Veterinary Sciences and Biotechnology (SVSBT) and International Conference* held at Department of Biotechnology, College of Veterinary Sciences, LUVAS, Hisar, **December 3–5, 2025**.
 - **Chanchal Rana, PhD student under Dr. S. De**, received the **Best Oral Presentation Award** for the paper titled “*Global Prevalence Pattern of Antimicrobial Resistance in Extended Spectrum Beta-lactamase-Producing E. coli*” at the *XII Annual*

Convention of the Society for Veterinary Sciences and Biotechnology (SVSBT) and International Conference on “Bridging Science and Society: Biotechnology for Sustainable One Health” held at LUVAS, Hisar, Haryana, **December 3–5, 2025.**

- **Renu Rani, PhD student under Dr. Sudarshan Kumar**, received the **First Prize in Oral Presentation** for the paper titled *“Aptamer-Based Non-invasive Approach for Sex-Specific Sperm Sorting in Bovine”* at the *XII Annual Convention of the Society for Veterinary Sciences and Biotechnology (SVSBT) and International Conference* held at Department of Biotechnology, College of Veterinary Sciences, LUVAS, Hisar, **December 3–5, 2025.**
- **Jahnvi Ahlawat, MSc student under Dr. J.K. Kaushik**, received the **Best Oral Presentation Award** for the paper titled *“Optimizing Recombinant Expression and Purification of Self-cleaving Buffalo SAS1B: Challenges and Insights”* at the *International Conference on “Innovations in Science and Technology: A Perspective of Viksit Bharat @ 2047”* organized by Deen Dayal Upadhyaya College, University of Delhi, **March 19–20, 2025.**
- **Diksha Sethi, PhD student under Dr. D. Malakar**, received the **Best Oral Presentation Award** for the paper titled *“CRISPR/Cas9-Mediated MSTN Knock-In of Human Erythropoietin Gene for Generation of Transgenic Goat Embryos via SCNT”* at the *5th Biotechnology Conclave cum International Conference on “Harnessing Biotechnology for Sustainable BioE3 Future”* held at UCB, Patwadangar, Nainital, Uttarakhand, **November 19–21, 2025.**
- **Nidhi Kumari, PhD student under Dr. Dharmendra Kumar (CIRB)**, received the **Best Oral Presentation Award** at the *ISSGPUCON 2025 Conference* held at ICAR-Central Institute for Research on Goats (CIRG), Mathura, India, **February 5–7, 2025.**
- **Ramprasad, PhD student under Dr. Sonika Ahlawat (NBAGR)**, received the **Best Oral Presentation Award** for the paper titled *“Integrating Multiomics to Understand the Genetic Basis of High-Altitude Adaptation in Changthangi Goats”* at the *ISSGPUCON 2025 Conference* held at ICAR-Central Institute for Research on Goats (CIRG), Mathura, India, **February 5–7, 2025.**

ANIMAL NUTRITION

- **Harneet Kour** received the **Dr. S.K. Ranjhan Best Doctorate Thesis Award-2025** conferred by the Animal Nutrition Society of India (ANSI) at the *21st Biennial International Conference (ANSICON)* held at ANDUAT, Kumarganj, Ayodhya, Uttar Pradesh, **November 19–21, 2025.**
- **Prateek Singh, Chander Datt, Kuldeep Dudi, Somesh Gaikwad, and Nishant Kumar** received the **First Prize in Poster Presentation** for the paper

titled “*Influence of Supplementing Nanocopper on Haematological Parameters in Alpine × Beetal Male Kids*” at the 21st Biennial International Conference on “*Global Resilience in Animal Nutrition: Innovations for Sustainable Future (ANSICON)*” held at ANDUAT, Kumarganj, Ayodhya, Uttar Pradesh, **November 19–21, 2025.**

- **Chander Datt, Akanksha Patel, and Sumit Narayan** received the **Protsahan Purushkar** for the Hindi article titled “*Gai-Bhains ke Shavakon ka Poshan*” published in *Rajasthan Kheti Pratap*, pp. 10–12, **2025.**
- **Harneet Kour** received an **Appreciation Certificate for Innovative Research Work** for outstanding contribution in Dairy Production at the 21st Convocation of ICAR-NDRI, **April 22, 2025.**
- **Harneet Kour, Raman Malik, Parul Rana, Amandeep Goyal, and Garima Chaudhary** received the **Second Prize in Oral Presentation** for the paper titled “*Continuous Rumen Bioreactor: Standardization and Evaluation of Methane Inhibiting Feed Additives*” at the 21st Biennial International Conference (ANSICON) held at ANDUAT, Kumarganj, Ayodhya, Uttar Pradesh, **November 19–21, 2025.**
- **Harneet Kour, Raman Malik, Parul Rana, Amandeep Goyal, and Garima Chaudhary** received the **Third Prize in Poster Presentation** for the paper titled “*Whole Genome Metagenomic Analysis of Microbial Community to Monitor Long-Term Stability in Continuous Rumen Bioreactor*” at the 21st Biennial International Conference (ANSICON) held at Kumarganj, Ayodhya, Uttar Pradesh, **November 19–21, 2025.**
- **Kanwate Rishikesh, R. Malik, H. Kour, P. Rana, and A. Goyal** received the **Second Prize in Poster Presentation** for the paper titled “*Estimation of Methane Emission from Dung of Lactating Tharparkar, Karan Fries Cattle and Murrah Buffaloes*” at the *World Animal Nutrition Conference (WANACON)* held at Nagpur Veterinary College, Nagpur, **January 20–22, 2025.**
- **Dr. Chander Datt** : Member of Institute Management Committee of ICAR-CIRB, Hisar, Haryana held on December 16.



Fig. Members of IMC with Director, ICAR-CIRB, Hisar

Dr. Chander Datt: Vice President (North Zone) of Animal Nutrition Society of India

Dr. Sachin Kumar was invited as an expert to deliver a talk titled “*Sustainable Family Farming in Livestock to Achieve the SDGs in South Asia: Challenges and Opportunities*” at the *SAARC Expert Consultation Meeting on “UN Decade of Family Farming 2019–2028: Sustainable Family Farming in Livestock Sector for Attaining the SDGs in South Asia”* held at Kathmandu, Nepal, **August 11–13, 2025.**



SRS

Dr. A. Kumaresan

- Ranked among the top 2% most influential scientists globally for five consecutive years (2021–2025) by Stanford University & Elsevier.
- Received Dr. A.S. Kaikini Award – 2025 for lifetime achievement in Andrology at the International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities” organized at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, India, during December 10–12, 2025.
- Aparna Raj (PhD student) received **Best Poster Presentation Award** at the International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities” organized at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, India, during December 10–12, 2025.
- Vedamurthy G. V., Naresh Kumar K., Kumaresan A., Sulochana M., Lavanya M. and S. Jeyakumar received **Best Oral Presentation Award** for the abstract “Gapdhs: Potential Biomarker of Sperm Progressive Motility” at the 40th Annual Convention of the Indian Society for the Study of Animal Reproduction (ISSAR) and International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities” organized at Rajiv Gandhi

Institute of Veterinary Education and Research, Puducherry, India, during December 10–12, 2025.

- Vedamurthy G. V., Lavanya M., S. Jeyakumar, Heartwin A. Pushpadass, Kumaresan A., F. Magdaline Eljeeva Emerald and Manimaran A. received **Best Poster Presentation Award** for the research titled “Development of Low-cost Progesterone Encapsulated Nanofiber Based Delivery System for Estrus Induction in Deoni Cattle” at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized by SRS, ICAR-NDRI in collaboration with Indian Dairy Association-South Zone and Alumni Association, ICAR-NDRI, held at Adugodi, Bengaluru, India, on November 28, 2025.

Dr. Rashmi H. M.

- Selected as Associate Fellow of the National Academy of Agricultural Sciences, India, for the year 2026.
- Conferred Young Scientist Award (Faculty Category) for contribution to fermented foods, sponsored by SASNET-FF, at the 12th International Conference on “Fermented Foods, Health Status and Social Well-being” organized by Faculty of Dairy Technology, West Bengal University of Animal and Fishery Sciences (WBUAFS) in collaboration with SASNET-FF, held at Mohanpur Campus, Nadia, West Bengal, India, during December 19–20, 2025.
- Khushi Singh, Monika Sharma, Rashmi H. M. and Vandana K. V. received **Best Poster Presentation Award** for the research titled “Optimization of whey-based medium for the production of *Lactiplantibacillus plantarum* Lp91 (MTCC 5690)” at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized by SRS, ICAR-NDRI in collaboration with Indian Dairy Association-South Zone and Alumni Association, ICAR-NDRI, held at Adugodi, Bengaluru, India, on November 28, 2025.

Dr. Vairat Amita Dinkar

- Received Outstanding Woman Researcher Award in Agricultural Process Engineering at the 10th Annual Women’s Meet organized by Venus International Foundation, held at Chennai, Tamil Nadu, India, during 2025.

Dr. Arindam Dhali

- Conferred Fellow of the National Academy of Veterinary Sciences (India) during the XXIII Convocation, 2025.
- **Mukund A. Kataktalware, Uppiretla Tony, Priyanka Meena, Umang Vashisth, Menon Rekha Ravindra, Sakthivel Jeyakumar, M. Sivaram,**

Letha Devi G. and Arindam Dhali received **Best Presentation Award** for the research titled “AI-Driven Multimodal Systems for Proactive Lameness Detection in Crossbred Dairy Cattle under Indian Production Systems” at the 7th Annual Convention and National Conference of the National Academy of Veterinary Nutrition and Animal Welfare jointly organized by ICAR-NIANP and the National Academy of Veterinary Nutrition and Animal Welfare, held at Bengaluru, India, during October 16–17, 2025.

Dr. Monika Sharma

- **Ameenabenazir P., Monika Sharma, Menon Rekha Ravindra and Devaraja H. C.** received **Best oral presentation** for the research titled “Comparative study on ultrasound and microwave-assisted extraction of phospholipids from industrial ghee residue” at the International Conference on “Recent Trends in Transforming Global Production Systems: Cutting-Edge Technologies in Penta ‘F’ (Food, Fibre, Feed, Fuel and Fertilizers)” organized by Thiagarajar College, held at Madurai, Tamil Nadu, India, during December 18–19, 2025.
- **Amandeep S., Devaraja H. C. and Monika Sharma** received **Best Oral Presentation Award** for the research titled “Development of active vitamin B12 rich ready to drink composite fruit beverage” at the 8th AMIFOST International Conference on “The Future of Food Science and Technology: Innovation, Sustainability and Health” organized at Amity University, Noida, Uttar Pradesh, India, during March 27–28, 2025.
- **Khushi Singh, Monika Sharma, Rashmi H. M. and Vandana K. V.** received **Best poster presentation award** for the research titled “Optimization of whey-based medium for the production of *Lactiplantibacillus plantarum* Lp91 (MTCC 5690)” at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized at SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.

Dr. Devaraja H. C.

- **Arulkumar M., Nidawanbiang Najjar, Amandeep Singh and Devaraja H. C.** received **Best Oral Presentation Award** for the research titled “In-situ produced Vitamin B12 rich ready to reconstitute Nutri mix” at the 9th International Conference on “Advances in Agricultural, Biological and Biodiversity Conservation for Sustainable Development (ABCD)” organized at University of Mysore, Karnataka, India, during November 13–15, 2025.

Dr. S. Jeyakumar

- Received **Best Poster Presentation Award** for the research titled “Electrospun nanofibre encapsulation: a novel approach for progesterone delivery system

for controlled breeding in dairy cattle” at the International Conference on Reproductive Biomedicine (ISSRF) organized at Jaipur, Rajasthan, India, during February 14–16, 2025.

- **Sakshi Payasi** (MVSc student) received **Best Oral Presentation Award** (Third Prize) at the 40th Annual Convention of ISSAR and International Symposium on “Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities” organized at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, India, during December 10–12, 2025.
- **Vedamurthy G. V.** and team (as above) received **Best Oral and Poster Presentation Awards** at ISSAR and National Symposium organized at Puducherry and Bengaluru, India, during November–December 2025.

Dr. Heartwin A.

- **Adityasukumar P., F. Magdaline Eljeeva Emerald, Heartwin A. Pushpadass and M. S. Roopesh** received **Best poster presentation award** for the research titled “Relative humidity-controlled atmospheric cold plasma as a non-thermal intervention for enhancing the shelf-life of whey” at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized by SRS, ICAR-NDRI in collaboration with Indian Dairy Association-South Zone and Alumni Association, ICAR-NDRI, held at Adugodi, Bengaluru, India, on November 28, 2025.

Students

- **Ayana Suresh and Subash S.** received **Best Paper Presentation Award** at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized at SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.
- **D. N. Das** received **Best Poster Presentation Award** for the research titled “Longitudinal Analysis of Lactation Length and Milk Yield in Deoni cattle” at the National Symposium on “Technological Advancement and Their Application for Management of Native Animal Genetic Resources (AnGR)” and XXII Annual Convention of Society for Conservation of Domestic Animal Biodiversity (SOCDAB) organized at Veterinary College, KVAFSU, Hebbal, Bengaluru, India, during January 21–22, 2025.
- **Deepak et al.** received **Best Poster Presentation Award** for the research titled “Immobilization of β -galactosidase on activated bentonite clay nanoparticles and galactooligosaccharides production from paneer whey” at the Southern Dairy Summit organized by Indian Dairy Association-South Zone, held at Bengaluru, India, during January 9–11, 2025.

- **Gunashekar H.** et al. received **Best Paper Presentation Award** at Southern Dairy Summit organized by Indian Dairy Association-South Zone, held at Bengaluru, India, during January 9–11, 2025.
- **Helna Pious** et al. received **Best oral presentation award** for the research titled “Physico-chemical, textural and nutritional characteristics of skim milk yogurt organogel” at the International Conference on “Recent Advances in Food Science and Technology: A Way Forward” organized by DSLD-CHEFT, held at Haveri, Karnataka, India, during January 22–24, 2025.
- **Kauser Banu** et al. received **Best poster presentation award** at Southern Dairy Summit-2025 organized by Indian Dairy Association-South Zone, held at NIMHANS Convention Centre, Bengaluru, India, during January 9–11, 2025.
- **Neha R. Petare** et al. received **Best poster presentation award** for the research titled “Purification of GOS produced from paneer whey using activated charcoal and selective microbial fermentation” at the National Symposium organized by SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.
- **P. Adithyasukumar** received Third Prize (with CAD 150 award) in poster presentation at ALES Graduate Research Conference organized by University of Alberta, held at Edmonton, Canada, during April 1–2, 2025.
- **Pratik Ramesh Wankhade** received **Best poster presentation award** at ISAPM National Conference organized at Department of Animal Production, RCA, MPUAT, held at Udaipur, Rajasthan, India, during February 26–28, 2025.
- **Priyanka B. N.** et al. received **Best paper presentation award** at Southern Dairy Summit organized by Indian Dairy Association-South Zone, held at Bengaluru, India, during January 9–11, 2025.
- **Sampreetha H. N.** et al. received **Best paper presentation award** at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized at SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.
- **Saurabh** (M.Tech., Dairy Engineering) received **Best Thesis Award** at the 14th IDEA Convention and National Seminar organized at Verghese Kurien Institute of Dairy and Food Technology (VKIDFT), KVASU, Mannuthy, Thrissur, Kerala, India, during May 8–9, 2025.
- **Spoorthy G. S.** et al. received **Best poster presentation award** for the research titled “Statistical modelling for shelf life prediction of packaged dairy product – ghee” at Southern Dairy Summit organized by Indian Dairy Association-South Zone, held at NIMHANS Convention Centre, Bengaluru, India, during January 9–11, 2025.

- **Usha S.** et al. received **Best poster presentation award** for the research titled “Properties of Curcuma angustifolia starch-PVA composite films loaded with ZnO nanoparticles and polyphenols” at the National Symposium on “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy Sector” organized at SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.
- **Varun K.** et al. received **Best poster presentation award** for the research titled “From Udder to Lab: Characterization of MRSA resistance and biofilm genes” at the National Milk Day Symposium organized at SRS, ICAR-NDRI, Adugodi, Bengaluru, India, on November 28, 2025.

ERS

Dr. Santanu Banik, Principal Scientist & Head

- Was elected as a **Fellow of the National Academy of Veterinary Sciences (India)**.
- Serves as a **Member**, National Advisory Committee for Animal Husbandry and Dairying (Piggery Sector), Ministry of Fisheries, Animal Husbandry and Dairying, Government of India.
- Serves as a **Member**, General Body, Paschim Banga Go-Sampad Bikash Sanstha, West Bengal.
- Served as **Section Editor** of *the Indian Journal of Animal Sciences*.
- Served as a **Member**, Editorial Board, *Indian Journal of Animal Health*.
- Served as a **Member**, Editorial Board, *The Indian Journal of Animal Genetics and Breeding*.
- Serves as a **Member**, Departmental Promotion Committee (DPC), WBUAFS, Kolkata.
- Was appointed as **Examiner** for evaluation of Ph.D. thesis in the Department of Animal Science, Palli Siksha Bhavana, Visva-Bharati.
- Was appointed as **Examiner** for evaluation of M.V.Sc. thesis in the Department of Animal Genetics and Breeding, ICAR–IVRI, Bareilly.

Dr. A. Santra, Principal Scientist

- **Patir, P., Santra, A., Damor, S., Tripura, S., Mandal, D. K., and Das, S. K.** presented a research paper titled “Effect of Slow-Release Nitrogen Compound on Rumen Fermentation and Blood Biochemical Parameters in Growing Crossbred Calves” in the Proceedings of the 21st Biennial International Conference (ANSICON) on “Global Resilience in Animal Nutrition: Innovations for a

Sustainable Future”, held at the College of Veterinary Science and Animal Husbandry, Kumarganj, Ayodhya, Uttar Pradesh, during November 19–21, 2025.

- **Dr. S. K. Das** was appointed as **Examiner for evaluation of M.V.Sc. thesis** in the Department of Veterinary Biochemistry, Faculty of Veterinary and Animal Sciences, West Bengal University of Animal and Fishery Sciences (WBUAFS), Kolkata, in 2025.

Dr. Ajoy Mandal received the **Best Poster Presentation Award** for the poster titled “Genetic Insights on Test-Day Milk Compositional Traits in Jersey Crossbred Cattle” at the XIX Annual Convention and International Conference on “Precision Animal Breeding through Genomics, Artificial Intelligence and Machine Learning”, organized by the Indian Society of Animal Genetics and Breeding (ISAGB) at WBUAFS, Kolkata, during November 13–14, 2025.

Dr. Mohan Mandal, Senior Scientist

- Was nominated as a **Member** of the Indian Expert Panel for the Indo–UK Joint Panel to review proposals under the Farm Animal Disease & Health (FADH) programme of DBT, Government of India, for a three-year term.
- Serves as a **Government of India–nominated Member** of the Institutional Biosafety Committee (IBSC), IIT Kharagpur.
- Serves as **Associate Editor**, *Frontiers in Animal Science*.
- Serves as a **Peer Reviewer** for the Council for the Lindau Nobel Laureate Meetings, Germany.
- Serves as a **Mentor (Physiology & Medicine Category)** for young researchers under the Lindau Nobel Laureate Meetings programme.

Dr. D. K. Mandal, Principal Scientist

- **Patir, P., Santra, A., Damor, S., Tripura, S., Mandal, D. K., and Das, S. K.** *Effect of Slow-Release Nitrogen Compound on Rumen Fermentation and Blood Biochemical Parameters in Growing Crossbred Calves*. In: Proceedings of the 21st Biennial International Conference (ANSICON–2025), held from November 19–21, 2025 at Kumarganj, Ayodhya, Uttar Pradesh.
- Was appointed as **Examiner** for evaluation of M.V.Sc. thesis in the Department of Livestock Production and Management, Faculty of Veterinary and Animal Sciences, WBUAFS, Kolkata.

Dr. Saroj Rai, Senior Scientist

- Received **Best Oral Presentation Award** at the 14th National Symposium on Coastal Agriculture (NSCA) on “*Harnessing Fragile Coastal Ecosystems for Food and*

Environmental Security”, organized at ICAR–Central Research Institute for Jute and Allied Fibres, from February 28 to March 3, 2025.

- Recieved **Second Best Oral Presentation Award** at the 12th International Conference on “*Fermented Foods, Health Status and Social Well-being*”, organized by the Faculty of Dairy Technology, WBUAFS, Nadia, in collaboration with the Swedish South Asian Network on Fermented Foods (SASNET–FF), held from December 19–20, 2025.

6.5.7.4 Employability

The ICAR-National Dairy Research Institute (NDRI), Karnal, maintains a robust employability framework that bridges academic excellence with industry requirements. Central to this mission is a dedicated Placement Cell that provides comprehensive career counseling and mentoring for UG, PG, and PhD scholars. To ensure students are market-ready, the institute hosts regular interactive sessions with industry experts and organizes specialized workshops focusing on oral and written communication, leadership, stress management, and emotional intelligence. This proactive approach is further strengthened by a continuous feedback loop from stakeholders, allowing for the dynamic upgrading of educational programs to meet evolving global standards.

Practical exposure is a cornerstone of the NDRI experience, with students undergoing rigorous industrial internships and laboratory deputations. A significant emphasis is placed on fostering an entrepreneurial spirit; notably, students participate in month-long intensive training on startups and entrepreneurship at prestigious institutions like ICAR-NAARM, Hyderabad. The success of these initiatives is reflected in a stellar placement record, featuring recruitment by top-tier domestic firms and overseas companies. Furthermore, the institute’s graduates consistently secure fellowships at renowned international universities and successfully transition into elite management programs at institutions such as the IIMs and IRMA, demonstrating the versatile and high-caliber nature of the training provided.

Institutional Infrastructure & Academic Excellence

The employability of NDRI graduates is fundamentally supported by world-class infrastructure and a legacy of academic rigor:

- **State-of-the-Art Infrastructure:** The campus is equipped with cutting-edge research laboratories, a National Library of Dairying, a unique Experimental Dairy and Model Dairy plants. These facilities provide a real-world manufacturing environment where students gain hands-on experience in membrane processing, functional food development, and quality assurance. The Business Incubators supported by DST (SINED-TBI) and ICAR (ABI) are providing excellent platform to learn the entrepreneursial skills.

- **Renowned Faculty:** The institute boasts a faculty of distinguished scientists and academicians who are leaders in fields such as Animal Genetics, Dairy Technology, and Milk Protein Chemistry. Their dual role as researchers and mentors ensures that teaching is informed by the latest scientific breakthroughs and global trends.
- **Teaching Quality:** The curriculum integrates theoretical depth with experiential learning. Through a combination of smart classrooms, pilot plant trials, and field visits, the pedagogical approach moves beyond rote learning to focus on problem-solving, analytical thinking, and technical mastery.
- **Research Ecosystem:** As a Deemed University, NDRI fosters an environment of inquiry. Students are encouraged to engage in high-impact research projects, often leading to publications in international journals, which significantly enhances their profiles for both corporate roles and advanced academic pursuits.

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University Governance

6.6.1. University Governance

6.6.1.1. MISSION, GOAL AND OBJECTIVES

Mission

The mission of the ICAR - National Dairy Research Institute (NDRI) is to advance the development of the dairy sector through the creation of quality human resources, development of appropriate and innovative technologies in the areas of production, processing, and marketing of milk and milk products, and the effective dissemination of these technologies to the dairy industry, farming community and the nation.

Vision

The vision of the ICAR - National Dairy Research Institute is to emerge as a globally recognized centre of excellence in dairy research, education, and innovation, contributing to sustainable dairy development, food and nutritional security, and socio-economic advancement of farming communities. ICAR-NDRI is positioning itself as a global center of excellence in dairy science and technology through a combination of high-impact research, academic leadership and innovation that have both national and international relevance.

State-of-the-art R&D infrastructure: The Institute houses advanced labs (e.g., National Referral Laboratory for Milk Quality & Safety, Central Instrumentation Facility, climate resilient livestock research, biotechnology, Experimental Dairy plant) and a large model dairy plant (2 Lakhs L/day) that support enhancing animal productivity, translational research, product scaling, and national and international collaborations.

Academic excellence & human resource development: As a Deemed University, ICAR – NDRI offers B.Tech in Dairy Technology, Biotechnology and Food Technology; M.Tech/M.Sc/M.V.Sc and Ph.D. programmes in 14 disciplines of dairy science and related fields, attracting scholars nationally and internationally and preparing globally competitive professionals.

6.6.1.2. Mandate

- To organize and conduct under-graduate and post-graduate programmes through various branches of dairy science.
- To undertake basic and applied research in the area of dairying
- To develop dairy farming systems for different agro-climatic conditions and demonstrate models for transfer of technology.
- To organize short-term specialized training programmes and vocational courses.
- To collaborate with National and International agencies for Dairy Research and Development
- To provide consultancy.

- To act as a Referral Centre on Dairy Research.

6.6.1.3 Goal

The goal of the ICAR - National Dairy Research Institute (ICAR-NDRI) is to provide research and development support for the generation and dissemination of knowledge aimed at improving milch animal productivity, enhancing milk production, increasing the efficiency and competitiveness of the dairy industry, and strengthening management practices within the dairy profession. These efforts are directed towards achieving social, economic, and environmental benefits for the nation, along with sustained human resource development.

The goals and objectives of the Institute with respect to **Teaching, Research, and Extension** are as follows:

Teaching

- To make dairy education responsive to the evolving needs of society in general and to the aspirations of the milk-producing community in particular, in alignment with the principles of the National Education Policy 2020, by promoting learner-centric, multidisciplinary, and experiential learning approaches.
- To establish a dynamic and flexible system of dairy education in accordance with National Education Policy 2020 for developing highly skilled, innovative, and competent human resources capable of addressing emerging challenges in research, extension, sustainability, and dairy-based industrial development.

Research

- To develop multidisciplinary, end-use technologies addressing challenges related to dairy production, processing, and management by integrating advances from animal sciences, biotechnology, engineering, data science, and socio-economic domains.
- To establish and maintain state-of-the-art multidisciplinary research infrastructure, including well-equipped laboratories, extensive farmland, and an effective research management system, to ensure timely, efficient, and cost-effective implementation of research programmes.
- To attract, retain, and support qualified and talented multidisciplinary research personnel capable of undertaking high-quality, collaborative, and translational research across diverse domains relevant to the dairy sector.

Extension

- To ensure that validated research findings and innovations are effectively disseminated to dairy farmers, industry stakeholders, and researchers, while

strengthening capacity building of all stakeholders and facilitating problem identification through systematic feedback mechanisms.

- To promote large-scale transfer of knowledge and technology to dairy farmers and the dairy industry through capacity building and skill development of stakeholders, including grassroots-level workers, officers of State Departments, and allied agencies, ensuring sustainable and inclusive growth of the dairy sector.

6.6.1.4 Specific Objectives

- To provide an education system that is contemporary and meets needs of the changing dairy sector.
- To make dairy education responsive to the needs of dairy sector and widen the knowledge base by providing vocational training in dairy sciences to the rural youth from all strata of the farming community.
- To start courses of current and future relevance to build a strong academic foundation for the scientific and technical manpower generated by the university.
- To develop technology in a proactive manner that solves the immediate problems of the producers on priority and enhances the productivity of dairy sector, reduces the cost of production and increases production in a sustainable manner.
- To document problems that requires immediate attention and those that need long-term attention and address them in mission mode and strategic mode, respectively.
- To create the necessary infrastructure for carrying out research in the cutting edge of science and technology.
- To facilitate effective transfer of technology to the farmers/dairy industry in an effective manner.
- To educate producers, government officials and trainers on the new developments in the field of dairying for wider dissemination.
- To develop extension techniques that are best suited for the transfer of technology and overall development of farmers' knowledge base.
- To commission the services of experts to solve the insurmountable problems of the farmers/dairy industry from time to time.
- To put in place an effective feedback mechanism from the grassroots on the performance of technology released and on emerging problems for the benefit of researchers and teachers.
- To identify thrust areas of immediate relevance and for future and initiate work so that emerging problems can be spotted and research directed towards their solution.

Statutes and Regulations

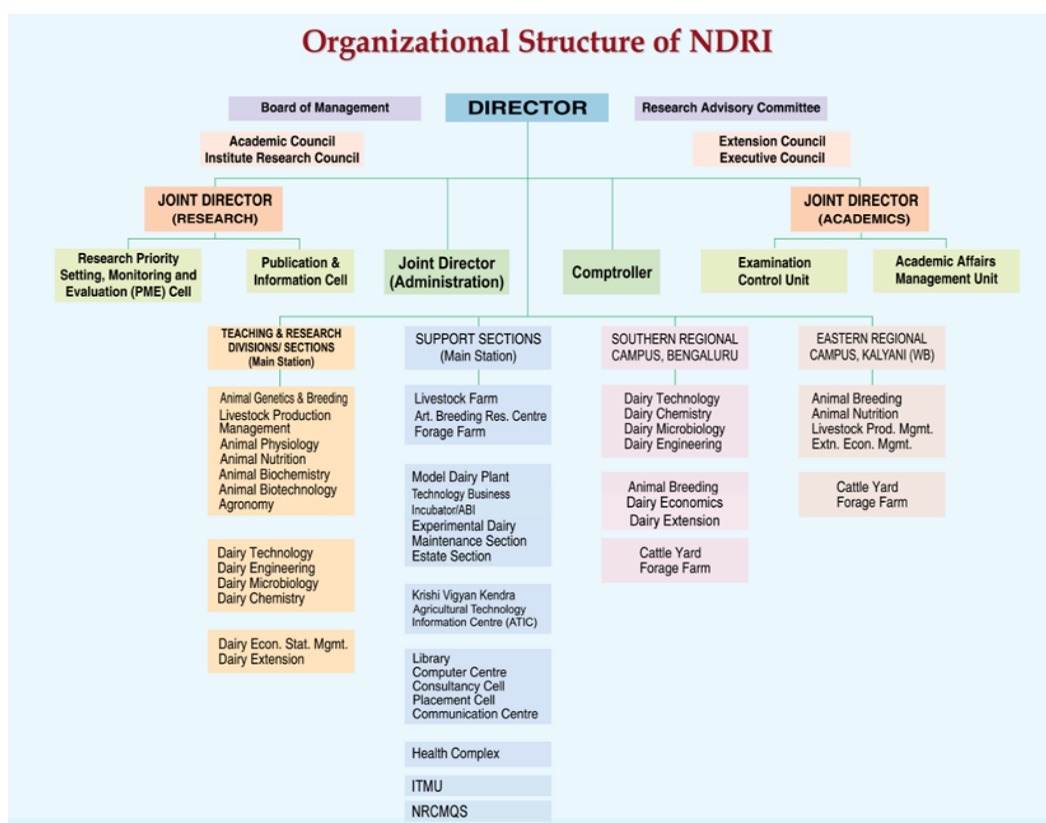
ICAR has formulated Model Act, which has been recommended for adoption by different SAUs. The adoption of the Model Act ensures certain degree of uniformity in the governance and administration of the SAUs. At this university, the major recommendations outlined in the Model Act are already adopted and a few more aspects are being amended. A comparative statement of the major recommendations of the Model Act of ICAR vis-à-vis the extent of adoption at ICAR – NDRI Deemed University that is governed by the ICAR Society Act (1860) is provided hereunder.

ICAR MODEL ACT		ICAR – NDRI ACT
A. OFFICERS		
1	The Chancellor-Governor of the State	Union Minister of Agriculture
2	The Vice Chancellor - Head of the University	Director-Head of the Institute
3	The Director of Research and Extension Education	Joint Director (Research)
4	Deans	Joint Director (Academic)
5	Registrar	Joint Director Administration & Registrar
6	Comptroller	Comptroller /Sr. Finance and Account Officer
7	Head of the Divisions	Head of the Divisions
B. Authority of the University		
Both the acts have the same Authority like Board of Management (BOM), Academic Council (AC), Research Advisory Committee (RAC), Extension Council (EC) etc. The functions are as per the objectives of the University.		
The highest policy making body is the Board of Management (BOM). The Director ICAR-NDRI, is the Chairman of this Board. The Research Advisory Committee (RAC) is responsible for the all-round progress in research at the Institute and its application. The Academic Council is responsible for all issues relating to the education and training. The Academic Council, in turn, is supported by (i) Standing Committees, (ii) the Post Graduate Faculty, and (iii) the Board of Studies in the respective disciplines. The Extension Council is responsible for guiding extension programmes. Institute Research Committee (IRC) is responsible for prioritization, monitoring and evaluation of research conducted in the Institute. The Executive Council is the main task-implementing body on Administrative matters and the powers and the function of this Council shall be those as may be delegated by the BOM. The research, education and extension activities of the Institute are managed by the Director and the Joint Directors through scientific, technical, administrative and supporting staff. The Director is the overall Administrative Head of the Institute and its Regional Stations. The Joint Directors in addition to extending support to the Director in the area of research, academics and administration are responsible to co-ordinate research and educational activities of various Divisions and Regional Stations, respectively. Each of the Regional Stations is administered through the Head located at the station. The scientific and teaching work at the main campus and its regional campuses is conducted in 14 subject-matter disciplines.		

C. Fund and Accounts	
Contributions from the respective State and ICAR	Full grant from ICAR for whole Institute and allocation for University Office
D. States and Regulations	

The ICAR Model Act, in Chapter VII, defines the statutes and regulations for Agricultural Universities. The statutes of the University provide for matters connected with the affairs of the University and, in particular, for the constitution, powers, and duties of the authorities; their appointments, functions, and service conditions (other than those of the Vice-Chancellor and the Chancellor); the classification, qualifications, and manner of appointment of teaching and non-teaching staff; and their service conditions. The statutes also include provisions for the establishment of pension and insurance schemes, the creation, composition, and functions of bodies for the improvement of academic life, and the conditions of service, remuneration, and allowances payable to teachers and other personnel. Additionally, they cover the appointment of examiners, management of colleges/centres, terms and conditions of service of the Vice-Chancellor, holding of convocations, and the conferment and withdrawal of honorary degrees. The authorities of the University frame regulations, consistent with the Act and statutes, to lay down procedures for meetings, to address matters that are to be regulated by regulations under the Act and statutes, and to deal with any other matters concerning the authorities that are not otherwise provided for. For academic matters, the Academic Council frames regulations to govern issues such as the holding of convocations for the conferment of degrees, conferment and withdrawal of honorary degrees, rules for scholarships and fellowships, hostel regulations, fee structure, admission of students, eligibility conditions, and the conduct of entrance examinations for various courses. All such regulations are submitted to the Board and the Chancellor for their approval.

At ICAR–NDRI Deemed University, the Director is the Head of the Institution and functions as per the powers and responsibilities delegated by ICAR. The supreme body is the Board of Management, which is supported by the Academic Council, Research Advisory Committee, Staff Research Advisory Committee, Executive Council, and Extension Council. All decisions taken by these bodies are placed before the Board of Management for approval and are subsequently forwarded to ICAR. These are further submitted to the Governing Body of ICAR, of which the Minister of Agriculture serves as the President. The appointment and service conditions of employees are governed by the Societies Act and are determined as per prescribed rules. The appointment of scientific staff is carried out through the Agricultural Scientists Recruitment Board (ASRB). In academic matters, the ICAR–NDRI Act functions on lines similar to Agricultural Universities. The Academic Council of the Institute is the apex academic body, supported by its five standing committees, and is empowered to frame, amend, or abolish regulations in the academic interest of the Deemed University.



6.6.1.5. University Statutory officers and their selection process

Table 59: List University Statutory officers and their selection process

Sr No.	Sanctioned Positions of Statutory Officers	Mode of Appointment	Tenure	Joining Date	Remarks
1.	Director- Head of the Institute	Selection by ASRB	5years	Dr. Dheer Singh	-
2.	Joint Director (Academic) & Dean	Selection by ASRB	5years	Dr. Ashish Kumar Singh	-
3.	Joint Director (Research)	Selection by ASRB	5years	Dr. Rajan Sharma	-
4.	Joint Director Administration & Sr. Registrar	Selection by ASRB in Administrative & Finance Cadre at entry level	Tenure not defined	Mr. P. K. Jain	Officers are promoted on the basis of seniority cum merit from central pool of officers with ICAR and deputed to institutes
5.	Academic Coordinator	Nomination by Director	Tenure not defined	Dr Anjali Aggarwal	Senior faculty at the level of Principal Scientist

6.	Comptroller / Finance Account Officer	Selection by ASRB in Administrative & Finance Cadre at entry level	Tenure not defined	Ms. Neha	Officers are promoted on the basis of seniority cum merit from central pool of officers with ICAR and deputed to institutes
6.	Controller of Examination	Nomination by Director	Tenure not defined	Dr. Suman Kapila	Senior faculty at the level of Principal Scientist

Decentralization of power:

Joint Director (Academic) as Dean is the academic head responsible for coordinating and regulating academic affairs of the Deemed University. He is responsible for all matters relating to students admission, conduct of classes, and maintenance of discipline, management of hostels and examination cell. He is ably assisted by the Academic Coordinator and Controller of examination. Work plan/dissertation proposal for post graduate research and synopsis for doctoral students research work is approved by the Dean. Disbursement of fellowship and development grant received from the education division are done by the university office under overall supervision of the Dean.

Project Monitoring and Evaluation (PME) Cell is headed by Joint Director (Research) who is charged with the responsibility of guiding and coordinating research work at the institute. Each of the Regional Stations is administered through the Head located at the respective Stations. Heads of Divisions as Chairman of the Departmental Board of Studies coordinates all student affairs including attendance, leave, fellowship and contingencies of the students as also allotment of guide.

Heads of Divisions and Section in- charges have been empowered to sanction amount of permanent cash advance in the form of “Imprest” depending upon their requirement which is recouped on monthly basis. Principal Investigators (PIs) of all externally projects have been delegated full powers for procurement of all approved goods/equipments costing Rs. 20 lakh or less. The PIs have been also empowered to sanction TA advance after approval of the tour by the Director.

6.6.1.5. Supporting Units:

6.6.1.5.1. Maintenance Section

The Maintenance Section is looked after by the office of Maintenance Engineer (ME). The maintenance section comprises of the following sub-sections:

1. Civil Section
2. Electrical Section

3. Refrigeration and Air Conditioning Section

4. Mechanical Section

The activities of the ME section include the maintenance of all the installations of the Institute including the civil works, electrical works, mechanical works, refrigeration works. The section caters as a support to the research area. The section maintains the drinking water supply system, sewage disposal systems, and the effluent treatment plant. The main aim of the section is to ensure the timely execution of maintenance works, including addressing routine complaints efficiently. The section also executes the minor repair or new small works by tender/ quotation process at institute level, while major construction, repair, and renovation works are executed through CPWD. The section ensures that the research works are not hindered due to lack of basic amenities such as water and electricity. It also maintains residential facilities, including boys' and girls' hostels, as well as student activity areas such as sports grounds. The section is equipped by qualified supervisory staff and technicians. The operation of these facilities is carried out through both online and physical modes. Complaints are received by the ME Section via email/ME complaint box, and technical staffs/workers are deployed accordingly to resolve the issues promptly. An inventory of repair and maintenance materials is systematically maintained in the stores of the ME Section.

6.6.1.5.2 SC/ST Cell

The National Dairy Research Institute has established dedicated institutional mechanisms to ensure effective implementation of Government of India policies pertaining to the welfare and development of Scheduled Castes (SC) and Scheduled Tribes (ST).

Liaison Officer (SC/ST):

A Liaison Officer for SC/ST is designated at the Institute level to oversee and ensure strict compliance with reservation policies as per Government of India rules. The Liaison Officer monitors the implementation of reservation norms in recruitment, admissions, and other institutional matters, and ensures adherence to all statutory provisions and guidelines related to SC/ST welfare.

Development Action Plan for SC/ST (SCSP/TSP):

The Institute implements the Development Action Plan for Scheduled Castes (SCSP) and Scheduled Tribes (TSP) for the welfare of SC/ST communities across various states of India through a structured institutional framework. The activities under SCSP/TSP are executed through a duly constituted committee by the Director of the Institute, comprising a Chairman, one Member (Finance), one Member (Administration), and a Member Secretary (Nodal Officer, DAPSC/DAPST).

The Committee is responsible for planning, implementation, and monitoring of programmes aimed at socio-economic upliftment of SC/ST beneficiaries. These

include skill development, capacity building, entrepreneurship promotion, and Direct Benefit Transfer (DBT)-based interventions. The mechanism ensures that funds are utilized efficiently, transparently, and strictly in accordance with Government of India guidelines for the intended beneficiaries.

Equal Opportunities Cell (EOC) at ICAR-National Dairy Research Institute has been established with the approval of the Director to promote diversity, equity, and inclusiveness on campus(https://www.ndri.res.in/sites/default/files/QS%20Sustainability_EDIC_EOC%20Committee_PNR.pdf). The Cell aims to create a respectful and supportive environment for all, irrespective of gender, ethnicity, disability, socio-economic background, religion, or other identities. The Committee advises the Institute on policies, programmes, and training related to equal opportunity and inclusion. It also addresses systemic issues affecting participation and wellbeing and works in coordination with grievance redressal mechanisms.

6.6.1.5.3 Human Health Complex

Human Health Complex has been catering to the health needs of the employees and students of NDRI as well as to the other sister ICAR Institutes situated at Karnal since its establishment in 1991. Full-time doctors are available for allopathic treatment, along with part-time practitioners, including a lady allopathic doctor, ayurvedic & homoeopathic doctors for medical aid. Well qualified & trained nursing staff, laboratory technicians and pharmacists assists the Doctors in providing the desired medical facilities. Medical facility in the hospital includes clinical pathology laboratory and preventive vaccination. The human health complex (HHC) is located within the close vicinity of the hostels and staff quarters. Qualified medical officers look after the health of staff and students. Free medical services are provided to students at the HHC.

Facilities Available

1. Diagnostic clinical lab well equipped with a fully automatic Haematolyzer and a semi- auto Biochemical analyzer.
2. Physiotherapy unit for the benefit of the patients suffering from various chronic ailments such as Lower back-ache, Cardiac ailments, Hypertension and various types of Arthritis etc.

HHC also organizes various health awareness programmes for educating the Staff and their dependents for better health care. Present mode of functioning of these units to support the student, staff and University infrastructure: The mode of functioning of these units has always been personal/ one to one communication. All students of the ICAR-NDRI are provided with health insurance coverage to ensure financial support for medical care.

Holistic Health and Wellness Framework

The Institute has established a comprehensive Health and Wellness Framework to promote a “Fit India” culture, ensuring physical, mental, and nutritional well-being of students and staff in alignment with national guidelines (https://www.ndri.res.in/sites/default/files/QS%20Sustainability_Holistic%20Health%20and%20Wellness%20Framework%20Policy_SKO.pdf). The on-campus Health Complex provides primary healthcare, first aid, and basic diagnostics, supported by a panel of empanelled hospitals for specialized treatment. Regular health awareness programmes, including reproductive health and disease prevention, are conducted. Mental well-being is addressed through a structured Mentor–Mentee system and a dedicated counselling cell. Nutritional wellness is ensured through scientifically designed balanced diets, regular food quality audits, and provision of special diets during illness. The Institute promotes physical fitness through yoga, meditation, sports facilities, and annual sports events. Students are also encouraged to participate in NSS and NCC activities for community health awareness and discipline. All students are covered under a group health insurance scheme to provide financial security during medical emergencies. A Health and Wellness Committee periodically reviews healthcare services, nutrition standards, and overall implementation of wellness initiatives.

6.6.1.6. Technology support

Information on Classroom technology (e.g., technology in rooms, computer labs): At the computer centre, NDRI has Smart Boards, Projectors, and Computers. Every division and section linked to the Computer services are provided with the computers. The classrooms have been updated with LED screens to support modern and interactive teaching.

Online learning tools: ICAR-NDRI has effectively integrated online modes of teaching. Academic activities continued seamlessly through platforms such as Microsoft Teams, Google Meet, and Zoom, ensuring uninterrupted learning. ICAR-NDRI initially utilized password-protected access to Microsoft Teams with support from IASRI and later procured licensed Zoom accounts to facilitate structured online classes and meetings. In addition, a range of digital tools and e-learning resources are available to both students and faculty, strengthening the institute’s blended learning environment. Apart from these there are several online tools available to students and faculty at ICAR-NDRI.

- **CERA:** Consortium for e-Resources in Agriculture (CeRA) is an e-Consortium of Agricultural Libraries under the Indian Council of Agricultural Research for National Agricultural Research and Education System (NARES) Libraries. It provides 24x7 online accesses to select journals in agricultural and allied sciences

to all researchers, teachers and students, policy planners, administrators and extension specialists in NARS through IP authentication.

- **e-Books:** The library procured about ~2,339 e-books from reputed international and national publishers such as Springer, Elsevier, Taylor & Francis, CABI, SAGE Publications, Cambridge University Press, and Wiley-Blackwell, along with selected Indian publishers as ASAP, Astral International, NIPA-GENX and Agrobios. These e-books are available on IP-based perpetual access to students, faculty members, scientists, and staff within the NDRI campus. Some other e-Books (1174 e-Books) are also available for institute users through CeRA. List of all the e-Books/ serial publications purchase by the library, ICAR-NDRI, Karnal/ CeRA, hyperlink and instructions for use are also available on institute's website under url- <http://ndri.res.in/e-books>
- **KOHA OPAC/Web OPAC:** Library is providing round-the-clock **Online Public Access Catalog** (OPAC)/Web based **Online Public Access Catalog** (Web OPAC) facility to the Student, faculty members and other staff members of the institute through Library software KOHA-Library Management System url:<http://192.168.11.4> (for access with in local area network) or <http://library.ndri.res.in> (for remote access). The database is searchable by standard bibliographic criteria viz. author, title, subject, keyword/subject etc.

Internet Wi-Fi connectivity

NKN Connectivity 1 GBPS link with 350 Mbps speed is provided at NDRI offices and library. The network is utilized for various official purposes. Apart from this, the Library is providing Internet/ Email Services to students, faculty members and other staff members of the institute, for this purpose there are 40 high yield computers available in the library, so that they may get current information in the area of their interest and communicate with the researchers of their interest immediately. In addition of that Library also provides uninterrupted Wi-Fi based internet connectivity to library users, who are using personal laptop in the library for their study and research work. These services are free for the students, faculty members and other staff members of the institute. The students, faculty members and research workers of other sister Institutes of ICAR/ SAUs/CAUs/CUs having Agriculture faculty and other research organizations may also use these services on request after getting permission for the same.

Student systems (online enrolment): Academic Management System (AMS-NDRI) is web enabled application software for management of various academic activities of the Dairy Science College, NDRI, Karnal. The system caters to the requirements of different users Dean, Registrar, Heads, Guides, Faculty, Teachers, Students, Administrators and Officials for performing their assigned tasks. The software is developed using latest Internet technologies such as Net platform and SQL server. The system is user friendly

and can be accessed ubiquitously. The online capabilities of the system allow the students, faculty members and administrators to publish and retrieve the information from their respective disciplines. It has following sub modules:

- Courses Management
- Student Management
- Faculty Management
- Administration Management
- E-Learning
- Online fee collection

The reference manuals for the students as well as staff are given on the web portal of ams NDRI ([https://amsndri.icar.gov.in/PDFs/Reference%20Manual%20\(Faculty\).pdf](https://amsndri.icar.gov.in/PDFs/Reference%20Manual%20(Faculty).pdf)) for easy learning and access of the system by the students. Students can enrol for their subject, which will be approved or disapproved by the course teachers. All the teaching related procedures and pipelines are embedded in the AMS system.

Business applications:

- **MS-office:** The licensed MS-office suit including MS-Office, MS-Excel, MS-Access etc. available in PC Lab's for the use of students.
- **Zoom, Google Meet, Webx:** The zoom application was procured in order to conduct online classes as well as to conduct the viva-voice, practical examination, seminars etc.
- **Virtual Class room:** At ICAR-NDRI, Karnal a well-established Virtual class room equipped with state-of-the-art which, is available for teaching purpose as well as for virtual meetings. Panpto application is also subscribed for virtual class room for the lecture recording facilities. This application enable the faculty members to record the lectures and also the faculty member can edit the recorded lectures to insert the links or external reference.
- **Google forms:** Google form of Google suit was used for conducting the online Quiz.
- **Google Classroom:** Google Classroom is suitable for assigning tasks and sharing study materials with students.
- **Academic Management:** Academic Management System (AMS-NDRI) is web enabled application software for management of various academic activities of the Dairy Science College, NDRI, Karnal. The system caters to the requirements of different users Dean, Registrar, Heads, Guides, Faculty, Teachers, and Students.

- **Language Lab:** Language Lab has been set up to improve the language proficiency of the students. This Lab is equipped with the “word worth English Language” application designed for effective teaching of language.

Computer help (e.g., setup for email, firewalls) and password resets being implemented at the University level.

Email services for NDRI staff were managed by IASRI, New Delhi until 31st March 2024, and are now managed by ICAR-NIC, New Delhi. The firewall is managed by the Computer Centre, NDRI, Karnal. The NDRI computer cell is a facility that works out every query related to password reset, email configuration, firewall set up, etc. The computer section has dedicated facility and manpower to handle the queries from students as well as staff.

6.6.1.7. Institutional Database and Website Update:

- The ICAR-NDRI as an institute maintains the database of all the general and specific programs whenever it participates in collaborative manner with other peer universities, research institutions and government agencies.
- The Research database of the scientists, their projects and also the research output generated is maintained in the PME cell of the ICAR-NDRI. This database is also digitized and PFMS system maintains the database related to scientists. The PME Unit implemented on-line database/computerization of research projects under PIMS, introduced in collaboration with IASRI until March 2024. The unit acted as a nodal agency to facilitate and coordinate with PI of the project at IASRI, New Delhi and PIs of all the on-going and completed research projects at NDRI for smooth functioning of PIMS activity.
- Academic Management System (AMS-NDRI) is web enabled application software for management of various academic activities of the Dairy Science College, ICAR-NDRI, Karnal. The AMS system of ICAR-NDRI maintains the database of the students registered for various courses like B.Tech, M.Sc., M.V.Sc. and Ph.D. This database records the credit hours for each subject offered to the students, faculty involved in teaching the course and also the list of students enrolled in the course. This database is used for several purposes within the institute.
- The Library of ICAR-NDRI maintains a huge database of research work in the form of Thesis for MSc and PhD scholars. The theses are already digitized and the whole database is therefore available in the KRISHIKOSH database of the ICAR. This database helps to facilitate a wide variety of intellectual interactions and exchanges between the NDRI and other institutions.
- The website for NDRI (<http://ndri.res.in>) is updated on regular basis at NDRI computer centre.

6.6.1.8. Inter-Departmental Linkages:

The ICAR – NDRI is currently adopting decentralized, participatory, adaptive and multifarious demand- supply side extension- research – academics approach. It involves participatory activities for various research projects and extension activities of the institute. ICAR – NDRI is involving public, private and third sector (civil society) in research and extension programmes and strengthening capacity of farmers, researchers and extension workers.

The Institute is engaged in active collaboration with industry, government agencies and other stakeholders for executing the research projects funded by them. State government departments, develop mental agencies at the national and state levels (Departments of Animal husbandry, National Dairy Development Board, MANAGE, NABAARD etc) are generally partners in capacity building and outreach programs while industry collaborates for transfer of technologies. Several funding agencies are providing the funds for carrying out research in various areas. The funding agencies apart from ICAR who are collaborating with ICAR – NDRI are DBT, CSIR, Indo-USA, Space Application Centre, MoE & F, Inspire Network for Environment, Indo-Denmark, CRIDA (ICAR), ICAR-ILRI (Foreign Collaboration, ICMR, DST, DAHVS, NASF / ICAR, Indo- Egyptian Collaboration , Indo-UK , NASF, Bill & Melinda Gates Foundation USA, Michigan State University USA, NIF-India, RKVY, RAFTAAR, MOFPI, VKCoEat IRMA, AIIMS Delhi, IIT Delhi/ICAR Collaboration, ICSSR, New Delhi, University of Copenhagen Denmark, etc.

ICAR – NDRI also engages itself in participatory research through departmental linkages by carrying out the intended activities through MoUs with several governments, private and semi-government organisations. Several MoUs signed during the period are as below:

Table 60: List of MoUs signed

Academics

Sr. No.	Name of Institution	Date of Signing	Valid upto	Brief Description	Signed by
1	Sh. Venkateswara Veterinary University, Tirupati	31.05.2021	30.05.2026	Promotion of students' training, post graduate research in cutting edge areas of mutual interest	ICAR-NDRI
2	PAU, Ludhiana	07.06.2021	06.06.2026	-----do-----	-do-

3	University of Petroleum and Energy Studies, Dehradun	18.09.2021	17.09.2026	Collaboration in PG training and research in cutting edge areas of mutual interest	-do-
4	GLA University, Mathura	13.09.2021	12.09.2026	-----do-----	-do-
5	Gurukul Kangri, Deemed to be University, Haridwar	20.09.2021	19.09.2026	-----do-----	-do-
6	Assam Agricultural University, Guwahati	28.12.2021	27.12.2026	Collaboration in PG training and research in cutting edge areas of mutual interest	-do-
7	Dayalbagh Educational Institute, Agra	03.01.2022	02.01.2027	Collaboration in PG training and research in cutting edge areas of mutual interest	-do-
8	Lovely Professional University, Punjab	18.05.2022	17.05.2025	Collaboration in PG training and research in cutting edge areas of mutual interest	-do-

Research

Sr. No.	Name of Institution	Date of Signing	Valid upto	Brief Description	Signed by
9	DBT Project on development of polarized angular light scattering and microfluidics technology for bovine sperm sexing	22.04.2022	21.04.2025	Development of polarized angular light scattering and microfluidics technology for bovine sperm sexing	ICAR-NDRI
10	BAIF Development Research Foundation, Pune	02.11.2022	01.11.2023	Collaboration for completion of Ph.D. research work	-do-

11	Alltech Biotechnology Pvt. Ltd., India, Bengaluru	15.12.2022	14.12.2023	For the contract research project “Effect of slow release nitrogen feeding on nutrient utilization, microbial protein synthesis, and milking performance in lactating cows”	-do-

Business Support

Sr. No.	Name of Institution	Date of Signing	Valid upto	Brief Description	Signed by
1	Agrinnovate India Limited & Schreiber Dynamix Dairies Pvt. Ltd., Mumbai	31.08.2021	30.08.2031	Commercialization of spore based kit for detection of antibiotic residues in milk	ICAR-NDRI
2	Uttarakhand Livestock Development Board, Dehradun	08.10.2021	07.10.2026	To provide bulls of Sahiwal breed on lease to ULDB	-do-
3	O. S. Balkumdan Foundation, Varanasi	29.06.2022	28.06.2025	Collaboration to organize trainings and value addition of indigenous cattle products, cattle improvement programmes in cutting edge areas of mutual interest	-do-

ICAR – NDRI always follows collaborative approach cutting across disciplines and most of the research projects are formulated in multidisciplinary mode to address the research problems comprehensively in its major domains of dairy production, processing, economics and extension.

6.6.1.9 Monitoring Mechanism

To assess the effectiveness of teaching, the knowledge acquired by B.Tech, M.Tech, and Ph.D. students during their coursework is evaluated through a structured and continuous assessment system in line with the provisions of the National Education Policy (NEP) 2020.

For undergraduate (B.Tech) and postgraduate (M.Tech/Ph.D.) programmes, evaluation is carried out through a combination of two mid-term examinations, surprise quizzes,

assignments, presentations and final theory and practical examinations. Continuous internal assessment components such as quizzes (including surprise quizzes), assignments and presentations are regularly conducted by course instructors to monitor students' progress and ensure active engagement with the subject matter. At the end of the semester, students appear for final theory and practical examinations, which comprehensively assess both conceptual understanding and practical skills. To qualify, B.Tech students must secure a minimum of 60% marks, while M.Tech and Ph.D. students must obtain a minimum of 65% marks, along with at least 75% attendance as a mandatory requirement.

For Ph.D. scholars, a comprehensive viva-voce examination is conducted to assess their depth of knowledge in major and minor disciplines. The viva-voce is conducted by a duly constituted committee comprising subject expert(s), the Major Advisor (Guide), and faculty members from the concerned Division, and is evaluated on a satisfactory/unsatisfactory basis. Successful completion of the comprehensive viva-voce is mandatory for Ph.D. scholars to qualify for presenting their synopsis seminar for thesis research work.

To further strengthen the teaching-learning process, departments regularly organize feedback sessions with postgraduate students, allowing them to share their academic concerns and suggestions. Student feedback on teaching effectiveness is also collected annually and used to evaluate and improve teaching quality. Open house sessions are regularly organized wherein senior officials of the institute, hostel administration and the Director interact directly with students to discuss their academic, administrative and residential concerns. These forums provide an open and inclusive platform for students to freely express their issues, suggestions and expectations. The concerns raised are addressed promptly through on-the-spot discussions or are forwarded to the concerned authorities for immediate resolution. This mechanism ensures transparency, strengthens student-administration communication and facilitates quick redressal of grievances, thereby contributing to a supportive and responsive institutional environment.

The performance of faculty members is assessed through the Annual Performance Appraisal Report (APAR) system, wherein teaching forms a significant component. Faculty are evaluated based on criteria such as courses designed and taught, number of students supervised, development of teaching resources and methodologies, and overall contribution to academic excellence.

6.6.1.10 Internal Quality Assurance Cell (IQAC) / PME Cell:

6.6.1.10.1 Institute Quality Assurance Cell

ICAR-NDRI, Karnal has a well-structured Internal Quality Assurance Cell (IQAC) for performance evaluation, assessment and accreditation and quality up-gradation of its higher education. The IQAC functions for promoting a quality culture across academic

and the vision of IQAC is to institutionalize a culture of quality enhancement through continuous evaluation, innovation, and stakeholder engagement in all academic and administrative processes.

Objectives of IQAC

- To develop a system for conscious, consistent, and catalytic improvement in academic and administrative performance of the institution.
- To promote quality enhancement through institutionalization of best practices by adopting modern teaching-learning methodologies and digital systems
- To create a learner-centric and outcome-based educational environment through strengthen stakeholder participation and feedback mechanisms

Functions of IQAC

The IQAC at ICAR - NDRI undertakes the following key functions:

- Development and application of quality benchmarks and performance indicators
- Formulation of parameters for academic and administrative activities
- Facilitation of a learner-centric teaching-learning environment
- Promotion of adoption of modern technologies in education
- Collection and analysis of feedback from students, alumni, employers, and stakeholders
- Dissemination of information on quality parameters to stakeholders
- Organization of workshops, seminars, and training programmes on quality-related themes
- Documentation of quality improvement activities and best practices
- Acting as a nodal agency for coordinating quality-related institutional activities including adoption and dissemination of best practices
- Development and maintenance of institutional database through MIS systems for the purpose of maintaining /enhancing the institutional quality
- Periodical conduct of Academic and Administrative Audits (AAA) and implementation of corrective measures
- Preparation and submission of Annual Quality Assurance Report (AQAR) as per NAAC guidelines

Composition of IQAC

IQAC is constituted under the Chairmanship of the Head of institution i.e. Director, ICAR-NDRI with heads of important academic and administrative units and a few

teachers and a few distinguished educationists and representatives of local management and stakeholders.

The composition of the IQAC may be as follows:

1. Chairperson: Head of the Institution
2. Teachers to represent all level (Three to eight)
3. One member from the Management
4. Few Senior administrative officers
5. One or two nominee each from local society, Students and Alumni
6. One or two nominee each from Employers /Industrialists/Stakeholders
7. One of the senior teachers as the coordinator/Director of the IQAC

Schedule of activities

Yearly submission of the Annual Quality Assurance Report (AQAR) by the institute to National Assessment and Accreditation Council (NAAC) by end of September.

Major Quality Enhancement Initiatives

- i. A Foundation Program was initiated from the Academic Year 2017- 2018 and strengthen from 2022-23 by including several practices such as Yoga, extracurricular activities to tap the inherent talents of the students by providing them an opportunity to discover, refine and express their capabilities.
- ii. Exam conducted by NTA was used for the Entrance Test for admission to Ph.D. programs for two consecutive years.
- iii. The Academic Management System was introduced, under which activities starting from admission, fee deposition, course registration, uploading of marks obtained etc. are carried out online.
- iv. Alumni portal was created on the institute website to track the alumni from across the globe and establish a mode of regular communication with them
- v. Students Empowerment Unit was established to empower the students to become “work-ready” by achieving educational advancement through communication skills as well as employability/soft skills for their holistic development.
- vi. Institutional Development Plan (IDP), a project to incentivize undergraduate education has been successfully completed at NDRI. The program was under the National Agricultural Higher Education Project (NAHEP) funded by the World Bank, to strengthen and revamp the B.Tech. (Dairy Technology) program in order to make it an internationally acclaimed educational program.

- vii. A new Language Laboratory has been established for improving language proficiency of the students including opportunities for learning foreign languages other than English.
- viii. Stakeholders' workshop was organized in collaboration with the IDP wherein stakeholders including alumni and industry leaders were invited to offer suggestions relevant to change in the curriculum and improvement in skill sets of the students.
- ix. In accordance with the IQAC recommendation, appraisal of faculty is done every year while selecting faculty for the best teacher awards. Students are asked to evaluate the faculty in a specially designed pro form as also online and these evaluations become one of the indicators for selecting best teacher.
- x. Institute has organized several workshops for enhancing the skills of the students and young faculty.

6.6.1.10.2 Research Governance through PME Cell

The rapid intensification of research and development (R&D) activities at ICAR–NDRI, Karnal, in recent years has necessitated the adoption of a structured and professional research management framework. Recognizing the critical importance of systematic research prioritization, continuous monitoring, and outcome-based evaluation within the institutional governance system, the Institute has established a dedicated Research Prioritization, Monitoring and Evaluation (PME) Cell, along with a Project Monitoring and Evaluation Committee (PMC).

These bodies play a pivotal role in ensuring that research activities are strategically aligned with national priorities, efficiently executed, regularly evaluated, and effectively translated into impactful outcomes, thereby enhancing the overall quality, relevance, and accountability of research at the Institute.

Functions of PME Cell

1. To Coordinate and prepare recommendations from QRT, RAC, IRC, and vision documents of institute and ICAR
2. To recommend research priorities of the institution and document priority researchable problems across divisions/programmes, commodity/livestock etc. at institution level.
3. Monitoring of ongoing and externally funded projects
4. Annual updating and presenting the report to the Director of the Institution for assigning research projects.
5. To coordinate and arrange for annual monitoring of each on- going evaluation of completed projects through internal and external experts.

6. To coordinate and arrange for technology validation and/or impact assessment of successful technology claimed by scientist(s) through internal and external experts.
7. Regularly sensitizing and capacity building of research managers and scientists through training programmes.
8. Maintenance of database on all publications, technologies, IPRs and consultancy projects

Constitution of PME Cell

Joint Director (Research)-Incharge; One to three Scientific/Technical Officers (depending on Institute size) and required Secretarial assistance

Schedule of PME activities

1. Institute Research Committee (IRC): Feb-March (Annual-it nearly coincides with financial year end, and Half Yearly Performance Review (HPR) of scientists.
2. Project Monitoring & Evaluation Committee (PMC): Aug-Sep. (Annual-it nearly coincides with Half Yearly Performance Review (HPR) of scientists and Half Yearly reports of projects).
3. Research Advisory Committee: Jan-Feb. (Annual 1-2 months before IRC).

Highlights of major activities undertaken by PME Cell

- Project based funding of all the IRC project
- Periodic monitoring of new / ongoing in-house and externally funded research projects
- Screening of concept notes Extra-mural /Contract/ Consultancy Projects
- Evaluation of manuscripts of Technical Bulletins/Books 485
- Preparation of NDRI-Annual report and quarterly newsletter
- Preparation of proceedings of IRC and RAC
- Other activities include addressing parliamentary questions, career assessment of scientists, handling action taken reports or status reports etc.

The unit also acted as a catalyst to promote and strengthen linkages with other Institutions of national and international repute. Visits of international delegations and distinguished visitors at the national level were coordinated and through scientific interactions/deliberations, agenda for mutual collaboration was chalked out with a view to arrive at MoUs for promotion of research and educational endeavors

Project Monitoring and Evaluation Committee (PMC)

i)	Director	Chairman

ii)	All Heads of Divisions	Members
iii)	Joint Director (Research) I/c PME Cell	Secretary

Functions of Project Monitoring and Evaluation Committee (PMC)

1. To deliberate on PME Cell reports and decide on Institute Research Priorities (Scientists would be required to take up projects from the list of priority research problems).
2. To constitute a committee of 2 experts (one internal and one external) constituted by Director to evaluate the progress of research projects and submit a report on the prescribed format. This exercise needs to be done every year.
3. To constitute a committee of 2 experts (one internal and one external) constituted by Director to submit a report on the prescribed proforma for technology validation of completed projects.
4. Prepare annual plan and identify Scientist for capacity building in PME activities
5. To approve updating Institute database on half yearly basis. The committee shall meet twice in a year i.e.
 - a) before IRC (Feb-March) and
 - b) Sept-Oct.

6.6.1.11. Collaborations with Academic Institutions and Industry

In recent years, there has been a significant thrust towards the commercialization of research outcomes, largely influenced by the global shift towards liberal trade policies. In response, industries and commercial enterprises have increasingly sought collaborations with research institutions to translate scientific innovations into practical applications. Recognizing this trend, the Institute has identified key areas of its expertise to foster strategic collaborations with industries as well as academic institutions, thereby accelerating research progress and enhancing its societal relevance. The Institute maintains strong linkages with various national and international organizations to facilitate the exchange of information and to stay abreast of emerging advancements in both basic and applied aspects of Dairy Science. Owing to its scientific competence and proven track record in successfully executing research programmes, the Institute has consistently attracted funding from diverse national and international agencies, as well as research and development organizations. Furthermore, the Institute actively collaborates with industry partners, government bodies, and other stakeholders for the effective implementation of sponsored research projects. The Institute actively collaborates with industry, government agencies, and other stakeholders for the execution of externally funded research projects. During the reporting period, the Institute received a total of six contract research projects generating close to 194.21

lakhs of revenue thereby, reflecting sustained engagement with external partners in research and development activities.

Table 61: List of Contract Research Projects

S. No.	Name of funding/ Collaborative Organization	Project Title	Name of Principal Investigator	Total Project cost (Rs)
	M/S National Innovation Fund (NIF), Amarpur, Gandhinagar, Gujarat	Management of sub-clinical mastitis through indigenous approach at lower Gangetic region	Dr Chapak Bhakat, PS, ERS	14,22,300
	National Accounts Division, National Statistical Office, Ministry of Statistics & Plan Implement, Sardar Patel Bhawan, Parliament Street, New Delhi	Estimation of productions & Utilization pattern of milk & milk products in India	Dr. Ajmer Singh, DESM	1,23,85,469
	Tata Chemicals Pvt. Ltd. Mumbai	Supplemental effect of Alkakarab and Alkakarab plus on rumen parameters and production performance in lactating dairy animals	Dr. Gautam Mondal Animal Nutrition Division	20,38,169
	Indian Herbs Specialities, Chandigarh	Efficacy of rumen protected choline and methionine in crossbred cows on health and milk yield	Dr. Bandla Srinivas Animal Nutrition Division, SRS Bengaluru	9,54,095
	M/S Alltech Biotechnology Pvt. Ltd., Bengaluru	The effect of slow-release nitrogen feeding on nutrient utilization, microbial protein synthesis and milking performance in lactating cows.	Dr. Sachin Kumar Animal Nutrition Division	20,06,887
	M/s Samsung India Electronics Pvt. Ltd., Gurgaon	Generation of basic engineering properties data and process validation of curd maestro 2.0 refrigerator suitable for India, US and European market	Dr A K Singh, DT Division	6,13,895

Major outputs of Contract Research Projects

- Developed and validated rapid diagnostic tools (e.g., Mastisense) showing high concordance with conventional methods (CMT and SCC) for early detection of sub-clinical mastitis in dairy animals.
- Identified and scientifically validated Indigenous Technical Knowledge (ITK) practices and herbal interventions for the management of sub-clinical mastitis in the lower Gangetic region.
- Generated baseline survey data on milk production and utilization patterns in India and established required infrastructure with effective manpower deployment for consultancy projects.
- Standardized and validated advanced milk analysis technologies (MilkoScreen, FTASCAN, O'RIGHT, IndiScope FTIR) for accurate estimation of fat, SNF, and protein in cow, buffalo, and mixed milk, with performance comparable to reference methods.
- Established capability for rapid detection of milk adulterants (urea, ammonium sulphate, maltodextrin, sucrose, and added water) using validated analytical platforms.
- Validated Cryostar 1 for reliable determination of milk freezing point and estimation of added water with high repeatability and improved accuracy.
- Generated scientific evidence on nutritional interventions (slow-release nitrogen, rumen-protected choline and methionine, feed additives like Alkakarb) demonstrating improved nutrient utilization, rumen function, microbial protein synthesis, and milk production performance.
- Produced engineering and process validation data for dairy product preparation systems (e.g., curd maestro refrigerator), establishing suitability for domestic and international markets.
- Strengthened industry–institute collaboration through contract research, technology validation, and product development supporting dairy sector innovation and commercialization.

In addition, the Institute provides both general and advisory consultancy services to individuals and organizations on various aspects of dairy production, processing, and management. The details of consultancy services offered amounting to Rs 48.42 Lakhs during the last five years are presented in Table.

The Krishi Vigyan Kendra (KVK) located on the Institute campus actively develops and maintains functional linkages with key stakeholders, including state government departments such as the Animal Husbandry and Agriculture Departments of Haryana,

agricultural universities (e.g., PAU and HAU), non-governmental organizations, and financial and rural institutions. The KVK plays a vital role as a knowledge partner by disseminating information through field-level activities and organizing collaborative training programmes in rural areas.

Table 62: List of Advisory and Consultancy Services

S. No	Name of firm	Project Title	Name of consultant	Total cost (Rs)
	M/S MooRopan India Pvt. Ltd., Surat, Gujarat	Validation of Masti Sense for the early diagnosis of bovine mastitis	Dr Raghu H V, DM Division	1,50,568
	M/S Jupiter Glass Works, New Delhi	Performance evaluation of automated colony counter for Jupiter glass works	Dr. Pradip Behare, DM Division	1,29,210
	Mr. Ganapathy Kuppasamy, General Manager Business development Sanzyme Biologics, Hyderabad	Preparation of Processed cheese on Pilot Scale	Dr. Yogesh Khetra, DT Division	87,143
	M/S Chr. Hansen A/S Boege Alle 10-12 2970 Hoersholm, Denmark	Effect of presence of antibiotics in milk on fermentation time and quality characteristics of yoghurt	Dr. Yogesh Khetra, DT Division	7,09,636
	M/s Dev Ice Cream, Kavri Pathak, Panipat, Haryana	Consultancy on training of ice creams manufacture and its analysis	Dr. Shaik Abdul Hussain, DT Division	20,798
	M/s Prompt Equipments Pvt. Ltd, Navrangpura, Gujarat	Evaluation of BovEasy/ AniEasy early pregnancy diagnosis in cows.	Dr. Rubina K Baithalu, LPM Division	13,82,602
	M/s Indifoss Analytical Pvt. Ltd., Gujarat	A Validation study on the milk screen for rapid assessment of the composition & Quality of Milk	Dr. Kamal Gandhi, DC Division	4,94,926
	M/s Everest instruments pvt. Ltd. corporate house no. Block-A, times, Corporate Park, thaltej-shilaj road, Ahmedabad, gujarat-380059	A validation of fatscan milk analyzer Equipment for rapid assessment of the composition of milk	Dr. Rajesh Kumar Bajaj, DC Division	5,40,654

	M/S Narsipur Chemical Pvt. Ltd., C-238, MIDC, Turbhe, Navi Mumbai-400705	In-vitro anti-bacterial efficacy evaluation of dairy sanitizers and detergents	Dr. Raghu H.V., Senior DM Division	2,52,225
	M/S Innobev Solution Private Ltd., Gurugram-12201	Homogenization and pasteurization of protein rich dairy drink	Dr. Yogesh Khetra, DT Division	22,037
	M/s Samsung India Electronics Pvt. Ltd., Gurgaon	Development of Easy Paneer Maker	DT Division	75,690
	M/S QboidO'Right, Gurugram	Validation study on the O'Right equipment for rapid assessment of composition and quality of milk	DC Division	2,52,328
	M/S Everest Instruments Pvt. Ltd, Ahmedabad, Gujarat	Validation study on the Indescope FTI milk analyser for assessment of composition and quality of milk	DC Division	5,01,319
	M/S Benny Impex Pvt. Ltd.	Verification of Cryoscope for determining freezing point of milk and added water in milk	DC Division	1,35,489
	M/S Sanzyme Biologics, Hyderabad	Preparation of Processed cheese on Pilot Scale	DT Division	87,143

Academic Support

Academic Council

- Innovation and best practices
- Library
- Centre of Excellence/Advance Studies/Centre for Advanced faculty Training
- Incubation centre/Start up Units/venture capital
- Technology enabled learning resources
- Integrated learning systems (Experiential learning)
- Academic Industry Interface

6.6.2. Academic Support

6.6.2.1. Academic Council

Academic Council

The Academic Council is the supreme body responsible for regulating the academic affairs of the university. It is mandated to ensure the maintenance of standards of instruction, education and examinations and other matters connected with the conferment of degrees or award of diplomas. The members of Academic Council are:

Table 63: Composition of the Academic Council

Sr. No.	Designation of the Officer	Status in the committee
	Director	Chairman
	Joint Director (Academic) & Dean	Vice-Chairman
	Joint Director (Research)	Member
	Six eminent scientists/academicians/industry representatives from outside of NDRI distinguished in the field of education including Animal Science Education	Members
	DDG (Education) or his nominee	Member
	Heads of Divisions (HOD) from each division/Section	Members
	Six Representatives from the PG Faculty	Member
	Representative from UGC	Member
	Comptroller/Chief Finance & Account Officer	Member
	Nominated Representative of UGC	Member
	Two students representatives	Member
	Joint Director (Admin) & Senior Registrar	Membrane Secretary

Note: The four eminent scientists mentioned at item (iv) above are nominated by the chairman of the Academic Council on the recommendations of the Joint Director (Academic). The tenure of their membership is 2 years; the first two of them retiring through draw of lots at the end of the first year.

The two representatives from the P.G. faculty mentioned at the item (vii) are elected annually by secret ballot by the Faculty members. One student each from 2nd year Ph.D. and M.Sc. programmes who have obtained maximum marks in first year at NDRI is nominated as representative on Academic Council.

Powers and Functions of the Academic Council

- iii. The Academic Council shall be the main consultative, deliberative and task implementing body in the field of education and training.
- iv. The Academic Council shall be responsible for broad policy matters on academic issues without dealing with individual cases.
- v. The Academic Council shall have the control and general regulatory powers on matters relating to education and training.
- vi. The Academic Council shall be responsible for the maintenance of standard of instruction, education and examination within and shall exercise such other powers and duties as are conferred on it.
- vii. The Academic Council shall be responsible for the determination of equivalence of degrees of candidates applying for admission from other universities, and shall be the final authority to make selection out of the applicants for admission.
- viii. The Academic Council shall perform in relation to academic matters, all such duties, as may be necessary for the proper conduct of the programmes of P.G.

Table 64: Details of the Academic Council meeting held

Name of the meeting (Academic Council)	Date
50 th	06.04.2021
51 th	28.03.2022
52 th	06.01.2023
53 rd	22.04.2023
54 th	13.03.2024
55 th	21.04.2025
56 th	19.03.2026

Table 65: Recommendations of the Academic council and Action Taken Report

50th meeting of Academic Council held on 06.04.2021

Agenda item no.	Agenda	Action taken
50.1	Confirmation of the proceedings of 49th meeting of Academic Council of NDRI held on 22.08.2020	Confirmed
50.2	Review of action taken on recommendations of the 49th meeting of the Academic Council held on 22.08.2020	Noted

50.3	Reconsideration of decision of the 47th meeting of the Academic Council held on 23.11.2019 regarding seats for candidates of NER states for admission to B.Tech.(DT) programme.	Decisions adopted/implemented
50.4	Consideration and approval of the recommendations made in the 92nd meeting of Standing Committee on Courses Curricula and Academic Affairs held on 17.03.2021.	
50.4.1	To consider the No. of seats for 2021-22 session for admission to various academic programmes at NDRI, Karnal.	
50.4.2	To consider the eligibility qualifications for 2021-22 session for admission to Master's degree programme.	
50.4.3	To consider the amendment in the existing rule 10.2 of Academic Rules & Regulations for B.Tech.(DT) students regarding academic probation	
50.4.4	To consider the amendment in the existing requirement of completion of comprehensive examination six months before the submission of thesis by Master's students	
50.4.5	To consider the discontinuance of M.Tech. (Food Tech.) programme	
50.4.6	To consider the inclusion of faculty as member of Advisory Committee of Ph.D. students from outside the Institute.	
50.5	Consideration and approval of the recommendations made in the 78th & 79th meeting of Standing Committee on Faculty, Students Problem and Discipline held on 04.09.2020 and 20.03.2021&30.3.2021 respectively.	
50.5.1	To consider the induction of Scientists to the PG Faculty.	
50.6	To celebrate Academic month from 22.03.2021 to 17.04.2021.	Celebrated
50.7	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Awarded during Convocation
50.8	To consider conferment of "Best Division Award"	
50.9	To consider the Best Thesis Award for Master's and Doctoral degree students	
50.10	To consider the Best Teacher Award for excellence in teaching	
50.11	To consider the conferment of Dr. S.K. Sirohi Memorial Outstanding Young Researcher Award for the year 2018.	
50.12	To consider the award of Degree without the convocation to students	
50.13	To approve the award of bachelor degree, master's degree and doctoral degree to the successful students and award of gold/silver/bronze medals/ merit certificates/dean's honor award to eligible students for the year 2018-19 & 2019-20	

51th meeting of Academic Council held on 28.03.2022

Agenda item no.	Agenda	Action taken
51.3	Confirmation of the proceedings of 50 th meeting of Academic Council of NDRI held on 06.04.2021	Confirmed
51.3.1	Review of action taken on recommendations of the 50 th meeting of the Academic Council held on 06.04.2021	Noted
51.3	Consideration and approval of the recommendations made in the 93 RD meeting of Standing Committee on Courses Curricula and Academic Affairs held on 17.03.2022	Decisions adopted/implemented
51.3.1	To consider the adoption of revised PG Syllabus as recommended by BSMA 2021.	
51.3.2.	Academic Year and Registration	
51.3.3	Credit requirements	
51.3.3.1	Framework of the courses	
51.3.3.2	Supporting courses	
51.3.3.3	Common Courses for PG Programme	
51.3.3.4	Mandatory Requirement of seminars	
51.3.4	Residential requirements	
51.3.5	Evaluation of course work and comprehensive examination	Celebrated
51.3.6	Advisory System	
51.3.6.1	Advisory Committee	Decisions adopted/implemented
51.3.7	Evaluation of research work	
51.3.7.1	Prevention of plagiarism	
51.3.8	Learning through online courses	
51.3.9	Internship during Masters programme	
51.3.10	Teaching assistantship	
51.3.11	Registration of project personnel (SRF/RA) for PhD	
51.3.12	Compliance with the National Education Policy-2020	
51.3.13	Definitions of academic terms	
51.4	To consider the No. of seats for 2022-23 session for admission to various academic programmes at ICAR-NDRI, Karnal	
51.5	To consider the amendment in clause 15.1.2 “Mode of allocation of M.Sc. students”.	
51.6	To consider the discontinuance of Ph.D./M.Tech. (FSQA) programme	
51.7	To frame separate guidelines for inclusion of faculty of other ICAR Institutes in the Advisory Committee of a student(s).	
51.8	Consideration and approval of the recommendations made in the 81 st meeting of Standing Committee on Faculty, Students Problem and Discipline held on 15.03.2022	

51.8.1	To consider the induction of Scientists to the PG Faculty.	
51.9	Consideration and approval of the recommendations made in the meeting of Standing Committee on Scholarship, Financial Assistance and Academic Progress held on 19.03.2022	
51.9.1	To consider the expansion of Heads of Expenditure and limit of expenditure under Contingency Grant for each Head for Ph.D. scholars admitted from 2021-22 session to bring at par with the students admitted upto 2020-21 and getting Institute Scholarship	
51.10	To ratify the decisions of the competent authority	
51.10.1	Grant of Institute Scholarship	
51.10.2	Conducting Spot round counseling	

52th meeting of Academic Council held on 06.01.2023

Agenda item no.	Agenda	Action taken
52.1	Confirmation of the proceedings of 51 st meeting of academic council of ICAR-NDRI, Karnal held on 28.3.2022.	Confirmed
52.2	Review of the action taken on recommendation of the 51 st meeting of the Academic Council held on 28.03.2022	Noted
52.3	Consideration and approval of the recommendations made in the 94 th , 95 th and 96 th meeting of standing committee on courses curricula and academic affairs held on 14.12.2022 and 19.12.2022 and 02.01.2023	Decisions adopted/implemented
52.3.1	To consider the proposal for accreditation of Master's and Ph. D. Programme offered by ICAR-NDRI (Deemed University)	
52.3.2	To consider the revision of existing Fee structure	
52.3.3.	To consider the initiation of Certificate Courses as per National Education Policy-2020	
52.3.4.	Commencement of Academic Session (2022-23) for Newly Admitted Students	
52.3.5	To consider the amendment in Sub clause 1.3.2. Of Academic Rules and Regulations on Rectification of Results	
52.3.6.	Resolved to approve the amendment in sub clause 9.10(b) of B. Tech. (DT), 11.10(b) of M.Sc. and 6.10 (b) of Ph.D. Of academic rules and regulations on system of evaluation and examination procedure	
52.3.7.	To consider the amendment in existing provision of sanction of leave to PG and Doctoral Students	
52.3.8,	To consider the amendment in the existing provision in academic rules and regulation regarding requirements before the submission of thesis	Decisions adopted/implemented
52.3.9.	To consider the amendment in Clause 6.4C for B.Tech. (DT), 8.4C for PG and 6.10 (B) for Ph.D. Regarding registration by B. Tech., PG and Ph. D. Students	

52.3.10.	To consider the amendment in Clause 16 of Academic rule and regulation on rate of Dearness Allowance (DA) to the students while on official tour	
52.3.11.	To make the provision of Diwali Break in Rules and Regulations for the students enrolled in various educational programme of ICAR-NDRI (Deemed University).	
52.3.12.	To consider the amendment in sub-clause 11.2 of clause 11.0 “Topic of Thesis” of Academic Rules and Regulations for Ph. D. Programme	
52.3.13.	Correction in Dairy Engineering subjects as per BSMA Guidelines	
52.4	Consideration and approval of the recommendations made in the 83 rd AND 84 th meeting of standing committee on faculty, students’ problem and discipline held on 23.09.2022 and 03.01.2023.	
52.4.1	To consider the induction of the scientists to the Post-Graduate Faculty	

53th meeting of Academic Council held on 22.04.2023

Agenda item no.	Agenda	Action taken
53.1	Confirmation of the proceedings of 52 nd meeting of Academic Council of ICAR-NDRI held on 06.01.2023	Confirmed
53.2	Review of action taken on recommendations of the 52 nd meeting of the academic council held on 06.01.2023.	Noted
53.3	To celebrate the academic month from 3 rd week of March to onwards.	Celebrated
53.4	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya memorial oration award.	Decisions adopted/implemented
53.5	To consider the conferment “Best Division Award”.	
53.6	To consider the best thesis award for Master’s and Doctoral degree students.	
53.7	To consider the conferment of Dr. S.K. Sirohi memorial Outstanding Young Research Award for the year 2021 and 2022.	
53.8	To consider the award of degree without the convocation to students.	
53.9	To consider the induction of scientists to the PG faculty.	
53.10	To approve the award of bachelor degree, master’s degree and doctoral degree to the successful students and award of Gold, Silver/Bronze Medals/Dean’s Honour Award/Merit Certificates to eligible students for the year 2020 and 2021.	Awarded during Convocation

54th meeting of Academic Council held on 13.03.2024

Agenda item no.	Agenda	Action taken
54.1	Confirmation of the proceedings of 53 rd meeting of Academic Council of NDRI held on 22.04.2023	Confirmed
54.2	Review of action taken on recommendations of the 53 rd meeting of the Academic Council held on 22.04.2023.	Noted
54.3	To celebrate the Academic fortnight from 1 st to 15 th March, 2024	Celebrated
54.4	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Decisions adopted/implemented
54.5	To consider the conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians/Scientist during the 20 th Convocation of ICAR-National Dairy Research Institute, Karnal.	
54.6	To consider the conferment of “Best Division Award”.	
54.7	To consider the Best Thesis Award for Master’s and Doctoral degree students.	
54.8	To consider the award of Degree without the convocation to students.	
54.9	To consider the Induction of Scientists to the PG Faculty.	Awarded during Convocation
54.10	To approve the award of bachelor degree, master’s degree and doctoral degree to the successful students and award of gold, silver/bronze medals / dean’s honour award / merit certificates to eligible students for the year 2022-23	
54.11	Consideration and approval of the recommendations made in the 98 th meeting of standing committee on courses curricula and academic affairs held on 1.2.2024.	Decisions adopted/implemented
54.11.1	To consider the number of seats for 2024-25 session for admission to various Academic Programmes at NDRI, Karnal.	
54.11.2	To consider the eligibility qualification for UG Programme B.Tech.(DT), B.Tech.(Food Technology) and B.Tech.(Bio-Technology)	
54.11.3	To consider the revision in fee structure regarding correction charges, if mistake is not part of the university level/ International Hostel charges and continuation fees for students who are under physical exemption.	
54.11.4	To consider and start the New UG Courses/ Certificate/Diploma courses from next academic session 2024-25 to comply with the NEP-2020.	
54.11.5	To start the course work and research work of LPM at SRS Bangalore from the next academic year 2024-25.	
54.11.6	To consider the direct admission of candidates having any external funding sponsorship or fellowship (e.g. DBT, UGC, CSIR etc) to pursue the Ph.D. at NDRI, Karnal.	

54.11.7	To consider Pre-requisite courses for Ph.D. Students admitted through entrance exam.	
54.11.8	To consider revised Evaluation System.	

55th meeting of Academic Council held on 21.04.2025

Agenda item no.	Agenda	Action taken
55.1	Confirmation of the proceedings of 54 th meeting of academic council of NDRI held on 13.3.2024	Confirmed
55.2	To celebrate the academic fortnight from 4 th MARCH, 2025.	Celebrated
55.3	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Awards.	Decisions adopted/implemented
55.4	To consider the conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians /Scientist / Distinguished Alumni during the 21 st Convocation of ICAR-National Dairy Research Institute, Karnal	
55.5	To consider the conferment of “Best Division Award”.	
55.6	To consider the Gold, Silver and Bronze medal awardee students of B. Tech. (DT), Master’s and Doctoral Degree Programme and Best Thesis Award for Master’s and Doctoral degree students.	
55.7	To approve the award of bachelor degree, master’s degree and doctoral degree to the successful students and award of Gold medal, Silver / Bronze medal/ Merit certificates to eligible students during the 21 st Convocation scheduled on 22 nd April, 2025.	
55.8	To consider the Induction of Scientists to the PG Faculty	
55.9	Consideration and approval of the recommendations of the Standing Committee on Course Curricula & Academic Affairs are placed before the Academic Council for its consideration.	
55.9.1	To consider the number of seats for 2025-26 session for admission to various Academic Programmes at NDRI, Karnal & its regional stations.	
55.9.2	To discuss applications of five Ph.D. Scholars for Teaching Assistantship	
55.9.3	To consider amendment in the rules & regulations regarding submission of synopsis and thesis, divisional seminar, advisory committee, etc.	
55.9.4	To consider the regularization of semesters of UG / PG / Ph. D. Programme	
55.9.5	Retention and Disposal of Evaluated Answer-Books	
55.9.6	To consider amendment in Rule 17 of Academic Rules & Regulations regarding vacation, mandatory presence of the student at the time of submission of loose bound thesis, submission of hard bound thesis within 7 days from viva-voce examination & matters related to shortage of attendance of UG, PG & Ph.D. students.	

55.9.7	To revise the guidelines for submission of Master's thesis	
55.9.8	Initiation of NSS programs for UG students as per the recommendations of 6 th Deans Committee report. Discussion on suggestive fee for NCC and NSS programme	

56th meeting of Academic Council held on 19.03.2026

Item No.	Item in Brief	Page No.
56.1	Confirmation of the proceedings of 55 th meeting of Academic Council of NDRI & held on 21.04.2025	Confirmed
56.2	To consider the Induction of Scientists to the PG Faculty.	Decisions adopted/implemented
56.3	Consideration and approval of the recommendations of the Standing Committee on Course Curricula & Academic Affairs are placed before the Academic Council for its consideration.	
56.3.1	To consider the number of seats for 2026-27 session for admission to various Academic Programmes at NDRI, Karnal & its regional stations.	
56.3.2	To amend the rules & regulations regarding Guidelines for allotment of Major Advisors (Guides) to Ph.D. students admitted as In-service candidates and Foreign Students	
56.3.3	To amend the rules & regulations regarding Fellowship 1. Fellowship after Submission of Loose-Bound Thesis 2. Switching Fellowship Schemes 3. Fellowship in Case of Medical Leave or Semester Drop	
56.3.4	To consider duration of semester for UG/PG/PhD students 1. To Consider regularization of UG/PG/Ph.D. Semesters 2. Extension of Second Semester – Academic Session 2024–25 3. Minimum Semester Duration for Students Engaged in Research Work 4. To consider the commencement of New Academic Session for Continuing Students (2025–26)	
56.3.5	To consider the New Education Policy-2020 implementation status 1. Initiation of PG Diploma Courses and Certificate Courses 2. Certificate Course on “Handling and Care of Laboratory Animals”	
56.3.6	To consider issues related to examinations 1. Conduct of Supplementary Examination 2. Guidelines for SGPA Improvement by Students 3. Clarification Regarding Physical Attendance of Repeat Students at SRS	

56.3.7	To consider amendments regarding submission of hard bound thesis 1. Timeline for Submission of Hard-Bound Thesis 2. Hard Bound Thesis Submission	
56.3.8	To consider the submission of Master's thesis 1. Last date of submission of Master's thesis 2. Thesis submission by Master's students	
56.3.9	To consider the Feedback Forms	
56.3.10	Regarding No Dues from ME Section at the Time of Thesis Submission	
56.3.11	Framing of Guidelines to Streamline and Regulate Student Involvement in Research Activities Supported by Externally Funded Projects 1. Alignment with Faculty Projects 2. Institute-Funded Research Proposals 3. Manpower Requirement in Externally Funded Projects & Clarity of Roles and Responsibilities 4. Allotment of Additional Students to Faculty Members having Externally Funded Projects	
56.3.12	To consider Enhancement of Contingency Amount of Books And Thesis Printing	
56.3.13	PhD students as Teaching Associate/Technical Associate	
56.3.14	To consider the Advisory Committee Constitution and Academic Compliance for Students Allotted to Other ICAR Institutes	
56.3.15	To consider Registration in backlog courses in place of SRP-III and permission to undertake SRP-III with them in-plant training in 4 th year II semester	
56.3.16	To consider Submission of PhD thesis without published paper	
56.3.17	To consider the qualification for eligibility in admission to Master's & PhD in Animal Biotechnology	
56.3.18	To consider the Guidelines & Qualification for Direct Admission of Scholarship Holder	
56.3.19	To consider the Cases of students for change of Guide/Research station 1. Case of Mr. Vikas Kumar (23-M-DX-06) regarding rejoining after medical leave 2. Consideration of the request of Ms. Lohitha (24-B-DT-32), 2nd Year B. Tech student, for transfer from NDRI, Karnal to SRS, Bengaluru on medical grounds 3. Request of Mr. Abhishek Tiwari for Change of Guide 4. Guide allotment of Mr. Jejal Anand Dinesh, PhD student of Agronomy 5. Request of Ms Umang, Master's student of LPM to transfer from SRS, Bangalore to NDRI, Karnal on medical grounds	

56.3.20	To consider the various issues 1. Proposal for the Creation and Implementation of ‘Paid Seats’ in Undergraduate Programmes at ICAR-NDRI 2. Approval of Guidelines for University-Level &” Spot Round” Admissions to Fill Vacant Seats	
56.4	To celebrate the Academic Fortnight from 26 th February, 2026	Celebrated
56.5	To consider the conferment of Dr. D. Sundaresan, Dr. N.N. Dastur and Dr. K.K. Iya Memorial Oration Award.	Decisions adopted/ implemented
56.6	To consider the Conferment of Honoris Causa (Doctor of Science) Degree to Eminent Academicians/Scientist / Distinguished Alumni during the 22 nd Convocation of ICAR-National Dairy Research Institute, Karnal.	
56.7	To consider the conferment of “Best Division Award”.	
56.8	To consider the Gold, Silver and Bronze Medal awardee students of B. Tech. (DT), Master’s and Doctoral Degree Programme To consider the Best Thesis Award for Master’s and Doctoral Degree Students.	
56.9	To Approve the Award of Bachelor Degree, Master’s Degree and Doctoral Degree To the successful students and award of Gold medal, Silver / Bronze medal/ Merit certificates to eligible students during the 22 nd Convocation scheduled on 20 th March, 2026	Awarded during Convocation

6.6.2.2. Innovation and best practices

Over the last five years, the institute has implemented a series of transformative measures to modernize academic delivery and align it with global standards. These initiatives focus on shifting toward outcome-centric learning, where the curriculum is designed to produce specific, measurable competencies in students. Beyond technical expertise, a significant emphasis has been placed on soft skill development, ensuring students are articulate, presentable, and prepared for leadership roles.

