

About NDRI

National Dairy Research Institute, NDRI is a premier institution of dairying and acclaimed for its contribution in generating quality human resource, carrying out excellent R&D work and assistance in promotion of Indian Dairy sector. The institute undertakes basic and applied research, teaching and extension activities towards dairy development, animal productivity enhancement, development of new products and processes for the benefit of millions of farmers and consumers.

Karnal is located on NH-1, equidistant (~125 Km) from New Delhi and Chandigarh. City is well connected by road and train. Buses for Karnal can be availed from ISBT Bus Stand, New Delhi.

Objective:

To provide basic knowledge and hands on training on starter culture production, handling and manufacture of fermented milk products.

Selection:

15-20 participants will be selected at a time, based on date of registration. First Come First Serve will be the selection criteria. However, remaining persons will be invited for the next batch of training depending on the number of participants.

Training Fee:

Fee of Rs. 20,000/- per participants will be charged. Boarding, lodging and other expenditure has to bear by the participants. Participants have to bring Demand Draft in favor of ICAR Unit, NDRI NAHEP, Karnal.



1-Month Certificate Entrepreneurship Development Programme On

Starter Culture and Fermented Milk Products

5th Feb-6th March 2019



About the Training



Dairy starter cultures are carefully selected groups of microorganisms intentionally added to milk and milk products to bring about desirable fermentations. In other words, they are said to be the heart of fermentation. Starter cultures are widely used in the manufacture of various fermented milk products like, dahi, lassi, yoghurt, cultured buttermilk, cheese etc. The successful manufacture of these fermented milk products relies upon careful and judicious selection of starter cultures, propagation and maintenance. In order to produce superior quality fermented milk products, it is inevitable to use high quality starter cultures. At the same time handling, maintenance and preservation of these microbes is also a very important step. Over the decades the demand for fermented milk product in India is increased remarkably. Several small dairy industries and entrepreneurs have started manufacturing indigenous fermented milk product as a profitable venture. Thus, course content is designed in such a way for imparting the knowledge of proper handling of starter cultures for preparation of good quality fermented dairy products.

Website:
<http://www.ndri.res.in/ncdc/>

National Collection of Dairy Cultures (NCDC) Unit

The National Collection of Dairy Cultures (NCDC) has been established in the Division of Dairy Microbiology for the last 40 years. The cultures were initially maintained on solid media by periodic sub culturing. However, freeze drying was introduced in 1964 for long term preservation of cultures. A total of 102 cultures were held at NCDC in 1962 and the culture repository grew up to 900 from 1995 to till date. The first catalogue of NCDC strains was published in 1996 and a supplement was brought out in 2016. The NCDC stock includes strains of bacteria, yeasts and molds of general interest to education, research and institution. The main interest of the collection lies in the lactic acid bacteria from dairy sources. In addition to individual strain cultures, the NCDC also holds mixed strains (traditional) and defined strain formulated cultures for making different varieties of cheese and fermented milk products. The NCDC also organizes specialized training programs and workshops to provide knowhow on maintenance and preservation of cultures, propagation of dairy starters and other related aspects.

Contact Us

Program Coordinator

Dr. Pradip Behare

Scientist,

DM Division, NDRI, Karnal-132001

E. Mail: pradip_behare@yahoo.com

Co-Coordinator

Dr. Sudhir Kumar Tomar

Principal Scientist

DM Division, NDRI, Karnal-132001

E. Mail: sudhirndri@gmail.com

Phone: 0184-2259196

Co-Coordinator

Dr. Chand Ram

Principal Scientist

DM Division, NDRI, Karnal-132001

E. Mail: dmcaft2011@gmail.com

Registration, Coordination &

Hospitality

Ms. Yogita Sharma

Technical Officer, NCDC, NDRI

Phone: 0184-2259198

E. Mail: ysharma241188@gmail.com

Amit Sandhu

Phone: 0184-2259198

SCHEDULE (1-Month Entrepreneurship Development Programme on ‘Starter Culture and Fermented Milk Products’)

