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CAFT in Dairy Processing 2018-19

National Training Programme on
Nanotechnological and Biochemical Techniques for Assessing the Quality and Safety of Milk and Milk Products

December 1-21, 2018

Sponsored by
Agricultural Education Division
Indian Council of Agricultural Research

Under the aegis of
Centre of Advanced Faculty Training in Dairy Processing

Organized by
Dairy Chemistry Division
ICAR-National Dairy Research Institute (Deemed University)
Karnal-132001, Haryana, India
ABOUT THE COURSE

Nanotechnology is a novel scientific approach that involves materials and equipments capable of manipulating physical as well as chemical properties of a substance at molecular levels. On the other hand, biotechnology uses the knowledge and techniques of biology to manipulate molecular, genetic and cellular processes to develop products and provide services in diverse fields from medicine to agriculture. Nanotechnology and biotechnology based analytical techniques enables rapid analysis of milk and milk products for assessing their quality with enhanced sensitivity. It is imperative to impart training to personals in this upcoming area in order to update their knowledge with its subsequent utilization for monitoring the quality and safety aspects of milk and milk products. The course curriculum of this training has been designed to provide the participants hands-on training on such new techniques.

COURSE SUMMARY

Course curriculum has been designed comprehensively to cover various techniques having potential for assuring quality and safety of dairy foods. Emphasis will be given on analytical techniques using various instrument based methods. It comprises of theory lectures as well as practical demonstration by resource persons from NDRF and invited personals from dairy and food industry. The objectives of this course are

• To acquaint the participants with the principle and analytical methodology of various nanotechnological and biochemical techniques for assuring the quality and safety of dairy foods.
• To provide hands-on-practical training to the participants on latest techniques being used in the area of dairy chemistry.

COURSE CONTENT

➢ Safety aspects of Nanomaterials
➢ Gold nanoparticle based surfaced enhanced fluorescence for detection of contaminants
➢ MALDI-TOF/NALDI-TOF and its applications in Dairy Foods
➢ Fourier Transform Infrared Spectroscopy – Concept and its Application in Quality Assessment of Dairy Foods
➢ Application of Atomic Absorption Spectrometry for detecting heavy metals in foods
➢ A1 and A2 milk-biotechnological interventions
➢ Electron Microscopy: Concepts and its applications in Dairy Foods quality evaluation
➢ Identification of proteins through Western Blotting
➢ Encapsulation and Functionalising milk proteins
➢ Procedure to file patent application in India
➢ Spores/ enzymes based intervention for rapid detection of contaminants in milk
➢ Modern approaches for detection of milk fat adulteration
➢ Estimation of cholesterol content in ghee using a cholesterol estimation kit
➢ Capillary electrophoresis and its application
➢ Application of GC/MS to detect admixing of adulterants in Dairy Foods
➢ ELISA/Lateral Flow Assay – Application in assessing the quality of milk
➢ Instrumental measurement of rheological properties of Dairy Foods
➢ Electrochemical sensing system for detection of various analytes
➢ Proteomic Techniques for application in Food Science

➢ Analytical tools for assessment of allergens in foods
➢ Surface Plasmon Resonance - a modern tool for studying molecular interaction
➢ Lateral Flow Assay – its application in assessing the quality of milk
➢ Colorimetric detection of melamine in milk by citrate-stabilized gold

ELIGIBILITY

Participation is invited from those working in the cadre of Assistant professor and above or equivalent in the National Agricultural Research System (NARS) including State Agricultural Universities (SAUs), Deemed to be Universities (DUs), Central Agricultural University (CAU) and Central Universities (CUs) in the area of Dairy/Food Science/ Livestock Products Technology etc. and engaged in teaching or research or extension.

IMPORTANT DATES

| Last date of application | 30th September, 2018 |
| Communication to participants | 16th October, 2018 |
| Commencement of training programme | 1st December, 2018 |

As per the ICAR instructions, the interested candidates should register and apply online through Capacity Building Programme (CBP) portal as follows:

• Visit the Website: - http://cbp.icar.gov.in/HomePage.aspx
• Login with your USER ID and PASSWORD (To create USER ID, use Create New Account link http://cbp.icar.gov.in/signUp.aspx)
• After login, click on “Participate in Training” and apply against the CAFT training programme (S.No. 20 “Nanotechnological and biochemical techniques for assessing the quality and safety of milk and milk products”).
• Fill the Proforma and submit online.
• Take a print out of submitted copy, send through proper channel to the Course Coordinator of CAFT (Dr. Kamal Gandhi) by post and also upload the signed application form on portal.

FEE

There is no fee for the training programme.

TRAVEL

The participants will be paid to and fro railway/bus fare as per their entitlement for the class of travel on production of original tickets by the shortest route restricted to maximum of AC II class as per the ICAR norms.

ACCOMMODATION

Free boarding and lodging will be provided by the institute (persons other than the selected candidates are not allowed). For more details please visit http://cbp.icar.gov.in

Note: An institute selection committee will be constituted to select most suitable candidates. Selected candidates will be informed by latest by 16th October, 2018. Incomplete/not filled properly application in the prescribed format will be rejected.

INVITATION

The ICAR-National Dairy Research Institute, Karnal, invites applications from faculty members and researchers of Indian universities/research institutions for a 21 days training program sponsored by Agricultural Education Division of Indian Council of Agricultural Research, New Delhi, scheduled from December 1-21, 2018.