Several measures have been taken over the last five years to strengthen academic programs in terms of improvement in quality of content delivery by introducing more outcome-centric learning content in the curriculum and providing greater opportunities to the students to acquire soft skills to become more articulate and presentable. There has been increased emphasis to improve industry/international perspective of the students, orient them to research through research-based internship programs within the institute and in overseas laboratories. In addition to this, faculty training, and capacity building activities at leading institutions within the country and overseas laboratories have been substantially increased.

To provide a deeper look into the institutional evolution over the last five years, the following sections break down the specific mechanisms, pedagogical shifts, and strategic outcomes that have redefined the academic and research landscape at the institute.

1. Pedagogical Shift: From Information to Outcomes

The transition to **Outcome-Centric Learning** is not merely a change in syllabus, but a fundamental shift in how student success is measured.

- **Competency Mapping:** Curriculum delivery is now mapped against specific professional competencies. For example, a module on “Dairy Processing” is no longer just about the theory of pasteurization but involves mastering the operation of high-speed automation systems.
- **Soft Skill Integration:** Recognizing that technical brilliance requires effective communication, the institute has integrated “Presentation & Articulation Labs.” These sessions focus on technical writing, public speaking, and corporate etiquette, ensuring students can defend their research in international forums or pitch to a VC with equal poise.
- **Assessment Diversification:** Moving away from rote-learning exams, the institute has introduced continuous evaluation methods including surprise quizzes, case study analyses, and peer reviews, which promote critical thinking.

2. The Global and Industrial Research Horizon

The institute has aggressively dismantled the “silo” approach to education by creating a porous boundary between the campus and the global research community.

- **Strategic Internships:** The traditional internship has been replaced by **Research-Based Residencies**. Students are placed in overseas laboratories and high-tech domestic facilities to work on real-time problems, such as reducing the carbon footprint of dairy farms or enhancing the shelf-life of probiotic supplements.
- **Faculty as Global Scholars:** By substantially increasing international faculty training, the institute ensures that the “Teacher” is also a “Learner” at the cutting edge. This creates a trickle-down effect where the latest global breakthroughs in **Nutrigenomics** or **Dairy Biotechnology** are discussed in the classroom within months of their discovery.

3. The Entrepreneurship & Startup Ecosystem

The “Idea-to-Market” pipeline has been institutionalized through the **Agri-Business Incubation (ABI)** center.

- **The Academic Fortnight & Idea Pitching:** These events serve as a talent scout mechanism. By inviting ideas in categories like **Artificial Intelligence in Dairying** and **Sustainable Packaging**, the institute identifies high-potential concepts early.
- **The Business Canvas Model:** In the **Experiential Learning Programme (ELP)**, students are no longer just making a product; they are building a business.

They must define customer segments, value propositions, and revenue streams, effectively creating a “Mini-Startup” within the academic framework.

- **IPR and Legal Literacy:** Through dedicated sessions on **Intellectual Property Rights (IPR)**, students learn to protect their innovations, shifting the mindset from “publishing research” to “patenting technology.”

4. Modernization of the “Student READY” Programme

The flagship **Student READY** (Rural Entrepreneurship Awareness Development Yojana) has been re-engineered for depth:

- **Production to Procurement:** Students gain an in-depth understanding of the dairy supply chain, working directly with milk procurement systems to understand logistics, quality control, and farmer relations.
- **Problem-Solving Aptitude:** Instead of passive observation, students are assigned “Problem Solving Projects” where they must identify a bottleneck in a dairy division or a rural farm and propose a technical or administrative solution

5. Sustainability and the Circular Economy

In alignment with the **Sustainable Development Goals (SDGs)**, the institute has woven “Green Science” into its core identity.

- **Climate Resilient Pedagogy:** Research and teaching now prioritize **Mitigation Strategies** for climate change. This includes developing breeds that can withstand rising temperatures and fodder that requires less water.
- **Waste-to-Wealth & Carbon Credits:** Students are trained in the concepts of the **Circular Economy**, learning how to convert dairy waste into energy (biogas) or high-value organic fertilizers. The curriculum now explores the emerging market of **Carbon Credits**, preparing students for the future of “Carbon-Positive” dairy farming.
- **Eco-Clubs and Conservation:** To ensure these aren’t just classroom concepts, student-led clubs actively manage campus biodiversity and energy conservation drives, fostering a culture of environmental stewardship.

Innovation and Creativity Contests were also organized by ABI, ICAI-NDRI as a part of Academic Fortnight. The purpose of this event was to inculcate creative thinking and promote innovative mindset among the students. Applications were invited from UG, PG and PhD students of ICAR-NDRI in two different categories viz. Business idea and Research idea. Several ideas were received in the broad categories from students viz. Innovative value-added products, Artificial Intelligence in Dairying, Marketing & branding, Sustainable packaging solutions, real-time monitoring of milk quality, Diagnostic tools/Kits for animal health, Application of IoT in animal production,

Climate resilient agriculture and animal husbandry and Waste management for circular economy. Also, an Idea Pitching Competition was organized on September 28, 2024 at ICAR-NDRI, Karnal, Haryana as a part of the efforts for inculcating and promoting entrepreneurial skills in the students. A total of 25 participants has presented their ideas and prizes were distributed for top three best ideas during the National Seminar on Indian Dairy & Food Industry in Viksit Bharat: Developments & Innovation, organized during September 27-28, 2024. The details of these events were given below:

Innovation and Creativity Contests Organized

S.No.	Name of the event	Date organized
	Innovative Research & Business Idea Contest – 2026	March 4, 2026
	Innovation & Creativity Contest – 2025	March 4, 2025
	EUREKA - Idea Pitching Competition	September 28, 2024
	Innovation & Creativity Contest – 2024	March 1, 2024
	Innovative millet food contest was organized on 4th March 2023	March 4, 2023



Students presenting their ideas during Innovative Research & Business Idea Contest – 2026



Students presenting their ideas during Innovation & Creativity Contest – 2024



Students pitching their ideas during EUREKA - Idea Pitching Competition – 2024



Innovative millet food contest was organized on 4th March 2023

6.6.2.2.1. Competency Enhancement through Student Ready Programme as per the guidelines of 6th Deans' Committee Guidelines

Student Ready I

(Hands on Training on Animal Management, Village Attachment, Deputation at Milk Collection Centre)

Better understanding of Animal management and aspects of clean milk production. Deputation of students to villages, commercial dairy farms, milk collection centers, and interaction with Line departments to enabled students equip themselves to address a wide range of issues related to milk productivity & quality. Students are also trained to develop comprehensive solutions of the problems of dairy farmers and industry in sourcing the quality milk. They were trained to develop brochure, extension literatures, and videos on assigned topics.

Student Ready II (R & D Laboratory Exposure & Deputation to Startup Companies)	Laboratory exposure and interaction with research scholars and scientists enhance their understanding of the subject matter and encourage students for higher education & R & D activities. B. Tech. (Dairy Technology) students were also selected based on taxonomical evaluation, academic performance and extra-curricular activities and deputed for 6 to 8 weeks to 9 universities of International repute located in USA, Canada, and Europe New Zealand. These students represented all social segments of the society. Remaining students were imparted training of one month duration in laboratories of ICAR-NDRI, Karnal under the guidance of faculty members of ICAR-NDRI, Karnal. These projects were designed to provide them an understanding of R & D activities.
Experiential Learning Module In-plant Training (Deputation to Commercial Processing Units, Quality Assurance Labs, Multinationals) Experiential Learning Programme (Product Development, Technology Refinement & Marketing of Food Products)	Students are divided into group of 6-8 in the form of a startup company with the objective to launch an innovative product commercially. Besides, product/process development, refinement, test marketing, and complete DPR/Business Canvas Model Development are the salient features of our Experiential learning programme (Promotes Innovations & make them Skillful). Students developed innovative products including goat milk-based cheeses, chhana based muffins, milk-carrot powder, and malt based Kulfi & ice-creams).

The following Skill Enhancement Courses (SEC) (as per 6th Deans Committee) were offered to the students of B.Tech. Dairy Technology and B.Tech. Food Technology to enhance their academic/technical skill sets. These SEC courses enable the students to take up entrepreneurship as a career path through several modes of skill development programs as in-plant training, internship, projects and rural agricultural work experience, etc.

Skill Enhancement Courses Offered

S. No.	Name of the event	Degree	Semester offered
	Operation of liquid milk processing system	B.Tech. Dairy Technology	I
	Operation of ice cream freezers, ice candy making unit and their packaging	B.Tech. Dairy Technology	I
	Capacity Design, operation and Maintenance of steam Boilers, Air compressor, DG set, soft water plant, and other utilities in Dairy plant	B.Tech. Dairy Technology	I
	Introduction to Drying Technology and Dryers	B.Tech. Food Technology	I

	Introduction to Processing of Extruded Foods	B.Tech. Food Technology	I
	Design, Operation and Maintenance of Cold Storage, Ice Bank tanks, Ice silo and refrigeration plant in Dairy plant	B.Tech. Dairy Technology	II
	Maintenance of Food Processing Equipment	B.Tech. Food Technology	II
	Food safety and hygiene	B.Tech. Dairy Technology	IV
	Introduction to Food Safety and Sanitation	B.Tech. Food Technology	IV

Hybrid Teaching

The transition to online teaching during the COVID-19 pandemic marked a significant shift in academic delivery system. When nationwide lockdowns were imposed, conventional classroom teaching was abruptly disrupted; however, the institute swiftly adapted by adopting digital platforms such as video conferencing tools, learning management systems, and virtual classrooms. Faculty members underwent rapid training to effectively use these technologies, enabling them to deliver lectures, conduct discussions, and share study materials seamlessly. Despite initial challenges such as connectivity issues and unfamiliarity with digital tools, both faculty and students demonstrated remarkable resilience and adaptability. Online teaching played a crucial role in ensuring academic continuity during the lockdown period. It allowed students, many of whom had returned to their hometowns across diverse geographical locations, to remain engaged with their coursework without interruption. Recorded lectures, digital notes, and online assessments provided flexibility and accessibility, accommodating varying internet conditions and personal circumstances. Faculty members also explored innovative teaching methods, including interactive quizzes and virtual lab demonstrations, to maintain student engagement and enhance understanding. Importantly, regular online interactions helped sustain a sense of academic community and reduced the sense of isolation among students during an uncertain period. In disciplines like dairy science and technology, where practical exposure is essential, faculty made concerted efforts to supplement theoretical teaching with virtual simulations, video demonstrations of laboratory procedures. Although these methods could not entirely replace hands-on experience, they ensured that conceptual learning remained robust until students could safely return to campus.

Post-COVID, the institute has embraced a blended learning approach, integrating the strengths of both online and offline teaching. The experience gained during the pandemic has encouraged faculty to continue using digital tools for sharing resources, conducting revision sessions, and inviting guest lectures from national and international experts without geographical constraints. Students, too, have benefited from improved digital literacy and greater access to learning materials beyond the classroom. Overall,

the adoption of online teaching not only safeguarded the academic progress of students at the institute but also catalyzed a long-term transformation in teaching methodologies. It highlighted the importance of flexibility, technological integration, and innovation in higher education, ensuring that the institute remains resilient and adaptive in the face of future challenges. A state-of-the-art language lab (24+1 seating capacity) equipped with language learning software's is established to teach students various foreign languages viz. English, French. This lab, being equipped with virtual classroom facilities, along with other smart classrooms supported the online teaching offered by the Institute.

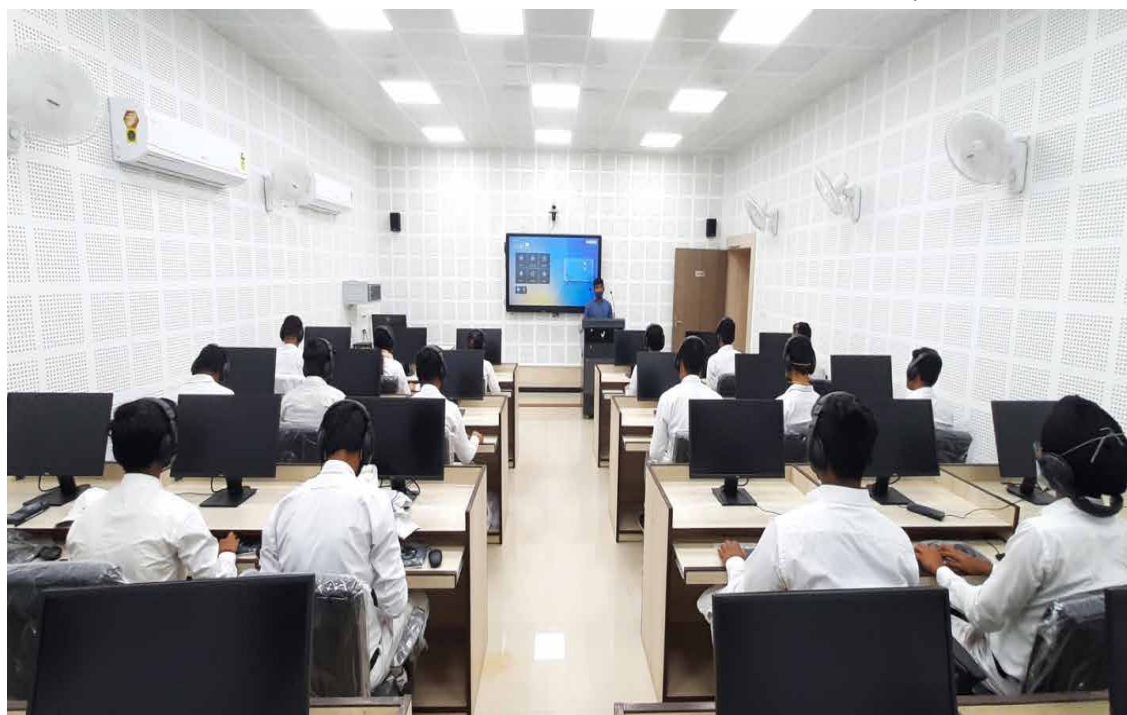


Fig. : A state-of-the-art language lab equipped with language learning software's

Waste to Wealth Interventions

At National Dairy Research Institute, students have actively participated in “Waste to Wealth” interventions as part of experiential learning, sustainability initiatives, and skill development programs. These activities focus on converting agricultural and dairy waste into value-added products, thereby promoting circular economy principles within the campus. Students have been involved in the utilization of dairy by-products such as whey, skim milk, and buttermilk for the development of nutritionally enriched beverages, fermented products, and functional foods. In addition, organic waste generated from hostels and experimental farms has been systematically processed through composting and vermicomposting techniques, producing high-quality biofertilizers that are subsequently used in institute fields and gardens.

Innovative student-led projects have also explored the conversion of dung into eco-friendly products such as biogas, organic manure, dung-based logs, and biodegradable pots, contributing to renewable energy generation and waste minimization. Some groups

have worked on transforming scrap material into sculptures viz. metallic cow, cycles, Benches, Milk cans, yoga statues etc. These interventions not only reduce environmental pollution but also create avenues for entrepreneurship and income generation.

Importantly, such activities have helped students develop practical skills in waste management, product development, and sustainable technologies, complementing their academic curriculum. Exposure to real-life problem-solving has enhanced their awareness of environmental challenges and encouraged them to think innovatively about resource utilization. Faculty guidance and institutional support have played a key role in facilitating these initiatives, ensuring scientific rigor and scalability of the outcomes. Overall, Waste to Wealth activities undertaken by students have demonstrated how scientific knowledge and creativity can be effectively harnessed to transform waste into valuable resources, aligning with national priorities on sustainability and rural development.



Fig. Several beautiful sculptures viz. Metallic cow, cycles, Benches, Milk cans, yoga statues etc. were created using scrap material

Social Outreach Activities

National Dairy Research Institute actively engage in a wide range of social outreach activities aimed at knowledge dissemination, capacity building, and community empowerment. One of the key initiatives includes organizing summer internship programs for students from sister State Agricultural Universities (SAUs), where participants receive hands-on training in dairy science, laboratory techniques, and emerging technologies. These internships foster academic exchange and enhance practical exposure among young scholars. Students (20 No's) from sister SAUSs were offered two months' summer-internship at NDRI, Karnal during June-July, 2019 as an Outreach Initiative of IDP-NAHEP, NDRI.

In addition, students play a significant role in conducting skill development programs for village youth and aspiring entrepreneurs, focusing on areas such as dairy farming practices, value addition of milk products, clean milk production, and small-scale agribusiness management. These programs are designed to promote self-employment and strengthen rural livelihoods. Furthermore, mentorship activities for school-going children from nearby villages form an important component of student outreach. Through regular interactions, tutoring sessions, and motivational guidance, students help improve academic performance and encourage higher education aspirations among rural children. They also create awareness about scientific temper, hygiene, and career opportunities in agriculture and allied sectors. Such outreach efforts not only benefit the community but also instill a sense of social responsibility, leadership, and communication skills among students, contributing to their holistic development.





Fig. Outreach Activities (1 & 6 Summer-internship to sister AU students; 2 Certificate courses for prospective entrepreneurs; 3 Blood donation camp; 4 Mentoring children from surrounding villages for higher studies; 5 Skill development Programme for village youth)

Mentor-Mentee Programme

Mentor-mentee interactions were organized between Successful Alumni and students physically on campus and virtually to enable the students to understand the real-time opportunities and situations outside the campus. ICAR-NDRI has organized a webinar on “Soft skills gained during my journey with NDRI” under IDP, NAHEP project. The webinar was delivered by Mr. Atul Jain (Managing Director for Indian Subcontinent & Middle East, DZ Card), an Alumnus of NDRI. A webinar on “Higher Education Opportunities in Management for Dairy Technology Students, MBA in India and Abroad” was organized under IDP, NAHEP project. This webinar included a presentation by Sh. Ajay Zener (Mentor and Career Launcher), an Alumnus of NDRI. A Mentor-Mentee Programme in collaboration with NDRI Alumni has been conducted in ICAR-NDRI Karnal on 15th April, 2022 for all the students of B.Tech. (DT), M. Tech. (DT), M. Tech. (FT), and Ph. D. (DT). The major objective of the programme is to promote self-awareness amongst students and provide need-based mentoring to help them make the best use of their potential and resources. A group of alumni interacted and mentored our students on various facets of quality improvement targeting enhancement in technical skills, communication, writing, problem-solving skill, promotion of innovations, inculcating leadership and other management virtues.

Functions and Activities of Placement Cell

Workshops organized for students by the Placement Cells

- An interactive session on Learning to learn: taking control of your own destiny on 19th February, 2022
- A FoSTaC training was organized for final year students of B. Tech. (Dairy Technology on “Advance Manufacturing & Covid”, by the Placement Cell, ICAR-NDRI, Karnal in association with Nestlé Research Development Centre India Ltd. On 26th June 2024

- Organized a workshop on “Effective Communication Skills” on 6th April 2024 in association with NDRI Graduate Alumni Association
- Organized a workshop on Digital marketing and Personal Branding on 27th July 2024 for the students of NDRI, Karnal. The workshop was organized in association with NDRI Graduate Association. Dr. Deepak Maun, Associate Professor, OP Jindal University was the speaker for the workshop
- A FoSTaC training was organized on “General Advanced Manufacturing”, by the Placement Cell, ICAR-NDRI, Karnal in association with Nestlé Research Development Centre India Ltd. on 3rd November 2025

Massive Online Open Courses (MOOCs)

MOOCs on six different subjects viz. Dairy Processing, Dairy Farming, Traditional Indian Dairy Products, Cheese Science and Technology, Food Packaging and Labelling and Fat Rich Dairy Products were developed by ICAR-NDRI with the support of ICAR-NAARM. A total of 60 video lectures were developed under the categories Dairy Processing and Dairy Farming. Out of 52 video lectures planned, a total of 26 lectures were developed under the subjects Cheese Science, Traditional Dairy Products and Food Packaging. A total of 17 modules were developed for the subject Fat Rich Dairy Products. MOOCs developed by IDP-NAHEP, NDRI in the field of Dairy Farming were successfully launched during the period 1st February, 2023 to 31st March, 2023 from ICAR-NAARM website. A total of 900 participants have registered for these MOOCs.

Commercial Dairy Farming: MOOC jointly launched by ICAR-NDRI and ICAR-NAARM

14th August, 2020

Dr. B.N. Tripathi, Deputy Director General (Animal Science), ICAR and Dr. R.C. Agrawal, Deputy Director General (Agricultural Education), ICAR & National Director, ICAR-NAHEP virtually launched the “Digital Content for offering the MOOC on Commercial Dairy Farming” today. The ICAR-National Dairy Research Institute, Karnal, Haryana and ICAR-National Academy of Agricultural Research Management, Hyderabad have partnered together in developing the digital content for offering the MOOC on Commercial Dairy Farming.

In his address, Dr. B.N. Tripathi stressed on the importance of such programmes for reaching the wider audience in the Dairy sector to generate employability.

Dr. R.C. Agrawal applauded the joint efforts of two ICAR Institutes in complementing each other with the





A total of 102 students from National Dairy Research Institute have undergone international training under the Institutional Development Plan (IDP) of National Agricultural Higher Education Project (NAHEP) at reputed universities and research institutes across the globe, including the United States, Europe, New Zealand, Denmark, Australia, and Ireland. These international training programs have provided students with valuable exposure to advanced research infrastructure, modern dairy processing technologies, and global best practices in animal husbandry, food safety, and value addition. During their training, students engaged in hands-on laboratory work, pilot-scale experiments, and collaborative research projects, while also interacting with leading scientists and international peers, thereby broadening their academic perspective.

The benefits of this training are clearly reflected in the enhanced performance of the students. It has significantly improved their technical competence, research aptitude, and problem-solving abilities. Exposure to international academic environments has also strengthened their communication skills, adaptability, and professional confidence. Many students have demonstrated improved academic achievements, contributed to high-quality research publications, and gained better career opportunities in both academia and industry. Overall, the IDP-NAHEP supported international training has played a pivotal role in developing globally competitive professionals and elevating the academic standards of the institute.

Sr.No.	Name	Host institutes & period of training	Output of the training
Total student beneficiaries: 102 no's			
Batch-I			
	Mr. Priyam Agarwal	University of Georgia, Griffin Campus, USA, 1.5 months	MBA at Narsee Monjee Institute of Management Studies (NMIMS), Mumbai, Maharashtra
	Ms. Ridam		Doing Job in Dairy/Food Industry
	Ms. Nawvabi Deka		Doing Job in Dairy/Food Industry
	Mr. Avineesh Arora		MBA from Indian Institute of Agricultural Extension Management (MANAGE), Hyderabad, Telangana
	Ms. Sapna Tomar	Technical University of Denmark, 1.5 months	Pursuing Higher Studies (Ph.D. in Dairy Technology)
	Ms. Sangita		Doing Job in Dairy/Food Industry
	Mr. Gopi Dhamija		Doing Job in Dairy/Food Industry
	Mr. Kamal		Doing Job in Dairy/Food Industry
	Mr. Digvijay Verma	Southern Illinois University, Carbondale USA, 1.5 months	MS in Food Science and Agricultural Chemistry at Southern Illinois University, USA
	Mr. Rajat Jain		MBA at Indian Institute of Management (IIM), Ahmedabad
	Ms. Intihaz Khanom Talukdar		Doing Job in Dairy/Food Industry
	Mr. Vinay Kumar Jha		MBA (Food & Agribusiness Management) from IIM, Ahmedabad

	Mr. Raminder Singh	Massey University, Palmerston	Started his own start-up named Calcio Foods at Ambala, Haryana handling around 10,000 lit of milk per day
	Mr. Abhilash Borah	North New Zealand, 1.5 months	Doing Job in Dairy/Food Industry
	Mr. Mukul Verma		MBA at Indian Institute of Management (IIM), Ahmedabad
	Mr. Aakash Gill	Kansas State University, Manhattan, KS USA, 1.5 months	Doing Job in Dairy/Food Industry
	Ms. Rashika		Started her own Start-up named “Simras Foods” at Karnal, Haryana selling millet-based cookies “Mightymix-SaptGrain”.
	Mr. Vinay Raman	Purdue University, West Lafayette USA, 1.5 month	Doing Job in Dairy/Food Industry
	Ms. Vaishali Poswal		PhD in Biological Sciences, Specialization in Dairy Science at South Dakota State University, USA
	Mr. Pranav Vashisht		MS in Food Science and Engineering in Tennessee State University, Tennessee, USA
	Ms. Shikhadri Mahanta		MS in Biological and Agricultural Engineering Texas A&M University
	Ms. Pumu Taku		Jange, C. G., Taku, P., Peng, S., Dixon, M. P., Shetty, A., & Ambrose, R. K. (2020). Cohesivity assessment of semi-crystalline and crystalline powders using a Warren Springs cohesion tester. Powder technology, 371, 96-105. https://doi.org/10.1016/j.powtec.2020.05.077 ; Ipact Factor: 5.2; NAAS Score: 11.2
	Ms. Diksha	University of Copenhagen, Denmark, 1.5 month	Pursuing Higher Studies (M.Tech. in Dairy Technology)
	Mr. Hardeep		Doing Job in Dairy/Food Industry
	Ms. Sakshi Girdhar		MBA at Indian Institute of Foreign Trade, Kolkata, West Bengal
	Mr. Deepak Punia		Doing Job in Dairy/Food Industry
	Mr. Vipin Chandra Jeengar	University College Cork, Cork, Ireland, 1.5 month	Doing Job in Dairy/Food Industry
	Mr. Sahil Mehla		Doing Job in Dairy/Food Industry
	Ms. Niharika		MBA from Indian Institute of Management, Udaipur

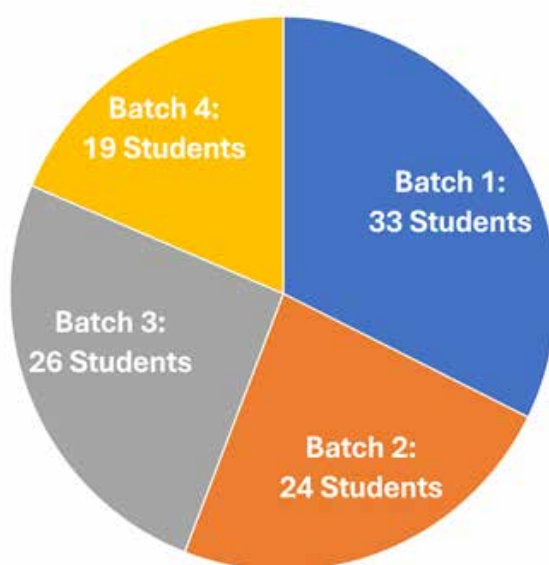
	Mr. Ratul Kalita	Teagasc Food Research Centre,	MS in Biological Sciences, Specialization in Dairy Science at South Dakota State University, USA
	Ms. Amar	Moorepark, Cork, Ireland,	Doing Job in Dairy/Food Industry
	Mr. Abhishek Dwivedi	1.5 month	Doing Job in Dairy/Food Industry
	Ms. Pooja	University of Copenhagen, Denmark, 2 months	Doing Job in Dairy/Food Industry
BATCH- II			
	Mr. Shubham Kapoor	McGill University, Canada, 2 months	MBA at Indian Institute of Management (IIM), Ahmedabad. Published Paper on “Kapoor, S., Singh, M. P., Vatankhah, H., Deshwal, G. K., & Ramaswamy, H. S. (2021). Production and quality improvement of Indian cottage cheese (Paneer) using high pressure processing. Innovative Food Science & Emerging Technologies, 72, 102746. https://doi.org/10.1016/j.ifset.2021.102746 ; Impact Factor 6.6 and NAAS Score: 12.6.
	Mr. Manan Preet Singh		Joined Job at GCMMF Published Paper on “Kapoor, S., Singh, M. P., Vatankhah, H., Deshwal, G. K., & Ramaswamy, H. S. (2021). Production and quality improvement of Indian cottage cheese (Paneer) using high pressure processing. Innovative Food Science & Emerging Technologies, 72, 102746. https://doi.org/10.1016/j.ifset.2021.102746 ; Impact Factor 6.6 and NAAS Score: 12.6
	Mr. Praveen Kumar	Purdue University, USA, 2 months	Doing Job in Dairy/Food Industry
	Ms. Poonam		Doing Job in Dairy/Food Industry
	Mr. Vijay	Lincoln University, New Zealand, 2 months	Doing Job in Dairy/Food Industry
	Ms. Vartika		Doing Job in Dairy/Food Industry

	Mr. Aditya	Southern Illinois University USA, 2 months	MS Food, Nutrition, and Wellness at Florida State University, USA
	Mr. Akshit		MS in Dairy Manufacturing at South Dakota State University, USA
	Mr. Rakesh Kaushik		MS in Biological Sciences, Specialization in Dairy Science at South Dakota State University, USA
	Mr. Mahesh Sharma		Doing Job in Dairy/Food Industry
	Mr. Aakash Sharma	Massey University, New Zealand, 2 months	MS in Food Science and Engineering, Tennessee State University, Tennessee, USA
	Mr. Aryaman Chauhan		During his internship at Riddet Institute, Mr. Aryaman developed Hemp Ice cream a novel dairy dessert. The product was tasted and applauded by NZ Prime Minister Jacinda Ardern and the NZ Finance Minister. The link is as follows: https://i.stuff.co.nz/national/politics/122802927/election-2020-could-innovation-save-the-economy-jacinda-arden-tries-hemp-icecream-in-palmerston-north
	Ms. Nibedita Barman		Doing Job in Dairy/Food Industry
	Mr. Prateek	University of Georgia USA, 2 months	Doing Job in Dairy/Food Industry
	Mr. Kartik Nayyar		MBA at Indian Institute of Management (IIM), Ahmedabad
	Mr. Girish Rajpurohit		MBA at Indian Institute of Management (IIM), Ahmedabad
	Ms. Pragya Malik	University of Idaho USA, 2 months	MS in Food Technology at Wageningen University, Netherlands
	Mr. Shrey Agrawal		MBA at Institute of Rural Management Anand (IRMA), Anand, Gujarat
	Ms. Anjali		MS in Food Science at Utah State University, USA
	Mr. Bishal Barman	University of Nebraska, Lincoln, USA, 2 months	MS in Food Science and Engineering at Oregon State University, USA
	Ms. Bhaswati Chowdhury	Oklahoma State University, USA, 2 months	MS in Biological Sciences, Specialization in Dairy Science at South Dakota State University, USA
	Mr. Aviral Agarwal		MBA at Mudra Institute of Communications (MICA), Ahmedabad, Gujarat

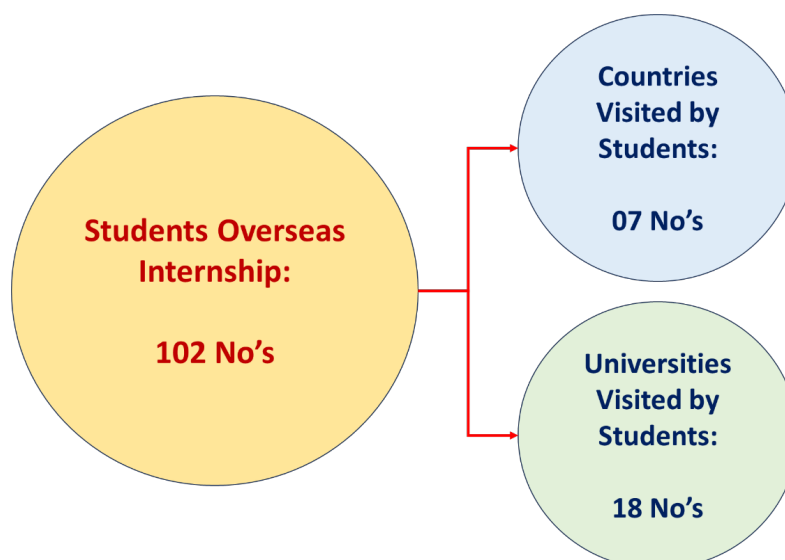
	Mr. Virender	Kansas State University, USA, 2 months	Doing Job in Dairy/Food Industry
	Mr. Vinay	University of Copenhagen, Denmark, 2 months	MS in Food Technology at Wageningen University, Netherlands
BATCH-III			
	Mr. Vansh Mishra	Kanas State University USA, 1.5 months	Doing Job in Dairy/Food Industry
	Mr. S. David Haokip		Pursuing Higher Studies (M.Tech. Dairy Technology)
	Mr. Navdeep Singh		Doing Job in Dairy/Food Industry
	Ms. Khushi Singh		Doing Job in Dairy/Food Industry
	Ms. Sweta Deb	Purdue University USA, 4 months	Doing Job in Dairy/Food Industry
	Ms. Suhani Sharma	Purdue University USA, 1.5 months	Doing Job in Dairy/Food Industry
	Ms. Vaishali Singh		Doing Job in Dairy/Food Industry
	Ms. Garima Saini		Doing Job in Dairy/Food Industry
	Ms. Namita Narwal	University of Georgia USA, 4 months	Doing Job in Dairy/Food Industry
	Ms. Preeti Rani	Oklahoma State University USA, 1.5 months	Pursuing Higher Studies (M.Tech. Dairy Technology)
	Ms. Arushi		Doing Job in Dairy/Food Industry
	Mr. Jashanpreet Singh		Doing Job in Dairy/Food Industry
	Ms. Shivanjali	North Carolina State University USA, 1.5 months	Pursuing Higher Studies (M.Tech. Dairy Technology)
	Mr. Nikhil Raghuwanshi		Doing Job in Dairy/Food Industry
	Mr. Narsingh	Texas University USA, 1.5 months	Doing Job in Dairy/Food Industry
	Mr. Chetan Soni		Doing Job in Dairy/Food Industry
	Mr. Armaan Singh		Doing Job in Dairy/Food Industry
	Mr. Kunal		Doing Job in Dairy/Food Industry

	Mr. Mayank	Utah State University USA, 4 months	Pursuing Higher Studies (M.Tech. Dairy Technology) Pace, N., Verma, A., Parhi, A., & Sharma, P. (2024). The utility of a slice defect score method in understanding factors impacting the sliceability of commercial Cheddar cheese blocks. International Dairy Journal, 151, 105865. https://doi.org/10.1016/j.idairyj.2023.105865 ; Impact factor: 3.1 and NAAS Score: 9.1
	Mr. Sulabh Singh		Doing Job in Dairy/Food Industry
	Mr. Harshal	University of Copenhagen Denmark, 1.5 months	Doing Job in Dairy/Food Industry
	Ms. Snehadri Mahanta		Doing Job in Dairy/Food Industry
	Ms. Richa	University of Copenhagen Denmark, 4 months	Doing Job in Dairy/Food Industry
	Mr. Satya Prakash		Doing Job in Dairy/Food Industry
	Ms. Rinkle Maan	Teagasc Food Research Centre, Ireland, 4 months	Doing Job in Dairy/Food Industry
	Ms. Anuradha		Doing Job in Dairy/Food Industry
BATCH- IV			
	Mr. Ankit	KU Leuven, Belgium, 2 months	Pursuing Higher Studies (M.Tech. Dairy Technology)
	Mr. Akash Deep		Doing Job in Dairy/Food Industry
	Ms. Riya	Purdue University USA, 1.5 months	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Aryan Kumar		Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Tarang Maheshwari		Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Gaurav Kumar	Oklahoma State University USA, 1 months and 3 days	Doing Job in Dairy/Food Industry
	Mr. Prince		Doing Job in Dairy/Food Industry

	Mr. Aman Singh	Massey University	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Gadhavi Devashish Vinaybhai	New Zealand, 1.5 months	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Sachidananda Hota	Massey University	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Sundram Kumar	New Zealand, 2 months	Pursuing Degree (B.Tech. Dairy Technology)
	Ms. Aditi	Texas University	Doing Job in Dairy/Food Industry
	Ms. Suzania Hujon	USA, 2 months	Doing Job in Dairy/Food Industry
	Mr. Arvind Kumar	Utah State University	Pursuing Degree (B.Tech. Dairy Technology)
	Ms. Ishita	USA, 1 month 19 days	Post Graduate Programme in Food and Agribusiness Management (PGP-FABM from IIM Ahmedabad)
	Mr. Amit Yadav		Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Yatin Jindal	University of Copenhagen	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Rohan Rathore	Denmark, 1 month 19 days	Pursuing Degree (B.Tech. Dairy Technology)
	Mr. Gaurav Attri	Teagasc Food Research Centre, Ireland, 2 months	Pursuing Degree (B.Tech. Dairy Technology)



No. of students undergone overseas training batch-wise



Diversity in Student Overseas Internship

Glimpses UG student internship



Ms. Richa Sharma (B. Tech, DT, 4th Year)

Training Period: 3 months (10th May to 28th July, 2022)

Visiting Institute: University of Copenhagen, Denmark

Project entitled: "Relating fat content to relaxation time through LF-NMR".



Mr. Jashanpreet Singh (B. Tech, DT, 3rd Year)

Training Period: 1 and half months (5th May to 20th June, 2022)

Visiting Institute: Oklahoma State University, USA

Project entitled: "Developing a food safety plan for Ground Black Pepper".



Ms. Preeti Rani, (B. Tech, DT, 3rd Year)

Training Period: 1.5 Months (23rd May to 4th July, 2022)

Visiting Institute: Oklahoma State University, USA

Project entitled: "To determine the effects of different plasma times on cottage quality".



Ms. Arushi, (B. Tech, DT, 3rd Year)

Training Period: 1.5 Months (24th May to 4th July, 2022)

Visiting Institute: Oklahoma State University, USA

Project entitled: "Preparation of biodegradable packaging film with flaxseed extract".



Mr. Avineesh, Ms. Nawabi, Mr. Priyam and Ms. Ridam at University of Georgi, USA



Students with Prof. Richard Ipson at University of Copenhagen, Denmark



Ms. Niharika, Mr. Sahil and Mr. Vipin with Prof. P.F. Fox at University College Cork, Ireland



Mr. Sundaram, Mr. Aman, Mr. Devashish and Mr. Hota at Fonterra Dairy, New Zealand



Mr. Prince and Mr. Gaurav with their overseas mentor Dr. Jadeja (centre) at Oklahoma State University, USA



Ms. Kushi at Kansas State University, USA



Ms. Riya at Purdue University, USA

6.6.2.2.2. Foundation Programme for Freshers

ICAR-NDRI introduced foundation program for the fresher students. The Foundation Program aims at tapping the innate talents of the students by providing them enabling and vibrant academic environment and nurturing them into outstanding professionals and accomplished human beings. During this programme, the students were exposed to multifarious extra-curricular group activities such as Theatre & Dramatics, Dance, Music, Art & Craft, Literary, Soft Skills and Yoga. It was made mandatory for all new comers to choose and participate in any event/s as per their interest, aptitude and liking, thus, throwing open to them a world of avenues for expressing their hidden talents and

creativity. Besides academics, the month long Foundation Program included workshops on Mastering Public Speaking; Team Building; Climbing the Leadership Curve; Effective Ways to Communicate in English; Improving Professional Communication and Spoken English; Gender Equality & Environmental Awareness; Stress Management and Social and Ethical Issues. These sessions were planned to mentor the students on public speaking; team spirit; developing the power of belief and unlocking human potential; overcoming distractions and bad habits; and leadership development. The entire batch of newly admitted students was also made to compulsorily participate in physical exercise & yoga sessions as a part of the Foundation Programme for their balanced intellectual, physical, and emotional development. Through participatory approach other programmes including English & Hindi Diagnostic Tests, Team Building Exercises/ Games, Workshops on ‘Competition and Excellence’; ‘Communication Skills’; ‘Peer Pressure’; ‘Personality Development’; ‘Soft Skills’; ‘Entrepreneurial Skills’; ‘Leadership and Management’; ‘Gender Equality’ and sessions on Poetry writing were also arranged for the newly inducted students.

The outcome of the program was a grand success. Within a short span of time, the students from diverse social and cultural backgrounds could mingle and interact on a single platform in a unique way. They could overcome their stage inhibitions and could express their inner strengths freely. The usefulness of the programme was evident from the feedbacks expressed by the students. For most of them this month long exercise was rejuvenating, eye opening and discovering a new way to enjoy academics.

Deeksharambh: Induction-cum-Foundation Course

ICAR-NDRI, Karnal organized first “Deeksharambh: Induction-cum-Foundation Course” for the newly admitted students of B.Tech. (Dairy Technology, Food Technology, and Biotechnology), M.Tech., and M.Sc. programs from November 6-22, 2024. Out of total 91 students admitted in Under Graduate Programme, 50 students were admitted in B.Tech. (Dairy Technology), 18 students each in B.Tech. (Food Technology) and in B. Tech. (Biotechnology). B.Tech. (DT) programme with 20 seats has been initiated at SRS of NDRI, Bangalore. The students admitted in B. Tech. programme marks the first batch to follow the recommendations of the 6th Dean’s Committee report which is essentially based on National Education Policy-2020 guidelines. In Master’s programme 78 students have been admitted in processing and social science disciplines. The Deeksharambh course aimed to provide insights into academic and research opportunities, institutional policies, and personal well-being to facilitate a smooth transition through their academic journeys. The inauguration ceremony was presided over by Dr. Dheer Singh, Director and Vice Chancellor of ICAR-National Dairy Research Institute, Karnal. Newly admitted students from the SRS Bengaluru campus also participated virtually. The purpose of “Deeksharambh” was to help new students

acquaint and feel comfortable in the new environment, inculcate in them the ethics and culture of the institution, assistance in developing stronger bonds with fellow students, faculty and other staff members, and prepare them for future journey.



A view of Deeksharambh: Induction-cum-Foundation Course

Table 66: Deeksharambh – Induction-cum-Foundation Course

Sr. No.	Programme	Deeksharambh: Induction-cum-Foundation Course	Duration
1	First Batch	Deeksharambh – Induction-cum-Foundation Course	06 November 2024 – 22 November 2024
2	Second Batch	Deeksharambh – Induction-cum-Foundation Course	12 November 2025 – 28 November 2025

6.6.2.2.3. Establishment of Student Empowerment Unit

Students Empowerment Unit was established to empower the students to become ‘work ready’ by achieving educational advancement through communication skills as well as employability/soft skills for their holistic development. Under this, eminent personalities and alumni were invited to address the students on several aspects of personality development. Four workshops and a lecture session were held under the aegis of the Unit.

Table 67: Number of workshops organized

Sr. No.	Title of the Programme	Duration	Date
	Digital Marketing and Personal Branding	One day	July 27, 2024
	Impact of a Dietary iso-peptide: Modulating Taste Sensations and, Alleviating Vascular Information	Two days	June 10-11, 2024
	Food Safety Issues and Challenges in Dairy Industry	One day	July 31, 2024
	New Education Policy”, Organized by SRS of ICAR- National Dairy Research Institute, Bengaluru	One day	August 18, 2023
	IP filing at faster speed: How to Proceed	One day	April 26, 2023
	Advances in starter culture technology	One day	Dec 4, 2021
	Women Empowerment	One day	January 28, 2021
	Advances in Application of Membrane Processing in Dairy & Food Industry	One day	February 17, 2021

	Metabolomics and Proteomics in Food Science	Three days	March 1-3, 2021
	Trends in Food Packaging	One day	March 5, 2021
	Unravelling the Digestion Behavior of Milk	One day	March 17, 2021
	Recent advances in the processing of high-value dairy products	One day	March 20, 2021
	Structures and digestion of milk and milk products	One day	March 31, 2021
	Protein Supplementation in Dairy and Food Products: Opportunities and Challenges	Two days	April 23, 2021 & May 7, 2021
	Making a Startup Successful - Mastering the Skill to Fund Your Ideas	One day	April 29, 2021
	Wear behavior of cheese and its correlation with rheology and sensory behaviors	One day	April 30, 2021
	Impact of milk seasonality on product quality and delivery of bioactive compounds	One day	May 11, 2021
	Sustainability and the search for novel water antimicrobials for use in post-harvest processing of various foods to enhance microbial safety	One day	May 17, 2021
	Advances in Aseptic Processing and Packaging	One day	May 31, 2021
	Innovations and Entrepreneurship Development in Agriculture	One day	June 17, 2021
	Impact of Oxidative Stress on Male and Female Reproduction	One day	July 1, 2021
	Host-microbial interactions in Neonatal calves	One day	July 5, 2021
	Colonization and Establishment of Rumen Microbiota opportunities to Influence the Livestock Productivity	One day	July 20, 2021
	Milk Proteins for the future	One day	July 22, 2021
	Diet-Microbe Interactions and Human Health	One day	August 21, 2021
	Genomic Dairy Cattle Breeding in Developed Countries with a view to its applications in India	One day	September 30, 2021
	Lactose: Properties and Processing	One day	November 19, 2021
	Biotechnological Interventions in Dairy Processing	One day	November 27, 2021
	Membrane Separation of Dairy Streams: An Industrial Perspective	One day	November 29, 2021
	Exploration of genomic data: Applications in livestock and beyond	One day	December 16, 2021

Other programmes were also organized to enhance their skills and to motivate them for future endeavors. These programmes were coordinated by the alumni or experts. Some of the programmes are listed here under:-

Table 68: List of skill-oriented training programs

Sr. No.	Title of the Programme	Duration	Date
	FoSTaC Advance Manufacturing Training for UG (B.Tech. Dairy Technology) students	One day	June 26, 2024
	A customized training programme on “Dairy Plant Management” was organized for B.Tech. (Dairy Technology) students at Mansinh Institute of Training (MIT) of NDDB, Mehsana, Gujarat	Two weeks	5 th to 19 th July 2024
	A customized training programme on “Dairy Plant Management” was organized for B.Tech. (Dairy Technology) students at Mansinh Institute of Training (MIT) of NDDB, Mehsana, Gujarat	Two weeks	28 th May to 11 th June 2024
	Orientation on Ice cream and Frozen Desserts Business Incubation” AIC-SRS-ICARNDRI Foundation supported)	Four days	September 4-8, 2023
	An International Workshop on the topic “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding”	Twelve days	21 st August to 1 st September, 2023
	A Workshop titled ‘CME on Good Laboratory Practice (GLP)’	One day	August 9, 2023
	An International Workshop on ‘Genome Editing Technologies in Livestock’	Seven days	August 7-13, 2023
	National Workshop on “Safety and Quality Monitoring in the Food Industry”	Nine days	August 1-9, 2023
	Workshop on & Personal Brand Building and Self-Management” organized	Two days	March 18-19, 2023
	A workshop on & Academic Writing & Soft skills” organized	Two days	Feb 24-25, 2023
	Dairy animal management and value addition to milk at farm level: ways to earn profits” for FPO members (NABARD supported	Nine days	Feb 9-11, 13-15, 20-22, 2023
	Glimpses of the workshop on the topic: “How to Improve Your Presentation Skills?” organized at ICAR-NDRI	Three days	July 11-13, 2022
	National skill development workshop has been organized on “Mass spectrometry-based detection and quantitation of adulterants/ veterinary drugs in Milk & Milk products”	One week	January 7-13, 2022
	A National Training Program on “Chemical and Microbiological Quality Assessment of Milk and Milk Products	Twenty days	October 6- 26, 2021
	Starter Culture and Fermented Milk Products	Six days	November 22-27, 2021
	A Session on Study Abroad Summit-Ask Me Anything (AMA)	One day	September 24, 2021
	A workshop on the topic “Scientific Writing”	Two days	June 23-24, 2021



On June 26, 2024, the Placement Cell of ICAR-NDRI organized a FoSTaC Advanced Manufacturing Training for final-year B.Tech. (Dairy Technology) students in association with Nestle R&D Centre India Pvt. Ltd.



A customized training programme on “Dairy Plant Management” was organized for 37 no’s of B.Tech. (Dairy Technology) 2nd year students at Mansinh Institute of Training (MIT) of NDDDB, Mehsana, Gujarat for our B.Tech. students during 28th May to 11th June 2024.



A customized training programme on “*Dairy Plant Management*” was organized for 31 no’s of B.Tech. (Dairy Technology) 2nd year students at Mansinh Institute of Training (MIT) of NDDDB, Mehsana, Gujarat for our B.Tech. students during 5th to 19th July 2024.



A workshop on & Academic Writing & Soft skills” organized on Feb 24-25, 2023 under IDP-NAHEP Project



A 7 days National skill development workshop has been organized on “Mass spectrometry-based detection and quantitation of adulterants/ veterinary drugs in Milk & Milk products” during 7th Jan to 13th Jan. 2022



Glimpses of the workshop on the topic: “How to Improve Your Presentation Skills?” organized at ICAR-NDRI during July 11 to July 13, 2022

Table 69: List of Entrepreneurial Development Programmes organized

Sr. No.	Name of the Webinar	Duration	Date
	A workshop on “Digital Marketing and Personal Branding”	One day	July 27, 2024
	“Entrepreneurial Skill Development” training was organized B.Tech. (Dairy Technology) students at ICAR-NAARM, Hyderabad	Four weeks	5 th June to 2 nd July 2024
	NAHEP sponsored EDP Training programme on Startup Opportunities in the Dairy Sector	Ten days	December 13-22, 2023

	Scale up Your Startup with Startup India Seed Fund Scheme (SISFS) by Startup India'. Organized by MANAGE-Centre for Innovation and Agripreneurship.	One day	October 14, 2023
	A workshop on Entrepreneurship development programme for the UG students was conducted		August 29-30, 2022
	Training Program on “Entrepreneurial Skill Development” at National Academy of Agricultural Research Management (NAARM), Hyderabad	35 days	June 02- July 06, 2022
	Hands-on-Entrepreneurship Development Programme on the topic “Starter Cultures and Production of Fermented Milk Products”	Six days	23-28th May, 2022
	Hands-on-Entrepreneurship Development Programme was organized on the topic “Starter Culture and Fermented Milk Products”	Six days	November 22-27, 2021



Dr. Deepak Maun, Associate Professor at OP Jindal Global University and an esteemed alumnus of NDRI, was invited to conduct a workshop on “Digital Marketing and Personal Branding” on July 27, 2024. The workshop saw active participation from 130 individuals, including both students and faculty members. This session provided valuable insights into establishing a professional digital footprint and building a strong personal brand, greatly benefiting the attendees.





“Entrepreneurial Skill Development” training was organized for 34 no’s of B.Tech. (Dairy Technology) 3rd year students at ICAR-NAARM, Hyderabad, from 5th June to 2nd July 2024.





A 6 days hands-on Entrepreneurship Development Programme on the topic “Starter Cultures and Production of Fermented Milk Products” was organized during 23-28th May, 2022



A total of 44 UG (B.Tech III & IV year) students visited for 35 days (June 02- July 06, 2022) Training Program on “Entrepreneurial Skill Development” at National Academy of Agricultural Research Management (NAARM), Hyderabad



A workshop on Entrepreneurship development programme for the UG students was conducted during 29-30 August 2022



A 6 days Hands-on Entrepreneurship Development Programme was organized on the topic “Starter Culture and Fermented Milk Products” from 22nd November to 27th November, 2021

6.6.2.2.4. Sensitization and Promotion of Environment Conservation Activities

Students, faculty, and staff of the institute were sensitized about the threats to the environment and ways to overcome these challenges to ensure for the sustainability of the environment. Various activities were arranged to actively involve the students and faculty for waste minimization, recycling, composting, water conservation/harvesting, and biodiversity conservation.

Table 70: Programs conducted under sensitization and promotion of environment conservation

Sr. No.	Name of the programmes	Major Activities Carried Out
1.	Swachhata Abhiyan	Regular activity in campus and outside campus. Each division has been allocated area for the same. It is the responsibility of the division faculty and student to clean and maintain the area.
3.	Tree Plantation Campaign	Mass tree plantation programme was organized every year between July to September months. During the Foundation programme each student must plant a tree and responsibility of caring is of the students. Through mass tree plantation 4 mini forests have been created within the campus. An herbal garden is also created near the administrative and other buildings.
4.	Bio-diversity Conservation	Wooden nests and feeding bowls were installed on trees and at various places in the campus to increase the population of birds. Mini forest areas provide shelters to wide variety of flora and fauna.
5.	Water Conservation and Water Harvesting	All the channels were cleaned as a part of Swachhata Abhiyan and dug deeply to store rainwater. Two pits were created for the harvesting of rainwater.
6.	Solar Power Installation and Energy Minimization	Solar power unit having capacity 1 MW is established on the rooftop of office buildings free of cost and the electricity generated is supplied to grid. In lieu of power generation Institute is saving substantial amount in electricity bills. For minimization of energy expenditure in hostel and offices, LED lights were put.
7.	Composting Unit	Students have established vermin composting unit in hostel premise and near canteen for converting the dried leaves/vegetative materials/dung into manure. The manure obtained is used in the gardens of the hostel and office area.
8.	Car Free Day	To minimize the vehicular emission an effort was made to convince staff and faculty to travel by cycle on every Tuesday. Students are also persuaded to use bicycle in campus.

Table 71: List of events organized

Sr. No.	Name of the Webinar	Duration	Date
	Scale up Your Startup with Startup India Seed Fund Scheme (SISFS) by Startup India'. Organized by MANAGE-Centre for Innovation and Agripreneurship.	One day	October 14, 2023

	A National Workshop on the topic: “Food microbiology and microbial diseases”	Twelve days	4- 15 September, 2023
	A workshop on ‘NARES-Blended Learning Platform (BLP)’	One day	August 23, 2023
	An International Workshop on the topic “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding”	Twelve days	21 st August to 1 st September, 2023
	A Workshop titled ‘CME on Good Laboratory Practice (GLP)’	One day	August 9, 2023
	An International Workshop on ‘Genome Editing Technologies in Livestock’	Seven days	August 7-13, 2023
	National Workshop on “Safety and Quality Monitoring in the Food Industry”	Nine days	August 1-9, 2023
	Wiley online library: How can it help researchers? Organized by CeRA Consortium	One day	August 3, 2023
	A National Faculty Development Programme and Workshop titled ‘NEP 2020: Unveiling the Curtain and Exploring New Opportunities’	Two days	July 14-15, 2023
	An International Workshop on “Agro-climatology Data: Useful to Usability”	One day	June 22, 2023.
	Orienting FPOs on Agri-Infrastructure Fund Scheme (AIF). Organized by Centre for Secondary Agriculture, FPO’s and Monitoring & Evaluation, National Institute of Agricultural Extension Management (MANAGE)	One day	June 21, 2023
	A brainstorming session on ‘Clinical Trials Involving Functional Foods’	One day	May 27, 2023
	National Level Faculty Development Programme on “Innovative Teaching Strategies and Tools in Digital Age” organized by M/s. Scrollwell, Noida in collaboration with MoE’s Institution innovation Council	Fourteen days	March 1-14, 2023
	Gender Equality Today for a Sustainable Tomorrow	Two days	March 8, 2022
	Environmental Issues and Sustainable Approaches	One day	Feb 28, 2022
	A workshop on the topic “Scientific Writing”	Two days	June 23-24, 2021
	An International Web-Workshop on the topic titled “Recent advances in design and emerging applications in lateral flow assay”	Four days	18-21 May 2021
	A web-Workshop on “Innovative and Emerging Technologies for Food Safety & Nutritional Quality”	Three days	12-13 & 25 May, 2021

6.6.2.2.5. Digitization of Academic Activities

- **National Academic Depository (NAD):** NAD is an initiative of Govt. of India for creating digital depository of academic certificates and records such as Degrees, PDC, Mark sheets, etc. NDRI has signed MoU with NSDL for initiating NAD. The process of digitising mark sheets and Provisional Degree Certificates is in progress. Certificates/documents uploaded on NAD can be accessed online 24/7.
- **Academic Management System (AMS):** AMS is a web-enabled application software for management of various academic activities of students and faculty of the university, catering to the requirements of different users. AMS was implemented in the year of 2017. The system, since then, has been used effectively for semester registration of students, payment of semester fee online, uploading of marks by faculty, preparation of results and grade cards, etc.

6.6.2.2.6. Competency Enhancement of Faculty

The IDP-NAHEP initiative has spearheaded a comprehensive suite of programs designed to sharpen the skill sets of young faculty members and equip scientists with cutting-edge technological expertise. Central to this mission were two high-impact off-campus workshops conducted by NAARM, Hyderabad, at the NDRI campus, which focused on “Writing Winning Research Proposals” and “Competency Enhancement for Efficiency and Effectiveness at Workplace.” The project also emphasized global exposure, selecting sixteen faculty members for international training, seven of whom have already been deputed to advance their expertise at six prestigious universities across the United States and the Netherlands. Beyond internal training, the initiative leveraged the expertise of NDRI alumni to conduct specialized workshops on “Data Analytics” and facilitate virtual mentoring sessions, bridging the gap between academic learning and professional application.

To further bolster the professional growth of the workforce, faculty and technical staff are regularly deputed for intensive training programs of 21-day, 10-day, and 7-day durations within their respective fields, ensuring they stay abreast of the latest scientific advancements. The student body has similarly benefited from targeted webinars on “Personality Development” and “Entrepreneurial Skill Development,” designed to significantly enhance undergraduate employment opportunities. Infrastructure improvements have played a vital role as well, with the establishment of a state-of-the-art Modern Language Laboratory featuring advanced audio-visual equipment to refine students’ linguistic capabilities. This holistic approach is rounded out by a continuous series of webinars featuring national and international experts, some of which are exclusively curated for the faculty of ICAR-NDRI and other Dairy Science Colleges to maintain a high standard of academic excellence. Apart from that institute is regularly organizing competency enhancement programs in allied subjects like IPR, Business

planning, Commercialization strategies, Entrepreneurship development, Content development and IOT technologies etc.

Table 6.6.10: List of events organized

Sr. No.	Name of the Webinar	Duration	Date
	Industry meet organized. The meet included a panel discussion and technical interactions, highlighting key industry challenges and opportunities for collaboration.	One day	February 24, 2026
	Awareness Programme on Viksit Bharat–Guarantee for Rozgar and Aajeevika Mission (Gramin) Act (VB-G RAM G Act)	One day	January 22, 2026
	National Milk Day was conducted to commemorate the birth anniversary of Dr. Verghese Kurien, the Father of the White Revolution in India.	One day	November 26, 2025
	Market for direct sale of products” under ‘Janajatiya Gaurav Varsh Pakhwada	One day	November 14, 2025
	Launch Programme of Major Initiatives for Enhancing Farmers’ Income and Strengthening the Agricultural Sector by Honourable Prime Minister	One day	October 13, 2025
	A national conference on “Milk Functional Foods and Consciousness” was organized at ICAR-National Dairy Research Institute (NDRI) in collaboration with the Bhaktivedanta Institute, Karnal.	One day	September 27, 2025
	“Janjatiye Gaurav Varsh and Prakriti Mahotsav and Dairy Farming” was organized at ICAR-NDRI, Karnal in collaboration with Indian Oil Limited and Haryana Police Department	Seven days	August 18 - 24, 2025
	Extension Approaches for Climate Resilient Dairy Farming	One day	February 12, 2025
	Informational webinar on ‘Risk Assessment and Risk Management: September 27, Looking Ahead to CP-MOP 11’	One day	September 27, 2024
	Inter-country Knowledge Sharing Webinar on the “Biosafety targets	One day	March 22, 2024
	NABARD Support in Incubation and Agri-Startups” Organized by MANAGE-Centre for Innovation and Agripreneurship (CIA)	One days	December 2, 2023
	Pradhan Mantri MUDRA Yojana (PMMY) scheme for Micro Entrepreneurs’. Organized MANAGE-Centre for Innovation and Agripreneurship	One day	November 25, 2023
	International Trade opportunities for Indian Dairy Industry’.	One day	November 7, 2023

Scale up Your Startup with Startup India Seed Fund Scheme (SISFS) by Startup India'. Organized by MANAGE-Centre for Innovation and Agripreneurship.	One day	October 14, 2023
A National Workshop on the topic: "Food microbiology and microbial diseases"	Twelve days	4-15th September, 2023
A Workshop titled 'CME on Good Laboratory Practice (GLP)'	One day	August 9, 2023
An International Workshop on 'Genome Editing Technologies in Livestock'	Seven days	August 7-13, 2023
National Workshop on "Safety and Quality Monitoring in the Food Industry"	Nine days	August 1-9, 2023
Wiley online library: How can it help researchers? Organized by CeRA Consortium	One day	August 3, 2023
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A brainstorming session on 'Clinical Trials Involving Functional Foods'	One day	May 27, 2023
Gender Equality Today for a Sustainable Tomorrow	Two days	March 8, 2022
Environmental Issues and Sustainable Approaches	One day	Feb 28, 2022
A workshop on the topic "Scientific Writing"	Two days	June 23-24, 2021
An International Web-Workshop on the topic titled "Recent advances in design and emerging applications in lateral flow assay"	Four days	18-21 May 2021
A web-Workshop on "Innovative and Emerging Technologies for Food Safety & Nutritional Quality"	Three days	12-13 & 25 May, 2021



A 15 days National Training Programme on the topic "Microbiological and Chemical quality and Safety Monitoring in Dairy Industry" has been organized from September 15, 2022 to September 29, 2022



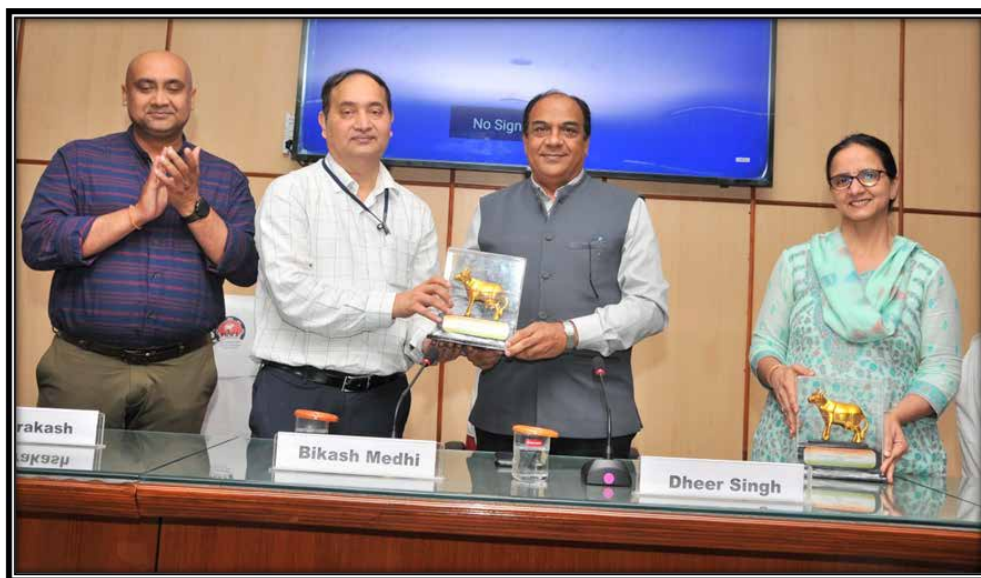
A brainstorming session on 'Clinical Trials Involving Functional Foods' was hosted on May 27, 2023



A National Faculty Development Programme and Workshop titled 'NEP 2020: Unveiling the Curtain and Exploring New Opportunities' was successfully conducted by Dr Pratima Khandelwal during 14th to 15th July 2023



A Workshop 'Stress Management and Conflict Resolution' was held during 28th to 29th July 2023



A workshop titled ‘CME on Good Laboratory Practice (GLP)’ was organized on August 9, 2023



National Workshop on “Safety and Quality Monitoring in the Food Industry” has been organized by ICAR-NDRI during 1st – 9th August, 2023. Dr. Ravi Jadeja, Associate Professor, Animal Sciences at Oklahoma University from USA was the resource person



An International Workshop on the topic “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding” has been organized by Animal Genetics and Breeding Division, ICAR-NDRI during 21 August to 1st September, 2023. Dr Cedric Gondro Dept of Animal Science, CNR at Michigan State University from USA delivered the lecture on the following topics 1) Genomic Analysis of R 2) Artificial Intelligence Applied to Animal Genetics.



A National Workshop on the topic: “Food microbiology and microbial diseases” has been organized by ICAR-NDRI under IDP-NAHEP Project from 4- 15th September, 2023. Dr. Arun Bhunia Fellow, International Association for Food Protection from Purdue University, USA delivered four lectures viz 1) Microbes Interact with foods and food constituents 2) Basic Mechanism of Common Food borne microbial diseases 3) Mechanism of Pathogenesis for food borne microbes 4) Bioengineered Probiotics in mitigating enteric infectious diseases.

National trainings/Seminars/Workshops attended by Faculty:

Sr. No.	Training details	Period of training
	Dr. Sonu KS, Scientist, Dairy Chemistry has attended a National training on NABL accreditation at National Institute of Training for Standardization, Bureau of Indian Standards, New Delhi during 6-9 August, 2024.	Four days
	Dr. Gunjan Bhandari, Scientist, Dairy Economics, Statistics & Management Division has attended 32 nd International Conference of Agricultural Economists organized by International Association of Agricultural Economists, USA and ICAR, New Delhi during 2-7 August, 2024.	Six days
	Dr. Udit Chaudhary, Senior Scientist, Dairy Economics, Statistics & Management Division has attended 32 nd International Conference of Agricultural Economists organized by International Association of Agricultural Economists, USA and ICAR, New Delhi during 2-7 August, 2024.	Six days
	Dr. Rashmi, H.M., Senior Scientist, Dairy Bacteriology (SRS of ICAR-NDRI) has attended a National training on “Whole-genome sequence analysis (WGS) of Extensively drug-resistant <i>Shigella flexneri</i> isolated from dairy production system” at National Centre for Biological Sciences, Bengaluru during 4 July to 2 August, 2024.	One month
	Dr. Sonu KS, Scientist, Dairy Chemistry has attended a National training on “Development of a paper-based μ PAD device for creative assay” at IIT-Madras, Chennai during 4 July to 2 August, 2024.	One month
	Dr. Ajay Yadav, Scientist (Senior Scale), Dairy Technology has attended a National training on “Non-thermal processing of food” at NIFTEM, Thanjavur, Tamil Nadu during 25-31 July, 2024.	One week
	A national brainstorming workshop on “Animal Cloning and Genome editing technology” was organized on July 19, 2024.	One day
	Dr. Basavaprabhu, H.N., Scientist, Dairy Microbiology has undergone National training on “Biogenic Synthesis and Characterization of N-Doped Carbon Quantum Dots (CQDs) from Milk and Whey for Food Safety and Bio-Medical Applications” at IIT-BHU, Varanasi during 1-15 July, 2024.	Fifteen days
	Dr. Sohanvir Singh attended Training on “Managerial Effectiveness Through Stress Management” from 16 th October to 18 October 2023, IIM Lucknow.	Three days
	Dr. S. Jeya Kumar attended Training on “Organizational Excellence through Leadership- Batch-I” organized by IIM Bangalore from 21 to 25 th August 2023.	Five days
	Dr. Sathish Kumar attended a training at IIM, Bangalore.	Four days
	Dr. G.V. Vedamurthy, attended a training at IIM, Bangalore.	Five days
	Dr. Rashmi H.M attended Training on “Mindfulness for Effective Leadership” from 20-22 September, 2023 at IIM Bangalore.	Three days

International training of Faculty:

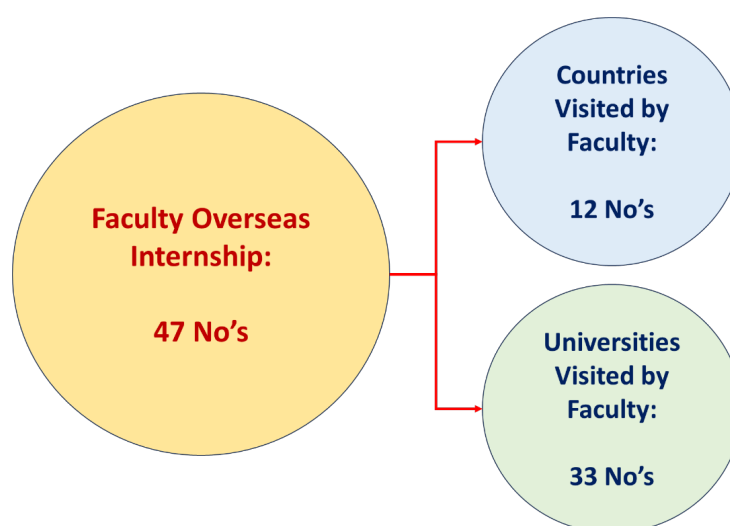
A total of 47 faculty members from National Dairy Research Institute have undergone international training under the IDP-NAHEP at leading universities and research institutes across the globe, including the United States, United Kingdom, New Zealand, Denmark, Australia, Germany, Sweden, Ireland, and Thailand. These training programs have provided faculty with exposure to advanced research infrastructure, innovative teaching methodologies, and global best practices in dairy science, food technology, and allied disciplines. Faculty members actively engaged in collaborative research, attended specialized training modules, and interacted with international experts, thereby enhancing their academic and professional competencies.

The impact of this international exposure is evident in improved faculty performance across multiple dimensions. Faculty members have adopted advanced pedagogical approaches, including outcome-based education, digital learning tools, and interactive teaching methods, leading to more effective classroom delivery. Their research aptitude has been significantly strengthened, resulting in increased quality and quantity of scientific publications in high-impact journals. Additionally, enhanced collaboration with international institutions has contributed to improved citation metrics and higher H-index values. Faculty have also been able to secure competitive research projects and contribute to curriculum modernization. Overall, the IDP-NAHEP supported international training has played a vital role in strengthening teaching excellence, research productivity, and global engagement of the institute's faculty.

Sr. No.	Name of the Scientist & Designation	Division	University Name	Actual dates they stayed
	Dr. Pawan Singh, Principal Scientist	Livestock Production Management	SRUC, Scotland, UK	Two weeks
	Dr. Anil Kumar Puniya, Principal Scientist	Dairy Microbiology	SRUC, Scotland, UK	Two weeks
	Dr. Chitranayak, Principal Scientist	Dairy Engineering	Curtin University of Technology, Perth, Australia	Two weeks
	Dr. Rajesh Kumar Meena, Scientist	Agronomy	The University of Western Australia, Australia	Two weeks
	Dr. Jai K. Kaushik, Principal Scientist	Animal Biotechnology Centre	Harvard University, USA	Two weeks
	Dr. Suman Kapila, Principal Scientist	Animal Biochemistry	Massey University, Palmerston North, New Zealand	Two weeks

	Dr. Kaushik Khamrui, Principal Scientist	Dairy Technology	Asian Institute of Technology, Thailand	50 days
	Dr. Gautam Kaul, Principal Scientist	Animal Biochemistry	Wayne State School of Medicine, Wayne State University, Detroit, Michigan, USA	Two weeks
	Dr. Sangita Ganguly, Scientist	Dairy Technology	Riddet Institute, Massey University, New Zealand	5 months
	Dr. A. Manimaran, Sr. Scientist	Veterinary Pharmacology	Department of Animal Sciences and Division of Nutritional Sciences, University of Illinois Urbana Campus (VIDC), USA.	5 months
	Dr. Sanchita Garai, Sr. Scientist	Dairy Extension	University of Reading, UK	5 months
	Dr. Gunjan Bhandari, Scientist	Agricultural Economics	University of Guelph, Canada	5 months
	Dr. Naresh L. Selokar, Scientist	Animal Biotechnology Centre	FLI-Institute of Farm Animal Genetics (ING), Germany	5 months
	Dr. Nitin Tyagi, Principal Scientist	Animal Nutrition	University of Florida, Florida, USA	2 months
	Dr. A. Kumaresan, Principal Scientist	Animal Reproduction	University of Wisconsin- Madison, USA	2 months
	Dr. Sathish Kumar, M.H., Sr. Scientist	Dairy Technology	University of Nebraska, Lincoln, USA	2 months
	Dr. Anil Kumar Dixit, Principal Scientist	Dairy Economics, Statistics & Management	Arizona State University, USA	2 months
	Dr. Hans Ram Meena, Principal Scientist	Veterinary Extension	University of Florida, Florida, USA	2 months
	Dr. K. Ponnusamy, Principal Scientist	Agricultural Extension	University of California, California, USA	Two weeks
	Dr. Vikas Vohra, Principal Scientist	Animal Genetics and Breeding Division	Michigan State University, USA	2 months
	Dr. Asif Mohammad, Senior Scientist	Eastern Regional Station of NDRI	Asian Institute of Technology, Thailand	5 months

	Dr Rakesh Kumar, Principal Scientist	Agronomy	Kansas State University, USA	Two weeks
	Dr. Manoj Kumar Singh, Sr. Scientist	Animal Biotechnology Centre	Federal Research Institute for Animal health, Institute of Farm Animal Genetics, Biotechnology Department, FLI Germany	2 months
	Dr. Diwas Pradhan, Scientist	Dairy Microbiology	Ohio State University, Ohio, USA	5 months
	Dr. Nishant Kumar, Sr. Scientist	Livestock Production & Management	College of Veterinary Medicine, Washington State University Pullman, WA, USA.	2 months
	Dr. Sunita Meena, Sr. Scientist	Animal Biochemistry	Dept. of Physiology, College of Medicine, University of Tennessee, Memphis, USA	5 months
	Dr. Yogesh Khetra, Sr. Scientist	Dairy Technology	Wageningen Research & University, Netherlands	5 months
	Dr. Rajeev Kapila, Principal Scientist	Animal Biochemistry	Wake Forest School of Medicine Winston Salem, North Carolina, USA	2 months
	Dr. Rajan Sharma, Principal Scientist	Dairy Chemistry	Wageningen Food & Biobased Research, Wageningen University of Research, Wageningen the Netherlands	3 months
	Dr. Manoj Kumar C.T., Scientist	Dairy Chemistry	Purdue University, West Lafayette, Indiana state, USA	5 months
	Dr. Richa Singh, Scientist	Dairy Chemistry	Dept. of Animal Sciences & Industry, Call Hall, Kansas State University, USA	5 months
	Dr. S. Subhash, Sr. Scientist	Southern Regional Station of NDRI	Iowa State University Ames, Iowa, USA	5 months



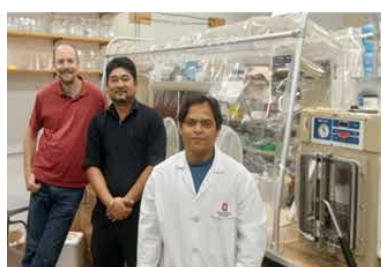
Diversity in Faculty Overseas Internship



Dr. A. Kumaresan, Principal Scientist
Period of Deputation :2 months
Visiting Institute: Wisconsin State, USA
Purpose of the Visit: IDP Faculty International Training on “Environmental chemicals and male fertility”



Dr. Vikas Vohra, Principal Scientist
Period of Deputation :2 months
Visiting Institute: Michigan State University, USA
Purpose of the Visit: IDP International Training on “Animal Genetics and Genomics for dairy improvement: Imputation projects and artificial Intelligence methods for genomic prediction”



Dr. Diwas Pradhan, Scientist
Period of Deputation :5 months
Visiting Institute: Department of Food Science & Technology at Ohio State University, Columbus, U.S.A
Purpose of the Visit: “To work on Microbial Metabolomics using Nuclear Magnetic Resonance (NMR) Spectroscopy under the IDP-NAHEP program”



Dr. Gunjan Bhandari, Scientist
Period of Deputation :5 months
Visiting Institute: University of Guelph, Guelph, Ontario, Canada
Purpose of the Visit: IDP-Training.



Dr. Sanchita Garai, Senior Scientist

Period of Deputation :5 months

Visiting Institute: University of Reading, UK

Purpose of the Visit: IDP Training on "Climate resiliency among the dairy farmers of climate-induced vulnerable region of the Haryana State of India: A Gender Perspective".

6.6.2.2.7. Engagement with Stakeholders for Remodelling and Strengthening of Education Programme

During the year 2024, the institute conducted a total of 3,470 number of extension activities, benefitting 3,01,460 dairy stakeholders. These activities included 20 exhibitions, 209 training sessions, 13 skill development programmes for dairy stakeholders, 03 large dairy melas, 37 animal health camps, 349 exposure visits, 2,179 advisory services and 182 frontline demonstrations etc.

During the year-2023, overall, 55270 numbers of dairy farmers were benefitted through various aspects of dairying and its allied fields. Fifty Kisan Sangoshthies were organized at village level for creating awareness about the latest technologies of scientific dairy farming among dairy stakeholders. During the year 2022, NDRI carried out 15 special Swachhta campaigns with a total participation of 1250 stakeholders. The faculty educated the villagers and farmers about cleanliness, non-use of single use plastics, non-spitting on the road and public places, putting the water bottles and other wastes in dust bins, wearing face masks while going out and in public places and adhering to all Covid-19 guidelines. During the year 2021, ICAR-NDRI carried out 18 special Swachhta campaigns with a total participation of 1833 stakeholders. A Special Swachhta Campaign was organized at Karan Lake on October 26, 2021. About 200 faculty and students of NDRI has actively participated by dividing into three groups and covered the whole lake premises. The faculty educated the tourists and visitors about cleanliness, non-use of single use plastics, non-spitting on the road and public places, putting the water boles and other wastes in dust bins, wearing face masks while going out and in public places and adhering to all Covid-19 guidelines. National Dairy Mela 2020 was organized during 15 to 17 February, 2020 to demonstrate, extend and expand the findings and technologies of the Institute to stakeholders, especially farmers. More than 15000 stakeholders from different states like Uttar Pradesh, Haryana, Punjab, Delhi, and Rajasthan participated. Further, 19 infertility and veterinary aid campaigns and 19 Kisan Sangoshthies were organized to impart awareness among farmers on good animal husbandry practices. About 155 need based on-line and off-line trainings programmes covering various aspects of crops, livestock, fish farming and bee keeping were organized by KVK to benefit 5548 participants. Similarly, in the grim pandemic

scenario of COVID19, KVK also organized 5 online training-cum-webinars, which benefited a total of 1540 farmers.

6.6.2.3. Library

The Institute Library has an impressive collection of literature on dairy science and related subjects. At present, 15 (6 Indian & 9 foreign) print journals are subscribed to keep track of the current scientific/technical developments. In addition to that, the institute has online access to about 13000+ journals of 27+ subject categories through the One Nation One Subscription (ONOS) scheme of the Government of India. There are 100,006 volumes, which include books, bound journals, theses, standards, and annual reports. There are 2339 e-books from different foreign and Indian publishers that were made available for perpetual access on the NDRI campus. In addition to the above purchased e-books, some other e-books/serial publications (1174 e-books and 17 serial publications) are also available for institute users through CeRA. The online library catalogue is available on URL: library.ndri.res.in by using Koha-LMS, and 53,444 catalogue records of the library are also available on Agricat/WorldCat. Presently, 7345 digitized records, which include valuable institutional publications, M.Sc. and Ph.D. dissertations, reports, conference proceedings, reprints, etc., are in the KrishiKosh Repository of the Indian National Agricultural Research System. The library is managing operations of anti-plagiarism software, Drillbit, through the Shodhsudhi portal of the INFLIBNET Centre of UGC for plagiarism detection in Ph.D. theses and subscribing to and managing the same Drillbit platform for plagiarism detection in master's theses and other documents of the institute.

Table 73: List of learning resources available in library

List of Items	Total Numbers
Books/ Journals etc during last five years	• 3352 Books • 990 bound Journals • 1268 Thesis • 1198 e-books • Total- 6808 Documents added during last five years
Software	KOHA-Library Management Software
New infrastructure created/ Renovated/ Amenities added	Providing round the clock reading room facility for students with WiFi connectivity for the students and faculty members w.e.f. 03.01.2022
Digital cataloguing/Digitization	Cataloguing of about 5610 documents/ Digitization of 2568 documents

E-learning promotion activities if any	Actively participated in Krishikosh/ Agricat platforms of the ICAR and ONOS (one Nation one subscription), NDL (National Digital Library) platforms of the Government of India. Also purchased 1198 Indian and foreign e-Books for users of ICAR-NDRI to promote E-learning

6.6.2.4 Centre of Excellence/Advance Studies/Centre for Advanced faculty Training:

The institute has the privilege of hosting two Centers of Advanced Faculty training in its major areas of expertise for nearly three decades. During 2021-26, the following training programs were organized.

6.6.2.4.1 CAFT Training Programme in Animal Genetics and Breeding

Table 74: List of training programs organized by CAFT Animal Genetics and Breeding (2021-26)

Animal Genetics & Breeding		
Sr. No.	Name of the training programme	Duration
1	Exploring integration of multi-omics and conventional breeding approaches for sustainable livestock production	21 days (December 1 -21, 2022)
2	Applying genomic models in prediction of breeding value using BLUPF90 software	21 days (January 10 th to 30 th , 2025)
3	Next-Gen Animal Breeding: Hands-on Approach to Genomics, Selection Strategies, and Artificial Intelligence in Dairy Animals	21 days (November 19 th to December 9 th , 2025)

Table 75: List of training programs organized by CAFT Dairy Processing (2021-26)

Dairy Processing		
Sr. No.	Name of the training programme	Duration
1	Innovation in Processing and Packaging of Dairy and Food Products and Opportunities for Entrepreneurship Development and Start-ups	21 days (November 7-27, 2022)
2	Emerging engineering and technological interventions in processing and value addition of milk products	21 days (January 10-30, 2024)

Table 76: List of training programs organized under Summer School / Winter School / Short Courses for Faculty Members of SAUs/others (2021-26)

Winter Schools			
Sr. No.	Name of the Division	Name of the training programme	Duration
	Dairy Chemistry Division	Milk Derived High Value Bioactive Compounds: Agro-Industrial Prospects, Challenges and Way Forward	21 days (Jan 31 st to Feb 20 th , 2025)

	Dairy Extension Division	Advances in Socio-Climatological Dimensions of Climate Resilient Agriculture	21 days (Feb 6 th to 26 th , 2025)
	Livestock Production Management Division	Doubling income of dairy farmers by Reproductive Management of Dairy cows and buffaloes	21 days (Dec 6 th to 26 th , 2025)
	Dairy Chemistry	Application of Foodomics and Advanced Analytical Techniques for Ensuring Quality, Safety and Functional Properties of Dairy Foods	21 days (Dec 6 th to 26 th , 2025)
	SRS of ICAR-NDRI	'Milk Derived High Value Bioactive Compounds: Agro-Industrial Prospects, Challenges and Way Forward'	21 days (Jan 31 st to Feb 20 th , 2025)
Short Courses			
Sr. No.	Name of the Division	Name of the training programme	Duration
	SRS of ICAR-NDRI	Emerging Trends in Nanotechnology for Dairy and Food Applications	10 days (January 1-16, 2026)
	SRS of ICAR-NDRI	Entrepreneurship Development Program on 'Startup Opportunities in the Dairy Sector', supported by NAHEP	10 days (December 13-22, 2023)
	Animal Physiology	Climate Smart Livestock Production under Changing Climate Scenario	10 days (February 01 to 10, 2023)
Workshops / Webinars / Other trainings			
Sr.No.	Name of the Division	Name of the training programme	Duration
	SRS of ICAR-NDRI	Hands-on-training on production and characterization of milk derived bioactive compounds using advanced instruments supported by SERB	10 days (26 February to 6 March 2024)
	Animal Genetics & Breeding	International Workshop on Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding	12 days (August 21-September 1, 2023)
	Animal Physiology	Impact of Climate Change and Heat Stress on Dairy Cattle and Mitigation Strategies	One day (20 th June 2022)

High-end Workshops (Karyashala SERB Sponsored Workshops)

The Institute has also organized high-end research workshops on specific themes under “Accelerate Vigyan” program and Karyashala Scheme to provide a big push to high-end scientific research and prepare scientific manpower which can venture into research careers and knowledge-based economy. Recognizing that all research has at its base as

development of quality, well-trained researchers; these high-end workshops will initiate and strengthen mechanisms of identifying research potential, mentoring, training and hands-on workshops, on a broad-based national scale. The aim of these workshops is to expand the research base in the country, with three broad goals - consolidation / aggregation of all scientific training programs, initiating High end Orientation Workshops and creating opportunities for Research Internships. The following SERB-Karyashalas were organized by ICAR-NDRI to improve research productivity of promising PG and PhD students from universities and colleges across India.

SERB-Karyashala (or SERB/DST sponsored training programmes) information

S. No.	Title of the Workshop	Duration with dates	Budget sanctioned	No. of participants	Diversity		
					No. of males	No. of females	No. of states represented by the participants
	Advanced training in unravelling the functional and nutraceutical properties of milk protein ingredients	10 days (June 12-21, 2023)	Rs 5 Lakhs	21	10	11	05
	Application of advanced and Sophisticated Instrumentation in the development and characterization of functional dairy foods	14 days (July 26-Aug 08, 2023)	Rs 5 Lakhs	25	8	17	08





Fig. A national brainstorming workshop on “Animal Cloning & Genome Editing Technology” was organized on July 19, 2024



SERB-Karyashala programme organized during 2023





Students attending the Practical Sessions during the High-end workshop

6.6.2.5 Incubation centre/Start up Units/venture capital

Agribusiness Incubation (ABI) Programme and Business Planning and Development Unit (BPD)

Objectives:

- To organize “Innovative Capacity Building Programmes” for farmers, entrepreneurs, unemployed youth, students and other stakeholders in the area of scientific dairy farming and Dairy/Food processing.
- To provide services on quality evaluation, research and development and market research
- To assist in development of linkages with developmental agencies, NGOs, private organizations, dairy/food industries and funding agencies with the trainees/entrepreneurs/farmers

Major Activities of ABI under the aegis of BPD Unit

- Organization of Entrepreneurship Development Programme (EDP)
- Mentor Support for Developing a Business Idea
- Promotion & Nurturing of Entrepreneurial Aptitude among Students
- Assistance in R & D activities
- Business Incubation
- Linkage Development with other ABI's, NGOs; MSME, NABARD and other developmental agencies
- Market Assistance



Fig. : Benefits of conducting technical programmes



Fig. : Business Planning and Development Unit (BPD) of ICAR-NDRI, Karnal
Capacity/Skill Development Programmes for Stakeholders Leading to Entrepreneurship

Capacity/Skill Development Programmes for Stakeholders Leading to Entrepreneurship

- **Entrepreneurship development programmes (EDP)** on Commercial Dairy Farming, Milk processing, and Value-added Dairy Products: To create awareness for the business opportunities in dairy sector and possible approaches for running a successful enterprise, possible risks, mitigations, and other management aspects.
- **Modular Training Programmes** for Industry Personnel & Government officials (Quality Assurance Personnel, Dairy & Food Technologists, Non-dairy technologists, Field Veterinarians, Technical officers, Paravets): To improve the skills of employees through imparting training on newer developments in dairy

value chain. Training programmes are customized as per the need of organization or company and topic included breed improvement, fertility management of dairy animals, feed & fodder technologies, farm management, advances in quality assurance and processing of dairy products, dairy plant management, energy and resource auditing of processing units.

- **Training Programme for Developmental Agencies** (Supported by NABARD, ATMA Directorate of State Governments, NGO's & other developmental agencies): To expose and train the farmers, rural youth & farm women on scientific rearing of dairy animals, cultivation & preservation of fodder crops, clean milk production, on-farm processing, and value addition dairy/food products.
- **Students Training:** For the students of other educational institutes, universities for industrial training at Experimental Dairy, modular trainings in food/dairy technology, biotechnological techniques, dairy/food process engineering, laboratory attachment for short-term projects and to enhance the analytical skills. These training programmes provide an opportunity to students throughout the country to get an exposure of emerging trends & advances in milk production, quality assurance, technological and engineering aspects.

Key Features of Entrepreneurship Development Programme

- Well defined Modules (Three tier approach)
- Involvement of Key Experts (Both internal & external)
- Flexible Approach to Address the Diverse needs of trainees
- Close interaction with Successful Entrepreneurs
- Mentor support
- “Hands on Training” opportunities
- Complete “Hand Holding”



Fig. : Hands on training under EDP

Business Incubation Programme

Provide services on marketing assistance, quality evaluation, research, and development for business development and help small entrepreneurs for setting up dairy farms, food, and dairy processing unit.

- Business incubation infrastructure (Space for office, laboratory and complete processing line and space for test marketing)
- Preparation of Project feasibility reports, submission to banks/funding agencies, assistance in getting requisite regulatory licenses, test marketing, and commercial launching of products
- To support Virtual Incubatee: formulate a core team to assist in quality improvement, product diversification & linkages

Service Available to Entrepreneurs

- Contract Services offered
 - Dairy/Food testing facility for physical, chemical & microbiological parameters
 - Feed & Fodder Analysis
 - Karyotyping of animals
 - Supply of semen, testing of semen straw
 - Milk Adulteration Kits
 - Microbial Cultures
- Consultancy services for establishment of commercial dairy farms, milk processing units, Breeding Farm, Food testing Laboratory
- Auditing of Processing unit for HACCP/ISO certification
- Advisory Services on product quality improvement and product diversification
- Farm Advisory Services in reference to quality feed/fodder production, maintenance of elite herd
- Custom hiring of processing equipment for pilot/industrial scale trials
- Mentor Support: For converting the idea into prototype and business model

Infrastructure Available to Support the Entrepreneurs & Startups

- Consultancy Processing Cell
- Technology Business Incubator (TBI)
- Institute Technology Management Unit (ITMU)

- National collection of Dairy Microorganisms (NCDC)
- National Bio-informatics Centre
- Livestock Farm (2000 animal)
- Fodder Farm (1000 acres)
- Biotechnology Centre
- Experimental Dairy Plant
- Model Dairy Plant
- National Referral Centre for Milk Quality & Safety

Processing Lines Available for Entrepreneurs

- **Modular Milk Processing & Packaging Line** (Pasteurizer, Ice cream Machine, Kulfi Making machine, Khoa kettles, Butter Churner, Ghee kettles, Mixing-cum-Incubation Tank, Paneer press, Paneer dicing machine, Curd cup filling machine, Beverage filling line, Powder packaging line)
- **Canning Line** (Vegetable preparation machine, Exhaust box, Retort pack sealer, retort)
- **Bakery and Snack Manufacturing Unit** (Mixers, Dough Divider, Cookie-drop machine, Rotary rack ovens, Pasta Making machine, Food Extruder, Biscuit packaging line, Snack packaging line)
- **Pilot Scale** Spray Dryer, Cabinet Dryer, Fluidized Bed Dryer, and Vacuum Tray Dryer

Achievements:

Capacity Building Programmes

- ABI of ICAR-NDRI, Karnal is coordinating and organizing short and long-term training programme for entrepreneurs, students from other universities and educational institutions, officials from industry and government organization and other development agencies. For promotion of self-employment 150 Entrepreneurship Development Programme (EDP) were organized since its establishment in June, 2014 in Commercial Dairy Farming, Milk & Milk Product Processing, Technology of Cheese, Ice cream and Frozen Desserts Manufacture, Traditional Indian Dairy Products & Starter Culture & Fermented Foods which was attended by 2430 participants from all parts of the country. Gross revenue generated through these activities during the period amounts to ~Rs. 2,50,00,000/- only.

- For promotion of entrepreneurship specialized training programmes for the Serving and Retired Personnel of Indian Army on “Practical Training on Commercial Dairy Farming and Milk Processing” was organized with the aim to impart the theoretical and practical knowledge about the rearing of dairy animals and effective management practices for running it as enterprise. Also, training programmes for Dairy Field/Technical Officer Trainees of Bohar Government was also organized.
- For the benefits of farmers beneficiaries of Nand Baba Dugdh Mission, Dairy Development Scheme of UP Government, 8 training programmes on Dairy Farming and Milk Processing were organized. More than 150 farmers were benefitted so far from these training programmes.

Initiatives to Promote Entrepreneurship among the Students of ICAR-National Dairy Research Institute

- The following workshops/seminars/brainstorming session/trainings (08 no's) were organized for promoting entrepreneurship among the students of ICAR-NDRI:
 - Workshop on Digital Marketing and Personal Branding
 - Training programme on Entrepreneurial Skill Development (Four weeks programme for 69 B.Tech. DT students)
 - A webinar on “Decoding Secrets of Agri-Dairy Sector: Towards Self Employment”
 - Workshop on & Personal Brand Building and Self-Management”
 - Two customized training programmes on “Dairy Plant Management” (Two weeks programme for 68 B.Tech. DT students)
 - A webinar on “Making a Startup Successful - Mastering the Skill to Fund Your Ideas” by Dr. Shekhar Patel, Senior Vice-president of US Hydrations, USA
 - A webinar on “Innovations and Entrepreneurship Development in Agriculture” by Dr. Matthew Clancy, Assistant Professor, Agricultural Entrepreneurship Initiative, Iowa State University, USA
 - A webinar “Development of an Agri-tech Startup Ecosystem” by Prof. Kevin Kimle, Professor and Director, Agricultural Entrepreneurship Initiative, Iowa State University, USA

- Three Innovative Research and Business Idea contests were organized to inculcate innovative thinking and business mindset among the students for promoting entrepreneurship and business acumen among the students. During each time, more than 30 applications were received by the UG, PG & PhD students in various categories. These applications were screened by a duly constituted committee followed by presentation/idea pitching of the short-listed applications. A selection committee then selected first three best ideas in each category and prizes were awarded. These initiatives promote idea creation capabilities and entrepreneurial mindset among the students.
- Three Entrepreneurship Brainstorming Sessions was organized as a part of Foundation Course Programme to encourage students to become entrepreneurs
- Five interactive sessions with successful entrepreneurs including alumni of ICAR-NDRI, Karnal who became entrepreneurs was organized for experience sharing
- Under Student Ready Programme as per the suggestion of 5th Dean Committee UG students were provided mentor support (Faculty & Staff of MDP) for development of technological packages for value added dairy products. Each team consisting of 5 students were guided to develop a business model for new range of innovative dairy products under the mentorship of expert faculty. The students developed the technology and also business canvas model for multigrain laddu, fruit flavoured kheer, millet burfi, dates milk shake, vanilla milk pudding, cheese cake, etc. The students conducted consumer acceptance studies and based on the feedback formulation and processing parameters were also modified. The aim of the training was to inculcate the research based developmental activities and business acumen among the student fraternity.
- KSHITIJ, an Initiative under National Agriculture Innovation Fund of ICAR, a one-month virtual incubation cohort for early-stage start-ups on Food Processing & Waste-To-Wealth Innovations was also organized by ABI in coordination with few ICAR Institutes. Boot camps, seminars and digital media programmes were organized under this KSHITIJ cohort to promote entrepreneurship. Several traditional universities and engineering colleges were covered under this programme to mine business ideas of the young minds and nurture them. A total of 369 applications/ideas were received. After through screening 41 ideas were short-listed and provided mentorship.