| 05.02.2019 (Tuesday, Day 1) | | |
|-------------------------------|--|---|
| 9:30 - 10:00 | Registration and Inauguration Session | Organizing committee |
| 10:00 – 13:00 | General aspects of starter culture and fermented milk | Dr. S. K. Tomar |
| 14:00 – 17:00 | Preparation of microbiological media and reagents | Dr. Pradip Behare |
| 17:00 – 18:00 | Morphological evaluation of microorganism | Dr. Pradip Behare |
| 06.02.2019 (Wednesday, Day 2) | | |
| 09:30 – 13:00 | Microbial and chemical quality of milk used for preparation of fermented milks (Theory) | Dr. Pradip Behare, DM /Dr. Priyanka Singh Rao, DC |
| 14:00 – 17:00 | Chemical Quality of milk for preparation of fermented milks (Hands-on-practical) | Dr. Priyanka Singh Rao, DC |
| 07.02.2019 (Thursday, Day 3) | | |
| 09:30 – 13:00 | Antibiotic Residues Present in Milk (Theory) Detection of antibiotic residues in Milk (Practical) | Dr. Raghu H. V., DM |
| 14:00 – 17:00 | Microbial quality of milk for preparation of fermented milks (Hands-on-practical) | Dr. Pradip Behare, DM |
| 08.02.2019 (Friday, Day 4) | | |
| 09:30 – 13:00 | Isolation and identification of Starter Cultures from Dairy Products (Theory) | Dr. Chand Ram, DM |
| 14:00 – 17:00 | Demonstration of identification of starter culture by biochemical and PCR method | Dr. Diwas Pradhan, DM |
| 09.02.2019 (Saturday, Day 5) | | |
| 09:30 – 13:00 | Mesophilic and thermophilic starter culture (Theory) | Dr. Pradip Behare |
| 14:00 – 17:00 | Demonstration of mesophilic and thermophilic starter (Practical) | Dr. Diwas Pradhan |
| 10.02.2019 (Sunday, Day 6) | | |
| 11.02.2019 (Monday, Day 7) | | |
| 9:30 - 13:00 | Activity and Purity Tests for Starter Cultures (Theory) | Dr. Chand Ram |

| | | |
|--------------------------------------|---|-------------------------------------|
| 14:00 – 17:00 | Activity and Purity Tests for Starter Cultures (Practical) | Ms. Yogita Sharma |
| 12.02.2019 (Tuesday, Day 8) | | |
| 9:30 - 13:00 | Effect of physical and chemical factors on starter culture (Theory) | Dr. Chand Ram |
| 14:00 – 17:00 | Evaluation of effect of temperature and antibiotic residues on starter culture (Practical) | Dr. Chand Ram/Ms Yogita Sharma |
| 13.02.2019 (Wednesday, Day 9) | | |
| 9:30 – 13:00 | Propagation and Preservation of Starter Cultures (Theory) | Dr. Pradip Behare |
| 14:00 – 17:00 | Preparation of sterilized reconstituted skim milk and propagation of Starter Cultures (Hands on training) | Ms. Yogita Sharma |
| 14.02.2019 (Thursday, Day 10) | | |
| 9:30 – 13:00 | Preservation of starter culture by freeze drying- Primary drying (Practical) | Dr. Pradip Behare/Ms. Yogita Sharma |
| 14:00 - 17:00 | Preservation of starter culture by freeze drying- Secondary drying (Practical) | Dr. Pradip Behare/Ms. Yogita Sharma |
| 15.02.2019 (Friday, Day 11) | | |
| 9:30 – 13:00 | Quality evaluation of starter culture (Theory) | Dr. Pradip Behare |
| 14:00 - 17:00 | Evaluation of microbial contaminants in starter culture (Practical) | Dr. Raghu |
| 16.02.2019 (Saturday, Day 12) | | |
| 9:30 - 13:00 | Technology of Direct-Vat-Set (DVS) starter culture (Theory) and demonstration | Dr. Pradip Behare |
| 14:00 – 17:00 | Demonstration of DVS starter culture production (Practical) | Dr. Pradip Behare |
| 17.02.2019 (Sunday, Day 13) | | |
| 18.02.2019 (Monday, Day 14) | | |
| 9:30 - 13:00 | Bioprotective starter culture (Theory) | Dr. Diwas Pradhan |
| 14:00 - 17:00 | Evaluation of antimicrobial effect of bioprotective starter cultures (Practical) | Dr. Diwas Pradhan |
| 19.02.2019 (Tuesday , Day 15) | | |
| 9:30 - 13:00 | Exopolysaccharides production starter cultures (Theory) | Dr. Pradip Behare |