Fig. : Boot camp under KSHITIJ programme

The Atal Incubation Centre (AIC)-SRS-ICAR-NDRI Foundation

The Atal Incubation Centre (AIC)-SRS-ICAR-NDRI Foundation in Bengaluru, established in 2021 with Atal Innovation Mission (AIM), NITI Aayog, supports dairy-based startups and entrepreneurs. Located at the Southern Regional Station of ICAR-NDRI, it fosters innovation in dairy farming, processing, and sensor technologies, driving technology commercialization, such as advanced milk testing technologies.

Key Aspects of AIC-SRS-ICAR-NDRI:

- Establishment: Inaugurated on March 20, 2021, at the SRS-NDRI campus in Bengaluru.
- Vision: Focused on improving dairy animal productivity, milk processing, and value addition through startup mentorship.
- Focus Areas: Encourages innovation in dairy production, sensor-based technologies, dairy processing, and nutrition.
- Success Stories: The center has nurtured ventures like Biosouk™ Life Sciences, which developed “Milk-O-Mak™,” a paper-based platform to detect milk adulterants.
- Facilities: Provides infrastructure and mentoring, utilizing the expertise of the ICAR-NDRI research team.
- Incubation and Mentoring: The center aids in translating research into marketable products. It supports entrepreneurs through mentoring and providing a platform for innovation.

The following activities have been undertaken from April 2021 to till date:

- Training programme on; “Entrepreneurship development in dairying” held on 01st Oct 2021 to 05th Oct 2021. (05 days)
- Training for M.Sc. Microbiology and B.Sc. Food Science & Technology in Dairy Microbiology from Garden City University held on 11 Oct 2022 to 21st Oct 2022. Total 18 students are participated. (11 days)
- Training Programme on: “Hands on training programme on Ghee Analysis” held on 01 Oct 2022 to 05th Oct 2022: From 31st Oct 2022 to 05th Nov 2022. Total 06 members were participated. (05days and 06 days respectively)
- Training programme on: “Dairy Animal management and value addition to milk at farm level: ways to earn profits” held on 09th Feb 2023 – 11th Feb 2023; 13th Feb 2023 – 15th Feb 2023; 20th Feb 2023 – 22th Feb 2023; 27th Feb 2023 – 01st Mar 2023. 78 Dairy FPO members participated. (Each batch spans 3 days, with 4 batches totaling 12 days.)
- Orientation on Ice Cream and Frozen Desserts Business Incubation held on 04 Sep 2023 to 08 Sep 2023. Total 11 members were participated. (05 days)
- In coordination with EDII, Bengaluru, and K.C. Das, Bengaluru, our AIC organized an event of sweets preparation to orient rural youth and women held on 28th Dec 2023 at Kolar. (01 day)

- Event on Research to Innovation towards Entrepreneurship held on 19th Dec 2023. (01 day)



NABARD sponsored training program on “Dairy Animal Management and Value Addition to Milk at Farm Level: Ways to Earn Profits”





Rural Skill Development Program,



Event on Research to Innovation towards Entrepreneurship



Hands on Training on GHEE Analysis" for Jr. Analysts of TTD (Tirumala Tirupati Devasthanam) Water and Food Analysis Lab

Achievements in Business Incubation

- ABI offers incubation support to interested entrepreneurs/prospective entrepreneurs to successfully start their businesses. As mentioned earlier, facilities viz. State-of-the-art infrastructure to prepare various dairy and foods products, bakery unit, packaging facilities, cold store facilities, and space for office set-up during incubation and sale counters to establish their marketing in the early stages of business will be provided by ABI to incubatees during the period of incubation. The incubation period is offered for initial six months followed by extension for a brief period as per the approval of competent authority. More than 150 incubatees were inducted by ABI ICAR-NDRI among which 140 have successfully doing their business. Several of these entrepreneurs graduated from ABI are the students of ICAR-NDRI itself thus indicated the commitment of ABI, ICAR-NDRI to promote entrepreneurship. A few success stories of ICAR-NDRI students, in the report period, are given here.

Entrepreneurial Success Stories of UG Students:

ABI of ICAR-NDRI thrives hard to make the students becoming job givers rather job seekers. Three inspiring entrepreneurial success stories of B.Tech. DT students of ICAR-NDRI are shared herewith:

- Two of NDRI's B.Tech. (Dairy Technology) graduates viz. Mr. Simran and Ms. Rashika established a Startup named M/s. Simras Foods Private Limited under the brand name MightyMix. The startup has launched "Sapt-grain Millet Cookies" with the help of ABI, NDRI on 26th November 2023.
- M/s. Ganganiya Natural Products Pvt. Ltd. was established by a B.Tech graduate student. The firm manufactures Traditional Desi Ghee, Cold-Pressed (Kachi Ghani) Oils and Nuts, Premium Tea Blends.
- Mr. Devender, an NDRI UG graduate has established a start-up named BellyVoids Pvt. Ltd. on 24th May 2022 at Karnal & Jabalpur. The start-up is recognized by The Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce, and Industry in India. The aim of the start-up is to revolutionize the Indian snacking landscape by providing healthy, sustainable, and delicious mushroom-based snacks that empower lower-marginal farmers and promote organic farming practices. The start-up develops and market a diverse range of innovative, 100% organic mushroom-based snacks that are delicious, nutritious, affordable, and cater to diverse taste preferences.

6.6.2.6. Technology enabled learning resources

Technology-enabled learning intends to focus on expanding access to quality teaching and learning by supporting application and innovation through information and

communication technologies (ICT) in education, and the development of ICT skills. Information technology may have a transformative effect on teaching and learning process, it is necessary to focus on resource generation and building capacity of teachers as a base practice to employ an effective learning process. A range of technologies are available for teaching and learning, including mobile devices, online learning, and low-cost technologies such as audio and video, radio and TV.

Infrastructure for Technology-enabled learning: Infrastructure is available for technology assisted teaching process. A fast internet service is available in all offices of the institute as well as hostels for conducting online classes. Smart boards are available in most of the UG and PG classrooms.

Digital Content: Faculty mostly conducts classes using digital contents in the form of presentations, videos and even movies. Realizing the situation which emerged post covid pandemic, faculty has started delivering lectures/practical sessions/demo w.e.f April, 2020 using Zoom, MS teams, Google Meet, etc. software. Online teaching materials are being uploaded in google classroom and evaluation being done through google classroom using google doc. Assignments are being prepared, submitted, and evaluated in digital mode only. A digital central facility (Virtual Classroom) is also created for the faculty to develop their video lectures etc. During the year 2021, practical was also conducted in online mode by using online presentation and videos. Video of product processing and analysis is being prepared by the faculty and later uploaded and subsequently discussed with the students. In addition, a language lab fully furnished with digital tools are available for use by faculty and students.

Teacher's Training: Faculty is being provided several training opportunities to enhance their skill for teaching through application of recent smart technologies. Also, several seminars, workshops organized for improving the usage of IoT and AI by faculty in their teaching and research. The list of training programme has been listed:

Table 77: List of events organized

Sr. No.	Name of the Webinar	Duration	Date
	Enhancement of Competency and Work Efficiency in Organization	Three days	January 20-22, 2025
	Webinar on “Internet of Things in Precision Farming”	One day	September 26, 2024
	A national workshop on “Application of Artificial Intelligence and Machine Learning in the Dairy & Food Industry”	One day	July 31, 2024
	A national workshop on “Application of Artificial Intelligence and IoT-enabled Sensor Technologies for Precision Dairy Farming”	One day	July 24, 2024

Continuous Education Program Series Webinar on 'Open Network for Digital Commerce (ONDC) applications in Dairying'. Organized by IDA-South Zone, Bengaluru.	One day	October 27, 2023
A workshop on 'NARES-Blended Learning Platform (BLP)'	One day	August 23, 2023
An International Workshop on the topic "Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding"	Eleven days	August 21 -September 1, 2023
A National Faculty Development Programme and Workshop titled 'NEP 2020: Unveiling the Curtain and Exploring New Opportunities'	Two days	July 14-15, 2023
National Level Faculty Development Programme on "Innovative Teaching Strategies and Tools in Digital Age" organized by M/s. Scrollwell, Noida in collaboration with MoE's Institution innovation Council	Fourteen days	March 1-14, 2023

National trainings attended by Faculty:

Sr. No.	Training details	Period of training,
	Dr. Bharati Pandey, Scientist, Animal Biotechnology Division has undergone a National training on "Digital imaging analysis using machine learning techniques" at Department of Computer Science, University of Delhi during 30 July to 20 August, 2024.	Three weeks
	Dr. Biswajit Sen, Scientist, Dairy Economics, Statistics & Management Division has undergone a National training on "Advance techniques for Impact evaluation" from International Food Policy Research Institute, New Delhi during 19 June to 16 July 2024.	Four weeks
	Dr. M. Sivaram attended Training on "Artificial Intelligence for Senior Leaders in IIM Bangalore.	Three days



A national workshop on "Application of Artificial Intelligence and IoT-enabled Sensor Technologies for Precision Dairy Farming" was organized on July 24, 2024 at ICAR-NDRI, Karnal. The workshop was attended by 98 participants, including faculty and students.



A national workshop on “Application of Artificial Intelligence and Machine Learning in the Dairy & Food Industry” was organized on July 31, 2024 at ICAR-NDRI, Karnal. The workshop saw participation from a total of 265 individuals, including students and faculty members.



A workshop on ‘NARES-Blended Learning Platform (BLP)’ was held on August 23, 2023. Dr. Sudeep Marwaha and Dr. Shashi Dahiya were the resource persons.



An International Workshop on the topic “Genomic Analysis and Artificial Intelligence Applied to Animal Genetics and Breeding” has been organized by Animal Genetics and Breeding Division, ICAR-NDRI during 21 August to 1st September, 2023. Dr Cedric Gondro Dept of Animal Science, CNR at Michigan State University from USA delivered the lecture on the following topics 1) Genomic Analysis of R 2) Artificial Intelligence Applied to Animal Genetics.

Available Data System: Adequate teaching materials are available online which has been developed by Institute.

E-content: Under NAIP component-1, e-courses for B. Tech (Dairy Technology) degree programme were completed and uploaded for online delivery to various dairy colleges/institutions. Later, during 2023, the content was revised under the NAHEP project and uploaded at Agricultural Education portal. Other educational reforms included i) e-learning, ii) web-based interactive modules and iii) development of teaching manuals.

MOOCs: Development of “Massive Open Online Courses (MOOCs) on “Commercial Dairy Farming”, “Milk Processing and Value Addition”, “Traditional Indian Dairy Products”, “Cheese Science and Technology”, “Fat-rich Dairy Products”, and “Food Packaging and Labelling”, in collaboration with ICAR-NAARM, Hyderabad. A total of more than 90 topics has been covered and video recording has been completed in the field of dairy production and processing with the help of ICAR-NAARM, Hyderabad. Further, during the years, 2024 and 2025, MOOC course on “Commercial Dairy Farming”, and “Milk Processing and Value Addition”, respectively were offered in collaboration with ICAR-NAARM, Hyderabad with huge number of candidates participating in these courses.

Online video: Several teaching videos has been developed and uploaded in google classroom, YouTube, and other platforms.

Online journals & magazines: Several journals and magazine is being available in both offline and online mode, some are available only digital mode, which is useful for gaining knowledge for faculty and students.

Online national and international webinars: Several National and international webinars had been conducted by Institute under the aegis of NAHEP project which are particularly useful to enhance knowledge of faculty and students in the relevant area.

6.6.2.7. Integrated learning systems (Experiential learning):

The Experiential Learning Program (ELP) is an academic initiative conducted during the seventh semester for B. Tech. final-year students. The program is based on the concept of “Earn While Learn,” aiming to integrate practical exposure with academic knowledge. Under this program, students are divided into five groups, and each group develops a unique value-added product. These products are marketed and sold through the institutional milk parlour and during special occasions such as National Milk Day. The primary focus of the program is to provide hands-on training and real-world industry experience.

The main objectives of the Experiential Learning Program are to help students gain experiential and practical knowledge, apply theoretical concepts in real-life situations, develop teamwork and leadership qualities, and understand the fundamentals of

marketing and sales strategies. By engaging in product development, processing, packaging, branding, and direct sales, students gain comprehensive exposure to entrepreneurial practices.

During the academic year 2024–2025, students prepared a variety of innovative products including multi-flavoured kulfi, bisquiburfi, murfi, whey drink, masala cheese, sorghum frozen dessert, mango-flavoured satavari drink, and cheese cookies. In 2025–2026, the range expanded to include feta cheese and its variants such as sandwiches and salads, whey fizz, whey-based channa soup, blueberry ice cream, cream cheese products, cheesecake, mousse cake, bhapa doi, and Joha rice kheer.

The initiative also received media and newspaper coverage, enhancing its outreach and visibility. Revenue generated through product sales reflects the program's commercial viability and student engagement. Overall, the ELP serves as an effective platform for nurturing technical competence, entrepreneurial skills, and professional confidence among students.

6.6.2.8. Academic Industry Interface

ICAR-NDRI, Karnal has various channels for developing and strengthening the linkages with the industry and other stakeholders. Institute undertakes collaborative, consultancy assignments, impart training and organize capacity/skill development programmes and offer certain services.

6.6.2.8.1 Consultancy Processing Cell (CPC)

Institute is offering both general and advisory consultancy to individuals or organization on various aspects of dairying. Institute is engaged in active collaboration with industry, government agencies, and other stakeholders for executing the research projects which are funded by them. All these activities are coordinated by the Consultancy Processing Cell of the institute and regulated by the PME Cell. Other major activity which is coordinated by the CPC is training of government, industry personnel, entrepreneurs/startups and students from other educational institutions.

6.6.2.8.2 Referral Centre for Milk Quality and Safety (NRCMQS)

A National Referral Centre for Milk Quality and Safety (NRCMQS) was set up at ICAR-National Dairy Research Institute, Karnal with funding support from National Agricultural Innovation Project Agriculture (NAIP) under project entitled on "Development of Biosensors and Micro-techniques for Analysis of Pesticide residues, Aflatoxin M1, Heavy Metals & Bacterial Contamination in Milk with an amount of Rs. 17.43 crores. The facility became operational on February 19, 2016. The main focus of the Centre is imparting scientific input for milk quality and safety to the regulatory authority (FSSAI) and National Standard Body (BIS) and other stakeholders in dairy

sector. The National Referral Centre comprises of Unit-I (Microbiology Section), Unit -II (Chemistry Section) and Unit -III (LC-MS/MS Section).

Unit-I (Microbiological Section) is having two sections namely BSL-3 and biosensor lab. BSL-3 is equipped with state-of-the-art modular facility having media preparation, autoclaving, inoculation chamber, incubation room, de-contamination room, and pathogen detection section which complies WHO biosafety standards guideline. BSL-3 facility is equipped with ante room, biosafety cabinet; VIDAS and HVAC system. Biosensor lab is having high end equipment like Surface Plasmon Resonance (SPR) and D-count for monitoring hygiene and safety indicators in food matrix in real time. BSL-3 lab is also capable of handling dairy pathogens.

Unit-II (Chemical Section) has two major sections which includes Wet Chemical Laboratory having facilities for routine chemical analytical work, adulteration testing, protein estimation, electrophoresis and lyophilizer facilities. The other area consists of Chromatographic Laboratory which has HPLC, GCMS, atomic absorption spectroscopy room, FTIR, particle size analyzer, refractometer, and a Protein Lab. The major activities of unit-II would include chemical analysis of milk and milk products, development of rapid kits for detection of adulteration in milk, development of analytical methods for new emerging additives/contaminants, working in the frontier area of science such as nanotechnology, lateral flow assay, aptamers, electrochemical assays etc.

Unit-III (LC-MS/MS Section) has been established with an aim to identify and quantify the proteins, peptides and veterinary drugs in milk and milk products. The LC-MS/MS facility has four standalone equipment namely; Ultra-High pressure liquid chromatography (UHPLC) system; Nano-liquid chromatography system (Nano-LC); Electrospray Ionization Quadruple Time of Flight (ESI qTof) Mass Spectrometer and Liquid Chromatography-Triple quadruple system (LC-TQD).

The Laboratory is being run and managed by the technical and experienced professionals having wide experience in various areas of their specialization. The laboratory employees are well-qualified and are capable enough to test and supervise the work and related quality functions. The institute has provided the necessary infrastructure and requisite equipment to meet the requirements. Laboratory also performs continuous Research & Development activities to meet the requirement of stake holders as well as to enhance the capabilities of the organization. NRCMQS is located at NDRI on the second floor of Animal Biotechnology Centre Building.

Activities in the NRCMQS

From its inception, the center has started developing expertise in the area of analytical testing as per various National/International standards and is contributing to the activities of National Regulatory Bodies such as FSSAI & BIS. The center has obtained NABL accreditation as per ISO 17025:2017 and is engaged in providing analytical services

to dairy industry, farmers, regulatory bodies and other stake holders. The center has generated revenue from various activities. Revenue generated is presented in Figure .

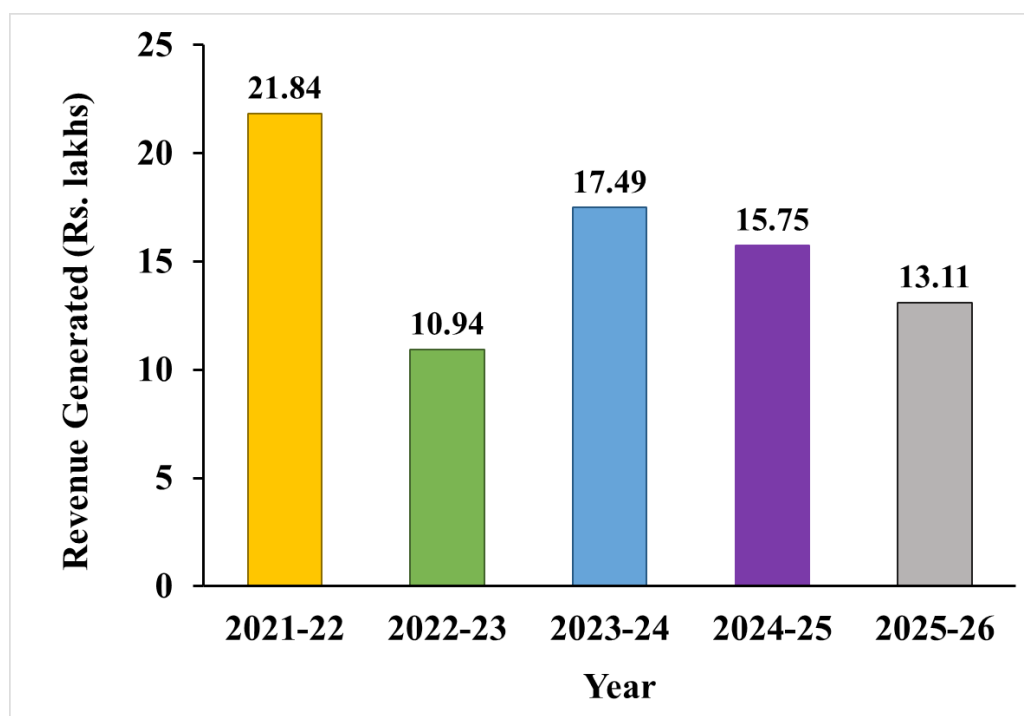


Fig. : Revenue through Sample analysis, consultancy services, equipment usage, Training and technology transfer

Total revenue generated by the NRCMQS during the last three years = Rs. 79.13 lakhs.

6.6.2.8.3: Institute Technology Management Unit (ITMU) and Institute Technology Management Committee (ITMC).

The Institute Technology Management Unit (ITMU) at ICAR-NDRI functions as the secretariat for the Institute Technology Management Committee (ITMC). The ITMC, chaired by the Director, is the highest decision-making body responsible for intellectual property (IP) and technology management at the institute, including technology development, protection, commercialization, and transfer. The ITMU facilitates the implementation of ITMC decisions and supports activities related to IP management such as identification, documentation, evaluation, and dissemination of technologies. It operates under the Intellectual Property & Technology Management (IP&TM) framework of ICAR and aligns with the National Agricultural Innovation Fund (NAIF) to promote innovation and technology commercialization. As per ICAR guidelines for intellectual property management and technology transfer/commercialization, ICAR-National Dairy Research Institute, Karnal has been designated as a Zonal Agro-Technology Management Centre (ZTMC) vide letter no. F.No. IP&TM7(5)/2013-IPR dated 02.12.2014. Through this mechanism, ITMU plays a key role in strengthening innovation management and facilitating effective transfer of technologies to stakeholders.

Institute Technology Management Committee (ITMC)

1.	Dr. Dheer Singh, Director & Vice-Chancellor, ICAR-NDRI	Chairman
2.	Dr. Rajan Sharma, Joint Director (Research) Member Secretary, IRC	Member
3.	Dr. Deep Narayan Yadav, Head, DT Division	Member
4.	Dr. Sachinanadan De, PS & Technical Expert	Member
5.	Dr. Chand Ram, PS & Technical Expert	Member
7.	Ms. Shikha Singh, Associate Partner, LexOrbis, New Delhi and IPR Expert	Member
8.	Dr. Pradip V. Behare, Senior Scientist, DM Division (PI, ITMU)	Member-Secretary

Benefits to the Industry and Other Stakeholders

The professional service functions are carried out for industry and other organizations to meet their diverse needs. Institute has served various organizations, industries, entrepreneurs, farmers and students through consultancy, collaborative research projects, organization of capacity building programmes, by offering analytical service, custom hiring of equipment, business incubation and mentoring.

- Most of the consultancy assignments were advisory in nature and provided solutions for the problems faced by the stakeholders that have assisted them in improving their productivity and efficiency.
- Findings of the collaborative research projects assisted the companies or organizations to develop the business plan and formulations of policy guidelines.
- Students from various universities and educational institutions were provided opportunity to join laboratories and plants for and it assisted them to improve their skills.

Revenue generated from consultancy services is utilized for strengthening the Institute's infrastructure and R&D work and part of the money is shared as an incentive with the scientists/staff rendering such services. Consultancy services also provide via media for two-way communication between scientists and industry. Feedback from industry through such interactions helps the scientists to focus and fine tune their research efforts to fulfil the real needs of dairy industry.

Table 78: General/Advisory Consultancy Projects (2021-2026)

Sr. No.	Scientist/Division Name	Name of the Company/ Firm/ Individual	Consultancy Project	Amount (Rs in lakhs)
April 2021 to March 2022				
	Dr. A.K. Singh, DT Division	M/s. Samsung India Electronics Pvt. Ltd., Gurgaon	Development of Easy Paneer Maker	3.90875

Dr. Rajan Sharma, DC Division	M/s. Agnext Technologies, Punjab	Validation study on the NIR based equipment (spexnano) for rapid assessment or quality of milk.	1.35989
Dr. P. Barnwal, DE Division	M/s. Prompt Innovation Pvt. Ltd., Navrangpura, Ahmedabad	Validation study on the Milkochill for instant chilling of milk	3.38964
Dr. Pardeep Behare, DM Division	M/s. Jupiter Glass Works Dairy and Laboratory Equipment, NIA Phase-1, New Delhi	Performance evaluation of automated colony counter for Jupiter glass works	1.29210
Dr. Rajan Sharma, DC Division	M/s. QboidO'Right, Shops No. 1 & 2, HBR Market, Gurugram	Validation study on the O'Right equipment for rapid assessment of composition and quality of milk	2.52328
Dr. Rajan Sharma, DC Division	M/s. Everest Instruments Pvt. Ltd, Ahmedabad, Gujarat	Validation study on the Indescope FTI milk analyzer for assessment of composition and quality of milk.	5.01319
Dr. Rajan Sharma, DC Division	M/s. Benny Impex Pvt. Ltd.	Verification of Cryoscope for determining freezing point of milk and added water in milk	1.35489
Dr. Yogesh Khetra, DT Division	Mr. Ganapathy Kuppasamy, General Manager Business development Sanzyme Biologics, Hyderabad	Preparation of Processed cheese on Pilot Scale	0.87143
Dr. Yogesh Khetra, DT Division	M/s. Chr. Hansen A/S BoegeAlle 10-12 2970 Hoersholm, Denmark	Effect of presence of antibiotics in milk on fermentation time and quality characteristics of yoghurt	8.39871
Dr. Kamal Gandhi DC Division.	M/s Inventis Technosys Pvt. Ltd., Distt. Mohali, Chandigarh	Adv. consultancy towards Third party visit/inspection of Food Lab. at HSIIDC Barhi Mega Food Park, Sonipat	0.13452

	Dr. Naresh Kumar DM Division.	M/s Floreecer Services Pvt. Ltd., New Delhi	Incubation monthly rent	0.08850
	Dr. Naresh Kumar DM Division.	M/s Aagam Arts, Dahisar (W), Mumbai – 400068	Evaluation & validation of Porta SCC Quick test of 5 min.	0.35400
	Dr. Raman Malik DCN Division.	CEBSI, Gurugram, Haryana	Preliminary discussion on the reduction of GHG from lactating dairy animals	0.05900
Sub-total				28.74790
April 2022 to March 2023				
	Dr. Pardeep Behera, DM Division	M/s. Jupiter Glass Works Dairy and Laboratory Equipment, NIA Phase-1, New Delhi	Performance evaluation of automated colony counter for Jupiter glass works	0.74460
	Dr. Yogesh Khetra, DT Division	M/s. Chr. Hansen A/S BoegeAlle 10-12 2970 Hoersholm, Denmark	Effect of presence of antibiotics in milk on fermentation time and quality characteristics of yoghurt	7.09636
	Dr. Shaik Abdul Hussain, SS, DT, Division	M/s. Dev Ice craem, Kavri Pathak, Panipat, Haryana	Training on ice cream manufacture and its analysis	0.20798
Sub-total				8.04894
April 2023 to March 2024				
	Dr. Rubina Baithalu, Scientist, LPM Division	M/s Prompt Equipments Pvt. Ltd, Navrangpura, Ahmedabad, Gujarat	Evaluation of Bio-easy pregnancy Diagnosis in cows	13.82602
	Dr. Kamal Gandhi, DC Div., NDRI	M/S Indifoss Analytical Pvt. Ltd., Gujarat	A Validation study on the milk screen for rapid assessment of the composition & Quality of Milk	5.40752
Sub-total				19.23354
April 2024 to March 2025				

	Dr. Rajesh Kumar Bajaj, P.S., DC Division	M/S Everest Instruments Pvt. Ltd. Corporate House No. Block-A, Times Corporate Park, Thaltej –Shilaj Road, Ahmedabad, Gujarat – 380059	“A Validation of Fatscan Milk Analyzer Equipment for Rapid Assessment of The Composition of Milk”	4.94836
	Dr. Raghu H.V., Senior Scientist, DM Division	M/S Narsipur Chemical Pvt. Ltd., C-238, MIDC, Turbhe, Navi Mumbai- 400705	“In-vitro anti-bacterial efficacy evaluation of dairy sanitizers and detergents”	2.52225
	Dr. Yogesh Khetra, Sr. Scientist DT Division	M/S Innobev Solution Private Ltd., Gurugram	“Homogenization and pasteurization of protein rich dairy drink”	0.22037
	Dr. Kaushik Khamrui, PS, DT	M/S Uttarakhand Cooperative Dairy Federation Ltd. (UCDFL) Haldwani	“Providing SOPs and onsite training to Uttarakhand Cooperative Dairy Federation Ltd. (UCDFL) for ensuring product uniformity across various production plant of Uttarakhand”	7.99656
	Incharge, Experimental Dairy	M/S Sachin Traders, Siyana Road, Bulandshahr-203001	Regarding Spray Dryer Trial	0.29500
	Incharge, Experimental Dairy	M/S Heritage Foods Limited, Hyderabad-500033.	Ultra-filtration of milk in small plant	0.11800
	Dr. Ankit Deep, Scientist (SS), Dairy Engineering	Mr. Prahlad Kumar Shri Balaji Enterprises Pundri-136026, Karnal	Usages of CNC Machine for 30 days @ Rup. 1,916/-	0.57480
Sub-total				16.67534
April 2025 to March 2026				
	Dr. Raghu H.V., Senior Scientist, DM	M/S MooRopan India Pvt. Ltd., Surat, Gujarat – 395009	Validation of MastiSense for the early diagnosis of bovine mastitis	1.50568
	Dr. Ankit Deep, Scientist (SS), Dairy Engineering	Mr. Prahlad Kumar Shri Balaji Enterprises Pundri-136026, Karnal	Usages of CNC Machine for 30 days @ Rup. 1,916/-	0.34488
Sub-total				1.85056
Grand total				74.55628

Table 79: List of Contract Research (2021-2026)

Sr. No.	Name of the bilateral / multilateral organization	Project under which consultancy being provided	Name of consultant	Amount (Rs in lakhs)
April 2021 to March 2022				
	M/s Samsung India Electronics Pvt. Ltd., Gurgaon	Generation of basic engineering properties data and process validation of curd maestro 2.0 refrigerator suitable for India, US and European market	Dr. A.K. Singh, DT Division	6.13895
	Tata Chemicals Pvt. Ltd. Mumbai	Supplemental effect of Alkakarb and Alkakarb plus on rumen parameters and production performance in lactating dairy animals	Dr. Gautam Mondal, DCN Division	20.38169
	Indian Herbs Specialties, Chandigarh	Efficacy of rumen protected choline and methionine in crossbred cows on health and milk yield	Dr. Bandla Srinivas, AN Division, SRS Bengaluru	9.54095
Sub-Total				36,06,159
April 2022 to March 2023				
	Tata Chemicals Pvt. Ltd. Mumbai	Supplemental effect of Alkakarb and Alkakarb plus on rumen parameters and production performance in lactating dairy animals	Dr. Gautam Mondal, DCN Division	10.19084
	Indian Herbs Specialties, Chandigarh	Efficacy of rumen protected choline and methionine in crossbred cows on health and milk yield	Dr. Bandla Srinivas, AN Division, SRS Bengaluru	9.54095
	M/S Alltech Biotechnology Pvt. Ltd, Bengaluru	The effect of slow-release nitrogen feeding on nutrient utilization, microbial protein synthesis, and milking performance in lactating cows.	Dr. Sachin Kumar, AN Division	9.86435
Sub-Total				29.59614
April 2023 to March 2024				
	M/S Alltech Biotechnology Pvt. Ltd, Bengaluru	The effect of slow-release nitrogen feeding on nutrient utilization, microbial protein synthesis, and milking performance in lactating cows. (2 nd Installment)	Dr. Sachin Kumar, AN Division	9.86436
Sub-Total				9.86436

April 2024 to March 2025				
	M/S National Innovation Foundation (NIF), Amarpur, Gandinagar-382650, Gujarat.	“Management of subclinical mastitis through indigenous approach at lower Gangetic region”.	Dr. Champak Bhakat, PS, ERS	7.11150
Sub-Total				7.11150
Grand-Total				82.63359

Table 80: Contract services (Analysis)

Sr. No	Name of the Services	Total No.	Amount (Rs in lakhs)
April 2021–March 2022			
	Contract Services	96	15.01808
April 2022–March 2023			
	Contract Services	64	7.49678
April 2023–March 2024			
	Contract Services	64	10.76454
April 2024–March 2025			
	Contract Services	40	6.51125
April 2025–March 2026			
	Contract Services	30	27.55007
Grand-Total		294	67.34072

Summary

During the period 2021-26, total 27 consultancy assignments, 8 contract research projects, and 294 contract services were executed by the scientists and faculty of the institute. Few consultancy projects were advisory in nature and remaining were problem solving, validation and explorative in nature. The total gross revenue generated through consultancy projects and assignment is Rs. 224.53059 Lakhs.

Table 81: Contract services executed by the Institute Services

Services	2021-22	2022-23	2023-24	2024-25	2025-Jan, 26	Total
Number of Organizations	96	64	64	40	28	292
Revenue Generated (Rs. Lakh)	15.01808	7.49678	10.76454	6.51125	27.29401	52.06673

Training and Other Capacity Building Programmes:

Number of Students (Other Universities and Educational Institutions) and Non-Student Trainings (Industry Personnel/Government Officials) and Revenue Generated year wise for 2021-22 to 2025-26.

Table 82: Details of student and non- student training programs organized during 2021-26

Year	Number of Students/Government Officials/ industry Personnel Trained	Revenues Earned (Rs. Lakh)
2021-22	28 Student + 2 non-student = 30	9.65742
2022-23	93 Student + 2 non-student = 95	34.03662
2023-24	151 Student + 2 non-student = 153	9.252267
2024-25	132 Student + 4 non-student = 136	30.11335
2025-26	196 Student + 3 non-student = 199	42.51293
Grand-Total	613	125.5726

6.6.2.9. National Ranking

Over the last five years, the **ICAR-National Dairy Research Institute (NDRI)** has cemented its status as a premier global leader in dairy education, consistently securing the **National Rank 2** among all Agriculture and Allied institutions according to the Ministry of Education (NIRF) from 2023 through 2025. This sustained excellence is mirrored in the caliber of its faculty and students, who are frequently elected as **Fellows of prestigious national and international societies** and honored with high-tier research awards. The institute acts as a critical talent pipeline for the industry, with top-tier MNCs and cooperatives offering **highly remunerative packages** to its graduates, while its alumni regularly secure **fully funded fellowships** at world-class universities for advanced research. This synergy of academic rigor, industry trust, and global mobility reinforces NDRI's reputation as a top-tier center of excellence in animal science and dairy technology. Historically, NDRI has also consistently secured the **Rank 1** position among all Agricultural Universities in rankings released by the **Indian Council of Agricultural Research (ICAR)**, underscoring its dominance in specialized dairy science.

Reputation and Academic Excellence

NDRI's reputation is built on a foundation of cutting-edge research and a highly distinguished faculty.

- **Faculty Achievements:** Members of the faculty are frequently elected as **Fellows** of prestigious societies such as the **National Academy of Agricultural Sciences (NAAS)** and the **National Academy of Dairy Science (NADS)**. They are recipients of prestigious honors including the **Vasvik Research Award** and various ICAR national awards.

- **Global Recognition:** The institute's research output is recognized internationally, with faculty and students frequently collaborating on global projects funded by agencies like **DBT, DST, and international dairy organizations.**

Placement and Industry Connect

The institute boasts a **near 100% placement record** for its B. Tech, M.Tech./ M. V.Sc./M. Sc, and Ph.D. scholars. The specialized nature of the curriculum ensures that students are “industry-ready,” leading to remunerative packages from top-tier MNCs and cooperatives.

- **Top Recruiters:** Regular recruiters include industry giants such as **Nestlé, Amul, Mother Dairy, GlaxoSmithKline (GSK), Tetra Pak, Britannia, and ITC.** In 2024-25 22 students of ICAR-NDRI, Karnal were recruited by a major German dairy with a handsome package of 3000 Euro per month
- **Salary Trends:** Recent data indicates median packages ranging from **₹7.5 LPA to ₹9.5 LPA**, with the highest packages for specialized roles reaching up to **₹15-20 LPA.**

Student Progression and Fellowships

Beyond immediate employment, NDRI serves as a launchpad for global academic careers.

- **Higher Education:** A significant percentage of students are selected for Masters and Doctoral programs at world-renowned universities in the **USA, Europe, and Australia.**
- **Prestigious Fellowships:** Students regularly secure competitive funding, including the **Prime Minister's Fellowship, JENESYS International Fellowship,** and various Erasmus Mundus scholarships for international research.

In summary, NDRI remains a “Category-1” institution, bridging the gap between traditional dairy farming and modern biotechnological advancement, making it the most sought-after destination for dairy professionals in Asia.

Table 83: Position/Recognition of the institute in National Ranking

Year	Awarding body	National Ranking
2023	Ministry of Human Resource Development, Government of India	Second among all Agriculture and Animal Science University
2024	Ministry of Human Resource Development, Government of India	Second among all Agriculture and Animal Science University
2025	Ministry of Human Resource Development, Government of India	Second among all Agriculture and Animal Science University

6.6.3 Research Support

6.6.3.1 Research Council

Priority Setting, Monitoring, and Evaluation (PME) Cell

AT ICAR-NDRI, all the research related activities are managed through PME cell. Intensification of R&D activities at ICAR-NDRI, Karnal in recent years has necessitated introduction of professional management approach for managing research functions. PME Cell has been created at ICAR-NDRI to coordinate and manage research activities and facilitate the decision support system with the following terms of reference:

- To co-ordinate and synthesize the recommendations of IRC, QRT, RAC and Vision document of Institute and ICAR.
- To recommend research priorities of the institution for short-listing researchable problems at Institute level.
- To co-ordinate and arrange for annual monitoring of each on-going project and evaluation of completed projects through internal and external experts.
- To co-ordinate and arrange for technology validation and impact assessment of successful technologies through internal and external experts.
- Regularly sensitizing and capacity building of research managers and scientists through training programmes.
- Maintaining a database on all publications, technologies developed, IPRs, consultancy projects undertaken in the past and on-going projects.

Constitution of PME Cell

Joint Director (Research) is the Head of PME Cell. PME also has five senior level principal scientists representing different domains of dairy science as its members. The Cell is supported by one Professor level faculty as its member secretary, 2 permanent technical officers, one assistant, two supporting staff and few contractual staff

Table 84: Present Composition of the PME Cell

Sr. No.	Officials of NDRI, Karnal	Positions occupied in PME Cell	
1.	Dr. Rajan Sharma	Chairman & Joint Director (Research)	Chairman
PME Officials			
	Mr. Braj Kishor	Chief Technical Officer (Editorial and other PME Assignments)	Technical / Secretarial staff
	Ms. Meenu Kumari	Private Secretary (Secretarial jobs)	
	Ms. Veenu	Technical Officer (Secretarial and word processing jobs)	

	Mr. Ashok	Multi-Tasking Staff	
	Ms. Manju Rani	High-Skilled (Contractual staff: Consultancy jobs)	
	Ms. Aarti	Skilled (Contractual staff)	
	Mr. Rakesh	Unskilled (Contractual staff)	
	Mr. Sumit	YP-I	
	Mr. Ravinder	High-Skilled (Contractual staff: ITMU)	
Scientists Engaged in PME			
	Dr. Gopal Gowane	Principal Scientist (Editor)	Member
	Dr. P. N. Raju	Sr. Scientist (I/C, Consultancy)	Member
	Dr. Pradip V. Behre	Sr. Scientist (I/C, ITMU)	Member
	Dr. S. A. Hussain	Sr. Scientist (ABI Incharge)	Member
	Dr. Sanjit Maiti	Sr. Scientist (Editor)	Member
	Dr. Shilpa Shree B.G.	Sr. Scientist (Editor)	Member

Schedule of PME Activities

1. Institute Research Committee (IRC) Meetings: March-April (Annually - it nearly coincides with financial year end, and HPR of scientists).
2. Research Advisory Committee: January - February (Annually - 1-2 months prior to IRC).
3. ITMU meetings – at least one in each quarter
4. ABI related meetings – as and when required
5. Consultancy Cell related meetings - as and when required

Highlights of major activities undertaken by PME Cell

- Periodic monitoring of new / ongoing in-house and externally funded research projects
- Screening of concept notes Extra-mural /Contract/ Consultancy Projects
- Evaluation of manuscripts of Technical Bulletins/Books
- Preparation of NDRI-Annual report and quarterly newsletter
- Preparation of proceedings of IRC and RAC
- Evaluation and clearing consultancy related proposal
- Evaluation and clearing proposals received for agri-business incubator (ABI)
- Other activities include addressing parliamentary questions, career assessment of scientists, handling action taken reports or status reports etc. The unit also acted as a catalyst to promote and strengthen linkages with other Institutions of national

and international reputation. Visits of international delegations and distinguished visitors at the national level were coordinated and through scientific interactions/ deliberations, agenda for mutual collaboration was chalked out with a view to arrive at MoUs for promotion of research and educational endeavours.

Institute Research Committee

The key functions of Institute Research Committee (IRC) are to critically review the new, on-going and completed research projects as well as advise on fostering of linkages between the groups/ divisions of the Institute in respect of multi-disciplinary/multi-location projects. IRC meetings are held twice in a year. The mid-term review of on-going IRC projects in various Research Divisions and Regional Stations of NDRI is taken up at the IRC meetings. At these meetings, the progress of on-going projects is critically reviewed. The final reports of the completed research are discussed at length during IRC meetings every year. At these meetings, the new proposals for research projects to be initiated from next year are also considered for approval.

Composition of Institute Research Council

The Director, ICAR-NDRI is the Chairman of IRC and the Joint Director (Research) is the Vice-Chairman. All the Head of Divisions and the scientists are the members of IRC representing their respective disciplines.

Research Advisory Committee (RAC)

The Research Advisory Committee (RAC) of ICAR-National Dairy Research Institute is a high-level body constituted to guide and strengthen the Institute's research programmes. Chaired by an eminent external scientist and comprising experts from outside the ICAR system along with key institutional members such as the Director, concerned DDG, and representatives of agricultural stakeholders, the RAC periodically reviews research progress, evaluates scientific quality, and ensures alignment with national priorities. It provides strategic inputs for improving research planning, fostering innovation, and enhancing the relevance and impact of research outputs in the dairy sector. Below we delineate the powers and functions of the Research Advisory Committee:

1. To suggest research programmes based on national and global context of research in thrust area.
2. To review the research achievements of the institute and to see that these are consistent of the mandate of the institute.
3. Any other function that may be specifically assigned by the DG, ICAR.

Table 85: Composition of Research Advisory Committee (RAC) at ICAR-NDRI, Karnal

S. No.	Composition	Status
	An eminent scientist from outside the ICAR system to be nominated by DG, ICAR	Chairman
	4-5 External experts to be nominated by D.G. ICAR	Member
	Director of the institute	Member
	DDG concerned with the institute	Member
	Two persons representing agricultural/rural interest in the management committee of the institute	Member
	One senior level scientist to be nominated by the Director	Member-Secretary

Details of the meetings held during 2021-26 are given under Table 6.6.3.3

6.6.3.2 Quinquennial Review Team (QRT)

The ICAR has established as a tradition of Quinquennial Review System (QRS) to provide a mechanism of transparency and accountability to the governing body of the ICAR. The specific mandate of the QRT is to review the existing research programmes and make recommendations for future research, education and training programmes. The composition of the QRT is restricted to 5 or 6 eminent scientists including one management scientist/ specialist and the Chairman.

Table 86: Details of Institute Research Council, Research Advisory Committee and Quinquennial Review Team (QRT) meetings held during 2021-26

Sr. No.	Years				
	2021-22	2022-23	2023-24	2024-25	2025-26
Institute Research Council (IRC)	17 th -21 st May & 20 th July, 2021 16 th -18 th & 22 nd , 23 rd , 24 th , 27 th Nov., 2021	23 rd , 26 th & 28 th April, 2022 & 02 nd May, 2022 ICAR- (NDRI, Karnal) 13 th May, 2022 (ERS, Kalyani) 20 th May, 2022 (SRS, Bengaluru) 9 th , 22 nd Nov. and 28 th December, 2022 & 4 th , 5 th and 10 th January, 2023	22 nd -25 th May & 15 th June, 2023 3 rd -6 th October, 2023	22 nd , 23 rd , 24 th , 29 th April, 1 st & 27 th May 2024 3 rd , 4 th , 7 th , 9 th , 11 th , 14 th & 26 th October, 2024	8 th , 9 th , 16 th April, 5 th May & 11 th June, 2025 7 th , 9 th , 10 th , 11 th , 14 th , 15 th October, 2025 (ICAR-NDRI, Karnal) 07 th November, 2025 (ERS, Kalyani) 29 th November, 2025 (SRS, Bengaluru)

Research Advisory Committee (RAC)	5 th Feb., 2021	14 th Feb., 2022	27 th -28 th June, 2023	21 st -22 nd March, 2024	7 th -8 th May, 2025
Quinquennial Review (QRT) for the period (April 2018- March, 2023)	-	-	-	14 th -18 th January, 2025 at ICAR-NDRI, Karnal. 27 th -28 th , 2025 at ICAR-ERS, NDRI, Karnal 31 st January, to 1 st Feb., 2025, at ICAR-SRS, NDRI, Bangalore 25 th -26 th April, 2025 at ICAR-NDRI, Karnal	-

Research Programmes of ICAR-National Dairy Research Institute, Karnal

Previous Research Programmes (2021-25)

- Genetic improvement of milch animals through identification and dissemination of superior germplasm by application of emerging reproductive and molecular technologies.
- Development of state-of-the-art dairy production systems using better housing and fertility management practices.
- Raising productivity of dairy animals through improved feeding strategies, efficient nutrient utilization and use of non-conventional feed resources.
- Research on nutraceuticals from milk, functional foods with prebiotics, probiotics, micronutrients, and other bioactive compounds for improved human health.
- Value addition to traditional milk products through application of new processes, biotechnological interventions, packaging and mechanized manufacturing system.
- Clean milk production with a focus on emerging health concerns and development of new generation tools for ensuring quality control through application of newer chemical and biotechnological concepts.
- Promoting dairy enterprise through transfer of technologies, improved farm financing, supply chain management, and better market access.

New Research Programmes (2025-onwards)

- Translational Basic, strategic and policy research in dairying for Viksit Bharat.

- b) Production, multiplication and dissemination of elite dairy germplasm through cutting edge biotechnological tools and computational approaches.
- c) Climate resilient smart dairy production and processing.
- d) Driving innovation in functional foods, biologicals, and sustainable dairy solutions for a circular economy.
- e) Research-driven implementation of the One Health approach to advance animal health, ensure food safety, and enhance quality milk production.
- f) Advancing demand-driven innovations through systematic technology assessment, refinement, dissemination, and capacity building for dairy sector stakeholders.

ICAR-National Dairy Research Institute, Karnal

Between 2021-22 and 2025-26, the ICAR-National Dairy Research Institute (NDRI) achieved ground breaking milestones across the dairy value chain, reinforcing its position as a global leader in dairy science. In **Dairy Production**, the institute made history with the production of “Ganga,” India’s first cloned Gir female calf, and “Shravani,” a second-generation clone produced in a record 39 months. These advancements in OPU-IVF and genomic selection—specifically the implementation of SSGBLUP and the registration of the synthetic Karan-Fries breed—have transitioned the industry from phenotypic to genomic selection, accelerating genetic gains by nearly 30%. Nutrition research further complemented these gains through the development of customized feed supplements that reduce methane emissions by up to 20% and region-specific mineral formulations that mitigate reproductive disorders.

The **Dairy Processing and Technology** sector saw a surge in innovation focused on food safety and functional health. NDRI developed rapid, paper-based detection kits for antibiotics, sorbitol, and aflatoxins, alongside a two-stage enzyme assay that reduces *Salmonella* detection time from days to just 18 hours. To meet modern consumer demands, the institute standardized A2 milk certification, optimized cholesterol reduction in ghee by 85%, and pioneered “hypoallergenic” buffalo milk research. Furthermore, the portfolio was diversified with high-value functional products, including bio-active peptides from goat and camel milk, low-lactose dairy sweets, and fortified products like curcumin-encapsulated paneer and lutein-fortified milk for geriatric care.

In the realm of **Dairy Management and Economics**, the institute harnessed digital transformation and climate resilience strategies. The launch of the Dairy Information System (WIDS) and the integration of wearable neck-sensors for automated estrus monitoring have modernized farm management. Socio-economic impacts were strengthened by the Dairy Development Index and the “e-Atlas” for mapping climate risks across South Asia, providing a roadmap for climate-resilient livestock planning. These achievements, supported by the success of the Kisan Sewa Kendra—which saw a

34.3% increase in milk production among participating farmers—demonstrate NDRI's commitment to delivering sustainable, technology-driven solutions for the benefit of the dairy industry and society at large.

Major Research Achievements for the period (2021-22 to 2025-26)

Dairy Production (Genetics, Breeding & Nutrition)

1. India's first cloned Gir female calf (Ganga) was produced using OPU-IVF technology, a massive leap for preserving high-yielding indigenous cattle.
2. Single-Step Genomic Best Linear Unbiased Prediction (SSGBLUP) implemented to identify superior bulls and cows at an early age.
3. ICAR-NDRI developed breed viz., Karan-Fries breed (a synthetic breed) has been registered by the Government of India and all the genomic aspects of the breed have been evaluated.
4. A cloned calf "Shravani" was produced from the elite "Ganga" lineage produced in record time (39 months) compared to the traditional 6 years.
5. Successful production of beta-lactoglobulin gene-edited buffalo embryos to potentially create "hypoallergenic" milk.
6. Customized feed supplements prepared that reduce methane emissions from livestock by 15-20%.
7. Sequencing of indigenous strains like *L. plantarum* Lp91 had been done to understand their gut-stabilizing properties.
8. Region-specific mineral formulations developed based on soil-plant-animal mapping to prevent reproductive disorders.
9. Probiotic mix culture for boosting calf health developed.
10. Endolysin was engineered for improved activity against *E. coli*.
11. Aptamer-based X chromosome-bearing sperm enrichment was established in bovine.
12. Extender for preservation of Black Bengal buck semen developed
13. Lateral flow immunoassay (LFIA) for early detection of Pregnancy in cow and buffalo developed

Dairy Processing & Technology

14. Technology of detection of sorbitol in milk using paper based discs has been developed.
15. A low-cost strip developed for rapid detection of multiple antibiotic residues in milk, crucial for food safety.

16. Rapid AST assay for detection of EBSL, Amp-C -Lactamase and Carbapenem resistance in *E. coli* developed.
17. Protocols standardized for the certification of A2 milk, supporting the premium marketing of indigenous cow milk.
18. Antihypertensive, antidiabetic and immunomodulatory peptides isolated of from cow, buffalo, goat and camel milk and their whey fraction
19. Scientific standardization of the traditional “Panchamrit” developed to increase its shelf-life and nutritional consistency.
20. Process optimized using beta-cyclodextrin to reduce cholesterol in ghee by up to 85% without affecting taste.
21. “Curcumin Soy-Whey” drinks and “Lutein-fortified” milk products developed for geriatric health.
22. Developed extended shelf-life paneer with encapsulated curcumin.
23. A process developed by using nano-technology to encapsulate iron and vitamin D in milk to prevent oxidation and ensure high bioavailability.
24. Biodegradable packaging films infused with essential oils to extend the shelf-life of paneer developed.
25. Probiotic Ice-Cream and Shrikhand developed for “Lp91” supplemented fermented products that survive the freezing process.
26. Two-stage enzyme assay developed for detection of *Salmonella* in milk in 18 h as compared to 5-7 days protocol by IS 5887 Part 3: 2021.
27. Technology for paneer whey-apricot wine has been developed.
28. Technology of spray-dried low lactose milk powder developed.
29. Process developed for low lactose khoa manufacturing using multi-enzyme approach.
30. A laboratory scale magnetic induction-based milk heating system (5 Litre) was developed.
31. Technology of low-fat Shrikhand by using exopolysaccharides (EPS) producing lactic cultures.
32. A process for preparation of milk protein fortified eggless muffins.
33. Technology of ghee residues incorporated energy bar developed.
34. Process technology for dry-crystalized gasagase *payasam phirni and kheer mix* developed.

35. Cow-ghee enriched with natural polyphenol antioxidants developed.
36. Technology for producing antimicrobial coagulant formulation to prolong the shelf-life of paneer developed.
37. Lateral flow assay-based method for rapid detection of presence of buffalo milk in cow milk.
38. Colorimetric paper strip sensor for the detection of total bacterial count in milk.
39. Spore based paper strip sensor for detection of aflatoxin B1 in food and feed developed.
40. Paper based strip assay for the simultaneous detection of nitrites and nitrates in milk developed.
41. Paper based assay for the detection of boric acid and starch in developed.
42. Process technology for the preparation of whey-based carbonated beverage developed.
43. Technology for goat milk based probiotic yoghurt, High-protein yoghurt, cheese rolls, feta cheese and cheddar-like cheese is developed.
44. Process for the development of spray dried camel milk and goat milk powder is developed and an incubatee company is guided for their commercial production.
45. On-Package smart indicator for khoa, sandesh a chhana based confection nutri-mix
46. Biological Smart Time-Temperature indicator for paneer
47. Metabolomic profile of different breeds of goats and their relationship with techno-functional properties was established
48. Technology for artisanal butter-milk powder is developed
49. Technology of processed cheese from the ultrafiltration retentate of cow milk
50. Technology for manufacturing of processed cheese from milk protein concentrate

Dairy Management & Economics

51. A Dairy Development Index for India was developed, establishing its framework and key determinants.
52. Composite Management Index (CMI), a data-driven tool developed to help farmers quantify the efficiency of their breeding, feeding, and health management.
53. Dairy Information System (WIDS), a web-based portal providing real-time data on milk prices, disease outbreaks, and weather-based animal advisories.

54. Integration of neck-sensors and pedometers to monitor “estrus” (heat) and rumination patterns automatically developed.
55. A technology developed for “Valorization of Dairy By-products,” converting waste whey into high-protein ingredients and bioplastics.
56. A new psychometric scale developed to measure the adoption behavior and skill competence of dairy entrepreneurs.
57. The Comprehensive Climate Index (CCI) was identified as a more reliable thermal stress indicator than the conventional Temperature Humidity Index (THI) for dairy cattle and buffaloes under tropical conditions.
58. One of the most significant shifts in the 2021-2026 period has been the transition from Phenotypic Selection (looking at the animal) to Genomic Selection (looking at the DNA), which has accelerated the genetic gain in Indian cattle by nearly 30%. We can also add goat and camel milk based products.
59. The ICAR-NDRI Kisan Sewa Kendra in Muzaffarnagar, Uttar Pradesh, significantly improved farm productivity, recording a 34.3% increase in milk production among beneficiary dairy farmers.
60. An e-Atlas was developed to map climate risks and feasible adaptation options for six major livestock species viz. cattle, buffalo, sheep, goat, pig, and poultry in South Asia. The Atlas provides projections for baseline (2000s), 2050s, and 2080s under two greenhouse gas emission scenarios (SSP2-4.5 and SSP5-8.5) at a spatial resolution of $0.05^\circ \times 0.05^\circ$, serving as a decision-support tool for climate-resilient livestock planning.

One of the most significant shifts in the 2021-2026 period has been the transition from **Phenotypic Selection** (looking at the animal) to **Genomic Selection** (looking at the DNA), which has accelerated the genetic gain in Indian cattle by nearly 30%.

6.6.3.3 Technology Development & its Adoption

Intellectual Property and Patents

- **Database Management:** The PME Cell maintains a comprehensive database of all developed technologies and Intellectual Property Rights (IPRs) to manage the institution’s R&D output.
- **IPR Oversight:** Regular meetings of the Institute Technology Management Unit (ITMU) are held at least once every quarter to review and process IPR-related matters.
- **Specific Outputs:** While the aggregate count of patents “filed” vs. “granted” is not explicitly totaled in the current document, the research has led to numerous protected technologies, including strip-based assays and diagnostic kits commercialized under licensing agreements.

Technology Commercialization & Industry Reach

Commercialization Volume: At least **45 distinct technology transfer instances** are recorded between 2021 and 2026.

- **Total Revenue:** Significant revenue is generated through licensing, with some single-technology agreements (like rapid detection strips for milk adulterants) reaching values such as **₹36.97 Lakhs + GST**.
- **Organizations Served:** Technologies have been transferred to over **20 unique organizations**, ranging from large cooperatives to private startups. Key partners include:
 - **Karnataka Cooperative Milk Producers' Federation Limited (KMF):** Licensed 11 different technologies in a single day in May 2022, including protein-rich cheese squeeze and ghee residue energy bars.
 - **Hatsun Agro Product Ltd., Chennai:** Licensed 9 technologies in January 2024 for various milk adulterant detection strips.
 - **Everest Instruments Pvt. Ltd., Gujarat:** Licensed 9 rapid detection technologies in March 2025.
 - **Others:** Schreiber Dynamix Dairies, Eastern Condiments, Anthocyanin Naturals, and several small/medium enterprises (SMEs) like Sarvagya Ayur and Delmos Research.

Key Commercialized Technologies

- **Diagnostic Kits:** Spore-based kits for antibiotic residues and paper-based strips for formalin, detergent, and urea detection in milk.
- **Functional Foods:** Milk-millet protein dips, low-fat Shrikhand, iron-fortified bajra biscuits, and curcumin-enriched ghee.
- **Animal Health:** Polyherbal feed supplements and strip-based technologies for early mastitis detection

The technologies developed by the Institute in the last 5 years are as follows:

Table 87: List of technologies developed during 2021-22 to 2025-26

S. No.	Name of the technology developed	Lead Inventor and Division	Technology Adopted by any Industry (Yes/No)	If Yes, then Name of the industry and Year of Licensing	Total revenue generated from the technology commercialized (Rs.)
	Paper-based strip for the rapid detection of formalin in milk	Kamal Gandhi, Farin Sayyad, Rajan Sharma, Priyae Brath Gautam, Harshitha CG). Dairy Chemistry Division, ICARNDRI, Karnal.	Yes	Hatsun Agro Product Ltd., Chennai	3 lakh + Taxes
	Technology for the preparation of low lactose Khoa	Raman Seth, Ankur Aggarwal, Kamal Gandhi. Dairy Chemistry Division, ICAR-NDRI, Karnal	No	--	--
	PCR ready Template DNA preparation by Quick Bacterial Lysis solution	Sachinandan De, Rajib Deb, Parul Chadhary). Animal Biotechnology Centre, ICAR-NDRI, Karnal.	No	--	--
	Cation Based mineral supplement for lactating dairy animals	Veena Mani, Chander Datt, Goutam Mondal, Shimla Yadav). Animal Nutrition Division, ICAR-NDRI, Karnal.	No	--	--
	PANI-PEC paper strip sensor for the detection of E. coli in milk	Raghu HV, Anjali MK, Bharat G, Naresh Kumar). Dairy Microbiology Division, ICAR-NDRI,	No	--	--
	PANI-PEC paper strip sensor for the detection of total bacterial count in milk	Raghu HV, Mohit Singh, Prajapathi M, Naresh Kumar). Dairy Microbiology Division, ICAR-NDRI,	No	--	--

Technology for the preparation of Indian artisanal cheese	Latha Sabikhi, Pravin Bhongle, Jeetmal Meena, Sathish Kumar MH and Yogesh Khetra). Dairy Technology Division, ICAR-NDRI, Karnal.	No	--	--
Paper ^{Staph} assay for visual detection on staphylococcus species in bovine milk".	Sachinandan De, Rajib Deb, Prasanna Pal and Ashutosh Ludri. Animal Biotechnology Centre, ICAR-NDRI, Karnal.	No	--	--
Autochthonous calves-origin probiotic <i>Lactobacillus reuteri</i> BF-E7	Sachin Kumar, A.K. Tyagi, Nitin Tyagi, Rashmi, Anukarna Singh and Vinay, V.V.). Animal Nutrition Division, ICAR-NDRI, Karnal.	No	--	--
Technology for preparation of protein rich cheese squeeze	Devaraja, HC., K. Jayaraj Rao, Sathish Kumar M.H, Monika Sharma and Manoj Kumar C.T.) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru	Yes	1. Karnataka Cooperative Milk Producers' Federation Limited 2. 2S Dairy Deli Products (OPC)	5.00 Lakh + Taxes
Technology for preparation of Milk-millet based protein rich dairy dip	Devaraja, HC., K. Jayaraj Rao, Monika Sharma, Sathish Kumar M.H. and Gopal Gadewar) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru	Yes	Karnataka Cooperative Milk Producers' Federation Limited	3.00 Lakhs + Taxes
Technology for preparation of Milk-millet based composite dairy spread	Devaraja, HC., K. ayaraj Rao, Monika Sharma, F. Magdaline Eljeeva Emerald and Omkar) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru	No	--	--

	Cow-ghee enriched with natural polyphenol antioxidants	Laxmana Naik, Shivli Jha, Priyanka Singh Rao, K. Jayaraj Rao, Sathish Kumar M. H., Menon Rekha Ravindra and F. Magdaline Eljeeva Emerald and Omkar) Dairy Chemistry Section, ICAR-NDRI, SRS Bengaluru	No	--	--
	Technology for production of reduced sugar <i>burfi</i> with natural sweeteners	Sathish Kumar M. H., Amal Biswas, K. Jayaraj Rao, Devaraja, HC and Laxmana Naik) Dairy Chemistry Section, ICAR-NDRI, SRS Bengaluru	No	--	--
	Technology of ghee residues incorporated energy bar	Monika Sharma, Amanchi A Sangma, K. Jayaraj Rao, Menon Rekha Ravindra and Laxmana Naik) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru.	No	--	--
	Process technology for dry -crystalized gasagase <i>payasam mix</i>	Menon Rekha Ravindra, Monika Sharma and Devaraja, HC) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru.	No	--	--
	Process technology for dry-crystalized <i>kheer mix</i>	Menon Rekha Ravindra, Monika Sharma and Devaraja, HC) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru.	No	--	--

Process technology for dry -crystalized <i>phirni mix</i>	Menon Rekha Ravindra, Monika Sharma and Devaraja, HC) Dairy Technology Section, ICAR-NDRI, SRS Bengaluru.	No	--	--
A process for the separation of glycomac-ropeptide and other protein fractions from cheese whey	Neelima Sharma, Rajan Sharma and Kamal Gandhi), Dairy Chemistry Division	No	--	--
Dual technique Rumen protected B-complex enzymes	Bandla Srinivas and R. Dhinesh Kumar, ICAR-SRS-NDRI, Bengaluru	No	--	--
Area-specific mineral mixture (ALMIN-ERS) for livestock in the lower Genetic region of West Bengal	Ajoy Mandal, A. Chatterjee and M. Karunakaran, ICAR-ERS-NDRI, Kalyani	No	--	--
Kid life-milk supplement to enhance the survivability and growth of kids	Ajoy Mandal, M. Karunakaran and T.K. Dutta, ICAR-ERS-NDRI, Kalyani	No	--	--
Extender for preservation of Black Bengal buck semen	M. Arunakaran, Ajoy Mandal and Subrata Kumar Das, ICAR-ERS-NDRI, Kalyani.	No	--	--
Post-partum reproduction augmenting polyherbal mixture for dairy cattle and buffaloes	A. Kumaresan, Phule Japheth, P.S. Oberoi and A. Manimaran LPM section, ICAR-SRS-NDRI, Bengaluru	No	--	--

Encapsulation of DPP-IV inhibitory peptides in double emulsion matrix	Shaik Abdul Hussain, Swapnil Ramrao Patange, Latha Sabikhi, Prashant Shelke, Yogesh Khetra, Sunita Meena and Sathish Kumar, M.H.), DT Division, ICAR-NDRI, Karnal	No	--	--
Low-Cost natural Chromogenic media to distinguish between <i>E. Coli</i> and <i>Klebsiella</i> Species	Sachinandan De, Parul Chaudhary, Rajib Deb and Manisha Behera ABTC, ICAR-NDRI	No	--	--
Sperm function-based bull fertility assessment technology	A. Kumaresan LPM Section, ICAR-SRS-NDRI, Bengaluru	No	--	--
Technology for reduced energy consumption during clarification step of Ghee preparation	Writdhama G Prasad, Shubham Kumbhare, Kaushik Khamrui and Shaik Abdul Hussain) DT Division, ICAR-NDRI	No	--	--
A process for preparation of milk protein fortified eggless muffins	Kaushik Khamrui, Rishi Puri and Writdhama G Prasad DT Division, ICAR-NDRI.	No	--	--
Rapid AST assay for detection of EBSL, Amp-C β -Lactamase and Carbapenem resistance in <i>E. coli</i>	Naresh Kumar, Avinash Jaswal and Raghu H.V.) DM Division, ICAR-NDRI	No	--	--

Technology of low-fat Shrikhand by using exopolysaccharides (EPS) producing lactic cultures	Pradip Vishnu Behare, Harisha M. R., S. K. Tomar and Sanket Borad DM Division, ICAR-NDRI	No	--	--
Technology of making universal control line in lateral flow assay	Y.S. Rajput, Dhiraj Nanda, & Rajan Sharma	No	--	--
Ghee –Residue Powder and Process of Preparing the same	Ganga Sahay Meena, Akash Gill, Yogesh Khetra, Ashish Kumar Singh, Sumit Arora	No	--	--
An energy efficient method for Ghee flavour simulation in butteroil	Writdhama G Prasad, Piyush Poharkar, Kaushik Khamurai, Shaik Abdul Hussain, Ankit Deep	No	--	--
On-Package Smart Indicator for Khoa	Narender Raju Panjagari, Rakesh Kumar Raman, Gautam Kumar, Ashish Kumar Singh	No	--	--
On-Package Smart Indicator for Sandesh, A Chhana-based Confection	Narender Raju Panjagari, Mr. Karpurapu Uma, Sangita Ganguly, Ashish Kumar Singh	No	--	--
On-Package Smart Indicator for Nutrimix	Narender Raju Panjagari, Mr.Lal Chand Sharma, Dr. Ashish Kumar Singh	No	--	--
Ghee residue incorporated chocolate dairy spread.	Monika Sharma, Abhishek Singh Kanwar, Devaraja HC, Menon Rekha Ravindra	No	--	--

	BUPAG2 Based immuno-diagnostic Elisa Kit for the quantitative estimation of PAG2 Isoform in cows and Buffaloes	Sudarshan Kumar, A.K. Mohanty, Sushil Kumar, Rubina Kumari Baithalu, T.K. Mohanty, Munna Yadav, Shweta Yadav	No	--	--
	Additive combination for, improving quality and aerobic stability of Maize Silage	Nitin Tyagi, Neelam Kumari, Nutan chauhan, Pradeep Vishnu Behare, Sachin Kumar	No	--	--
	Detection of sorbitol in milk using paper based discs	Vivek Sharma, Shailja Shinde, Sumit Arora, Priyanka Singh Rao, Richa Singh, Karra Madhavi Latha	Yes	Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat	10.00 Lakhs + Taxes
	Innovative Technology for Producing Antimicrobial Coagulant Formulation to Prolong the Shelf-Life of Paneer	Pradip V. Behare, Rallapalli Vembar Rajanikar, Sudhir Kumar Tomar, Diwas Pradhan, Rajan Sharma, Sanket Borad	No	--	--
	Technology on production of stable direct Vat Set liquid starter culture blend for fermented milk	Pradip V. Behare, Mr. Reshab Majumdar, Diwas Pradhan, P. Narender Raju	No	--	--
	Fast-acidifying <i>Streptococcus thermophilus</i> NCDC 960 strain for production of fermented milk	Pradip V. Behare, Manorama, Anil Kumar Puniya, Shaik Abdul Hussain	No	--	--

	Spray-dried low lactose milk powder	Sumit Arora, Richa Singh, Vivek Sharma, Payal Singh, Priyanka Singh Rao, A.K. Singh	No	--	--
	Probiotic mix culture for boosting calf health	Sachin Kumar, A K Samanta, Nitin Tyagi, Pradip Behare, Heartwin, A Pushpadass, Balaga Sravani, Rakesh Chouraddi	No	--	--
	Cloning of bulls for the industry	Naresh Selokar, and Manoj Kumar Singh	No	--	--
	Colorimetric paper strip sensor for the detection of total bacterial count in milk	Raghu H V., Shreya Saha, Mohit Singh, Maharshi Prajapathi, Naresh Kumar	No	--	--
	Polyherbal Feed Supplement for Improving Dairy Productivity and Milk Quality	Sachin, A.K. Samanta, Nitin Tyagi, Pramod Kumar, Dheer Singh	No	--	--
	Technology of instant Buttermilk powder	G. S. Meena, Subhadip Manik, A.K. Singh, Yogesh Khetra	No	--	--
	Technology of Ghee residue based fat spread	G. S. Meena, Jitendra Sharma, A.K. Singh, Yogesh Khetra	No	--	--
	Lateral flow Immunoassay (LFIA) for early detection of Pregnancy in cow and buffalo	Sudarshan Kumar, A. K. Mohanty, T. K. Mohanty, Rubina K. Baithalu, Sushil Kumar Saini, . Munna Lal Yadav, Shweta Yadav	No	--	--

	Technology of Chhana Podo	H.C. Devaraja, B.C. Ghosh, K. Jayaraja Rao, S. Kulkarni, B.V. Balasubramanyam, F. Magadalin Eljeeva Emerald, C.T. Manoj Kumar	No	--	--
	Cheese Puri mix	Monika Sharma, S. Kulkarni, B.V. Balasubramanyam, K. Jayaraja Rao, Sathish Kumar M.H.	No	--	--

Table 88: Technologies Commercialized from 2021–26

S. No.	Name of technology	Date on which MOU signed	License fee (excluding service tax) Rs.	Purchaser
	Preparation of milk-based spray dried nanoencapsulated curcumin formulation	04.01.2021 through Agrinnovate	3.00 Lakhs	Anthocyanin Naturals Indian Pvt. Ltd, Kerala
	Process technology for Palada Payasam Mix Preparation by Dry Crystallization Method in a Mechanical Unit.	11.01.2021 through Agrinnovate	3.00 Lakhs	Eastern Condiments Pvt Ltd, Kerala
	Milk Protein-enriched Bajra Snacks	01.02.2021 (through ICAR-NDRI)	1.00 Lakhs	Sarvagya Ayur and Pharma (OPC) Private Limited Maharashtra
	Spore based kit for detection of antibiotic residues in milk at dairy farm	31.08.2021 through Agrinnovate	4.00 Lakhs	Schreiber Dynamix Dairies Pvt Ltd., Mumbai
	Milk Protein enriched Iron fortified Bajra Biscuit	22.09.2021 through Agrinnovate	1.50 Lakhs	Chandigarh sweets, Chandigarh
	Spore based kit for detection of antibiotic residues in milk at dairy farm	14.10.2021 through Agrinnovate	4.00 Lakhs	Tirumala Milk Products Private Limited, Chennai
	PCR based method for differentiating A1 and A2 milk	06.05.2022 through Agrinnovate	2.00 Lakhs	Manorama Agrobiotech Pvt. Ltd. Gujarat
	Paper strip assay for rapid detection of pesticide residues	09.05.2022 through Agrinnovate	7.50 Lakhs	Delmos Research Pvt. Ltd, Gurugram, Haryana

	Protein rich cheese squeeze	21.05.2022 through Agrinnovate	2.50 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Cow ghee enriched with natural polyphenols for enhanced shelf-life	21.05.2022 through Agrinnovate	3.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Milk millet-based protein rich dairy dip	21.05.2022 through Agrinnovate	3.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Ghee residue incorporated energy bar	21.05.2022 through Agrinnovate	4.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Functional butter with hypocholesterolemic attributes	21.05.2022 through Agrinnovate	2.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Dry crystalized kheer mix	21.05.2022 through Agrinnovate	4.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Flavored milk and curd fortified with plant source of omega 3 fatty acid	21.05.2022 through Agrinnovate	1.50 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Shelf stable, nutritionally rich smoothies using dairy and non-dairy ingredients	21.05.2022 through Agrinnovate	2.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Spray dried milk malted millet beverage mix	21.05.2022 through Agrinnovate	2.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka

	Spreadable butter fortified with vegetarian source of omega-3-fatty acid	21.05.2022 through Agrinnovate	2.00 Lakhs	Karnataka Cooperative Milk Producers' Federation Limited, Karnataka
	Protein rich cheese squeeze	25.04.2022 through Agrinnovate	2.50 Lakhs	2S Dairy Deli Products (OPC), Karnataka
	Technology for preparation of curcumin enriched ghee	07.07.2022 through Agrinnovate	2.00 lakh	Brahmins Foods India Pvt. Ltd., Vengalloor - Kolani Bypass Road, Manakkad P.O., Thodupuzha, Kerala
	Total Mixed Ration	29.08.2022 through Agrinnovate	1.00 Lakh	Digi Vet Care pvt. Ltd., Vasant Kunj, New Delhi
	Indigenous probiotic <i>Lactobacillus rhamnosus</i> NCDC 610	20.01.2023 through Agrinnovate	4.00 Lakh	Vickro Biopharma Pvt. Ltd., Hyderabad
	Native vitamin B12 producing <i>lactobacillus Reuteri</i> NCDC 958/ VTCC610b for production of vitamin B12 bio-fortified soy curd	20.01.2023 through Agrinnovate	5.00 Lakh	Vickro Biopharma Pvt. Ltd., Hyderabad
	Misti Doi with fast acidifying high sugar tolerating lactic cultures	20.03.2023 through Agrinnovate	1.60 Lakh	Terrestrial Foods Ltd., New Delhi
	Spore based kit for detection of antibiotic residues in milk at dairy farm	08.06.2023 Through Agrinnovate	4.00 Lakh	Beejapuri Dairy Pvt. Ltd., BG-05, Unitech Arcadia, Sector – 49, South City -2, Gurgaon Haryana, 122018
	Strip based technology for early detection of sub-clinical and clinical Mastitis	24.11.2023 through Agrinnovate	6.00 Lakh + 18% GST	Schreiber Dynamix Dairies Pvt. Ltd., Pune
	A new rapid test for detection of detergent in milk	04.01.2024 Through Agrinnovate	32.30 Lakh + 18% GST	Hatsun Agro Product Ltd., Chennai
	A new strip based test for detection of neutralizers in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai

A new strip based test for detection of urea in milk	04.01.2024 Through Agrinnovate	32.30 Lakh + 18% GST	Hatsun Agro Product Ltd., Chennai
Strip based test for detection of glucose in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
Strip based test for detection of hydrogen peroxide in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
Strip based test for detection of maltodextrin in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
A strip based test for detection of sucrose in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
Strip for detection of sodium chloride in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
Paper based strip for the rapid detection of formalin in milk	04.01.2024 Through Agrinnovate		Hatsun Agro Product Ltd., Chennai
A new strip based test for detection of neutralizers in milk	26-03-2025 through Agrinnovate	36.97 lakh + 18% GST	Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
A new strip based test for detection of urea in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Strip based test for detection of glucose in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Strip based test for detection of hydrogen peroxide in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Strip based test for detection of maltodextrin in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
A strip based test for detection of sucrose in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Strip for detection of sodium chloride in milk	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat

Strip based technology for early detection of sub-clinical and clinical Mastitis	26-03-2025 through Agrinnovate	36.97 lakh + 18% GST	Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Detection of sorbitol in milk using paper based discs	26-03-2025 through Agrinnovate		Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat
Indigenous Probiotic <i>Limosilactobacillus fermentum</i> NCDC 400 strain	12-06-2025 Through Agrinnovate		The Rohtak Coop. Milk Producers Union Ltd., Rohtak, Haryana

Photos of Technology Transfer/Commercialization



Transfer of technology titled “Indigenous Probiotic *Limosilactobacillus fermentum* NCDC 400 strain” to The Rohtak Coop. Milk Producers Union Ltd., Rohtak, Haryana on 12 June 2025



Transfer of 09 technology titled “Rapid detection technologies for milk adulterants” to Everest Instruments Pvt. Ltd., Ahmedabad, Gujarat on 26 March 2025.



Transfer of 09 technology titled “Rapid detection technologies for milk adulterants” to Hatsun Agro Product Ltd., Chennai, on 04 January 2024.



Transfer of technology titled “Strip based technology for early detection of sub-clinical and clinical Mastitis” to Schreiber Dynamix Dairies Pvt. Ltd., Pune, on 24 November 2023.



Transfer of technology titled “Spore based kit for detection of antibiotic residues in milk at dairy farm” to Beejapuri Dairy Pvt. Ltd., BG-05, Unitech Arcadia, Gurugram, Haryana, on 8 June 2023.



Transfer of technology titled “Misti Doi with fast acidifying high sugar tolerating lactic cultures” to Terrestrial Foods Ltd., New Delhi, on 20 March 2023.



Transfer of 02 technology titled “Indigenous probiotic *Lactobacillus rhamnosus* NCDC 610” and “Native vitamin B12 producing *lactobacillus Reuteri* NCDC” to Vickro Biopharma Pvt. Ltd., Hyderabad, on 20 January 2023.



Transfer of technology titled “Total mixed ration” to Digi Vet Care Pvt. Ltd., Vasant Kunj, New Delhi, on 29 August, 2022.



Transfer of technology titled “Technology for preparation of curcumin enriched ghee” to Brahmins Foods India Pvt. Ltd., Vengalloor - Kolani Bypass Road, Manakkad P.O., Thodupuzha, Kerala, on 7 July 2022.



Transfer of 10 technologies to “Karnataka Cooperative Milk Producers’ Federation Limited”, Karnataka, on 21 May 2021.



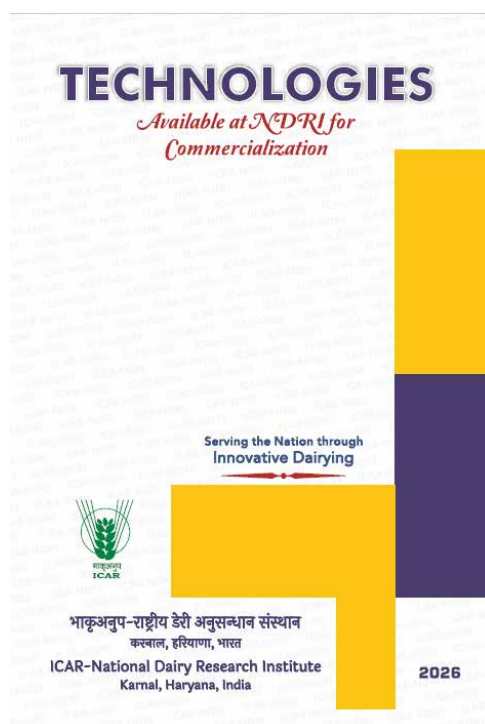
Transfer of technology titled “Paper strip assay for rapid detection of pesticide residues” to “Delmos Research Pvt. Ltd, Gurugram, Haryana, on 09 May 2022.



Transfer of technology titled “PCR based method for differentiating A1 and A2 milk” to “Manorama Agrobiotech. Pvt. Ltd. Gujarat, on 06 May 2022.



QR Code for ICAR-NDRI Technology Booklet-2026



Front cover of the NDRI Technology Booklet 2026



Back cover of the NDRI Technology Booklet 2026



Back and front cover of the NDRI Technology Booklet 2024

6.6.3.4 Research Publication

In total 1610 articles were published during last five years from NDRI, which is more than 300 articles per year. Year to year variation shows higher trend in publication in the high impact journals.

Research Publication Performance (2021–2026)

- **Total Volume & Productivity:** Over the last five years, ICAR-NDRI published a total of 1,610 articles. This averages to more than 300 articles per year.
- **Quality & Impact Factor:** There is a consistent upward trend in publishing within high-impact journals. Impact factors for representative publications during the 2021–22 period range from approximately 0.18 to 9.27.
- **NAAS Rating:** Research papers frequently achieve high NAAS ratings, with several publications scoring between 8.0 and 15.30.
- **Thematic Focus:** Research spans critical dairy science domains, including buffalo sperm surface proteome profiling, zoonoses, whey potential, and genetic diversity of native germplasms.

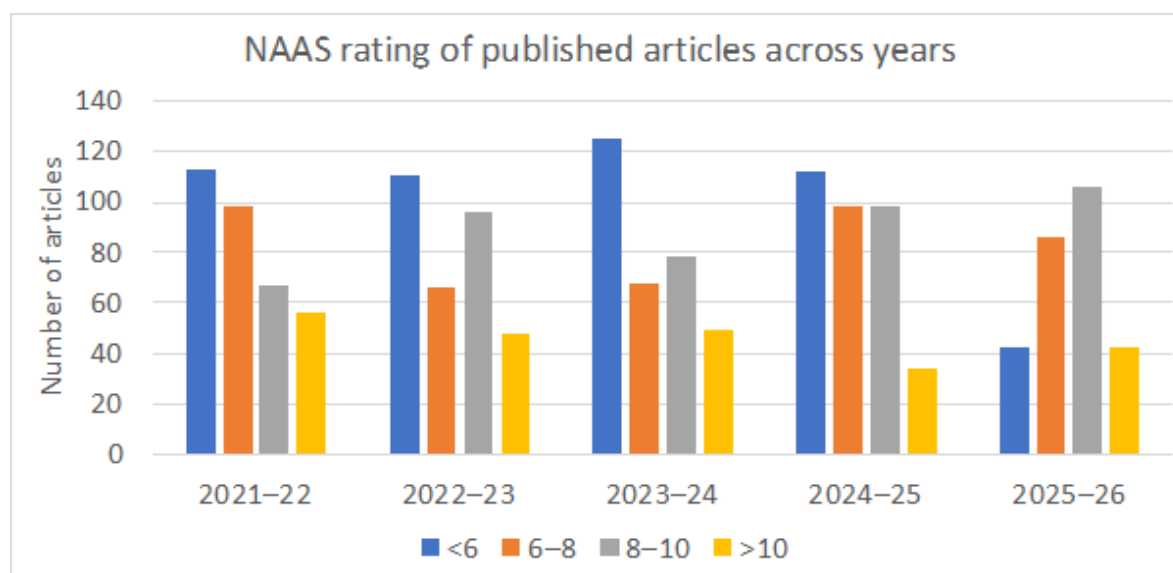


Table 89: List of research publications brought out during 2021-26

Sl. No.	Research Papers	Impact Factor	NAAS Rating
	2021-22 (335)		
	Batra, V, Bhushan, V, Ali, SA, Sarwalia P, Pal A, Karanwal S, Solanki S, Kumaresan A, Kumar, Rakesh and Datta, TK (2021). Buffalo sperm surface proteome profiling reveals an intricate relationship between innate immunity and reproduction. <i>BMC Genomics</i> 22, 480, https://doi.org/10.1186/s12864021-07640	3.969	9.59
	Behera, M, Ghorai, SM, De, S and Kaur, H (2021). Understanding eco-immunology of bacterial zoonoses and alternative therapeutics toward “One Health”. <i>International Journal of One Health</i> . 7(1):104-15.	0.40	-
	Beniwal, A, Saini, P, De, S, Vij, S (2021). Harnessing the nutritional potential of concentrated whey for enhanced galactose flux in fermentative yeast. <i>Lebensmittel-Wissenschaft und-Technologie</i> 141:110840.	3.98	10.95

Bhardwaj A, Nayan V, Kumar S, Sharma P, Kumar S, Chakarvarty N, Kumar S, Pal Y, Yadav SC, Mohanty AK and Tripathi BN (2021). Expression analysis of recombinant equine chorionic gonadotropin in three host systems: <i>E. coli</i> BL21C, Sf insect cell lysate and COS-1 mammalian cells. <i>Indian Journal of Animal Research</i> . 55(1):40-45. doi: 10.18805/ijar.B-3917.	-	6.44
Chera, JS, Kumar, S, Vats, A, Kushwah, P, Behera, M and De, S (2021). PU.1 is involved in the transcriptional up-regulation of RNA and DNA sensing pathway genes in buffalo fibroblasts. <i>Veterinary Immunology and Immunopathology</i> 242:110349.	2.04	8.05
Chopra, M, Badhopadyay, S, Singh, RK and De, S (2020). Genome based phylogeny and virulence factor analysis of mastitis causing <i>Escherichia coli</i> isolated from Indian cattle. <i>Indian Journal of Animal Sciences</i> 90 (12): 1577–1583.	0.18	6.32
De, AK, Sawhney, S, Ponraj, P, Bhattacharya, D, Sujatha, T, Sunder, J, Ravi, SK, Kundu, A, Mondal, S and Malakar D (2021). Origin, genetic diversity and evolution of Andaman Local Duck, a native duck germplasm of an insular region of India. <i>Plos One</i> https://doi.org/ 10.1371/journal.pone.0245138 .	3.24	8.74
De, Arun Kumar, Sawhneya, Sneha, Ponraj, Perumal, Ravi, Sanjay Kumar, Malakar, Dhruva, Alyethodi, RR, Mondal, Samiran, Sunder, Jai, Banik, Santanu, Kundu, Anandamoy and Bhattacharya, Debasis (2021). Maternal lineage of nicobari pig (<i>sus scrofa nicobaricus</i>) correlated with migration of nicobarese, a native tribal population of Andaman and Nicobar Islands (India). <i>Animal Biotechnology</i> , https://doi.org/ 10.1080/10495398.2021.1950742 .	2.282	7.49
Deepika, S, Gautam, D, Meena, S, Ali, M, Meena, AS, Vats, A, Verma, M, Rout, PK and De, S (2021). Heterogeneity and diversified distribution of S2 casein variants in Indian goats. <i>Small Ruminant Research</i> 204 (2021) 106501	1.89	7.61
Dholpuria, S, Kumar S, Kumar, Manish, Sarwalia, Parul, Kumar, Rakesh and Datta, TK (2021). A novel lincRNA identified in buffalo oocytes with protein binding characteristics could hold the key for oocyte competence. <i>Molecular Biology Reports</i> . doi: 10.1007/s11033-021-06388-9.	2.316	7.40
Doreswamy, R, Deb, R and De, S (2021). Potential use of piggery excreta as a viable source of bioethanol production. <i>Journal of Cleaner Production</i> 316:128246.	9.27	15.30
Dua, D, Tripathi, G, Alam, A, Chauhan, Palta, P and Singh, MK (2021). Optimization and comparison of three-dimensional culture conditions in different media of coculture and encapsulation system for <i>in vitro</i> follicular development in <i>Bubalus bubalis</i> . <i>Cellular Reprogramming</i> , 23(1):26-34.	1.98	7.98
Gautam, D, Vats, A, Pal, P, Haldar, A and De, S (2021). Characterization of anti-müllerian hormone (AMH) gene in buffaloes and goats. <i>Frontiers in Veterinary Science</i> :8, 217	3.47	9.41

Ghai, S, Verma, VN Ansari, S, Saini, S, Thakur, A, Kumar, A, Kumar S and Malakar, D (2021). Mesenchymal stem cells as a regenerative therapy for the prevention of subclinical mastitis in cattle. <i>Reproduction, Fertility and Development</i> 34(2):316-17 https://doi.org/10.1071/RDv34n2Ab157 .	2.311	7.72
Jaiswal, Sarika, Jagannadham, Jaisri, Kumari, Juli, Iquebal, Mir Asif, Nayan, Varij, Angadi, Ulavappa B, Kumar, Sunil, Kumar, Rakesh, Datta, Tirtha Kumar, Rai, Anil and Kumar, Dinesh (2021). Genome wide prediction, mapping and development of genomic resources of mastitis associated genes in water buffalo. <i>Frontiers in Veterinary Science</i> . doi.org/10.3389/fvets.2021.593871.	3.12	8.25
Jaswal, S, Anand, V, Ali, SA, Jena, MK, Kumar, S, Kaushik, JK and Mohanty, AK (2021). TMT based deep proteome analysis of buffalo mammary epithelial cells and identification of novel protein signatures during lactogenic differentiation. <i>The FASEB Journal</i> 35 (6):e21621. https://doi.org/10.1096/fj.202002476RR .	5.90	11.19
Joshi, H, Mathur, M, Mohanty, AK, Kumar, S, Kaushik, JK, Mohanty, TK and Kumar, D et al (2021). Semen Sexing in Bovine: Current Status and the Need to Develop Alternative Techniques. <i>Animal Reproduction Update</i> 1, No. 1:17-31.	-	-
Kumar, R, Ali, SA, Singh, SK, Bhushan, V, Kaushik, JK, Mohanty, AK and Kumar, S (2021). Peptide profiling in cow urine reveals molecular signature of physiology-driven pathways and in-silico predicted bioactive properties. <i>Scientific Reports</i> 11, No. 1:1-16.	4.99	10.38
Kumar, S and Chauhan, MS (2021). Relative abundance of pluripotency-associated candidate genes in immature oocytes and <i>in vitro</i> produced buffalo embryos (<i>Bubalus bubalis</i>). <i>Zygote</i> . Apr 5:1-9.	1.442	7.26
Kumar, S, Singh, MK and Chauhan, MS (2021). Expression of the developmental important candidate genes in oocytes, embryos, embryonic stem cells, cumulus cells and fibroblast cells of buffalo (<i>Bubalus bubalis</i>). <i>Gene Expression patterns</i> . 41:119200.	1.224	6.90
Maharana, J, Maharan, D, Bej, A, Sahoo, BR, Panda, D, Wadavrao, SB, Vats and De, S et al (2021). Structural Elucidation of Inter-CARD Interfaces involved in NOD2 Tandem CARD Association and RIP2 Recognition. <i>Journal of Physical Chemistry</i> 125:49: 13349-365.	3.2	8.99
Mehra, Vinay Kumar and Kumar, Satish (2021). The Application of CRISPR/Cas9 Technology for Farm Animals: A Review. <i>Agricultural Review</i> . R2163, pp.1-8.	-	4.63
Ponraj, P, De, AK, Mondal, S, Ravi, SK, Sawhney, S, Sarkar, G, Bera, AK, Malakar, D, Kumar, A, Singh LB, Ahmed, SKZ, Mu-niswamy, K, Jerard, BA and Bhattacharya, D (2021). Tri-model therapy: combining macrocyclic lactone, piperazine derivative and herbal preparation in treating humpsore in cattle. <i>Veterinary Science</i> , 13:8(2):27.	2.314	8.31
Roshan, M, Dua, D, Sharma, A, Tiwari, M, Singh, MK, Singla, SK, Palta, P, Manik, RS, Chauhan, MS (2021). Supplementation of L-ascorbic acid improves the <i>in vitro</i> development of buffalo (<i>Bubalus bubalis</i>) embryos and alters the expression of apoptosis-related genes. <i>Asian Pacific Journal of Reproduction</i> , 10(1):36-42.	-	-

Roshan, M, Parmanand, Arora, D, Behera, M, Vats, A, Gautam, D, Deb, R, Parkunan, T, De, S (2021). Virulence and enterotoxin gene profile of Methicillin-resistant Staphylococcus aureus isolates from Bovine Mastitis. <i>Comparative Immunology, Microbiology and Infectious Diseases</i> 80:101724.	2.72	8.27
Sarwalia, Parul, Raza, Mustafa, Soni, Apoorva, Dubey, Pratiksha, Chandel, Rajeev, Kumar, Rakesh, Kumaresan, A, Onteru, Suneel Kumar, Pal, Ankit, Singh, Kalpana, Iquebal, Mir Asif, Jaiswal, Sarika, Kumar, Dinesh and Datta, TK (2021). Establishment of repertoire of placental associated microRNA and their appearance in blood plasma could identify the early establishment of pregnancy in buffalo (<i>Bubalus bubalis</i>). <i>Frontiers in Cell and Developmental Biology</i> . doi:10.3389/fcell.2021.673765.	6.684	11.20
Sharma, AK, Sah, S, Singla, SK, Chauhan, MS, Manik, RS and Palta, P (2021). Exposure to pulsed electromagnetic fields improves the developmental competence and quality of somatic cell nuclear transfer buffalo (<i>Bubalus bubalis</i>) embryos produced using fibroblast cells and alters their epigenetic status and gene expression. <i>Cellular Reprogramming</i> , 25(5):304-15.	1.98	7.98
Shivani, Malpotra, MK Singh and Palta, P (2021). MeDIPsequencing for profiling global DNA methylation in buffalo embryos produced by <i>in vitro</i> fertilization. <i>Animal Biotechnology</i> , doi: 10.1080/10495398.2021.1981356.	2.28	8.28
Singh, KP, Mohapatra, SK, Kaushik, R, Singh, MK, Palta, P, Singla, SK, Manik, RS and Chauhan, MS (2021). Parthenogenetic activation of buffalo (<i>Bubalus bubalis</i>) oocytes: comparison of different activation reagents and different media on their developmental competence and quantitative expression of developmentally regulated genes. <i>Zygote</i> , 29(1):49-58.	1.44	7.44
Singh, R, Bhaskar, V, Saini, S, Kumar, A, Thakur, A, Kumar, S and Malakar, D (2021). Therapeutic efficacy and safety of adipose tissue-derived mesenchymal stem cells in treating mastitis and metritis in dairy cattle. <i>Reproduction, Fertility and Development</i> 33(2):179-179 https://doi.org/ 10.1071/RDv33n2Ab143 .	2.311	7.72
Vats, P, Kaushik, R, Rawat, N, Sharma, A, Sharma, T, Dua, D, M.K. Singh, MK, Palta, P, Singla, SK, Manik, RS, Chauhan, MS (2021). Production of transgenic handmade cloned goat (<i>Capra hircus</i>) embryos by targeted integration into Rosa 26 locus using transcription activator-like effector nucleases. <i>Cellular Reprogramming</i> , 23(4):250-62.	1.98	7.98
Verma, AK, Ali, SA, Singh, P, Kumar, S and Mohanty, AK (2021). Transcriptional Repression of MFG-E8 Causes Disturbance in the Homeostasis of Cell Cycle Through DOCK/ZP4/STAT Signaling in Buffalo Mammary Epithelial Cells. <i>Frontiers in Cell and Developmental Biology</i> , 9, 568660. https://doi.org/10.3389/fcell.2021.568660 .	6.08	12.68

Verma, VN, Ghai, S, Ansari, S, Saini, S, Thakur, A, Kumar, A, Kumar S and Malakar D (2021). Umbilical cord blood-derived mesenchymal stem cells (UCB-MSC) used for the prevention of metritis in cattle. <i>Reproduction, Fertility and Development</i> 34(2) 317-17 https://doi.org/10.1071/RDv34n2Ab158 .	2.311	7.72
Alyethodi, RR, Singh, U, Kumar, S, Alex, R, Sengar, GS, Raja, TV, Deb, R and Prakash, B (2021). Designing, optimization and validation of whole blood direct T-ARMS PCR for precise and rapid genotyping of complex vertebral malformation in cattle. <i>BMC Biotechnol.</i> 21(1):36.	2.409	8.56
Dar, MR, Singh, M, Thakur, S and Verma, A (2021). Exploring the relationship between polymorphisms of leptin and IGF-1 genes with milk yield in indicine and taurine crossbred cows. <i>Trop. Animal Health Production</i> 53, 413. https://doi.org/10.1007/s11250-021-02866-1 .	1.559	7.56
Dige, MS, Rout, PK, Singh, MK, Bhusan, Saket, Kaushik, Rakesh, Mahala, Sudarshan and Gowane, GR (2021). Use of Random regression model for modeling growth trajectory in Jamunapari goat in the semi-arid region of India. <i>Livestock Science.</i> 253; 104713, ISSN 1871-1413, https://doi.org/10.1016/j.livsci.2021.104713 .	1.943	7.94
Dige, MS, Rout, PK, Singh, MK, Dass, G, Kaushik, R & Gowane, G R (2021). Estimation of co (variance) components and genetic parameters for growth and feed efficiency traits in Jamunapari goat. <i>Small Ruminant Research</i> 196 106317. https://doi.org/10.1016/j.smallrumres.2021.106317	1.61	7.61
Gowane, GR, Sharma, LM, Misra, SS, Mallick, PK, Kumar, A (2021). Farmer's participatory approach for breed improvement in Malpura sheep. <i>Journal of Animal Breeding and Genetics.</i> 138:403-417. https://doi.org/10.1111/jbg.12519	2.38	8.38
Illa, Satish Kumar, Mukherjee, Sabyasachi, Nath, Sapna, and Mukherjee, Anupama (2021). Insights into the putative genomic regions controlling milk composition traits and coat colour in Sahiwal cattle under selection: De-correlated composite of selection signals approach. <i>Frontiers in Genetics.</i> 12:699422. doi: 10.3389/fgene.2021.699422.	4.599	10.60
Kour, Aneet, Deb, Sitangshu Mohan, Nayee, Nilesh, Niranjana, Saket Kumar, Raina, Varinder Singh, Mukherjee, Anupama, Gupta, Ishwar Dayal Gupta and Patil, Chandrashekhar Santosh (2021). Novel insights into genome-wide associations in <i>Bos indicus</i> reveal genetic linkages between fertility and growth. <i>Animal Biotechnology.</i> 1-17 https://doi.org/10.1080/10495398.2021.1932520	2.282	8.28
Krishnaswamy, N, Jeyakumar, S, Tamil Selvan, Gowane, GR, Mahadappa, P, Vijayapillai, U, Dechamma, HJ, Patel, BHM, Saravanan, P, Ramesha, KP and Sanyal, A (2021). Short-term effect of foot-and-mouth disease (FMD) vaccination on the milk yield in the Deoni and crossbred cows. <i>Tropical Animal Health and Production</i> 53:217. https://doi.org/10.1007/s11250-021-02653 .	1.559	7.56

Kumar, A, Mallick, PK, Misra, SS, Sharma, RC and Gowane, GR (2021). The Morphometric Scale to Predict the Live Weight of Malpura Sheep in Semi-arid Region of Rajasthan. <i>Indian Journal of Animal Research</i> . 10.18805/IJAR.B-4147	0.44	6.44
Kumar, A, Misra, SS, Chopra, A, Narula, HK Sharma, RC and Gowane, GR (2021). Sheep breeding in north-western arid and semi-arid regions of India: an overview. <i>Indian Journal of Small Ruminants</i> 27(1):1-10. doi: 10.5958/0973-9718.2021.00013.1	0.081	5.95
Kumar, A, Misra, SS, Sharma, RC and Gowane, GR (2021). Genetic parameters for sex ratio in an organised sheep farm. <i>Indian Journal of Small Ruminants</i> 27(1):31-36. doi: 10.5958/0973-9718.2021.00014.3	0.081	5.95
Kumar, Rakesh, Gupta, Ishwar Dayal, Verma, Archana, Singh, Sohanvir, Kumari, Ragini and Verma, Nishant (2021). Genetic polymorphism in HSPB6 gene and their association with heat tolerance traits in Indian Karan Fries (<i>Bos taurus</i> x <i>Bos indicus</i>) cattle. <i>Animal Biotechnology</i> , https://doi.org/10.1080/10495398.2021.1899939 .	2.282	8.28
Pandian, SJ, Kumar, J, Sonawane, GG, Gowane, GR, Swarnkar, CP and Sharma, SR (2021). Soil-borne speticeamic Colibacillosis in Neonatal lambs: Salient observations. <i>Indian Journal of Animal Research</i> . doi: 10.19905/IJAR.B-4327.s	0.44	6.44
Singh, R, Deb, R, Sengar, GS, Raja, TV, Kumar, S, Singh, U, Das, AK, Alex, R, Kumar, A, Tyagi, S, Pal, P, Patil, NV (2021). Differentially expressed microRNAs in biochemically characterized Frieswal™ crossbred bull semen. <i>Animal Biotechnol</i> . 9:1-14.	2.282	8.28
Sinha, R, Sinha, B, Kumari, R, Vineeth, MR, Sharma, N, Verma, A and Gupta, ID (2021). Effect of nongenetic factors on udder and teat morphometric traits in Sahiwal and Karan Fries cows. <i>Indian Journal of Animal Research</i> . doi:10.18805/IJAR.B-4444.	0.44	6.44
Vohra V, Singh NP, Chhotaray S, Raina VS, Chopra A, Kataria RS (2021). Morphometric and microsatellite-based comparative genetic diversity analysis in Bubalus bubalis from North India. <i>Peer Journal</i> 9:e11846. https://doi.org/10.7717/peerj.11846 .	2.984	8.98
Vohra, V, Chhotaray, S, Gowane, G, Alex, R, Mukherjee, A, Verma, A and Deb, SM (2021). Genome-Wide Association Studies in Indian Buffalo Revealed Genomic Regions for Lactation and Fertility. <i>Frontiers in Genetics</i> , 12, 696109. https://doi.org/10.3389/fgene.2021.696109 .	4.599	10.60
Worku, Destaw, Gowane, GR, Kumar, Ravi, Joshi, Pooja, Gupta, ID and Verma, Archana (2021). Estimation of genetic parameters for production and reproductive traits in Indian Karan-Fries cattle using multi-trait Bayesian approach. <i>Tropical Animal Health and Production</i> 53, Article number: 369. https://doi.org/10.1007/s11250-021-02806-z .	1.559	7.56
Alhussien, MN, Tiwari, S, Panda, BSK, Pandey, Y, Lathwal, SS and Dang, AK (2021). Supplementation of antioxidant micronutrients reduces stress and improves immune function/ response in periparturient dairy cows and their calves. <i>Journal of Trace Elements in Medicine and Biology</i> , 65: 126718.	3.755	-

Devi, P, Singh, M, Somagond, YM and Aggarwal, A (2021). Alleviation of heat stress by <i>Chlorophytum borivilianum</i> : impact on stress markers, antioxidant and immune status in crossbred cows. <i>Tropical animal health and production</i> , 53(3):1-10.	1.55	7.56
Kumar, M, Aggarwal, A and Kaul, G (2021). Novel and known miRNAs in zebu (Tharparkar) and crossbred (Karan-Fries) cattle under heat stress. <i>Functional & Integrative Genomics</i> , 21(3):405-19.	3.058	9.41
Kumar, P and Singh, S (2021). Growth rate, feed intake, physiological responses and hormonal profile of Murrah buffaloes implanted melatonin during summer season. <i>The Indian Journal of Animal Sciences</i> , 91(5):386-90.	0.32	6.32
Lakhani, N, Tyagi, N, Agarwal, A, Kumar, S and Tyagi, A (2021). Optimizing fiber and protein levels in diet of lactating Murrah buffaloes to ameliorate heat stress: Effect on physiological status and production performance. <i>Journal of Thermal Biology</i> , 96, 102838.	2.80	8.90
Pandey, Y, Panda, BSK, Bhatt, N, Tiwari, S, Somagond, YM and Dang, AK (2021). A study of changes in colostrum and transition milk immune cells along with growth factors in dairy cows. <i>The Pharma Innovation Journal</i> ; SP-10(10):336-41.	-	5.0
Singh, SV, Somagond, YM and Deshpande, A (2021). Nutritional management of dairy animals for sustained production under heat stress scenario. <i>The Indian Journal of Animal Sciences</i> , 91(5):337-49.	0.32	6.32
Somagond, YM, Singh, SV, Deshpande, A, Sheoran, P, Chahal, VP (2021). Infrared thermography to assess thermoregulatory reactions of buffaloes supplemented with antioxidant and dense energy source in summer season. <i>Journal of Agrometeorology</i> , 23(3):243-48.	0.577	6.55
Somagond, YM, Singh, SV, Deshpande, A, Sheoran, P and Chahal, VP (2021). Effect of dietary supplementation of astaxanthin, prill fat and their combination on antioxidants and immunity status of lactating buffaloes during heat stress. <i>Buffalo Bulletin</i> 40(3):451-63.	0.18	6.17
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Dutta, T. K., Sheoran, M., Chatterjee, A., Tripathi, P., & Mohammad, A. (2025). Optimizing performance in young goats: impact of concentrate supplementation in <i>Cicer arietinum</i> straw-based diets on rumen fermentation, nutrient availability, blood profile and growth. <i>Tropical animal health and production</i> , 57(4), 208.	1.70	7.70
Satapathy, D., Dutta, T.K., Chatterjee, A. et al. Ameliorating arsenic toxicity in young goats: assessing vitamin E and <i>Saccharomyces cerevisiae</i> on feed intake, carcass quality, mineral profiles in tissues and impending health risks to humans. <i>Environ Geochem Health</i> 47, 141 (2025). https://doi.org/10.1007/s10653-025-02439-3	3.80	9.20
Suresh Suvarna, A. Chatterjee T.K. Dutta and Nare Swathi (2025) Intake behaviour of black Bengal kids reared under cafeteria feeding system vis-a-vis total mixed ration. <i>International Journal of Advanced Biochemistry Research</i> (3): 430-440	5.29	-

Total Publications number of last 5 years (2021-22 to 2025-26): 1610

Innovation and Best Practices

Several innovations and best practices have been delivered by ICAR-NDRI during last five years. A list of several of them is given below with a few important innovations in details.

- Technology developed for Palada Payasam Mix Preparation by Dry Crystallization Method in a Mechanical Unit.
- A process developed for Spray Dried Milk-malted Millet Beverage Mix.
- Technology developed for Omega-3 Fatty Acid Fortified Curd and Flavoured Milk.
- Technology developed for Probiotic Bacterial Culture to Augment the Neonatal Health of Calves.
- Buffalo Saliva Scope, an estrus identification kit developed.
- Spore-based technology developed for rapid detection of antibiotic groups in milk and aqua-products.
- Lateral flow assay-based method developed for rapid detection of the presence of buffalo milk in cow milk.
- A technology developed for the manufacture of high protein ice cream
- A nanotechnology based analytical method developed for the rapid detection of organophosphorus pesticide residues in milk.
- Paper-based strip for the rapid detection of formalin in milk developed
- Cow ghee enriched with natural polyphenols for enhanced shelf-life developed
- Anionic mineral mixture developed for reducing postpartum problems in cattle and buffaloes
- Technology developed for preparation of protein-rich cheese squeeze.
- Behavioural biometrics and thermal signatures associated with parturition in Deoni and HF crossbred cows were established.
- Twelve buffalo calves produced using semen of the two cloned bulls through artificial insemination
- Area-specific mineral mixture (ALMIN-ERS) for livestock in the lower Genetic region of West Bengal developed.
- Low-cost natural Chromogenic media to distinguish between E. Coli and Klebsiella Species developed
- Functional butter with hypocholesterolemic attributes developed

- Cost effective whey based media developed for harvesting of probiotic biomass for direct vat set preparation.
- India's First Cloned Cow, named Ganga produced using indigenous technology
- A method developed for the detection of sorbitol in milk using paper-based discs
- Two-stage assay developed for rapid detection of *Salmonella* in milk and milk Products
- Strip-based technology developed for early detection of sub-clinical and clinical mastitis
- A technology was developed on “*Smart Sensors for Real-time Quality Assessment of Packaged Traditional Dairy Products*”
- A Composite Livelihood Security index developed.
- Mobile App on environment friendly dairy farming practices developed in English and Hindi to educate dairy farmers.

Major Outcomes

Major Outcomes & Impact of the Technologies Developed, Tested, Adopted and Commercialized by the Institute

Between 2021 and 2026, the technologies developed and marketed by the institute have demonstrated significant economic and social impact, particularly in dairy quality assurance, functional food innovation, and livestock productivity.

Economic Impact and Revenue Generation

- **Commercial Success of Diagnostic Strips:** The most significant financial impact has come from rapid milk adulterant detection technologies. For example, a single licensing agreement for a suite of strip-based tests with Everest Instruments Pvt. Ltd. generated **₹36.97 Lakhs** (plus 18% GST) in March 2025.
- **Volume of Licensing:** The institute successfully commercialized approximately **45 technological applications** through various Memorandums of Understanding (MoUs) during this five-year period.
- **Diverse Revenue Streams:** License fees for individual technologies typically range from **₹1.00 Lakh to ₹7.50 Lakhs**, covering a wide array of products from “Milk Protein-enriched Bajra Snacks” to “Spore-based kits for antibiotic residues”.

Industrial Adoption and Market Reach

- **Major Dairy Partnerships:** Technologies have been adopted by prominent industry leaders, including **Hatsun Agro Product Ltd.** (Chennai), Schreiber Dynamix Dairies Pvt. Ltd. (Mumbai/Pune), and **Tirumala Milk Products**.

- **Cooperative Integration:** A notable instance of mass adoption occurred on May 21, 2022, when the **Karnataka Cooperative Milk Producers' Federation Limited (KMF)** licensed 11 different technologies in a single day, ranging from protein-rich cheese squeeze to energy-fortified smoothies.
- **Start-up Support:** The institute has fostered a startup ecosystem by licensing technologies to specialized firms such as Delmos Research Pvt. Ltd. for pesticide residue strips and **Vickro Biopharma** for probiotic production.

Social and Research Impact

- **Food Safety and Public Health:** The primary social impact is the deployment of rapid detection kits for harmful adulterants like **formalin, detergents, urea, and pesticides**, which directly enhances the safety of the public milk supply.
- **Nutrition and Functional Foods:** Development and marketing of “bio-fortified” products, such as **vitamin B12 enriched soy curd** and **iron-fortified bajra biscuits**, address nutritional deficiencies in the population.
- **Livestock Productivity:** Technologies like the “Total Mixed Ration” and “polyherbal feed supplements” help farmers improve animal health and milk yield, contributing to the economic stability of rural dairy farmers.
- **Validation and Quality Control:** To ensure impact, the **Priority Setting, Monitoring, and Evaluation (PME) Cell** coordinates technology validation and periodic impact assessments using both internal and external experts.

Major Technologies Generated and Validated

Buffalo Cloning Technology: Prospects for doubling farmers' income

For more than 10 years, India's premier research organization, the Indian Council of Agricultural Research (ICAR) has been utilizing buffalo cloning technology to produce clones of elite buffaloes. Researchers of ICAR-National Dairy Research Institute, Karnal have developed buffalo cloning technology that will play key role to improve the milk production of dairy buffaloes. Since the birth of India's first cloned buffalo in 2009, significant advances have been made to improve the success rate of this technology. At present, Institute has produced 15 cloned bulls, and more to be expected in coming years. To upgrade the genetic potential of low milk producers and non-descript buffaloes; the government of India has proposed increasing the coverage of artificial insemination (AI) from the current 30% to 80-100 % by the end of 2025. Also, non-descript buffaloes to be bred with the semen of Murrah, a most prestigious buffalo breed. Therefore, there is a huge requirement of semen from high genetic merit bulls for breeding. As on 2021, India has 55 million breedable female buffaloes that require 135 million semen doses annually to be calved (2.5 inseminations per calf). Cloning allows the multiplication of exact genetics, which is not possible with any reproductive

technologies. To access the impact of bull cloning, for example, 100 cloned bulls can produce more than 120 million semen doses that can give births to 48 million buffalo calves. The calves born using cloned bull semen will have improved milk production. This way, the implementing use of cloned bull semen will be game changing strategy to boost the income of Indian farmers.

Livestock Production and Productivity

The livestock sector in India has grown at a Compound Annual Growth Rate (CAGR) of 7.38% from 2014-15 to 2022-23. This growth has contributed to an increase in the livestock sector's share of the Gross Value Added (GVA) in agriculture and allied sectors from 24.32% in 2014-15 to 30.38% in 2022-23. This sector has contributed around 30.19% during 2021-22 in total agriculture and allied sector GVA. NDRI is contributing in the sector through genetic improvement of livestock breeds at field level through distribution of semen of genetically meritorious bulls, dietary solutions for enhancing the production and reproduction performance. The role of NDRI is one of the key factor for increasing the India's per capita milk availability from 459 to 471 grams per day during 2023-24 which is a 4% increase from the previous year.

Anionic Mineral Mixture Supplementation

The incidence of milk fever reduced by 71 per cent after adoption of anionic mineral mixture. It fell from 21 cases in before intervention period to 2 cases in the post-intervention period. The adoption of technology led to a 14 per cent increase in milk production (milk yield at baseline = 10.47 kg/d), 3 per cent reduction in average costs of milk production (at baseline Rs. 57,360/year) and a 35 per cent increase in net returns to variable costs (at baseline Rs. 47,891/year). Benefits realized by the small farmers were comparatively higher than the large farmers. The increase in net returns to variable costs of small farmers was Rs. 19,142, while it was Rs. 10,619 for large farmers. Similarly, the impact on milk fever incidence was higher among older animals (4th and 5th parity) than younger animals (2nd and 3rd parity).

If the implementing agency spends Rs. 1,00,000 per 100 animals, 5 (95% CI: 2-7) additional milk fever cases could be averted and around 21,000 kgs (95% CI: 14,000-28,000) additional milk yield could be gained. When only the gain in milk yield is considered, 14,000 kgs of milk (lower bound) values around Rs. 4,00,000 (at Rs. 30/kg); the gains are around 4 times higher than the cost (Rs. 1,00,000). Therefore, it can be concluded that the AMM supplementation is a cost-effective intervention. If a similar scheme was to be implemented in Haryana to prevent all the milk fever cases using AMM, annual cost to be incurred was estimated at Rs. 611 crores. Potential economic welfare to the extent of Rs. 4,862 crores could be generated provided all the farmers adopt the technology and the technology is 100 per cent successful.

Innovative Technologies for Production of Clean Milk and Milk Products

Many of the analytical methods for the detection of adulteration of milk have been adopted by FSSAI and they have been incorporated into Manual of *Methods of Analysis of Foods: Dairy and Dairy Products* published by FSSAI. Notable additions are detection of urea in milk, detection of detergent in milk and detection of presence of foreign fat in milk. Apart from this, ICAR-NDRI has developed paper strip based methods for the rapid detection of adulteration in milk at the field level. The technologies of these methods have been commercialized to 10 organization including dairy cooperatives.

Library and Learning Resources

The Institute Library has an impressive collection of literature on dairy science and related subjects. At present, 15 (6 Indian & 9 foreign) print journals are subscribed to keep track of the current scientific/technical developments. In addition to that, the institute has online access to about 13000+ journals of 27+ subject categories through the One Nation One Subscription (ONOS) scheme of the Government of India. There are 100,006 volumes, which include books, bound journals, theses, standards, and annual reports. There are 2339 e-books from different foreign and Indian publishers that were made available for perpetual access on the NDRI campus. In addition to the above purchased e-books, some other e-books/serial publications (1174 e-books and 17 serial publications) are also available for institute users through CeRA. The online library catalogue is available on URL: library.ndri.res.in by using Koha-LMS, and 53,444 catalogue records of the library are also available on Agricat/WorldCat. Presently, 7345 digitized records, which include valuable institutional publications, M.Sc. and Ph.D. dissertations, reports, conference proceedings, reprints, etc., are in the KrishiKosh Repository of the Indian National Agricultural Research System. The library is managing operations of anti-plagiarism software, Drillbit, through the Shodhsudhi portal of the INFLIBNET Centre of UGC for plagiarism detection in Ph.D. theses and also subscribing to and managing the same Drillbit platform for plagiarism detection in master's theses and other documents of the institute.

Talent and diversity of faculty and students

One of the primary drivers of the institute's strong research performance is the quality and diversity of its faculty and students. The Agricultural Research Service (ARS) recruitment system ensures that some of the best talent in animal and dairy science from across the country begin their careers at National Dairy Research Institute (NDRI). Similarly, admissions to postgraduate and doctoral programs are conducted through highly competitive, all-India examinations, attracting meritorious students from diverse academic, geographic, and socio-cultural backgrounds. This blend of excellence and diversity fosters a vibrant intellectual environment, encourages interdisciplinary

thinking, and significantly contributes to the institute's sustained achievements in research and innovation.

Centre for excellence

At NDRI Karnal, genomics has emerged as a core strength of research and innovation, positioning the institute as a *de facto centre of excellence in genomic sciences* for dairy animal improvement. Advanced genomic tools and technologies are being deployed to accelerate genetic gains in indigenous dairy breeds, enhance productivity, and support sustainable livestock improvement. A key recent initiative is the implementation of a Single Step Genomic BLUP (SSGBLUP) selection strategy for Sahiwal cattle, enabling precise identification of bulls with superior genetic merit for milk production and reproductive traits, significantly reducing generation intervals and strengthening herd quality for small and marginal farmers.

These genomic activities are anchored in the broader work of NDRI's Animal Biotechnology and Animal Genetics research divisions, where scientists apply molecular genetics, genomic selection strategies, and gene expression studies to understand and manipulate economically important traits in cattle and buffalo. Alongside selective breeding programmes, the institute also organises training and capacity-building events on cutting-edge genomic and genome editing technologies, including national workshops on genome editing in livestock, which bring together researchers and stakeholders from across the country.

NDRI's genomics research contributes to developing superior germplasm and evidence-based breeding strategies that can be translated into field applications, strengthening India's dairy sector. Through sustained investment in genomic science and collaborative training efforts, the institute continues to lead genomic innovation in dairy animal improvement and to nurture skilled researchers in this high-impact domain.

Centers for Advanced Faculty Training (CAFT)

The Institute has two Centers for Advanced Faculty Training (CAFT) at Dairy Technology Division and Animal Genetics & Breeding Division. A total of 52 Assistant Prof. and above rank, from 14 SAU/SVU, were trained in field of advanced genetics. AGB division also organized an international workshop on Genomic Analysis and Artificial Intelligence Applied to Animal Genetics where 47 PG students and 10 faculty members were trained.

1. Centre for Advanced Faculty Trainings
2. Incubation Centre
3. Start-up Units
4. Venture Capital

5. Technology enabled learning resources
6. Integrated Learning system (Experimental Learning)
7. Academic Industry Interface
8. National Ranking ICAR (MHRD)

In addition to securing NIRF first rank among all 72 Agricultural Universities, ICAR-NDRI, Karnal consistently secured first rank during the consecutive four years (2018-19, 2019-20, 2020-21, and 2021-2022). In 2023, ICAR-NDRI secured second rank among all 72 Agricultural Universities of the country. In 2023, ICAR-NDRI also commemorated its centennial anniversary.

6.6.3.6 IPR CELL / ITMU

Institute Technology Management Unit (ITMU) Institute Technology Management Unit at NDRI is managed by Institute Technology Management Committee (ITMC). ITMC is the highest body which takes important decisions for the intellectual property management at NDRI viz., filing of patents, approval of the technology for commercialization, pricing of the technologies ready for commercialization etc. ITMC is chaired by the Director.

Table 90: The composition of ITMC is as follows:

S. No.	Name & Designation	Role
	Dr. Dheer Singh, Director	Chairman
	Dr. Rajan Sharma, Joint Director (Research) & Member Secretary, IRC	Member
	Dr. Deep Narayan Yadav, Head, DT Division	Member
	Dr. Sachinadan De, PS & Technical Expert	Member
	Dr. Chand Ram, PS & Technical Expert	Member
	Ms. Shikha Singh, Associate Partner, LexOrbis, New Delhi and IPR Expert	Member
	Dr. Pradip Behare, Sr. Scientist & Office-in-charge, ITMU	Member-Secretary

Table 91: ITMU meetings conducted by the Cell (2021-26)

S. No.	ITMU Meetings held	Date of ITMU Meeting	Agenda Taken in the meeting		
			Patent application	Technology	Other agenda
	48 th	25 th Feb, 2021	--	--	01
	49 th	10 th March 2021	09	--	--
	50 th	12 th May 2021	01	05	--
	51 st	27 th Aug 2021	03	--	--
	52 nd	4 th Oct 2021	02	03	02
	53 rd	29 th Dec 2021	02	10	01

	54 th	16 th March 2022	02	12	--
	55 th	6 th Aug 2022	04	02	01
	56 th	22 nd Dec 2022	05	05	01
	57 th	29 th May 2023	04	--	03
	58 th	7 th July 2023	04	--	--
	59 th	31 st July 2023	--	01	--
	60 th	2 nd Jan 2024	03	03	02
	61 st	16 th May 2024	04	04	--
	62 nd	18 th July 2024	03	01	03
	63 rd	3 rd Aug 2024	03	03	05
	64 th	28 th Oct 2024	05	02	06
	65 th	3 rd Jan 2025	02	01	--
	66 th	4 th March 2025	06	--	03
	67 th	16 th May 2025	01	05	05
	68 th	18 th July 2025	01	04	02
	69 th	30 th Sep 2025	02	--	04
	70 th	30 Dec 2025	04	05	--

List of IPR components (2021-2026)

FY	Patent Filed	Patent Granted	Copyright	Trademarks	Technologies commercialized
2021-22	06	06	00	01	03
2022-23	04	09	00	00	18
2023-24	04	07	00	00	11
2024-25	18	03	05	04	09
2025-26	07	00	07	00	01
Total	39	25	12	05	42

The period from 2021-22 to 2025-26 marked a prolific era for Intellectual Property Rights (IPR) and technology transfer at the institute, reflecting a robust culture of innovation and commercialization. A total of **39 patents were filed** and **25 were granted**, with a significant surge in filing activity during 2024-25. The institute also expanded its IPR portfolio into diverse areas, securing **12 copyrights** and **5 trademarks** to protect its digital and brand assets.

The institutional impact is most evident in its commercialization efforts, with **42 technologies successfully transferred** to industry partners. Notably, the 2022-23 and 2023-24 financial years saw the highest levels of technology adoption, with 18 and 11 commercialization deals respectively. This trajectory underscores a successful transition from laboratory research to market-ready solutions, ensuring that scientific advancements in dairy and agricultural sectors achieve tangible socio-economic impact.

List of patents filed year-wise by ICAR-NDRI

April 2021-March 2026

2021-2022					
S. No.	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.
1	SRS	Self-stable Metal ion based Nano-Dispersion for Thermal Energy Storage and Exchange and Method of Preparation	Ravi Prakash, Menon Rekha Ravindra, Devaraja Hosapalya Chikkathimmaiah	15-06-2021	202111026625
2	AP	Peptide sequences and epitope specific antibodies for detection of bovine Anti-Mullerian hormone (bAMH)	Prasanna Pal, Anjali Aggarwal, Sachinandan De, Rajib Deb, Vinay Joshi and Avijit Halder	25.08.2021	202111038528
3	SRS	In vitro Proteomic Analysis of the uterine fluid for detection of subclinical uterine infection	Arumugam Kumaresan, Kurati Sunny Praveen, KerekoppaPuttaiah Bhatta Ramesha, Sakthivel Jeyakumar, Ayyasamy Manimaran	28-08-2021	202111039076
4	AN	Novel probiotic formulations to improve the growth and health of buffalo calves	Sachin Kumar, A.K. Tyagi, Nitin Tyagi, Rashmi H. M., Vinay V V and Anukarna Singh	01.10.2021	202111044603
5	SRS	A system device facilitating monitoring and prediction of calving process in dairy animals	S. Jeyakumar, A. Kumaresan, Mukund A Katakataware, K.P. Ramesha	06-10-2021	202111045493
6	DT	Ghee-Residue powder and process of preparing the same	Ganga Sahay Meena, Aakash Gill, Yogesh Khetra, Ashish Kumar Singh, Sumit Arora	30.03.2022	202211019096
2022-2023					
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.
1	AN	BullTraMin"-Formulation of a bull-specific trace mineral mixture and method of its preparation	Mondal Goutam Srivastava, Rashika Bhakat, Mukesh Mani, Veena	20.04.2022	202211023368

2	DT	Process for semi-hard ripened cheese from camel milk	Yogesh Khetra, Suresh C.T., Ganga Sahay Meena, Lata Sabhikhi, Sumit Arora, Sangita Ganguly	16.06.2022	202211034642
3	DT	A novel method for Ghee preparation with lesser energy requirement".	Writdhama G Prasad, Shubham Kumbhare, Kaushik Khamrui and Shaik Abdul Hussain	23.12.2022	202111060140
4	DC	A multi-enzyme based method for preparation of low lactose milk powder	Sumit Arora, Payal Singh, Priyanka Singh Rao, Richa Singh, Ashish Kumar Singh, Vivek Sharma, Deepika Kathuria	29.03.2023	202311023254
2023-2024					
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.
1	ABTC	Modification of gene structure of buffalo genome and a method thereof"	Naresh Lalaji Selokar, Dr. M.K. Singh, Dr. S.DE and Dr. M.M. Chauhan	03.08.2023	202311052265'
2	DT	Method of preparing processed cheese from ultrafiltration retentate of cow milk	Yogesh khetra, Suresh C.T., Ganga Sahay Meena, Lata Sabhikhi, Sumit Arora, Sangita Ganguly	21-03-2024	202411021939
3	DM	A shelf-stable direct vat set liquid starter culture and a method of preparation thereof	Dr. Pradip Behare, Mr. Reshab Majumder, Dr. Diwas Pradhan, Dr. P.N. Raju	27-03-2024	202411024415
4	ABTC	A Recombinant Polynucleotide comprising Goat Beta Casein Gene, Method of Producing and Use Thereof	Dr. D. Malakar, Abhishek Thakur	23-03-2024	202411022771

2024-2025					
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.
1	DT	A process of producing <i>khola</i> powder substitute using sweet cream butter milk and ghee-residue	G.S. Meena, Aditya Dutta, Yogesh Khetra, Ashish Kumar Singh, Sumit Arora	02-05-2024	202411034793
2	ABTC	Assay for detection of Bovine Pregnancy Associated Glycoprotein Isoform bupag-2	A.K. Mohanty , Sudarshan Kumar, Sushil Kumar, T.K. Mohanty, Rubina Kumari Baithalu, Munna Yadav, Shweta Yadav	30-07-2024	202411057694
3	ABTC	Mouse Monoclonal Antibodies against Bovine Pregnancy Associated Glycoprotein	A.K. Mohanty , Sudarshan Kumar, Sushil Kumar, T.K. Mohanty, Rubina Kumari Baithalu, Munna Yadav, Shweta Yadav	30-07-2024	202411057692
4	DT	Instant Desi Chhach Powder (DCP) & Process of Preparing the same	G.S. Meena, Mr. Subhadeep Manik, Ashish Kumar Singh, Yogesh Khetra	03-07-2024	202411050894
5	ERS	Device for monitoring Udder health condition of dairy animals by detecting mastitis, and method thereof	Ajoy Mandal, Muthu Karunakaran, Champak Bhakat, ERS, Kalyani, Nadia	04-09-2024	202431066949
6	DM	Epitop peptide Predicted INL A and INL B Antibody based lateral flow assay strips for detection	Raghu HV, Mariya Divanshi A S, Jitesh Tarak, Sachinandan De	22-10-2024	202411080111
7	DM	Two stage assay for rapid detection of Salmmonella in foods and water	Raghu HV, Ajit A, Ms. Pushpa Devi, Rashmi H.M., A.K. Puniya	22-10-2024	202411080112
8	DT	Whey-Apricot wine and its production process thereof	P. Narender Raju, Harsh Jindal, Sangita Ganguly, Anurag Saxena	05-11-2024	202411084435
9	AN	An apparatus for real time monitoring of rumen fermentation	Raman Malik, Harneet Kour	21-11-2024	202411090649

10	AN	A teat spray formulation for combating subclinical mastitis and process for preparation thereof	Sachin kumar, Nitin tyagi, Ashis kumar samanta, Ashish kumar singh, Pradip Vishnu behare, Nutan Chauhan, Ojal singh	28-11-2024	202411093245
11	DM	Media and method for detection of shigella species by three stage assay	Raghu H V., Harshitha P R, Aishwarya M, Dr. Shilpa Vij, Dr. Diwas Pradhan	10-01-2025	202511002406
12	DM	Spore based paper strip sensor for detection of aflatoxin B1 in food and feed	Raghu H.V., Priya Kalyan, Srishti Patel, Naresh Kumar, Rajan Sharma	10-01-2025	202511002407
13	ABC	An in vitro assay for assessing the Aflatoxin M1 toxicity in a sample	Suneel Kumar Onteru, KAPRI Ankita Kapri, Sanjay Sharma, Suman Rani, Priyanka Patel, Dheer Singh	14-02-2025	202511012695
14	SRS	A bull sperm RNA transcript panel for bull fertility prediction, methods and uses	Arumugam Kumaresan, Manish Kumar Sinha, Shivanagouda Patil, Ebenezer Samuel King j, Tirtha Kumar Datta, Rakesh Kumar, Ayyasamy Manimaran, Sakthivel Jeyakumar, Kerekoppa Puttaiah, Bhatta Ramesha	12-03-2025	202511022146
15	ABTC	Fusion protein comprising cathelicidin and Escherichia coli endolysin	Jai Kumar Kaushik, Neha	13-03-2025	202511022856
16	ERS	System and method for detecting abnormalities and providing reproductive management in bovine	Ajoy Mandal, Muthu Karunakaran, Champak Bhakat	24-03-2025	202531026917
17	DC	A process for milk protein stabilized nanoencapsulated curcumin dried formulation	Rajesh Kumar, Kaviya P, Parvesh, G Poojitha, Shaik Abdul Hussain, Rajan Sharma, Bimlesh Mann	25-03-2025	202511028031

18	AN	Additives formulation for enteric methane mitigation	Dr. Nitin Tyagi, Dr. Nitin Tyagi, Chamadiya Bilal, Antra Gupta, Ashutosh, Sachin Kumar, Goutam Mondal	29-03-2025	202511030754
2025-2026					
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.
1	DM	A process for the production of Vitamin B12 employing whey-based culture media and Limosilactobacillus reuteri	Pradip Vishnu Behare, Deepa Pauly Chakiath, Manorama Kumari, Richa Singh	18-04-2025	202511037722
2	SRS	A Vitamin B ₁₂ rich dietary supplement and a method of preparation thereof	Devaraja H. C., Rashmi H. M., Monika Sharma, Gautam Kaul, Anjal Katiyar, Amandeep Singh, Nidawanbiang Najjar, Manoj Kumar C.T., Ashwani Koth, Arindam Dhali	28-06-2025	202511061934
3	ABTC	A point of care apparatus, method and kit for detection of bovine pregnancy associated glycoprotein-2	Dr. Sudarshan Kumar, Dr. A. K. Mohanty, Dr. Sushil Kumar, Dr. Rubina Kumari, Baithalu, Dr. T. K. Mohanty, Dr. Munna Lal Yadav, Shweta Yadav	30-07-2025	202411057694
4	ABC	A device and a method for creating interconnected cell-culture wells in a gel-based structure	Suneel Kumar Onteru, Suman Rani, Ankita Kapri, Priyanka Patel, Dheer Singh	31-07-2025	202511072929
5	AN	Teat spray formulation for combating subclinical mastitis and process for preparation thereof	Sachin kumar, Nitin tyagi, Ashis kumar samanta, Ashish kumar singh, Pradip Vishnu behare, Nutan Chauhan, Ojal singh	20-11-2025	202411093245
6	ABC	An Assay for Rapid Identification and Detection of Single Nucleotide Polymorphism in Buffalo Genes	Suneel Kumar Onteru, Priyanka Patel, Ankita Kapri, Suman Rani, Dheer Singh	23-12-2025	202511130887

7	DM	“Formulation of Vitamin B12 Biofortified Fermented Whey-Based Beverage and Preparation thereof”	Manorama Kumari, Pradip Vishnu Behare, Deep Narayan Yadav	16-01-2026	202611004458
8	DM	paper strip-based sensor for the detection of Escherichia coli and ESB� resistant E. coli in milk	Raghu H.V., Pushplatha, Harish Devi, Prashant Goel, Naresh Kumar, Rashmi H.M., Shilpa Vij, Diwas Pradhan	19-03-2026	202611033269
9	De	Portable self- powered dry type bovine semen straw thawing device	Ankit Deep, Kiran Goyat, Nishant Kumar, Pradyuman Barnwal, Chitranayak, Madan Lal Kamboj	05-03-2026	202611025775
10	DT	formulation for enhanced properties of apricot kernel protein-based films for packaging	P. N. Raju, Deepak Kumar	27-03-2026	202611037657

List of patents Published (2021-26)

Patent published in 2021-22								
S. No.	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.	Grant date	Grant number	Published Date
1.	DC	A Preservative formulation for Milk and Milk Product Samples Stored for Analytical Purpose	Richa Singh, Bimlesh Mann, Sumit Arora, Mitul Bumbadiya, Priyanka Singh Rao, Diwas Preadhan	09.08.2019	201911032383	22/08/2023	446523	12/02/2021
3	ABTC	Microfluidic device for enrichment of live and motile spermatozoa of cattle	Ashok Kumar Mohanty Vinod Kumar Yata,Bhanu Prakash, Vibhav Katoch Neeraj Yadav, Dharmendra Kumar Gangwar, Sudarshan Kumar, Tushar Kumar Mohanty	27.02.2020	202011008229	23/06/2023	436709	03/09/2021

4	ABTC	Detection of BCM-7 peptide in urine sample by aptamers	AK Mohanty, Abhishek Parashar,	08.06.2020	202011023895	Application in hearing	10/12/2021
7	SRS	A pail for cooling milk simultaneous to milking	Ravi prakash and Menon Rekha Ravindra	07.08.2020	202011033807	Granted	11/02/2022
Patent published in 2022-23							
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.	Grant date	Published Date
1	ABTC	Development of PAG-7 based diagnostic kit for the early detection of pregnancy in bovine	AK Mohanty, Munna Lal Yadav, Sudarshan Kumar	22.06.2020	202011026145	Application referred u/s 12 for examination.	21/10/2022
2	DE	Development of pH - controller based automated endo-exo unit for dahi	Chitranayak, Prashant Sourav Minz, Ashish Kumar Singh, Jitender Kumar Dabas and Amita Dinkar Vairat	26.10.2020	202011046532	Application referred u/s 12 for examination.	29/04/2022
3	DM	A paper strip sensor for detection of E.Coli and total Plate Count (TPC) in milk using PANIPeC	Raghu, Anjali M.K., Mohit Singh, Bharath G., Naresh Kumar	15.12.2020	202011054432	Application referred u/s 12 for examination.	17/06/2022
4	DT	A process for preparation of milk protein fortified eggless muffins	Kasushik Khamrui, Rishi Kumar Puri and Writdhama G Prasad	03.02.2021	202111004592	Application referred u/s 12 for examination.	23/09/2022

5	DT	Label for indicating freshness of Indian Dairy Products and preparation method thereof (Provisional Application)	P.N. Raju, Rakesh kumar raman, Karpurapu Uma, Ashish Kumar Singh and Sangita Ganguly	03.02.2021	202111004590	23/04/2024	534389	23/09/2022
6	DT	Label for indicating freshness of Milk Millet composite complement food and preparation method thereof (Provisional)	Narender Raju Panjagari, Lal Chand Sharma, Ashish Kumar Singh	03.02.2021	202111004587	FER Issued, reply not filed		23/09/2022
7	DM	A process for production of antimicrobial coagulant formulation for making extended self-life Paneer	Pradip Vishnu Behare, Rallapalli Vembar Rajanikar, Sudhir Kumar tomar, Diwas Pradhan, Rajan Sharma and Sanket Borad	23.02.2021	202111007461	29/01/2024	504293	07/10/2022
8	DM	Rapid antimicrobial susceptibility assay for Detection of Extended spectrum	Naresh Kumar, Avinash Jaswal, Raghu H. Vishweshwaraiah	23.02.2021	202111007462	referred u/s 12 for examination.		07/10/2022
9	SRS	Self stable Metal ion based Nano-Dispersion for Thermal Energy Storage and Exchange and Method of Preparation	Ravi Prakash, Menon Rekha Ravindra, Devaraja Hosapalya Chikkathimmaiah	15-06-2021	202111026625	Reply Filed. Application in amended examination		10/02/2023

10	AP	Peptide sequences and epitope specific antibodies for detection of bovine Anti-Mullerian hormone (bAMH)	Prasanna Pal, Anjali Aggarwal, Sachinandan De, Rajib Deb, Vinay Joshi and Avijit Halder	25.08.2021	202111038528 (Provisional)	referred u/s 12 for examination.	24/03/2023
11	SRS	In vitro Proteomic Analysis of the uterine fluid for detection of subclinical uterine infection	Arumugam Kumaresan, Kurati Sunny Praveen, KerekoppaPuttaiah Bhatta Ramesha, Sakthivel Jeyakumar, AyyasamyManimaran	28-08-2021	202111039076'	referred u/s 12 for examination.	17/03/2023
Patent published in 2023-24							
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.	Grant date	Published Date
1	AN	Novel probiotic formulations to improve the growth and health of buffalo calves	Sachin Kumar, A.K. Tyagi, Nitin Tyagi, Rashmi H. M., Vinay V V and Anukarna Singh	01.10.2021	202111044603	referred u/s 12 for examination.	07/04/2023
2	SRS	A system device facilitating monitoring and prediction of calving process in dairy animals	S. Jeyakumar, A. Kumaresan, Mukund A KataktaIware, K.P. Ramesha	06-10-2021	202111045493	referred u/s 12 for examination.	14/04/2023
3	DT	Ghee-Residue powder and process of preparing the same	Ganga Sahay Meena, Aakash Gill, Yogesh Khetra, Ashish Kumar Singh, Sumit Arora	30.03.2022	202211019096'	referred u/s 12 for examination.	26/01/2024

4	AN	BullTraMin”- Formulation of a bull-specific trace mineral mixture and method of its preparation	Mondal goutam Srivastava, rashika bhakat, mukesh mani, veena	20.04.2022	202211023368	Reply Filed. Application in amended examination	--	12/01/2024
5	DT	Process for semi-hard ripened cheese from camel milk	Yogesh Khetra, Suresh C.T., Ganga Sahay Meena, Lata Sabhikhi, Sumit Arora, Sangita Ganguly	16.06.2022	202211034642	referred u/s 12 for examination.	--	05/01/2024
6	DT	A novel method for Ghee preparation with lesser energy requirement”.	Writdhama G Prasad, Shubham Kumbhare, Kaushik Khamrui and Shaik Abdul Hussain	23.12.2022	202111060140	referred u/s 12 for examination.	--	12/01/2024
Patent published in 2024-25								
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.	Grant date	Grant number	Published Date
1	DC	A multi-enzyme based method for preparation of low lactose milk powder	Sumit Arora, Payal Singh, Priyanka Singh Rao, Richa Singh, Ashish Kumar Singh, Vivek Sharma, Deepika Kathuria	29.03.2023	202311023254	Application referred u/s 12 for examination.		04/10/2024
2	ABTC	Modification of gene structure of buffalo genome and a method thereof”	Naresh Lalaji Selokar, Dr. M.K. Singh, Dr. S.DE and Dr. M.M. Chauhan	03.08.2023	202311052265	FER Issued, Reply not Filed		07/02/2025
3	DT	Instant Desi Chhach Powder (DCP) & Process of Preparing the same	G.S. Meena, Mr. Subhadeep Manik, Ashish Kumar Singh, Yogesh Khetra	03-07-2024	202411050894	23-02-2026	581352	23/08/2024

4	ERS	Device for monitoring Udder health condition of dairy animals by detecting mastitis, and method thereof	Ajoy Mandal, Muthu Karunakaran, Champak Bhakat, ERS, Kalyani, Nadia	04-09-2024	202431066949	Application Awaiting Examination	Filed by CDAC, Kolkata as Lead Centre	13/09/2024
Patent published in 2025-26								
S. No	Division	Title of Patent	Inventors	Date of Filing	Patent Application No.	Grant date	Grant number	Published Date
1	DT	Method of preparing processed cheese from ultrafiltration retentate of cow milk	Yogesh khetra, Suresh C.T., Ganga Sahay Meena, Lata Sabhikhi, Sumit Arora, Sangita Ganguly	21-03-2024	202411021939	Application referred u/s 12 for examination.	-	17/10/2025
2	DM	A shelf-stable direct vat set liquid starter culture and a method of preparation thereof	Dr. Pradip Behare, Mr. Reshab Majumder, Dr. Diwas Pradhan, Dr. P.N. Raju	27-03-2024	202411024415	Application referred u/s 12 for examination.	-	31/10/2025
3	ABTC	A Recombinant Polynucleotide comprising Goat Beta Casein Gene, Method of Producing and Use Thereof	Dr. D. Malakar, Abhishek Thakur	23-03-2024	202411022771	Awaiting Request for Examination	-	17/10/2025
4	DT	A process of producing <i>khoa</i> powder substitute using sweet cream butter milk and ghee-residue	G.S. Meena, Aditya Dutta, Yogesh Khetra, Ashish Kumar Singh, Sumit Arora	02-05-2024	202411034793	Awaiting Request for Examination	-	28/11/2025

5	ABTC	Assay for detection of Bovine Pregnancy Associated Glycoprotein Isoform bupag-2	A.K. Mohanty, Sudarshan Kumar, Sushil Kumar, T.K. Mohanty, Rubina Kumari Baithalu, Munna Yadav, Shweta Yadav	30-07-2024	202411057694	Awaiting Request for Examination	06/02/2026
6	ABTC	A point of care apparatus, method and kit for detection of bovine pregnancy associated glycoprotein-2	Dr. Sudarshan Kumar, Dr. A. K. Mohanty, Dr. Sushil Kumar, Dr. Rubina Kumari, Baithalu, Dr. T. K. Mohanty, Dr. Munna Lal Yadav, Shweta Yadav	30-07-2025	202411057694	Awaiting Request for Examination	06/02/2026

6.6.3.7: Central Instrumentation

The Institute houses a state-of-the-art Central Instrumentation Facility, namely the NDRI Central Instrumentation Facility (NCIF), equipped with several high-value and advanced analytical instruments. This centralized facility has been established to ensure efficient access to sophisticated equipment for all scientific staff and students, thereby promoting high-quality research and optimal utilization of resources across the Institute.

Table 92: List of equipment available at NDRI Central Instrumentation Facility

Sr. No.	Name of the Instrument and Model	Amount (Rs)	Year of Purchase
	High Speed Optima Max XP Ultracentrifuge (Beckman Coulter)	29,94,287/-	2023
	Analytical Semi Micro balance (LABWAN) (Two)	2,00,000/-	2023
	Hot Air Oven	69,565/-	2023
	Deep Freezer (DS-DF.252H-CT)	1,67,758/-	2023
	HPLC System With PDA , RI Detector, Shimadzu (DGU-20A5R)	30,68,000/-	2024
	Synergy H1 Multimode Plate Reader (Agilent)	18,39,620/-	2024
	High Speed Refrigerated centrifuge Hermle Z36 HK	13,41,188/-	2024
	Spectrophotometer Lasany L1-2800 Ex	4,82,000/-	2024
	Particle Size Analyser (Malvern ZS-90)	17,83,854/-	2014
	Olympus Confocal Microscope (FV 4000)	1,63,43,000/-	2025
	Sever (Linux based)	16,00,000/-	2025
	Water Purification System (Bio-Age Dura-Q-Classic-10)	5,91,000/-	2026
	pH meter (Milwaukee, model MW 151)	33,590/-	2025
	Nuclear Magnetic Resonance	1,32,16,000/-	2026
	Dynamic Rheometer with accessories	44,99,000/-	2025
	Workstation cum high end server	32,17,000/-	2025
	Droplet PCR (1 Nos)	36.69,000/-	2026
	Cold-room facilities(3Nos.)	14,72,000/-	2026
	Pulse electric field(1No)	8047,000/-	2026
	Ultra-pure water purification system	11,83,000/-	2026
	-80oDeep Freezer	23,55,280	2026
	Freeze Dryer (1 Nos.) with provision of drying all type of samples in ampoules, plates, flask assembly	30,00,000/-	2026
	Automated Autoclave	19,78,000/-	2026

List of Other Equipments Procured under the Development Grant Fund (2021-2026)

List of Equipments Procured in 2024-25

Sr. No.	Name of equipment	Numbers	Cost
	Automated magnetic-particle based DNA/RNA, protein or cell purification system	1	4.97,960/-
	Centrifuge (Large Capacity 200-250 mL)	3	12,21,618/-
	Analytical balance	1	99,999/-
	Refrigerated Microcentrifuge	1	3,00,000/-
	Laminar Air Flow	1	1,49,990/-
	Horizontal electrophoresis with power pack	1	160450/-
	Vertical Electrophoresis	1	99,999/-
	Incubator shaker	1	2,99,000/-
	Autoclave	1	1,98,200/-
	-20° C Deep freeze	1	74000/-
	Cream separator (lab scale)	1	1,88,800/-
	Water bath (2)	2	1.87, 500/-
	Gerber centrifuge	2	49, 560/-
	Microwave oven	1	44840/-
	Millet Pearler (1)	1	61179/-
	Table top refrigerated centrifuge	1	4,32,175/-
	Muffle furnace	1	40206/-
	Table Top Environment Test Chamber	1	99,999/-
	Analytical Balance Capacity: 230 gm	1	61800/-
	Laminar Air flow	1	145886/-
	Double-beam UV-Vis Spectrophotometer	1	3,36,940/-
	Biosafety Cabinet (BSL – II)	1	4,39, 990/-
	Kulfi-cum-Candy making machine	1	4,99,000/-
	pH Meter	9	3,02,310/-
	Refrigeration Tutor	1	99,120/-
	Refrigerator (Cooling cabinet)	1	1,40,120/-
	Gerber centrifuge	1	99,710/-
	Water quality analyser	1	84,995/-

Minor Equipment (2024-25 & 2025-26)

S. No.	Item	QTY	Amount
	Refrigerated Centrifuge	1	349988
	Compound microscope with USB camera and computer	1	237500

	Weighing Balance	1	239000
	Autoclave		
	Digital Tensiometer with	1	149860
	microcontroller		
	Time Domain Reflectometer with access tubes	1	349280
	Automated Milk analyzer		499730
	Probe Sonicator	1	495635
	Deep Freezer(-20°C)4 numbers	4	391987
	Weighing Balance	1	159300
	Heat Transfer Test Rig with Accessories (2)	1	288510
		1	384680
	Refrigeration Transfer Test Rig/Tutor with Accessories	1	299720
	Gradient PCR Machine	1	380550
	Rotary Vacuum Evaporator	1	425000
	Modular Lab Scale MF/UF	1	499140
	Basket centrifuge	1	249924
	Rotational Viscometer	1	248001
	Major & Minor Loss Equipment for DE UG Courses	1	82600
	Boiler Models & Assembly		139476
	Water Bath	1	34999
	Automatic Tissue Processor	1	398500
	Weighing Balance (1)	1	98750
	Ultrasound machine		10,61,000
	Rotary Manual microtome with E blade holder with ER blade holder	1	496650
	Vacuum Manifold with Vacuum Pump	1	351998
	Floating Bath/Tissue Flotation Baths	1	24672
	Fabrication of cheese making equipment	1	64074
	Fluid flow Test rig	1	145140
	Performance test rig	1	141600
	Biosafety cabinet	1	5,25,000
	Bench top non refrigerated centrifuge	1	49999
	Tissue embedding system with cold plate	1	3,89,975
	Research Microscope with digital camera and computer	1	4,88,000

6.6.3.8: Global Support

The institute has a long standing track record of collaborating with overseas institutions for research programs, faculty and student exchange. A standing deputation committee comprising of senior faculty members and administrative officers is entrusted with the responsibility to consider all proposals for mobility programs of the faculty. The

committee guides the scientists in organizing necessary documents for clearance at the Institute and the ICAR headquarter and supports them in all possible ways including timely advice to process their application for grant of visa and other paper works. Students' application for internship is currently processed by a group of scientists identified under the IDP. Each member of the committee has been tasked with specific responsibilities of selecting the students, based on certain merit-based indices, contacting the overseas universities and identifying students for each university, processing application of the students, organizing accommodation, tickets, insurance and visa applications. Faculty members also keep a track of the training of the students in host universities and coordinate their arrival plan. Recently the Institute has set up a single point contact in the form of Alumni and International Affairs Office with enhanced mandate to promote such faculty and student exchange. This cell will be providing a single point access to the information related to overseas academic opportunities, fellowships, international collaboration, and alumni support abroad etc to the students as also the faculty and guide them in securing these opportunities.

International collaborations (2021-22 to 2025-26)

ICAR-NDRI has demonstrated exceptional institutional prowess in securing prestigious international grants and fostering global collaborations to advance cutting-edge dairy and agricultural research. By partnering with world-renowned organizations—including the **Bill & Melinda Gates Foundation (USA)**, the **University of Copenhagen (Denmark)**, and various **Indo-UK**, **Indo-Spain**, and **ASEAN-India** consortiums—the institute has successfully attracted significant foreign funding exceeding **1,000 Lakhs** for high-impact projects. These initiatives tackle critical global challenges such as **Antimicrobial Resistance (AMR)** through the DOSA project, and the enhancement of livestock productivity via advanced **molecular markers** and **genome editing** in Indian cattle and water buffaloes.

Furthermore, the research portfolio extends into functional food science and human health, featuring collaborations focused on the biogenesis of proteins in relation to bull fertility and the development of **probiotic fermented foods** aimed at preventing childhood diarrhea. By investigating the fundamental mechanisms of milk gels and leveraging international expertise, these projects ensure the translation of laboratory findings into “One Health” solutions. This robust framework of international cooperation not only strengthens the institute’s novel research capabilities but also delivers tangible benefits to stakeholders and society by improving livestock health, enhancing farmer livelihoods, and promoting public nutritional security.

Several research projects, research and development collaborations were formed during the period under report. Below is the table indicating some important grants received by PIs of the institute.

Table 93: Grants received under international collaborations at ICAR-NDRI

Sl. No.	Title of the Project	Name of PI	Name of Associates	Funding Agency	Duration	Total Cost (Rs. In Lakh)
	DOSA- Diagnostics for one health and user driven solutions for AMR.	Naresh Kumar	-	Indo-UK DBT	2018-2021	88.09
	Molecular markers for improving reproduction of cattle and buffaloes (MMIRCB).	Rakesh Kumar	Dheer Singh, Suneel Onteru, Rubina K. Baithalu, A. K. Mohanty, Sudarshan Kumar, T. K. Mohanty, J. K. Kaushik and Mukesh Bhakat.	Bill & Melinda Gates Foundation, USA	2018-2024	648.38
	Molecular markers for improving reproduction of cattle and buffaloes (MMIRCB)-Bill & Melinda Gates Foundation, USA	Kumaresan CCPI	A. Manimaran and K.P. Ramesha	Bill & Melinda Gates Foundation, USA	2018- 2024	127.13
	The mechanism behind formation of coocable milk gels (GELCOOK)”	Yogesh Khetra	S. A. Hussain	University of Copenhagen, Denmark	2019-2022	64.90
	Explaining the biogenesis and interaction of Pirnas and PIWI proteins in buffalo testes in relation to bull fertility	Rakesh Kumar	Dr. T.K. Datta, PS, NDRI, Karnal	SERB Funded, ASEAN –INDO Collaboration	2020-2022	16.8
	Development of probiotic fermented food for prevention of childhood diarrhea against Indian diarrheal pathotypes	Suman Kapila	-	Indo-Spain Project	2020-23	10.20
	One-step multiplex genome editing and improvement of lactation traits in Indian water buffalo	Naresh Selokar		Indo-USA BMGF	2022 -2027	98.53

6.6.4. Extension Support

6.6.4.1. Extension Council:

The Division of Dairy Extension is conducting Extension Council Meeting regularly. This meeting is essential to review the progress of current extension programmes and also to recommend changes to streamline the extension activities of the Institute. This council also aims to promote the interdisciplinary extension with development departments to bring out horizontal and vertical coordination of extension activities. As per the composition of Extension Council of NDRI, the members are nominated for two year tenure under Rule 6.01 (vi) to 6.01(x).

Table 94: The present composition of the Extension Council

Rule: 6.00				
6.01	(i)	Director, NDRI, Karnal	Chairman	Dr. Dheer Singh
	(ii)	Joint Director (Extension)	Vice Chairman	(vacant)
	(iii)	Joint Director (Research)	Member	Dr. Rajan Sharma
	(iv)	Joint Director (Academic)	-do-	Dr. A. K. Singh
	(v)	DDG (Extn. Education), ICAR, New Delhi or his nominee	-do-	DDG (Extn. Education), ICAR, New Delhi or his nominee
	(vi)	Three Scientists in Management position of the Institute	-do-	Dr. Nitin Tyagi, PS and Incharge, LRC Dr. M.L. Kamboj, PS and Incharge, LPM Section Dr. Rajesh Bajaj, PS & Head, DC Division Dr. S. Mandal, PS & Head, DESM Div.
	(vii)	Five Scientists of the Institute (to be nominated by the Board of Management on a two year tenure basis)	-do-	Dr. A.K. Dang, PS & Head, AP Division Dr. Jai K. Kaushik PS & Head, ABTC Dr. Suneel K. Onteru PS & Head ABC Div. Dr. Deep Narayan PS & Head DT Div. Dr. M.L. Kamboj, P.S. and Incharge, LPM

	(viii)	One Scientist from Regional Station to be nominated by the Board of Management on a two year tenure basis)	-do-	Dr. S. Banik, PS & Head, ERS-NDRI, Kalyani
	(ix)	One representative of the Deptt. of Agriculture, Ministry of Agriculture (to be nominated by the Agriculture Commissioner, Govt. of India)	-do-	Agriculture Commissioner, Govt. of India, Ministry of Agriculture & Farmers welfare, Department of Agriculture & Cooperation, Krishi Bhawan, New Delhi-110 001 or his nominee
	(x)	One Extension Scientist representing Livestock Development and/or Dairy Development (to be nominated by the Board of Management on a two year tenure basis)	-do-	Director General, Department of Animal Husbandry & Dairying Govt. of Haryana Pashudhan Bhawan, Sector- 2, Panchkula or his nominee
	(xi)	Director (Farm Information), Directorate of Extension, Govt. of India, New Delhi	-do-	Director (Farm Information), Directorate of Extension, Govt. of India, New Delhi
	(xii)	Head, Division of Dairy Extension	Member Secretary	Dr. Gopal Sankhala, Head, Dairy Extension Division

Table 95: Details of Extension Council Meetings

Sr. No	Year	Meeting No.	Dates of Meetings of Extension Council
1	2023	48	08/02/2023
2	2024	49	30/08/2024

PROCEEDINGS OF THE 48th MEETING OF THE EXTENSION COUNCIL, ICAR-NDRI, KARNAL HELD ON FEBRUARY 8, 2023 AT 11.00 AM

The 48th meeting of the Extension Council, ICAR-NDRI, Karnal was held on February 8, 2023 at 11.00 AM in the Pinaki Hall of Institute through hybrid mode (offline and online through Zoom meeting application). The following members were present:

1. Dr. Dheer Singh, Director, ICAR-NDRI, Karnal : Chairman
2. Dr. A. K. Singh, JD(Academic), ICAR-NDRI-NDRI, Karnal : Member
3. Dr. R.K. Singh, ADG (Agril Extn.), ICAR, New Delhi rep of DDG (Agril Extension), ICAR, New Delhi : Member
4. Dr. Praveen Singh, Agril. Commissioner, GOI, Ministry of Agril. & Farmers Welfare, DAC, Krishi Bhawan, New Delhi rep of Agriculture Commissioner : Member

5. Dr. Bhupendra Chowdhury, Deputy Director rep of Director General, Dept of Animal Husbandry & Dairying (Govt of Haryana) Pashudhan Bhawan, Sce-2, Panchkula : Member
6. Dr. A. K. Mishra, PS, and I/C LPM, ICAR-NDRI, Karnal : Member
7. Dr. R. Malhotra, PS & Head, DES&M, ICAR-NDRI, Karnal : Member
8. Dr. Vivek Sharma, PS, DC Div., ICAR-NDRI, Karnal : Member
9. Dr. A. K. Dang, PS and Head, DCP, ATIC, ICAR-NDRI, Karnal : Member
10. Dr. S. M. Deb, Head, ERS, ICAR-NDRI, Kalyani : Member
11. Dr. S. De., PS, ABTC, ICAR-NDRI, Karnal : Member
12. Dr. Pawan Singh, PS & I/C ABRC, ICAR-NDRI, Karnal : Member
13. Dr. Suneel K. Onteru, PS, ABC Division, ICAR-NDRI, Karnal : Member
14. Dr. P.N. Raju, Sr. Scientist, DT Divisionrep. Dr. K. Khamarui, PS, DT Division, ICAR-NDRI, Karnal : Member
13. Dr. Gopal Sankhala, Head, Dairy Extension Division, ICAR-NDRI, Karnal : Member Secretary

Special invitees

1. Shri B. D. Phansal, JD (Admin) & Sr. Registrar, ICAR-NDRI, Karnal
2. Shri Avesh Yadav, Comptroller, ICAR-NDRI, Karnal
3. Dr. P. K. Saraswat, PC, KVK, ICAR-NDRI, Karnal
4. Dr. K. Ponnusamy, PS, Dairy Extension Division, ICAR-NDRI, Karnal
5. Dr. B. S. Meena, PS, Dairy Extension Division, ICAR-NDRI, Karnal
6. Dr. H. R. Meena, PS, Dairy Extension Division, ICAR-NDRI, Karnal
7. Dr. Ritu Chakravarty, Sr. Scientist, Dairy Extension Division, ICAR-NDRI, Karnal
8. Dr. Sanjit Maiti, Sr. Scientist, Dairy Extension Division, ICAR-NDRI, Karnal
9. Dr. Sanchita Garai, Sr. Scientist, Dairy Extension Division, ICAR-NDRI, Karnal
10. Dr. Asif Mohammad, Sr. Scientist, ERS of ICAR-NDRI, Karnal
11. Dr. Raj Kumar, Sr. Scientist & I/C ATIC, ICAR-NDRI, Karnal
12. Sh. Deepak Kumar, Progressive dairy farmer, Subri, Karnal

Due to preoccupied and under compulsion of circumstances, Director (FI), Directorate of Extn, New Delhi; Smt. Snehlata, progressive women dairy farmer and member of the Self Help Group, Kulwherei village, Karnal could not attended the meeting.

At the outset, Dr. Dheer Singh, Director, ICAR-NDRI, Karnal & Chairman of the Extension Council welcomed all the members especially Dr. Praveen Singh, Agril. Commissioner, GOI; Dr. R. K. Singh, ADG (Agril. Extn), ICAR, New Delhi and others

who attended the meeting. In his welcome address, the Chairman highlighted the need and importance of the organized extension activities to promote animal husbandry sector a profitable one and to disseminate the latest technologies to the resource poor dairy farmers across the country.

With the permission of the Chairman, Dr. Gopal Sankhala, Member Secretary, Extension Council and Head, Dairy Extension Division, ICAR-NDRI, Karnal to put up the agenda items one by one.

48.1 Confirmation of the proceedings of the 46th Meeting of Extension Council held on 09.12.2020

The member secretary informed that the proceedings of the 47th Extension Council was circulated to all the members and no comments have been received from any members of the Extension Council. Since, no comments have been received from any member; the same was taken as confirmed.

48.2 Point-wise discussion on the action taken report and progress report presented during the meeting. The following points emerged out of the discussion:

- i. Meeting of the Extension Council should be organized in every six month instead of yearly meeting.

(Action: Head, Dairy Extension Division)

- ii. Dairy Mela should be organized on priority at NDRI, Karnal; ERS, Kalyani and SRS, Bengaluru.

(Action: Head, Dairy Extension Division; Head, ERS and Head, SRS)

- iii. NDRI must reach to the one lakh farmers through its all outreach programmes.

(Action: All HODs, I/C Regional Station, All I/C sections, I/C KVK, Karnal and ERS)

- iv. Geo-tagging and Geo-referencing of the progressive dairy farmers may be done.

(Action: I/C KVK, Karnal and ERS)

- v. Students may be included in the team made for MGMG programme to meet out the shortage of technical manpower.

(Action: Nodal Officer, MGMG)

- vi. List of technologies ready for dissemination to the farming community may be discussed in the meeting of the committee made for regulating extension programme at the farmers' field.

(Action: All HODs)

- vii. Mechanisms should be standardized to obtain farmers' feedback on the different issues related to dairy farming. Subsequently, IRC projects may be initiated to address these obtained feedbacks.

(Action: All HODs)

- viii. Dairy Samachar may be published in audio-book format in addition with the digital format for better utilization by the farming community.

(Action: Head, Dairy Extension Division)

- ix. An event should be organized to sensitize school children regarding utility of millets to celebrate International Millet Year-2023

(Action: Nodal Officer, IMY-2023)

- x. News coverage of the activities of KVKs may be increased on priority to improve visibility of the NDRI.

(Action: I/C KVK, Karnal and ERS)

- xi. Farm literatures published by different divisions of NDRI should handover to the Dairy Extension Division and/or KVK to translate into simpler language for better utility by the farming community.

(Action: All HODs)

- xii. It was decided by the house that the fresh agenda proposed by the ERS, Kalyani and SRS, Bangalore is approved in the Extension Council.

- xiii. It was decided that the following agenda items proposed by the Dairy Extension division is approved:

- To continue the extension activities in the adopted villages of Dairy Extension division
- To continue the Dairy Education at Farmers' Door in the adopted villages
- To continue the Farmers' farm School programme in the villages of the Karnal districts
- To continue the Swachh Bharat Abhiyan in allotted areas.

The meeting ended with a vote of thanks to the Chair and other participants especially outside members.

(Gopal Sankhala)

Head, Dairy Extension Division &
Member Secretary, Extension Council

PROCEEDINGS OF THE 49th MEETING OF THE EXTENSION COUNCIL, ICAR-NDRI, KARNAL HELD ON AUGUST 30, 2024 AT 11.00 AM

The 49th meeting of the Extension Council, ICAR-NDRI, Karnal was held on August 30, 2024 at 11.00 AM at the Pinaki Hall of the institute. The following members were present:

1.	Dr. Dheer Singh, Director, ICAR-NDRI, Karnal	:	Chairman
2.	Dr. R. K. ADG (Agril Extn.), ICAR, New Delhi rep of DDG (Agril Extension), ICAR, New Delhi	:	Member
3.	Dr. Sanjay Antil, Deputy Director rep of Director General, Dept of Animal Husbandry & Dairying (Govt of Haryana) Pashudhan Bhawan, Sce-2, Panchkula	:	Member
4.	Dr. SS Lathwal, PS, LPM Divn., ICAR-NDRI, Karnal	:	Member
5.	Dr. Vivek Sharma, Head, Dairy Chemistry, ICAR-NDRI, Karnal	:	Member
6.	Dr. S. Mondal, Head, DESM, ICAR-NDRI, Karnal	:	Member
7.	Dr. A. K. Dang, Head, Animal Physiology, ICAR-NDRI, Karnal	:	Member
8.	Dr. Pawan Singh, Head, LPM, PS ICAR-NDRI, Karnal	:	Member
9.	Dr. Suneel K Onteru, Head, ABC, ICAR-NDRI, Karnal	:	Member
10.	Dr. D. N. Yadav, Head, Dairy Technology, ICAR-NDRI, Karnal	:	Member
11.	Dr. S. Banik, Head, ERS of ICAR-NDRI, Kalyani	:	Member
12.	Dr. Gopal Sankhala, Head, Dairy Extension Division, ICAR-NDRI, Karnal	:	Member Secretary

Special invitees

1. Dr. Ram Chand, Former ADG (Agril. Extn), ICAR, New Delhi
2. Shri B. D. Phansal, JD (Admin) & Sr. Registrar, ICAR-NDRI, Karnal
3. Shri Naresh Arora, Comptroller, ICAR-NDRI, Karnal
4. Dr. Arindam Dhali, Head, SRS of ICAR-NDRI, Bengaluru
5. Dr. Kulvir Singh, SMS, Head, KVK, ICAR-NDRI, Karnal
6. Shri Vikash Choudhary, Progressive farmer
7. Shri Ram Singh, Progressive farmer
8. Smt. Krishna Kamboj, Progressive farmer
9. Smt. Deepa Kamboj, Progressive farmer
10. Dr. Nishant Kumar, Sr. Scientist & I/C ABRC, ICAR-NDRI, Karnal
11. Dr. Anurag Saxena, PS & I/C, FMRC, ICAR-NDRI, Karnal
12. Dr. B. S. Meena, PS, Dairy Extension Division, ICAR-NDRI, Karnal
13. Dr. Sanjit Maiti, Sr. Sci, Dairy Extension Division, ICAR-NDRI, Karnal

14. Dr. Sanchita Garai, Sr. Sci, Dairy Extension Division, ICAR-NDRI, Karnal
15. Dr. Asif Mohammad, Sr. Scientist, ERS of ICAR-NDRI, Karnal
16. Dr. Raj Kumar, Sr. Scientist, KVK, ICAR-NDRI, Karnal

Due to preoccupied and under compulsion of circumstances, Agriculture Commissioner, Govt of India, Director (FI), Directorate of Extn, New Delhi; JD (Academic), ICAR-NDRI, Karnal; JD (Research), ICAR-NDRI, Karnal; Dr. J.K. Kaushik, Head, ABTC and Dr. A. K. Mishra, PS, LPM, ICAR-NDRI, Karnal could not attend the meeting.

At the outset, Dr. Dhree Singh, Director, ICAR-NDRI, Karnal & Chairman of the Extension Council welcomed all the members especially Dr. Ram Chand, Former ADG, ICAR-New Delhi, Dr. R. K. Singh, ADG(Agril Extension), ICAR-New Delhi and others who attended the meeting. In his welcome address, the Chairman highlighted the need and importance of the organized extension activities to promote animal husbandry and dairy sector a profitable one and to disseminate the latest technologies to the resource poor dairy farmers across the country.

With the permission of the Chairman, Dr. Gopal Sankhala, Member Secretary, Extension Council of Head, Dairy Extension Division, ICAR-NDRI, Karnal to put up the agenda items one by one.

49.1 Confirmation of the proceedings of the 48th Meeting of Extension Council held on 08.02.2023

The member secretary informed that the proceedings of the 48th Extension Council were circulated to all the members and no comments have been received from any members of the Extension Council. Since, no comments have been received from any member, the same was taken as confirmed.

49.2 Point-wise discussion on the action taken report and progress report presented during the meeting. The following points emerged out of the discussion:

- i. Extension Council Meeting may be organized six monthly.
(Action: Head, Dairy Extension)
- ii. Progressive dairy farmers should be invited as the key resource person for the training programme designed for the smallholder dairy farmers.
(Action: Head, Dairy Extension; Head KVK, Karnal and ERS)
- iii. Feedback collected/received during different field extension activities should annexed in the next extension council meeting.
(Action: Head, Dairy Extension; Head KVK, Karnal and ERS)

- iv. List of the students involved in the field extension activities may added as an annexure in the next extension council meeting.

(Action: Head, Dairy Extension)

- v. Database of the progressive dairy farmers may be prepared.

- vi. (Action: Head, Dairy Extension; Head KVK, Karnal and ERS)

- vii. NDRI may initiate to develop a portal of the good dairy animal for the dairy farmers.

(Action: Head LPM and I/C Computer Centre)

- viii. School children should be invited in the dairy mela to expand its horizon.

(Action: Head, Dairy Extension Division)

- ix. Database of 10 progressive farmers of each KVK may be prepared who will be considered as flag bearers of that KVK.

(Action: I/C KVK, Karnal and ERS)

- x. QR code of the extension literature may be displayed in the ATIC as well as in the institute website.

(Action: I/C ATIC and I/C Computer Centre)

- xi. Success stories under the SCSP/TSP programme, particularly multiplication of the goat in the adopted village should be documented.

(Action: Head, ERS and Nodal Officer, SCSP/TSP)

- xii. A livestock fair on small ruminants may be organized in collaboration with the State Animal Husbandry Dept.

(Action: Head, Dairy Extension Division)

- xiii. Women dairy should be facilitated to from common interest groups to start their economic venture.

(Action: Head, Dairy Extension Division; I/C KVK, Karnal and ERS)

- xiv. It was decided by the house that the fresh agenda proposed by the ERS, Kalyani and SRS, Bangalore is approved in the Extension Council.

(Action: Head, SRS and ERS)

It was decided that the following agenda items proposed by the Dairy Extension division is approved:

- To continue the extension activities in the adopted villages of Dairy Extension division

- To continue the Dairy Education at Farmers' Door in the adopted villages
- To continue the Farmers' farm School programme in the villages of the Karnal districts
- To continue the Swachh Bharat Abhiyan in allotted areas.

The meeting ended with a vote of thanks by the Member Secretary to the Chair and other participants especially outside members.

(K. S. Kadian)

Head, Dairy Extension Division &
Member Secretary, Extension Council

6.6.4.2. Directorate of Extension Education:

The Institute has a well-structured approach and strategy for the transfusion of science and technology for enhancing milk production in the country. The Dairy Extension Division, along with Krishi Vigyan Kendra/Dairy Training Centre and Agricultural Technology Information Centre (ATIC) have been working in unison to enable two-way communication between scientists and end-users, so that result oriented R&D programmes could be undertaken. Through these programmes, efforts are made to bring various stake holder institutions at the doorsteps of the farmer to encourage the adoption of scientific practices of milk production. Dairy Melas, Field Days, Calf Rallies and Women in Agriculture Days are organized for inculcating entrepreneurship among the farmers, so as to promote integrated approach for fostering rural development.

The main emphasis of "Extension Education/Services" at this institute has always been:

- To provide timely information, this is farm worthy, socially acceptable and ecologically sustainable in different areas of dairying.
- To provide feedback on adoption of new research findings in different farming systems and to workout feasible and viable strategies
- To devise mechanisms for improving the quality and effectiveness of extension education and services.

The major approaches of Institute extension programmes have been focused mostly on frontline extension activities like testing and introduction of new technologies on the farmers' fields; processing of technical information; and technology-transfer in the area of dairy production, dairy processing and dairy management; training of extension personnel of the State and other development departments of the State Governments, NGOs and others. Due emphasis is also given to establish enduring linkages between research and extension activities and develop innovative extension

methodologies and strategies. The extension activities of the Institute are implemented through the following extension machineries:

- Division of Dairy Extension
- Krishi Vigyan Kendra/Dairy Training Centre
- Krishi Vigyan Kendra-II, Nadia, West Bengal
- Agricultural Technology Information Centre (ATIC)
- Extension Section of Southern Regional Station
- Extension Section of Eastern Regional Station
- Service center at Lalukheri, UP
- Service center at Muzaffarnagar, UP
- Service center at Piprakothi, Motihari, Bihar
- Service center at Goras, Madhya Pradesh

Besides these units, Extension Education and Transfer of Technology Programmes are also implemented through the regional stations of the Institute, viz. Southern Regional Station (SRS) located at Bangalore (Karnataka), and Eastern Regional Station (ERS) located at Kalyani (West Bengal).

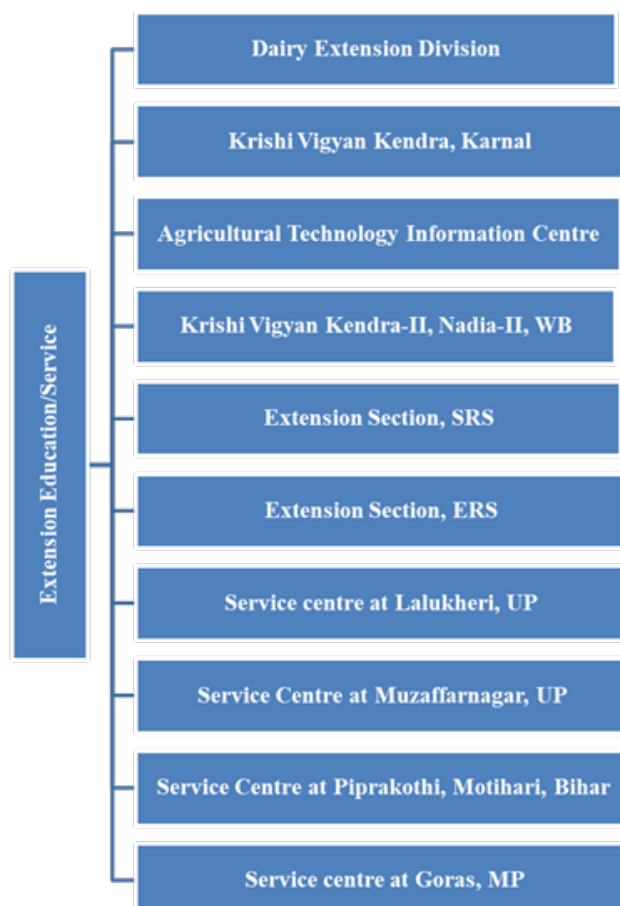


Fig. 4: Extension Education/Services providing section of ICAR-NDRI

Division of Dairy Extension

The Division of Dairy Extension established in 1961 is involved in the dissemination of the technologies developed by the subject matter divisions of the Institute through subject matters specialists (SMS), All India Animal Husbandry officers workshop (AIAHOW) Workshops, National Dairy Melas, publication of Extension literature on transferable technologies, Dairy Samachar published quarterly in Hindi for farmers and field extension activities like campaign, animal health camp, consultation service etc., for the end users. Various multi-media and social group have also been developed on transferable technologies.

Objectives:

- To provide opportunities for students & extension scientists to carry out research in different farming situations.
- To facilitate the scientists to test the feasibility of various dairy innovations evolved by NDRI.
- To make the farmers aware, and change their behaviour to adopt the dairy production and processing technologies.
- To transfer the improved dairy farming technologies developed by NDRI among the farming communities.

A. Training

Need based special training programmes are designed and organized by the division for the faculty members/SMS(s) of the SAU(s)/ICAR Institutes through short courses sponsored by Directorate of Extension, Ministry of Agriculture, Government of India, New Delhi in the specific areas related to dairying. In addition specific training programmes at village level are also organized benefiting large number of women and youth on various aspects of dairy production and processing.

B. Extension services

The farmers, in general, and dairy farmers, in particular, are educated on scientific methods of breeding, feeding, management, fodder production and health care of dairy animals. Many methods of interaction, viz. Group discussion, printed literature and lectures on specific topics or issues are used to enhance the knowledge and skill level of the farmers. The main thrust remains upon the change of farmers' attitude towards improved dairy innovations and practices by using persuasive approaches.

The Division, through Field/Farm Technician (FFT) Laboratory, is carrying out extension works in the adopted villages around Karnal district. The major focus of the FFT Laboratory includes:

- To facilitate the students of extension education to acquire skill in organizing field extension activities.
- To enable scientists to test the field applicability of their innovations.
- To improve the knowledge and skill of dairy farmers, on scientific dairy practices so as to enable them to adopt the same To obtain feedback regarding transferable dairy technologies

The laboratory is operated through Stockman and Lay Inseminator Centres spread over villages. The Stockman and Lay Inseminators are grass-root level workers through whom a live contact between scientists and farmers is established. The different extension activities are as follows:

(a) Dairy Development support & services

Under Dairy Development programmes, emphasis is laid upon:

- Organizing fertility and veterinary aid campaigns
- Providing A.I. facility with frozen semen in cows and buffaloes
- Providing necessary treatment to the animals
- Providing vaccination against contagious diseases
- Educating farmers on scientific methods of breeding, feeding, management and health care of animals

1. **Awareness campaign & Animal health camp:** The Institute provides a base for extension work in the adopted villages around Karnal and keeps the records of all extension activities of the institute. In order to upgrade the existing breeds of dairy animals, cross-breeding was continued in cows and selective breeding in local buffaloes through A.I. using high pedigree bulls. To reduce age at maturity and to minimize inter-calving interval, infertility and veterinary aid campaigns were conducted in adopted villages.



2. **Farmers-Scientist Interaction:** The Institute provides a base for extension work in the adopted villages around Karnal and keeps the records of all extension activities of the institute. The Farmers-Scientist Meet aims to showcase the latest technologies and address new opportunities for farmers and dairy entrepreneurs. It will encompass various activities like exhibition of new



technologies, products, tools and machinery useful for dairy processing, milk production, semen/embryo technology, feed processing, animal healthcare, and agricultural activities including horticulture, fisheries and post-harvest technologies.

3. **Dairy Education at Farmers' Door:** The innovative Extension approach 'Dairy Education at Farmers Door' was initiated in 2009 by NDRI to educate the farmers at their door step. In which a team of NDRI scientists consisting of specialists from production, processing and management groups visited nearby selected villages on every second Saturday. The Extension Scientist in the team acted as coordinator and identified the village as per functional linkages. This programme facilitated the effective dissemination of dairy production and processing technologies among farming community at their door, and the scientist could understand the practices adopted by farmers and also the constraints faced by them.



4. **Empowerment of Women and Main streaming of Gender Issues:** Women empowerment training and campaigns were organized with the objective to create awareness in the field of dairying and home science and also impart skill in these areas so that farm women could generate more income from dairying and maintain healthy atmosphere in their respective family. The programme were organized under women empowerment lab Women empowerment training and campaigns are being continuously organized with the objective to create awareness in the field of dairying and home science and also impart skill in these areas so that farm women could generate more income from dairying and maintain healthy atmosphere in their respective family.



5. **Farmers Farm School:** National Dairy Research Institute (NDRI) has started an ambitious programme wherein farmers of Haryana State are being provided formal Education in the field of Dairying, Horticulture and Agriculture through Farmers Farm School. In this School, farmers would



interact with the scientists of the Research Institutes and there is class room teaching as well as practical classes. There is provision of enrolling 25 farmers in one batch on first come first basis and the course duration is for one year. The main aim of Farmers Farm School is to provide all important and latest information related to Dairying, Horticulture, crop farming, etc. to farmers and to extend the latest research done by scientists involving lab to land programme. The video coverage of Farmers Farm School of NDRI was telecast by many channel (Aajtak, DD Kisan, Haryana News, E-tv, etc.). Similarly, many print media (English and Hindi newspaper, magazine, etc.) highlighted the unique school of farmers.

6. **SMS Message Portal:** A web enable NDRI Messaging service portal were developed with data base facilities. NDRI Messaging portal was launched on 7th October 2014 and every week 2 SMS are being send to the respondents. So far we received very encouraging feedback from the SMS recipients. A view of NDRI messaging



7. **Farmers FIRST:** The project is implemented in Karnal district of Haryana in a cluster of seven villages namely: Kamalpur Roran, Garhi Gujran. Nagala Roran, Churni, Samora, Chandsamad and Dabkoli Khurd having more than 1000 farm families. A glimpse of farmers FIRST programme is presented in the following table.



Table 96: Total No. of Interventions and their coverage under FFP, NDRI, Karnal from 2021-26

Year	No. of Interventions	Area Covered	No. of Animals	Total No. of House Holds Covered
2021-22	23	385.6	3355	3237
2022-23	20	254.82	4419	4491
2023-24	18	254.82	4124	4226
2024-25	20	297.67	4440	3723
2025-26	27	115.58	2580	1498
Total		1308.49	18918	20175

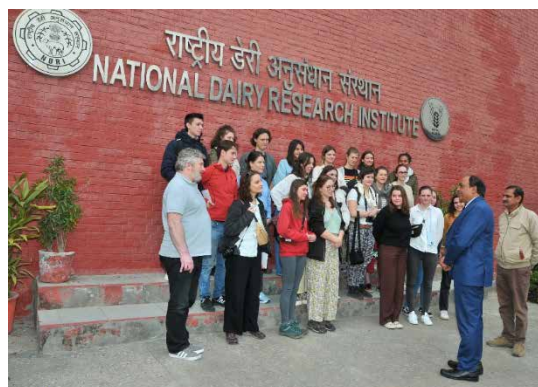
8. **National Dairy Mela:** The dairy mela is being organized on every year at Institute level. The various events in the Mela included breed beauty competition, milk yield competition, milking efficiency competition for women, etc., Exhibitions by NDRI and other ICAR Institutes as well as private organizations were organised. Kisan sangosthi cum question answer session was organized in which experts from NDRI provided solutions to the problems of dairy farmers.



9. **Mera Gaon Mera Gaurav:** A new Extension Education Programme “Mera Gaon Mera Gaurav” is initiated to strengthen the effective dissemination of agricultural information and government among farming community. Under this programme, a team of NDRI scientists including subject matter specialists from production, processing and management group organize the visit at respective villages. Scientists also obtain the feedback from the participating farmers.



10. **Educational Tour & Visit:** A large number of visitors (students & Faculty) of various colleges/Institutions/Universities have visited the institute under Education visit and Study Tour programme. The groups have been sensitized about the different research, teaching and extension achievements and facilities available in the Institute.



11. **Dairy Samachar:** Dairy Samachar, Quarterly published in Hindi in a magazine form. Popular/technical article, latest technical know-how in the field of dairy farming and dairy processing were published in Hindi for the updating the farmers knowledge. Three thousand copies of Dairy Samachar were sent/distributed to the farmers, as a regular practice to dairy owners and other dairy entrepreneurs in different states throughout the country.



12. Dairy Calendar: Dairy calendar is regularly published in Hindi for educating the farmers in the field of animal husbandry and dairying. The calendar contains month wise important information on scientific breeding, feeding health care and management practices of dairy animals which help/remind the farmers in his day to day activities.

13. Advisory Services: Scientist are providing the regular advisory services through postal, e-mail, phone to individual farmers / NGO's / relevant departments all over the country in response to their particular / general queries regarding latest technologies of the institute and modern dairy farming practices.

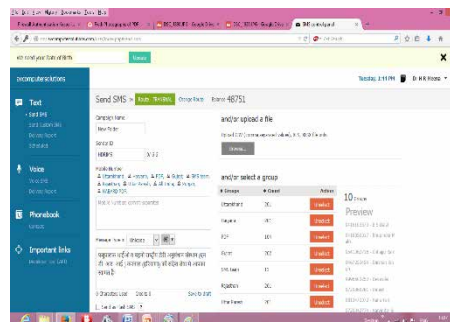


Table 97: Extension Activities carried out by the Dairy Extension division (2021-22 to 2025-26) (Main Campus at Karnal)

Extension programme/ Activities	No. of beneficiaries (Farmers)					
	2021-22	2022-23	2023-24	2024-25	2025-26	Pooled
Farmers-Scientist Interaction	750	950	600	860	898	4058
Dairy Education at Farmers' Door	6861	-	605	-	-	7466
Women Empowerment	55	20	68	95	149	387
Farmers Farm School	20	45	40	20	32	157
SMS Message Portal	-	-	360	-	28110	28470
Training	1150	68	297	78	485	2078
Farmers FIRST	1250	985	732	1100	2382	6449
National Dairy Mela	-	-	40000	3000	43000	86000
Mera Gaon Mera Gaurav	-	13900	605	-	-	14505
Educational Visit and Study Tour	7795	8621	23976	24305	23642	88339
Dairy Samachar	6000	3000	-	-	-	9000
VKSA	-	-	-	-	323716	323716

Table 98: Training Activities of Krishi Vigyan Kendra, Karnal during 2021-22 To 2025-26

SN	Discipline	2020-21		2021-22		2022-23		2023-24		2024-25	
		T*	P**	T*	P**	T*	P**	T*	P**	T*	P**
1	Dairy Farming	08	1470	11	234	17	373	18	607	21	967
2	Dairy Processing	04	182	05	120	07	122	07	120	09	270

3	Goat Farming	05	150	06	160	05	108	07	198	06	105
4	Fisheries	06	186	05	145	07	192	06	206	06	115
5	Field crop/ CRM /FOM	08	341	10	613	14	615	18	695	22	845
6	Home sciences	07	228	06	183	06	281	08	227	08	260
7	Bee Keeping	05	98	04	108	03	98	05	142	05	143
8	Vermicompost	05	34	04	62	04	59	05	115	13	210
9	Horticulture	04	95	05	94	05	102	03	53	03	85
10	Natural Farming	06	160	08	172	08	875	07	155	10	678
11	RAWE-Students	01	26	02	62	01	28	01	32	00	00
	Total	59	2970	66	1953	77	2853	85	2550	103	3678

*No of trainings;**Participants

Table 99: Summary of total Trainings: 2021-22 to 2025-26

Year	No of trainings	Participants
2021-22	59	2970
2022-23	66	1953
2023-24	77	2853
2024-25	85	2550
2025-26	103	3678
Total	390	14004

Krishi Vigyan Kendra, ICAR-NDRI, Karnal: Established in July 1976 under administrative control of National Dairy Research Institute Karnal, the Krishi Vigyan Kendra, Karnal has been functioning with the aim of overall development of the district in agriculture and allied sectors. The Kendra has linkages with all the line departments in the district in addition to contacts with most of the Agricultural Universities and all the ICAR Institutes in the country. These linkages helps the Kendra updated on the recent technologies in agricultural and allied sectors. Highly qualified professionals in each fields of agriculture working with Kendra facilitate to modify these technologies suiting to local requirements by adopting various scientific methodologies. Thus, locally viable technology takes birth. The impact of our technology dissemination activities is visible in the technology adoption rate by farmers in operational area in Karnal district.

Mahila Kisan Divas: The women were educated to impress upon male members of the families from farming community not to burn paddy straw and mix it in the fields using machines available in the market for the purpose to improve soil health. It was informed to women that machines available with KVK for In-situ management of paddy straw may be made available to farmers as and when required.

World Soil Health Day: To create awareness on the importance of soil health in crop production, KVK organized “Soil Health Day” on every year on 05 December,

in which more than 79 farmers from different villages of Karnal district participated. In the programme the farmers were educated about importance of assessing the soil health and linking it with productivity. The farmers who had done excellent work in conservation of soil health were honoured in the function

Krishi Vigyan Kendra of ERS of ICAR-NDRI, Kalyani, West Bengal: Krishi Vigyan Kendra (KVK), Nadia-II established on 19th January 2017 under the administrative control of the National Dairy Research Institute, Karnal, KVK, Nadia has been working towards the comprehensive development of the district's agriculture and allied sectors. The Kendra maintains strong connections with various district-level departments, agricultural universities, and ICAR institutes across the country. These collaborations keep the Kendra informed about the latest advancements in agriculture and related fields. A team of highly qualified professionals at the Kendra adapts these innovations to suit local conditions through scientific approaches, resulting in the creation of region-specific, practical technologies. The positive effects of these efforts are reflected in the increased adoption of improved agricultural technologies by farmers within the operational areas of Nadia district.

Jal Shakti Abhiyan: A series of Jal Shakti Abhiyan programmes were conducted by ICAR-KVK, Nadia-II to promote water conservation, rainwater harvesting, and sustainable water resource management among farmers and rural communities. The programmes included awareness campaigns, field demonstrations, training sessions, and community participation activities aimed at efficient water use, groundwater recharge, and adoption of climate-resilient agricultural practices.

Pradhan Mantri Kisan Samman Nidhi: Since 2022, live telecasts of PM-Kisan Samman Nidhi programmes have been conducted regularly by ICAR-KVK, Nadia-II to facilitate farmers' participation and awareness. Through these telecasts, farmers were able to witness programme proceedings, policy announcements, and benefit transfers under the Pradhan Mantri Kisan Samman Nidhi scheme, thereby enhancing transparency and outreach at the grassroots level.

Mahila Kisan Diwas: Programmes on Mahila Kisan Diwas have been conducted every year on 15th October by ICAR-KVK, Nadia Additional to recognize and honour the contributions of women farmers in the district. The programmes emphasize capacity building, skill development, dissemination of improved agricultural technologies, and awareness on income-generating activities, thereby strengthening the role of farm women in sustainable agriculture and rural livelihoods.

World Soil Health Day: On the occasion of World Soil Health Day, observed every year on 5th December, ICAR-KVK, Nadia Additional organizes "Soil Health Day" to create awareness about the importance of soil health in crop production. More than 100 farmers from different villages of Nadia district participate in the programme every

year. Farmers are educated about soil testing, balanced nutrient management, and the linkage between soil health and crop productivity. Soil Health Cards are distributed, and farmers are encouraged to adopt sustainable soil management technologies for maintaining long-term soil fertility and agricultural sustainability.