| | | |
|---------------------------------------|---|-------------------------------------|
| 14:00-17:00 | Evaluation of capsular and ropy polysaccharides production by starter culture (Practical) | Dr. Pradip Behare/Ms. Yogita Sharma |
| 20.02.2019 (Wednesday, Day 16) | | |
| 9:30-13.00 | Probiotic cultures (Theory) | Dr. Diwas Pradhan/Dr. Pradip Behare |
| 14:00-17.00 | Maintenance of probiotic cultures (Practical) | Dr. Diwas Pradhan/Dr Pradip Behare |
| 21.02.2019 (Thursday, Day 17) | | |
| 9:30 - 13:00 | Fermented milk, nutritional aspects and therapeutic benefits (Theory) | Dr. S. K. Tomar |
| 14:00 - 18:00 | Preparation of Dahi by mesophilic and thermophilic starter (Practical) Cont... | Dr. Chand Ram |
| 22.02.2019 (Friday, Day 18) | | |
| 9:30 - 13:00 | Evaluation of physicochemical and sensory properties of dahi (Practical) | Dr. Chand Ram |
| 14:00 - 17:00 | Technology of Misti Dahi, Lassi, Shrikhand, Yoghurt and Cultured Butter Milk (Theory) | Dr. Pradip Behare |
| 23.02.2019 (Saturday, Day 19) | | |
| 9:30 - 17:00 | Preparation and quality evaluation of Mishti dahi (T Practical) | Dr. Pradip Behare |
| 24.02.2019 (Sunday, Day 20) | | |
| 25.02.2019 (Monday, Day 21) | | |
| 9:30 - 17:00 | Preparation and quality evaluation of yoghurt (Practical) | Dr. Diwas Pradhan/Ms. Yogita Sharma |
| 26.02.2019 (Tuesday, Day 22) | | |
| 09:30 – 17:00 | Preparation and quality evaluation of lassi (Practical) | Dr. Sanket Borad |
| 27.02.2019 (Wednesday, Day 23) | | |
| 9:30 - 17:00 | Preparation and quality evaluation of Shrikhand (Practical) Cont... | Dr. Pradip Behare/ Dr. Sanket Borad |
| 28.02.2019 (Thursday, Day 24) | | |
| 9:30 - 13:00 | Preparation and quality evaluation of Shrikhand (Practical) | Dr. Pradip Behare/ Dr. Sanket Borad |
| 14:00 - 17:00 | Preparation of cultured butter milk (Practical) Cont... | Dr. Chand Ram |

| 01.03.2019 (Friday, Day 25) | | |
|--------------------------------|--|----------------------|
| 9:30 - 13:00 | Quality evaluation of cultured butter milk (Practical) Cont... | Dr. Chand Ram |
| 14:00 – 17:00 | Preparation of probiotic dahi (Practical) Cont.... | Dr. Pradip Behare |
| 02.03.2019 (Saturday, Day 26) | | |
| 03.03.2019 (Sunday, Day 27) | | |
| 9:30 - 13:00 | Quality evaluation of probiotic dahi (Practical) | Dr. Diwas Pradhan |
| 14:00 – 17:00 | Cheese technology (Theory) | Dr. Yogesh Khetra |
| 04.03.2019 (Monday, Day 28) | | |
| 9:30 - 17:00 | Cheese manufacture (practical) | Dr. Yogesh Khetra |
| 05.03.2019 (Tuesday, Day 29) | | |
| 9:30 - 17:00 | Packaging & Labeling of Fermented Milk Products (Theory and Practical) | Dr. P. N. Raju |
| 06.03.2019 (Wednesday, Day 30) | | |
| 9:30 - 13:00 | Examination on Skill Development of Participants and Evaluation | |
| 15:00 – 16:00 | Valedictory Function | Organizing committee |