Table 100: Consolidated table of Trainings/Orientation programme organized by ERS of ICAR-NDRI

Particulars	No. of farmers					
	2021-22	2022-23	2023-24	2024-25	2025-26	Pooled
On Farm Testing	30	30	45	60	-	165
Front Line Demonstration	64	315	168	532	1607	2686
Trainings	20	123	230	167	364	904
Orientation programme cum exposure visits	-	330	671	464	532	1997
Veterinary health camps organized	329	464	208	3126	801	4928
Scientists farmers interaction session	1742	1221	1459	4274	4649	13345

Table 101: Extension Activities carried out by the KVK of ERS of ICAR-NDRI

Particulars	No. of farmers					
	2021-22	2022-23	2023-24	2024-25	2025-26	Pooled
Trainings	1911	1758	1897	3508	3222	12296
Front Line demonstration	110	505	875	875	544	2909
Technology assessment	32	40	152	152	140	516
Extension programme	922	3448	3414	5183	3211	16178
Mobile Advisory Services						

Table 102: Extension Advisory Services provided by SRS-Bengaluru:

Activity Profile	2021-22	2022-23	2023-24	2024-25	2025-26
Advisory Services Provided	432	188	266	578	160
Visits Conducted (No. of Visitors)	103	1393	2087	1107	1972
Training Programmes organized (in Nos.)	20	1	19	18	15
No. of Beneficiaries - Farmers/Field Extension Officers/Students	725	50	Farmers-441 Students-23	455	917
Participation in Exhibitions	2	2	4	4	3
Extension Publications	5	3	4	4	2
Dairy Education at Farmer's Door Programme	12	12	12	12	12

FARMER FIRST Programme (No. of beneficiaries) (2018-25)	50	167	170	106	100
SC SP Project Activities (No. of beneficiaries)	56	84	84	911	-
On-farm Outreach Programme	625	925	460	70	-
Sensitization Programme on International Year of Millet - 2023	1 SHG - 50 Farm Women 145 Students				-
RKVY Project (2021-26)	550 Beneficiaries				12 days on campus training for 50 farmers
Tribal Sub-Plan (2023-24)	120 Beneficiaries				-

6.6.4.3. Extension Planning and Technological Impact:

Krishi Vigyan Kendra is the single window of agricultural technology information with production of quality technology products/inputs (seeds, planting materials, bio-agents, fingerlings etc.) to make them available to farmers. In addition Krishi Vigyan Kendra Karnal also identifies and document selected farmer-led innovations with on-going schemes and programmes within the following mandates of KVK:

1. Technology assessment and demonstration for wider application in operational area.
2. Capacity development Programmes for stakeholders (Practicing farmers, farm women, extension functionaries of line departments and rural youth/entrepreneurs).
3. Technology product and inputs production and promotion.

Krishi Vigyan Kendra in the operational area of Karnal covers the district being the focus on/to in following thrust areas:

1. Capacity building of farmers in Dairy Farming & Milk processing, Crop production, Post-harvest management, Fisheries, Bee-keeping etc.
2. Vocational training to the farmers & rural youth for self-employment.
3. Out scaling of Natural farming through capacity building & awareness.
4. Out scaling of CRM technology for promotion of in-situ crop residue management
5. Promotion of Dairy based Integrated Farming System (IFS) model.
6. On-farm testing to assess the location specificity of agricultural technologies
7. Capacity building of extension personnel to update their knowledge and skills.

8. Knowledge and Resource Centre for farmers in the operational area.
9. Demonstration of proven technology for establishing production potential & generating data.
10. Farm advisories through *GRAMIN KRISHI MAUSAM SEWA* under District Agro-Met Unit

KVK provides strong training support to disseminate need-based and skill-oriented technology for various target groups for achieving a production breakthrough in Dairying, Agriculture and allied subjects. Need-based short and long-term (on and off-campus) trainings on various disciplines, viz. Dairy Production, Dairy Processing, Agriculture, Horticulture, Vermi-culture, Bee-keeping, Fish Farming and Home Science are being organized for farmers, farm-women, rural youth, in-service personnel and rural leaders. The need based trainings have been provided to for need based training and skill development for farmers, farm women, rural youth, students, FPOs and SHGs to attempt towards entrepreneurship development for achieving self-employment, accordingly they are being adequately incubated in various skills thereby providing the opportunity to set up their own business enterprises the technical personnel from the dairy industry on various aspects of milk processing, milk products and quality assurance.

Training Activities Details: 2021-22 To 2025-26

SN	Discipline	2020-21		2021-22		2022-23		2023-24		2024-25	
		T*	P**	T*	P**	T*	P**	T*	P**	T*	P**
1	Dairy Farming	08	1470	11	234	17	373	18	607	21	967
2	Dairy Processing	04	182	05	120	07	122	07	120	09	270
3	Goat Farming	05	150	06	160	05	108	07	198	06	105
4	Fisheries	06	186	05	145	07	192	06	206	06	115
5	Field crop/ CRM / FOM	08	341	10	613	14	615	18	695	22	845
6	Home sciences	07	228	06	183	06	281	08	227	08	260
7	Bee Keeping	05	98	04	108	03	98	05	142	05	143
8	Vermicompost	05	34	04	62	04	59	05	115	13	210
9	Horticulture	04	95	05	94	05	102	03	53	03	85
10	Natural Farming	06	160	08	172	08	875	07	155	10	678
11	RAWE-Students	01	26	02	62	01	28	01	32	00	00
	Total	59	2970	66	1953	77	2853	85	2550	103	3678

*No of trainings; **Participants

Summary of total Trainings: 2021-22 to 2025-26

Year	T*	P**
2021-22	59	2970
2022-23	66	1953
2023-24	77	2853
2024-25	85	2550
2025-26	103	3678
Total	390	14004

The impact of technology assessment and demonstration of NDRI-KVK interventions demonstrates significant improvements in farm productivity and socio-economic conditions. The impact study has evaluated Cluster Front Line Demonstration (CFLD) in pulses and oilseeds, Crop Residue Management (CRM), and training in animal husbandry and dairying. Results indicate higher yields in intervention farms, with wheat and mustard yields are increasing by 12.02% and 10.50%, respectively. Dairy productivity also improved, with an 8.56% rise in milk production per animal. These improvements suggest better resource management and efficiency. The technical efficiency gains underscore the success of interventions in closing yield gaps. Further, KVK has provided customized resource material as a mean of information, education and communication (IEC) for training, skill development and capacity building stakeholders to farmers, farm women, rural youth, students, FPOs and SHGs.

The execution of Central Sector Scheme in partnership mode with farmers on “Promotion of Agricultural Mechanization for In-situ Management of Crop Residue, Cluster Front Line Demonstrations (CFLDs) on Oilseed and Pulses’ Natural Farming and Technology demonstrations on Liquid Fermented Organic Manure (LFOM) has established the production potential of livestock production management and rop production at farmers field.

SOCIO-ECONOMIC IMPACT

Table 103: A glimpse of socio-economic of the technological interventions of extension services of ICAR-NDRI

S. No.	Programme/ Study	Study Area	Major Interventions	Key Outcomes
1	Reproductive and Dairy Performance Improvement	Haryana	Improved feeding strategies and reproductive management practices	Reduction in service period and calving interval; enhanced conception efficiency

2	Farmer FIRST Programme (Paddy–Wheat–Dairy System)	Haryana	Crop demonstrations, fodder production, mastitis detection and control	Increased crop productivity; improved fodder availability; reduced mastitis incidence
3	Livestock-Based Livelihood Enhancement (SC Farmers)	Kolar, Karnataka	Balanced feeding, fodder cultivation, backyard poultry, animal health services	Technology adoption increased (up to 53%); milk yield improved (192 to 230 L); income increased (~ 19%)
4	Farmer FIRST Programme (Horticulture-Based System)	Karnataka	Capacity building, veterinary health camps, improved dairy and nutrition practices	Improved animal health status; enhanced farmer awareness and skills
5	Tribal Livestock Development Programme	Eastern India	Distribution of poultry (chicks/ducklings), training, animal health interventions	Strengthened livelihood security; increased livestock productivity
6	Crop Demonstration in Tribal Areas	Eastern India	Introduction of improved crop varieties and fodder crops	Increased crop yield; improved benefit–cost ratio (up to 2.5)
7	SCSP Livelihood Improvement Programme	West Bengal	Distribution of livestock inputs, training, and veterinary support	Improved technical knowledge; enhanced livestock productivity
8	Cation-Based Mineral Mixture Supplementation	Karnal, Haryana	Dietary supplementation with cationic mineral mixture (C-bMS)	Milk yield increased (~ 13%); profit increased (~ 28.65%); subclinical acidosis eliminated
9	Livelihood Enhancement in Dry Regions (SC Farmers)	Rajasthan	Fodder production, training, and awareness programmes	Improved productivity; higher economic returns (B:C ratio up to 3.04)
10	Integrated Livestock Intervention	Karnataka	Dairy and poultry integration with improved management practices	Milk yield increased (10–20%); improved technology adoption
11	Tribal Sub-Plan (TSP) Livestock Intervention	Eastern India	Livestock distribution, feed support, and capacity building	Improved income levels; favourable benefit–cost ratio (~ 1.6–1.9)

12	Use of High Pedigree Bull Semen	Haryana	Artificial insemination with genetically superior semen	Milk yield increased (~12.31%); conception rate improved (~5.5%)
13	Anionic Mineral Mixture Supplementation	Haryana	Pre-partum feeding of anionic mineral mixture (AMM)	Incidence of milk fever reduced (21% to 2%); profit increased (~35%)
14	Farmer FIRST in Salt-Affected Agroecosystem	Haryana	Nutritional interventions and heat stress management	Increased milk yield (7–10%); improved reproductive and health parameters
15	RKVY Dairy Development Project	Karnataka	Training, infrastructure development, and fodder support	Enhanced dairy skills; strengthened entrepreneurship
16	MOOCs on Dairy Farming	Pan India	Online capacity-building courses on scientific dairy farming	Large-scale knowledge dissemination; enrolment of 900+ participants; revenue generation

1. Livelihood augmentation of scheduled caste households in arid region

of Rajasthan: Rajasthan comprises 61% of India's arid zone, where extreme weather and natural disasters worsen challenges for Scheduled Caste farmers. ICAR - National Dairy Research Institute introduced crop and dairy interventions to improve Scheduled Caste household's livelihoods through economic stability, poverty alleviation, social empowerment, and sustainable development. A research study assessed intervention effectiveness among 240 respondents from Hanumangarh and Bikaner districts. Findings showed advisory services were most beneficial, with 75% complete satisfaction. Propensity Score Matching revealed significant productivity improvements among beneficiaries, with highest gains in wheat and 19.81% increase in milk production. Beneficiaries experienced 23.85% rise in gross annual income. AHP analysis identified breeding as biggest dairy constraint, especially heat detection, while marketing was lesser concern. In crop production, unpredictable rainfall and high irrigation costs were primary challenges. The study highlights NDRI's significant impact and emphasizes need for continued advisory support, breeding assistance, and irrigation investment for marginalized communities.

2. Impact of temperature humidity index-based climate services for Murrah buffaloes of India on operational decision-making and economic outcome of the farm:

Climate change affects productive and reproductive functions of Murrah buffaloes, India's major milch breed. Weekly Temperature Humidity Index-based climate services were prepared and disseminated to farmers in experimental villages of Haryana through WhatsApp, Text SMS, and Mobile

Application. Difference-in-Difference quasi-experimental design studied impact on operational decision-making and economic outcomes. Climate services positively affected farmer adoption of oil cakes, minerals, and feed additives in animal diet. Treatment effects were significant on oilcake quantity (0.39, 0.45, 0.51 kg/animal/day), concentrates during summer (0.48, 0.56, 0.59 kg/animal/day) and winter (0.35, 0.40, 0.42 kg/animal/day), and mineral mixture (9.47, 12.34, 13.08 gm/animal/day) across Text SMS, WhatsApp, and MobileApp groups respectively. Treatment effect on summer milk yield was significant (0.38, 0.44, 0.50 L/animal) respectively. Overall benefit-to-cost ratio was 1.8. Climate services were proved to be an effective adaptive mechanism for helping vulnerable dairy farmers adapt to current and future climate challenges.

3. **Capacity building of resource poor farmers in paddy-wheat cum dairy production system through Farmer FIRST programme under irrigated agro-eco region of Haryana:** The Farmer FIRST Programme achieved notable progress across agriculture, livestock management, horticulture, enterprise development, and capacity building. In crop production, integrated pest management in paddy yielded 54-55 q/ha, while nutrient and weed management in wheat achieved 61-62 q/ha. High-yielding varieties PB-1885, PB 1692, DBW-370, DBW-371, DBW-372 demonstrated excellent productivity. Mustard varieties Radhika and PM-32 supported diversification with yields of 13.88 and 14.37 q/ha respectively. In livestock management, 150 cattle and buffaloes received infertility treatments, while 2,027 dairy animals received parasite control, increasing daily milk yield by 200-300 ml per animal. Nutritional supplements led to 14% milk yield increase and 50% conception rate. Saliva Scope technology achieved 66% farmer satisfaction and 94% projected adoption. Horticulture included planting Mango, Lemon, and Guava with 42.65%-61.45% survival rates. VIREN DAIRY processed 450 litres milk daily, generating 95,000 monthly. Integrated Farming System increased net returns by 21.49%. Capacity-building benefited 1,100+ farmers through training, extension programs, and animal health camps, strengthening farm productivity and sustainability.
4. **Empowering farmers through selective interventions in salt affected agro-ecosystems of Ghaghar plains:** The mineral mixture supplementation @50 60g/day/animal to buffaloes improved the conception rate and milk yield significantly ($P < 0.05$) over the farmers practice. Bypass fat supplementation 100g/day/animal, enhanced the milk yield by 12.34 % with a BC ratio of 5.87. Buffaloes supplemented with anionic mixture @100g/day/animal prior to 21 days of parturition, improved the disease resistance, no case of milk fever, 95 % of buffaloes expel the placenta in time and milk yield was 10.72 % higher compared to control. Tractor operated feed mill was introduced for preparation of concentrate mixture at the farmers

door and farmers are utilizing the service for getting prepared concentrate mixture of good quality for their dairy animals.

5. **Kisan Seva Kendra, ICAR-NDRI, Karnal, at Lalukheri (Muzaffarnagar, UP):** A service center of ICAR-NDRI at village Lalukheri, district Muzaffarnagar (UP) provides input services to farmers for genetic improvement of dairy animals for higher milk production and fertility. The center distributes quality seeds of different fodder and grain crops, mineral mixture, and frozen semen doses of buffalo, Sahiwal, crossbred, and Tharparkar breeds to farmers from surrounding villages. Kisan Gosthis are organized regularly at the center and surrounding villages, where farmers are educated about various animal husbandry practices including breed improvement importance, mineral mixture role in improving fertility, balanced ration preparation using domestic ingredients, and artificial insemination benefits using elite breeding bull semen from renowned institutions. Demand for fodder crop seeds, mineral mixture, and frozen semen doses have increased among farmers. Many good quality calves have been born through high genetic merit bull semen provided by Lalukheri center. Significant improvement in milk production and fertility of dairy animals had been observed in surrounding villages through center-provided inputs.
6. **Establishment of artificial insemination network for improving milk production potential of dairy animals in district Muzaffarnagar (UP):** The Ministry of Fisheries, Animal Husbandry and Dairying sanctioned Rs. 8.5 crores to NDRI to expand the present services of the centre in 100 villages of district Muzaffarnagar. Under the project, the farmers are being provided artificial insemination services at their door steps and kisan gosthies are being conducted in adopted villages to create awareness among the farmers for use of quality bull semen for AI in their dairy animals and use of scientific cow and buffalo rearing for maximum return. The frozen semen doses of Murrah buffalo bulls is being procured from the well-known stations having superior quality Murrah buffalo bulls in the country. The cow bull's semen doses are being procured from NDRI, Karnal for improving milk production potential of local dairy animals. In 2024, 15 Kisan gosthies were organized for making the farmers aware about the scientific rearing of dairy animals. During 2024 ~20000 artificial inseminations have been made in cows and buffaloes in 100 adopted villages under the project with ~ 44% conception rate.
7. **Impact assessment of selected interventions of NDRI-KVK:** The impact assessment of NDRI-KVK interventions demonstrated significant improvements in farm productivity and socio-economic conditions. The study evaluated Cluster Front Line Demonstration (CFLD) in pulses and oilseeds, Crop Residue

Management (CRM), and training in animal husbandry and dairying. Results indicated higher yields in intervention farms, with wheat and mustard yields higher by 12.02% and 10.50%, respectively. Dairy productivity also improved, with an 8.56% rise in milk production per animal. These improvements suggest better resource management and efficiency. The technical efficiency gains underscore the success of interventions in closing yield gaps. The socio-economic impact analysis reveals that CFLD increased agricultural income by 1,526.75/farm, while dairy training led to a 6,324.92/farm rise in dairy earnings. Increased income improved household food expenditure, benefiting rural livelihoods. However, adoption constraints include financial limitations, extension challenges, and social barriers. While financial and extension service constraints were significant, social constraints had a lesser impact. Addressing these challenges through targeted policies and enhanced support can ensure broader adoption and long-term sustainability, reinforcing the role of KVK interventions in rural development and agricultural progress.

8. **Improving adaptive capacity of women farmers of Haryana through climate resilient dairy farming practices:** Dairy farming has been an integral part of rural life and women play a very significant role in management of dairy animals. In India 75 million women are engaged in dairying as against 15 million men. Considering the above facts, the present study was undertaken in Hisar, Jind and Rohtak districts of Haryana. Three hundred and sixty women farmers were considered as respondents for the study. Difference-in-difference research design was used. Six selected climate resilient practices were intervened to the experimental group. Significant improvements (at 1% level) in adaptive capacity of farmers was observed in treatment clusters (Mineral mixture, buffer and combination groups) in which input was supplied along with necessary information on the practices and significant improvement (at 5% level) in adaptive capacity was also observed in treatment cluster where advisory services on ration and feeding management were provided. The counterfactual (control group) shows that adaptive capacity of farmers was decreasing over the time and highlights the need for adoption of climate resilient dairy farming practices.
9. **Promotion of dairy farming for upliftment of socio-economic status of tribal farmers through technological Interventions in NEH Region:** Dairy interventions were introduced in NEH region and it was found that there have been notable changes in various aspects. In terms of animal breed, there has been a shift from predominantly non-descript cattle in 2020 to a mix including Jersey, HF cross, and Sahiwal breeds in 2023. The artificial insemination increased from 27% to 36%. In the herd composition among tribal communities, there was a notable increase in Jersey cross (17.35%) and Graded (Sahiwal) (7.29%) cattle. There was

an increase in the quantity of green fodder from 3-4 kg in 2020 to 4-6 kg in 2023. The productive performance of cattle exhibited notable changes between 2020 and 2023. The peak yield of animals increased significantly from 3.64 ± 0.37 liters in 2020 to 5.47 ± 1.22 liters in 2023. The lactation length of animals showed a positive trend, growing from 155 ± 15 days in 2020 to 169 ± 17 days in 2023. Regarding reproductive performance, positive changes were observed from 2020 to 2023. The puberty age of animals decreased from 34 ± 6 months to 31 ± 7 months, and the age at first calving reduced from 41 ± 7 months to 39 ± 9 months. The service period of animals also saw improvement, decreasing from 141 ± 37 days to 127 ± 31 days. The number of services per conception decreased from 3 ± 1 to 2 ± 1 , indicating enhanced reproductive efficiency. Additionally, the calving interval of animals reduced from 411 ± 46 days to 397 ± 37 days, reflecting better reproductive management.

10. Capacity building of resource poor farmers in paddy-wheat cum dairy production system through farmer FIRST programme under irrigated agro-eco region of Haryana:

One hundred demonstrations were conducted for the seed production of new wheat varieties, DBW-327 and DBW-332, with average yields recorded at 62.49q/ha and 60.28q/ha, respectively. New paddy crop varieties (PB-1847, PB-1885, and PB-1886) were introduced, and 173 demonstrations were carried out for paddy growers, covering an area of 74.41 hectares. The average yields were 60.51q/hac for PB-1847, 59.28q/ha for PB-1885, and 58.04q/ha for PB-1886. For crop diversification of mustard (PM-32 & Pusa Tarak), 48 demonstrations were conducted, and the average yield for PM-32 was recorded as 22.23q/ha, while Pusa Tarak yielded 18.59q/ha. In response to inadequate green fodder availability, particularly in lean periods (May-June and November-December), 33 demonstrations of Maize J-1006, 25 of Oats (Kent), 25 of Chinese cabbage, and 50 of fodder kits in Rabi were conducted. The average yields were 518.7 q/ha, 444.6 q/ha, 395.2 q/hac, and 494 q/hac, respectively. Testing milk samples through strip tests helped in the early detection of mastitis, enabling timely treatment by farmers and reducing losses. The overall prevalence of subclinical and clinical mastitis in cows was found to be 45 percent and 28.33 percent on an animal basis. For buffaloes, the overall prevalence of subclinical mastitis and clinical mastitis was found to be 25.00 percent and 20.00 percent, respectively, on an animal basis.

11. Sustainable livelihood development of scheduled caste farmers through livestock based technological interventions in Kolar district of Karnataka:

A study was conducted in Kolar District of Karnataka State, selected purposefully for having significant percentage (30.32%) of Scheduled Caste (SC) population. Based on the baseline survey data after problem identification, suitable technological

interventions were prioritized based on weighted mean score viz., ‘balanced feeding, green fodder production (2.27), breeding & reproduction management (2.13), clean milk production (1.85), cattle health & infertility management (1.56) and also backyard poultry to supplement the income were implemented. The overall adoption level of improved livestock farming practices among the respondents has increased to the extent of 53.00 per cent, post implementation of technological interventions. Further, the technological interventions resulted in improved dairy cattle productivity leading to enhance income among the beneficiaries. The average monthly milk yield before the intervention was 192 lit/cattle which increased to 230 liters and accordingly the monthly income of the farmers from dairying increased by 19.00 per cent after implementation of the project. In order to supplement farmers’ agricultural income, backyard poultry units were established which resulted in realizing an additional income of Rs.2050/per bird. Thus, through integration of different livestock interventions, it is possible to augment farmer’s income, provide additional employment to farm women.

12. **Farmer FIRST: enriching knowledge-integrating technology and institutions for holistic village development in horticulture based farming system:** Significant progress was made in the adopted villages through various institute interventions. These included on-campus and on-farm training, interactive sessions, animal health care, and demonstrations on balanced nutrition and quality milk production. Regular animal infertility and health camps were organized in Hosadurga, Balepura, Yeremgere, and Vasappanadoddi villages, addressing issues such as mineral deficiency, conception problems, and mastitis for 210 dairy cattle. Eighty-six beneficiary farm families received mineral supplements, rumen alkalizers, and dewormers. Training on scientific dairy management and health-nutrition sensitization was conducted, benefiting farmers, farmwomen, and youth. These interventions enhanced technical know-how and dairy management practices, improving animal health.
13. **Tribal development through backyard livestock/poultry farming in Eastern India:** Superior breeds of chicks (9500), and ducklings (5200) were distributed to help families raise healthier and more productive birds. Feeds, mineral mixtures, supplements, dewormers, and equipment like feeders and waterers were provided to enhance animal health and production. Over 1109 farmers participated in sessions (on-farm and off-farm) on various aspects of animal care, including dairy farming, goat husbandry, pig farming, poultry, and duck farming. On-site health camps treated sick animals and vaccinated cattle, goats, and poultry against dreaded diseases. Overall, these efforts in West Bengal demonstrate the positive impact of supporting tribal communities through improved livestock rearing. By providing

resources, training, and veterinary care, programs like these empowered families to improve their livelihoods and well-being.

14. **Demonstrated crop production technologies increased tribal farm family income:** The average yield of mustard using demonstrated technology was recorded at 1380 kg/ha with the Benefit: Cost (B:C) ratio of 1.53. The average yield of black gram was recorded at 1071.13 kg/ha. The Benefit: Cost (B:C) ratio of the demonstrated technology was found encouraging (1.91) in this case also. The average yield of berseem fodder was recorded at 550.5 quintals/ha with B:C ratio of 2.40. The average yield of oats fodder was recorded at 345.0 quintals/ha. The Benefit: Cost ratio of the demonstrated technology (2.01) was highly promising for fodder cultivation by the tribal farmers in the study areas. The yield of elephant foot yam has motivated tribal farmers for more tuber crop cultivation with the yield of 25.8 tonnes/ha and this variety was demanded by local farmers due to its higher B:C value (2.4). The bio-fortified (rich in anthocynonin) variety of sweet potato (Cv Bhu-Krishna) yielded little less crop production (18.0tonnes/ha) than other farmers variety, however, B: C ratio was impressive (2.5) and it is a value-added crop.
15. **Enhancement of socio-economic condition of Scheduled Caste farmers through livestock based integrated farming in Eastern India (SCSP):** On the basis of technological needs of the farmers, a total of 500 chicks and 500 ducklings of 28 days of old were distributed among 100 SC farmers in different districts. Other inputs like supply of goat feed (2800kg), poultry feed (2500 kg), bypass fat (595 kg), mineral mixture (255 kg), dewormer, vaccine, medicines, feeder/waterer etc. were also distributed among the SC farmers in the project area. Several animal health and vaccination camps (17 nos.) and 6 nos. of scientists-farmers' interaction meet was organized in the project areas of different districts of West Bengal. Awareness camp on subclinical mastitis was also conducted in 2 villages of Nadia district. One livestock mela was also organized in the Birbhum district of West Bengal. During this period a 3-days training programme for skill development of SC women farmers' of Birbhum district was organized at this station for scientific/precision dairy farming.
16. **Farmers' participatory appraisal of cation-based mineral supplement on performance of dairy animals in Karnal district of Haryana:** The rate of milk let down in high yielding dairy animals in the first six weeks of lactation, is so high that the secretion of nutrients into the milk exceeds the rate of uptake of nutrients from the digestive tract. The appetite of the animal during the early lactation (up to 8 weeks) is reduced by 2 to 3 kg per day. Usually, all such cows and buffaloes remain under negative energy balance during first five months of

lactation. The sudden change in diet and feeding high concentrate diet to fulfil their demand impose the risk of rumen acidosis. Findings from experimental research stations suggest that feeding cationic diet post-partum improves rumen pH and reduces SARA while improving productive and reproductive performance of dairy animals. With this background, the effectiveness of 'cation-based mineral supplement' for controlling SARA, increasing the milk production, milk fat and service period was evaluated. The randomized controlled trial design was used with 212 dairy animals (106 cows and 106 buffaloes). The study revealed that C-bMS was highly effective in preventing SARA as after feeding C-bMS, cases were not found in treatment group. The overall cost of production reduced by (2.87%), improvements in milk yield (13.02%) and farmer's profits (28.65%) with C-bMS supplementation. The peak adoption rate for C-bMS is predicted to be 96 per cent after a period of 8 years. Majority of the dairy farmers have responded that C-bMS is effective to control the ruminal acidosis, increase in dry matter intake, improvement in BCS and increase in milk production of dairy animals.

17. **Livelihood augmentation of resource poor scheduled caste farm households in western dry region of Rajasthan:** Interventions are being implemented based on the identified problems to enhance production and income of the Scheduled caste farmers in Bikaner and Hanumangarh district of Rajasthan. It was found that Yield of Oat (Variety Kent) was recorded as 318 quintal per hectare while yield of Chinese cabbage was recorded as 175 quintals per hectare which is first time introduced in this area. Increase in yield of Chick Pea (GNG-1958) in Bikaner 26.28per cent than the farmer practice was observedand cost benefit ratio (3.04) was also calculated as compared to 2.57 of local varieties. Capacity building of SC farmers for establishing enterprise based on their interest and need and six training programmes were organised. Awareness messages on Lumpy skin disease were circulated in 9 WhatsApp groups. Ayurveda treatment of Lumpy skin disease messages were also conveyed in WhatsApp groups.
18. **Sustainable livelihood development of scheduled caste farmers through livestock based technological interventions in Kolar district of Karnataka:** Four villages viz. Karisandra, Hunasikote, Thoralakki and Jinagathimmanahalli in Kolar District were identified for implementing the project interventions. A total of 84 SC dairy farm families from the four villages were identified as the beneficiaries. Technological interventions viz., 'balanced feeding, green fodder production, cattle health & infertility management, clean milk production and backyard poultry were implemented among the selected beneficiaries through distribution of critical technical inputs, organizing on-farm demonstrations and training programmes, animal health camps and interaction meeting with the beneficiary-farmers. The impact of overall institute's interventions resulted in

increased milk yield of 10-20% and improved knowledge and adoption of level on dairy farming practices.

19. Upliftment of socio-economic condition of tribal people through integrated livestock farming in North Eastern Hill Region/ Eastern part of India (TSP):

The developmental works were continued in tribal dominated villages/ clusters of Birbhum, Bardhaman and Nadia districts in West Bengal during January-December, 2022. Tribal farmers were motivated to rear livestock scientifically for strengthening livestock farming with integrated approach for enhancing the family income and improving the nutritional status of their family members. Total of 105 goats and 11650 kg goat feed were distributed among 70 and 299 needy tribal farmers, respectively; 60 piglets along with 1450 kg of pig feed were also distributed to 30 beneficiary farmers; 2000 chicks and 4400 ducklings along with 12000kg chick/ duckling feed were distributed to 240 and 515 resource poor beneficiary farmers, respectively along with other inputs, like feeders, waterers etc. Off-farm Interaction-cum-Training sessions were also conducted to train 1174 Tribal farmers on different aspects of dairy farming, goat husbandry, pig farming, poultry and duck farming. Several onsite health-cum-vaccination camps were also organized to treat diseased animals reared by tribal farmers. Cattle, goats and poultry birds were also vaccinated against dreaded diseases. FLDs on oilseed (mustard) and pulses (green gram, black gram) were done based on the focused areas of the government. The benefit to cost ratios (B:C) of oilseed (Bullet variety), green gram (Virat IMP-205/07 variety) and black gram (PU 31 variety) were estimated 1.83, 1.90 and 1.91. The benefit to cost ratios (B:C) of fodder sorghum (MFSH 4 variety) and maize (J1006 variety) were evaluated as 1.68 and 1.60. Therefore, it may be interpreted that farmers can easily go for fodder production in their own cultivated land to increase the production potential of their livestock economically.

20. Impact assessment of high pedigree bull semen: Field survey of 304 households (encompassing 1129 dairy animals) revealed that NDRI semen accounts for 30 per cent of breedable population of dairy animals in Karnal district of Haryana. Positive transitional heterogeneity (TH) establishes a positive income impact of adoption of NDRI semen. The adoption of NDRI semen led to increase in milk productivity of F1 progeny by 12.31 per cent. Moreover, conception rate improved (approx. 5.5%) as compared to other semen sources. The simulated gain (in economic surplus and surplus distribution) of NDRI semen was to the tune of ₹ 2154 crores at 30 per cent adoption in North India and 10 per cent in remaining parts of the country.

21. **Impact Evaluation of Anionic Mineral Mixture Technology:** Anionic Mineral Mixture (AMM) technology was developed and commercialised by ICAR-NDRI for reducing milk fever in cows and buffaloes as a pre-partum approach. AMM was opened to commercial production for the first time in the year 2016-17. Milk fever is causing annual economic losses to the extent of Rs.873 crores in Haryana. The occurrence of milk fever also acts as a gateway for other diseases; a cow with milk fever is 8 times more likely to experience mastitis, 3 times more likely to have dystocia and have a retained placenta. The randomised controlled design was used to evaluate the impact of the AMM by selecting 200 dairy animals (100 cows and 100 buffaloes) randomly assigned to treatment and control groups. Economic surplus model was used to estimate the overall welfare gains of the technology under different adoption and success rates. The study found that AMM supplementation reduced milk fever incidence (from 21% to 2%) and improvements in milk yield (14%) and farmer's profit (35%). The impact was higher on farmers with older animals, small herd size (< 6 animals) and among those farmers who were having formal training on dairying. The demand for AMM was highly sensitive to the prices. A one per cent increase in prices led to an 18.4 per cent fall in demand. The cost incurred per unit of a milk fever case averted was estimated to be Rs.14,217 and for every additional gain of milk yield was Rs. 5 per litre. The implementation of AMM scheme in Haryana to prevent milk fever cases will cost Rs. 611 crores. But the potential economic welfare gains are much higher to the extent of Rs. 4,862 crores if all the farmers adopt the technology at 100 per cent rate of success. Taking into account the price sensitivity, costs of implementation and the impact of AMM, it was found that the welfare gains is more than the costs in Haryana if 18 per cent (@ 71% success rate) of the dairy farmers adopt the technology. To achieve the 18 per cent adoption level, the AMM should be distributed at a minimum of 60 per cent subsidy.
22. **Empowering Farmers through Selective Interventions in Salt Affected Agroecosystems of Ghaghar Plains (Farmers FIRST Project):** In order to ameliorate the adverse effect of heat stress and to improve the growth rate of growing buffaloes. Twenty four growing buffaloes (6-9 months) were selected and equally divided into four groups i.e. group-I (control), and treatments viz. group-II (supplemented cumin @15g/100kg BW/ day/ animal), group-III (supplemented Molasses 10% of /kg concentrate/ animal/ day) and group-IV (combination of cumin and molasses). THI during the study varied from 78.73 to 83 during experimental period indicating the heat stress on the buffaloes. The physiological parameters (RT, RR and ST) and body measurement (body length and height at withers) was found to be significantly higher (P80) indicated an increase in the milk yield from 0.5 to 1.2 lit./ animal/ day compared to control animals. Body

condition score, shining of hairs and skin was improved in treatment animals compared to control group. Prill fat supplementation @100g/day/animal to lactating buffaloes during summer heat stress also showed increase in milk yield (7-10%) and fat %. In another trial, supplementation of anionic mixture @100g/day/ animal showed increase in udder size and the skin become shiny. Timely expulsion of placenta was around 83% in treatment group compared to 50% in control animals. Increase in milk (7-10%) was also observed in treatment group. In another study, 424 breedable bovines were inseminated using the NDRI bull semen. These animals were also supplemented mineral mixture @50-60 g/day/ animal during the study. Inseminated cow and buffaloes were checked through rectal palpation after three months of insemination. The overall conception rate for the whole period was 51.42 %.

23. Impact of RKVY Project

Various technological interventions on 'scientific dairy farming' were implemented through on-farm and on-campus training and capacity-building programs in the study area i.e. Raichur and Yadgir, Aspirational Districts of Karnataka State. The selected 550 farmer-beneficiaries from the two districts were sensitized about balanced feeding and improved fodder crop inputs distributed among the beneficiaries to augment green fodder production in the study area. To provide the training to the selected beneficiaries, the training infrastructure in both the KVKs and at the station was strengthened by establishing new facilities for effective training and demonstration and establishment of 'Dairy Entrepreneurship and Skill Development Center' constructed over an area of 136 square meters, the new facility includes modern infrastructure such as a video conferencing system, developed with a project outlay of 103 lakh by CPWD, Bengaluru. The center is designed to host training programs and skill development activities for farmers, entrepreneurs, and field-level extension personnel in the dairy sector. Further during this period, an on-campus training program (12 days) on 'Scientific Dairying and Value-added Dairy Products' was provided to 50 farmers from Aspirational Districts of Karnataka State.

24. MOOCs on "Incentivizing Dairy Education through Innovative Learning Approaches":

The MOOCs was developed under ICAR-NDRI- NAHEP project on "Incentivizing Dairy Education through Innovative Learning Approaches". ICAR-NDRI and ICAR-NAARM partner together in developing digital content for offering MOOC on 'Commercial Dairy Farming' for the benefit of dairy farmers and entrepreneurs. The digital content was offered to the farmers/entrepreneurs and students during February 01–March 31, 2023 and concluded in July 2023.

Total number registrations for the course were 917 participants, 175 participants have successfully completed the training course, 88 participants have acquired the course completion certification and a total of Rs. 2,64,000/- revenue was generated to the institute through this course.

6.6.4.4. Implementation of National Initiatives:

Mention the status of implementation of Student Ready, green initiatives, Farmers First Scheme, Mera Gaon Mera Gaurav, NICRA and other similar schemes.

Farmers First Scheme at NDRI Main Campus, Karnal: NDRI running a project entitles “Capacity Building of Resource Poor Farmers in Paddy-Wheat cum Dairy Production Systems through Farmer FIRST (Farm, Innovation, Resources, Science and Technology) Programme under Irrigated Agro-Eco. Region of Haryana” in Karnal is one of the old and important districts of Haryana State. From Karnal district, a cluster of seven villages having farm families from different socio-economic groups those who are practicing paddy-wheat cum dairy production system was selected purposively as it is in the vicinity of ICAR-NDRI. The beneficiaries of the project are Resource-Poor farmers who are having operational land holding up to 2.00 ha and keeping up to 5 dairy animals. Seven villages namely: Kamalpur Roran, Garhi Gujran. Nagala Roran, Churni, Samoura, Chandsamad and Dabkoli Khurd (total SC population village) were selected as per project guidelines.

Table 104: No of farmers covered under different interventions

Year	Number of household covered				
	Crop based	Horticulture Based	Dairy based	Enterprise based	Total
2021-22	829	20	2373	15	3237
2022-23	979	60	2347	15	3401
2023-24	606	60	3545	15	4226
2024-25	723	13	2967	20	3723
2025-26	440	10	1128	10	1588
Total	3577	163	12360	75	16175

Impact of Farmer FIRST intervention on Farmers Extent of Knowledge on farmers:

The extent of knowledge under crop-based interventions was highest in IPM in paddy crop (8.40% increase in yield over farmers’ practice), followed by INM in wheat crop (9.00%) and IWM in wheat crop (7.73%). Significant technological gains were also observed under improved varieties of paddy and wheat, particularly PB-1847 (7.44%), PB-1885 (11.30%), DBW-327 (15.62%) and DBW-332 (13.70%), indicating strong knowledge enhancement and adoption among farmers.

Under dairy-based interventions, substantial impact was observed in mastitis control programme, which resulted in avoided losses of 63,750 with a B:C ratio of 41.2. The Theileriosis control programme covered 1,406 cross-bred cows and significantly reduced morbidity and mortality losses, generating net returns of 19,968 with a B:C ratio of 10.2. Control of ecto- and endo-parasitic infestation covered 15,752 animals with a B:C ratio of 4.58, while mineral supplementation and anionic mineral mixture interventions also showed notable improvement in milk yield and economic returns.

In horticulture-based interventions, crops like cucumber, bottle gourd and pea demonstrated substantial economic gains with higher net returns and B:C ratios, reflecting improved farmer knowledge and adoption of scientific cultivation practices. The development of the SMS portal covered 1,245 farmers, where more than 98% of farmers perceived the messages as informative and authentic, strengthening awareness and timely decision-making.

Overall, the increased knowledge of farmers regarding various interventions significantly enhanced their understanding of improved technologies, improved productivity, reduced losses and strengthened economic resilience under the Farmer FIRST Programme.

Economic Impact of different intervention

The Benefit–Cost ratio of crop-based interventions indicated higher economic viability under improved practices, viz., IPM in Paddy (1:2.69), INM in Wheat (1:2.54), IWM in Wheat (1:2.35), Maize production (1:2.80) and Cucumber cultivation (1:4.88). These interventions demonstrated that scientific crop management practices substantially improved profitability over farmers’ traditional practices.

Similarly, the Benefit–Cost ratio of dairy-based interventions revealed significant economic gains, particularly under balanced feeding (1:1.83), bypass fat supplementation (1:3.24), mineral mixture supplementation (1:5.42), Theileriosis vaccination (1:74.88), Theileriosis treatment (1:10.19), mastitis diagnosis (1:41.20) and mastitis treatment (1:85.75). The one-year returns of VIREN dairy were found to be 14,34,400, reflecting strong economic sustainability of dairy enterprise interventions.

Overall, it can be concluded that enhanced knowledge and adoption of improved crop production technologies and scientific dairy management practices significantly increased productivity, reduced losses, improved farm income and strengthened the socio-economic resilience of the farming community under the Farmer FIRST Programme.

Farmer FIRST programme at SRS-Benguluru (2021-2026):

The collaborative research project entitled “Enriching knowledge and integrating technology and institutions for holistic village development in horticulture-based

farming system” for the Farmer FIRST Programme of ICAR under the priority area “Technology Assessment and Refinement” by ICAR-IIHR and SRS: ICAR-NDRI has been initiated in the selected villages in Kanakapura block of Ramanagara District of Karnataka State. About 100 farm families including 35 farm families from tribal settlements, involved in animal husbandry & dairying are identified as beneficiaries for the programme which includes series of planned activities as institute interventions for integrated development of selected villages and the beneficiary farm families. Under this programme, farmers were provided with critical inputs like, Improved green fodder varieties/stem cuttings, mineral mixtures, Urea Molasses Mineral Block Licks, rubberized cow mats, California Mastitis Kits, Hand operated milking machines and animal/shed cleaning equipment. During this period, farmer-scientist interaction meets, awareness campaigns, Animal health cum infertility camps, demonstrations, and training programmes on key aspects of scientific dairy farming were also organized for the benefit of farmer beneficiaries/the target farm families.

Impact of NICRA project

The National Innovations in Climate Resilient Agriculture (NICRA) project, has successfully empowered dairy farmers in different districts of Haryana, to adapt to climate change through targeted interventions. Under the project, NDRI organized awareness camps in eight adopted villages-Sultanpur, Chowgama, Hansumajra, Bhanikhurd, Bhanikala, Buddanpur, Kotra and Haibatpur, over the period from 2021 to 2026, benefiting approximately 800 farmers. A primary survey of 200 dairy farm households, comprising 100 NICRA beneficiaries and 100 non-beneficiaries, highlighted the transformative impact of these interventions on dairy farming practices, income and productivity. The improvements were especially noticeable in crossbred cows, which showed higher milk production, better peak yield, longer lactation periods, and greater overall productivity. These animals responded more positively because they are more sensitive to climate stress. Indigenous cows and buffaloes did not show much change in average milk production, although their lactation period improved. Literature related to mitigating strategies during climate change in the form of NICRA calendars and leaflets were given to about 700 dairy farmers. Dairy farmers are using these literatures as a handy reference in different weather conditions. Under SCSP component the SC community members were supported by distributing animal rubber mats, drinking water filters, mineral mixture, dewormers, veterinary medicines and study material for children. The climate resilient practices introduced under the NICRA project have clearly improved both farmers’ income and the productivity of dairy animals.

HRD programs conducted during last 5 years under NICRA:

Under SCSP component the SC community members were supported by distributing animal rubber mats, drinking water filters, mineral mixture, dewormers, veterinary medicines and study material for children

S. No.	Name of the items	Name of village	Date	No. of beneficiaries
1	Animal rubber mats, mineral mixture, veterinary medicines	Village :Budhanpur, haryana	22.02.2021	40
2	Water filters	Village: Budhanpur, haryana	16.09.2021	121
3	Water filters	Village: Budhanpur, haryana	3.02.2022	28
4	Animal rubber mats, mineral mixture, veterinary medicines	Village: Budhanpur haryana	6.09.2022	45
5	Mineral mixture	Village: Bhanikhurd, haryana	9.06.2023	55
6	Mineral mixture	Village: Budhanpur, haryana	4.07.2023	45
7	Animal rubber mats, mineral mixture, veterinary medicines	Village: Budhanpur and bhanikhurd, haryana	5.09.2023	75
8	Animal rubber mats, shoes, water purifier	Village: bhanikala, haryana	3.12.2024	40
9	Animal rubber mats, shoes, water purifier	Village: sultanpur haryana	25.03.2025	39
10	Animal rubber mats, mineral mixture, anionic mixture, veterinary medicines, mosquito nets, water purifier	Village: kotra haryana	23.07.2025	55
11	Animal rubber mats, mineral mixture, anionic mixture, veterinary medicines, mosquito nets, water purifier, shoes	Village: Haibatpur, haryana	1.08.2025	8
12	Animal rubber mats, mineral mixture, anionic mixture, veterinary medicines, mosquito nets, shoes	Village: Haibatpur, haryana	28.10.2025	23
13	Mineral mixture, anionic mixture, veterinary medicines, mosquito nets,	Village: kotra haryana	19.11.2025	55

Impact of scientific interventions in the adopted village under NICRA project

Name of villages	No. of beneficiaries	Milk yield before supplementation (in kg)	Milk yield after supplementation (in kg)
Bhanikhurd	45	6.64	7.72
Budanpur	48	7.20	8.25
Kotra	50	8.45	9.34

6.6.4.5. Innovation and Best Practices:

Many innovative initiatives have been taken by the institute and best practices adopted during the last five years to accelerate the process of technology dissemination and strengthen outreach activities. These are delineated below:

Dairy Education at Farmers' Door (DEFD):

The innovative Extension approach was initiated by NDRI; "Dairy Education at Farmers' Door" continued in the year 2013-14. In which a team of NDRI scientists consisting of specialists from production, processing and management groups visited nearby selected villages on every second Saturday. The Extension Scientist in the team acted as coordinator and identified the village as per functional linkages. This programme facilitated the effective dissemination of dairy production and processing technologies among farming community at their door, and the scientist could understand the practices adopted by farmers and also the constraints faced by them.

Empowerment of Women and Mainstreaming of Gender Issues: Women empowerment training and campaigns were organized with the objective to create awareness in the field of dairying and home science and also impart skill in these areas so that farm women could generate more income from dairying and maintain healthy atmosphere in their respective family.

Farmers Farm School: National Dairy Research Institute (NDRI) has started an ambitious programme wherein farmers of Haryana State are being provided formal Education in the field of Dairying, Horticulture and Agriculture through Farmers Farm School. In this School, farmers would interact with the scientists of the Research Institutes and there is class room teaching as well as practical classes. There is provision of enrolling 25 farmers in one batch on first come first basis and the course duration is for one year. The main aim of Farmers Farm School is to provide all important and latest information related to Dairying, Horticulture, crop farming, etc. to farmers and to extend the latest research done by scientists involving lab to land programme. The video coverage of Farmers Farm School of NDRI was telecast by many channel (Aajtak, DD Kisan, Haryana News, E-tv, etc.). Similarly, many print media (English and Hindi newspaper, magazine, etc.) highlighted the unique school of farmers. Recently, Farmers

Farm School of NDRI is mainly concentrate on climate change issues and renamed as “Climate Resilient Dairy Farm School”.

Educational Visit and Tour: A total of 88,339 visitors (students & Faculty) from various colleges/Institutions/Universities have visited the institute which were coordinated by the division. The groups have been sensitized about the different research, teaching and extension achievements and facilities available in the Institute.

SMS Message Portal: A web enable NDRI Messaging service portal were developed with data base facilities. NDRI Messaging portal was launched on 7th October 2014 and every week 2 SMS are being send to the respondents. So far we received very encouraging feedback from the SMS recipients.

List of Mobile Apps developed

Title of Mobile App	Content (in one line)	Languages (in which app developed)	Year of Development
NDRI Climate Service	Temperature Humidity Index (THI)-based climate advisory services for dairy farmers	Hindi, English, Punjabi and Bengali	2022
Dairy Pashu Prajanan	Reproductive issues of dairy animal and their remedies	Hindi	2023



WhatsApp Group: The WhatsApp group aims to transfer/share the latest technologies and address new opportunities for farmers and dairy entrepreneurs. In this platform farmers query are being replied by the scientist and it is also being used by the farmers for sharing their experiences in dairy farming.

NDRI YouTube channel: The channel encompass various videos of new technologies, products, tools and machinery useful for dairy processing, milk production, semen/embryo technology, feed processing, animal healthcare, and agricultural activities including horticulture, fisheries and post-harvest technologies for enhancing the farmers income

Dairy Samachar: Quarterly Dairy Samachar (Hindi magazine) containing latest technical know- how in the field of dairy farming and dairy processing were published. Three thousand copies of Dairy Samachar were sent/distributed to the farmers, as a regular practice to dairy owners and other dairy entrepreneurs in different states throughout the country.

6.6.5 Faculty and Staff Development

6.6.5.1 Faculty Recruitment and Promotion Procedure

Faculty Recruitment

Recruitment of faculty and all the scientific posts in various disciplines, which comes under the mandate of the Institute is done as and when posts fall vacant as a result of transfer to other Institute/department or due to superannuation from Council's service or on death are notified by the Agricultural Scientists Recruitment Board (ASRB). For this, detailed proposal (s) is sent by the Institute from time to time to the Council for conducting recruitment process. The vacancies are notified by the ASRB through Employment News/ other news agencies, and the entire recruitment action is processed by the ASRB. The ASRB conducts a three-step examination for eligible candidates: Stage 1-Preliminary (Online examination); Stage 2 - Main examination; Stage 3 (Viva-voce/Interview). The plan of examination is as follows: **Preliminary** (150 Marks, 2h, and online mode); **Main examination** (240 marks, 3h, pen and paper mode) and viva-voce (60 marks). The question papers of the Examination are in the bilingual form i.e. in Hindi and English medium. The successful and eligible candidates based on mark list of main examination are called for an interview. After making selection on vacant posts, a list of selected candidates is sent to the Council for obtaining approval of the competent authority, viz., President, ICAR, who issues the offer of appointment to the selected candidates.

Educational qualification for scientific posts: A candidate for the Agricultural Research Service must hold a master's degree or equivalent in the discipline concerned with specialization as defined by the Council.

Number of Attempts: The number of attempts for appearing in the Agricultural Research Service Examination are limited to six for Unreserved category candidates (whether M.Sc./Ph.D.) including the in-service candidates of I.C.A.R. The number of attempts for Other Backward Classes category and PwD category (belonging to General/OBC category) candidates are nine.

Age limits: A candidate seeking admission to the ARS Examination must have attained the age of 21 years but not have attained the age of 32 years as on date of advertisement. However, relaxation in age limit is provided for in-service, SC, ST, OBC and PwBD candidates.

Career Development Plan Including Competence Improvement

The ICAR has introduced promotion/career advancement policies for their scientific, as well as technical personnel as under:

Scientific

Minimum length of service for eligibility to move into the grade of Scientist (Senior Scale) is 4 years for those with Ph.D., 5 years for those with M. Tech/ M.Phil. and 6 years for others in the level of Scientist. For eligibility to move into the grade of Scientist (Selection Grade)/Senior Scientist, the minimum length of service for scientists (Senior Scale) is uniformly 5 years. For movement into grade of Senior Scientist and above, the minimum eligibility criterion is Ph.D. and those without Ph.D. can go up to the level of Scientist (Selection Grade). A Senior Scientist with a minimum of 8 years of service is eligible to be considered for appointment as Principal Scientist. Promotion under this Career Advancement Scheme has been made effective from 1.1.1996 and no Scientist is entitled to promotion under this scheme prior to 1.1.1996 under any circumstances.

Eligibility Criteria

A Scientist is eligible for placement in a Senior Scale through a procedure of selection, if he/she has:

- Completed six years of service after regular appointment with relaxation of one year, and two years, respectively, for those with M.Phil. and Ph.D. degree (i.e., for M.Sc. 6 years, M.Phil. years and Ph.D. 4 years)
- Submitted performance of work with reference to the targets set
- Obtained consistently satisfactory performance appraisal reports
- Participated in one Refresher Course/Summer Institute, organized/sponsored either by the Education Division of ICAR or UGC.

Scientist (Selection Grade): Scientists in the senior scale who do not have Ph.D. degree or equivalent published work and who do not meet the scholarship and research standards but fulfill the other criteria given for the post of Senior Scientist and have good record in research/teaching/extension and contributed in various ways in above activities and to the corporate life of the Institute, extension activities, etc. are placed in the Selection Grade subject to the recommendations of the Selection Committee. The Selection Committee will be the same as for promotion to the post of Senior Scientists. They will be designated as Scientists (Selection Grade) till the period they acquire Ph.D. degree and/or fulfil other requirements for promotion as Senior Scientists and if found suitable by a duly constituted Committee would be designated as Senior Scientist.

Senior Scientist (Promotion): A scientist in the senior scale is eligible for promotion to the post of Senior Scientist, if he/she has:

- i. Completed 5 years of service in senior scale
- ii. Obtained a Ph.D. degree or equivalent published work

- iii. Made some mark in the areas of scholarship and research/teaching/extension, as evidenced through self- assessment appraisal reports, of expert reports, and publications/patents/designs of new courses/ innovations/extension activities
- iv. Participated in a workshop/ seminar/symposia/conference, etc., and
- v. Possessed consistently good performance appraisal report

Principal Scientist (Promotion): In addition to the sanctioned posts of Principal Scientist as per cadre strength already fixed, which is to be filled through direct recruitment through All India Advertisement, promotion is made from the post of Senior Scientist to the post of Principal Scientist after 8 years of service as Senior Scientist.

This promotion is personal to the scientist who is a promoted Senior Scientist, who will be promoted to the post of Principal Scientist, if he/she:

- i. has completed 8 years of service and
- ii. he/she presents himself/herself before the Selection Committee constituted by the ASRB with the following:
 - a. self-appraisal reports
 - b. Research contribution/books/ articles/research papers published
 - c. Any other academic contribution by the Scientist
 - d. Seminars/conference attended
 - e. Contribution to teaching/academic environment/institutional corporate life
 - f. Extension and field outreach activities.

These are to be sent in advance to the experts to review before coming for the selection. The candidate is required to submit these in three sets with the application.

Selection Committee:

Suitability for promotion to the next higher grade up to Scientist (Selection Grade)/ Senior Scientist will be adjudged by the Selection Committee constituted by the ASRB/ DG, ICAR, etc. at the Institute itself.

The promotion from Senior Scientist to the post of Principal Scientist is usually done by the ASRB at their headquarters by instituting the Selection Committee for the purpose.

Note

If the scientist is not found fit for movement from one grade to another grade by the Selection Committee, after completion of the prescribed residency period, he/she is again considered by Selection Committee every year till he/she is placed in the next higher grade. The promotion/placement in the next higher grades in such cases is effective from the date he/she is found fit by the Selection Committee.

Recruitment Procedure for Technical Personnel

Recruitment of Technical Personnel: All technical posts of category T-I, T-II and T-III are filled up in the lowest grade of T-I/T-III/T-VI by notifying the vacancies in the newspapers through Employment/ Central Employment Exchange. However, about 33.33% of vacancies are filled up by promotion from amongst the eligible group and T-5, respectively, having essential qualifications and experience in the relevant field as per technical service rules.

Promotion of Technical Personnel: There exists a career advancement scheme for merit promotion of technical personnel service in a grade within the category to the next higher grade after rendering five years of service in a grade within the category.

Selection Process for Academic and Other Administrative Officers: The selection procedure for Administrative Officers under ICAR system is given as under:

- Selection/appointments to the posts of Assistant Administrative Officers (AAO) is made at the Institute level. About 75% of the total vacant posts are filled up on seniority cum fitness basis, whereas 25% posts are filled up by departmental competitive examination at Institute level.
- Selection/appointments to the posts of Administrative Officers are done at the Council's level through direct recruitment, on the basis of seniority-cum-fitness and career advancement scheme.

Direct Recruitment: Forty percent of the total vacant posts are filled up by the Council through competitive examinations conducted by ASRB.

Seniority-cum-Fitness: Sixty percent of the total vacancies of Administrative Officers are filled up by the Council itself on the seniority-cum-fitness basis and the incumbents are posted to the ICAR Institutes as per the requirements.

In addition to this, the vacant posts of Senior Administrative Officers (SAO) and Chief Administrative Officer (CAO) are also filled in by the Council on seniority-cum-fitness basis and the incumbents are posted at ICAR Head Quarters/ ICAR Institutes as per requirement.

Career Advancement: With the objective to attract the best talent under technical service, the ICAR had launched its technical services in 1975 for technical personnel, similar to ARS for scientists. There is no common cadre. The posts are borne on the strength of the respective Institutes or the Head Quarters of the Council as the case may be. The Technical Service Rules came into force with effect from 1.10.1975.

The Technical Services are grouped into three categories, considering the following grades with the scales of pay as adopted by the ICAR on the basis of recommendations made by 4th and 5th Central Pay Commission.

Category I: T-1, T-2, T-1-3

Category II: T-II-3, T-4, T-5

Category III: T-6 to T-9

Career advancement of technical personnel in their respective categories is done in the following manner.

There is a system of merit promotion from one grade to the next higher grade irrespective of the availability of the vacancies in the higher grade or grant of advance increments in the same grade, on the basis of the assessment of performance. The persons concerned are eligible for consideration for such promotion or for the grant of advanced increment after the expiry of the number of prescribed years of the service in the respective grade.

As per the revised grade structure, the entrants of category I at T-1 grade continue to be regulated for assessment from T-1 to T-2 after 5 years of service. However, the T-2 grade personnel having the qualifications as prescribed for category II for direct recruitment are eligible for assessment promotion to T-3 grade after 5 years of service, while those not possessing such qualifications become eligible for assessment/promotion to T-3 grade only after 10 years of service in T-2 grade. The assessment promotion from T-3 to T-4 and T-4 to T-5 continues to be regulated at the five yearly intervals.

The provisions relating to category barrier for assessment promotions from T-5 grade of category-II to T-6 grade of category III have been revised as follows:

- a. The technical personnel in T-5 grade and possessing essential qualifications, as prescribed for direct recruitment is eligible for assessment/ promotion to T-6 grade after completing 5 years of service in T-5 grade.
- b. The T-5 technical personnel, who do not possess the essential qualifications as for direct recruitment prescribed are eligible for assessment/promotion to T-6 grade after completing 10 years of service in T-5 grade, provided such technical personnel possess qualifications prescribed under the notification dated 3.2.2000 for direct recruitment under category-II (T-3). However, such technical personnel in T-5 grade, who do not possess the prescribed qualifications for direct recruitment to the category II (T-3) are not eligible for further assessment promotion to category III of the technical services.
- c. Since a revised single pay scale of Rs.10,000-15,200 by way of replacement of their erstwhile pre-revised pay scale as per the Fifth Central Pay Commission has been attached to the existing technical grades of T-7 and T-8, these two grades have been re-designated as uniform and single grade as T (7-8) in the given pay scale of Rs.10,000-15,200 and the movement of the technical service (pay scale Rs.10,000-16,500) in the following manner.

- i. Those technical personnel, who are working in T-7 grade and have not been assessed for T-8 grade, are eligible for assessment to T-9 grade after completion of 7 years of service in T-7 grade.
- ii. Those technical personnel, who have already been placed in T-8 grade are assessed for T-9 after completion of 5 years of service in grade T-8.

Selection Process for Academic and other Administrative Officers:

Recruitment to the combined cadre of Administrative Officers viz., Administrative Officers, the Senior Administrative Officers and the Chief Administrative Officers takes place through direct recruitment by ASRB or by promotion from the feeder cadres of departmental candidates. The selection process for the post of Administrative Officer-cum-Deputy Registrar takes place by direct recruitment for 40% of the posts and by departmental promotion for 60% of the posts. A Departmental Promotion Committee (DPC) is constituted by ICAR in consultation with the ASRB for the purpose selection of the eligible officers.

Personal Policy Details Including Availability of Manual:

The Indian Council of Agricultural Research is a registered society governed by its own rules and bye laws. The administrative and financial rules and procedures framed by Government of India from time to time are followed *mutatis mutandis* in regard to matters for which specific provision has not been made in its rules and bye laws. The ICAR introduced a scientific personnel policy known as Agricultural Research Services (ARS), which came into effect on 1st October 1975. Subsequently, the rules for Research Management Positions were framed w.e.f. 1st April 1976. The ARS envisages a scientist-centered system, replacing the post-centered system providing promotional opportunities to scientists irrespective of occurrence of vacancies. The President of ICAR Society is the Appointing Authority to the Service. The President assisted by a Committee known as the Committee on Agricultural Research Service acts as the controlling authority. The authorized strength of the service is fixed by the controlling authority from time to time in accordance with the provisions of ARS rules. The salient features of the ARS are as follows:

- i. To attract, recruit and train the most promising graduates and post-graduates from the universities as may have an aptitude for research in various branches of agriculture,
- ii. To induct proven talent and experience into the council by direct recruitment of highly qualified scientists on a permanent or a tenure basis,
- iii. To generate a scientific culture and opportunity for continuous professional growth and life-long specialization without any constraint and to promote individual and

- collective initiative for improving the productivity of research and application of knowledge in matters relating to all aspects of agriculture,
- iv. To promote team work and genuine professional collaboration, particularly on an inter-disciplinary basis and to eliminate unhealthy rivalry,
 - v. To enable a scientist to advance in his career while continuing to work on problems relating to a particular crop, animal or area of agricultural study, for an extended period of time,
 - vi. To give explicit recognition to the research management function and to ensure that those desiring and having an aptitude for research management and co-ordination responsibilities are able to concentrate on the task of effective planning and implementation of research programmes and of promoting organized cooperation
 - vii. To develop an effective system of career planning, management and advancement,
 - viii. To ensure that interchange of scientists between positions involving research performance and research management responsibilities takes place smoothly and reciprocally,
 - ix. To facilitate mobility of scientists from one Institute of the ICAR to another as also from the ICAR to sister organizations like universities, CSIR, BARC, etc.,
 - x. To facilitate scientific attention to the problems or areas of the country whose potential for agricultural growth is yet to be converted into wealth meaningful to the people.

The scientific posts in the Institute fall into two categories, viz., 1) Research Post and ii) Research Management posts. While the research posts have been included in the Agricultural Research Services, the Research Management Posts are governed by a separate set of rules. The details of both are contained in the Handbook on Agricultural Research Service. The technical posts constitute the Technical Service; the details of which are available in the Handbook on Technical Services. There exist Service Rules for the combined cadre of Administrative Officers in ICAR. A Manual of Administrative instruction has been set in place in 1979 by ICAR. A booklet on ICAR Scientific Services has been brought out by National Academy of Agricultural Research Management (NAARM), Hyderabad in 1985. The ICAR and its constituent units adopted University Grants Commission pay package w.e.f. 18th January, 1986, thereby revising the nine grades of scientists into five new grades. As a result of adoption of the new pay package, the scheme of assessment was suitably amended.

Regularity in recruitment of scientific, administrative and technical staff:

Faculty or scientific staff is being recruited on regular basis to the Institute through ARS selection and direct recruitment mode. In addition, transfer of scientists, senior

scientists and principal scientists takes place through online transfer module. About 23 scientific staff has joined the ICAR-National Dairy Research Institute in the last 5 years, among whom 12 have joined through ARS selection and remaining 11, after taking transfer from other Institutes. However, no scientific staff has joined the Institute through direct selection mode. The list of scientific staff who joined in the institute in last five years through ARS selection, direct recruitment mode and transfer is represented in the tables below. On similar modes, various administrative and technical staff has also joined the institute in past five years.

Table 105: List of faculty who joined at NDRI through selection and transfer in last 5 years

S. No.	Division	Name of scientist	Position	Date of joining at NDRI	Mode of joining
1	Dairy Chemistry	Dr. Sonu K.S.	Scientist	11.04.2023	ARS
2	Dairy Microbiology	Dr. Manorama Kumari	Scientist	11.04.2023	ARS
3	Dairy Microbiology	Dr. Basavaprabhu H.N., SRS, Bangalore	Scientist	11.04.2023	ARS
4	Animal Nutrition	Dr. Ankita	Scientist	07.07.2025	ARS
5	Dairy Extension	Dr. Maina Kumari	Scientist	07.07.2025	ARS
6	Dairy Technology	Dr. Harshita Sonarathi	Scientist	07.07.2025	ARS
7	Dairy Technology	Dr. Elizabeth Thomas	Scientist	07.07.2025	ARS
8	Dairy Microbiology	Dr. Catherine Skyongzin Paul	Scientist	07.07.2025	ARS
9	Animal Physiology	Dr. Karuna Prakash Bambode	Scientist	07.07.2025	ARS
10	Dairy Chemistry	Dr. Priyae Brath Gautam	Scientist	07.07.2025	ARS
11	Dairy Chemistry	Dr. Shilpa Shree B.G., DR-SS	DR-SS	07.05.2025	ARS
12	KVK	Dr. Pankaj Kumar Saraswat	Head, KVK, NDRI, Karnal	20.01.2021	Transfer
13	Animal Biochemistry	Dr. Rajani Kumar Paul	Sr. Scientist	08.04.2021	Transfer
14	Livestock Products & Management	Dr. Indu Devi	Scientist	04.04.2022	Transfer
15	Animal Nutrition	Dr. Ram Singh	PS	05.08.2022	Transfer
16	Animal Biotechnology	Dr. Bharati Pandey	Scientist	30.12.2022	Transfer
17	Dairy Technology	Dr. Deep Narayan Yadav	Head of Division	01.05.2023	Transfer

18	Dairy Economics	Dr. Subhasis Mandal	Head of Division	07.07.2023	Transfer
19	Head, SRS	Dr. Arindam Dhali	Head, SRS Bangalore	19.07.2023	Transfer
20	Head, ERS	Dr. Santanu Banik	Head, ERS Kalyani	27.07.2023	Transfer
21	Head cum Sr. Sci, KVK	Dr. Sanjay Kumar Ray	ERS, Kalyani	21.08.2023	Transfer
22	Animal Biochemistry	Dr. Varij Nayan	PS	22.12.2023	Transfer
23	AGB	Dr. T.V. Raja	PS	27.12.2023	Transfer
24	Dairy Technology	Dr. Ajay Yadav	Scientist	02.04.2024	Transfer
25	ABTC	Dr. Anuradha Bhardwaj	PS	13.06.2025	Transfer
26	Agricultural Engineering	Dr. Sadvatha R.H.	Scientist, SRS, Bangalore	13.08.2025	Transfer
27	ARGO	Dr. Thirumala Rao Talluri	PS, SRS, Bangalore	05.01.2026	Transfer
28	Dairy Microbiology	Dr. Lata Jain, PS	PS	11.02.2026	Transfer

Table 106: List of inducted faculty members

S. No.	Name of the Scientist	Name of the discipline
1	Dr Ajay Vir Sirohi, Principal Scientist, ICAR-CIRC	Livestock Production & Management
2.	Dr. Sanjay Choudhary, Scientist, ICAR-CIRB, Hisar	Livestock Production & Management
3	Dr. Suresh K., Head, CP&R., ICAR-CIRC, Meerut	Animal Reproduction Gynaecology& Obstetrics
4	Dr. MeghaPandey, Sci. (SS), ICAR-CIRC, Meerut	Animal Reproduction Gynaecology& Obstetrics
5	Dr. Aisvarya S., Scientist, CIRB Hisar	Dairy Extension
6	Dr. Yallappa Mallapa Somagond, Scientist, ICAR-NRC Mithun, Nagaland	Animal Physiology
7	Dr. Vishwaranjan Upadhyay, Scientist, NRCC Bikaner (Rajasthan)	Animal Physiology
8	Dr. Avijit Dey, PS, ICAR-CIRB, Hisar	Animal Nutrition
9	Dr. Suresh Kumar, Sr. Scientist, ICAR-CSSRI, Karnal	DES&M
10	Dr. Supriya Chhotaray, Sci., CIRB, Hisar	Animal Genetics & Breeding
11	Dr. Anuj Kumar, Sci. (SS), IIWR, Karnal	Dairy Technology
12	Dr. Rajiv Ranjan Kumar, PS, ICAR-CIRC, Meerut	Dairy Technology

13	Dr Saket Niranjana	Animal Genetics & Breeding
14	Dr Raja K.N.	Animal Genetics & Breeding
15	Dr Sanjeev Singh	Animal Genetics & Breeding
16	Dr Indrajit Ganguly	Animal Genetics & Breeding
17	Dr Dige Mahesh Shivanand	Animal Genetics & Breeding
18	Dr Amod Kumar	Animal Genetics & Breeding

Pay structure of scientific, administrative and technical staff

A) Scientific Posts

The 7th Central Government Pay commission has been implemented in the Institute from, January, 2016; hence salary structure is being revised. The Agricultural Research Service consists of the following grades: Scientist, Scientist (Senior Scale), Senior Scientist, Principal Scientist, Project Coordinator/ Head of Division / Joint Director and Director (NDRI) and their salary is being represented in tabular form.

Table 107: Pay scales and grades of scientific personnel at NDRI

Category of Post	Previous pay scale (Rs)			Revised pay as per 7 th pay commission of Central Government			Additional Allowance, if any
		Pay Level	Basic Pay	7 th CPC HRA	7 th CPC DA	Gross Pay	
Scientist	15600-39100+ GPof6000	L-10	57700	8% of Basic Pay	17% of Basic Pay	Addition of HR A, DA, allowance with Basic pay	Additional allowance is being provided As Transport allowance GIS CPF/ GPF
Scientist (Sr. Scale)	15600-39100+ GPof7000	L-11	68900				
Senior Scientist	37400-67000+ GPof9000	L-13A	131400				
Principal Scientist	37400-67000+ GPof10000	L-14	144200				

Project Coordinator /Head of Division/ Joint Director	37400-67000 (for those recruited on or after 01.01.09 minimum of Rs. 43000)+ GPof 10000	L-14	144200				
Director (NDRI)	Rs.75000 fixed + 5000 per month has special allowances	L-14	144200				Special allowance Rs 11250

(B) Technical Posts

Technical Services provide support to research and education in laboratory, workshop or field, in areas like library, documentation, publications and communication. Technical posts constitute of several categories and their salary is being represented in tabular form.

Table 108: Pay scales and grades of technical personnel at NDRI

Category of Post	Previous pay scale (Rs)	Revised pay as per 7 th pay commission of Central Government					Additional Allowance, if any
		Pay Level	Basic Pay	7 th CPC HRA	7 th CPC DA	Gross Pay	
Category I							
T-I (Technician)	PB-IRs.5200-20200+2000GP	L-3	21700	8% of Basic Pay	17% of Basic Pay	Basic +HRA +DA + Other allowance	Transport/ GIS/ CPF/ GPF
T-2 (Senior Technician)	PB-IRs.5200-20200+2400GP	L-4	25500				
Category II							
T-3 (Technical Assistant)	PB-IRs.5200-20200+2800GP	L-5	29200	8% of Basic Pay	17% of Basic Pay	Basic +HRA +DA + Other allowance	Transport/ GIS/ CPF/ GPF
T-4 (Senior Technical Assistant)	PB-2Rs.9300-34800+4200GP	L-6	35400				
T-5 (Technical Officer)	PB-3Rs.9300-34800+4600GP	L-7	44900				

Category III							
T-6 (Senior Technical Officer)	PB-3Rs.15600-39100+5400GP	L-10	56100	8% of Basic Pay	17% of Basic Pay	Basic +HRA +DA + Other allowance	Transport/ GIS/ CPF/ GPF
T-7-8 (Assistant Chief Technical Officer)	PB-3Rs.15600-39100+6600GP	L-11	67700				
T-9 (Chief Technical Officer)	PB-3Rs.15600-39100+7600GP	L-12	78800				

Administrative Posts

The Administrative posts including the Audit and Finance are categorized as under:

Table 109: Pay scales and grades of administrative staff at NDRI

Category of Post	Previous pay scale (Rs)	Revised pay as per 7 th pay commission of Central Government					Additional Allowance If any
		Pay Level	Basic Pay	7 th CPC HRA	7 th CPC DA	Gross Pay	
Joint Director (Admn.)	37400-67000+GP8700	L-13	123100	8% of Basic Pay	17% of Basic Pay	Basic pay. + HRA+ DA+ Other allowance	Transport + GIS + CPF/ GPF
Comptroller	37400-67000+GP8700	L-13	123100				
Sr.F & AO	15600-39100+GP6600	L-11	67700				
A.O.	15600-39100+GP5400	L-10	56100				
A.A.O./ A.F.A.O.	9300-34800+GP4600	L-7	44900				
Private Secretary	9300-34800+GP4600	L-7	44900				

Assistant	9300-34800+ GP4200	L-6	35400			
UDC	5200-20200+GP2400	L-4	25500			
LDC	5200-20200+GP1900	L-2	19900			
PA	9300-34800+GP4200	L-6	35400			
Jr. Steno	5200-20200+GP2400	L-4	25500			
Security Supervisor	5200-20200+GP2800	L-5	29200			

(D) Supporting and Auxiliary Posts

The Agricultural Research Service consists of the following grades:

Table 52: Pay scales and grades of supporting staff at NDRI

Category post	Previous Pay	Pay Level in 7 th CPC	Basic pay in 7 th CPC
Skilled supporting staff Group C	Rs. 5200-20200 + 1800 GP	Level 1	1800

6.6.5.2 Participation of Faculty in Seminar, workshop, symposia, etc.

2021-22

Name and Designation	Title of Workshop/ Seminar/ Conferences	Period
Dr. Latha Sabikhi, PS	Online meeting organized by Cohesion Foundation (Ahmadabad), an NGO run by NDRI alumni Mr. Rajesh Kumar to participate in the Role Model Interaction for STEM program	January 5, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Marketing of Agricultural Commodities: Challenges and Opportunities	January 2-14, 2021
Dr. K.P. Ramesha, PS	95th meeting of Board of Management of Karnataka Veterinary, Animal & Fisheries Sciences University, Bidar	January 16, 2021
Dr. Champak Bhakat, PS Dr. Ajoy Mandal, PS Dr. Dilip Kumar Mandal, PS	Webinar on Women Empowerment	January 28, 2021

Dr. K.P. Ramesha, PS	Online lecture at XVIII Annual Convention and National Webinar (SOCDAB) on Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability at NBAGR, Karnal	February 11-12, 2021
Dr. Sudarshan Kumar, Scientist	11 days Online Workshop on Basic & Advanced Proteomics Approaches Workshop-2021 faculty development course at IIT, Bombay sponsored by DST, New Delhi	February 15-26, 2021
Dr. S.K. Das, PS	Webinar on Gene editing research in agriculture: Key Initiatives in India	February 17, 2021
Dr. S.K. Das, PS	International Conference organized by Indian Society for the study of reproduction and fertility (ISSRF), 2021	February 19-21, 2021
Dr. Yogesh Khetra, Scientist	Online Data Visualization and Agricultural Research Training sponsored by ICAR-NAARM, Hyderabad	February 22-27, 2021
Dr. Mohan Mondal, Sr. Sci.	Seminar on Agriculture Research through Knowledge Discovery	February 23, 2021
Dr. Mohan Mondal, Sr. Sci.	ICAR/IDF Webinar on Frameworks for animal welfare assessment and meeting stakeholder needs	February 24, 2021
Dr. Praveen Kumar, PS Dr. Sohan Vir Singh, PS Dr. Mohan Mondal, Sr. Sci.	XXIX Annual conference on Recent approach to escalate livestock productivity under current socio-economic scenario organized by Bihar Veterinary College, Patna	February 25-26 2021
Dr. K.P. Ramesha, PS	96th meeting of Board of Management of Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar	March 3, 2021
Dr. Suman Kapila, PS Dr. Menon Rekha Ravindra Dr. F. M. Eljeeva Emerald	Online Leadership Development for Women Scientist programme organized by ICAR-NAARM, Hyderabad	March 8-10, 2021
Dr. Ashok Santra, PS	Centennial Symposium (webinar) on, 100 years of Animal Nutrition Research in India	March 11-12, 2021
Dr. T. K. Dutta, PS Dr. Mohan Mondal, Sr. Sci. Dr. Saroj Rai, Scientist	11th India Probiotic Symposium (webinar) Role of gut microbiota and probiotics in reducing viral infections- Mechanisms to combat them	March 13-14, 2021
Dr. K.P. Ramesha, PS	Online talk on Organic Livestock in Regional Centre of Organic Farming, Bangalore	March 15, 2021

Er. Ankit Deep, Scientist	Seminar on the theme Entrepreneurship Development in Dairy Sector at College of Dairy Technology, UDGIR, Latur (MS)	March 15, 2021
Dr. T. K. Dutta, PS	International webinar on Unraveling the digestion behavior of milk	March 17, 2021
Dr. Anupam Chatterjee, PS Dr. Champak Bhakat, PS Dr. Sohan Vir Singh, PS	Virtual National Conference on Strategic Reorientation for Climate Smart Agriculture V-AGMET, 2021 organized by Ludhiana Chapter, Association of Agrometeorologists & Department of Climate Change and Agriculture Meteorology, PAU, Ludhiana.	March 17-19, 2021
Dr. M. Karunakaran, PS	Diamond Jubilee Celebration of Indian Journal of Animal Health Meet the scientists on National research prospects in Animal & Fishery Sciences and Biotechnology	April 3, 2021
Dr. M. Karunakaran, PS	International E Workshop on recent trends in quality control of bovine semen- A paradigm shift	April 22, 2021
Dr. Champak Bhakat, PS Dr. Anupam Chatterjee, PS Dr. A. Kumaresan	Webinar on Response to Covid 19 crisis for improving Animal and Human Webinar on Response to Covid 19 crisis for improving Animal and Human health among rural households	April 24, 2021
Dr. M. C. A Devi	National Webinar on Innovative Extension Strategies for sustainable livestock development at Department of Veterinary & AH Extension, MVC-TANUVAS Chennai	April 29, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Clomiphene Resistance What next?	May 5, 2021
Dr. S. Subash	National Webinar on Resilience and Cope up Strategies in Pandemic through Agricultural Engineering Interventions-Womens Perspective at ICAR-CIAE, Regional Station, Coimbatore.	May 9, 2021
Dr. Manoj Kumar C.T.	International Webinar on Impact of milk seasonality on product quality and delivery of bioactive compounds at Dairy Chemistry Division, ICAR-NDRI, Karnal	May 11, 2021
Dr. M. C. A Devi	Online Training Programme on Innovative Ideas for Entrepreneurship Development in Livestock Sector at MANAGE, Hyderabad.	May 11-14, 2021
Dr. M. C. A Devi	Webinar on, Extension of Shelf Life of Pasteurized Milk at IDA	May 12, 2021
Dr. M. C. A Devi	International Web-Workshop on the topic titled Innovative and Emerging Technologies for Food Safety & Nutritional Quality at IDP-NAHEP Project.	May 12-13 & May 25, 2021

Dr. Manoj Kumar C.T.	International Webinar on Innovations and Entrepreneurship Development in Agriculture at SRS of ICAR-NDRI, Adugodi, Bengaluru	May 17, 2021
Dr. A. Kumaresan	International Web Workshop on Recent advances in design and emerging applications in lateral flow assays at NAHEP, ICAR-NDRI	May 18-21, 2021
Dr. K. Ponnusamy	National Conference on Empowerment of Rural Community through NSS organized by Avinashilingam Institute for Home Science and Higher Education for Women.	May 19, 2021
Dr. A. Kumaresan	Webinar on Revisiting MSP-Remunerative pricing for crop and livestock produce in Haryana and Rajasthan region at NAAS Regional Chapter, Karnal	May 22, 2021
Dr. A. Kumaresan Dr. S. Subash	NADS (I) Foundation Day and convocation at NADS (I)	May 26, 2021
Dr. H. C. Devaraja Dr. Manoj CT Dr. Monika Sharma Dr. MCA Devi Dr. Satish Kumar M.H.	International Webinar on Advances in Aseptic Processing and Packaging at SRS of ICAR-NDRI, Adugodi, Bengaluru	May 31, 2021
Dr. S. Subash	International Webinar Advances in Aseptic Processing and Packaging at Southern Regional Station ICAR-NDRI	May 31, 2021
Dr. M. Karunakaran, PS Dr. A. Kumaresan Dr. M. Sivaram, PS	Webinar on World Milk Day	June 1, 2021
Dr. Bimlesh Mann, PS	Lecture on Advances in Health Benefits of Milk and Dairy Products in the Webinar organized by Indian Dairy Association	June 1, 2021
Dr. S. Subash	Webinar on: Issues related to Gaushala and Dairy Entrepreneurs at NDRI.	June 1, 2021
Dr. M. Sivaram	Online Faculty Development Programme on Application of Mathematics and Programming in Science and Technology at Karunya Institute of Technology and Sciences, Coimbatore	June 1-11, 2021
Mrs. Khushbu Kumari, Scientist	On-Line training Programme on MOOC on Theoretical foundations of education technology at NAARM, Hyderabad.	June 1- 30, 2021
Dr. S. Subash	Online Sensitization program for Agricultural Scientists on Entrepreneurship Development and Start-Up Ecosystem at ICAR-NAARM	June 5-9, 2021

Dr. K.P. Ramesha, PS	A speaker for the OIE Virtual Workshop for Vetey Education Establishments and to participate in the Special Seminar on Antimicrobial Resistance (AMR)	June 6-9, 2021
Dr. S. Subash	National Webinar on Agripreneurship in India - Scope, Opportunities and Challenges faced by Agripreneurs & Strategies for a successful Agri-Startup growth at ANGRAU-RARS, Tirupati	June 7, 2021
Dr. K.P. Ramesha, Head	OIE Virtual Workshop for Vety Education Establishments and to participate in the Special Seminar on Antimicrobial Resistance (AMR) in Virtual mode.	June 7-9, 2021
Dr. M. Karunakaran, PS	Webinar on Ovum pick up unit procedures and its solutions	June 8, 2021
Dr. M. C. A Devi	Participated in Webinar on Opportunities and Challenges in Translational	June 9, 2021
	Research- its relevance to the India of tomorrow at Team KIIT-TBI TTO	
Dr. A.K. Singh, PS Dr. Rakesh Kumar, PS	Online training Programme on Management Development Programme on Leadership Development (Pre-RMP programme) at NAARM, Hyderabad.	June 14-25, 2021
Dr. M. C. A Devi	Online Training Programme on Promotion of Farmer Producer Organization in Livestock Sector at MANAGE Hyderabad	June 15-17, 2021
Dr. Satish Kumar M.H. Dr. S. Subash	International Webinar on Innovations and Entrepreneurship Development in Agriculture at SRS of ICAR-NDRI, Aduodi, Bengaluru under the IDP-NAHEP Project	June 17, 2021
Dr Mukund A. Katakataware Dr. Ajoy Mandal, PS	DDCI-Dutch Dairy Days Webinar (3)-Milking technology/ farm management	June 17, 2021
Dr. M. Sivaram, PS	International Webinar on Innovations and Entrepreneurships Development in Agriculture	June 17, 2021
Dr. S.K. Das, PS	Expert Lecture on Bio-safety regulations and guidelines in India	June 19, 2021
Dr. Dilip Kumar Mandal, PS Dr. Champak Bhakat, PS Dr. S. Subash Dr. Monika Sharma Dr. MCA Devi Dr. Anupam Chatterjee Dr. A. Kumaresan	International Workshop on Scientific Writing	June 23-24, 2021

Dr. Mohan Mondal, Sr. Sci.	International Workshop on Indo-US Workshop on Application of Data Science in Biological Systems	June 23-24, 2021
Dr. S.K. Das, PS	Webinar of Hon'ble Minister of State, Animal Husbandry, Dairying and Fisheries and Micro, Small and Medium Enterprises	June 24, 2021
Dr. S. Subash	Webinar on Startup Ecosystem in Agriculture at M. S. Swaminathan School of Agriculture-Centurion University of Technology and Management.	June 24, 2021
Dr. M. C. A Devi	Participated in Webinar on Startup Ecosystem in Agriculture at Department of Agricultural Extension, M.S. Swaminathan School of Agriculture- Centurion University of Technology and Management.	June 24, 2021
Dr. Champak Bhakat Dr. Anupam Chatterjee Dr. Mohan Mondal Dr. S. Subash Dr. M. C. A Devi	Webinar on Role of Rural India on Sustainable Development at ICAR-NDRI, Karnal	June 26, 2021
Dr. A. Kumaresan Dr. S. Subash	Online Dr. K.K. Iya Memorial Lecture on Challenges and Road Map for Indian Dairying Beyond 2021 at Indian Dairy Association, South Zone, Bengaluru.	June 26, 2021
Dr Mukund A. Kataktalware	Webinar on Brain Storming on Potential of Non-bovine Milk Confirmation at NAAS, India	June 29, 2021
Dr. K. Ponnusamy	ICAR-IIWM and IWMI collaborative online training programme on Enhancing Agricultural Resilience through Index-based Flood Insurance and Post-flood Management Interventions in India organized by Indian Institute of Water Management, Bhubaneswar and International water management Institute, Sri Lanka	June 29-30, 2021
Dr. S. Subash Dr. S.K. Das, PS	Online Zonal Workshop 2021 at ICAR-ATARI, Bengaluru	June 30, 2021
Dr. A. Kumaresan, PS	International webinar on the topic Impact of oxidative stress on male and female reproduction	July 1, 2021
Dr. S.K. Das, PS	Webinar/motivational talk on Principles to make a synergy amongst physical, mental and spiritual health: A way forward to mitigate stress and to develop positive thinking in work life	July 3, 2021
Dr. Mohan Mondal	Optimization of embryo & oocyte cryopreservation program organized by ISAR	July 3, 2021
Dr. S.K. Das, PS	Webinar on World Zoonosis Day	July 5, 2021

Dr. S. Jeyakumar Dr. Narender Raju Panjagari	Ag-Incubation at NDRI Incubation Centre at e-Workshop on Entrepreneurship & Start-up Ecosystem at ICAR-NAARM, Hyderabad	July 5-9, 2021
Dr. S. Subash	Webinar on Zoonoses and One Health at SRS of ICAR-NDRI & Alumni Association of SRS of ICAR, NDRI, Bengaluru.	July 6, 2021
Dr. A. Kumaresan	Webinar on Know your dairy food from farm to fork at All India Food Processor Association	July 10, 2021
Dr. A. Kumaresan	Guest Lecture webinar on Can gene editing contribute to livestock agriculture? at NAAS Regional Chapter, Bengaluru	July 15, 2021
Dr. S.K. Das, PS Dr. Champak Bhakat, PS Dr. Dilip Kumar Mandal, PS	Webinar on Biological Diversity Act 2002 with Special Reference to Access and Benefit Sharing	July 17, 2021
Dr. Manoj Kumar C.T. Dr. Monika Sharma	Webinar on Cold chain technologies, convergence and capacity building at ASSOCHAM	July 17, 2021
Dr. M. C. A Devi	Participated in Webinar on, Rethinking on Extension Strategies at MANAGE, Hyderabad & AAU, Assam	July 19, 2021
Dr. Mohan Mondal, Sr. Sci.	International Webinar on Colonization and establishment of rumen microbiota-opportunities to influence the livestock productivity	July 20, 2021
Dr. Mohan Mondal, Sr. Sci. Dr. Champak Bhakat, PS Dr. Dilip Kumar Mandal, PS Dr. Anupam Chatterjee, PS Dr. Mohan Mondal, Sr. Sci.	Webinar on Artificial Intelligence for Smart Agriculture	July 22, 2021
Dr. Asif Mohammad, Sr. Sci.	International webinar on Milk Proteins for the Future	July 22, 2021
Dr. Mohan Mondal Dr. Manoj Kumar C.T.	ILSI India Symposium on Safety and Benefits of Nano technology with focus on its application in Agriculture, Water Safety, Food & Food Safety, Nutrition and Packaging	July 26, 2021
Er. Ankit Deep, Scientist	ICAR-CIAE, Bhopal	July 28-29, 2021
Dr. M. Karunakaran, PS	Webinar on Large animal model: Status of Cloning and Gene Editing	July 30, 2021

Dr. M. C. A Devi	Online Training Programme on Developing Work-life Well-being for Women Extension Functionaries at MANAGE, Hyderabad and PAMETI, Ludhiana.	August 2-5, 2021
Dr. A. Kumaresan	Stephen J Roberts Memorial Lecture at Veterinary College and Research Institute, Orathanadu, TANUVAS	August 5, 2021
Dr. S.K. Das, PS	Webinar on Harnessing potential of protein engineering to combat	August 10, 2021
Dr. M. Karunakaran, PS	Diseases by TIGS group	
Dr Mukund A. Kataktalware	Digital Discussion Series 2020 on Gender and Pandemic: Challenges and Opportunities at ICAR-ATARI, Bengaluru	August 10-12, 2021
Dr. S. Subash	Virtual NADSI- Brainstorming Session on Potential of Small Ruminants in Dairying at NADSI	August 16, 2021
Dr. T. K. Dutta Dr. S.K. Das Dr. Ajoy Mandal Dr. Anupam Chatterjee Dr. M. Karunakaran Dr. Asif Mohammad	International webinar on Diet- microbe interactions and human health	August 21, 2021
Dr. Champak Bhakat, PS Dr. Dilip Kumar Mandal, PS	IDA webinar on Impact of feeding herbs to cattle on the properties of milk	August 21, 2021
Dr. Raghu H.V., Scientist	NABL Assessors Training Course on ISO/IED 17025:2017	August 25-27, 2021
Dr. M. Karunakaran, PS Dr. Mohan Mondal, Sr. Sci.	Webinar on Agricultural Residues Conversion to Biofuels Through Solar Powered Microwave Pyrolysis	August 27, 2021
Dr. S.K. Das, PS Dr. M. Karunakaran, PS	National Webinar on Recent Advances in Animal Genetics for Improving Poultry Productivity organized by Indian Council of Agricultural Research-Research Complex for Eastern Region, Patna.	August 28, 2021

Dr. S.K. Das, PS	International Webinar entitled Diet-Microbe Interactions and Human Health by Dr Ravinder Nagpal (Assistant Professor), Department of Nutrition & Integrative Physiology, Florida State University, Tallahassee, FL (USA) have been scheduled on August 28th from 3:30PM onwards on the topic We and our micro biome: diet microbe interactions in us health & disease.	August 28, 2021
Dr. A. Kumaresan, PS Dr. Asif Mohammad, Sr. Sci.	Webinar on Analysis of obviousness requirement in Indian Patent System	August 28, 2021
Dr. S.K. Das, PS	Webinar on Climate change and Agriculture; Role of Extreme Events on the occasion of Azadi Ka Amrut Mahotsav. Organized by ICAR-Indian Institute of Oilseeds Research (IIOR),	August 31, 2021
Dr. A. Kumaresan	Six-week online agMOOCs course on Management of infertility in cattle – Completed with distinction at TANUVAS, Chennai, IIT, Kanpur and Commonwealth of Learning, Canada	August 31, 2021 to October 15, 2021
Dr. A. Kumaresan, PS	2nd International online Flow Cytometry course on Flow cytometry and its application in biomedical sciences at Trust for Education and Training in Cytometry	September 1-4, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Nutritional Security in India: Issues and Way Forward	September 4, 2021
Dr. S.K. Das, PS Dr. Ajoy Mandal, PS Dr. M. Karunakaran, PS Dr. Asif Mohammad, Sr. Sci.	Webinar for Developing Practical Leadership Skills by Major Priya Jhingan organized by NDRI, Karnal	September 13, 2021
Dr Mukund A. Kataktalware	Webinar on Production Diseases in Farm Animals- Part-I at Intas Polivet	September 13, 2021
Dr. M. Karunakaran, PS	Webinar on Leadership in the creation of a New Scientific endeavour - Role of a Visionary	September 16, 2021
Dr. S.K. Das, PS Dr. Champak Bhakat, PS Dr. Anupam Chatterjee, PS Dr. Mohan Mondal, Sr. Sci	National webinar on Scientific Goat Farming: From the Livelihood to Financial Security for the Farmers, organized by ICAR Research Complex for Eastern Region	September 18, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Exploring Identities in Peer review: A look at Author, Reviewer, and Journal Perspectives	September 20, 2021

Dr. Neelam Upadhyay, Scientist	Application of Bioinformatics in Agricultural Research and Education	September 20-24, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Author and Reviewer Experiences: Building a bridge of empathy	September 21, 2021
Dr. Mohan Mondal, Sr. Sci.	Webinar on Behind the scenes: How a Peer Reviewer Reviews a Manuscript	September 22, 2021
Dr. Asif Mohammad, Sr. Sci.	IRMI Webinar: Funding Opportunities from India Research Management Initiative-2021 organized by India Alliance	September 24, 2021
Dr. S. Subash	Online 19th Annual Convocation cum Scientific Convention (Virtual Mode) on Transforming Livestock health and production with innovative technologies and policy reforms to boost farmers income at National Academy of Veterinary Sciences (I)	September 24, 2021
Dr. S.K. Das, PS	19th Annual Convocation-cum-Scientific Convention of NAVS 24-25 sep21	September 24-25, 2021
Dr. A. Kumaresan	3rd Annual Conference of Animal Physiologists Association (APA) and	September 24-25, 2021
Dr. A. Manimaran	National Symposium on-Physiological Interventions for the augmentation of sustainable Animal Production at DUVASU Mathura, Uttar Pradesh	2021
Dr Mukund A. Kataktalware	Webinar on Production Diseases in Farm Animals- Part-II at Intas Polvet	September 27, 2021
Dr. S. Subash	International Webinar Conference on Alternate Cropping Systems for Climate Change and Resource Conservation at ICAR-Indian Institute of Farming Systems Research, Modipuram, Meerut	September 29, 2021 to October 1, 2021
Dr. S.K. Das, PS Dr. Ajoy Mandal, PS Dr. Dilip Kumar Mandal, PS	International Webinar on Genomic Dairy Cattle Breeding in Developed Countries - with a view to its application in India under the aegis of IDP- NAHEP, organized by Animal Genetics & Breeding Division of ICAR-NDRI, Karnal	September 30, 2021
Dr. S.K. Das, PS Dr. Champak Bhakat, PS Dr. Anupam Chatterjee, PS Dr. S.A. Hussain Dr. Gunjan Bhandari	National webinar on Gandhian Philosophy and Current Scenario in Agriculture	October 2, 2021

Dr. Laxmana Naik N	Participated in 5 days online training programme on Innovations in Educational Technology at ICAR-NAARM, Hyderabad	October 4-8, 2021
Dr Mukund A. Kataktaalware	Webinar on Lesser-Known Animal Genetic Resources of India: An Overview at ICAR-NBAGR, Karnal	October 5, 2021
Dr. Rakesh Kumar, PS Dr. S. Subash	International Conference on Moringa Pariyakulam, Tamilnadu	October 6-8, 2021
Dr. S.K. Das, PS	National Webinar on Agro-Environmental Ethics at ICAR-NDRI	October 7, 2021
Dr. S. Subash	Webinar on Entrepreneurship in Food Industry at Alumni Association of SRS of ICAR, NDRI, Bengaluru	October 16, 2021
S. Jayakumar	International Symposium on Novel Knowledge, Innovative practices and Research in Theriogenology (Attended through online) at Dept. of Animal Reproduction, Gynecology and Obstetrics, College of Veterinary Sciences, Mannuthy, KVASU.	October 19-20, 2021
Dr. Archana Verma, PS	Online Management Development programme (MDP) on Management & Leadership Development Programme at Institute of Rural Management Anand (IRMA), Gujarat	October 21-22, 2021
Dr. S.K. Das, PS	National Webinar on Engineering Self-reliance in Dairy Industry (Through Virtual Mode) Organized by: Indian Dairy Engineers Association (IDEA) & Dairy Engineering Division, NDRI	October 23, 2021
Dr. Rajeev Kapila, PS	Directors/ Divisional Heads/ Chief Scientists/ Senior Scientists Policy for Science and Science for Policies (Online) by Ministry of Science and Technology, Govt. of India.	October 25-29, 2021
Dr. Nitin Tyagi, PS	Training cum Workshop on Livestock methane emission assessment, impact and amelioration strategies organized by ICAR-NIANP Bangalore.	October 26-28, 2021
Dr. Bimlesh Mann, PS	Lecture on Migration of Chemical Additives from Food Packaging Material -New Generation contaminants in the International Conference on Convergence of Tech. and Policy for Sustainable Meat Production organized by Association of Meat Scientists & Technologies (AMST), Meat Tech. Unit (MTU), Kerala Vet. & Animal Sciences University (KVASU) in virtual mode.	October 26-28, 2021

Dr. S.K. Das, PS	Webinar on Application of Multi -Omics in Animal Production organized by ICAR-National Bureau of Animal Genetic Resources Speaker: Dr. James M. Reecy, Professor, Associate Vice President of Research, Department of Animal Science, College of Agriculture & Life Sciences, Iowa State University, USA	October 27, 2021
Dr. Shivaswamy G.P.	Oral presentation on an assessment of magnitude and drivers of India's virtual water trade in major food products at 29th Annual Conference of Agricultural Economics Research Association, OUAT, Bhubaneswar	October 27-29, 2021
Dr. K.P. Ramesha, PS	Radio Talk on Breeds of cows and Buffaloes of Karnataka to be broadcast on Rajyotsava Day.	November 1, 2021
Dr. M. C. A Devi	International Virtual Conference Transforming Agricultural Advisory	November 12-13, 2021
Dr. S. Subash	Services to Mitigate the Effects of the Pandemic for Farmers Welfare- (ICTAAS-2021) at VIT, TANUVAS, Bule Hora University, Ethiopia and Al Neelain University, Sudan	2021
Dr. Ashok Santra Dr. Nitin Tyagi Dr. Rajani Kumar Paul Dr. A. Manimaran Dr. Sachin Kumar Dr. A. K. Singh Dr. T.K. Mohanty	XV Agriculture Science Congress & ASC Expo (Online) by BHU, Varanasi under DST Project	November 13-16, 2021
Dr. Sanjit Maiti, Sr. Sci.	Workshop on Researchable ideas and methods: Improving competency of social scientists under the 5th Faculty Development Program of IDP-NAHEP at CAU, Imphal.	November 15-20, 2021
Dr. Meena Malik, Professor (English) Dr. P.S. Minz, Sr. Sci. Dr. Chitranayak, Sr. Sci. Dr. Hima John, Scientist	51st Annual Conference of ELTAI-A four-day Virtual Conference (two weekends) Online	November 20-21, & November 27-28, 2021
Dr. Vairat Amita Dinkar, Scientist	International symposium on Emerging trends in Agricultural Engineering Education, Research and Extension (Online). Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar	November 23-25, 2021

Dr. Vairat Amita Dinkar, Scientist	55th Annual Convention of Indian Society of Agricultural Engineers on Challenges and Technological Solutions for Ensuring Food, Water and Energy Security	November 23-25, 2021
Dr. Sanjeev Kumar, Scientist	Lecture in the 5th International Agronomy Congress Agri. Innovations to Combat Food and Nutrition Challenges at PJTSAU, Hyderabad	November 23-25, 2021
Dr. Asutosh, PS	5th International Agronomy Congress at PJTSAU, Hyderabad	November 25-27, 2021
Dr. Ajoy Mandal, PS	Webinar on Sustainable Development in Dairy Sector- Clean Milk Production (online)	November 26, 2021
Dr. Shivaswamy G. P	Attended a National Workshop on Farmers Income and Research Impact Assessment at ICAR-NIAP	November 29, 2021
Dr. Asif Mohammad, Sr. Sci.	Management of Water Surplus - Deficit Dichotomy in North Eastern Agriculture to enhance the Productivity organized by NIRDPR-NERC, GUWAHATI in association with ICAR-Research Complex-North Eastern Hill Region, Meghalaya	November 30, 2021
Dr. S.K. Das, PS	Webinar on Protection of plant varieties, the Key to Improved Agricultural Commerce & Growth	December 1, 2021
Dr. S.K. Das, PS	Webinar on How to Write Claims in a Patent Application? organized by Institute Technology Management Unit (ITMU) at ICAR-NDRI, Karnal	December 1, 2021
Dr. Ajmer Singh, PS Dr. B. S. Chandel, PS Dr. A. K. Dixit, PS	81st Annual Conference of Indian Society of Agricultural Economics at Shri Mata Vaishno Devi University Katra, Jammu & Kashmir.	December 1-3, 2021
Dr. Asif Mohammad, Sr. Sci.	Geospatial Approach for Water management in Urban and Rural Areas organized by ICAR Research Complex for Eastern Region, Patna, Bihar-800014	December 3, 2021
Dr. K. Jayaraj Rao	Workshop on Waste to Wealth – Use of Food Industry Waste as Animal Feed and Beyond at National Academy of Agricultural Sciences, New Delhi	December 3, 2021
Dr. Champak Bhakat, PS Dr. Anupam Chatterjee, PS	ISCAR Webinar on Sustainable Integrated Farming System for Coastal India	December 4, 2021
Dr. Satish Kumar M.H. Dr. MCA Devi	Online webinar Enhancing Resilience through Entrepreneurship at ICAR-NAAR	December 6-10, 2021

Dr. Sangita Ganguly, Scientist	Two-week training on General Management Programme for Women Scientists in Online Mode from Administrative Staff College of India (ASCI), Hyderabad.	December 6-17, 2021
Dr. K.P. Ramesha, PS Dr. S. Subash	Birth Centenary Celebrations of Dr. Verghese Kurien by Indian Dairy Association (South Zone) at Hotel Abu Sarover Protico, Chennai	December 8, 2021
Dr. Menon Rekha Ravindra	Online training programme on Statistical Design and Analytical Methods for Multifactorial Experiments at ICAR-CMFRI	December 8-17, 2021
Dr. Champak Bhakat, PS Dr. Anupam Chatterjee, PS	5th Webinar on Implementation and Use of Agril. Research Management System	December 9, 2021
Dr. Bimlesh Mann, PS	National symposium of Indian Society for Buffalo Development (ISBD) on	December 10-11, 2021
Dr. Vikas Vohra, PS	Scientific Interventions to Address Challenges for Sustainable Buffalo	2021

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Name & Designation	Title of the Training	Period
Dr. Latha Sabikhi, PS	International conference on Water, Agriculture, Dairy and Food processing for Sustainable Economy held in a hybrid mode by Verghese Kurien Centre of Excellence (VKCoE), Institute of Rural Management Anand (IRMA), Anand (Gujarat)	March 25-26, 2022.
Dr. D. Malakar, PS	National Conference on “Animal Breeding Strategies in the Era of Genomics and Ohenomics at NBAGR, Karnal.	December 17-18, 2022.
Dr. Kamal Gandhi, PS	28th Indian Convention (online) of Food Science & Technologies at Aurangabad Maharashtra.	January 20-22, 2022.
Dr. G. S. Meena, Scientist	-do-	-do-
Dr. T. K. Mohanty, PS	Guest Speaker in the National Livestock Conference “UTKARSHA” at Visakhapatnam.	April 11-13, 2022
Dr. K. Ponnusamy, PS	Lecture in the National Conference at CSK Himachal Pradesh Agricultural University, Palampur Distt Kangra (H.P)	May 6-8, 2022

Dr. Mukesh Bhakat, PS	National Symposium on “ Advancement in Veterinary medical research contributing to “One Health” for betterment of Animal and public health and their welfare” at Udaipur	April 8-9, 2022
Dr. Nishant Kumar, Sr. Scientist	-do-	-do-
Dr. Sachin Kumar, Scientist	National Symposium on Self-Reliant Coastal Agriculture at ICAR- CCARI, Ela, Old Goa.	May 11-13, 2022
Dr. Pankaj Saraswat, Scientist	National Conference of KVKs 2022 at YSPH&F, Solan	June 1-2, 2022
Dr. Magan Singh, Sr. Scientist	Seminar/ National Group Meeting Kharif 2022 at SKUAST- Kashmir, Srinagar	June 13-14, 2022
Dr. Sanjeev Kumar, Scientist	-do-	-do-
Dr. Sachin Kumar, Scientist	XX NAVS (I) convocation-cum-scientific convention on “Restructuring veterinary education, research and extension for enhancing livestock and poultry production to boost the GDP at MAFSU, Nagpur	June 20-21, 2022
Dr. Gautam Mondal, PS	International Conference on “Advances in Agriculture and Food System at Bangalore.	August 22-24, 2022
Dr. G. S. Meena, Sr. Scientist	-do-	-do-
Dr. Yogesh Kheta, Sr. Scientist	-do-	-do-
Dr. Kamal Gandhi, Sci	IDF World Dairy Summit 2022 at Greater Noida (UP)	September 12-15, 2022
Dr. G. R. Gowane, Sr. Scientist	XIX Annual Convention (SOC DAB) & National Symposium on Contemporary Technology for Animal Genetics Resources at NBAGR, Karnal .	September 21-22, 2022
Dr. Anupama Mukherjee, PS	-do-	-do-
Dr. D. Malakar, PS	-do-	-do-
Dr. Nitin Tyagi, PS	India Animal Health Summit 2022, NASC Complex, New Delhi.	July 6-7, 2022
Dr. Gopal Gowane, Sr. Scientist	-do-	-do-
Dr. Nishant Kumar, Sr. Scientist	-do-	-do-
Ms. Priyanka, Scientist	Training program on “Intellectual Property Rights (IPR) organized by National Intellectual Property and Technology Management Unit (ITPM) of ICAR	August 1-5, 2022

Ms. Priyanka, Scientist	International Conference on Advances in Agriculture and Food Systems towards Sustainable Development Goals	August 22-24, 2022
Dr. P.S. Minz, Sr. Scientist	-do-	-do-
Dr. Sachin Kumar, Scientist	-do-	-do-
Dr. Sudarshan Kumar, Sr. Scientist	XIX Annual Convention and National Symposium on Contemporary Technology for Animal Genetics Resource (ANGR) Management, NBAGR, Karnal (online)	September 21- 22,2022
Dr. Rani Alex, Sr. Scientist	-do-	-do-
Dr. Rubina K. Baithalu, Scientist	-do-	-do-
Dr. S. Mukherjee, PS	-do-	-do-
Dr. Sohan Vir Singh, PS	-do-	-do-
Dr. P. N. Raju, Sr. Scientist	International Conference on Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES-2022), University of Kashmir, Hazratbal, Sri Nagar (online)	September 28-30, 2022
Dr. Nishant Kumar, Sr. Scientist	-do-	-do-
Dr. Rubina K. Baithalu, Scientist	-do-	-do-
Dr. Heena Sharma, Sr. Scientist	7th Convocation of NADSI and National Dialogue at DUVASU, Mathura.	October 29, 2022
Dr. G. S. Meena, Sr. Scientist	-do-	-do-
Dr. Yogesh Khetra, Sr. Scientist	-do-	-do-
Dr. A. K. Singh, Joint Director (A)	-do-	-do-
Dr. Heena Sharma, Sr. Scientist	National Seminar-cum Annual Conference on at ICAR-Central Sheep and Wool Research Institute, Avikanagar.	November 10-12, 2022
Dr. G. R. Gowane, Sr. Scientist	-do-	-do-

Dr. Hima John, Sr. Scientist	CAFT training programme on “Innovations in Processing and Packaging of Dairy and Food Products and Opportunities for Entrepreneurship Development and Start-ups at NDRI, Karnal.	November 7-27 2022
Dr. Chitranayak, PS	12th Convention of IDEA & National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India at Warud (Pusad) Distt.-Yavatmal (M.S.)	December 15-16, 2022
Er. Ankit Deep, Sci	-do-	-do-
-do-	10th International Conference (online) at Bhai Gurdas Institute of Engineering Technology at Sangrur.	November 11-12, 2022
Dr. Vikas Vohra, PS	1st National Convention & National Seminar at DPR, Hyderabad.	December 2-3, 2022
Dr. D. Malakar, PS	National Development Programme at NBAGR, Karnal	December 17-18, 2022
Dr. Arun Kumar Mishra, PS	National Dialogue on “Sustainable growth and Development of Indian Dairy Sector” at DUVASU, Mathura	December 16-17, 2022
Dr. Ashutosh, PS	International Conference on “Reimagining Rainfed Agro-ecosystems at Hyderabad.	December 2-3, 2022
Dr. P.N. Raju, Sr. Scientist	7 th Convocation of NADSI and National Dialogue on “Innovation in Reshaping the Indian Dairying” DUVASU, Mathura.	October 29, 2022
Dr. P.S. Minz, Sr. Scientist	International Conference on Advancements in Engineering and Technology (online).	November 11-12, 2022
Dr. Nishant Kumar, Sr. Scientist	National Conference on “Contemporary Multidisciplinary Issues in Applied Science, Humanities, Agriculture, Animal Health and Production” (ASHAA-2022), Rajiv Gandhi South Campus, Barkachha, Mirzapur, BHU	November 14-15, 2022
Dr. Sunita Meena, Sr. Scientist	-do-	-do-
Dr. Rubina K. Baithalu, Scientist	National Symposium National Symposium on “Optimizing animal reproduction through recent techniques of biotechnology, nutraceuticals and alternative medicine” & XXXXVII ANNUAL CONVENTION of ISSAR (ISSARCON-2022).	November 16-18, 2022
Dr. S. De, PS	AMR International Seminar & deliver talk on “AMR patterns of E.coli from fish”, ICAR-CIFT, Cochin, Kerala	November 21-22, 2022
Dr. Rakesh Kumar, PS	International Seminar “Interventions for control of AMR: Harnessing One Health Knowledge”, Cochin Kerala	November 21-22, 2022

Dr. S. De, PS	XVI Annual Conference of Indian Society of Animal Genetics & Breeding (ISAGBICON2022), ICAR- Directorate of Poultry Research, Hyderabad	December 2-3, 2022
Dr. P.S. Minz, Sr. Scientist	6th Biennial e-Conference of Probiotic Association of India (PAi) and international e-symposium on “Psychobiotics and Gut: Potential in Neurological Disorders” (online).	December 5-6, 2022
Dr. Meena Malik, Professor (English)	16th International and 52nd Annual Conference of ELTAI, New Panvel (W), Navi Mumbai.	December 8-10, 2022
Dr. Pradip Behare, Sr. Scientist	12th Convention and National Seminar, College of Dairy Technology, Warud Pusad, Maharashtra	December 15-16, 2022

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Name and Designation	Conferences/ Symposiums/ Conventions/ Seminars/ Workshops etc.	Duration
Scientific Staff		
Dr. Sachin Kumar, Scientist	New Horizons of Animal Nutrition Research: Combating the Challenges of Productivity, Health and Welfare of Animals at DUVASU, Mathura	16-18 February, 2023
Dr. Nitin Tyagi, Principal Scientist		
Dr. Pradip Behare, Senior Scientist		
Dr. Sumit Arora, Principal Scientist	National Workshop on “Enhancing the functionality of dairy foods through fortification- Quality and Challenges at WBUA&FS, Kolkata, Mahanpur Campus, Nadia, West Bengal.	10-12 August, 2023
Dr. Vivek Sharma, Principal Scientist		
Dr. Pankaj Kumar Saraswat, Principal Scientist	National Symposium on Enhancing Agricultural Sectors Income through Integration, Diversification and Commercialization of Technologies (NSEAI-2023) at Agriculture University, Jodhpur.	1-2 September, 2023
Dr. A. K. Sharma, Principal Scientist	Online Hindi workshop at IASRI, New Delhi.	08-13 September, 2023
Dr. Chitranayak, Principal Scientist		
Dr. (Mrs.) Khushbu Kumari, Scientist		
Dr. Pawan Singh, Principal Scientist	Online Workshop on Biological Data Exploration and Visualization Using R	27-28 October, 2023
Technical Staff		
Sh. Rakesh Kumar Raman, Technical Assistant	Expo during the 49th Dairy Industry Conference at Gandhinagar Gujarat by Indian Dairy Association	16-18 March, 2023

Sh. Munish Leharwan, Technical Assistant	National Symposium on “Enhancing Agricultural Sectors Income through Integration, Diversification and Commercialization of Technologies (NSEAI-2023)” at Agriculture University Jodhpur	1-2 September, 2023
Sh. Bindeshwari Pratap Singh, CTO, Library Sh. Narender Singh, STO, Library	Agricultural Libraries and Sustainable Development Goals: The Way Forward at Mohinder Singh Randhawa library Punjab Agricultural University Ludhiana & Association of Agricultural librarian and Documentalists of India.	05-06 October, 2023
Dr. P. Barnwal, Principal Scientist	13th IDEA Convention & International Conference on “Recent Advance in Engineering Applications for Sustainable Dairying” IDEA, at Collage of Dairy Technology GADVASU, Ludhiana.	13-14 October, 2023
Dr. Chitranayak, Principal Scientist		
Dr. Ankit Deep, Scientist		
Dr. Khushbu Kumari, Scientist		
Dr. Priyanka, Scientist		
Dr. J.K. Dabas, CTO, ME, Section		
Er. Sunil Kumar, ACTO, DE, Division		
Er. Pardeep TO, DE, Division		
Er. Sachin, TA, DE Division		
Sh. Ishu Dhiman, TA, ABTC, Division	Laboratory System & Internal audit as per ISO/ IEC17025:2017 (NABL Accreditation), at INSA, Bahadur Shah Zafar Marg, Mata Sundari Railway Colony, Mandi House, New Delhi	04-06 December, 2023
Sh. Mukesh Onkar, TA, Dairy Chemistry Division,		
Administrative Staff		
Sh. Sanjay Kumar	Workshop for Administrative Staff working at ICAR-NDRI, Karnal and its Regional Stations organized by NDRI, Karnal	25-29 October, 2023
Smt. Alpana		
Sh. Sahil		
Sh. Shailender Kumar		
Sh. Dharmendra Singh		
Smt. Sushma Rani		
Sh. Ram Dhari		
Smt. Pinki Devi		

Smt. Meena Kumari		
Sh. Ravinder Kumar		
Ms. Sonika Yadav		
Sh. Pardeep Kumar Gupta		
Sh. Chatar Pal		
Sh. Naresh Chauhan		
Sh. Kuljit Singh		
Sh. Annu Mann		
Sh. Narendra Kant Sharma		
Sh. Vinod Kumar		
Sh. Prabhjit Singh Behl		
Sh. Babu Lal Meena		
Sh. Jatin Verma		
Sh. Rajesh		
Sh. Raj Kumar		
Sh. Suraj Bhan		
Sh. Subhash Chander		
Sh. Jalam Singh		
Sh. Rajesh Kumar		
Smt. Simranjeet Kaur Lall		
Sh. Sagar		
Sh. Ankit Kaushik		

2024-25

Scientist	Title	Sponsoring agency	Duration
Dr. Nitin Tyagi, Principal Scientist and Dr. Rubina Baithalu, Sr. Scientist	Entrepreneurship Development Program on “Commercial Dairy Farming”	ABI project of ICAR-NDRI	January 6-11, 2024
Dr. Sanjeev Kumar, Sr. Scientist	15 days short course training (online) on Climate Smart Practices in Agriculture and Allied Sciences for Sustainable Development	Astha Foundation, Meerut	March 15-30, 2024

Dr. Sanjeev Kumar, Sr. Scientist	15 days short course training (online) Climate Change Scenario: Impact on Agriculture and Allied Sciences	Astha Foundation, Meerut	March 16-30, 2024
Dr. Richa Singh, Sr. Scientist; Dr. Vivek Sharma, Principal Scientist	Hands-on training for fatty acid and triglyceride analysis of ghee	Everest Instruments Pvt. Ltd. Ahmedabad	April 19-20, 2024
Dr Sadeesh E.M. Sr. Scientist	Summer Internship Training Program for students, focusing on Mitochondrial Research Techniques. The program covered key techniques, including the Isolation of Mitochondria from Tissues, Mitochondrial DNA Extraction, PCR Amplification, and Genetic Analysis of Mitochondrial DNA	Students from the following institutions participated in the program: Kurukshetra University, Kurukshetra, Haryana Chandigarh University, Punjab	May 27, to July 7, 2024
Dr. Suneel Kumar Onteru	Summer Internship Training Program for students on the topics “Targeted delivery and analysis of anti-cancerous drugs (in vitro) and encapsulated miRNA(in vivo) using bovine milk exosomes”	Students from Kurukshetra University participated in this program	June 3, 2024 to July 14, 2024
Dr Rajani Kr Paul, Sr. Scientist	Summer internship training on “Gene cloning, protein expression and purification” for 4-6 weeks duration	Ms Radhika Ms Parul Dagar Mr Kritik Balayen Kurukshetra University	May 28 to July 12, 2024 June 3 to July 16, 2024 July 15 to August 14, 2024
Dr. P. Barnwal, Head of Division; Dr. Ankit Deep, Scientist	One month training to students	Hands on training programme in Dairy Engineering” for undergraduate students from Sam Higginbottom University of Agriculture, Technology	June 3 to July 2, 2024

		and Sciences, Prayagraj, Uttar Pradesh and Mehr Chand Mahajan DAV College for Women, Chandigarh	
Dr. Shaik Abdul Hussain, Sr. Scientist	One month training to student	Ms. Palak Aggarwal and Ms. Tamanna, student of M.Sc. Home Science (Food Nutrition & Dietetic), Kurukshetra University, Kurukshetra.	June 3 to July 3, 2024
Dr. Shaik Abdul Hussain, Sr. Scientist	One month training to student	Ms. Kavyashree, student of B. Tech Food Technology, Shoolini University, Solan (H.P).	June 10 to July 10, 2024
Dr. Yogesh Khetra	Training on Cheese Technology	Dairy Technology Division, ICAR- NDRI Karnal	June 17-21, 2024
Dr. P. Barnwal, Head of Division; Dr. Ankit Deep, Scientist	One month training to students	Hands-on Training Program in Dairy Engineering (Five undergraduate students from Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, Uttar Pradesh; Mehr Chand Mahajan DAV College for Women, Chandigarh and NIMS University, Jaipur)	July 1-31, 2024

Dr. Yogesh Khetra, Sr. Scientist and Dr. Sangita Ganguly, Scientist	Entrepreneurship Development Program on “Cheese: Production & Quality Evaluation”	ABI project of ICAR-NDRI	July 17-21, 2024
Dr. Naresh L. Selokar Dr. Manoj Kumar Singh.	National Brainstorming Workshop on “Animal Cloning & Genome Editing Technology”	ICAR-NDRI, Karnal	July 19, 2024
Dr. Bharati Pandey, Scientist	SERB Sponsored High-End Workshop (Karyashala) on “Harnessing the Power of Multi-omics Big Data in Animal Science for Precision Agriculture.”	ICAR-NDRI, Karnal	July 15-28, 2024
Dr. Rajesh Bajaj, Principal Scientist; Dr. Richa Singh, Sr. Scientist, Dr. Raghu H.V., Sr. Scientist; Dr. Kamal Gandhi, Scientist	Training on “Chemical and Microbiological Quality and Safety Monitoring in Dairy Industry”	Officials of Hatsun Agro Products Ltd, Chennai	July 23 to August 01, 2024
Dr. Writdhama Prasad and Dr. Kaushik Khamrui	National workshop on Application of artificial intelligence and machine learning in dairy and food industry	ICAR-NDRI, Karnal	July 31, 2024
Dr. Sanjeev Kumar, Sr. Scientist	21 Days Summer School in Online Mode on Emerging Challenges and Opportunities in Biotic and Abiotic Stress Management (ECOBASM-2024)	Astha Foundation, Meerut	August 10-30, 2024
Dr. Yogesh Khetra	FOSTAC training program on manufacturing	For B. Tech. Dairy Technology students	September 7, 2024
Dr. G.S. Meena, Scientist and Dr. Heena Sharma, Sr. Scientist	Entrepreneurship Development Program on “Milk and Milk Products Processing”	ABI project of ICAR-NDRI	October 14-19, 2024
Dr. Sachin Kumar, Scientist	Entrepreneurship Development Program on “Commercial Dairy Farming”	ABI project of ICAR-NDRI	October 21-26, 2024

Dr. Bharati Pandey, Scientist	SERB sponsored One-day Workshop titled “Applications of Big Data in Animal Science: Advances and Insights”	ICAR-NDRI, Karnal	October 25, 2024
Dr. Anupama Mukherjee, Principal Scientist	Dr. Akinsola Oludayo Michael, Animal Geneticist, Jos, Nigeria	Trained (PDF) at AGB Division, NDRI under C V Raman Fellowship sponsored by DST, Govt of India & FCCI for a period of six months	October 26, 2023 to April 26, 2024

6.6.5.3 Faculty Recognition/ Incentive for Excellence

Institute Awards

- ICAR-NDRI ranked first among 72 Agricultural Universities and Deemed Universities consecutively five times for the year 2020 conferred in 2021 by the Education Division of Indian Council of Agricultural Research, New Delhi.
- ICAR-NDRI was conferred Global Water Award on August 22, 2021 for work carried out on water saving and reuse technologies in 5th World Water Summit 2021.
- Team NDRI (Puniya AK (Team Leader), Dasriya V, Dhillon HS and Chaudhary V) won ‘Zonal Level Technical Evaluation’, KRITAGYA (HACKATHON 2.0) for the year 2021 organized by ‘National Agricultural Higher Education Project (NAHEP)’ and Animal Science Department of Indian Council of Agricultural Research, New Delhi.



- ICAR-National Dairy Research Institute has received Research Leadership Award - 2023. The award was presented to Dr. Dheer Singh, Director, ICAR-NDRI by Sh. Arjun Munda, Honourable Minister of Agriculture and Farmers Welfare at 14th Agriculture Leadership Conclave 2023 held at New Delhi on December 21, 2023. The award is given by Agriculture Today Group to institutes who have made noticeable contributions to research achievements, generated resources and established networks which accelerated the pace of research activities in that sphere.
- ICAR-National Dairy Research Institute has been recognized as a GATI Achiever by the department of Science and Technology (DST), Govt. of India among the identified 30 pilot institutions on July 3rd, 2023. This is prestigious and the first of its kind of recognition of ICAR-NDRI for its remarkable work done for women in STEMM through GATI program. This recognition would be valid for next five years.
- Selokar, N., Singh, M. K., Aswal, A., Lathwal, S. S., Chand, S., Verma, R., Patel, K. and Chauhan, M. S. Received appreciation letter for the production of India's first cloned cow, GANGA from Hon'ble Union Minister of Agriculture and Farmers' Welfare, Shri. Narendra Singh Tomar.



- The ICAR-National Dairy Research Institute (NDRI) secured the second rank in the National Institutional Ranking Framework (NIRF)-2024 in 'Agriculture and Allied Category' of the Union Ministry of Higher Education. Dr. Dheer Singh, Director and Vice-Chancellor of the institute, received the award for the ranking from Union Minister for Education Shri Dharmendra Pradhan during the award ceremony for the India Rankings 2024 in New Delhi on 12th August, 2024.
- ICAR-NDRI technology titled "A new strip-based test for detection of urea in milk" has been awarded one of the best technologies amongst 05 technologies of Animal Science Division. Dr. Rajan Sharma, Joint Director (Research) received the certificate from Shri Shivraj Singh Chouhan, Honourable Union Minister of Agriculture & Farmers Welfare & President of the ICAR Society on July 16, 2025 on the occasion of 96th ICAR Foundation Day at New Delhi.



- ICAR-National Dairy Research Institute (NDRI) Library received the award for “Best e-Resource Sharing” through the CeRA@J-Gate (Consortium of e-Resources in Agriculture) platform among deemed universities, state agricultural universities, and central agricultural universities for 2023 on September 2, 2024, during the CeRA Workshop for the Northern Region held at SKUAST in Srinagar, Kashmir



ICAR Awards/ Best Teacher Awards

- Dr. Sanchita Garai, Senior Scientist (Extension) received “Swami Sahajanand Saraswati Outstanding Extension Scientist Award 2020 from Indian Council of Agricultural Research, New Delhi on July, 2021.
- Dr. K. Ponnusamy Principal Scientist (Dairy Extension) and Dr. Nishant Kumar, Senior Scientist (Veterinary Gynaecology and Obstetrics) received Best Teacher Award of the Institute at 18th Convocation held on August 24, 2021.
- Dr Anurag Saxena received Best Teaching Award, Global Teaching Excellence Award 2021.
- Dr. P. Barnwal, PS and Acting Head, DE Division received “Engineering Excellence Award-2021” from The Institution of Engineers (India) Rajasthan State Centre, Jaipur” on the occasion of 75th Independence Day on August 15, 2021 at Jaipur.
- Dr. Rakesh Kumar was awarded Dr. Sarvepalli Radhakrishnan Best Teacher Award 2021 in Agronomy on September 5, 2021 by Center for professional advancement

(A unit of MGRF Registered with Govt. of India NITI Aayog NGO Darpan), Vijayawada, India.

- The students' team of Sumit Kumar Singh, Rohit Kumar and Anju Nagpal, PhD students (Mentor: Dr. Sudarshan Kumar) was awarded the Biotechnology Industry Research Assistance Council (BIRAC)'s award at National Bio Entrepreneurship Competition 2022. The team got the top position and earned a cash prize of Rs. 3.0 lakhs and a certificate.
- The students' team of Dasriya V, Dhillon HS and Chaudhary V (Mentor: Dr. A. K. Puniya) was awarded KRITAGYA (National HACKATHON 2.0) organized by 'National Agricultural Higher Education Project (NAHEP)' and Animal Science Department of Indian Council of Agricultural Research, New Delhi.



- Dr Neelam Upadhyay, Dr Ashish Kumar Singh, Mr. Shailesh Meena, Dr. Ganga Sahay Meena, Dr Ravinder Malhotra: FSSAI EAT RIGHT RESEARCH AWARD AND GRANT Under Team Category Theme: Eat sustainable.

Best Oral Presentation /Best Paper/ Poster Awards

2021-22

- Bharti Deshmukh, Archana Verma, Ishwar Dayal Gupta and Neeraj Kashyap received Best Oral Paper Award for the paper "Identification of Single Nucleotide Polymorphisms in SPAG11 Gene and their association with Fertility Traits in Murrah Bulls" (Theme-2: Breeding and Genetics) in the National Symposium of Indian Society for Buffalo Development held at GADVASU Ludhiana during December 10- 11, 2021.
- Sakshi Kaith and J. K. Kaushik, Animal Biotechnology Centre was given Best Oral Presentation Award at the Virtual Conference on Proteomics in Agriculture and Healthcare, organized by University of Hyderabad, March 13-14, 2021.
- Nidhi Sukhija, Anoop Anand Malik, Aishwarya Dash, Kangabam Bidyalaxmi, Anjali Choudhary, Rekha Sharma, I.D. Gupta, Jayakumar Sivalingam and Archana

Verma received Best Oral Presentation Award on ‘Genome-wide identification of selective sweeps and diversity in Gir and Tharparkar cattle’ during V Annual Convention of SVBBI and National Symposium organized by Department of Veterinary Biochemistry, College of Veterinary Science and Animal Husbandry, DUVASU, Mathura during March 24-25, 2021.

- Thamizan, P., Chander Datt, Shambhvi, Kuldeep Dudi, Anupam Thakuria, Prateek Singh, Goutam Mondal and Veena Mani received First prize for oral presentation on “Influence of supplementary nickel on feed intake and nutrient utilisation in Murrah buffalo calves” during National Symposium of Indian Society for Buffalo Development (ISBD) On “Scientific Interventions to Address Challenges for Sustainable Buffalo Production” at GADVASU, Ludhiana-141004, Punjab, India during December 10-11, 2021.



Dr. Chander Datt Receiving Best Oral Presentation Award (On behalf of his team) From : Mr. K. S. Sangha (IAS) MD, Milkfed, Punjab on Dec. 11th, 2021 during ISBD, Symposium - 2021 held at : GADVASU, Ludhiana, Punjab, India

- S. Ragulraj, M. Bhakat, T.K. Mohanty, S. Maiti, G.S. Lal, M.S. Rajput, N. Shah and R. Dewery received Best Presentation Award (Oral) on “Early prediction of neonatal calf diarrhoea in Murrah buffalo through daily infrared temperature monitoring” in the National Symposium organized by C.V.Sc. (Ludhiana), GADVASU, in National symposium of ISBD on Scientific Interventions to address challenges for sustainable buffalo production during December 10-11, 2021.
- Atul S. Rajput, Mukesh Bhakat and T.K. Mohanty received Best Oral Presentation in the online conference Emerging trends in agriculture and biological sciences (January 14-15, 2022) organized by Society for Bioinformatics and Biological Sciences and Applied Research and Development Organization, India under session VIII: Veterinary Sciences-III on the title “Identification of estrus using infrared thermography in indigenous dairy animals”.
- Sandeep Kumar got Best Oral Presentation Award entitled, ‘Bifunctional HPrK/P enzyme: A potential target for antibiotics discovery against resistant *Enterococcus faecalis* in the International Conference on Emerging Strategies in Antimicrobial

Agents and Bio-innovation’ organized by the Department of Microbiology, School of Science, RK University on December 18-19, 2020.

- Reenu Kashyap and Shilpa Vij received First Prize for oral presentation on “Buffalo colostrum proteins derived formulation for management of diarrhea in immune compromised patients. 27th International conference on Advances in Food Science and Technology (October 26-28, 2021) Meghalaya, India.
- M. Kumari and P. V. Behare received Best Oral Presentation Award for Immunomodulatory potential of exopolysaccharide produced by *Streptococcus thermophilus* NCDC399 at 10th International Conference on Fermented Foods, Health Status and Social Well-being held on December 17-18, 2021 at the Faculty of Agriculture, University of Peradeniya, Sri Lanka.
- Shivaswamy G.P. received RT Doshi Best Paper Presentation Award for a research paper, “An assessment of magnitude and drivers of India’s virtual water trade in major food products” in the 29th Annual Conference of Agricultural Economics Research Association, held at OUAT, Bhubaneswar during October 27-29, 2021.
- S. Subash received Two ‘Best Paper Presentation Awards –II Place’ for a paper presented in the “International Virtual Conference “Transforming Agricultural Advisory Services to Mitigate the Effects of the Pandemic for Farmers Welfare”– (ICTAAS-2021) Jointly Organized by VIT, TANUVAS, Bule Hora University, Ethiopia and Al Neelain University, Sudan held during November 12-13, 2021.
- Suwalke R., Panjagari N.R., Ganguly S., Singh A.K., Sharma R. and Raghu H.V. received Best oral presentation entitled ‘Performance of On-package freshness indicator of set type Dahi as affected by starter cultures’ at 10th International Conference on Fermented Foods, Health Status and Social Well- being. Organized by the University Research Council of University of Peradeniya, Sri Lanka in collaboration with SASNET-FF at December 17-18, 2021 (virtual mode).
- Kathan Raval, Manish Kumar Sinha, Elango Kamaraj, Nilendu Paul, Thirumala Rao Talluri, Pradeep Nag, Ebenezer SKPJ, Arumugam Kumaresan received Best Young Scientist Award (2021) by ISSAR for the paper “RNA Sequencing Unveils Alteration in Gene Expression Involved in Important Biological Processes Related to Fertility in Crossbred Bull Semen with High DNA Damage”.
- Manish Kumar Sinha, Arumugam Kumaresan, Thirimala Rao Talluri, John Peter Ebenezer Samuel King, Mani Arul Prakash, Aranganathan V received Best Young Scientist Award (2021) by ISSAR (2021) for the paper “SNP study related to genomics differences for fertility in crossbred bull spermatozoa”.
- Kamini Sharma, Heena Sharma, A K Singh, G K Deshwal and S. Kadyan received Third Prize for the Oral Presentation in 4th International Conference on Food

and Nutrition organized by Universal Society of Food and Nutrition (USFN) on September 23-24, 2021.

- Singh, N; Mann, B; Sharma, R; Raju, P N; Verma, A; Gandhi, K. received Third Prize in Oral Presentation for the paper Identification of intentionally and non-intentionally added substances in milk packaging materials by GC-MS/MS. Orally presented at the International Conference on “Convergence of Technology and Policy for Sustainable Meat Production” organized by the Association of Meat Scientists and Technologists (AMST) and Meat Technology Unit and Dept. of LPT, Kerala Veterinary and Animal Sciences University (KVASU) in association with Association of Food Scientists and Technologists (India) and Indian Dairy Association (Kerala Chapter) in October, 2021.
- Pradeep Nag, Kumaresan A., Ankur Sharma, Nilendu Paul received Best Research Paper Award (2021) by ISSAR for the paper “DNA fragmentation is associated with alterations in sperm phenome and oviduct binding ability in cattle”.
- Kamaraj Elango, Arumugam Kumaresan, Ankur Sharma, Pradeep Nag, Mani Arul Prakash, Manish Kumar Sinha, Ayyasamy Manimaran, Ebenezer Samuel King John Peter, Sakthivel Jeyakumar, Sellappan Selvaraju, Kerekoppa P. Ramesha and Tirtha K. Datta received Dr. G. B. Singh Memorial Award (2021) for the best research paper published in International Journal entitled “Sub-fertility in crossbred bulls: deciphering testicular level transcriptomic alterations between zebu (*Bos indicus*) and crossbred (*Bos taurus* x *Bos indicus*) bulls”.
- Narendra Singh Rohila, B. P. Singh, Satyavir and Lakshman received “Best Paper Award” for the presentation of their paper “Zotero: A Personal Research Assistant for Researchers” during International Conference on “Management of Knowledge Resource Centre in the Networked Digital Environment: Trends, Challenges and Opportunities” jointly organised by University of Agricultural Science and Association of Agricultural Libraries and Documentalists of India (AALDI) held at University of Agricultural Science, Bengaluru during February 25-26, 2021.
- Meena, D. C., Garai, S., Maiti, S., Dutta, S., Meena, B. S. and Kadian, K. S. received Best research paper award on the paper of “Migration pattern of *Raika* pastoralists of Marwar region of Rajasthan. *Range Management and Agroforestry*”, 42(1): 167-174.
- Paul, R.K., Chandel R., Onteru S.K. received Best Article Award for the paper titled “Male reproductive tract origin sperm-quiescent proteins: prospects in semen cryopreservation of livestock species” published in Animal Reproduction Update, Vol I, Doi: 10.48165/aru.2021.

- Udit Chaudhary received Best Article Award for the article “Gender Discrimination in Labour Markets in India” (Article ID 10086, published in Vol. 3, Issue 1 (January, 2021) of Agriculture and Food e-Newsletter (ISSN: 25818317).
- S. Chhotaray, Vikas Vohra, G.R. Gowane, Rani Alex, A. Mukherjee, Archana Verma and S.M. Deb received Best Poster Presentation Award for the paper “GWAS in Indian buffalo unmasks novel genes for lactation” (Theme-2: Breeding and Genetics) in the National Symposium of Indian Society for Buffalo Development held at GADVASU, Ludhiana during December 10-11, 2021.
- S. Chhotaray, Vikas Vohra, G.R. Gowane, Rani Alex, A. Mukherjee, Archana Verma and S.M. Deb received Best Poster Presentation Award for the paper for the paper “GWAS unravels novel genes for lactation yield and persistency in Murrah buffalo” in the National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- Pooja Joshi, Archana Verma, Rani Alex, I.D. Gupta, Destaw Worku and G.R. Gowane received Best Poster Presentation Award for the poster “Estimation of co(variance) components for growth traits in Murrah buffaloes” in Technical Session I during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- Nidhi Sukhija, Anoop Anand Malik, Kousalya Devi M, Jayakumar Sivalingam and Archana Verma received Best Poster Presentation Award for the poster “Adaptational Consequences of Selective Sweeps in Gir and Tharparkar cattle” in Technical Session II during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR- NBAGR, Karnal during December 17-18, 2021.
- Ravi Kumar D, Archana Verma, Nandhini P B, Joel Devadhasan M, I D Gupta, S K Niranjana, R S Kataria M S Tania and Jayakumar Sivalingam received Best Poster Award on ‘Identification of genomic regions associated with reproduction traits in Indian Murrah buffalo using single-step gBLUP’ under the Technical Session- Molecular Genetic techniques for Animal Breeding and Improvement in the Virtual International Conference on “Promising Genetic and Genomic Technologies – Frontier in Selection and Animal Improvement” jointly organized by Department of Animal Genetics and Breeding, Veterinary College and Research Institute, Orathanadu and Department of Animal Genetics and Breeding, College of Veterinary and Animal Sciences, Pookode during January 27-28, 2021.

- Pandey, Y., Panda, B.S.K., Somagond, M. and Dang, A.K. received Best Poster Award on the paper entitled, “Isolation, characterization and LC-MS exosomes in dairy cows” in the APA CON-2021, held at DUVASU, Mathura, India.
- Dipti, T.K. Mohanty, M. Bhakat, R. Dewery, M. Sethi and N. Shah received Best Presentation Award (Poster) on “Combination of semen additives improves sperm cryopreservability and *In-vitro* sperm functionality test in Murrah buffalo” in the National Symposium organized by C.V.Sc. (Ludhiana), GADVASU, in National symposium of ISBD on Scientific Interventions to address challenges for sustainable buffalo production on December 10-11, 2021.
- R. K. Dewry, T.K. Mohanty, M. Bhakat, S. Nath, H. P. Yadav, S. Tiwari, N. Shah and M. Sethi received Best Young Scientist in respect of poster presentation of scientific paper entitled “Prediction of bull fertility based on *in-vitro* sperm function tests and seasonal semen quality variables in Sahiwal bulls” in National seminar on innovative biotechnological approaches for enhancing fertility, health and productivity of livestock to boost the farmers economy and VIII annual convention of the society for veterinary science and biotechnology held at ANDUAT, Kumarganj, Ayodhya (UP) during December 17-18, 2021.
- e-Poster entitled ‘Lactic acid bacteria isolated from indigenous were conferred Best Poster Award in the Convener Coordinator Organizing Secretary Ref. No. GADVASU/ DM/2021/443 International e- Symposium on Probiotics, Prebiotics and Gut Microbiome : Key Regulators for Human and Animal Health” organized by Department of Dairy Microbiology, College of Dairy Science and Technology, Guru Angad Dev Veterinary and Animal Sciences University on November 11, 2021 under the aegis of Probiotic Association of India.
- Rakesh Chouraddi, Sachin Kumar and Vinay VV et al., received Best Poster Award (First Place) from Probiotic Association of India, 2021.
- K.Ponnusamy was awarded best poster award for the topic Success story of women empowerment through value addition in milk and milk products in Hindi Ullas Mahotsv-2021 at NDRI, Karnal.
- Best Poster Award (2021) by ISSAR to Nilendu Paul, Talluri T R, Raval Kathan, Kamaraj Elango, Verma A., Kumaresan A for the poster on “Nano purification of bull semen for enrichment of functionally competent spermatozoa”.
- Ms. Ankita Kumari was awarded “Young Investigator Poster Presentation Award” for presentation entitled “Probiotic *Lactobacillus fermentum* mediates its immunoregulatory function by targeting epigenomic modulations” in 11th India Probiotic symposium “ Role of Gut Microbiota and Probiotics in reducing viral

infections –Mechanisms to combat them” organized by the Gut Microbiota and Probiotic Science Foundation (India) in online mode from March 13-14, 2021.

- Dr. Dhruva Malakar was awarded Best poster award at National Conference on “Animal Breeding Strategies in the Era of Genomics and Phenomics” at NBAGR, Karnal December 17-18, 2021.
- Nidhi Sukhija, Kousalya Devi M, Ravi Kumar D, Anoop Anand Malik, Anjali Choudhary, Aishwarya Dash, Kangabam Bidyalaxmi, Rekha Sharma, I.D. Gupta, Jayakumar Sivalingam and Archana Verma received Second best poster award received for Genome wide identification of selective sweeps and QTL intersection in Gir cattle in the XVIII Annual Convention and National Webinar on Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability, organized by Society for conservation of Domestic Animal Biodiversity (SOCDAB), Karnal and ICAR-National Bureau of Animal Genetic Resources, Karnal, India, February 11-12, 2021.
- Tamal Sarkar received First position in Poster presentation award at National Conference on *Moringa* Food Conclave-2021 organized by CSA University of Agriculture and Technology, Kanpur during September 28- 29, 2021.
- Dr. A. Maniaran Secured second prize in poster presentation for research paper entitled “Salivary biochemical parameters discriminate energy balance based on average blood glucose level in early lactating cows” during third Animal Physiologist Association (APA) conference at DUVASU Mathura during September 24-25, 2021.
- Shivam Bhardwaj, Sanjeev Singh, Indrajit Ganguly, A. K. Bhatia and S.P. Dixit received Second Best Poster Presentation Award for the poster presentation “Deciphering Genomic Basis of Local Adaptation of Native Indian Cattle (*Bos indicus*) Breeds using Landscape Genomics” in Technical Session IV during National Conference of ‘Indian Society for Animal Genetics and Breeding’ on “Animal Breeding Strategies in the Era of Genomics and Phenomics” held at ICAR-NBAGR, Karnal during December 17-18, 2021.
- Rizwan M, Upma V, Cahndhni PR, Daraksha I and Shilpa Vij received Third prize for poster presentation on topic “Isolation of Lactobacillus strain with -glucosidase inhibitory and DPP-IV inhibitory activities from camel milk” in 27th International Conference of International Academy of physical sciences (CONIAPS XXVII) on “Advances in Food Science and Technology” October 26-28, 2021.

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- P. Narender Raju received Best Paper Presentation Award for the paper entitled, “Development of an On-Package Freshness Indicator for Misti Dahi, an Eastern

Indian Fermented Dairy Product” at 3 days International Conference on “Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security” held at University of Kashmir, Srinagar, J&K from Sept. 28-30, 2022.

- Dr. Satish Kumar MH received Best Oral Presentation Award (1st Prize) in International Conference on Advances in Agriculture and Food System Towards Sustainable Development Goals, held at GKVK, Bengaluru during 22-24 Aug., 2022.
- Tiwari, S., Lathwal, S.S. and Dang, A.K. awarded First prize in oral presentation in 1st National Conference of Association of Mastitis on “Implications of Mastitis” held at DUVASU, Mathura on October 19-20, 2022.
- Dr. S.V. Singh received Best Oral Paper Presentation Award on “Effect of supplementation of Cumin and molasses on Physiological, morphological parameters and antioxidants markers under field condition” during “19th Biennial International Conference of Animal Nutrition Society of India on Nutritional Technologies to Augment Livestock, Poultry, Canine, Fish Production for Global Competitiveness” held at GADVASU, Ludhiana from Nov 16-18, 2022.
- Bhavesh B Chavhan, P Barnwal, Ankit Deep, Pooja Bhagat, Vinod K Sharma received First prize in Oral Paper Presentation entitled “Chemical kinetic modelling of in-package microwave treated pindi khoa for shelf life prediction” under theme “Tech-engineering interventions in milk production and processing”, in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, at Warud, Pusad (Maharashtra), 15-16 December 2022.
- Aakash Dadarao Wani, Writdhama Prasad, Ankit Deep, Kaushik Khamrui, Shaik Abdul Hussain received First Prize in Oral Paper Presentation entitled “Evaluation of selected solvents as an alternative for efficient milk fat extraction from ghee residue” in 10th International Conference on Advancements in Engineering and Technology, ICAET-2022, organised at Bhai Gurdas Institute of Engineering and Technology (BGIET), Sangrur, 11-12 November, 2022 via online mode.
- Dr. Nishant Kumar received Best Oral Presentation award for the research paper entitled “Elucidating the efficacy of Sodium alginate as antimicrobial alternative in cryopreservation of Sahiwal bull semen” in National Conference on “Fostering One Health for Food Safety and Security through Sustainable Animal Husbandry & Aquaculture Practices” organized by Society for Promotion of Farm and Companion Animals at Bihar Veterinary College, Bihar Animal Science University, Patna from 10-11 November 2022

- Dr. Nishant Kumar received Best Oral Presentation award for the research paper entitled “Effect of Boron Supplementation on Physiological and Biochemical attributes of peripartum crossbred cows under heat stress condition” in International Conference on Contemporary Multidisciplinary Issues in Applied Sciences, Humanities, Agriculture, Animal Health and Production (ASHAA-2022) at Rajiv Gandhi South Campus, Banaras Hindu University, Mirzapur, Uttar Pradesh from 14-15 November 2022
- Dr. R. K. Baithalu received Best Oral Presentation award in XIX Annual Convention and National Symposium on “Contemporary Technology for Animal Genetic Resource (AnGR) Management” from 21-22 September 2022 held at ICAR-NBAGR, Karnal.
- Dr. R. K. Baithalu received Best Oral Presentation award in International Conference on “Advances in Agricultural, Veterinary and Allied sciences for Improving Livelihood and Environmental Security” from 28- 30 Sep., 2022 held at University of Kashmir, J&K.
- Aakash Dadarao Wani, Writdhama Prasad, Ankit Deep, Kaushik Khamrui, Shaik Abdul Hussain received First prize for oral presentation entitled “Evaluation of low toxicity solvent as an energy efficient alternative for milk fat extraction from Ghee residue” under theme “Emerging technologies in the field of dairy processing and quality control”, In: 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India” at Warud, Pusad (Maharashtra), 15-16 December 2022.
- Gayathri, S.L. and Bhakat, M. received Young Scientist Award for the paper Assessment of mastitis using thermal image analysis among dairy breeds during autumn and winter season in National Symposium on Contemporary Technology for Animal Genetic Resource (AnGR) Management organized by Society for Conservation of Domestic Animal Biodiversity & ICAR-National Bureau of Animal Genetic Resources, Karnal during September 21- 22, 2022.
- Gupta, V.K., Mohanty, T.K., Dewery, R.K., Nain, D., Aye, S. and Yadav, R. received Young Scientist Award for the poster presentation on “Lessening the negative effect of vaccination stress in Sahiwal breeding bulls with the use of levamisole and antipyretics”, in National symposium on optimizing animal reproduction through recent techniques of biotechnology, nutraceuticals and alternative medicine & XXXVII annual convention of ISSAR from November 16-18, 2022.
- S. Ragulraj, M. Bhakat, T.K. Mohanty, S. Maiti, A. Fernandes and P.B. Nandhini. received A. Lakshman Rao received Award for the paper entitled “Application of infrared thermography for identification of estrus, calf health and tick infestation

in dairy animals in National Livestock Conference UTKARSHA organized by ISAPM in Visakhapatnam, Andhra Pradesh from April 11-13, 2022.

- Elizabeth Jose and K.Ponnusamy were awarded best oral presentation award for the topic Efficiency of Farm Diversification in Haryana in 4th National Conference of Society of Veterinary & Animal Husbandry Extension (SVAHE) on the theme “Pluralistic Approaches for Livestock Development – An Extension Call” at the CSK Himachal Pradesh Agricultural University, Palampur, Himachal Pradesh during 06-08 May 2022. ATMA, Dept of Agriculture, Karnal and Panipat and HAMETI, Jind.
- Dr. Nishant Kumar received 2nd Best Oral Presentation award for the presentation entitled “Effect of Vitamin E and Selenium supplementation on performance of crossbred bulls under induced heat stress condition” in 22nd Indian Veterinary Congress, XXIX Annual Conference of IAAVR & National Symposium on advancement in Veterinary Medical Research contributing to one health for betterment of Animal Health & their Welfare organized at C.V.Sc Udaipur, RAJUVAS, Bikaner from 8-9 April 2022.
- Dr. Nishant Kumar received 2nd Best Oral Presentation award for the presentation entitled “Effect of supplemental Boron on performance of peri-parturient Karan Fries cows under heat stress condition” in International Conference on Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES-2022) organized by University of Kashmir, Hazratbal, Srinagar, Kashmir from 28–30 September 2022.
- Dr. Monika Sharma received second Prize for oral presentation on Valorization of ghee residue for development of value-added food products in International Conference on “Food Sustainability: Challenges and Opportunities for The Future” 5th AMIFOST – 2022 from 29- 31 March 2022.
- Dr. Monika Sharma received Best Poster award for Malted finger millet -milk based composite probiotic beverage. 28th ICFOST EAT-SAFE organized from 20-22 Jan 2022.
- Dr. Monika Sharma received Best Poster award for Utilization of ghee residue for extraction of phospholipids through pulsed electric field technique. National Dialogue on “Innovations in Reshaping the Indian Dairying” at DUVASU, Mathura on 29 October 2022.
- Gayathri S. L., Bhakat, M. and Mohanty T. K. received Best Poster Presentation (Second Prize) on Short- milking-tube thermograms as mastitis detection tool in dairy animals” in 14th Kerala Veterinary Science Congress on One-health

approaches in the management of animal health care- new paradigms organized by Indian Veterinary Association, Kerala, from 12.11.2022 to 13.11.2022.

- Poonam Rani and Rakesh Kumar received Best Poster award in SOCDAB at NBAGR, September 21-22, 2022.
- Gurpreet Kaur, Navkiran Kaur, Neha Sarova, K. Siddharth Singh, Sudershan Kumar, and Jai K. Kaushik won the first Best Poster Award during the 6th Biennial PAi Conference and International Symposium on “Psychobiotics and Gut: Potential in the neurological disorders organized by NDRI during 5-6 Dec 2022.
- Apeksha Ukey, S.V. Singh, A.K. Misra, Gaurav Kumar, Nikita Bhalakiya and Jaskiran Kaur received Best Poster Presentation Award on “Impact of concentrate replacement with Moriga Olifera on stress indicators and metabolic hormones of Barbari goats in different seasons” during National Seminar and Annual Conference on “Prospects and Potential of Small Ruminants Production for Enhancing Income under Changing Scenario” held at ICAR-CSWRI, Avikanagar (Rajasthan) from 10-12 November, 2022.
- Akash, Monica Rose Amarlapudi, Hemlata Singh, Chandrasekhar B., Ganga Gulati, Ngangyola Tuikhar, Amit Yadav, Raghu H. V., Diwas Pradhan, Nishant Kumar, Dhiraj Dhotre, Rashmi H M received Best Poster Award (Second) for poster entitled “Characterization of Antibiotic Resistant Bacteria from Dairy Production System” by in the VII Convocation of National Academy of Dairy Science (India) and National Symposium on Innovation in Reshaping Indian Dairying on October, 29, 2022 at DUVASU, Mathura.
- Rashmi H M, Sree Niharika Erwa, Bidisha Senapati, Saurabh Kadyan, Diwas Pradhan received award for presentation on “Integrated omics (Metagenomics and Culturomics) approach to reveal the microbial signatures of Dahi” in the VII Convocation of National Academy of Dairy Science (India) and National Symposium on Innovation in Reshaping Indian Dairying on October, 29, 2022 at College of Veterinary Science and Animal Husbandry, Mathura.
- Ravikant V Vinchurkar, Heena Parveen, Hogarehalli Mallapa Rashmi and Diwas Pradhan received Best Poster Award entitled ‘Prevalence of Antibiotic Resistance in Dairy based Enterococcus strains using in vitro and WGS approach’ in the 6th Probiotic Association of India Biennial e-Conference and International e-Symposium on ‘Psychobiotics and Gut: Potential in Neurological Disorders’ on Dec 5-6, 2022.
- Abhinash P, Chitranayak, Minz, P.S., Suresh, D., Sharanabasava, John, H., and Priyanka received First prize for Poster Presentation entitled “Development of Isothermal Bioreactor for the Generation of Biogas from Cow Dung” under theme

- “Application of Nanotechnology, Artificial Intelligence, Machine Learning and I-O-T and Design of New Processes or Equipment for Mechanisation in the Dairy Industry”. in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, Warud, Pusad (Maharashtra), 15-16 December 2022.
- Swetha Damodharan P.V., Sangita Ganguly, Ashish Kumar Singh, P.N.Raju 2nd Best Paper Presentation Award for paper entitled ‘Fermentation Dynamics of selected probiotic organisms in milk-flaxseed based composite substrate’ in International Conference on ‘Advances in Agricultural, Veterinary and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES-2022) held during September 28-30, 2022 at University of Kashmir, India.
 - Rohit, H.K. and Mukul, S received Third Prize for the presentation on ‘Development of Ice Slurry Based Milk Cooling System’, (Mentor: Dr. Chitranayak) in National Level Hackathon under the IDP-NAHEP Project on “Smart and Remunerative Farming”, held at Navsari Agricultural University (NAU), Navsari, on 5th March 2022.
 - Dr. R. K. Baithalu received best oral presentation award in international conference on “Contemporary Multidisciplinary issues in Applied Sciences, Humanities, Agriculture, Animal Health and Production” held at Banaras Hindu University from 14-15 Nov. 2022.
 - Aakash Wani, Writdhama Prasad, Kaushik Khamrui, Shaik Abdul Hussain and Ankit Deep awarded Best Paper (1st) for the paper ‘Evaluation of selected solvents as an alternative for efficient milk fat extraction from ghee residue’ presented in 10th International conference compendium on Advancements in Engineering and Technology, held at Bhai Gurdas Institute of Engineering and Technology, Sangrur, Punjab, during 11- 12 Nov 2022.
 - Aakash Wani, Writdhama Prasad, Kaushik Khamrui, Shaik Abdul Hussain and Ankit Deep awarded best paper (1st) for the paper ‘Evaluation of low toxicity solvents as an alternative for efficient milk fat extraction from ghee residue’ presented in 12th Convention of IDEA and national seminar on ‘Engineering interventions in Dairy Processing for self-reliant India’, held at College of Dairy Technology, Warud (Pusad) during 15-16 Dec, 2022.
 - Manas Sarkar, Writdhama Prasad and Kaushik Khamrui: Best poster (3rd) presentation award for the paper “Active Food Packaging through Electro hydrodynamic processing with natural fibres” presented in National Seminar on ‘Advanced Practices in Dairy Industry and Research’, held at West Bengal University of Animal and Fisheries Sciences, Mohanpur Campus, Nadia, West Bengal on 23rd December 2022.

- Sonam Kumari, Shaik Abdul Hussain, Writdhama Prasad and Yogesh Khetra: Best poster (3rd) presentation award for the poster entitled “Uchh koti ice cream ki banawat karyakarta aur sanvedi visheshtao par stabilizer mishran ka prabhav” presented during Hidi Ullas Mahotsava 2022 at ICAR-National Dairy Research Institute, Karnal on 29 Sep., 2022.
- M. Sathiyabarathi received Best Paper Presentation Award under the Session: III Livestock Production and Artificial Intelligence during the National Livestock Conference and 28th Annual Convention of ISAPM held at Vizac between 11 and 13 April, 2022.
- Oral presentation award by Hi-Tech Horticultural Society to Talluri, T.R., Kumaresan, A., Sinha, M.K., Paul, N., Ebenezer Samuel King, J.P. and Datta, T.K for the paper “Integrated multi-omics analysis reveals molecules governing sperm metabolism potentially influence bull fertility” published in Scientific Reports during the seminar on 9th October, 2022
- First Prize for Best Poster Presentation for the paper “Economic impact of COVID-19 pandemic on dairy supply chain” authored by Das, A, Mushi, S,A, Shivaswamy, G,P, Subash, S, Sivaram, M was received during International Conference of Indian Dairying – Sustainability and Nutritional Security held at Coimbatore on 14th October
- Naveen Jose has secured First prize in poster presentation for presenting poster on “Dry-Crystallization: A Novel Approach for Development of Convenience Mixes” at International Conference on Advances in Agriculture and Food System Towards Sustainable Development Goals (AAFS2022) held at University of Agricultural Sciences, Bangalore between 22nd-24th August, 2022.
- Gajanan P Deshmukh has been awarded Best Poster Award In: 12th convention of Indian Dairy Engineering Association held at Pusad, Maharashtra for the topic “Process optimization of pumpkin powder incorporated lassi” by Sawale P. D., Deshmukh, G. P., Meshram B. D., Patil, P. S., Dhotre, A. V. and Wasnik, P. G.
- Gajanan P Deshmukh was awarded with Best Oral Presentation award (First Prize) at 12th convention of Indian Dairy Engineering Association held at Pusad on December 15-16, 2022 for topic entitled “Design and development of mechanical Unit for dry-crystallisation of Palada Payasam- Indian Sweet Delicacy”.
- Rupesh Datir was awarded second prize in Best Paper award category for the paper entitled “Preparation and optimization of processed cheese spread in a small volume dispenser unit” under the theme Techno- engineering interventions in Milk production and processing, during the 12th Convention of IDEA and National

seminar held at the College of Dairy Technology, Warud (Pusad), Maharashtra during December 15,16-2022.

- Das, A, Mushi, S, A, Shivaswamy, G, P, Subash, S, Sivaram, M was awarded First Prize for Best Poster Presentation for the paper “Economic impact of COVID-19 pandemic on dairy supply chain” during International Conference of Indian Dairying – Sustainability and Nutritional Security held at Coimbatore on 14th October 2022.
- Nutan Chauhan won best oral presentation award for her work titled “Effects of Lactic Acid Bacteria and Propionic Acid Additives on the Fermentation Quality and Aerobic Stability of Sugarcane Tops Silage” in 19th Biennial International Conference on Nutritional Technologies to Augment Livestock, Poultry, Canine, and Fish Production for Global Competitiveness.
- Deepesh Misra won best oral presentation at National conference conducted by NAVNAW in 2022 for abstract titled “Ensiling of paddy straw at specific time intervals with agro industrial byproducts and additives for the preparation of straw age”.
- Deepesh Misra won best oral presentation at ANSICON 2022 in Ruminant Nutrition session.
- Dr. Nitin Tyagi won Second Best Oral Presentation Award in National Conference conducted by National Academy of Veterinary Nutrition and Animal Welfare in September 2022
- Naliyapara H.B, Raman Malik, Dhaigude V. D., Rana Parul, Chander Datt, Kuldeep Dudi, Harneet Kour and Ojha L. won First Prize for poster presentation on “Inclusion of varying levels of feed aromas in paddy straw based TMR and their effects on feed preference and intake of crossbred calves” during “Nutritional Technologies to Augment Livestock, Poultry, Canine and Fish Production for Global Competitiveness” & 19th Biennial International Conference of Animal Nutrition Society of India, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, from Nov. 16-18, 2022.
- Thamizhan, P, Chander Datt, Shambhvi, Veena Mani and Goutam Mondal received First Prize for poster presentation on “Influence of supplementary nickel on mineral balances, plasma mineral profile and blood metabolites in Murrah buffalo calves” (during “Nutritional Technologies to Augment Livestock, Poultry, Canine and Fish Production for Global Competitiveness”& 19th Biennial International Conference Of Animal Nutrition Society of India organized by Department of Animal Nutrition, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, Punjab-141004 from Nov. 16-18, 2022.

- P. Thamizhan, Chander Datt, Shambhavi, A Thakuria, Veena Mani and G. Mondal received Second Prize for poster presentation on “Influence of supplementation of nickel on antioxidant status in Murrah buffalo calves” during “Coordinated nutrition, health and extension approach for sustainable livestock production” organised by College of Veterinary Science and Animal Husbandry, NDVSU, Jabalpur (M.P.) from 21-22 Sept. 2022.
- Richa Singh, Ravali Parvatam, Anusha Kishore received Second Prize in oral presentation (2022). “Effect on environmental temperature in metabolites in milk of Sahiwal cows” during “National Symposium on Contemporary Technology for Animal Genetics Resources management and XIX Annual Convention of Society for Conservation of Domestic Animal Biodiversity (SOCDAB)” September, 21-22 2022 at National Bureau of Animal genetics and Breeding, Karnal.
- Anusha Kishore and Richa Singh received Second best poster award on “Metabolite alterations in whole raw milk of dairy cows with respect to season” by in National Seminar on “Innovations and advances in Valorization of functional dairy products” held on 25-26 November 2022 at BHU, Banaras.
- Dr. Dhruba Malakar was awarded the “second-Best Poster Award” in the SOCDAB, NBAGR, Karnal, 2022.
- Swetha Damodharan P.V., Sangita Ganguly, Ashish Kumar Singh, P. N. Raju awarded 3rd Best Poster for paper entitled ‘Development of a base model for probiotic formulations in milk-flaxseed- based composite substrate through fermentation kinetics study’ in National Dialogue on “Innovations in Reshaping the Indian Dairying” held on October 29, 2022 at Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan (DUVASU), Mathura, UP.
- S. Praveen, Ramesh Chandra, Nishant Kumar, Manisha Yadav, Sanchi Kamal, and Ashutosh received “Third Best Poster Presentation Award” for their poster paper entitled “Effect of Boron supplementation on performance of Karan Fries cows during heat stress condition” in Hindi Ullas Mahotsav held at ICAR-National Dairy Research Institute, Karnal on September 29, 2022.
- Diptesh Das, Nikunj Tyagi, Sudarshan Kumar and Jai K. Kaushik won the third Best Poster Award during the 6th Biennial PAi Conference and International Symposium on “Psychobiotics and Gut: Potential in the neurological disorders organized by NDRI during 5-6 Dec 2022.
- Deshmukh, A.K., Talwar, G., Mehta, S., Chandla, N.K. received Second prize for Poster presentation entitled “Effect of ultrasonication on mechanical properties of biodegradable cup” under theme “Emerging Technologies in the Field of Dairy

Processing and Quality Control” in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud, Pusad (Maharastra), 15-16 December 2022.

- Mehta, S., Minz, P.S., Deshmukh, A., Rohit, H.K., Chitranayak, Kumari, S. received Third prize for Poster presentation entitled “Energy Benchmarking: A useful tool for energy conservation in dairy processing plant” in “Techno-engineering interventions in milk production and processing” in 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud, Pusad (Maharastra), 15-16 December 2022.
- Mehta, S., Minz, P.S., Deshmukh, A., Rohit, H.K., and Chitranayak. Third prize for Poster presentation entitled “Python based simulation tool for prediction of rheological behaviour during bioreactor operation” In: 12th Convention of Indian Dairy Engineers’ Association (IDEA) and National Seminar on “Engineering Interventions in Dairy Processing for Self-Reliant India”, organized by Indian Dairy Engineers’ Association (IDEA) at College of Dairy Technology, Warud (Pusad), Dist-Yavatmal (Maharastra), 15-16 December 2022.
- Third Best poster award for the poster entitled “High yield paneer formulation using buffalo milk protein coprecipitate by Hemant Gawande, Sumit Arora, A.K.Singh, G.S.Meena and Vivek Sharma presented in the third 12th convention of IDEA and National Seminar on “engineering interventions in dairy processing for self-reliant India”, 15-16 Dec 2022 at CDT, Warud (Pusad), Dist.- Yavatmal (Maharashtra).
- Teja Allu, Ph.D. student (ARGO) was awarded “Young Scientist Award” during the XXXVII Annual Convention of Indian Society for the Study of Animal Reproduction (ISSAR) – 2022.
- Mani Arul Prakash, Arumugam Kumaresan, Ebenezer Samuel King John Peter, Pradeep Nag, Ankur Sharma, Manish Kumar Sinha, Elango Kamaraj, Tirtha Kumar Datta received Prof. Nils Lagerlof Memorial Award by the Indian Society for Study of Animal Reproduction for the research paper “Comparative Transcriptomic Analysis of Spermatozoa from High- and Low-Fertile Crossbred Bulls: Implications for Fertility Prediction” published in Frontiers in Cell and Developmental Biology during ISSAR conference on 16th November 2022.

2024-25

- Ajoy Mandal awarded First Best Paper Award for the article “Application of Smart Technologies in Livestock Management” published in Indian Dairyman, 2022 by the Indian Dairy Association during the 50th Dairy Industry Conference held at Hyderabad on March 4-6, 2024.
- Fanny Josan, Sonam Yadav, Seema Karanwal, Vikrant Gaur, Aditya Patel, Prasanna Pal, Mukesh Bhakat, Tirtha Kumar Datta, Rakesh Kumar received the 2nd Best Paper Award for the research paper entitled “Distinctive abundance of lipid molecules in spermatozoa from contrasting fertility cattle bulls affect fertilization potential through capacitation” in the XXXII Annual Conference of SAPI & International Symposium on “Advances in physiological research in omics era for sustainable animal Production and livelihood security under the changing climatic scenarios” organised by ICAR-CIRC, Meerut, UP & SAPI during November 27-29, 2024.
- M. R. Meena, P. Govindraj and R.K. Meena received Best Research Paper award by the society for Sugarcane Research and Development (SSRD), SBI, Coimbatore, TN for the article entitled “Genetic variability for fodder quality traits among high biomass energy cane feedstock under rainfed condition”.
- Manisha Yadav, Nishant Kumar and Ashutosh received 2nd best paper award for the research paper entitled “Effect of Dietary Curcumin supplementation on Physiological attributes of Crossbred Bulls during Induced Heat Stress” in the 24th Indian Veterinary Congress & 31st Annual Conference of IAAVR & National Symposium on “Livestock Health and Poultry: A Paradigm Change to Maximize Productivity for Sustainable Farmers’ Livelihood” organized by College of Veterinary & Animal Sciences, LUVAS, Hisar (Haryana) during February 7-8, 2024.
- Sanchi Kamal, Nishant Kumar, T.K. Mohanty and D. K. Yadav received Best Paper Award for the research paper entitled “Effect of bull urine exposure in augmenting early resumption of ovarian cyclicity in postpartum Sahiwal cows” in 24th Indian Veterinary Congress & 31st Annual Conference of IAAVR & National Symposium on “Livestock Health and Poultry: A Paradigm Change to Maximize Productivity for Sustainable Farmers’ Livelihood” organized by College of Veterinary & Animal Sciences, LUVAS, Hisar (Haryana) during February 7-8, 2024.
- Sanjeev Kumar received Best Paper Award 2024 for the research paper entitled “Organic Carbon Management for Soil Health in Fodder Based Systems” published in Agri Journal World Volume 04 issue 02 published by Leaves and Dew Publication.

- V. V. Vinay, S. Kumar, N. Tyagi and A. K. Samanta received Best Paper Award during 2024 for the research paper entitled “Impact of electro hydrodynamically micro encapsulated probiotics vs in-feed antibiotics on nutrient utilization, faecal microbiota and rumen fermentation profile of indigenous cattle calves” published in the proceedings of the 20th Biennial Animal Nutrition Society of India Conference, January 23-25, 2024, Chennai, India.
- V.V. Vinay, S. Kumar, S. Balaga, Rashmi H.M. and B. L. Jangir received Best Paper Award 2024 for the research paper entitled “Oral delivery of electro dynamically encapsulated *Lactiplantibacillus plantarum* CRD7 modulates gut health, antioxidant activity and cytokines-related inflammation and immunity in mice” published in the proceedings of the 20th Biennial Animal Nutrition Society of India Conference, January 23-25, 2024, Chennai, India.
- Vjay Shende, Aakash Wani, Writdhama Prasad, Kaushik Khamrui and Shaik Abdul Hussain received Dr C.M. Singh Best research article award for the research paper entitled “Effect of glucan addition on complexed zinc concentration and physico-chemical attributes of buffalo milk paneer whey” during 2nd National Conference On Enhancing Farmer’s Income by Livestock, Poultry and Aqua Farming through Sustainable and Eco-Friendly Smart Technologies and Practices, held at BASU, Patna during February 28-29, 2024.
- Richa Singh and Rajan Sharma Received Best Research Paper Award in the category of “Commercial Aspects of Dairying” for the year 2022 by the Indian Dairy Association (IDA) for the article entitled “Geographical Indication for Traditional Indian Dairy Products- A Perspective” in Indian Dairyman. 74 (9), 88-95 during the 50th Dairy Industry Conference held during March 4-6, 2024 at Hyderabad.
- Raj, R.K. Baithalu, M. Pandey, S.P. Pannu, M. Akram, R. Sharma and T.K. Mohanty received second best oral presentation award in National symposium of Indian Society for Buffalo Development (ISBD) on “Innovative approaches for boosting buffalo productivity” held at CoVS&AH, Kamdhenu University from December 16-18, 2024.
- S. Rajput, M. Bhakat, T. K. Mohanty, G. Mondal, A. Mir and M. S. Rajput received Best Presentation Oral presentation Award for the research paper entitled “Assessment of Transient stress in FMD vaccination using Infrared thermography (IRT) in dairy animals” in the 30th Annual convention and national conference on ‘Optimization of livestock farming for sustainable development in the era of climate change’ held during February 22-24, 2024 at Madras Veterinary College, Chennai.
- Ukey, S. V. Singh, T. Satpute, P. Singh, R. Sharma and Afreed Muhhamad, N.V. received Third Prize in Oral presentation for the research paper entitled “Assessment

Of Seasonal Impacts And Temperature Humidity Index On Blood Biochemical Parameters And Semen Quality In Murrah Bulls” in the National Symposium of Indian Society for Buffalo Development on “Innovative Approaches for Boosting Buffalo Productivity” (December 16-18, 2024) organized by College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand - 388001.

- Anjali M. K., Mohit Singh Shah, G. Bharath, Raghu H.V. received Best Paper Presentation award for the research paper entitled “Development of Rapid conducting polymer based colorimetric sensor for detecting total bacterial count and E. coli in milk” in the 15th National Women’s Science Congress held at Karnataka Samskrit University, Bengaluru held during December 6-8, 2024.
- Anu, J., Sanchita Garai, and Sanjit Maiti received Best Presentation award for oral presentation on “Assessment of adaptive capacity to climate change in low elevation coastal zones of Kerala” in the 6th International conference on “Cutting Edge Solutions in Science- Agriculture, Technology, Engineering and humanities” conducted by the Society for community mobilization for sustainable development (MOBILISATION), New Delhi in collaboration with Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan from August 24-26, 2024.
- Chandrasekhar B, A Monica Rose, Akash Shriram, Hemlatha Singh, Ganga Gulati, Rushikesh Deshmukh, Ravikanth V, Diwas Pradhan, Raghu H V and Rashmi H M received Best Presentation Award for the oral presentation on “Insights into the resistome profile of raw milk from Haryana” at Fifth Science Conclave-cum-National Biomedical Research Competition (NBRCOM) 2024, under the aegis of Society of Young Biomedical Scientists, India, which was jointly organized by AIIMS, New Delhi and SCMM, JNU, New Delhi at JLN Auditorium, AIIMS, New Delhi from December 1-3, 2024.
- Gayathri S. L., M. Bhakat, and T. K. Mohanty received 3rd Best Oral Presentation Award for the research paper entitled “Assessment of moringa-based herbal post-teat dip solution via goat trial” in the International conference of the Indian Society for Sheep and Goat Production and Utilization (ISSGPUCON 2024) on “Recent trends and future perspectives to improve the performance, health and welfare of small ruminants under changing climate scenario” held at Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry during April 24-26, 2024.
- Gayathri S. L., M. Bhakat, and T. K. Mohanty received First Best Oral Presentation Award for the research paper “Seasonal assessment of mastitis using thermal image analysis in Goats” in the International conference of the Indian Society for Sheep and Goat Production and Utilization (ISSGPUCON 2024) on “Recent trends and future perspectives to improve the performance, health and welfare of

small ruminants under changing climate scenario” held at Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry during April 24-26, 2024.

- Hency Rose, Heena Sharma, A. K. Singh, Yogesh Kheta, Fathima Shahna and D. N. Yadav received Best Oral Presentation award for the research paper entitled “Effect of admixture of goat and cow milk on the physico-chemical properties of feta” in 8th National Youth Convention on ‘New perspectives for sustainable Agriculture & Livelihood Security’ held at BHU, Varanasi during August 22-23, 2024.
- Indu Devi received Best Oral Presentation award for the research paper entitled “Development of a deep learning aided computer vision system for automated measurement of linear traits in Sahiwal cow” in 11th National Seminar on ‘Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovations’ during September 27-28, 2024, at ICAR-NDRI Karnal.
- Indu Devi received Best Oral Presentation award on “Development of a deep learning aided computer vision system for automated measurement of linear traits in Sahiwal cow” in the international symposium “Advances in Physiological Research in omics era for sustainable animal production and livelihood security under the changing climate scenario” from November 27-29, 2024, at ICAR-CIRC, Meerut - 250001, UP (India).
- Indu Devi received Second Best Oral presentation award for the research paper entitled “Development of a deep learning and computer vision - based model for automated appraisal of linear traits in Sahiwal cows” in the National Conference on ‘Optimization of livestock farming for sustainable development in the era of climate change & 30th annual convention of ISAPM 2024’ during February 22-24, 2024 at Madras Veterinary College, Chennai - 600 007, Tamilnadu, India.
- Manisha Sethi, Tushar Kumar Mohanty, Nadeem Shah, Mukesh Bhakat, Dilip Kukar Swain, Dileep Kumar Yadav, Nishant Kumar and Rubina Kumari Baithalu received Best Oral Paper Presentation Award at 32nd Annual Conference of SAPI & International Symposium on “Advances in Physiological Research in Omics Era for Sustainable Animal Production and Livelihood Security under the Changing Climatic Scenario” organized by ICAR-CIRC, Meerut (UP) during November 27-29, 2024.
- Mir Muneeb Rafiq, Surender Singh Lathwal, Pawan Singh, Indu Devi, Atul S Rajput, Manoj Sharma, Nadeem Shah and Hitesh K Bagri received Second Best Oral Presentation award for the research paper entitled ‘Effect of age on sperm kinematics, viability and mitochondrial membrane potential in Murrah Buffalo’ in the National Conference on ‘Optimization of livestock farming for sustainable development in the era of climate change & 30th annual convention of ISAPM

2024' during February 22-24, 2024 at Madras Veterinary College, Chennai - 600 007, Tamilnadu, India.

- P. Pavan, Sanchita Garai, A. Veldandi, S. Zade, Amitava Panja, N. Padaliya and Sanjit Maiti received Best Oral Presentation Award for the research paper entitled “Approaches for evaluating climate change adaptation: Methodological insights and tools” in the National Seminar on “Agricultural Extension cum Alumni Meet”, held at Banaras Hindu University, Varanasi, Uttar Pradesh, India from 15th to 17th November 2024.
- R. Arunkumar, T. K. Mohanty, A. Kumaresan, R. K. Baithalu, M. Bhakat, and V. K. Gupta received First Oral Presentation award for the research paper entitled “Impact of FMD vaccination on bull seminal plasma fertility-related proteins” in the National Conference on “Challenges in Animal Health and Production amidst Climate change: Innovative, Sustainable solutions and their Translation”-VIBCON2024, Madras Veterinary College, Chennai during September 26-28, 2024.
- R. Arunkumar, T. K. Mohanty, R. K. Baithalu, M. Bhakat and Selvaraj Kumaresan received Second Prize Oral Presentation award for the research paper entitled “Optimizing mitigation strategies for reducing the impact of Foot and Mouth Disease Vaccination induced stress on semen production performance” in the 30th Annual Convention ISAPM and National Conference on “Optimization of Livestock Farming for Sustainable Development in the Era of Climate Change”, held during February 22-24, 2024 at Madras Veterinary College, TANUVAS, Chennai.
- Rubina K. Baithalu received best oral presentation award in International Symposium and XXXII Annual Conference of SAPI on “Advances in Physiological Research in Omics Era for Sustainable Animal Production and Livelihood Security under the changing climate scenario” held at ICAR-CIRC, Meerut, India from November 27-29, 2024.
- Sanchita Garai, A. K. Reddy, Sanjit Maiti, Amitava Panja and Gopal Sankhala received Second Best Oral Presentation award for the research paper entitled “Improving adaptive capacity of women dairy farmers: the impact of climate resilient dairy farming practices in Haryana” in the 3rd International conference ICNSFS-2024 during November 6-8, 2024 at ICAR-ICWA, Odisha.
- Sanjit Maiti, Manjunath KV, Sanchita Garai, Goutam Mondal, Anjali Aggarwal, and Gopal Sankhala received Second Best Oral Presentation Award for the research paper entitled “Building Climate Resilient: Impact of the NDRI Climate Service Model” in the International Conference on Impact of Climate Change on Biodiversity- A Global Perspective held at Madras Veterinary College, TANUVAS,

Chennai on July 11-13, 2024 organized by Madras Veterinary College, Tamil Nadu Veterinary and Animal Science University, Chennai.

- Sushil Kumar Yadav, T.K. Dutta, A. Chatterjee, Sneha Dutta, and Vibhor Agarwal received 2nd Best Paper Award (Oral Presentation) for the research paper entitled “Assessment of Arsenic Contamination Chain and Cancer risk in human residing near in Murshidabad of West Bengal” at the 20th Biennial International Conference of Animal Nutrition Society of India (January 23-25, 2024) held at Madras Veterinary College, Chennai.
- T. Satpute, P. Singh, A. Ukey, K. R. Sriranga, and S. V. Singh received First Prize in Oral presentation for the research paper entitled “Effect Of Supplementary Feeding on Testicular Thermoregulation of Murrah Buffalo Bulls and its Relation with Semen Quality” in National Symposium of Indian Society for Buffalo Development on “Innovative Approaches for Boosting Buffalo Productivity” (December 16-18, 2024) organized by College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand - 388001.
- Amitava Panja, Sanchita Garai, Sanjit Maiti, S. Sahani, S. Zade, and A. Veldandi received Best Poster Presentation award on “Exploring the viability of land shaping technology as an adaptive mechanism in saline coastal regions of West Bengal” in the international salinity conference on “Rejuvenating salt affected ecologies for land degradation neutrality under changing climate” conducted by ICAR-CSSRI, Karnal from February 14-16, 2024.
- Anu, J., Sanchita Garai, Sanjit Maiti and S. Zade received Best Poster Presentation award on “Assessment of Adaptive Capacity and Exposure to Climate Change of Dairy Farmers in the coastal low-lying region of Kerala” in the 11th National Seminar on “Transformative Agriculture and Sustainable Development: Rethinking Agriculture for a changing world” conducted by Kumaon University Nainital, Uttarakhand from March 5-7, 2024.
- Arijit Ray, Chitranayak, Kiran Goyat, P.S. Minz, J.K. Dabas, Hima John & Khushbu Kumari received 1st Best poster presentation award for poster presentation on “Solar powered hybrid automatic yogurt processing system” in International Conference on Emerging Technologies in Food Processing, (ETFP-2024), organized at Ghani Khan Choudhury Institute of Engineering and Technology, Narayanpur, Malda, West Bengal.
- Arijit Ray, Chitranayak, Rishi Shringi, Khushbu Kumari, P.S. Minz, J. K. Dabas received 1st Best poster presentation award for poster presentation on “Unnat engineering taknik va swachalan prasansakan dwara dahi banana ka set up” in “Hindi Shodh-Patra Pradarshan Pratiyogita, ICAR-NDRI, Karnal on September 23, 2024.

- Arthiya, K. awarded First prize in poster presentation entitled “CRISPR/Cas9 mediated editing of COX-2 gene to discern its role in prostaglandin production in buffaloes (*Bubalus bubalis*) in XXI SOCDAB National Symposium during February 15-16, 2024 at NTR Veterinary College, Gannavaram, Andhra Pradesh.
- Ashritha B. received Best poster Award for the poster entitled “Fortification of milk-derived DPP-IV inhibitory peptides into snack bar and it’s in vivo effect on alleviating hyperglycaemia” in the National Seminar on ‘Innovative Strategies for Global Nutrition Security: Focus on Fortification’ at College of Agriculture, Kerala Agricultural University, Vellayani, during October 16-17, 2024.
- Chitranayak, P.S. Minz, A.K. Singh, J.K. Dabas, Arijit Ray, Nisha Bose received Second Best Poster presentation award for poster presentation on ‘Solar-Powered Automation for Curd Fermentation: A Hybrid Approach’ in 11th National Seminar by NGA on “Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovation” during September 27-28, 2024 at ICAR-NDRI, Karnal.
- D. Rajendran, Shobha, M, Emerald FME, Selvaraju, S. and Gopi, M. received best poster award for the research paper entitled “Synthesis and Characterization of Conjugated Zn-Phyto-Chemical Nanoparticles” in the 20th Biennial International Conference of Animal Nutrition Society of India on “Sustainable Animal Nutrition for Global Health and Production: Innovations and Directions” Organized by Madras Veterinary College, TANUVAS, Chennai, January 23-25, 2024.
- Divyanshu Lakhanpal, T.K. Mohanty, Ramaswamy Arunkumar, Dipti Nain, Mukesh Bhakat and Rubina Kumari Baithalu received First Best Poster Presentation Award in the Andrology, Semenology and Artificial Insemination Session (Poster Presentation) for the paper entitled, “Evaluation of testicular blood perfusion and its association with temperature gradient and semen quality in dairy bull during summer”, in the 39th Annual Convention of the Indian Society for study of Animal Reproduction (ISSAR), and National Symposium on “Challenges in Enhancing Reproductive Efficiency of Livestock: An Indian Perspective” organised by Dept. VGO, College of Veterinary Science, GADVASU, Ludhiana (Punjab), November 29, 2024 to December 1, 2024.
- Heena Sharma, Ashish Kumar Singh, Saipriya Kanchanpally, Lakshmipriya P R and Richa Singh received 2nd Best Poster Presentation Award for paper entitled ‘Exploration of breed-specific candidate metabolites in Barbari and Jamunapari goat milk using gas chromatography-mass spectrometry based metabolomics approach’ in National Symposium on ‘Animal Production Systems and its role in sustainable use of AnGR’ held at NTR college of Veterinary Science, Gannavaram, Andhra Pradesh during February 15-16, 2024.

- Hency Rose, Heena Sharma, A. K. Singh, D. N. Yadav, Yogesh Khetra, Kanchanpally Saipriya and Poornima received Best Poster Presentation Award for the paper entitled “Evaluation of physico-chemical composition and proteolytic changes during ripening of feta cheese prepared using Barbari goat milk” at International Conference on “Recent Trends and Future Perspective to improve the performance, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during April 24-26, 2024.
- Hima John, P. Barnwal, Khushbu Kumari, & Banashree N. received Third Best Poster presentation award for poster presentation on ‘Magnetic induction: a sustainable milk heating solution’ in the 11th National Seminar on “Indian Dairy & Food Industry in Viksit Bharat: Developments and Innovation” during September 27-28, 2024 at ICAR-NDRI, Karnal.
- Kaviya P, Rajesh Kumar Bajaj, Parvesh, Abdul Hussain Shaik, Poojitha, G., Aiswarya V.G. and Rajan Sharma received 1st Best Poster Award for the research paper entitled “Evaluation of nano encapsulated curcumin for preparation of functional yoghurt” at 11th National Seminar on “Indian Dairy & Food Industry in Viksit Bharat: Development & Innovation” held at ICAR-National Dairy Research Institute, Karnal, Haryana during September 27-28, 2024.
- Saipriya Kanchanpally, Heena Sharma, Ashish Kumar Singh, D. N. Yadav, Richa Singh, G. S. Meena, Diwas Pradhan, Sachin Kumar and Anusha Kishore received Second Best Poster Presentation Award for the paper entitled “Elucidation of difference in metabolite profile and physico-chemical characteristics of Barbari and Beetal goat milk” at International Conference on “Recent Trends and Future Perspective to improve the performance, health and welfare of small ruminants under changing climate scenario” held at RIVER, Puducherry, during April 24-26, 2024.
- Sheetal Berry, K. S. Kadian, S. Maiti, A. Ray received 3rd position in Poster Presentation on Building Climate Resilience through Adaptive Mechanisms Adopted by the Livestock Rearers of Uttarakhand. 8th National Youth Convention on New Perspectives for Sustainable Agriculture & Livelihood Security (NYC-NPSALS) at Institute of Agricultural Sciences.
- Sonia Mor, Swarnalata, Surendra Nath and Laxmana Naik N awarded 2nd place in the poster presentation for poster entitled “Fortification of milk with encapsulated milk derived peptides” held at 50th Dairy Industry Conference, during March 4-6, 2024 at Hyderabad, Telangana.
- Diksha, Rajan Sharma, Kamal Gandhi, and Sonu K Shivanna (2024). Detection of Vegetable Oil Adulterants in Cow Ghee Using Raman Spectroscopy in Combination with Multivariate Analysis. 11th National Seminar organized by

NDRI Graduate Association & ICAR-National Dairy Research Institute, Karnal held on September 27-28, 2024 at ICAR-NDRI, Karnal, India.

Fellows and Other Individual Awards

2021-22

- Dr. Dheer Singh, Joint Director (Research) secured NAAS Fellow-2021.
- Dr Anurag Saxena received Fellow Award-2021 conferred by Agricultural and Environmental Technology Development Society (AETDS) during GIAFAS-2021 at Dehradun in recognition of outstanding contribution and recognition in Agronomy.
- Dr Ashish Kumar Singh received Award of Fellow of NAAS, India on January 1, 2021.
- Dr. A. Manimaran was conferred with Associate Fellow of Indian Society of Veterinary Pharmacology and Toxicology (2021).
- Dr. Chitranayak, PS, DE Division received National Academy of Dairy Science (INDIA) NADSI Fellow Award.
- Dr. Nishant Kumar received membership of the National Academy of Veterinary Sciences, India (NAVSI) on September 25, 2021
- Dr. Dhruva Malakar was awarded “Lifetime Achievement Award” in the International Scientist Awards on Engineering, Science and Medicine. ALPHA Scientist Award 2021 Chennai, India.
- Dr. Dhruva Malakar was awarded “Outstanding Achievement Award-2021” from Advances in Agriculture, Environmental and Biosciences for Sustainable Development August 5-7, 2021.

2022-23

- Dr. A. Kumaresan was awarded NAAS Fellowship on 4th June 2022 in New Delhi.
- Dr. A. Kumaresan was awarded with VASVIK Industrial Research Award in the field of Agricultural Science and Technology in Mumbai on 5th May 2022.



- Dr. Dhruba Malakar was awarded the “Rashtriya Shiksha Gaurav Puraskar 2022” by the Centre for Education Growth and Research, New Delhi.
- Dr. Dhruba Malakar was awarded the “Dr. D.S. Balain Memorial Award- 2022” in the SOCDAB, NBAGR, Karnal.
- Dr. Dhruba Malakar was awarded the “Lifetime achievement award-2022” in the Society for Technology, Environment, Science & People, Kozhikode, Kerala, India ICASTESP-2022.
- Dr Sohan Vir Singh was awarded as Fellow of Society for Conservation of Domestic Animal Diversity during XIX Annual Convention and National Symposium on Contemporary Technology for Animal Genetic Resources (AnGR) Management during 22-23 April, 2022 at ICAR-NBAGR, Karnal.
- Dr. Sanjit Maiti was selected as the Associate Fellow of the National Academy of Dairy Science (India).
- Dr. K. Ponnusamy received Distinguished Alumnus Award of Tamil Nadu Agricultural University, Coimbatore.
- Dr. Monika Sharma awarded with Associate Fellowship of National Academy of Dairy Science (India) on October 29, 2022 in the VII Convocation of NADS(I) at DUVASU, Mathura.
- Dr. Sangita Ganguly was awarded Associate Fellowship of National Academy of Dairy Science, India on October 29, 2022.
- Dr. Nishant Kumar received Gaon Gyan Paritoshik Award at 22nd Indian veterinary Congress, XXIX Annual Conference of IAAVR & National Symposium on advancement in Veterinary Medical Research contributing to one health for betterment of Animal Health & their Welfare organized at C.V.Sc Udaipur, RAJUVAS, Bikaner from 8-9 April 2022.
- Dr. R. K. Baithalu received Distinguished Scientist Award on the occasion of International Conference on “Advances in Agricultural, Veterinary and Allied sciences for Improving Livelihood and Environmental Security” from 28-30 Sep., 2022 held at University of Kashmir, J&K.
- Dr. Naresh Kumar was nominated as member secretary codex committee of ICAR-NDRI to attend international codex meeting on food hygiene in virtual mode in management of biological foodborne outbreaks chaired by Denmark from 28th February 4th March and 9th March 2022.
- Dr. Naresh Kumar contributed in development as FAD-19 Member of IS: 17945:2022 standard on food for special medical purpose intended for infants –

Specifications - Standard was approved and released in BIS gazette dated 28th September 2022.

2023-24

- Rajan Sharma received Recognition Award for the Biennium 2021-2022 for his contribution in Animal Sciences from National Academy of Agricultural Sciences (NAAS), New Delhi during the Inaugural Function of the XVI Agricultural Science Congress at ICAR-CMFRI, Kochi on October 10, 2023
- Sachinandan De selected as the 'National Professor' by ICAR Agricultural Education Division.
- Sachinandan De selected as Fellow of the National Academy of Agricultural Sciences, New Delhi and National Academy of Veterinary Sciences, India.
- Sudarshan Kumar was selected for Fulbright-Nehru Academic and Professional Excellence Fellowship 2022-23.
- Chander Datt conferred with Fellow of Animal Nutrition Association, ICAR Bareilly, Izatnagar, UP, India.
- Chand Ram was conferred upon the Fellowship of Society for Advancement of Biological Sciences, Bangalore (Karnataka).
- Santanu Banik has been awarded Fellow of Indian Society of Animal Genetics and Breeding.
- Dhruba Malakar received the "Research Excellence Award" in recognition of his outstanding professional & research achievements in the fields of Animal Biotechnology from the Institute of Researchers, Wayanad, Kerala.
- Suman Kapila received "Women Scientist Award" in 2nd International Conference on Prospects and Challenges of environment and biological sciences in food production system for livelihood security of farmers (ICFPLS-2023) at ICAR-CIARI, Port Blair, A & N Islands.
- Bharati Pandey received "Young Scientist Award" on account of her overall achievements and accomplishment in the Agriculture & Allied Sector by Dr. Ram Awatar Shiksha Samiti (DRASS), 2023.
- Sachin Kumar acted as an Expert to the Food and Agriculture Organization (FAO) of the United Nations expert meeting on "Alternative and advanced feed practices to promote the responsible use of antimicrobials" at FAO Headquarters, Rome, Italy.

- Sachin Kumar received “International Travel Grant” from Science and Engineering Research Board, Department of Science and Technology, Government of India, New Delhi.
- Sachin Kumar received Dr. U. B. Singh Memorial Young Scientist Award at DUVASU, Mathura.
- Sachin Kumar received Dr. S. K. Sirohi Memorial Outstanding Young Researcher Award of ICAR-NDRI, Karnal.
- Sadeesh E.M. is honoured with a nomination to the SMRM-India Executive Committee, serving as a Member (January, 2024 – December, 2027).
- Raghu H. V. Received ‘Best Technology award’ for the technology entitled “PANI-PEC paper strip sensor for detection of aerobic plate count in milk” during ICAR 95th foundation day and Technology Day celebrations.
- Raghu H. V. Awarded ‘Dr. S.K. Sirohi Memorial Outstanding Young Researcher Award of ICAR-NDRI, Karnal.
- Reenu Kashyap awarded ‘Best thesis award’ for outstanding research work on the topic entitled “Buffalo colostrum proteins and peptides derived formulation for diarrhoea management in weaning mice” in the 19th Convocation at ICAR-NDRI, Karnal held on 24th April 2023.
- Akash awarded with best thesis award for outstanding research work on the topic entitled “Isolation and characterization of antibiotic-resistant bacteria from organized dairy production system” in the 19th Convocation at ICAR–NDRI, Karnal held on 24th April 2023.
- Yogesh Khetra Received Young Scientist Award by Swedish South Asian Network on Fermented Foods (SASNET-FF).
- Sharanabasava awarded Best PhD Thesis Award in International Conference at Malla Reddy University, Hyderabad during 21st -23rd June, 2023.
- Dr. A. Kumaresan awarded with Prof. Nils Lagerlof Memorial Award (2023) by the Indian Society for Study of Animal Reproduction in recognition of his meritorious contribution to the research in Animal Reproduction.
- Arindam Dhali awarded with G.B. Singh Memorial Award (2023) by the Indian Society for Study of Animal Reproduction in recognition of his contribution to the research in Animal Reproduction.
- Subash, S. Received ‘Best Extension Scientist Award’ during the International Conference on ‘Global Insights on Research and Development in Agriculture, Horticulture and Allied Sciences’ jointly organized by G.H. Rasoni University and Just Agriculture Education Group.

- Indu Devi received 'Shri S. Lakshmana Rao award' in National Livestock Conference and 29th Annual Convention - "Futuristic Approach to Viable Animal Production vis à vis Climate and Calamity Challenges" at b.V. Sc.&A.H., OUAT, Bhubaneswar, Orissa
- K. Ponnusamy is recognised with Lifetime Achievement Award in 5th National Conference of Society of Veterinary & Animal Husbandry Extension (SVAHE) at Khalsa College of Veterinary and Animal Sciences, Amrits
- Dr. A. K. Puniya nominated as Member, Scientific Panel, Milk and Milk Products, Food Safety and Standards Authority of India, New Delhi.
- Dr. A. K. Puniya nominated as Member National Core Group and Convener of National Level Committee; BSMA (Basic Subject Matter Area) for "Restructuring of Master's & Ph.D. Curriculum & Syllabi" of Dairy Science & Technology; ICAR-Agricultural Education Division, New Delhi.
- Dr. Raghu H V., certified as FSSAI food analyst declared by Food Analyst Board constituted by FSSAI for the year 2022 under the provision of Food safety standards Act., 2006.

2024-25

- Anil Kumar Puniya, Principal Scientist, Dairy Microbiology Division was awarded Scientific High Level Visiting Fellowships (SSHN) 2024 by Institute of French in India (IFI) and French Embassy in India at UMR Herbivores Centre, Clermont Auvergne, France during October 14-27, 2024.
- Kumaresan is ranked among the world's top 2 percent scientists list published by the Stanford University, USA consecutively for last four years (2024, 2023, 2022 & 2021).
- Vaibhav Bharat Rokade received a bursary of £1000 from the UK Food Safety Research Network (FSRN) and Microbiology Society UK for attending the 21st International Symposium on Problems of Listeria and Listeriosis (ISOPOL), hosted by Quadram Institute at the University of East Anglia, Norwich, United Kingdom, during September 10-13, 2024. He presented a poster on "The Influence of Biomimetic Synthesized Magnesium Oxide Nanoparticle on Listeria monocytogenes Virulence and Biofilm forming properties".
- A. K. Puniya was nominated as the Member, 'National Advisory Committee', Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi.
- A.K. Puniya was nominated as the Member, Scientific Panel on Milk & Milk Products: Food Safety & Standards Authority of India, Ministry of Health & Family Welfare, Government of India, New Delhi.

- A.K. Puniya was nominated as the Member, Sectoral Expert Committee on Biomanufacturing; Subsector: Functional Foods, Department of Biotechnology (DBT), Ministry of Science & Technology, New Delhi.
- A.K. Puniya was nominated as the Principal Member, FAD 31 (Food & Agriculture Division), Sectional Committee, Bureau of Indian Standards, New Delhi.
- P. Barnwal acted as Chairman, BIS of Dairy Equipment Sectional Committee, FAD 33.
- Chitranayak acted as BIS Member of Dairy Equipment Sectional Committee, FAD 33.
- P. S. Minz acted as BIS Member of Dairy Equipment Sectional Committee, FAD 33.
- Ankit Deep was invited member of FAD 33 / Panel-1 & 2, BIS, New Delhi.
- Chitranayak received third prize for “INDIA-General knowledge test” ICAR-NDRI Raj Bhasha at ICAR-NDRI, Karnal on September 30, 2024.
- D. Malakar was awarded Dr. A.P.J. Abdul Kalam Memorial NABS Life Time Achievement Award in September, 2024 from NABS University of Madras, Chennai, Tamil Nadu.
- Helna Pious received appreciation and cash award in a competition conducted by Bureau of Indian Standards (BIS) on “Standardization Contest - Shaping Tomorrow’s Sustainability Standards”.
- Manisha Sethi awarded received Savitribai Phule Excellence Award 2024 for in National Level Essay Writing Competition held on the Birth Anniversary of SAVITRIBAI PHULE, “First Female Teacher of India” on 3rd January and Presented on the Indian Republic Day, January 26, 2024.
- Manjunath KV was awarded the prestigious MANAGE Best PhD Thesis Award. This award was presented on the 37th Foundation Day celebration of National Institute of Agricultural Extension Management (MANAGE), Hyderabad, an autonomous institute under the Ministry of Agriculture and Farmers’ Welfare, Govt. of India.
- Mohan Mandal nominated as a member of the Indian Expert Panel for Joint Indo-UK Panel to review proposals under Indo-UK joint calls on Farm Animal Disease & Health (FADH) of DBT, GOI for three-year term.
- Narender Raju Panjagari, Senior Scientist, Dairy Technology received International Travel Grant for attending the 17th International Hydrocolloids Conference held at the Riddet Institute, Massey University, New Zealand during November 12-15, 2024 and presenting an oral paper by the Anusandhan National Research Foundation (former SERB), DST, Govt. of India.

- R. K. Meena received Best Agronomist award conferred by Agri meet foundation and CCSHAU, Hisar during International conference on “Recent Advances in Agriculture for Aatmanirbhar Bharat” during April 19-21, 2024.
- Raghu H.V. received certificate of appreciation in recognition for his contribution as an Eminent speaker at India Food Summit and Awards 2024 held at Dwarka, New Delhi during December 5-6, 2024 organized by Synnex.
- Raghu H. V was nominated and received a certificate of appreciation for exceptional contribution as a Jury in Smart India Hackathon (SIH), 2024 held at IES, Bhopal, Madhya Pradesh during December 11-15, 2024 organized by AICTE-MIC Innovation cell, Ministry of Education, Govt. of India.
- Santanu Banik was nominated as the Member, General Body, Paschim Bangal Go-Sampad Bikash Sanstha, West Bengal.
- Santanu Banik was selected as the Member, National Advisory Committee for Animal Husbandry and Dairying sector for Piggery by Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, GoI
- Ajoy Mandal awarded Fellow of Indian Society of Animal Genetics and Breeding for the year 2024.
- Bindeshwari Pratap Singh, Chief Technical Officer (Library) received the award for the Fellow of the Association of Agricultural Librarians and Documentalists of India (AALDI) for the years 2023 and 2024.



- D. Malakar was conferred on as an Honorary Fellow of the Association of Biotechnology and Pharmacy 2024 from Mangalayatan University, Aligarh, UP.
- Goutam Mondal conferred with Fellow of Animal Nutrition Association (FANA), ICAR-IVRI, Bareilly, Izatnagar, UP, India.
- Richa Singh received Associate Fellowship Award from National Academy of Dairy Science, India (NADSI), during the 8th Convocation of NADSI, held on April 9, 2024 at Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, (DUVASU), Mathura, U.P.

- Laxmana Naik N. received Associate Fellowship Award from National Academy of Dairy Science, India (NADSI), during the 8th Convocation of NADSI, held on April 9, 2024 at Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, (DUVASU), Mathura, U.P.
- Magan Singh Received Fellow Award (2022-23) of Indian Association of Hill Farming (IAHF) on November 29, 2024 at ICAR-RC-NEHR, Nagaland Centre,



Jharnapani, Medziphema, Nagaland. Pradip Vishnu Behare, Senior Scientist received NASI-Membership 2024 (Biological Sciences, Biochemistry, Biophysics, and Biotechnology) in 2024 from The National Academy of Sciences in its 94th Annual Session on December 1, 2024.

- Priyanka Singh Rao was conferred with Associate Fellowship Award during 8th Convocation of NADSI from April 9, 2024 at U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, (DUVASU), Mathura.
- Sohan Vir Singh was selected as a Fellow by Society of Animal Physiologist of India on November 27, 2024 during 32nd Annual Conference of SAPI & International Symposium on “Advances in Physiological Research in Omics Era for sustainable Animal Production and Livelihood Security under Changing Climate Scenario” organized by ICAR-CIRC, Meerut in collaboration with Society of Animal Physiologist of India during November 27-29, 2024.
- Vikas Vohra was conferred with ISAGB Fellow Award 2024 from Indian Society for Animal Genetics & Breeding, during the 18th Annual Convention of ISAGB held at BASU, Patna.
- Afreed Muhammed NV awarded Best MVSc thesis award by Animal Physiologists Association during 4th Annual convention of Animal Physiologists Association and National Conference held during March 1-2, 2024 at ICAR-Central Sheep and Wool Research Institute, Avikanagar (Rajasthan).

- Kishan Fatania conferred with Young Scientist Award for his research work on “Buffalo bull fertility prediction using functional sperm populations” on October 25, 2024 by SVSBT during the XI Annual conference of SVSBT held at Tirupati.
- Magan Singh was conferred Tenth Dr. Gopal Pandey Memorial Award by the Society of Biological Sciences and Rural Development, Prayagraj (U.P.) on July 27, 2024 during 10th Dr. Gopal Pandey Memorial Lecture Function.
- Monika Sharma was conferred with the Young Scientist Award by the Pragati International Scientific Research Foundation (PISRF) for her contribution to the field of Food Science and Technology during the International Conference on “Climate Smart Nutri-Sensitive Integrated Farming System for Gender Equitable Sustainable Agriculture: Prospects and Challenges: ICNSFS” organized from November 6-8, 2024.
- Nilendu Paul received Dr. T. C. Anand Kumar Young Scientist Award for his research work on “Transcriptomic profiling of buffalo spermatozoa in relation to field fertility” on February 25, 2024 during the 34th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility-2024 held at Hyderabad.
- Pawan Singh awarded with distinguished Extension Worker Award- 2024 by the Indian Society for Buffalo Development in its National Symposium on “Innovative Approaches for Boosting Buffalo Productivity” (December 16-18, 2024) organized at College of Veterinary Science & Animal Husbandry, Kamdhenu University, Anand.
- Ragulraj, S., M. Bhakat, T. K. Mohanty, S. Maiti, A. Fernandes, P.B. Nandhini, C. Sahu, G. S. Patil and R. Vikram received Shri. A. Lakshman Rao Award for fresh M.V.Sc. Research paper entitled “Infrared thermal image analysis for estrus identification in Murrah buffaloes” in the 30th Annual convention and national conference on “Optimization of livestock farming for sustainable development in the era of climate change” held during February 22-24, 2024 at Madras Veterinary College, Chennai.
- Ravi Prakash who completed his Ph.D (Dairy Engineering) from the Southern Regional Station of ICAR - NDRI under the supervision of Dr Menon Rekha Ravindra, was selected for the IAUA Award for Outstanding Ph.D. Thesis Research for the year 2023 in the category Dairy and Fisheries Sciences. The award was presented during IAUA Vice Chancellors’ Convention held on March 17, 2024 at GADVASU, Ludhiana.
- Sakshi Payasi conferred with Young Scientist Award for her research work on “Thermal signatures of udder skin surface: a potential non-invasive tool to predict

parturition in cows” on October 25, 2024 by SVSBT during the XI Annual conference of SVSBT held at Tirupati.

6.6.5.4 Capacity Building and Training

Deputations Abroad

2021-22

- Dr. Nishant Kumar, Senior Scientist (Animal Reproduction & Gynaecology) was Deputed for training at Department of Veterinary Clinical Sciences, College of Veterinary Medicine, Washington State University, Pullman, Washington (USA) from September 28, 2021 to November 27, 2021 under IDP-NAHEP Project

2022-23

The information on training attended by Scientists abroad during 2022-23 is as under: -

S. No	Name of Employee and Designation	Name of Training programme attended Under the Project	Duration
1	Dr. Diwas Pradhan, Scientist	NAHEP Project	21.03.2022 to 20.08.2022
2	Dr. Rakesh Kumar, PS	BMGF Project at USA	06.06.2022 to 05.08.2022
3	Dr. M.K. Singh, Sr. Scientist	NAHEP Project at Germany	24.06.2022 to 20.08.2022
4	Dr. Rakesh Kumar, PS	NAHEP Project at USA	01.07.2022 to 15.07.2022
5	Dr. K. Ponnusamy, PS	-do-	15.08.2022 to 29.08.2022
6	Dr. H.R. Meena, PS	-do-	15.08.2022 to 14.10.2022
7	Dr. Vikas Vohra, PS	-do-	08.08.2022 to 07.10.2022
8	Dr. A.K. Dixit, PS	-do-	01.09.2022 to 31.10.2022
9	Dr. A Kumaresan, PS	-do-	15.09.2022 to 14.11.2022
10	Dr. Gunjan Bhandari, Scientist	NAHEP Project at Canada	22.09.2022 to 18.02.2023
11	Dr. Asif Mohammad, Sr. Scientist	NAHEP Project at Thailand	25.07.2022 to 21.12.2022
12	Dr. Naresh Lalaji Selokar, Sr. Scientist	NAHEP Project at Germany	25.09.2022 to 24.02.2023
13	Dr. Satish Kumar M.H., Sr. Scientist	NAHEP Project at Thailand	01.09.2022 to 31.10.2022

14	Dr. Nitin Tyagi, PS	NAHEP Project at USA	16.09.2022 to 15.11.2022
15	Dr. Sangita Ganguly, Scientist	NAHEP Project at New Zealand	18.11.2022 to 31.03.2023
16	Dr. Gautam Kaul, PS	NAHEP Project at USA	28.11.2022 to 12.12.2022
17	Dr. Sanchita Garai, Scientist	NAHEP Project at UK	19.09.2022 to 15.02.2023

2023-24

- Dr. A. K. Puniya, Principal Scientist attended the International Gut Microbiology Symposium, 13th, Aberdeen, Scotland, UK as Invited Speaker for Gateway to Global Enteric Methane Reduction during June 13-15, 2023.

The information on training attended by Scientists abroad during 2023 is as under: -

Name of Employee and Designation	Name of Training programme attended	
	Under the Project	Duration
Dr. Sanchita Garai, Scientist	NAHEP Project at UK	19-09-2022 to 15-02-2023
Dr. Naresh L Selokar, Senior Scientist	NAHEP Project at Germany	25-09-2022 to 23-02-2023
Dr. A. Manimaran, Senior Scientist	NAHEP Project at USA	12-10-2022 to 28-02-2023
Dr. Sangita Ganguly, Scientist	NAHEP Project at New Zealand	22-11-2022 to 20-04-2023
Dr. Kaushik Khamrui, Principal Scientist	NAHEP Project at Thailand	01-02-2023 to 30-03-2023
Dr. Suman Kapila, Principal Scientist	NAHEP Project at New Zealand	20-02-2023 to 06-03-2023
Dr. Jai Kumar Kaushik, Principal Scientist	NAHEP Project at USA	16-03-2023 to 31-03-2023
Dr. Sunil Kumar Onteru, Principal Scientist	BMGF Project at USA	07-05-2023 to 30-06-2023
Dr. A. Kumaresan, Principal Scientist	BMGF Project at Canada	01-06-2023 to 31-07-2023
Dr. Pawan Singh, Principal Scientist	NAHEP Project at UK	13-12-2023 to 27-12-2023
Dr. Anil Kumar Puniya, Principal Scientist	NAHEP Project at UK	13-12-2023 to 27-12-2023
Dr. Chitranayak, Principal Scientist	NAHEP Project at Australia	14-12-2023 to 30-12-2023

Dr. Anupama Mukherjee	International training on “Livestock Genetic Improvement Programme” at International Livestock Research Institute, Nairobi, Kenya	February 19-24, 2024
Dr. Gopal R. Gowane	Sabbatical leave to work as Post Doc with Dr. Ignacy Mitzal on genomic selection aspect (Methods) at University of Georgia (GA) Athens, (USA)	March 25, 2024 to September 30, 2024
Dr. Narender Raju Panjagari	Attended the 17th International Hydrocolloids Conference and present an oral paper at The Riddet Institute, Massey University, New Zealand	November 12-15, 2024
Dr. Rajesh Kumar Meena, Scientist	NAHEP Project at Australia	15-12-2023 to 30-12-2023

Trainings (Category-wise)

Scientific Staff

2021-22

Name of the Employee	Name of Training Programme	Duration	Organizing Institute
Dr. Mohan Mondal, Senior Scientist	ICAR-HRM virtual training programme on Health and Mental Well Being of ICAR-Staff for Enhancing	February 25-27, 2021	ICAR–Indian Institute of Wheat & Barley Research, Karnal
Dr. Khushbu Kumari, Scientist	On-Line training programme on MOOC on Theoretical foundations of Education Technology	June 1-30, 2021	ICAR-NAARM, Hyderabad
Dr. A.K. Singh, PS Dr. Rakesh Kumar, PS	Online training on Management Development Programme on Leadership Development (a Pre- RMP programme)	June 14-25, 2021	ICAR-NAARM, Hyderabad

Dr. S.K. Das, PS Dr. Champak Bhakat, PS	Online Collaborative Training Program on Enhancing Agricultural Resilience through Index-based Flood Insurance and Post-flood Management Interventions in India	June 29-30, 2021	ICAR-Indian Institute of Water Management and International Water Mgmt. Institute
Dr. Narender Raju Panjagari, Scientist	Sensitization of Agril. Scientist on Entrepreneurship Development and Start-up Ecosystems	July 5-9, 2021	ICAR-NAARM, Hyderabad
Dr. Raghu H.V., Scientist	NABL Assessors Training course on ISO/IED 17025:2017	August 25-27, 2021	NABL
Dr. Neelam Upadhyay, Scientist	Application of Bioinformatics in Agricultural Research and Education	September 20-24, 2021	ICAR-NAARM, Hyderabad
Dr. Sangita Ganguly, Scientist	Attended a two weeks online training on General Management Programme for Women Scientists	December 6-17, 2021	Administrative Staff College of India (ASCI), Hyderabad

2022-23

Dr. K. Ponnusamy, PS	Training programme on National Facilitators Development programme	(NFDLP) at MANAGE, Hyderabad	January 17-22, 2022
Dr. (Mrs.) Heena Sharma, Scientist	ICAR Winter School (online) on Prescribing Human Health Using Foods of Animal Origin	ICAR-IVRI, Izatnagar	February 8-28, 2022
Dr. Biswajit Sen, Scientist	Training on Computable General Equilibrium (CGE) modelling (Phase I & II)	IFPRI, New Delhi	April, 4-13 May, 10-18, 2022
Dr. Rajan Sharma, PS	Training programme titled MDP on Leadership Development (a pre-RMP programme)	ICAR-NAARM, Hyderabad	June 14-25, 2022
Er. Ankit Deep, Scientist	Training on Computer aided design (online)		July 7 to August 6, 2022
Dr. (Mrs.) Hima John, Scientist	-do-		-do-
Dr. Sangita Ganguly, Scientist	Training programme on Promotion of Biofortification for ensuring Nutritional Security (online)		July 27-29, 2022

Ms. Priyanka, Scientist	The training program on Intellectual Property Rights (IPR)	ITPM, ICAR, New Delhi	August 1-5, 2022
Dr.Sachinandan De, PS	Workshop on Training Workshop for	NAARM, Hyderabad	August 24-26,
	Vigilance Officers of ICAR institutes		2022
Dr. P. N. Raju, Sr. Scientist	Management Development Programme (MDP) on Market Analytics for Small Business (online)		August 29 to September 2,2022
Dr.J.K. Kaushik, PS	Training programme on 12th T.P. on Science Technology and Emerging Trends in Governance	New Delhi	November 21-25,2022
Dr. Shaik Abdul Hussain, Scientist	Training program titled Advances in web and mobile application development	ICAR-NAARM, Hyderabad	December 5-9,2022
Dr. Rashmi H.M., Sr. Scientist	ICAR-HRD Training Programme (online)	ICAR-IIWBR, Karnal	December 3-15,2022

2023-24

Name of the Employee	Title of the Training	Period
Dr. G. R. Gowane, Senior Scientist	Training programme on Genomic Selection at NDDB, Anand	1-3 March, 2023
Dr. P.S. Minz, Senior Scientist	Training programme on Multivariate Data Analysis(online) at ICAR-NAARM, Hyderabad	20-27 March, 2023
Dr. Rani Alex, Senior Scientist		
Dr. Shaik Abdul Hussain, Scientist	Advanced User training Programme for water Activity Meter and Texture Analyser at Scientific and Digital Systems (SDS), New Delhi	3-4 May, 2023
Dr. Manoj Kumar Singh, Senior Scientist	Genome Analysis and Artificial Intelligence Applied to AGB at ICAR-NDRI, Karnal	21 August - 1 Sep,2023
Dr. K. Ponnusamy, Principal Scientist	Training programme at the National Institute of Advanced Studies (NIAS), Bengaluru	11-15 September, 2023
Dr. Magan Singh, Senior Scientist	Training Programme (online) on Design Thinking in Agricultural Research and Education through Online Mode organised by NAARM, Hyderabad	9-13 October, 2023

	Onsite Training on Laboratory System and Internal Audit as per ISO/IEC 17025:2017 at Indian National Science Academy (INSA), New Delhi	2-4 December, 2023
Dr. Sachin Kumar, Scientist	Onsite Training on Laboratory System and Internal Audit as per ISO/IEC 17025:2017 at Indian National Science Academy (INSA), New Delhi Science Academy (INSA), New Delhi	4-6 December, 2023
Dr. Monika Sharma, Senior Scientist	CAFT training programme on Agri-derived Nutrients and Nutraceuticals for Innovative Health Foods: Tools and Strategies at ICAR-IARI, PUSA, New Delhi	15 December 2023 to 04 January 2024
Dr. M. Sivaram, Principal Scientist	Training programme on Systems Dynamics Modelling	28-29 December, 2023

2024-25

Name of the Employee	Title	Duration
Dr. T.K. Dutta, Principal Scientist	86 th Foundation Day, Farmers' Day and Seminar at ICAR-National Institute of Natural Fiber Engineering Technology, Tallygunj, Kolkata	January 4, 2024
Dr. S. Banik, Principal Scientist; Dr. A. Mandal, Principal Scientist	National Symposium on "Role of Anti-Microbial Resistance (AMR) in Veterinary & Animal Sciences with a special reference to Poultry industry" at WBUAFS, Kolkata	January 10-11, 2024
Dr. Sachin Kumar, Scientist Dr. A. Manimaran, Principal Scientist	Animal Nutrition Conference "Sustainable Animal Nutrition for global health and production: Innovations and Directions" at Tamil Nadu Veterinary and Animal Sciences University, Chennai	January 23-25, 2024
Dr. Diwas Pradhan, Scientist	To present an oral talk at the International Conference on advances in Biological Sciences for Sustainable Development at Central University of Jammu & Kashmir	February 1-2, 2024
Dr. Nishant Kumar, Sr. Scientist	24 th Indian Veterinary Congress & 31 st Annual Conference of IAAVR and National at LUVAS, Hisar	February 7-8, 2024
Dr. Sohan Vir Singh, Principal Scientist	Presented the lead lecture during international conference on "Climate change and Agro ecosystem: threats, opportunities and solution" Banaras Hindu University, Varanasi (U.P.)	February 8-10, 2024

Dr. Sohan Vir Singh, Principal Scientist Dr. Sanjit Maiti, Sr. Scientist Dr. Sanchita Garai, Sr. Scientist Dr. Subhasis Mandal, Principal Scientist	Conference entitled “International Salinity Conference on “Rejuvenating salt affected Ecologies for land degradation neutrality under changing climate” at CSSRI, Karnal	February 14-16, 2024
Dr. Anupama Mukherjee, Principal Scientist Dr. Vikas Vohra, Principal Scientist	National Symposium and XXI Annual Convention of Society at Gannavaram (AP)	February 15-16, 2024
Dr. Nitin Tyagi, Principal Scientist	New Horizons of Animal Nutrition Research: Combating the Challenges of Productivity, Health and Welfare of Animals at DUVASU, Mathura	February 16-18, 2024
Dr. T. K. Mohanty, Principal Scientist	Indo Canadian Bi-National Agri Cluster Workshop-2024 at Tamil Nadu Agricultural University, Coimbatore	February 22-23, 2024
Dr. A. Manimaran, Principal Scientist Dr. Indu Devi, Scientist	National Conference & 30th annual convention of Indian Society of Animal Production and Management 2024 at Madras Veterinary College Chennai, Tamil Nadu	February 22-24, 2024
Dr. Rajani Kumar Paul, Sr. Scientist	4th Annual Convention of Animal Physiologists Association and National through Online Mode at CSWRI, Avika Nagar	March 1-2, 2024
Dr. A. Mandal, Principal Scientist, Dr. Sohan Vir Singh, Principal Scientist Dr. P.N. Raju, Sr. Scientist Dr. Naresh Selokar, Scientist	Attended the 50th Dairy Industry Conference at HITEK Exhibition Centre Hyderabad	March 4-6, 2024
Sh. Biswajit Sen, Scientist	Winter School Training on “ Quantitative Techniques for Agricultural Policy Analysis” at ICAR-NIAP, New Delhi	March 8-28, 2024
Dr. Rajiv Kapila, Principal Scientist	Workshop to present the progress of work under SERB funded project entitled at BHU, Varanasi	March 14-15, 2024
Dr. A. Chatterjee, Principal Scientist	Inter-country Knowledge Sharing Webinar on the “Biosafety targets”	March 22, 2024

Dr. T.K. Dutta, Principal Scientist	Foundation Day Programme of KVK-Addl, ERS of ICAR-NDRI, Kalyani chaired by Dr. Himanshu Pathak, DG, ICAR and Secretary DARE, GoI	March 31, 2024
Dr. T.K. Dutta, Principal Scientist	Online Seminar on “Viksit Bharat” chaired by Dr. Himansu Pathak, DG, ICAR and Secretary, DARE, GoI	April 16, 2024
Dr. Sumit Arora, Principal Scientist	To deliver lectures in the one-day workshop entitled “Recent Advances in tools and techniques for food quality and safety” ONLINE at University of Horticultural Sciences Bagalkot.	April 16, 2024
Dr. Rajan Sharma, Principal Scientist Dr. Raghu H.V., Sr. Scientist	Conference “The FIRST IDF Regional Dairy Conference Asia Pacific 2024” at Kochi, Kerala	June 26-28, 2024
Dr. M. Karunakaran, Principal Scientist	National Steering Committee (NSC) of “National programme on Electronics and ICT Applications in Agriculture and Environment (AgriEnIcs)”, at ICAR-NDRI-ERS, Kalyani	June 12, 2024
Dr. Basavaprabhu H.N., Scientist, Dairy Microbiology SRS, Bangalore	National training programme under IDP-NAHEP Project at IIT, BHU, Varanasi	July 1-15, 2024
Dr. Shaik Abdul Hussain, Scientist	Training program on “Building Successful Incubation Ecosystem” at ICAR-NAARM Hyderabad	July 3-5, 2024
Dr. Rashmi H.M., Sr. Scientist	National Training programme at National Centre for Biological Sciences, Tata Institute of Fundamental Research, GKVK, Bellary Road, Bengaluru	July 4, 2024 to August 2, 2024
Dr. Sonu K.S., Scientist	National Training programme at IIT Madras, Chennai	July 4, 2024 to August 2, 2024
Dr. M. Karunakaran, Principal Scientist	Meeting of Regional Advisory Group -NABARD, West Bengal, held at NABARD Bhawan, Kolkata	July 10, 2024
Dr. Rajan Sharma, Principal Scientist	ICAR Foundation Day & Technology Meet, New Delhi	July 15-16, 2024
Dr. S. Subhash, Sr. Scientist	Attended the workshop and participate in ‘Dairy Entrepreneurship Curriculum Workshop’ at Coimbatore	July 16-17, 2024

Dr. Bharati Pandey, Scientist Dr. Sumit Arora, Principal Scientist Dr. Vivek Sharma, Principal Scientist; Dr. A. Santra, Principal Scientist	National training programme at Department of Computer Science at Delhi University, Delhi	July 30, 2024 to August 19, 2024
	Workshop on Application of artificial intelligence and machine learning in dairy and food industry under IDP-NAHEP NDRI, Karnal	July 31, 2024
Dr. A. K. Dixit, Principal Scientist Dr. Udit Chaudhary, Sr. Scientist Dr. Gunjan Bhandari, Scientist	32nd International Conference of Agricultural Economists (ICAE) at NASC complex, New Delhi	August 2-7, 2024
Dr. P. Barnwal, Principal Scientist Dr. A. K. Sharma, Principal Scientist Er. Ankit Deep, Scientist	Training Programme on Python Organized by ICAR-IASRI, New Delhi through (online mode.)	August 2-8, 2024
Dr. Sonu, Scientist	Training programme on Laboratory Quality Management System and International Audit in accordance with IS/ISO/IEC17025-2017 at NITS, Noida, UP	August 9, 2024
Dr. A. Kumaresan, National Fellow	XXIX Annual Convention of ISVIB and National Conference of Madras Veterinary College, Chennai	August 7-9, 2024
Dr. Bharati Pandey, Scientist	Attended the 8th National Youth Convention and also present the research work of her SERB project at Banaras Hindu University (BHU), Varanasi, Uttar Pradesh	August 22-23, 2024
Dr. S. Banik, Principal Scientist	XXVII Meeting of ICAR Regional Committee No. II at ICAR-NRRI, Cuttack.	August 23, 2024
Dr. Rajan Sharma, Principal Scientist	Executive Development Programme (EDP) on 'Leadership Excellence' for RMPs of ICAR at ICAR-NAARM, Hyderabad	August 26-31, 2024
Dr. Sachin, Scientist	Training programme on "Multivariate Analysis Using R" at ICAR-NAARM, Hyderabad	August 26-30, 2024

Dr. M. Mondal, Sr. Scientist	Online international e-training program on “The Physiology of Reproductive Success in Veterinary field: latest insight and innovations”, by Department of Veterinary Physiology, College of Veterinary and Animal Sciences, Kishanganj under the acgis of Bihar Animal Sciences University, Patna	September 2 and 11, 2024
Dr. S.De, Principal Scientist	Annual Conference of the Society of one health Biochemist and Nutritional Symposium on “Biochemistry of One Health” at Nagpur Veterinary college Nagpur	September 4-5, 2024
Dr. S. K. Das, Principal Scientist	Regional Science Congress organized by Jawahar Navodaya Vidyalaya, Kalyani and delivered presentation on ‘Horizon of Biotechnology and its Multi-dimensional Aspects’	September 13, 2024
Dr. Subhasis Mandal, Principal Scientist	To deliver a talk on “Management of coastal salinity for transforming agri-food systems in Ganges delta – turning grassroots experiences into policy” at NDDB, Anand	September 18-20, 2024
Dr. D.K. Mandal, Principal Scientist; Dr. A. Chatterjee, Principal Scientist; Dr. A. Santra, Principal Scientist; Dr. S. K. Das, Principal Scientist Dr. A. Chatterjee, Principal Scientist	Webinar on “Internet of Things in Precision Farming”	September 26, 2024
	Informational webinar on ‘Risk Assessment and Risk Management: Looking Ahead to CP-MOP 11’ held on 27th September 2024	September 27, 2024
Dr. Vivek Sharma, Principal Scientist, Sumit Arora Principal Scientist; Dr. Manoj Kumar Singh, Sr. Scientist Dr. Naresh Lalaji Selokar, Sr. Scientist; Dr. Richa Singh, Senior Scientist, Dr. Kamal Gandhi, Scientist	11th National Seminar on “Indian Dairy & Food Industry in Viksit Bharat: Development & Innovation ICAR- NDRI, Karnal	September 27-28, 2024

Dr. Rajan Sharma, Principal Scientist	37th Foundation Day of ICAR-National Research Centre on Mithun & Regional Workshop on “Development of Dairy sector in Northeast India with special reference to Mithun (<i>Bos frontalis</i>)” Nagaland	October 15, 2024
Dr. Sumit Arora, Principal Scientist	Training Workshop on “Enhancing Academic Excellence of Agricultural Higher Education Institutions through NIRF Ranking and NAAC Accreditation” at ICAR-NAARM, Hyderabad	October 16-18, 2024
Dr. Sachin Kumar, Scientist	39th Indian Poultry Science Association Conference (IPSACON-2024) and National Symposium under the aegis of IPISA, Bareilly at Department of Poultry Science, MAFSU-Nagpur Veterinary College, Nagpur	October 16-18, 2024
Dr. Hardev Ram, Sr. Scientist	National conference at Chandra Shekhar Azad University of Agriculture & Technology, Kanpur	October 18-20, 2024
Dr. P.N. Raju, Sr. Scientist	National Conference on “Biotechnological Innovations to augment health and productivity of livestock and poultry for sustainable livelihood” and XI Annual at College of Veterinary Science, Sri Venkateswara Veterinary University Proddatur (AP)	October 23-25, 2024
Dr. Yogesh Khetra, Sr. Scientist	International Conference-2024 on: Emerging Paradigm Shifts in Food & Dairy Processing at Banaras Hindu University	October 25-26, 2024
Dr. Sanchita Garai, Sr. Scientist	International Conference on “Climate-Smart Nutri-Sensitive Integrated Farming System for Gender-equitable at ICAR-CIWA, Bhubaneswar, Odisha	November 6-8, 2024
Dr. Nitin Tyagi, Principal Scientist	Stakeholders Consultation Workshop on Innovative Approaches to Crop Residue Management, jointly organized by FAO and the ICAR- CSSRI, Karnal	November 9, 2024
Dr. Sadeesh E.M., Sr. Scientist	International Conference on Progress in Mitochondrial Research and Therapy at SDM University, Dharwad, Karnataka	November 11-12, 2024
Dr. Udit Chaudhary, Sr. Scientist	To present the paper and attend the 84th Agricultural Economics Conference at Karaikal, Pondicherry	November 11-13, 2024
Dr. Sudarshan Kumar, Sr. Scientist	Conference on “New Vistas in Harnessing Genetic Resources for sustainable Animal Production” & XVIII Animal Convention of Indian Society of Animal Genetics & Breeding at IIT Bombay	November 12, 2024

Dr. A. Mandal, Principal Scientist	Brainstorming meet on “Automation in agriculture using sensor-based networks” at CDAC, Kolkata	November 13, 2024
Dr. D. Malakar, Principal Scientist	International Conference on Reproductive Sciences and Molecular Medicine at University of Delhi	November 15-17, 2024
Dr. Rajan Sharma, Principal Scientist	National Seminar on ‘Policy and Strategies for the Indian Goat Sector in Amrit Kaal’ Agra.	November 19, 2024
Dr. Santanu Banik, Principal Scientist Dr. Vikas Vohra, Principal Scientist Dr. G. R. Gowane, Principal Scientist Dr. A. Mandal, Principal Scientist Dr. S. Banik, Principal Scientist	Conference on “New Vistas in Harnessing Genetic Resources for sustainable Animal Production” & XVIII Animal Convention of Indian Society of Animal Genetics & Breeding at Bihar Veterinary College, BASU, Patna	November 21-22, 2024
Dr. Sohan Vir Singh	Presented the lead lecture during XXXII Annual Conference of Society of Animal Physiologists of India & International Symposium ICAR-CIRC, Meerut	November 27-29, 2024
Dr. Jai Kumar Kaushik, Principal Scientist Dr. Nishant Kumar, Sr. Scientist Dr. Sudarshan Kumar, Sr. Scientist Dr. Rubina K. Baithalu, Sr. Scientist Dr. Rani Alex, Sr. Scientist Dr. Indu Devi, Scientist; Dr. M. Mondal, Sr. Scientist	Attended XXXII Annual Conference of Society of Animal Physiologist of India (SAPI) & International symposium on Advances in Physiological Research in Omics Era for sustainable Animal Production and Livelihood Security under the changing climatic scenario” at Central Institute for Research on Cattle in Meerut Cantt. (UP)	November 27-29, 2024
Dr. A. Mandal, Principal Scientist	Online 3-day collaborative training programme on “Characterization, Documentation and Sustainable Utilization of Indigenous Livestock and Poultry Genetic Resources”	November 27-29, 2024

Dr. D.K. Mandal, Principal Scientist Dr. C. Bhakat, Principal Dr. A. Santra, Principal Scientist Principal Scientist Scientist	Presentation on line given by Dr. Pallavi Dubey, Iowa State Univ., USA on the topic: Cattle Manure to Sustainable Aviation Fuel - A Techno Economic Analysis and Life Cycle Assessment	November 28, 2024
Dr. S. Banik, Principal Scientist; Dr. Magan Singh, Sr. Scientist; Dr. A. Mohammad, Sr. Scientist	National Conference on “Hill Agro-Ecosystem: Challenges and Opportunities for Achieving Sustainable Development Goals” at ICAR- Research Complex for NEH Region, Nagaland Centre, Jharnapani	November 29-30, 2024
Dr. Pradip Behare, Scientist	Presented a poster in the 94 Annual Session and Symposium on “Accelerated R&D towards a Developed India” organized by the National Academy of Sciences, India (NASI) at IISER Bhopal	December 1-3, 2024
Dr. Sanjeev Kumar, Scientist	Global Research Initiatives for Sustainable Agriculture and Allied Sciences (GRISAAS -2024) conference at SKNAU, Jai Pur	December 10-12, 2024
Dr. Subhasis Mandal, Principal Scientist Dr. Sanjit Maiti, Sr. Scientist	Presented Research Paper during 32nd Annual Conference of Agricultural Economics and Research Association (AERA), India at Indira Gandhi Krishi Viswavidyalaya (IGKV), Raipur, Chhattisgarh	December 11-13, 2024
Dr. Pawan Singh, Principal Scientist Dr. Vikas Vohra, Principal Scientist Dr. Nitin Tyagi, Principal Scientist	National Symposium on “Innovative approaches for Boosting Buffalo productivity” at Department of Animal Genetics and Breeding, College of Veterinary Science & A. H., Kamdhenu University, Anand (Gujarat)	December 16-18, 2024
Dr. Bharati Pandey, Scientist and Dr. Indu Devi, Scientist	National Conference at National Agriculture Science Complex (NASC), New Delhi	December 17-18, 2024
Dr. M. Mondal, Sr. Scientist	National Conference on “Digital Agriculture: Empowering Indian Farming,” jointly organized by NAAS, ICAR, and ICRISAT at A.P. Shinde Symposium Hall, NASC, New Delhi [ONLINE]	December 17-18, 2024
Dr. Subhasis Mandal, Principal Scientist	Workshop on data validation of livestock production in India at Hotel Jaypee Siddharth, Rajendra Place, New Delhi	December 20, 2024

Dr. Rajni Kumar Paul, Scientist	8th Annual Convention of Society of Veterinary Biochemists and Biotechnologists of India and National Symposium on “Unlocking and Potential of Veterinary Biochemistry and Biotechnology for Food and Nutrition Security” (SVBBICON-2024) at DUVASU Mathura	December 20-21, 2024
Dr. Saroj Rai, Principal Scientist	Advance Training Course on Sample size determination & Power Analysis in Health Research	December 28-30, 2024

Technical Staff

2021-22

Name of the Employee	Name of Training Programme	Duration	Organizing Institute
Dr. Rahul Singh Tomar, TA Dr. Rahul Kumar Meena, TA	One-week international e-training program on Gene Cloning Advances and Application in Veterinary Science	May 5-Jun 6, 2021	ICAR-NAHEP, Mumbai
Sh. Anil Kumar, ACTO	Training programme on Good Agricultural Practices (GAPs) for higher productivity, profitability and resource-use	August 8-16, 2021	ICAR-NDRI, Karnal
Mr. Naresh Kumar Dahiya, ACTO Ms. Teena Chopra, TO	5 days training programme on e-Governance Application in ICAR	September 6-10, 2021	ICAR-IASRI, New Delhi
Dr. Vikas, TA Sh. Mukesh Onkar, TA	Training on Chemical and Microbiological Quality Assessment of Milk and Milk Products	October 6-26, 2021	NAHEP, ICAR-NDRI, Karnal
Sh. Ram Bahadur, STA	Training Programme on Upskilling Professionals In Scientific Dairying	October 21-30, 2021	DES&M, ICAR-NDRI, Karnal
Sh. Ashwani Kumar, TO	Online Training Programme on Motivation Positive Thinking & Communication Skills	November 25-30, 2021	NAARM-Hyderabad

2022-23

Sh. Sandeep Deswal, ACTO	Refresher Course emergency preparedness: An Animal	NCC Officers Training Academy, Kamptee, Maharashtra	March 1-30, 2022

Dr. S Raju, ACTO	Short course on National Animal Disease Health Contingency Plant	ICAR- NIVE&DI, Bangalore	February 14-23,2022
Sh. Sandeep Deswal, ACTO	NCC Training Camp with NDRI students	NCC Academy, Ropar, Punjab	May 28 to June 6,2022
Smt. Manju Bala, TO	Training course on computer aided designed (online)	CIAE, Nabibagh, Bhopal	July 7 to August 6, 2022
Sh. Rakesh Raman, TA	Competency Enhancement programme on soft skills and personality development for T1-T4	Hyderabad	October 17-22,
Sh. Uttam Kumar, CTO	ICAR-HRD Training Program on Emotional and social Intelligence at work place(online)	ICAR- IIW&BR, Karnal	December 13-15,2022

2023-24

Dr. Vijendra Kumar Meena, CTO	Agri-preneurship development in Seed Sector for sustainability of Agriculture & Rural Economy at ICAR-Indian Institute of Wheat & Barley Research, Karnal	01-10 February, 2023
Dr. S. Raju, CTO	Advance Diagnostics and Therapeutic Approaches of Emerging, R-emerging and Metabolic Diseases of Livestock, Poultry and Companion animals at State Level diagnostic Laboratory, Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh	14 February, 2023 - 06
Mrs. Sneha, TA	Online Short Course Training Programme on E-Governance Applications in ICAR for Technical personnel at ICAR-IASRI, New Delhi	22 – 28 February, 2023

2024-25

Employee Name and Designation	Title	Duration
Dr. Santosh Kumar, ACTO	Winter School on Animal Nutrition Strategies for Efficient and Carbon Neutral Livestock Production at Animal Nutrition Division, ICAR-NDRI, Karnal	January 18, February 7, 2024
Dr. Ranjeet Verma, STO Dr. Subhash Chand, CTO	Basics of Echocardiography and Doppler Ultrasonography in Animals at ICAR-IVRI, Izatnagar, UP	February 5-10, 2024

Dr. Santosh Kumar, ACTO	Advanced Agricultural Technologies for Self-Reliant Farmers and Developed India at Dr. Rajendra Prasad Central Agricultural University Pusa Samstipur, Bihar	February 11, 2024
Sh. Narendra Singh, STO	J-Gate @CeRA SKUAST-Kashmir at Indian Council of Agricultural Research, New Delhi	September 2, 2024
Sh. Gurpartap Singh, STO Sh. Ajeet Rundla, STO Ms. Diksha Bhardwaj, STO Sh. Himanshu Nitant, STA Sh. Vijay Kumar, STA Sh. Navneet, STA Sh. Manoj Kumar, STA Sh. Deepak Golan, TA Sh. Ravi Kant, CTO Sh. Rohitashav Meena, TA Sh. Rajender Kumar, TA	Indian Dairy & Food Industry in Viksit Bharat: Development and Innovation at ICAR-NDRI, Karnal	September 27-28, 2024
Sh. Bindewshwari Pratap Singh, CTO	Technological Transformations in Agricultural Library and Information Systems and Services in the AI Era at University Library Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka	November 22-23, 2024
Sh. Arun Kumar T V, STA	Global Research Initiatives Agricultural and Allied Sciences at SKNAU RARI, Durgapura, Jaipur, Rajasthan	December 10-12, 2024
Sh. Aditya Tandon, Technician	Laboratory Animal Handling and Experimentation at Department of Molecular and Cellular Medicine, ILBS, Delhi	December 17-20, 2024

Administrative Staff

2021-22

Name of the Employee	Name of Training Programme	Duration	Organizing Institute
Sh. Brahm Prakash, AAO	Online Training Programme on Reservation in Service	June 28-30, 2021	ICAR-NAARM, Hyderabad

Sh. Vishal Acharya, AAFO	Online Training Programme on Accrual Account for Administrative & Finance Staff of ICAR institutes	July 26-30, 2021	ICAR-NRRI, Cuttack
Sh. Kunal Kalra, SFAO	Online Training Programme on Accrual Account for Administrative & Finance Staff of ICAR institutes	September 20-24, 2021	ICAR-NRRI, Cuttack
Sh. Kunal Kalra, SFAO	Online Training Programme on Train the Trainers	October 25-29, 2021	ASCI, Hyderabad
Smt. Veena Rani, UDC Sh. Karambir, UDC	Online training programme on Establishment Matters for LDCs and UDCs	November 15-20, 2021	ICAR-IISR, Lucknow

2022-23

Sh. Sukhdev Singh, AAO	Training on Pension and Retirement Benefit for officers and Staff of ICAR (online)	ICAR-NRRI, Cuttack	January 12-14, 2022
Sh. Gurjeet Singh, AAO	-do-	-do-	-do-

2023-24

Sh. Sanjay Kumar	Workshop for Administrative Staff working at ICAR-NDRI, Karnal and its Regional Stations organized by NDRI, Karnal	25-29 October, 2023
Smt. Alpana		
Sh. Sahil		
Sh. Shailender Kumar		
Sh. Dharmendra Singh		
Smt. Sushma Rani		
Sh. Ram Dhari		
Smt. Pinki Devi		
Smt. Meena Kumari		
Sh. Ravinder Kumar		
Ms. Sonika Yadav		
Sh. Pardeep Kumar Gupta		
Sh. Chatar Pal		
Sh. Naresh Chauhan		
Sh. Kuljit Singh		
Sh. Annu Mann		
Sh. Narendra Kant Sharma		
Sh. Vinod Kumar		
Sh. Prabhjit Singh Behl		
Sh. Babu Lal Meena		

Sh. Jatin Verma		
Sh. Rajesh		
Sh. Raj Kumar		
Sh. Suraj Bhan		
Sh. Subhash Chander		
Sh. Jalam Singh		
Sh. Rajesh Kumar		
Smt. Simranjeet Kaur Lall		
Sh. Sagar		
Sh. Ankit Kaushik		

2024-25

S. No.	Name & Designation	Training Programme	Duration
1	Sh. Chiranjee Lal, AAO, E-II (T) Section, ICAR-NDRI, Karnal	Training Programme on “Administrative and Financial Management ICAR-NAARM, Hyderabad. (in-person mode)”	November 25-29, 2024

6.6.6 Student Development

6.6.6.1 Scholarships / Stipend

The Institute consistently attracts meritorious students through the All India Competitive Examinations conducted by the **Education Division of ICAR, New Delhi** for admission to Undergraduate (UG) and Postgraduate (PG) programmes. The high academic standards and reputation of the Institute ensure that top-ranking candidates opt for admission.

To support students financially and promote academic excellence, the following scholarship mechanisms are in place:

- **National Talent Scholarship (NTS):** Awarded to UG students admitted through ICAR.
- **ICAR Junior Research Fellowship (JRF):** Provided to PG students based on merit in ICAR entrance examinations.
- **Senior Research Fellowship (SRF):** Available for Ph.D. scholars as per ICAR norms.
- **Institute Fellowships:** Granted to students who are not recipients of any external fellowship.
- **Other Fellowships:** Financial assistance is also extended through agencies such as **CSIR, ICMR, DBT, DST-Inspire**, etc.

It is noteworthy that **UG students who are domicile of Haryana are not eligible for ICAR National Talent Scholarship**, as per ICAR guidelines.

The Institute ensures that no deserving student is deprived of financial assistance. Students not covered under national or external fellowships are supported through Institute-funded fellowships.

Table 110: Fellowship Expenditure Details (2020–2025)

Year	Institute Fellowship	JRF	SRF	CSIR	ICMR	DBT	DST Inspire
2020–2021	8,97,19,000	81,16,587	0	23,489	63,04,654	41,34,563	3,62,986
2021–2022	9,01,74,000	96,67,320	60,45,308	0	34,91,200	29,30,833	0
2022–2023	7,75,37,000	78,54,223	1,09,50,227	1,32,063	45,85,109	98,22,873	1,15,500
2023–2024	7,46,22,000	58,53,659	93,37,103	21,932	34,96,240	50,51,782	3,97,058
2024–2025	7,44,65,000	71,99,114	79,97,618	0	90,42,954	62,14,838	3,92,017
Total	40,65,17,000	3,86,90,903	3,43,30,256	1,77,484	2,69,20,157	2,81,54,889	12,67,561

6.6.6.2 Extra and co-curricular activities

Sports games and other extra-curricular activities are organized regularly in the institute for overall growth of the students. The Institute encourages extra-curricular activities that enrich cultural, physical and social life of the students. A spacious playground available near the students' hostels for sports activities. All necessary facilities exist for outdoor games viz., cricket, hockey, volleyball, football, basketball, lawn tennis and other athletic events. There is also gym facility for the students. Facilities for indoor games such as badminton, table tennis, carom and chess are also available in each hostel. The students, at the time of admission subscribe to the Students' Council and Students Aid Fund. The amount so collected is utilized for improving the sports, literary, cultural and other activities among students.

A Foundation Course is being organized for fresher students to nurture their innate talents during which, sessions on literary activities, communication skills, leadership skills, theatre art, cultural (dance, music), physical and sports activities including yoga, values, ethics and social awareness are being conducted. The selected students participate in inter-institutional sports, cultural and literary competitive activities regularly. The Institute also holds annual competitions in various athletic events. In addition, the NDRI Student Council organizes cultural evenings to celebrate Fresher's Day, *Vidharathi Milan Samaroh* and Reverie (Youth Festival) and at other relevant occasions.

Participation in Literary, Cultural and Extra-curricular Activities at State and National Level

Literary and cultural activities prove a valuable lens to view the inner world of students and thereby enable their holistic development. The University provided several opportunities to the students to showcase their talent. The University organises several cultural, literary, fine-arts activities through Freshers' Day, Intra-university Festival 'Vasantotsava' and Inter-university Festival 'Reverie' each year, for all round development of students.

Organization of Agriculture Education Day

In pursuance of ICAR's sagacious initiative to inculcate interest in agriculture and allied sciences among the school and college students and to choose 'agriculture' as their professional & research career or engage themselves in farming as agri-entrepreneurs, ICAR-NDRI celebrates the birthday of the first Indian Union Agriculture Minister and the first President of Independent India, Bharat Ratna Dr. Rajendra Prasad as Agricultural Education Day on 3rd December each year.

- *National Agricultural Education Day (कृषि शिक्षा दिवस) on 3rd December 2021-26.*
- *National Milk Day on 26th November 2021-26.*

SSR REPORT – 2026 (NCC & Sports)

No of Students who passed NCC B and C Certificate Examination

S. No	Year	No of Students who passed NCC B Certificate Examination	No of Students who passed NCC C Certificate Examination
	2021	Boys-06 + Girls-06, Total=12	Boys-12 + Girls-04, Total=16
	2022	Boys-14 + Girls-03, Total=17	Boys-06 + Girls-06, Total=12
	2023	Boys-18 + Girls-05, Total=23	Boys-13 + Girls-02, Total=15
	2024	Boys-06 + Girls-08, Total= 14	Boys-18 + Girls-06, Total=24
	2025	Boys-10 + Girls-07, Total=17	Boys-06 + Girls-08, Total=14
		Total=83	Total=81

Details of NCC Camps Attended By NDRI B.Tech Students from 2021-2026

S. No	Year	NCC Camp	No. Of Students
	2021	NCC Camp (CATC-125) from 3 rd Feb. to 07 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD- 12, SW-04) Total 16
	2021	NCC Camp (CATC-126) from 8 th Feb. to 10 th Feb. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-06, SW-06) Total 12

2021	NCC Camp (CATC-145) from 22 nd to 28 th OCT. 2021 at Govt PG College Karnal	B.Tech (DT) 3 rd Yr (SD-06, SW-06) Total 12
2021	NCC Camp (CATC-146) from 08 th to 12 th Nov. 2021 at Govt PG College Karnal	B.Tech (DT) 2 nd Yr (SD-14 SW-03) Total 17
2022	NCC Camp (CATC-145) from 28 th May to 06 th June 2022 at NCC Academy Ropar, Punjab	B.Tech (DT) 2 nd Yr (SD-14 SW-02) Total 16
2022	NCC Camp (CATC-146) from 11 th to 18 th November 2022 at Doon Valley of Education, Karnal	B.Tech (DT) 3 rd Yr (SD-00 SW-01) B.Tech (DT) 2 nd Yr (SD-18 SW-05) Total = 24
2023	NCC Camp CATC-177 at KV No. 2, Ambala Cantt from 20 th to 29 th October 2023	B.Tech (DT) 3 rd Yr (SD-17, SW-05) Total = 22
2023	NCC Camp CATC-179 at JNV Chuhurpur, Yamuna Nagar, Haryana from 09 th to 18 th November 2023	B.Tech (DT) 2 nd Yr (SD-06, SW-08) Total = 14
2024	CATC-124 at NCC Academy Ropar, Punjab from 15 th to 24 th September 2024	B.Tech (DT) 3 rd Yr (SD-06 SW-08) B.Tech (DT) 2 nd Yr (SD-10 SW-07) Total = 31
2025	CATC -136 at Sanik School Kunjpura, Karnal Haryana From 19 th to 28 th December 2025	B.Tech (DT) 3 rd Yr (SD-10, SW-07) = 17 B.Tech (DT) 2 nd Yr (SD-15, SW-08) = <u>23</u> Total = <u>40</u>

NCC Achievements from 2021-2026

NCC Achievements 2021

Combine Annual NCC Training Camp (CATC-145) which was organised from 22nd October to 28th October 2021 at Govt. PG College Sec 14 Karnal. In this camp around 300 NCC SD/SW Cadets from all over Haryana State have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

1. English Declamation Competition SD/SW Cadets

S. No	Class	Name	Position
1.	B. Tech IIIyr.	VAISHALI SINGH	1 st position

NCC Achievements 2022

Combine Annual NCC Training Camp (CATC-146) which was organized at DOON VALLEY OF EDUCATION, KARNAL From 11th to 18th November 2022. In this camp around 500 NCC SD/SW Cadets from all over Haryana State have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

English/Hindi Declamation Competition SD/SW Cadets

S. No	Class	Name	Position
1.	B. Tech IIyr.	SREEHARI S	1 st position
2.	B. Tech IIyr.	VAIBHAV TIWARI	1 st position

Tug of War Competition SW

S. No	Class	Name	Position
1.	B. Tech IIyr.	KIRTI	2 nd position

NCC Achievements 2023

Combined Annual Training Camp -179 was organised at JNV Chuharpur, Yamunanagar, Haryana From 09th to 18th November 2023. Total 14 (Fourteen) SD/SW NCC Cadets of our institute will attend this camp. In this camp around 600 NCC SD/SW Cadets from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Volley Ball Competition Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	SHAMBHAVI PRIYA	1 st position
2.	B.Tech DT 2 nd Yr	ANUSHREE SAINI	2 nd position

Appreciation Award for Discipline in Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	KUMARI SHREYA	1 st position

Cultural Programme Senior Wing Girls

S. No	Class	Event	Position
1.	B.Tech DT 2 nd Yr	Group Dance	1 st position
2.	B.Tech DT 2 nd Yr	Group Song and Solo Song	Prizes & Gifts

Tug of War Competition Senior Wing Girls

S.No	Class	Name	Position
1.	B.Tech DT 2nd Yr	SHWETA	1st position
2.	B.Tech DT 2nd Yr	SIDDHI KUMARI	NDRI Team

Basketball Competition Senior Division Boys

S. No	Class	Name	Position
1.	B.Tech DT 2 nd Yr	AMIT RAGHUWANSHI	1 st position
2.	B.Tech DT 2 nd Yr	DHARMENDRA JANGIR	NDRI Team
3.	B.Tech DT 2 nd Yr	ISHAN SACHDEVA	
4.	B.Tech DT 2 nd Yr	NIKHIL JHAJHARIA	
5.	B.Tech DT 2 nd Yr	RAHUL MAHALA	
6.	B.Tech DT 2 nd Yr	RAJIV KUMAR	

NCC Achievements 2024

Combined Annual Training Camp -124 was organised at NCC Academy Ropar, Punjab From 15th to 24th September 2024. Total 31 (Thirty One) SD/SW NCC Cadets of our institute will attend this camp. In this camp 464 NCC SD/SW Cadets 07 ANO's 12 CTO's 10 PI Staff from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Line Area Maintenance Competition SD Cadets

S. No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	AMIT RAGHUWANSHI	2 nd position	
		DHARMENDRA JANGIR	2 nd position	
		ISHAN SACHDEVA	2 nd position	
		NIKHIL JHAJHARIA	2 nd position	
		RAHUL MAHALA	2 nd position	
		RAJIV KUMAR	2 nd position	
2.	B.Tech DT 2 nd Yr	AJAY SAHU	2 nd position	
		ANKAJ KUMAR	2 nd position	
		ANSHUL DUTTA	2 nd position	
		ARJUN MEENA	2 nd position	
		HIMANSHU	2 nd position	
		MANOJ KUMAR	2 nd position	
		RISHI SHARMA	2 nd position	
		SACHIN	2 nd position	
		SOMENDRA SHARMA	2 nd position	
		SURYANSH RATHORE	2 nd position	

Group Song SD Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Ballet Dance SD Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MANOJ KUMAR	2 nd position	

Poster Making Competition of Senior Wing Girls

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	NEHA	1 st position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	
3.	B.Tech DT 3 rd Yr	ANUSHREE SAINI	1 st position	
4.	B.Tech DT 3 rd Yr	KHYATI	1 st position	

Speech for Social Activity in Senior Wing Girls

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	MEENU JHA	1 st position	

KHO-KHO Competition Senior Wing Girls

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	
2.	B.Tech DT 2 nd Yr	MEENU JHA	2 nd position	
3.	B.Tech DT 2 nd Yr	MONA MAURYA	2 nd position	
4.	B.Tech DT 2 nd Yr	PAWANI	2 nd position	
5.	B.Tech DT 2 nd Yr	PURVA	2 nd position	
6.	B.Tech DT 2 nd Yr	RIMJHIM RAGHUWANSHI	2 nd position	
7.	B.Tech DT 3 rd Yr	KHYATI	2 nd position	
8.	B.Tech DT 3 rd Yr	KUMARI SHREYA	2 nd position	
9.	B.Tech DT 3 rd Yr	NEHA	2 nd position	
10.	B.Tech DT 3 rd Yr	SHAMBHAVI PRIYA	2 nd position	
11.	B.Tech DT 3 rd Yr	SIDDHI KUMARI	2 nd position	

Line Area Maintenance Competition SW Cadets

S.No	Class	Name	Position	Remarks
1.	B.Tech DT 3 rd Yr	SHWETA	2 nd position	
2.	B.Tech DT 3 rd Yr	KASHISH	2 nd position	
3.	B.Tech DT 2 nd Yr	VANSHIKA	2 nd position	
4.	B.Tech DT 2 nd Yr	GARIMA SINGH	2 nd position	

NCC Achievements 2025

Combined Annual Training Camp -136 was organised at Sanik School Kunjpura from 19th to 28th December 2025. Total 40 (Forty SD/SW NCC Cadets of our institute will attend this camp. In this camp 400 NCC SD/SW Cadets 03 ANO's 01 CTO's 20 PI Staff from all over Haryana have participated. NCC Students of NDRI Karnal have achieved following positions in various competitions held during this Camp.

Slogan Writing Competition

S.No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	1 st position
2.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	2 nd position
3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Poster Making Competition

S.No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	2 nd position
3.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

Declamation Competition

S.No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080876	VIJAYASHREE	B.Tech BT 2 nd Yr	2 nd position

Running Competition

S.No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	3 rd position

KHO-KHO Competition Senior Wing Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227898	MONA MAURYA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SWA/227901	RIMJHIM RAGHUWANSHI	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position
7.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
8.	HR2024SWIA6080870	VANDANA KUMARI	B.Tech DT 2 nd Yr	1 st position
9.	HR2024SWIA6080872	ANJALI	B.Tech FT 2 nd Yr	1 st position

10.	HR2024SWIA6080875	DHEERJA VERMA	B.Tech DT 2 nd Yr	1 st position

Drill Competition Senior Wing Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227901	RIMJHIM RAGHUWANSI	B.Tech DT 3 rd Yr	3 rd position

Tent Pitching Competition SD Cadets

S.No	Registration No.	Name	Class	Position
1.	HR/23/SDA/ 227903	AJAY SAHU	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SDA/ 227904	ANKAJ KUMAR	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SDA/ 227906	ARJUN MEENA	B.Tech DT 3 rd Yr	1 st position
4.	HR/23/SDA/ 227907	HIMANSHU	B.Tech DT 3 rd Yr	1 st position
5.	HR/23/SDA/227909	RISHI SHARMA	B.Tech DT 3 rd Yr	1 st position
6.	HR/23/SDA/227910	SACHIN	B.Tech DT 3 rd Yr	1 st position
7.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	1 st position
8.	HR2024SDIA6080867	KARAN KUMAR	B.Tech DT 2 nd Yr	1 st position

Tent Pitching Competition SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR/23/SWA/227899	PAWANI	B.Tech DT 3 rd Yr	1 st position
2.	HR/23/SWA/227900	PURVA	B.Tech DT 3 rd Yr	1 st position
3.	HR/23/SWA/227901	RIMJHIM RAGHUWANSI	B.Tech DT 3 rd Yr	1 st position
4.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	1 st position
5.	HR/23/SWA/227902	VANSHIKA	B.Tech DT 3 rd Yr	1 st position

Camp Senior SD Boys

S.No	Registration No.	Name	Class	Position
1.	HR/23/SDA/227912	SURYANSH RATHORE	B.Tech DT 3 rd Yr	Camp Senior B2

Camp Senior SW Girls

S.No	Registration No.	Name	Class	Position
1.	HR/23/ SWA/227901	RIMJHIM RAGHUWANSI	B.Tech DT 3 rd Yr	Camp Senior G2

Cultural Events SD/SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR2024SWIA6080886	KOMAL MEENA	B.Tech FT 2 nd Yr	Solo Song

2.	HR/23/SWA/227897	MEENU JHA	B.Tech DT 3 rd Yr	Duet Dance
3.	HR2024SWIA6080868	JANVI SINGH LOHIT	B.Tech DT 2 nd Yr	Duet Dance
4.	HR2024SDIA6080882	DURAIBABU KAVADI CHETHAN	B.Tech BT 2 nd Yr	Group Dance
5.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2 nd Yr	Solo Dance
6.	HR2024SDIA6080887	ARPIT CHOUDHARY	B.Tech DT 2 nd Yr	Duet Dance
7.	HR2024SDIA6080877	KUSH SIRVI	B.Tech DT 2 nd Yr	Duet Dance
8.	HR2024SDIA6080873	GOURI PRASAD ROUT	B.Tech DT 2 nd Yr	Solo Dance
9.	HR2024SDIA6080879	DEEPANSHU KUMAR	B.Tech FT 2 nd Yr	Solo Song

Cultural Events Competition SD/SW Cadets

S.No	Registration No.	Name	Class	Position
1.	HR2024SDIA6080880	AYUSH KUMAR BISWAL	B.Tech FT 2nd Yr	3rd position

Overall Camp In charge

S.No	Registration No.	Name	Class	Position
1.	NCC/12110238	Capt. Sandeep Deswal	Associate NCC Officer	Camp Adjutant

Sports Achievements from 2021-2026

S.No	Year	Host Institute	Events	No. Of Students	Remarks
	2022	All India Veterinary Colleges' Badminton, Table Tennis tournaments and Professional Quiz Competition held from October 31 to November 02, 2022 at GBPUA&T Pantnagar	Badminton(M&W) Table- Tennis(M&W)	Boys-07 Girls-07 Total=14	
	2023	XXI All India Inter Agricultural Universities Sports & Games Meet, 2022-23 organized by CCS Haryana Agriculture University Hisar Haryana from 20 th to 24 th February 2023	Athletics, Badminton Kabaddi, Football Table- Tennis and Volley Ball	Boys-30 Total=30	

Yoga Activities from 2021-2026

International Day of Yoga 2021

On the occasion of the 7th International Day of Yoga held on 21st June, 2021, a Yoga Shiver was organized from 18.06.2021 to 21.06.2021 at ICAR- National Dairy Research Institute, Karnal from 6:00 AM to 7:00 AM. A team of experts from Patanjali Yog Samiti, Karnal and Bharat Swabhimani Trust, Haridwar trained the participants. The Shiver was organized as per the protocol of Ayush Mantralaya and advisories issued by the government. Arrangements have been made to follow physical distancing in view of COVID-19. The basic objective of the Shiver is to improve the immunity of the participants through various Yoga Asanas.

ICAR- National Dairy Research Institute, Karnal celebrated the International Yoga Day on 21st June 2021. This event was organized at Sports Complex of the institute between 6:00 AM to 7:15 AM. The employees and their family members, students of the institute, trainees and members of Yoga club actively participated in this event. The Yoga experts of “Patanjali Yog Samiti and Bharat Swabhimani Trust” conducted the Yoga Session as per the Protocol and Guidelines of Ayush Department. The session was begun with the lighting of lamp by Director ICAR-NDRI, Karnal and experts of Yoga team followed by light warm up session. Thereafter, importance of yoga in life, the correct way of performing yoga with live demonstration of different Yoga positions/postures were explained by experts of Yoga team. The session was ended with the chanting of OM. Beside International Yoga Day celebration at ICAR-NDRI, Karnal campus, Students and NCC cadets of NDRI (Deemed University) also participated Online Yoga celebration organized on 21st June, 2021.

The glimpse of the organized event can be seen from the following photographs.





International Day of Yoga 2022

On 8th International Day of Yoga on 21st June, 2022, a Yoga Shivar is being organized from 20.06.2021 to 21.06.2021 as per the time schedule and venue given below. A team of experts from Patanjali Yog Samiti, Karnal and Bharat Swabhimani Trust, Haridwar will train the participants about Yog. The Shivar will be organized as per the protocol of Ayush Mantralaya and advisories issued by the government. Arrangements have been made to follow social distancing in view of the pandemic COVID-19. The basic objective of the Shivar is to improve the immunity of the participants through various Yoga Asanas.

Yoga Competitions of NDRI Students International Day of Yoga 21st June 2022

S. No	Name	Class	Division	Position	Remarks
	Girls	M.Sc/M. Tech/M.VSc			
1	G. Sreeja Reddy	---do---	Dairy Extension	1 st Position	8978114993
2	Shreepali Bhardwaj	---do---	---do---	2 nd Position	9078692287
3	Hiral Thakur	---do---	AGO	3 rd Position	8347168494
		Ph.D			
1	Momita Adhikary	---do---	Dairy Technology	1 st Position	9932587712
2	G.Poojitha	---do---	Dairy Chemistry	2 nd Position	9742616416
3	Sravani	---do---	Animal Nutrition	3 rd Position	6281663924

	Boys	M.Sc/M. Tech/M.VSc			
1	Anil .V	---do---	Dairy Technology	1 st Position	8217344128
2	Akhil K	---do---	Animal Nutrition	2 nd Position	7012099457
3	PritamPal	---do---	AGB Division	3 rd Position	9529911725
		Ph.D			
1	M B Reddy	---do---	Agronomy	1 st Position	9381110684
2	Mukund Ramesh	---do---	AGB Division	2 nd Position	9284458760
3	Vaibhav Arya	---do---	Animal Nutrition	3 rd Position	9897804615



International Day of Yoga 2023

ICAR- National Dairy Research Institute, Karnal celebrated the 9th International Yoga Day on 21st June 2023. This event was organized at Kalki Bhawan Indoor Sports Complex of the institute between 6:00 AM to 7:15 AM. The employees and their family members, students of the institute, trainees and members of Yoga club actively participated in this event. The Yoga experts of “Patanjali Yog Samati and Bharat Swabhimana Trust” conducted the Yoga Session as per the Protocol and Guidelines of Ayush Department. The session was begin with the lighting of lamp by Director ICAR-NDRI, Karnal Dr. Dheer Singh. Experts of Yoga team started the yoga session with light warm up. Thereafter, the correct way of performing Yoga Asanas with live demonstration of different Yoga



positions/postures were explained by them. The session was ended with the chanting of OM. Director NDRI Dr. Dheer Singh explained the importance of yoga in our life and advised everyone to make it part of life to remain fit. The glimpse of the organized event can be seen from the following photographs.

International Day of Yoga 2024

ICAR- National Dairy Research Institute, Karnal celebrated the 10th International Day of Yoga on 21st June 2024. This event was organized at Kalki Bhawan Indoor Sports Complex of the institute between 5:00 AM to 6:30 AM. Around 350 employees, their family members, students and trainees of the institute have actively participated in this event. The session was begin with the lighting of lamp by Director ICAR-NDRI, Karnal Dr. Dheer Singh. Experts of Yoga team started the yoga session with light warm up. Thereafter, the correct way of performing Yoga Asanas with live demonstration of different Yoga positions/postures were explained by them. The session was ended with the chanting of OM. Director NDRI Dr. Dheer Singh explained the importance of yoga in our life.



International Day of Yoga 2025

ICAR-NDRI is a premier institute under the Indian Council of Agricultural Research (ICAR), dedicated to advancing dairy science and promoting health through sustainable and scientific practices. On the occasion of International Yoga Day on 21st June 2025, we are pleased to invite Dr. Dheer Singh Director & Vice- Chancellor to lead a Yoga session at our campus. Dr Shalini Mehta, who is an Internationally Certified Yoga Trainer RYT200 from Bodhi School of Yoga. She is a competent Eye surgeon of Haryana, working at Civil Hospital Panipat. Besides this, she is Music Vocalist and an Artist who paints Acrylic and Oil paintings on canvas. , She have conducted Yoga workshop with Yoga Day Protocol.

6.6.6.3 Health facilities

The Institute has a Human Health Complex (HHC) to cater to the medical needs of staff and students. Medical facilities in the hospital include X-ray unit, ECG, clinical pathology laboratory and preventive vaccination. The complex is located within the close vicinity of the hostels and staff quarters. There are qualified medical officers to look after the health of staff and students. Free medical services are provided to students at the HHC. Ayurvedic and Homeopathic consultancy is given by qualified doctors in these areas. All the students are also covered by an annual health insurance scheme. The HHC also organizes free Health Check-up Camps for screening the patients and organizes health talks.

6.6.6.4 Sports and cultural facilities

Outdoor Sports Facilities at NDRI Karnal

Outdoor Sports Complex is in Approx. 14 acres of area, (Length 1117ft. (372.33yards) Width 548 ft. (182.66 yards) area = 68012.88 sq. yards i.e. 14.52 acres) with the stadium shed having the seating capacity of 500 persons in the stairs form. The building includes two rooms for office, two urinals for ladies and gents and one store room for placing sports equipments. The sports complex is well equipped with Six High Mast Lights all around enables students and staff members of NDRI to play during late hours along with the boundary wall, two side opening and road surrounding it. Outdoor stadium includes the following sports facilities.

S.No	Name of Sports Facility	Location	Number	Remarks
1.	400 mt. Standard Athletics Track with 8 lanes (Grass)	Outdoor Sports Complex	01	
2.	Cricket Field (With Turf Wicket)	Outdoor Sports Complex	02	
3.	Cricket Practice half Wicket (Concrete)	Outdoor Sports Complex	01	
4.	Cricket Practice half Wicket (Turf)	Outdoor Sports Complex	01	
5.	Football Field	Outdoor Sports Complex	01	
6.	Handball Ground	Outdoor Sports Complex	02	
7.	Basketball Ground (Synthetic)	Outdoor Sports Complex	01	
8.	Basketball Ground (Concrete)	Outdoor Sports Complex	01	
9.	Volley Ball (Smashing)	Outdoor Sports Complex	02	
10.	Volley Ball (Shooting)	Outdoor Sports Complex	02	
11.	Tennis (Hard Court)	Outdoor Sports Complex	01	
12.	Kho-Kho Ground	Outdoor Sports Complex	01	
13.	Kabaddi Ground (Synthetic)	Outdoor Sports Complex	01	
14.	Kabaddi Ground (Mud)	Outdoor Sports Complex	01	

15.	Tennis (Hard Court)	Brahmputra Hostel	01	
16.	Volley Ball (Smashing)	Narmada Hostel	01	
17.	Badminton Court (Outdoor)	Sutlej & Krishana Hostel	02	
18.	Outdoor Gym	Kaveri Hostel	01	
19.	Outdoor Gym	Staff Club Children Park	01	

Indoor Sports Facilities at NDRI Karnal

Indoor Sports Complex (Kalki Bhawan) is 100'X150'=1500 sq. ft. of area two urinals and changing rooms for ladies and gents and one store room for placing sports equipment's. Kalki Bhawan is well equipped with Lights & fans all around and at the top enables students and staff members of NDRI to play during late hours. Kalki Bhawan includes the following indoor sports facilities.

S.No	Name of Sports Facility	Location	Number
1.	Badminton Court (Synthetic)	Kalki Bhawan	06
2.	Indoor Gym (Machines)	Kalki Bhawan	15
3.	Billiards Pool Table	Kalki Bhawan	01
4.	Badminton Court (Wooden Flooring)	Staff Club (Indoor Hall)	01
5.	Table Tennis Court	Kalki Bhawan	04
6.	Steam Bath	Kalki Bhawan	01
7.	Sauna Bath	Kalki Bhawan	01
8.	Table Tennis Court	Krishana & Narmada Hostel	02
9.	Treadmills	Kalki Bhawan	02

6.6.6.5 Student counseling and placement cell

Placement cell

The Institute has a placement cell, to which a senior faculty member acts as Chairman. The main objective of the placement cell is to collect and disseminate the information related to the job opportunities in private and government sectors and to invite various organizations for campus interviews. Students counseling is also done at times of the advancement of their career in respective subject matter/discipline areas. The university has a very impressive track record of placement in highly competitive professions both within and outside the country. The Placement Cell of the institute plays a vital role in supporting students as they transition from academic life to professional careers. It functions as a bridge between the university and potential employers in both the private and government sectors. The primary objective of the Placement Cell is to maintain a comprehensive database of students, which includes their academic qualifications, skills, and areas of specialization. This information is shared with recruiting organizations so that they can identify suitable candidates for employment opportunities. The cell

also actively invites reputed companies and organizations to the campus to conduct recruitment drives and campus interviews.

In addition to facilitating final placements, the Placement Cell also arrange internship opportunities, particularly for undergraduate students. Internships help students gain practical experience in their respective fields and improve their industry readiness. The cell also extends its services to postgraduate and doctoral students who are interested in pursuing careers in industry. This ensures that students at different academic levels receive equal support in exploring employment opportunities. Another important function of the Placement Cell is to provide career guidance and counseling. Students are advised and mentored regarding various career paths available in their respective disciplines. The cell organizes guidance sessions and interacts with students to help them make informed decisions regarding their professional development, higher education, or specialization in certain subject areas.

Year	Number of students placed	Number of students went for higher studies
2020-21	24	6
2021-22	30	5
2022-23	39	11
2023-24	30	2
2024-25	24	11

The university has established an excellent placement record, especially in highly competitive professions, both within India and internationally. Graduates from the institute, particularly the alumni of National Dairy Research Institute (NDRI), are highly regarded in the dairy and food industries. They secure positions in government organizations, cooperative sectors, and multinational companies, reflecting the strong reputation of the institute in the field of dairy and food technology.

In terms of compensation, the placement outcomes are quite promising. Students graduating from the B.Tech. (Dairy Technology) program generally receive salary packages ranging from ₹45,000 to ₹90,000 per month. Meanwhile, students completing the M. Tech. programs tend to receive higher offers, typically ranging from 50,000 to ₹1,25,000 per month, depending on their specialization, skills, and the recruiting organization. Apart from entering the workforce, many students also choose to pursue higher education and research opportunities. Several graduates enroll in advanced degree programs in reputed institutions across India and abroad, which further contributes to the academic and professional reputation of the institute.

Overall, the Placement Cell plays a crucial role in enhancing students' employability, providing career direction, and maintaining strong connections with industry, thereby ensuring that graduates are well prepared to succeed in their professional journeys.

Table : Details about the students who appeared for campus placement at the Institute and were successfully placed

Name of the student	Company
2021-22	
Aditya Prakash	Satol Chemicals
Anisha Dev	HUL
Anuj Kumar	Satol Chemicals
Anupreet Singh	VRS
Anuradha Verma	Lactalis
Ashish Kumar	Amul
Chetan Khoraniya	JMF
Deepak Kalwaniya	Mother Dairy
Gautam Midha	Amul
Jitendra Sharma	Mother Dairy
Mayank	Lactalis
Mukesh Jangu	AMulFed
Nikhil Raghuwanshi	JMF
Pankaj kumar	JMF
PARVEEN SAINI	AMulFed
Pradeep Dagar	VRS
Radheshyam Kumawat	VRS
Rahul Kumar	JMF
Rakesh Kumar	Lactalis
Ramcharan Meena	VRS
Ravi Ranjan	Lactalis
Richa Sharma	Umang
Rinkle Maan	Umang
Sahil Sansarwal	Mother Dairy
Satya Prakash Sahoo	Umang
sonu Nain	VRS
Sulabh Singh Thakur	Lactalis
Sweta Deb	Lactalis
2022-23	
Aakash deep	JMF
Aditi	Lactalis
Aditya Naryal	Amul
Aniket Kumar	JMF
Ankit	Param Dairy
Arushi	Lactalis

Chandamita Das	Ecolab
Deepak	COMFED
Deepshikha Nagpure	COMFED
Dinesh Godara	Sakhi Mahila
Dolamani Dip	COMFED
Garima	Umang
Gaurav	Lactalis
Gaurav Kumar	Panchmahal
Gurmat Singh	Lactalis
Harshal	Mother Dairy
Ipsita Kashyap	COMFED
JashanPreet Singh	Mother Dairy
Kratik Singh	JKMPCL
Madhav Sharma	JMF
Malsawmzuala Chhangte	JMF
Navdeep Singh	GEA
Niranjana	Lactalis
Nirmal Kumawat	Sakhi Mahila
Pankaj Rathore	Panchmahal
Parteek Narwal	Param Dairy
Preeti Rani	Lactalis
Prince	Panchmahal
Rituraj Kumar	JMF
Rohan Rathore	Lactalis
S. David Haokip	Param Dairy
Shailendra	JMF
Shivam Patel	Param Dairy
Shravan Soni	JMF
Snehadri Mahanta	Mother Dairy
Suhani Sharma	TetraPak
Vansh Mishra	Lactalis
Yashwant	JKMPCL
Yatin Jindal	Param Dairy
2023-24	
Gourav Agarwal	Lactalis India
Adarsh Kumar	The Jharkhand state co-operative Milk Producers' Federation Limited
Sachidananda Hota	Jharkhand Milk Federation (JMF)
Himanshu	Sakhi Mahila Milk Producer Company Limited

Gursevak Singh	Lactalis
Siddharth Halder	Parag milk foods Pvt limited
Arvind Kumar	Nestle India Limited
Devashish gadhavi	Lactalis India
Alok Sahu	Banas(AMUL)
Suman Kumar choudhary	Param dairy
Aryan Patel	Tetra Pak
Aryan Yadav	Gyan dairy
Tarang Maheshwari	SPX Flow
Riya	Not sited
Aman Singh	Jharkhand Milk Federation (JMF)
Ayush Moond	Jharkhand Milk Federation (JMF)
Poonam	Nestle India Ltd
Jagdish Choudhary	Banas Dairy
Manish Kumar	Jharkhand Milk Federation (JMF)
Ankit Balihara	Lactalis India
Ishita	Perfetti Van Melle
Amit Yadav	jharkhand milk fedration
Bhuvnesh khandaite	Banas dairy (Amul)
Sundram	Jharkhand Milk Federation (JMF)
Suresh Kumar	BANAS dairy
Aamir Biju	Banas
Sandeep	Haldiram
2024-25	
Sachin Yadav	JMF
Sreehari	TetraPak India
Harshvi	Lactalis
Nikhil Gupta	COMFED
Muskan	VRS Foods limited
Shubham	VRS Foods Limited
Akshat Mishra	Amulfed Dairy, Gandhinagar
Kartik	Ladakh COOP
Manish	Modern Dairies Ltd Karnal
Shashwat Kaushish	Nestle
Vansh Palia	VRS Foods limited
Gunjeshwar Kumar	COMFED
Rakesh Verma	modern dairies ltd karnal
Kirti	VRS Foods limited
Anand Kumar Gautam	JMF

Vaibhav Tiwari	COMFED
Indrajeet Kumar	Mtech
Purnima Beck	COMFED
Amit Kumar Verma	COMFED
Anuj Asati	JMF
Smriti Pandey	VRS Food limited
Manish Kumar	Amulfed Dairy Gandhinagar, Gujarat
saurabh Kumar	ZYDUS WELLNESS
Vishal Kumar	JMF

D. Various Committees for Welfare of students

1. Students grievance redressal committee

Objectives:

- To provide opportunities for redressal of grievances of enrolled and prospective students.
- Establish a transparent mechanism for addressing complaints.
- Ensure fair, prompt and just resolution of issues.

Reporting and Appeal:

- SGRC submits report and recommendations to competent authority.
- Copy shared with aggrieved student.
- Student may appeal to Ombudsperson within 15 days of SGRC's decision, if not satisfied.

2. Ombudsperson (UGC regulations 2023)

- Independent authority to resolve student's grievances
- Ensures fairness, transparency and accountability

Functions:

- Hear and investigate appeals post- SGRC.
- Provide neutral and confidential redressal
- Ensure resolution within 30 days

3. Committee for awareness and counselling of the students in the campus regarding nasha mukt bharat abhiyan (NMBA)

Launched on 15 August 2020 by the Ministry of Social Justice and Empowerment, Nasha Mukta Bharat Abhiyaan (NMBA) is a nationwide campaign addressing substance abuse through prevention, treatment, and rehabilitation.

4. Students service center (SSC)

Key functions of student service center:

- **Academic Support:** Offers resources like tutoring and counseling to help students overcome academic challenges.
- **Grievance and Query Resolution:** Provides a system to handle student questions and complaints, often through a dedicated call center or digital platform.
- **Personal and Mental Health Support:** Offers support for a variety of personal challenges students may face.

5. Equal opportunity cell

An **Equal Opportunity Cell (EOC)** is a university or college-based cell established under UGC guidelines to promote and safeguard the interests of disadvantaged groups, such as those from SC/ST, OBC, minority, and disabled communities, ensuring fair and equal opportunities for all members of the institution. The EOC's functions include providing academic, financial, and social guidance, implementing supportive policies, resolving discrimination complaints, and organizing sensitization programs to foster a diverse and inclusive campus environment for all.

6. Anti-ragging committee

An **Anti-Ragging Committee (ARC)** is a mandatory committee in educational institutions designed to prevent, prohibit, and eliminate ragging by creating strategies, monitoring activities, and addressing complaints. It works to educate students, parents, and staff about anti-ragging policies, handles complaints, and ensures compliance with UGC Regulations.

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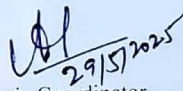
F.No. Elections/NDRI/SU/2024-25

Dated: 29.05.2025

OFFICE ORDER

Consequent on the results received from the Returning officer for the election of NDRI Students' Council NDRI, Deemed University, the following elected executive committee of NDRISC will function for the academic year 2024-25

Name of the Post	Name of the Student	Class
President	Prince	PhD 2 nd year(DC)
Vice-President	Vidhu Kumar	MSc 1 st year(AN)
General Secretary	Kashish	BTech.(DT) 3 rd year
Joint Secretary	Rimjhim Raghuvanshi	BTech. (DT) 2 nd year
Financial Secretary	Ajay Nagar	MTech 1 st year(DE)
Executive Member	Manisha	PhD 2 nd year(AP)
Executive Member	Gagan Chawla	PhD 1 st year(AP)
Executive Member	Aditya Kumar Sinha	BTech.(DT) 1 st year


29/5/2025
Academic Coordinator

Distributions:-

1. The Director, NDRI and Chief Patron, SUF, NDRI, Karnal.
2. The JD(Acad), NDRI and Patron, SUF, NDRI, Karnal.
3. The JD(R), NDRI, Karnal for information, please.
4. All the Heads of Division for information, please
5. The Chief Hostel Warden, NDRI for information, please
6. All the members of Executive Committee through Chief Hostel Warden.
7. The Chief Hostel Warden, NDRI with a request to make necessary arrangement to handover the charge from Ex-President, NDRISC Council to Newly Elected executive committee.



भाक अनुप - राष्ट्रीय डेरी अनुसंधान संस्थान
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No.F. NDRI/NEP/2025/08/

Dated: 08.07.2025

OFFICE ORDER

In pursuance of the guidelines issued by the University Grants Commission (UGC) under the National Education Policy (NEP) 2020, and with a view to facilitate the redressal of academic and technical hurdles, the following students are hereby appointed as NEP-SAARTHI (Student Ambassadors for Redressal of Academic and Technical Hurdles in Institutions) at ICAR-NDRI, Karnal.

Further, as part of the institutional initiative towards strengthening student welfare and academic support systems, the following students are appointed as ICAR-NDRI SAARTHI.

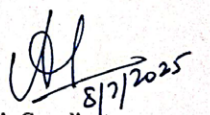
1. NEP-SAARTHI (Under UGC-NEP 2020 Guidelines):

Sr. No.	Name of the Student	Roll No.	Degree Programme	Discipline
1.	Pawani	23-B-DT-15	B.Tech	Dairy Technology
2.	Prince Kamboj	24-M-DT-07	M.Tech	Dairy Technology
3.	Satish Kumar	20-P-AB-06	Ph.D.	Animal Biochemistry

2. ICAR-NDRI NEP-SAARTHI (Institute-level Student Ambassadors):

Sr. No.	Name of the Student	Roll No.	Degree Programme	Discipline
1.	Yuvraj Singh	24-B-FT-08	B.Tech.	Food Technology
2.	Shreya Kumari	22-B-DT-13	B.Tech.	Dairy Technology
3.	Riya Nain	24-M-DC-03	M.Tech.	Dairy Chemistry

The above-named student ambassadors shall serve as facilitators for addressing academic and technical challenges faced by the students, promote awareness regarding NEP 2020 initiatives.


8/7/2025
Academic Coordinator

Distributions:

1. Joint Director Academic/ Research, ICAR-NDRI, Karnal
2. NEP Coordinator, ICAR-NDRI, Karnal
3. Academic Coordinator, ICAR-NDRI, Karnal
4. All Head/ Incharges of Division/Sections, ICAR-NDRI, Karnal
5. Joint Director (Admn.) Cum Sr. Register, ICAR-NDRI, Karnal
6. Comptroller, ICAR-NDRI, Karnal
7. CAO/SAOs/AOs, ICAR-NDRI, Karnal
8. PPS to Director, ICAR-NDRI, Karnal for kind information of Director
9. Incharge Computer Centre for information and uploading on NDRI website

Tel: 0184-2259008 (O) E-mail:academiccoordinator1.ndri@gmail.com 0184-2259010, 2259011 & 2259574 (University Office)



भाकृअनुप - राष्ट्रीय डेरी अनुसंधान संस्थान
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F.No.Anti-Ragging/NDRI/2025-26

Dated: 23.07.2025

OFFICE ORDER

The Director, ICAR-NDRI, Karnal is pleased to re-constitute the following Anti-Ragging Committee and Anti-ragging squads for Hostel and Campus for the academic session 2025-26.

Anti-Ragging Committee (Overall)	
Dr. A. K. Singh, Joint Director(Academic)	Chairman
Sh. B.D.Phanshal, Joint Director(Admin.) & Sr. Registrar	Member
Dr. Vikas Vohra, Head, AG&B Division	Member
Dr. Jai Kaushik, Head, ABTC	Member
Dr. Gopal Sankhala, Head D. Extn. Division	Member
Dr. Sunil Onteru, Head, ABC Division	Member
Dr. Subhashis Mandal, Head, DES&M	Member
Dr. D. N. Yadav, Head, DT Division	Member
Dr. Suman Kapila, PS & COE	Member
Dr. Rajesh Bajaj, Head, DC Division	Member
Dr. Ajay Kumar Yadav, Scientist (SS), DT Division	Member
Dr. Anjali Aggarwal Academic Coordinator	Member Secretary
Anti-Ragging Squad for Hostel	
Dr. Jai Kaushik, Head, ABTC	Chairman
Dr. A.K. Mishra, PS & Chief Hostel Warden	Member
Dr. Bharati Pandey, Scientist & Hostel Warden	Member
Dr. Rani Alex, Scientist (SS), & Hostel Warden	Member
Dr. Shilpa Shree, Senior Scientist & Hostel Warden	Member
Dr. M.K. Singh, Sr. Sci., ABTC & Hostel Warden	Member
Dr. Satish Kumar, Principal Scientist. ABTC Division	Member
Dr. Gopal R. Gowane, Principal Scientist & Hostel Warden	Member
Dr. Hardev Ram, Senior Scientist, Agronomy Section	Member
Capt. Sandeep Deswal Security Section	Member
Dr. Yogesh Khetra, Sr. Sci. DT Division	Convener

Anti-Ragging Squad for Campus:

Dr. D. N. Yadav, Head, DT Division	Chairman
Dr. Subhashis Mandal, Head DESM Division	Member
Dr. Chand Ram, PS, DM Division	Member
Dr. Anuradha Bhardwaj, Principal Scientist, ABTC Division	Member
Dr. Richa Singh, Senior Scientist, DC Division	Member
Dr. P. N. Raju, Senior Scientist, DT Division	Member
Dr. Gautam Mandal, Principal Scientist, Animal Nutrition Division	Member
Dr. Naresh Selokar, Senior Scientist, ABTC Division	Member
Dr. Priyanka, Scientist, DE Division	Member
Dr. Heena Sharma, Scientist (SS), DT Division	Member Secretary

As per the term of reference includes monitoring the implementation of the anti-ragging guidelines and take further necessary action in case any offence:

The action by the squads and other authorities will be as under:

A help Desk will be established at the main gate under the supervision of Security Coordinator who will be authorized to take help from students and security staff and ensure to provide all type of help and information to the new students.

Action: Security Coordinator

The wardens of the respective concerned hostels will be responsible for having a vigil/checking in the hostels. The Chief Hostel warden will be overall responsible for all the hostels.

Action: CHW & hostel Wardens. Both the squads will submit written reports every day to JD(A) about their visits/checks etc. to the JD(A).

JD(A) and Academic Coordinator will make a visit to the Hostel every day to have a proper check.

Action: JD(A)&Academic Coordinator

Leaflets to inform about ban on ragging and punishments etc. will be prepared and distributed to all the old and fresher students.

Action: Academic Coordinator /CHW

Anti-Ragging posters will be prepared and displayed on all prominent places in the Institute and Hostel.

Action: CHW

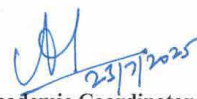
All the students will be advised to down 'ANTI-Ragging Mobile App' introduced by the University Grants Commission on the mobile for filing complaints against any incidence of ragging.

Hostel Office will provide a copy of hostel rules to all students.

Action: Chief Hostel Warden

UGC guidelines on ragging will be displayed on the Website of the Institute for information on all the students.

Action: Academic Coordinator


23/7/2025
Academic Coordinator

Distributions: -

1. The Chairman & all Committee members.
2. PPS to Director for kind information of the Director.
3. I/c Computer Centre to upload on NDRI e-office's Notice Board.

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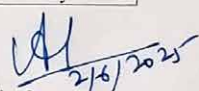
F.No. 2-1/Uni.Office/Students/Committee

Dated:-02.06.2025

OFFICE ORDER

The Competent Authority has constituted the following committee for Students Grievance Redressal for the year 2025-26 of ICAR-NDRI, Karnal.

1	Dr. A. K. Singh, JD (Academic)	Chairman
2	Dr. Gopal Sankhala, Head, Dairy Extension Division	Member
3	Dr. A.K.Mishra, PS , Chief Hostel Warden	Member
4	Dr. Shilpa Vij Head,DM	Member
5	Ms. Veda TV Ph.D Student, FP	Member
6	Dr. Suman Kapila,PS & COE	Member
7	Dr. Anjali Aggarwal, PS & AC	Member Secretary


2/6/2025
Academic Coordinator

Distributions: -

1. To all the Committee members.



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No.F. NDRI/NCC/2025/01

Dated: 17.07.2025

OFFICE ORDER

As per the provisions laid down in the National Education Policy – 2020 and the recommendations of the 6th Dean's Committee, the **National Service Scheme (NSS)** has been made a mandatory component of undergraduate educational programmes.

Accordingly, with the approval of the competent authority, the following faculty member is hereby nominated as the **Nodal Officer / Programme Officer** for the NSS Unit of ICAR-NDRI, Karnal:

- Dr. Rajesh Kumar Meena, Scientist (SS), Agronomy Division

Further, for the effective planning, implementation, and monitoring of NSS activities at the university level, the following **Advisory Committee** is hereby constituted:

1. Dr. A.K. Singh, Joint Director (Academic)	– Chairman
2. Dr. D. N. Yadav, Head, Dairy Technology Division	– Member
3. Dr. Pradeep Behare, Senior Scientist & I/C Sports	– Member
4. Dr. Anuradha Bhardwaj, Principal Scientist, ABTC	– Member
5. Dr. Sanjit Maiti, Senior Scientist, Dairy Extension Division	– Member

Academic Coordinator

Distributions:

1. Joint Director Academic/ Research, ICAR-NDRI, Karnal
2. NEP Coordinator, ICAR-NDRI, Karnal
3. AO, University Office, ICAR-NDRI, Karnal
4. All Head of Divisions /Sections, ICAR-NDRI, Karnal
5. Joint Director (Admn.) & Sr. Register, ICAR-NDRI, Karnal
6. PPS to Director, ICAR-NDRI, Karnal for kind information of Director
7. Incharge Computer Centre for information and uploading on NDRI website

Tel: 0184-2259008 (O) E-mail:academiccoordinator1.ndri@gmail.com 0184-2259010, 2259011 & 2259574 (University Office)

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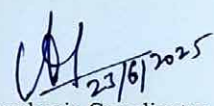
F.No. 02/UO/Misc.file/2024-

Dated: 23.06.2025

OFFICE ORDER

The Director, ICAR-NDRI, Karnal has been pleased to Re-constitute the following Committee for awareness/counseling of the student in the campus regarding Nasha Mukta Bharat Abhiyan(NMBA), as below:

1. Dr. A.K. Singh Joint Director(Academic)	- Nodal Officer
2. Dr. A.K.Mishra,PS LPM Division & CHW	- Member
3. Dr.Hardev Ram, Sr.Sci.	- Member
4. Dr.Manoj Kumar, Medical consultant,	- Counsellor
5. Mr. Prince, PhD 2 nd year(DC, Divn.)	
Mr. Vidhu Kumar, MSc 1 st year(AN)	
Ms. Kashish,BTech.(DT) 3 rd year	- Student Representatives in Hostel
Ms. Rimjhim Raghuvanshi, BTech. .(DT) 2 nd year	
Mr. Ajay Nagar, MTech 1 st year(DE)	
Ms. Manisha, PhD 2 nd year(AP)	
Mr. Gagan Chawla, PhD 1 st year(AP)	
Mr. Aditya Kumar Sinha, BTech.(DT) 1 st year	


23/6/2025
Academic Coordinator

Distributions:-

1. The JD(Acadmic), ICAR- NDRI, Karnal.
2. All the members of the Committee.
3. Mr. Prince (President), NDRI Students' Council may provide the copy of the office order to Newly Elected Student Representatives mentioned above.
4. The JD(A) & Sr. Registrar, ICAR-NDRI, Karnal for information, please.




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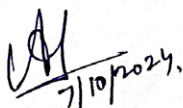
No.F. NDRI/NEP/2024/

Dated: 07.10.2024

OFFICE ORDER

For the redressal of student grievances, and in accordance with the University Grants Commission (Redressal of Grievances of Students) Regulations, 2023, **Prof. N. K. Lohiya**, NASI Senior Scientist & Secretary, Department of Zoology, University of Rajasthan, Jaipur-302004, Rajasthan (Mobile: 9829124048, Email: lohiyank@gmail.com), is hereby appointed as the Ombudsperson, as per the guidelines of the said regulations.

This appointment is issued with the approval of the Competent Authority, ICAR-NDRI, Karnal.


 Academic Coordinator

Distribution:

1. Joint Director Academic/ Research, ICAR-NDRI, Karnal
2. NEP Coordinator, ICAR-NDRI, Karnal
3. Academic Coordinator, ICAR-NDRI, Karnal
4. AO, University Office, ICAR-NDRI, Karnal
5. All Head/ Incharges of Division/Sections, ICAR-NDRI, Karnal
6. Joint Director (Admn.) Cum Sr. Register, ICAR-NDRI, Karnal
7. Comptroller, ICAR-NDRI, Karnal
8. CAO/SAOs/AOs, ICAR-NDRI, Karnal
9. PPS to Director, ICAR-NDRI, Karnal for kind information of Director
10. Incharge Computer Centre for information and uploading on NDRI website

Tel: 0184-2259008 (O) E-mail:academiccoordinator1.ndri@gmail.com 0184-2259010, 2259011 & 2259574 (University Office)

**UNIVERSITY OFFICE
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F.No. 2-1/Uni.Office/Students/Centre

Dated:-04.06.2025

OFFICE ORDER

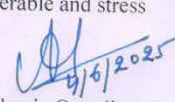
The Competent Authority has constituted the **Students Service Centre (SSC)** of ICAR-NDRI, Karnal. The SSC will work as single window system to address relevant student issues.

Sr.No	Faculty	Contact Details
1	Dr. Sunil Kumar Onteru Head & PS, Animal Biochemistry Division	suneelvet@gmail.com Phone: 895035613
2	Dr. A.K. Mishra PS. LPM Division & Chief Hostel Warden	mishraak17@yahoo.com Phone: 8769055593
3	Dr. Suman Kapila, Principal Scientist ABC Division & COE.	kapila69@gmail.com Phone: 8295008019
4	Dr. Shilpa Shree, Senior Scientist, Dairy Chemistry Division	shilpashreebg14@gmail.com Phone: 9671699449
5	Dr. Udit Chaudhary Scientist (SS), Dairy Economics, Statistics & Management Division	uditasheokand@gmail.com Phone: 9992778955

- Dr. Udit Chaudhary Scientist (SS)- as member Secretary of SSC.
- Dr. Anjali Aggarwal, Academic Coordinator, ICAR-NDRI- to address the academic related matters of the students

The responsibilities of the SSC:

1. Dealing with and managing problems related to stress and emotional adjustments.
2. The SSC will conduct counseling, guidance, physical and mental health services depending on the circumstances.
3. SSC will maintain record of students appearing to be more vulnerable and stress prone for further support.


Academic Coordinator

Distributions: -

1. Director & Vice Chancellor, ICAR-NDRI
2. Joint Director (Academic)
3. Joint Director (Research)
4. Joint Director (Administration) & Sr Registrar
5. All HOD's
6. Concerned faculty
7. In charge/Computer Center for uploading on NDRI website

Revised

UNIVERSITY OFFICE
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No Elections/NDRI/2024-25/373

Dated 23.3.2026

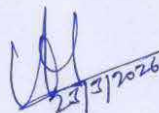
Director, NDRI and Chief Patron, Student's Council, NDRI is pleased to nominate the following Staff Advisors, Financial Advisors & other Advisors to look after the various activities of the Student Council for the Academic Session 2024-25:

Chief Patron	Dr. Dheer Singh, Director
Patrons	Dr. Ashish Kumar Singh, Joint Director(Academic) Dr. Rajan Sharma, Joint Director(Res.) Mr. P.K. Jain, Joint Director(Admn.) & Sr.Registrar
Staff Advisors	All Heads of Divisions Chief Hostel Warden Academic Coordinator
Financial Advisor	Dr. Subhashis Mandal, Head, DES & M Division
Cultural Advisor	Dr. Suman Kapila, COE & PS, ABC Division Dr. Nishant, PS, LPM Division Dr. Richa Singh, Senior Scientist, DC, Division Dr. Gunjan Bhandari, Scientist, DES&M Division
Literary Advisor	Dr. P.N. Raju, Senior Scientist, DT Division Dr. Udit Choudhary, Scientist (SS), DES&M Division Mr. Dheeraj Sharma, JD (Rajbhasha)
Sports(Overall)	Dr. Yogesh Khetra, Senior Scientist, DM Division Capt. Sandeep Deswal, Sports Section
Indoor Games	Dr. Hardev Ram, Senior Scientist, Agronomy Dr Gopal Gowane, PS & CHW
Outdoor Games	Dr. Diwas Pradhan, Scientist (SS), DM Division Capt. Sandeep Deswal, Sports Section
Girls' Sports	Dr. Shilpa Shree, Senior Scientist, DC Division Dr. Rani Alex, Sr. Scientist, AGB Division

Blood Donations & Red Cross Advisors	Dr. Rajesh Kumar Meena, Sr. Scientist, Agronomy Dr. Sachin Kumar, Sr. Scientist, AN Division Dr. Naresh Selokar, Scientist, ABT Division
Arts and Hobbies	Dr. Sunita Meena, Sr. Scientist, ABC Division Dr. Heena Sharma, Scientist, DT Division Dr M.K. Singh, Sr Scientist, ABT Division
Tours & Recreation	Dr. K. S. Sonu, Scientist, DC Division Dr. Saurabh Kadiyan, Scientist, DM Division
Alumni Affairs	Dr. Sumit Arora, PS, DC Division Dr. Gaurav Deswal, Scientist DT Division
Training / Placement & Career Counselling	Dr. Yogesh Khetra, Sr. Scientist, DT Division Dr. Heena Sharma, Scientist (SS), DT Division
Social Outreach Activities & Green Campus Initiatives	Dr. Sunil Onteru, Head, ABC Division Dr. Bharati Pandey, Scientist, ABT Division Dr. Gautam Mondal, PS, Animal Nutrition Division Dr Rajesh Kumar Meena, Sr Scientist, Agronomy
Mass Media and Hobbies	Dr. B.S. Meena, PS, Dairy Extension Division Dr. Sanjit Maiti, Senior Scientist, Dairy Extension Division

Officers authorized to operate Students Council/Aid Fund Account

Academic Coordinator
Chief Hostel Warden
Financial Advisor


23/3/2026
Academic Coordinator

Distributions:

1. PPS to Director for kind information of the Director, NDRI please
2. Joint Director (Academic)
3. Joint Director (Research)
4. All HOD's for information
5. All the above concerned through respective HOD's
6. DA (B.Tech/Master's/PhD) University office

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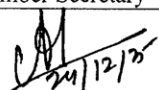
F.No.U.O./Standing Committee student's Problems/-2025-26/-

Dated.24.12.2025

OFFICE ORDER

The Director, ICAR-NDRI, Karnal has re-constitute the Standing Committee on Faculty, Student's Problems and Discipline.

1	Dr. Ashish Kumar Singh, Joint Director(Academic)	Chairman
2	Dr. M.Sivaram, PS & Academic In-charge, SRS of NDRI, Bengaluru	Member
3	Dr. Satish Kumar, PS, ABT Division	Member
4	Dr. Yogesh Khètra, Sr. Scientist, DT Division	Member
5	Dr. Sumit Arora, PS, DC Division	Member
6	Dr.Bharti Pandey, Scientist	Member
7	Dr Anupam Chatterjee, Academic In-charge, ERS, Kalyani	Member
8	Master's 1 st year Topper student	Member
9	Dr. Anjali Aggarwal, PS, & Academic Coordinator	Member Secretary


Academic Coordinator

Distributions:-

1. To All the committee members.

**UNIVERSITY OFFICE
ICAR-NATIONAL DAIRY RESEARCH INSTITUTE
KARNAL**

F.No. 2-1/Uni.Office/Students/Committee

Dated:-02.06.2025

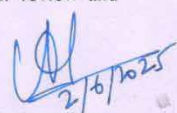
OFFICE ORDER

As per the guidelines of the University Grants Commission (UGC) for the promotion of students' health, welfare, and psychological and emotional well-being in higher education institutions across India, In this regard, the Competent Authority has nominated the following female faculty members from each division:

S.No	Division	Name of faculty
1	Animal Biochemistry Division	Dr Suman Kapila, PS & COE
2	DES&M Division	Dr Udit Chaudhary, Sr Scientist
3	Dairy Technology	Dr Heena Sharma, Scientist
4	Animal Physiology Division	Dr Anjali Aggarwal, PS & Academic Coordinator
5	Animal Nutrition Division	Dr Rani Alex, Sr Scientist
6	Animal Genetics & Breeding Division	Dr Anupama Mukherjee, PS
7	Livestock Production & Management	Dr Rubina K. Baithalu, Sr Scientist
8	Dairy Chemistry Division	Dr Richa Singh, Sr Scientist
9	Dairy Microbiology Division	Dr Manorama Kumari, Scientist
10	Dairy Extension Division	Dr Sanchita Garai, Sr Scientist
11	Agronomy	Dr Suman Kapila, PS & COE
12	Animal Biotechnology Division	Dr Bharti Pandey, Scientist
13	Dairy Engineering Division	Dr Priyanka, Scientist
14	SRS, Bangalore	Dr Monika Sharma, Sr Scientist
15	ERS, Kalyani	Dr Saroj Rai, Sr Scientist

The responsibilities of the nominated female faculty members will be as follows:

- Student Records:** Maintain updated records of all girl students in their respective divisions.
- Support for Stress-Prone Students:** Identify students who are more prone to stress and maintain a separate record to facilitate timely intervention and support from the Institute's Student Services Centre (SSC).
- Guidance and Support:** Provide necessary guidance and support to girl students as and when needed.
- Monthly Meetings:** Conduct monthly meetings to discuss concerns, progress, and initiatives. Submit the proceedings of each monthly meeting to the Joint Director (JDA) for review and further action.


2/6/25
Academic Coordinator

Distributions: -

- To all the concerned members.
- JD(Acad.) for information please.

Infrastructure

Physical facilities including administrative buildings and lands

IT Infrastructure at NDRI, Karnal

Students and Staff Amenities

Infrastructure

6.6.7 Infrastructure

6.6.7.1 Physical facilities including administrative buildings and lands

Institutional Area and Farm Land (NDRI, Karnal)

ICAR-National Dairy Research Institute, Deemed University, is located on the northern outskirts 304 of Karnal city in Haryana, at G.T. Road, about 125 km from Delhi. It is well connected by road and rail being on the main trunk route connecting Delhi with Amritsar and Chandigarh. The elevation of Karnal is 250 meters, above mean sea level, latitude 29.43N and longitude 77.2 E. Minimum temperatures fall to near freezing point in winter and maximum goes up to 45°C in summer. The annual rainfall is about 70 cm. Besides the headquarter at Karnal, Institute has two Regional Stations, Southern Regional Station of NDRI, at Bangalore and Eastern Regional Station of NDRI at Kalyani, West Bengal.

The allocation of land at NDRI, Karnal

NDRI Karnal has an area of 545.77 hectare including Estate Section comprising academic buildings, hostels, residential quarters, farms, playground etc. The allocation of land is as below:

Table 68: The allocation of land to Forage Production section at NDRI, Karnal

Sr. No.	Unit	Area (Acres)	Area (ha)
	Forage Production Section & RFS (Seed)	785.39	317.97
	Farm Building, Road Drains, Channel & Silo Pit.	106.21	42.78
	Area under Eucalyptus trees plantation (Farm)	5.01	2.23
	Total area	896.6	362.98

Administrative Buildings

The Central Administrative office located at Karnal is just at about 1 km distance from Karnal Railway Station and Bus Stand. It covers 2400 sq. meter area and houses the Central Offices of Institute including Director, Joint Director (Research), Joint Director (Academics), Joint Director (Administration) & Registrar, Comptroller, PME Cell, Academic Coordinator, Controller of Examinations, Sr. Finance & Accounts Officer and other administrative offices etc. It has got two air-conditioned conference Halls and one video conferencing room, state-of-the-art air conditioned two Auditoriums, Dr. D. Sundaresan (Main Auditorium) and Dr. N.N. Dastur Auditorium (Mini Auditorium) with modern facilities and seating capacity of 900 and 180, respectively are also available for organizing Institute functions.

Academic Buildings

Academic building houses the office of Joint Director (Academics), who is In-charge of Academic activities, office of Academic Coordinator, Controller of Examination and other offices, associated with academic activities.

Table 68a. The allocation of Land under Buildings and other Institute activities at NDRI, Karnal

Sr. No.	Name of Building/Block	Plinth Area (Sq. Meter) Approx.	Rooms/Labs
Administrative Buildings-Block/ Divisions/Labs			
1	Administrative Block	2400	Administrative Block, Director's Office, Centre Lecture Hall, Conference Halls, Ladies & Gents toilets.
	University Office	376	Office of Joint Director (A), Registrar, Controller of Examinations
	Dairy Technology Division	2312	1 HOD Office, 1 Division Office, 13 Labs, Seminar Room, Computer Room, Library, Consultancy cell, UG Lab, Instrument Room, PG Lab, Ladies & Gents toilets.
	Experimental Dairy	3434	All offices, Lab, Cold Store, Boiler Room and Milk-Processing plants
	Extension of Experimental Dairy (Experiential learning laboratory with training room and processing hall of BPD Unit)	622	Near Experimental Dairy and Staff-canteen.
	Dairy Economics, Statistics & Management Division	1353	1 HOD's Office, 1 Division Office, Stat Lab, Seminar Room, Computer room, library, Scientist Room (19 span), Ladies & Gents toilets.
	Dairy Engineering Division	1703	1 HOD's Office, 1 Division Office, 11 Labs, Machine Shop, welding shop, Processing Hall, Design & Drawing section, Seminar room, Examination Hall, Ladies & Gents toilets.
	Dairy Extension Division (Housed in DE Div. Building)	504	1 HOD's Office, 1 Division Office, FFT labs, Classroom, 14 Scientist room, Ladies & Gents toilets.

	Dairy Microbiology Division	3665	1 HOD's Office, 1 Division Office, seminar room, UG/PG LABORATORIES, National centre of Dairy cultures, research laboratories of DM & Biotechnology, Ladies & Gents toilets.
	Dairy Chemistry Division	1600	1 HOD's Office, 1 Division Office, seminar room, UG/PG Laboratories, QC Lab, fine instrument lab, res. Laboratories, Ladies & Gents toilets.
	Animal Biochemistry Division	1600	1 HOD's Office, 1 Division Office, 8 res. Labs, class room, instrument room, PG Lab, Ladies & Gents toilets.
	Dairy Cattle Nutrition Division	1649	1 HOD's Office, 1 Division Office, 16 res labs, class room, Instrument Room, 6 scientists' room, Ladies & Gents toilets.
	Dairy Cattle Physiology Division	1692	1 HOD's Office, 1 Division Office, 1 seminar hall, research laboratories, Ladies & Gents toilets.
	Dairy Cattle Breeding Division	1692	1 HOD's Office, 1 Division Office, 27 rooms/labs, Ladies & Gents toilets.
	Animal Bio tech Centre (ABTC) Building. [G.F & 1 st Floor]	4067	18 Scientist Rooms, 2 Nos. on-line Examination Hall, 18 labs, 1 cold room, AC Plant, Central Instruments room, 1 conference room, Ladies & Gents toilets.
	Referral Lab centre (On 2 nd floor of ABTC Building)	1400	4 Labs, 1 Seminar Room, 1 Kitchen with Pantry, Admn. Block & a toilet block.
	ATIC Building	470	In-charge-Room, PA Room, Seminar-Hall, 2 Nos. of Seed / Agricultural Implements Stores, 1 Lab & 4 Rooms for office-staff, Ladies & Gents' Toilets.
	Livestock Research Centre (Cattle Yard)	19813	Central domed building consisting of office, Four Milking Byers, 1 Vareo Tandem milking Byre, 2 Flat Barn-milking Byre, 3 Bucket Milking Byrer, 3 Herringbone Milking Byre, Centre Laboratory, Record room, Lecture room, paddocks (10), Calf pens, Goat pens, Modern Sheds (4), Chaff cutting unit, Calving pens, Animal health complex, small animal house, AI Unit & workshop.
	ETT Building (LPM Section)	1013	2 Scientist Room, 5 Labs, 1 seminar room, 1 store, 1 HOD Office,

	Climate Resilient Livestock Research Centre (NICRA Project) 2305		Inside Livestock Research Centre Complex
			Customised Design Shed (1764m ²)
			Animal calorimetric system shed (280m ²)
			Psychometric chamber shed (145m ²)
			Environmental chamber shed (116m ²)
			Laboratories, control room, office, toilet block etc. (426m ²)
	NICRA Building	501	NICRA BuildingBlock, Laboratories, control room, office, toilet block etc.
	Artificial Breeding Research Centre	3685 [1195 sqm. Bldg area +2490 sqm Sheds area]	1 HOD's Office, 1 Division Office, semen processing laboratory, Bull cubicles (140), Sick animal shed, Vehicle stand, Overhead Water tank, Store, toilet block.
	KVK & DTC	837	1 HOD's Office, 1 Division Office, class rooms, Laboratory
	Model Dairy Village Centre, Pussar (UP)	220	5 rooms with two toilets in Village Pussar (UP)
	Model Dairy Village Centre, Lalukheri (UP)	220	5 rooms with two toilets in Village Lalukheri (UP)
	Passenger Lift (13-16) at Admin Block	8.71	Lift structure including parts complete.

Support Sections

	Feed Quality Control Lab	213	Adjacent to CPWD office with 5 labs and 1a room & a toilet block
	State Bank of India	245	At backside of Production Block having One big hall, a toilet block and a store.
	CPWD Office	213	Adjacent to SBP with a big hall, a toilet block & a store.
	Post Office	54	Housed in the Auditorium Building with 2 rooms with attached toilet
	Milk Parlour	166	Product dispensing hall, seating room, cold store
	Security Section/office	121.39	2 rooms, with ATM Rom of Bank
	Public Toilet Block adj. to Security Office.	13.93	1 toilet-block near Security Section
	Main-Electric- Meter Room near Gate No.1	23	Near Gate No. 1

	National Library	1896	4 reading halls, 3 journal/book rooms, 2 office, 2 computer rooms
	Record room adjacent to Staff-canteen near DT Div.	255	One Room for Audit Section Record etc.
	Labour welfare office	54	One hall at back side of library.
	Computer Centre	302	9 rooms including i/c office, ARIS Cell, Data processing cell, BTIS Sub centre, OC Labs
	Model Dairy Plant	5653.7	All offices, Lab and plant
	Feed Mill Plant Building near Central Stores.	501	Feed mill, godown, verandah
	Feed Grinding unit in Cattle Yard	125	One shed with A.C.C sheet Roofing in LRC.
	Central Store	1307	4 Godowns
	Dairy-Mela / Exhibition ground	34560	With Boundary wall, 2 toilet blocks, one security room, 2 gates
	Estate Section	179	3 Rooms with a store-shed and a toilet block
	EPABX Telephone Control Room & AMCComputers' Room, I/C Sweepers Room, Letter-Box-Room, Record Room	632	At backside of DM Division
	Maintenance Section	3367 [1904 sqm covered area +1463 sqm open yard with CC flooring]	Office of ME (Civil & Elec.), Workshops, Stores & Printing Press with a toilet block.
	Vehicle-Maintenance Section	496	One shed with washing ramp
	Communication Centre/ Exhibition	524	Video Room Lab, AV Lab, press unit, exhibition unit
	Farm Section	4889 [2625 sqm covered area +2264 sqm open yard with interlocked-tiled flooring]	Office of Farm In-charge, workshop, store& toilets.
	Seed Store with Pre-coated GI Profile sheet roof & front open yard with Boundary wall	884	In front of Farm Section

Seed Store with Pre-coated GI sheet roof.	197	In front of Farm Section
Seed Store with AC sheet roof & false-ceiling.	153	Adjacent to water-tank no.1
Agronomy Lab of Farm Section	89	AC sheet roofed room with area 44 sqm + front shed with AC sheet roof of area 25 sqm adjacent to water-tank no.1+ store with RCC roof of size 20 sqm
Effluent Treatment Plant	904 [72 sqm area occupied by Office / Control Room & balance area occupied by various units of Plant]	200 cu m/hr. capacity Aeration tank, equalization tank, USAB Reactor tank, sludge drying bed, clarifier etc& a Generator Shed.
Over Head Water Tanks (Tank No.1,2 &3)	3 Nos.	80000 Gal. capacity (2 Nos.) & 60000 Gal. capacity (1 No.)
Sewage Sump-well No.1 (Old)	77	well with a circular Room with RCC roof near Water-Tank No.1
Sewage Sump-well (New)	59	Circular RCC well of area 54 sqm + Electric Panel Room of 5 Sqm area near Sump-well No.1
Sewage Sump-well No.2	22	with a circular Room with RCC roof near KVK
Water supply booster pump: Exp. Dairy	301	Near Experimental Dairy with RCC roofed room.
Water supply booster pump: water-Tank no. 1	46	Near water-tank No. 1 with RCC roofed room& Room for chlorination with A.C.C sheet roofing
Underground water storage tank	176	R.C.C underground water tank
Water supply booster pump: water-Tank no.2	34	Near water-tank No. 2 with RCC roofed room& Room for chlorination with A.C.C sheet roofing
Water supply booster pump near Primary School	43	Near Primary School with RCC roofed room
Weighing Platforms	2 Nos	In Central store and Farm section
Human Health Complex	2216	20 Bedded Hospital
Electric Sub. station 11 KVA (New)	443	1 Hall
Electric Substation 11KVA (old)	560	One hall for OCB and one room with ACC sheet Roofing for generator

	Water supply booster pump near corner of Central store	1	10" dia bore well only. with working platform
	Underground water storage tank for sprinkler system	40	At tank no. 1 ABTC building, 1 Brahmaputra. 1 at guest house

Guest House Facilities: -

	Guest House	3000	2 suites (VIP), 10 suites (24 occupants)
	VVIP Suites of Guest House	593	2 suits with attached toilets
	Scientists Home	1285	20 suites with attached toilets for 40 occupants
	Kisan Hostel	1166	3 dormitories with mess and dining hall

Staff Quarters: -

	Director's Bungalow	298	1 No.
	Staff Quarters F Type	1032	5 Nos. (206.34 sqm each)
	Staff Quarters E Type	2217	14 Nos. (158.34 sqm each)
	Staff Quarters D TYPE	2627	36 Nos. (72.96sqm each)
	Staff Quarters C Type	3204	64 Nos. (50.06 sqm each)
	Staff Quarters B Type	3554	88 Nos. (40.37 sqm each)
	Staff Quarters A Type	5045	175 Nos. (28.83 sqm each)

Students Hostels: -

	Krishna Hostel	6667	104 rooms, 1dinnig hall, 4 kitchen, 1 TV Room, 1 reading room, 1 sports room
	Sutlej Hostel	3619	150 Suites, 1 dining Hall, 4 Kitchen, 1 TV Room, 1 Reading Room with toilet blocks.
	Brahmaputra Hostel	7668	191 rooms, 1 dining hall, 1 kitchen, 1TV Room, 1 reading room, 1 sports room with toilet blocks.
	Kaveri Hostel	2721	97 rooms, dining hall, 1 kitchen, 1 TV Room, 1 Reading room, 1 sports room with toilet blocks.
	Extension wing of Kaveri Hostel	286	20 Rooms with a toilet block
	New-Extension wing of Kaveri Hostel (Amravati wing)	941	26 Rooms with attached-toilets& a new dining hall
	International Students' Hostel	840	12 suites, 1 TV Room, 1 reading room with attached toilets

	Alaknanda Hostel	1470	44 nos. A Type Quarters catering for 23 Married Hostel rooms and 21 Bachelor Suites. 7 nos. A type quarters behind Brahmaputra Hostel
	Narmada hostel (New Hostel for Boys) & New Hostel for Girls (Hemavati Wing)	3646	150 rooms for boys, 1 Dining Hall, 1 kitchen, 1 TV Room, 1 Reading Room in Narmada Hostel with toilet blocks. 50 room +with attached toilet for girls in Hemavati Wing

Facilities for Sports, Games, Cultural / Literary activities & other Facilities: -

	Sports Ground office & Rooms	496	i Covered area (210.73m ²) with toilet blocks ii Open back yard with Kota Stone flooring(48.50m ²) iii Stadium sitting area (236.8m ²)
	Students' Playground	44160	Playground for outdoor sports i.e. Cricket, Foot-Ball, Volley-Ball, Lawn Tennis with boundary wall
	Auditorium with Conference/ Seminar Halls	2908	900 seating capacity, 4 conference room with 150 seating capacity along-with toilets.
	Kalki- Bhawan & (Sports Complex)	2860	Multipurpose hall along with toilets (Gents & Ladies), 20 Nos rooms, kitchen and Dining Hall
	Cafeteria	582	150 Seating Capacity near Sutlej hostel with toilet block.
	Lawn Tennis Court	376	In Brahmaputra Hostel
	Staff Club	757	5 hall-rooms with a toilet-block
	Badminton Hall	273	Hall with 2 toilets
	Community Centre	385	2 rooms, 1 hall, 1 kitchen, 2 stores & a covered front-veranda.
	Shopping Centre	304	10 shops
	Staff-canteen near DT Div.	193	One Sitting- hall, Sale-counter & kitchen
	Farm Section Canteen	32	In front of Farm Section.
	Children's Park with boundary wall and 3 nos. gates	37184	Between Type A & B quarters of the Institute.
	Primary School	602	200 students with toilet blocks.
	Flour Mill	24	Adjacent to Primary School building
	Examination Hall	850	Behind Dairy Engineering Division
	Museum	237.93	01 Hall, office sitting area with toilet block
	Centenary Mill Stone	13.00	One Mill Stone structure
	Incinerator Shed	150.00	Shed with profile sheet roofing, Control Room with Profile sheet roofing,

	One Firefighting sump well Control Room	196	One Room
	Water Tank LPM	6.8	R.C.C water tank
	ABTC near room	27.5	One room adjacent to ABTC Building
	Security room at director residence	101.60	Security room with toilet, T.T HUT at director Residence, securityroom, storeroom, security room with toilet block
	Room at fish pond	156	Rooms with profile sheet roofing

Vehicle-Parkings:-

	Car Parking with cement-concrete roofing in front of Library	396	in front of Library
	Car Parking with AC sheet roofing in front of Library	549	in front of Library
	Car Parking with AC sheet roofing in front of Admn Block.	233	in front of Admn Block.
	Car Parking with AC sheet roofing at backside of Production Block.	539	at backside of Production Block
	Car Parking with AC sheet roofing at backside of DE Division Block	236	at backside of DE Division Block
	Car/Scooter Parking with cement-concrete roofing at backside of DE Division Block	315	at backside of DE Division Block
	Cycle / Scooter /Car Shed with AC sheet roofing of KVK/DTC	107	Front of KVK
	Car/Scooter Parking with cement-concrete flooring at front side of DT Division.	405	At front-side of DT Div. without roofing.
	Car/Scooter Parking with cement-concrete flooring & AC sheet roofing of ABTC Building.	241	Near ABTC Div. Building
	Car/Scooter Parking with interlocking-tiles flooring near SBI.	578	At backside of Production Block & adjacent to SBI.
	Car/Scooter Parking with AC sheet roofing of human health complex	93	At front of health complex building.
	ME/Farm Parking with Profile sheet Roofing and Paver Block flooring.	245	At Adjacent side of M.E Section
	Narmada hostel Parking with Profile sheet Roofing and Paver Block flooring.	336	Paver block flooring with profile sheet roofing
	Car/Scooter Parking with C.C flooring at ABRC	252	Parking shed with A.C.C sheet roofing

Physical Facilities in various Research Centre of NDRI, Karnal

Artificial Breeding Research Centre (ABRC):

The Complex is involved in production, processing, preservation, storage and distribution of quality semen from cattle and buffalo bulls of high genetic merit. The 55,000 to 60,000 doses of frozen semen were produced each years and at present the complex maintains a stock of 9,00,000 frozen semen doses from important cattle breeds like Sahiwal, Tharparkar, Karan Swiss, Karan Fries, Holstein Friesian and Murrah breed of buffalo. Its field unit also provides facilities like artificial insemination, pregnancy diagnosis and veterinary aid to the farmers.

Livestock Research Centre (LRC):

NDRI, Karnal maintains an experimental dairy herd consisting of two breeds of Indigenous cows (Sahiwal and Tharparkar), two high yielding crossbred strains namely Karan Swiss and Karan Fries developed at the institute, one buffalo breed (Murrah) and two strains of crossbred goats namely Alpine x Beetal and Saanen x Beetal. The institute livestock farm apart from being the breeding herd for the evaluation of sires and dams also caters to the requirement of experimental animals of various research projects run by the scientists as well as M.Sc. and Ph.D. scholars in production disciplines of the institute and therefore is a central facility. At any point of time the institute research herd maintains about 2000 heads of livestock. Institute has established a 'Bull Mother Farm' for Sahiwal, Karan Fries cattles and Murrah buffaloes. To manage the day to day activities of the section the scientist In-charge is assisted by a team of dedicated scientists, technical, administrative and supporting staff.

The institute cattle yard has all the basic facilities including the loose housing structures adequate for housing over 2500 heads of livestock apart from modern state-of-art milking parlors (Verio tendom and Flat barn parlors) and a well-equipped veterinary health care facility to cater to the health of the animals. The average milk production per day is maintained between 3500-4000 kg and the annual milk production varies between 13 to 14 lakh kg.

6.6.7.2. IT Infrastructure at ICAR-NDRI, Karnal

1. Introduction

The ICAR-NDRI, Karnal has developed a robust and efficient IT infrastructure to support research, education, administration, and communication activities. The Computer Centre plays a pivotal role in promoting digitalization and ensuring seamless IT services across the institute.

2. Development of Computer Culture

The Centre has successfully inculcated a strong computer culture within the institute by organizing various training programmes, workshops, and awareness sessions for students, faculty, and staff. These initiatives have significantly enhanced digital literacy and effective utilization of IT resources.

3. Organizational Structure of IT Units

The IT infrastructure is supported through the following dedicated units:

- **Data Processing Unit** – Handles data analysis, processing, and computational tasks for research purposes.
- **Teaching & Training Unit** – Conducts training programmes, workshops, and academic support activities.
- **Computer Maintenance Unit** – Responsible for maintenance, troubleshooting, and upkeep of IT equipment.
- **Digital Lab and Smart Classrooms** – Equipped with modern teaching aids and digital learning tools.
- **Digital Library** – Provides access to online academic resources, journals, and databases.

4. Hardware Infrastructure

The institute is well-equipped with modern computing facilities:

- **700+ Computer Systems** deployed across various departments.
- **15+ Servers** supporting different applications and services.
- Dedicated **Server Room** for centralized management.

5. Software Resources

The institute uses a wide range of licensed and specialized software for academic and research purposes, including:

- Licensed **Microsoft Windows** and **MS Office**
- **MATLAB Software**
- **SolidWorks Software**
- Various **Data Processing and Research-Oriented Software**

These tools support advanced research, design, data analysis, and educational activities.

6. Network and Connectivity

The campus has a strong and reliable network infrastructure:

- **Wi-Fi Enabled Campus** with over **175+ Access Points**
- **NKN (National Knowledge Network) Connectivity** with a **1 Gbps leased line**
- Average available speed of **300+ Mbps** across offices and library

This ensures high-speed internet access and seamless communication across the institute.

7. Library IT Services

The institute library plays an important role in digital access:

- Provides **Internet and Email Services** to students, faculty, and staff
- Equipped with **40 Workstations** for user access
- Facilitates access to current research information and communication with researchers worldwide
- Library Management: Uses the KOHA Library Management System for automated circulation and online searching of theses, books, and reports.
- AgriCat: NDRI is a partner of AgriCat (WorldCat), making over 53,785 catalogue records accessible worldwide.
- Video Conferencing: Zoom, Webex Google Meet, Teams softwares are maintained for online meetings and viva-voce examinations

8. Server and Communication Services

The Computer Centre maintains:

- **Web Server** for hosting institutional websites
- **Mail Server** for official communication
- Centralized **Server Room Management** ensuring uninterrupted IT services

These services ensure smooth functioning of internet-based operations within the institute.

9. IT Infrastructure at Regional Stations

The Institute also has two regional stations, namely the Southern Regional Station (SRS) and the Eastern Regional Station (ERS). These regional stations are equipped with similar IT infrastructure and facilities as available at the main campus. The necessary computing systems, networking infrastructure, licensed software, and internet connectivity have been established to support research, academic, and administrative activities at these stations, ensuring uniformity and efficiency in IT-enabled services across the Institute.

6.6.7.3. Students and Staff Amenities:

Students and staff have access to outdoor and indoor sports facilities, which comprises of sports ground, lawn tennis courts, badminton courts and gymnasium.

(a) Indoor sports at NDRI campus

Indoor Sports Complex (Kalki Bhawan) consists of 1500 sq ft. area (100'X150') with three washrooms, urinals and two separate changing rooms, each for girls and boys. Another room for the storage of sports related items and equipment is also available. Kalki Bhawan is well equipped with lights & fans all around and enables students and staff members of NDRI to play during late hours. Facility of sauna bath, steaming room and wash room is also available for staff and students. Kalki Bhawan is equipped with state-of-art Indoor gym with all required equipment. There are five badminton courts with synthetic flooring and three Table tennis tables of modern configuration. The facility is accessible to students on weekdays from morning to late evening

(b) Infrastructure for Outdoor Sports at ICAR-NDRI Campus

Outdoor Sports Complex is in 11 acres of area with the stadium shed having the seating capacity of 250 persons in the form of stairs. The building includes two office rooms, two washrooms for ladies and gents and two storage rooms for keeping sports equipment. The sports complex with Six High Mast Lights all around enables students and staff members of NDRI to play during late hours. The sports ground consists of two cricket pitches of standard dimensions, one football ground, one outdoor lawn tennis courts; two basketball court (one synthetic), two volleyball courts and tracks and field for the organization of Track & Field events. Physical Education classes are held for B.Tech. M.Tech/M.Sc./M.V.Sc and Ph.D. students throughout the academic year. The university is unique as it offers a non-credit course on Physical Education for the students. Besides theory sessions, students are mentored for yoga, sports and exercises. NSS and NCC courses are offered to Under Graduate students as compulsory course. NCC unit of ICAR-NDRI, Karnal is affiliated with the 7 Haryana Battalion and qualified students get B & C certificates.

Staff Club:

The Staff Club exists in the institute for recreation of staff and their family members. The broad objectives of the staff club are as follows:

- To promote social and cultural activities of the staff of the national dairy research institute and their families.
- To provide facilities for out-door and in-door games, and organize tournaments.
- To provide facilities of a reading room and library.
- To organize study tours and excursion trips.

- To assist the Institute in organizing the celebrations of National festivals.

The membership of NDRI Staff Club is open to all the regular staff members of the institute on payment of membership fee which is decided in the executive committee of the club on year to year basis. In addition to membership fee, the club also gets matching grant from ICAR to perform following activities to rejuvenate the staff members:

The Institute has a well-furnished Guest House that has 10 double bed AC rooms, Scientist Home having 19 double bed AC rooms, and Kalki Bhawan having 23 double bed AC rooms for the comfortable stay of the guest with boarding facilities.

- Celebration of various festivals including national festivals,
- Cultural programs
- Children competition (in dance/music/calligraphy/painting etc.)
- Sports (Badminton, Chess, Carom, Cricket, Athletes, Kabaddi, Volleyball etc.)
- Extracurricular activities (Yoga classes/ training programs etc.)
- Excursion/ study tours
- Family functions (Birthday, marriage, religious etc.)
- Maintenance of library

Creche:

Staff members also have access to a fully functional Creche for their children very close to the staff quarters. The infrastructure for the crèche has been developed by the institute and are maintained with support from the employees welfare funds whereas as its operational expenditures are met with contributions from the members.

Canteens:

There are two staff canteens (One close to the administrative building and the other near farm section within the institutional area. Besides, the separately located students' cafeteria is also available to the staff members residing within the campus.



Students and Staff Amenities at SRS of NDRI, Bengaluru:

SRS, NDRI has staff canteen, medical dispensary, Children Park for the benefit of staff and students, Volleyball court, shuttle badminton court, inside the campus. Gym rooms, shuttle badminton court, table tennis at Students' Hostel for the benefit of students.

6.6.8. Financial Resource Management

6.6.8.1 Budget Allocation

In furtherance of its objectives of undertaking research, education, and transfer of technology, the Institute receives budgetary support from the Indian Council of Agricultural Research (ICAR), which in turn receives grants from the Government of India (GOI) under the ICAR by-laws. The financial support is received through:

1. Government of India (GOI) Grants
2. Other sources, including governmental agencies and foreign funding agencies such as the World Bank, ADB, etc.

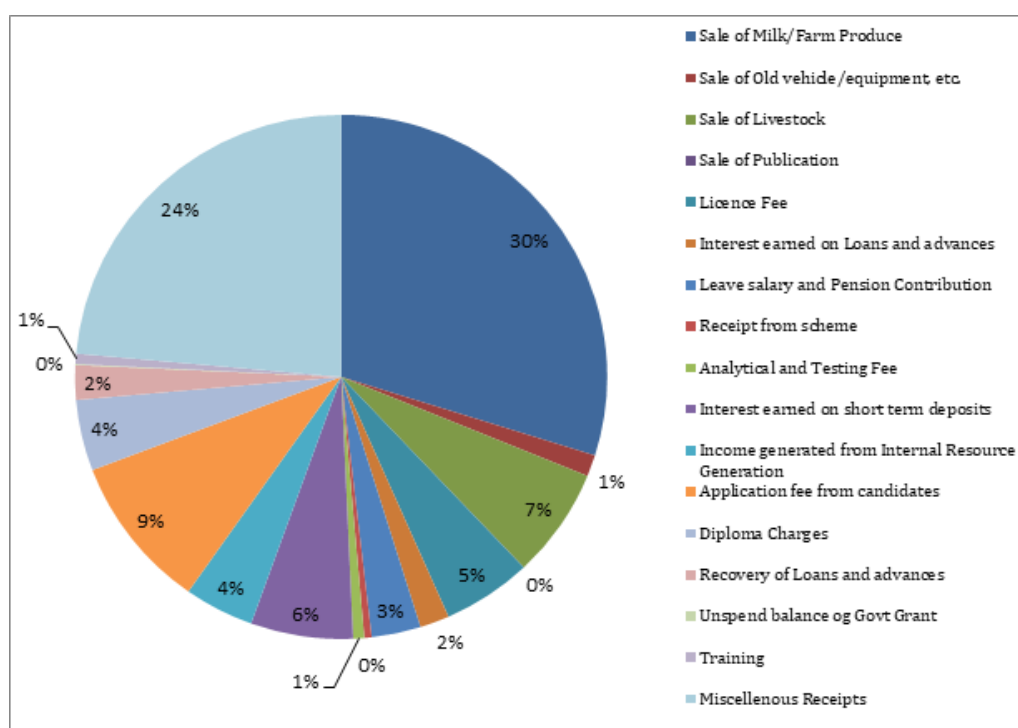
The budget allocated during the last five financial years has been adequate to meet the academic, research, and developmental requirements of the Institute. The funds are primarily distributed under Grant-in-Aid (GIA) heads such as Capital, General, Salary, and Pension.

During the period 2021–22 to 2025–26, the Institute received a cumulative Revised Estimate (RE) of ₹132,853.58 lakhs, out of which ₹132,803.86 lakhs were utilized, reflecting highly efficient financial planning and resource utilization.

The year-wise budget allocation and expenditure indicate consistent financial discipline, with nearly 100% utilization across all heads, ensuring smooth functioning of academic programs, research activities, student support services, and institutional development.

Thus, effective financial resource management has significantly contributed to sustaining excellence in teaching, research, extension, and institutional administration.

Total Scheme fund Allocation received by your institution												
Rs. (In Lakhs)												
Head of Account	RE/ Budget 2021-22	Exp. 2021-22	RE/ Budget 2022-23	EXP. 2022-23	RE/ Budget 2023-24	EXP. 23-24	RE 2024-25	Exp. 2024-25	RE 2025-26	Exp. 2025-26	Cumulative RE	Cumulative Exp.
GIA - Capital	391.26	390.89	408.00	408.00	464.00	420.69	398.00	398.0	253.58	253.58	1914.84	1871.16
GIA - General	4064.25	4061.86	3710.00	3710.00	4350.00	4349.21	4558.00	4558.0	4744.48	4744.48	21426.73	21423.55
Total (Capital + Gen)	4455.51	4452.75	4118.00	4118.00	4814.00	4769.90	4956.00	4956.00	4998.06	4998.06	23341.57	23294.71
GIA - Salary	9054.17	9051.31	9589.49	9589.49	9790.02	9790.02	9570.50	9570.50	10000.00	10000.00	48004.18	48001.32
GIA - Pension	9940.28	9940.28	11227.55	11227.55	12750.00	12750.00	12590.00	12590.00	15000.00	15000.00	61507.83	61507.83
Total (Salary + Pen)	18994.45	18991.59	20817.04	20817.04	22540.02	22540.02	22160.50	22160.50	25000.00	25000.00	109512.01	109509.15
Grand Total	23449.96	23444.34	24935.04	24935.04	27354.02	27309.92	27116.50	27116.50	29998.06	29998.06	132853.58	132803.86



6.6.8.2 Finance Committee

Director cum Vice-Chancellor is the chief executive officer of the Institute. For proper management of finances of the Institute and other financial responsibilities, Director is assisted by the Comptroller, who is in-charge of Finance wing and is responsible for scrutinizing the budget and all proposals involving financial implications, maintenance of accounts and internal auditing of the Institute. The Institute Financial Review Committee (IFRC), headed by the Director meets at least twice in a year to discuss the issues related to finance and also to monitor the utilization of budget allotted under various capital and revenue heads of expenditure of the Main Institute Grant. The Institute's Accounts are being audited by the Statutory Auditor of ICAR, viz., Comptroller and Auditor General of India through the Principal Director of Audit (Scientific Department)/Director General of Audit (Central). ICAR also conducts internal inspection of records as per the by- laws of ICAR.

6.6.8.3 Internal Resources Generation

As per the self-sufficiency strategy, headquarter expects the institute to generate some part of the revenue on its own. During the last five years, the institute has successfully met over 80 per cent of the target set by the ICAR. Major share of internal resource generation comes from sale of farm produce (34%) followed by license fee (10%). Other sources of internal resource generation includes sale of livestock, analytical and testing fee, diploma charges/tuition fee, interest earned on loans and advances, training, consultancy, contract research, etc. Though, the revenue generated by the Institute is remitted back to the Council (ICAR) every year, however some portion of the Overheads / Institutional charges received from various externally funded projects is utilized for

various academic & research related expenditure and also for the maintenance of the common infrastructure of the Institute. Details related to Internal Revenue Generation are provided in given below

Revenue Generation (2021-2026)

Rs. (In lakh)

Sr. No.	Head	2021-22	2022-23	2023-2024	2024-25	2025-26
1.	Sale of Milk/Farm Produce	312.48	270.69	279.31	453.93350	445.96
2.	Sale of Old vehicle/equipment, etc.	50.85			27.53877	
3.	Sale of Livestock	45.63	96.77	65.12	85.82926	106.96
4.	Sale of Publication	0.47				
5.	Licence Fee	75.78	86.75	97.96		60.24
6.	Interest earned on Loans and advances	8.58	8.69	16.68	64.08791	7.54
7.	Leave salary and Pension Contribution	78.96	15.15	5.15	5.08497	71.99
8.	Receipt from scheme	1.12			25.09398	
9.	Analytical and Testing Fee	10.07	6.89	8.32	4.20674	10.43
10.	Interest earned on short term deposits	12.22	56.85	91.40	109.50049	96.74
11.	Income generated from Internal Resource Generation	89.04	22.39	72.56	22.22870	44.13
12.	Application fee from candidates		0.63	209.41		350.13
13.	Diploma Charges				258.23436	
14.	Recovery of Loans and advances	29.00	36.18	22.39	13.86786	24.54
15.	Unspend balance og Govt Grant				3.49035	
16.	Training					37.55
17.	Miscellenous Receipts	318.97	433.37	267.59	236.69230	135.79
	Total	1033.17	1034.36	1135.89	1309.78919	1392.00

6.6.8.4: EXTERNAL FUNDING

ICAR-NDRI receives nearly half of the projects out of total projects which are funded by external funding agencies. This shows the competitive research acumen of the scientists working at ICAR-NDRI.

Table 6.6.3.10: List of external funding mobilized including research projects: 2021-26

2021-22

S.No.	Title of project	Funding Agency	Duration	Total cost

	Application of nano-immobilized β -Galactosidase for production of galactooligosaccharides from dairy by-product	MOFPI	2021-2023	43.94
	CRP on bio fortification: suitability of incorporating biofortified cereal straw in animal studies	ICAR-NIANP	2021-2023	10.00
	CRP on bio fortification: suitability of incorporating biofortified cereal straw in animal studies	ICAR-NIANP	2021-2023	10.00
	Dairy entrepreneurship development among rural youth and women in aspirational districts of Karnataka State	RKVY	2021-2024	232.00
	Development of phyto-immunobiotic for reduction of bovine intra mammary infections: comparative studies on bioactive compounds and whole extract effects	SERB	25.03.2021 to 24.03.2024	46.20
	Development of polarized angular scattering and microfluidics technology for bovine sperm sexing	DBT	2021-2023	157.0376
	Development of quantitative molecular assays for rapid enumeration of viable probiotics from probiotic food products	ICMR	2021- 2024	43.89
	Differential carriage of extracellular vesicles (EVs) in seminal plasma of cattle and buffalo bulls as a novel fertility indicator	DBT	2021-2023	85.32
	Generation of milk somatic cell reference values and intelligent and predictive modelling for monitoring mammary profile and milk quality of indigenous dairy animals.	DBT	2021-2024	73.06
	Genomic based approaches for characterization of the microbial antibiotic resistance and resistome in Dairy production system	ICMR	2021-2024	49.32
	ICAR Network programme on precision agriculture.	ICAR-NEPPA	2021-2026	332.00
	Indigenous breed program (Sahiwal Cattle).	ICAR	2021-2026	8.35
	Network project on buffalo Improvement-Field Unit (CIRB Hisar-125001)	ICAR	2021-2026	30.70
	Network project on buffalo Improvement-Institute herd-ICAR (CIRB Hisar-125001)	ICAR	2021-2026	15.60
	Process for the preparation of lactose free skim milk powder with approaches to minimize maillard reaction	DBT	2021-2024	44.448
	Production and shelf-life enhancement of phospholipids rich instant lassi powder from desi chhach	HSCSIT	2021-2023	15.00
	Production of dairy powder from by-products (ghee residue and butter milk); characterization and application in heat desiccated products/ convenience formulations.	MOFPI	2021- 2023	43.52

	Production of Double Muscled-Mass Farm Animal using CRISPR	NASF	2021-2023	165.92
	Protein Based Optical sensors for detection of listeria monocytogenes in milk.	ICMR	2021-2024	43.30

2022-23

Sl. No.	Title of the Project	Funding Agency	Duration	Total Cost (Rs. In Lakh)
	Controlling subclinical mastitis through NIFs indigenous medication farmers field in region of Haryana	NIF-DST	2022-2023	10.45
	Utilization of paddy straw as complete fodder block by treating with Gomutra (Indigenous cow urine)	DST-SEED-SUTRA	2022 - 2024	70.68
	Establishment of AI network in Muzaffarnagar	DADF	2022 -2025	859.10
	Unraveling the genomic diversity and identifying Putative SNPs for Milk quality and production in Bilahi and crossberd population in Haryana State.	DST (HSCSI&T)	2022 -2025	40.00
	One-step multiplex genome editing and improvement of lactation traits in Indian water buffalo	BMGF	2022 -2027	98.53
	Antimicrobial resistance surveillance in view of one health concept	ICMR New Delhi	2022-2024	57.34
	Electronic platform to monitor cattle health and milk quality	MEIT	2022-2024	90.00
	Enhancing post thaw quality of cryopreserved buffalo semen by using sperm-quiescent proteins of cauda epididymal plasma	SERB-DST	2022-2024	13.60
	“Evaluation of semen characteristics and fertility parameters of cloned bulls and performance of clone’s progenies –phase II”.	NASF	2022-2025	450.58
	Comparative functional analysis of human bovine and goat milk based on modulation in the gut bacterial and metabolite composition	ICMR	2022-2025	90.00
	Development of climate resilient and sustainable agri based systems for better food ,feed ,nutritional and livelihood security potions to farming community of cold arid region – Ladakh.	DST	2022-2025	272.00
	Development of Nano-Micro Matrices for the Delivery of Bioactives, Micro-nutrients and Therapeutics	NASF-ICAR	2022-2025	401.63

	Evaluation of bio functional attributes of extracellular components derived from probiotic lactobacilli as postbiotics.	SERB	2022-2025	46.08
	Isolation of pro-rich poly peptides from colostrum of select indigenous cattle breed and evaluation of their neutraceutical potential.	NASF	2022-2025	85.55
	Unique innate-immunity genomic signatures identification in Sahiwal Gir, Tharparkar, Kangeyamm Karan Fries and Holstein Friesian cattle using immune informatics	NASF	2022-2025	95.40
	Characterization of native livestock and poultry population of West Bengal State.	ICAR	2022-2027	27.50

2023-2024

Sl. No.	Title of the Project	Funding Agency	Duration	Total Cost (Rs. In Lakh)
	Profile analysis of farmer producer companies in India	KAU-ICAR-NAHEP-CAAST, Kerela Agricultural university Thrissur, Kerala	2023 -2023	40.00
	Novel Nano purification technology for enrichment of super sperm population to improve fertility and skew sex ratio towards female in dairy animals.	Funded under national fellow ICAR	2023-2027	376.59880
	Delineating the drug delivery potential of milk exosomes to combat intracellular pathogenic niche causing bovine mastitis	DBT	2023-2026	104.00
	Exploring the role of non-coding RNAs in regulating the epigenomics of lactation in low yielding cows	DBT	2023 -2026	38.275
	Identification of heat stress-specific biomarkers to develop a biosensor for formulating mitigation strategies in high yielding dairy animals	DBT	2023 -2026	49.10480
	Sensor based oestrus identification and health monitoring device in dairy animals	DST	2023 -2026	34.04592
	Indian dromedary camel genome diversity analysis and development of customized low density SNP chip for camel.	NRCC Bikaner as part of coordinated research project IAEA Vienna	2023-2028	0.00

	Evaluation of the impact of mitochondrial changes on milk production traits of indigenous cattle	SERB-DST	2023-2025	29.53800
	“Valorization of pearl millet straw for production of gut health caring nutraceuticals” Global Centre of Excellence on Millets(Shri Anna) :Sub-Component	ICAR-IIMR, Hyderabad	2023-2026	50.00
	Affordable sustainable and nutritionally balanced milk millet protein ingredients	DST	2023-2026	29.69327
	Building resilience model for the vulnerable hotspots to climate change in smallholder dairy production system of Indo-Gangetic Plain Region of India using GIS and fuzzy cognitive mapping approach	NASF	2023-2026	54.94741
	Controlled Release of Olfactory Cues for Management of Lesser Grain Weevil, Sitophilus Oryzaea Stored Product Pest of Rice	DBT	2023-2026	86.42800
	In-situ production of active vitamin B12 rich ready to use therapeutic composite dairy food and evaluation of its bioavailability and safety	ICMR	2023-2026	44.89
	Overexpression of recombinant linoleic acid isomerise/desaturase on the surface of probiotice Lactobacillus spp. for enhanced in situ production of conjugated linoleic as acids in gastrointestinal tract of the host	DST under Women Scientists Scheme (WOS-A)	2023-2026	31.28
	Production of cloned indigenous cattle using simplified handmade cloning method	ICAR-Lal Bahadur Shashtri award	2023-2026	35.00
	The South Asia Agriculture Adaptation Atlas: Interconections between climate risk, practices, technologies and policies	MOA&FW	2023-2026	28.86
	Establishment of Centre of Excellence with OPU-IVF Technology	MOFAHD	2023-2028	1185.25

2024-25

Sl. No.	Title of the Project	Funding Agency	Duration	Total Cost (Rs. In Lakh)
	Development of novel strategy for the detection and tackling of antimicrobial resistant (AMR) Mastitis pathogens in dairy animals and environment using nanotechnology	NASF	2024- 2027	82.25300
	In vitro production of oocyte- and spermatozoa-like cells from pluripotent stem cells of farm animals	NASF	2024- 2027	88.86000
	Preparation of greenhouse inventory from Indian Livestock for first BTR, fourth BUR and fourth NC from livestock sector	MOEF&CC, GOI	2024- 2027	70.15168
	DPP-IV inhibitory (antidiabetic) peptides-rich milk protein hydrolysates: Effect of simulated digestion and safety evaluation	DST	2024-2027	94.63
	Network Project on Animal Genetic Resources (AnGR)	ICAR-NBAGR	2024-2025	10.00
	Agricultural waste management using vermicomposting and microbial-based residues decomposers	Swachhta Action Plan (SAP) under ICAR	2024-2026	8.50
	AICRP on Mechanization of animal Agriculture Production and Post-Production Mechanization Augmentated with innovation Technologies for sustainable agriculture Development	ICAR	2024-2026	11.70
	Application of mesenchymal stem cells for the treatment of metritis to control repeat breeding in cattle and buffaloes for improvement of the live stock	DST-Haryana	2024-2026	30.00
	Development of probiotic formulations containing lactiplantibacillus plantarum LP91 (MTCC 5690) and its pre-clinical safety & efficacy study for human use	ICMR	2024-2026	205.47
	Effect of processing on the levels of aflatoxin M1 in selected dairy products	FSSAI	2024-2026	86.20
	Knowledge partnership to understand the Pashusakhi model, Co-development and supporting in creation of Entrepreneurship.	ITC(CSR)	2024-2025	9.765
	Production of broiler livestock and poultry using CRISPR technology	ICAR	2024-2026	329.00
	Exploring CRISPR/Cas9-based genome editing for skewed sexed embryo production in buffalo-NDRI	ICAR	2024-2026	136.00

Preclinical Efficacy safety and toxicity of colostrum whey protein derived formulations('Propep') in animals mode;(DHR) and its preclinical safety and efficacy study for human use	ICMR-DHR	2024-2026	179.86
Bacteriophage and Metal based Antimicrobial Therapy for the Bio-Control of Multi-Drug Resistant(MDR) Zoonotic Bacterial Dairy Pathogens	ICMR	2024-2027	85.00
Biosynthesis and downstream processing of lacto bionic acid from paneer whey using lactose oxidizing bacteria.	DBT	2024-2027	38.20
Development and functional characterization of spray-dried lactose-free milk powder using high molecular weight polysaccharide as adjunct	DST	2024-2027	27.96200
Development of fertility signatures for identifications of repeat breeding cows by exploring crosstalk mechanism in SNP-miRNA-mRNA networks	HSCSIT	2024-2027	40.00000
Livelihood improvement of rural farmers through augmentation of fertility in dairy cows with assured female calf approach in Chakdaha and Haringhata blocks of Nadia district, West Bengal	NABARD	2024-2027	20.09
Comprehensive characterization of badri cow milk bioactivities and its dairy products (yogurt & Paneer) across seasons	DBT	2024-2027	17.95
All India Network Programme (AINP) on antimicrobial resistance(AMR) in Fishery & animal sciences(INFAAR)	ICAR-NBFGR	2024-2026	17.25
Application of aptamer, microfluidics and protein targeted approaches for sex specific spermatozoa enriched in bovine and technology development thereof	DBT	2024-2026	102.74
Application of aptamer, microfluidics and protein targeted approaches for sex specific spermatozoa enriched in bovine and technology development thereof	DBT	2024-26	94.96
Management of subclinical mastitis through NIFs indigenous approach at lower gangetic region	NIF	18 months	14.22
Designing, synthesis and functional evaluation of therapeutic potential of bovine specific novel kisspeptin-10 analogues for reproduction augmentation in livestock species	DST-SERB	2024-2027	95.00

2025-26

S No.	Title of the Project	Funding Agency	Duration	Total Cost (Rs. in Lakh)
	Development of nutrigenomics strategies through foetal epigenetic reprogramming for enhanced performance in goats	NLM, GOI	2025 - 2028	63.91
	Kisan Sarathi 2.0: Enhancement, Operations, Maintenance and Support	ICAR	2025 -2028	36.00
	Promotion of livestock based technological interventions for socio-economic improvement of scheduled caste farmers in Chhotanagpur plateau of West Bengal	ICAR-IIAB, SCSP	2025 -2028	30.00
	Centre for innovations to foster full cycle processing of agriculture waste to wealth PAWW <i>Sub title: Bio conversion of agricultural waste into nutraceutical for incorporation in milk replacer and calf starter to augment gut health and productivity of calves</i>	DST	2025-2030	30.00
	Application of horticultural, dairy and small ruminant technologies for technological empowerment to enhance and sustain livelihood security of small and marginal SC farmers in Karnataka (Lead Centre: ICAR-IIHR, Bengaluru).	DST/SEED/ SCSP	2025-2028	15.71200
	Enhancing dairy production efficiency in India through improved ration balancing and advanced feed library development	Cornell University (USA)	2025-2027	120.78
	Integration of millets and their Derivatives with Dairy and non-dairy food matrices for improved functionality	DST	2025-2027	50.46
	Network project Project title: Adoption pattern and economic impact assessment of sex sorted semen technology in India Component 1: Impact assessment of agricultural technology	ICAR-NIAP	2025-2026	11.5
	Probing the nano-therapeutic potential of super cationic carbon quantum dots for combating the bovine mastitis associated multi-drug-resistant pathogens	ANRF	2025-2028	65.00560
	Prevalence of Microbiological and Chemical Hazards in Traditional Fermented Foods of North-East India	DBT	2025-2028	93.89878

	Preclinical Validation and clinical evaluation of expolysaccharides –Iron complex enriched fermented dairy product for ameliorating Iron deficiency anaemia.	ICMR	2025-2029	91.19

6.6.8.5. Financial Powers Delegation to Deans/Heads

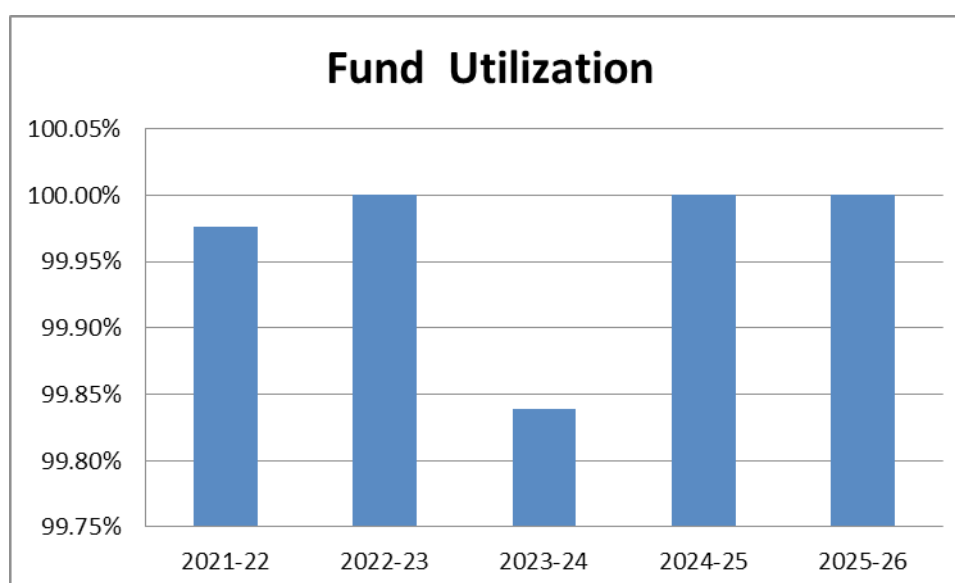
In the beginning of every year, budget out of the Main Grant is allocated to all the divisions for their research and academic requirements. Some budget is also allocated to the divisions from the Development Grant. However, the financial sanctioning authority for all the proposals is vested with the Director. For meeting out some petty day to day expenses, all the Heads of Divisions have been sanctioned some amount of permanent cash advance in the form of “**Imprest**” **depending upon their requirement which is recouped on monthly basis.**

In addition to this, the Principal Investigators (PIs) of externally funded projects from national and international agencies, projects funded by private sector, consultancy projects and ICAR projects are delegated full powers for procuring goods/equipments costing Rs. 20 lakh or less, as approved under the project. The PIs are authorized to sanction the TA advance after approval of the tour by the Director, and counter sign the TA bill while passing of TA claims by the Audit.

6.6.8.6. Finance Utilization

It can be discerned that the institute utilized more than 99% of the Government Grants received during the last 5 years. The percent utilization of finance in the last five years is depicted in Figure 10.

Head of Account	Budget 2021-22	Exp. 2021-22	Budget 2022-23	EXP. 2022-23	Budget 2023-24	EXP. 23-24	Budget 2024-25	Exp. 2024-25	Budget 2025-26	Exp. 2025-26
Grand Total	23449.96	23444.34	24935.04	24935.04	27354.02	27309.92	27116.50	27116.50	29998.06	29998.06



Accomplishments

Awards for the University

Accreditation Report from ICAR/Other Agencies

Inter Institutional Standings

Socio-economic Impact

International Collaboration

Fund Raising through CSR

Alumni Support

Certificate

6.6.9. Accomplishments

6.6.9.1 Awards for the University

- ICAR-NDRI ranked first among 72 Agricultural Universities and Deemed Universities consecutively five times for the year 2020 conferred in 2021 by the Education Division of Indian Council of Agricultural Research, New Delhi.
- ICAR-NDRI was conferred Global Water Award on August 22, 2021 for work carried out on water saving and reuse technologies in 5th World Water Summit 2021.



- Team NDRI (Puniya AK (Team Leader), Dasriya V, Dhillon HS and Chaudhary V) won 'Zonal Level Technical Evaluation', KRITAGYA (HACKATHON 2.0) for the year 2021 organized by 'National Agricultural Higher Education Project (NAHEP)' and Animal Science Department of Indian Council of Agricultural Research, New Delhi.
- **Registration of Karan Fries Cattle**
ICAR- National Dairy Research Institute (NDRI), Karnal has developed a Karan Fries cattle and ICAR- National Bureau of Animal Genetic Resources (NBAGR) has officially registered **Karan Fries**, a high-yielding crossbred cattle developed

by scientists of the Institute. The breed has been developed through crossbreeding of Holstein Friesian (HF) and Tharparkar cattle and is now genetically stabilized with 62.5% HF and 37.5% Tharparkar inheritance. Karan Fries cattle have a black and white coat, and the hump is absent. It was registered by Breed Registration Committee of Indian Council of Agricultural Research (ICAR) on December 12, 2025 with the accession Number INDIA_CATTLESYNTHETIC_0500_KARANFRIES_04002. The registration of Karan Fries marks a significant milestone in dairy genetics, supporting sustainable livestock improvement, farmer income enhancement and fulfil the national foods security objectives. This breed produces an average of about 3550 kg of milk per lactation, with a maximum yield of up to 5851 kg in 305 days. The peak daily milk yield can reach 46.5 kg. This germplasm is well adapted to hot and humid sub-tropical climatic conditions, with an estimated population of around 20,000 animals. The main distribution areas of Karan Fries cattle include Karnal, Kurukshetra, Panipat, Kaithal, Jind, and Yamuna Nagar districts of Haryana.

6.6.9.2 Accreditation Report from ICAR/Other Agencies

The accreditations received by the Institute in the last 5 years are as follows:

- On the recommendations of the ICAR Peer Review Team, the National Agricultural Education Accreditation Board, ICAR, New Delhi granted accreditation (2021-26) to the ICAR-National Dairy Research Institute, Karnal (Haryana) and its following programmes up to 31st March, 2026.

- National Accreditation Board for Testing and Calibration Laboratories (NABL)

The National Referral Centre for Milk Quality and Safety (NRCMQS), ICAR-NDRI, Karnal is accredited by NABL under ISO/IEC 17025 standards for Testing Laboratories.

This accreditation confirms the laboratory's competence in testing and calibration services related to milk quality and safety.

Details of NABL Accreditation

Year	Standard	Certificate No.	Issue Date	Valid Until	Field
2018–2020	ISO/IEC 17025:2005	TC-7054	22.03.2018	21.03.2020	Testing
2022–2024	ISO/IEC 17025:2017	TC-7054	06.03.2022	05.03.2024	Testing
2024–2026	ISO/IEC 17025:2017	TC-13928	20.06.2024	19.06.2026	Testing

- ISO Certification Quality Management System Certification

ICAR-NDRI has also been certified under ISO 9001:2015 for maintaining an effective Quality Management System (QMS) in research, education, and technology dissemination.

The certification covers institutional excellence in dairy production, processing, and management.

Details of ISO Certification

Period	Standard	Certificate No.	Validity
2021–2024	ISO 9001:2015	IN7179A	06.08.2021 – 05.07.2024
2024–2027	ISO 9001:2015	09111914A	09.06.2025 – 05.07.2027

6.6.9.3. Inter Institutional Standings

- ICAR-National Dairy Research Institute secured 2nd rank among Agricultural and Allied Sector institutions in India as per National Institutional Ranking Framework (NIRF) 2025, Ministry of Education, Government of India.
- ICAR-National Dairy Research Institute secured 2nd rank among Agricultural and Allied Sector institutions in India as per NIRF 2024, Ministry of Education, Government of India.
- B.Tech. (Dairy Technology) programme with intake capacity of 20 students started at ICAR-NDRI Southern Regional Station, Bengaluru in the year 2024.
- Started two new UG programme B.Tech. (Biotechnology) and B.Tech. (Food Technology) each with intake capacity of 20 students, at NDRI, Karnal in the year 2024.
- ICAR-NDRI ranked first among all Agricultural Universities of ICAR fifth time in 2021.

6.6.9.4. Socio-economic Impact

2021

- For the productivity enhancement in Hill cattle (Badri) conserved by SC, ST and other communities of Uttarakhand, baseline data were collected from the respondents (71) regarding Family Size, Crop Pattern, Land size, Herd Size, Production Parameters, Feeding, Treatment, Vaccination against diseases, Morbidity and Mortality.
- List of Badri keepers from SC community was prepare and 120 bags comprised of Enzyme powder (5kg), Mineral Mixture (2.5 kg), Dewormer (1 pkt), Wound healing Spray, Ekbolic (500ml), Liver booster (500ml) and Bloat guard were given as critical inputs.

- Mineral mixture supplementation @50g/ day/ animals improved the production performance of cows and buffaloes under field conditions.
- Skill enhancement for rural woman in Odisha is a step towards reducing their **dependence on remittances (upto 54%) and social grants (52%)**.
- Fourteen youth belonging to scheduled caste communities were identified from Haryana and Himachal Pradesh and trained for 45 days at Regional Centre of National Dairy Development Board, Jalandhar, Punjab from 02.08.2021 to 15.09.2021 on Artificial Insemination. Later, they were facilitated to undergo 75 days field training at their respective native places under the trained veterinarians. The prime objective of this capacity building was to generate self employment
- Training was imparted to Training was imparted to potential women entrepreneurs from Karnal, Panipat, Sonapat district on milk and milk products processing (*dahi, paneer, ghee etc.*) under a DST-funded project.
- Under the NEH a total of five livestock developmental camps were organized in five North Eastern states of India namely, Arunachal Pradesh, Nagaland, Tripura, Assam and Sikkim during 2021. Livestock animals, poultry chicks, ducks and different agri-inputs were distributed among farmers.
- Under TSP, 4 camps were organised in different parts of Eastern and North-Eastern India and 4 on-campus training programmes were organized.
- Seven extension programmes were organized under SCSP programme during January 2021 to December 2021 at ERS, Kalyani.
- A total of 46 training programmes were conducted at ERS, Kalyani on different topic like Weed Management, on different topic like Weed Management, Integrated Farming, Fodder Production, Water Management, Soil fertility management, Dairy Management, Piggery Management, Disease Management, Goat Farming, etc. Through these training programmes, a total of 1015 male participants and 896 female participants were benefited.
- During the year 2021, 59 on-campus training programs were conducted by KVK in which 1874 participants from different states of the country took part, whereas 69 off- campus training programmes for 1482 farmers were conducted by KVK.
- During the Rabi season 2021 a total of 54 FLDs (Front line demonstration) on Gram (HC-5) were laid in 20.0 hectare area under irrigated conditions in different villages of Karnal district. In the demonstration plots, an average production of variety was observed to be 12.30 quintal per hectare. Front Line Demonstrations on Mustard, CS-58 variety was conducted in 50.0 hectare area during Rabi season 2021. An average production of the demonstrated variety was 18 quintal per hectare.

- During the summer season 2021, total 50 FLDs on Moong (IPM-205-07 (Virat)) were laid in 20.0 hectare area under irrigated conditions. In the demonstration plots, an average production of variety was observed to be 8.1 quintal per hectare.
- KVK generated Rs. 23,75,508/- for the Institute and revolving fund through various activities.

KVK demonstrated *in-situ* management of crop residues (paddy straw) at two adopted villages, Nabipur (78 Acre) and Phurlak (81 Acre) of Karnal district .

2022

- To study the risk vulnerability and impact assessment of extreme weather events on dairy livestock, a high wind velocity system was designed, developed, fabricated and installed at NICRA complex. The system may be helpful in generating information related to different extreme events and their effect on physiological, production, growth reproduction, biochemical and metabolic parameters.
- Socio-economic impact of COVID-19 pandemic on dairy farm households of West Bengal was assessed. y A composite 'Livelihood Security Index' was developed. y Socio-economic condition of scheduled caste farmers (under SSP) and tribal community under TSP of NEH region was improved through livestock based integrated farming.
- Three workshops on various topics viz. women empowerment, leadership and social entrepreneurship in dairying were organised for the benefit of the faculty and students.
- Eleven entrepreneurial development programmes for prospective entrepreneurs and one innovative idea contest and an experiential learning programme for UG students were also conducted to nurture business ideas of undergraduate students.
- As a part of outreach activity a total of 61 MOOCs were developed in the field of dairy production and processing with the help of ICAR-NAARM, Hyderabad.
- Nineteen veterinary and campaigns were organized in adopted villages, addressing various issues related to production and reproduction in dairy animals. y Twenty farmers of Johar Majra village in Karnal district received certificate after attending one year Farmers Farm School.
- Under the NEH total four livestock developmental camps were organized in Arunachal Pradesh, Tripura and Assam during 2022. Livestock animals, poultry chicks, ducks and different agri-inputs were distributed among farmers.
- About 7795 students and faculty from 143 institutions visited NDRI, Karnal under Educational Visit and Tour.

- KVK, NDRI, Karnal organized 219 off-line and online training courses and visits benefitting 8676 farmers. It organized 18 National events involving 2148 participants.
- Forty-nine training programmes were conducted on different topics like duckery and poultry rearing beekeeping, mushroom cultivation, and cut flower production benefitting 1263 (591 male and 664 female participants).

2023

- The Institute started an innovative extension approach to provide formal education in the field of Dairying and allied farm enterprises through Farmers' Farm School. In this School, classroom teaching as well as practical classes on all relevant and latest information related to crop and dairy farming as well as latest outcomes of research done by scientists involving lab to land programme are imparted to 23 farmers in the village Deep Janesaro.
- A total of 4941 cases of animals were treated during the veterinary aid campaigns by extension team of the Institute.
- Under the Extension Education Programme "Dairy Education at Farmers' Door", NDRI scientists including subject matter specialists from production, processing and management groups visited villages in and around Karnal district on 2nd Saturday of each Month. The queries raised by 5930 number of farmers were addressed during the year 2023.
- Fifty Kisan Sangoshthies were organized at village level for creating awareness about the latest technologies of scientific dairy farming among dairy stakeholders.
- During the year-2023, overall 55270 numbers of dairy farmers were benefitted through various aspects of dairying and its allied fields.
- During the year-2023, a total of 23976 visitors (Students & Faculty) of 316 colleges/ Institutions/ Universities visited the institute. The visitors were sensitized about the different research, teaching and facilities available in the Institute.
- Under Tribal Sub-Plan (TSP), Eastern Regional Station (ERS), Kalyani organized two animal health camps and 403 numbers of animals were treated and various inputs were distributed.
- Under North Eastern Region (NEH), Eastern Regional Station (ERS), Kalyani organized several scientists- farmers- interaction meeting cum training programmes for 1109 farmers. During these programmes, inputs comprising Chicks (19860), Ducklings (12065), Chick & duckling feed (19075 kg.), Goats (96), Goat feed (6010 kg.), Piglets (99) and Pig feed (27950 kg.) were distributed among 1156 resource poor farmers during the year- 2023.

- Under Scheduled Caste Sub-Plan (SCSP), Eastern Regional Station (ERS), Kalyani organized 17 veterinary camps in SC dominated areas in different villages of West Bengal and several animals were treated in these camps. Five training programmes on various aspects of agriculture and its allied sector were conducted for 617 farmers to uplift the socio-economic condition of scheduled caste farmers. Various inputs were distributed.

2024

- During the year- 2024, the institute conducted a total of 3,470 extension activities, benefiting 3,01,460 dairy stakeholders. These activities included 20 exhibitions, 209 training sessions, 13 skill development programmes for dairy stakeholders, 03 large dairy melas, 37 animal health camps, 349 exposure visits, 2,179 advisory services and 182 front-line demonstrations, etc.
- Farmers' satisfaction with Salivascope for estrus detection in buffaloes was assessed, revealing that 79.45% of the dairy farmers were moderately to highly satisfied. The peak adoption rate is projected to reach 94% in 11 years.
- Climate risk hotspots in the Indo-Gangetic Plain's dairy sector were identified, with 46 districts at risk, potentially expanding to 56-57 districts by 2050, affecting 16.67-16.90 lakh hectares (3.78- 3.83% of IGP).
- A climate adaptation plan for heat stress, drought, cold stress, and floods was developed with women dairy farmers. Implementing it could recover over 90% of milk production losses from heat stress
- The impact assessment of NDRI-KVK interventions demonstrates significant improvements in farm productivity and socioeconomic conditions. The socio-economic impact analysis reveals that Cluster Front Line Demonstration (CFLD) increased agricultural income by 1,527/farm, while dairy training led to a 6,325/farm rise in dairy earnings. Increased income improved household food expenditure, benefiting rural livelihoods. Results indicate higher yields in intervention farms, with wheat and mustard yields increasing by 12.02% and 10.50%, respectively.
- The institute organised 55 animal health camps, treating 2,362 dairy animals in adopted villages around Karnal. They also supported AI with semen of high-pedigree bulls in cattle as well as buffaloes. Infertility and veterinary aid campaigns were conducted to reduce the maturity age and inter-calving intervals. Further, a "calf rally" was organized in the villages under the field progeny testing program of Murrah buffaloes in Karnal district.
- Fifty-seven (57) Kisan Sanghoshties were organized at the village level for creating awareness about the latest technologies of scientific dairy farming among dairy

stakeholders. A total of 5719 farmers were benefited on different aspects of dairying.

- Five Women empowerment trainings and campaigns were organized to create awareness in the field of dairying and to impart skills on value-added dairy products, so that farm women could generate more income from dairying and maintain a healthy atmosphere in their respective families. A total of 115 farm women participated in these activities.
- 143 old activities were carried out, benefiting 2,580 farmers under the Mera Gaon Mera Gaurav (MGMG) program.
- KVK, NDRI organized 66 training programmes (both on and off campus), for the benefit of 1653 farmers, farm women, rural youth and entrepreneurs from various states of the country on different aspects of dairying and allied fields of agriculture, such as crop production, horticulture, beekeeping, and fisheries, apart from home science.
- SRS-NDRI, Bengaluru, conducted 08 training programmes on scientific dairy farming and its allied fields attended by 524 farmers. KVK (Addl.) Nadia, located at ERS-NDRI, conducted 82 training programmes on various aspects of scientific dairy farming for 3166 farmers and farm women, rural youths and extension functionaries.

2025

- The ICAR-National Dairy Research Institute organised a three-day National Dairy Mela and Agri Expo from 27th February to 1st March, 2025. Over 40,000 farmers and 2,000 school children from multiple states attended, with 108 organizations exhibiting their products and technologies. The event showcased latest research, technologies, and innovations in dairying and animal husbandry from ICAR institutes and industry stakeholders. A total of 196 dairy animals from major breeds participated in competitions, alongside activities like paneer making and milking contests for rural women. The mela also promoted dairy entrepreneurship, career opportunities in dairy education, and livestock insurance awareness among farmers.
- The Farmer FIRST Programme (FFP) enhanced crop productivity in paddy and wheat while promoting diversification into mustard. Livestock interventions improved animal health and increased milk yield by 200–300 ml per animal per day. The VIREN Dairy Processing unit, established under enterprise development strengthened rural enterprise by processing 450 litres of milk daily and generating substantial income. Integrated Farming System interventions increased net returns by 21.49% and created additional employment opportunities. Overall, the

programme improved income, productivity, and capacity of over 1,500 farmers through technology-driven approaches.

- The “NDRI Climate Services” platform delivered district-specific, THI-based weekly advisories to enhance climate resilience in dairy systems. These advisories guided farmers on livestock management practices. Study conducted among 80 smallholder farmers in Haryana assessed its effectiveness on farm decision-making. Results showed significant improvements in heat stress management, reproductive practices, and calf care, highlighting the value of localized climate advisories.
- A Climate Change Risk Index was developed and measured among 350 smallholder farmers in coastal Odisha indicated a mean risk score of 0.480, with 31.82% of households falling under moderate risk. A Resilience Capacity Index was also constructed, which showed that transformative capacity was the most significant contributor to resilience (0.743), followed by absorptive (0.505) and adaptive (0.489) capacities. The findings suggested that climate policy should focus on farmer training, improved access to climate information and production practices, along with strengthening infrastructure such as roads, markets, and shelters.
- Study analysed climate risks across South Asia using high-resolution spatial data, highlighting widespread impacts on millions of dairy-dependent households rather than a fixed farmer sample. Results showed increasing heat stress affecting dairy systems in India, Afghanistan, and Pakistan, with risks intensifying by 2050. The findings indicated significant socio-economic impacts through reduced livestock productivity, income instability, and heightened vulnerability in regions like the Indo-Gangetic Plains and coastal areas, emphasizing need for region-specific adaptation plan.
- Climate projections at a $0.05^\circ \times 0.05^\circ$ resolution, across South Asia, indicated a significant rise in heat stress and Temperature-Humidity Index (THI) levels by the 2050s under SSP2-4.5 and SSP5-8.5 scenarios. These changes expected to reduce livestock productivity, affecting income, employment, and nutritional security of smallholder farmers. The impacts were particularly evident in countries like India, Afghanistan, and Pakistan, highlighting widespread regional vulnerability. Adaptation strategies such as improved nutrition, disease management, and genetic improvements can help reduce losses, emphasizing the need for region-specific interventions.
- Participatory assessment, among women farmers in Haryana, revealed that elevated temperature was the most critical climate stress, with 40% having moderate knowledge but many showing unfavourable attitudes toward climate-resilient

practices. Adaptation planning identified multiple strategies across hazards, with 15 options for heat stress, 13 for drought, and 7 for cold stress. Implementation of these measures could recover over 90% of milk loss and improve reproductive performance by 44.19% under heat stress, while restoring 77.49% fodder under drought and 15.20% milk under cold stress. Flood adaptation strategies reduced livestock and economic losses by 48.75% and 46.99%, highlighting strong socio-economic gains from targeted interventions.

- System mapping of 360 smallholder farmers in coastal West Bengal revealed increasing cyclone frequency, erratic rainfall, rising temperatures, and salinity intrusion as major stressors affecting crop-livestock systems. An exclusive climate-resilient pathway was developed and it projected significant gains in resilience of agriculture (+40%), fisheries (+22%) and livestock (+10%) along with improved soil and water conditions.
- Evaluation among 60 dairy farmers (30 crossbred cattle and 30 Murrah buffaloes) in Haryana showed that Karan Pashu Amrit led to significantly reduction of Somatic Cell Count (2.12 lakh cells/ml in buffaloes and 1.95 lakh cells/ml in cattle). Perception analysis revealed that 42.8% of farmers had a high perception of the supplement, considering it advantageous, compatible, and easy to use. Adoption projections indicated 50% adoption within 2.3 years, 65% within 5 years, and a peak of 66% after 10 years.
- Under the SCSP in 2025, interventions benefited 195 Scheduled Caste farmers in the Western Dry Region of Rajasthan through livestock health camps and Kisan Sangosthis. Veterinary support and inputs improved animal health, preventive care practices, and productivity. Crop demonstrations involving 80 farmers promoted improved varieties (Wheat: DBW-371 and DBW-372, oat: Kent), fodder availability, diversification, and nutritional security.
- Dairying in Haryana is largely sustained by experience, family occupation, and perceived income stability across different value chain segments. The study, covering 210 respondents (150 farmers, 30 processors, and 30 marketers), showed that low initial investment and steady returns motivated engagement in processing and marketing, supporting employment generation. However, rising input costs, financial constraints, and work-related challenges limited profitability and efficiency. Strengthening training, access to processing infrastructure, and supportive policies is crucial to enhance income and sustainability of dairy entrepreneurship.
- Natural farming across North India, assessed among 180 farmers from Haryana, Uttarakhand, and Rajasthan, was largely practiced by young and moderately educated farmers mainly for household consumption. Farmers perceived it as cost-effective, sustainable, and capable of producing high-quality outputs,

supporting income savings and environmental benefits. Key practices such as *Jeevamrit*, *Beejamrit*, and neem-based formulations were widely adopted, reducing dependency on external inputs. However, weak market linkages, low price realization, and transition challenges limited its broader socio-economic gains.

- In the South Bihar Plains, assessment of 180 dairy farmers revealed that milk productivity remains below national standards, with crossbred cattle yielding 6.21 litres/day and 1828.41 litres per lactation. Suboptimal feeding, poor housing, and low adoption of scientific practices such as mineral supplementation limited productivity gains. Constraints including inadequate veterinary services, high treatment costs, fodder scarcity, and lack of cooperatives further affected farmers' income and efficiency. Strengthening extension services, input access, and capacity-building is essential to improve productivity and livelihood security.
- In Muzaffarnagar, Uttar Pradesh, evaluation of 160 farmers (80 beneficiaries and 80 non-beneficiaries) showed that Kisan Sewa Kendra interventions significantly improved knowledge and adoption of scientific dairy practices. Beneficiaries achieved higher milk yield, longer lactation periods, and shorter dry periods, enhancing farm productivity and income. The intervention resulted in a 34.3% productivity gain, with a potential 24.5% increase for non-beneficiaries if included. Overall, improved access to inputs and services strengthened dairy-based livelihoods, though institutional constraints remained a key challenge.

6.6.9.5 International Collaboration

International collaborations (2021-22 to 2025-26)

Several research projects, research and development collaborations were formed during the period under report. Below is the table indicating some important grants received by PIs of the institute.

Table 6.6.3.8: Grants received under international collaborations at ICAR-NDRI

Sl. No.	Title of the Project	Name of PI	Name of Associates	Funding Agency	Duration	Total Cost (Rs. In Lakh)
	DOSA- Diagnostics for one health and user driven solutions for AMR.	Naresh Kumar	-	Indo-UK DBT	2018-2021	88.09

	Molecular markers for improving reproduction of cattle and buffaloes (MMIRCB).	Rakesh Kumar	Dheer Singh, Suneel Onteru, Rubina K. Baithalu, A. K. Mohanty, Sudarshan Kumar, T. K. Mohanty, J. K. Kaushik and Mukesh Bhakat.	Bill & Melinda Gates Foundation, USA	2018-2024	648.38
	Molecular markers for improving reproduction of cattle and buffaloes (MMIRCB)-Bill & Melinda Gates Foundation, USA	Kumaresan CCPI	A. Manimaran and K.P. Ramesha	Bill & Melinda Gates Foundation, USA	2018- 2024	127.13
	The mechanism behind formation of coocable milk gels (GELCOOK)”	Yogesh Khetra	S. A. Hussain	University of Copenhagen, Denmark	2019-2022	64.90
	Explaining the biogenesis and interaction of Pirnas and PIWI proteins in buffalo testes in relation to bull fertility	Rakesh Kumar	Dr. T.K. Datta, PS, NDRI, Karnal	SERB Funded, ASEAN –INDO Collaboration	2020-2022	16.8
	Development of probiotic fermented food for prevention of childhood diarrhea against Indian diarrheal pathotypes	Suman Kapila	-	Indo-Spain Project	2020-23	10.20
	One-step multiplex genome editing and improvement of lactation traits in Indian water buffalo	Naresh Selokar		Indo-USA BMGF	2022 -2027	98.53

6.6.9.6. Fund Raising through CSR

ICAR-NDRI has been very active to convince the industries for service to the nation. CSR funding from the industries has been generous to ICAR-NDRI in recent years.

Table 6.6.3.9: Details of CSR Funds from 2021 to 2025

Year	Funder	Kind of fund	Cost	Ref. No.

2021	--	--	--	--
2022	--	--	--	--
2023	--	--	--	--
2024	Mr. S.S. Mann, Ventures CSR from NDRI Graduate Association	CSR Fund	Rs. 50,00,000	D-1/ICAR/ 93 dated 9.10.2023
	NDRI Graduate Association, Karnal	CSR Fund	Rs. 50,00,000	D-1/ICAR/NDRI- 94 Dated 9.10.2023
	Agriculture Insurance Company India Ltd., New Delhi (Construction of Training-cum-Seminar Hall)	ICAR, CSR Fund	Rs. 32,51,889	KVK/ NDRI/2023/ dated 17.10.2023
2025	--	--	--	--

6.6.9.7 Alumni Support

The NDRI Alumni Association, established in the early 1960s as a registered body, continues to play a vital role in strengthening the Institute's academic, research, and developmental ecosystem, with significant advancements made in recent years. Concerted efforts have led to the creation of a robust digital alumni portal integrating social media platforms, resulting in over 3000 registered members. The establishment of the Alumni & International Affairs Office has further streamlined alumni engagement, fostered stronger connections and facilitated contributions toward student career guidance and institutional development. Major events such as the Global Alumni Meet and Leadership Summit have enhanced the vibrancy and proactiveness of the alumni community. Several impactful initiatives, including student mentoring, institution of fellowships and awards, crowdfunding, alumni newsletters, and the development of regional and international forums, are actively contributing to a more connected and supportive alumni network. The Association currently maintains a fund of approximately ₹40 lakh, which is effectively utilized for student support, institutional development, and promotion of academic excellence initiatives.

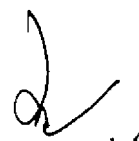
In addition, the NDRI Graduate Association (NGA) has emerged as a highly active professional alumni body contributing significantly to institutional growth. Since 2008, NGA has been organizing national seminars every year on key themes such as food safety, sustainable dairy development, innovation and entrepreneurship, and emerging industry challenges and opportunities. It has also actively engaged with the Food Safety and Standards Authority of India in policy matters and has promoted strong industry-academia collaborations. A major highlight in 2024 was the successful organization of the 11th National Seminar at NDRI, which witnessed participation from over 400

delegates and the presentation of more than 80 research papers, along with active involvement of scientists, industry leaders, and policymakers.

A landmark contribution of NGA is the establishment of an Advanced Centre of Excellence at NDRI, which is targeted for fostering advanced research and innovation, strengthening industry linkages and technology demonstration, supporting entrepreneurship and skill development, and facilitating technology commercialization. Overall, alumni support has led to strengthened infrastructure and facilities, enhanced research and innovation capacity, improved student mentoring, employability and entrepreneurial outcomes, increased global visibility and alumni engagement, and the establishment of a sustainable model of alumni-driven institutional development.

6.6.10 Certificate

I, Sh. P. K. Jain, the Registrar of the Agricultural University ICAR-NDRI (Deemed University) hereby certify that the information contained in the sections 6.4, 6.5 and 6.6.1 to 6.6.9.7 are furnished as per the records available in the University.



**Signature of Registrar
with Date and Seal**

संयुक्त निदेशक (प्रशासन) एवं कुलसचिव
Joint Director (Admn.) & Registrar
भाकृअनुप-राडेअनुसं, करनाल
ICAR-NDRI, Karnal

