

# Training and Capacity Building Programme for Food Testing Laboratories



भारतीय खाद्य सुरक्षा एवं मानक प्राधिकरण (एफ.एस.एस.ए.आई)  
(स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार)

FOOD SAFETY AND STANDARDS AUTHORITY OF INDIA (FSSAI)  
(MINISTRY OF HEALTH & FAMILY WELFARE, GOVERNMENT OF INDIA)

## प्रशिक्षण एवं क्षमता निर्माण

### Training and Capacity Building

Capacity Building is a process of developing and strengthening the skills, instincts, abilities, processes and resources that are essential components for the strengthening and up-gradation of food testing laboratory infrastructure of the Country. The ultimate objective of this activity is to ensure that all the food testing laboratories especially the State Government Laboratories obtain NABL accreditation and be at par with the best laboratories of the country. Training programmes are intended to provide understanding, technical knowledge and expertise that the trainees can use to improve their daily laboratory safety practices.

The training programs are provided to impart knowledge about food analytical techniques for various parameters such as analysis of moisture, ash, lipid, protein and carbohydrate content, analysis of safety parameters such as Mycotoxins, Pesticides Residues, Metal contaminants etc. in various food commodities using High End Equipment so as to enhance the testing skills of laboratory personnel which will not only be useful in developing strategies for analysis of these safety parameters but also develop removal and preventive strategies to ensure consumer safety and compliance with regulatory standards. The key role of these trainings is to give target audience the opportunity to brush up on their skills and refresh tasks through practical demonstration.

The Food Authority have recognized referral food laboratories as reference laboratories for the purpose of developing methods of testing, validation, proficiency testing and training. In order to establish an effective and qualified network of food analysts in the country, training programme are organized by Quality Assurance Division for all the laboratory personnel of State Food Testing Laboratories and Notified Laboratories. Through these training programmes, the laboratory personnel can obtain, improve and maintain the skills, knowledge, tools, equipment and other resources required to do their work More competently and to an enhanced capacity.

**Shri G. Kamala Vardhana Rao, IAS**  
**Chief Executive Officer**  
**FSSAI, New Delhi**



## CSIR- INDIAN INSTITUTE OF TOXICOLOGY RESEARCH (IITR), LUCKNOW

### सीएसआईआर- भारतीय विष विज्ञान अनुसंधान संस्थान (आईआईटीआर), लखनऊ

CSIR-IITR, Lucknow (a constituent laboratory of the Council of Scientific and Industrial Research (CSIR), New Delhi), was established on November 4, 1965. It is the only institute of toxicology in the country contributing towards cutting-edge research and innovation in toxicology with the motto: Safety to Environment and Health and Service to Industry. CSIR-IITR has made an impact in addressing problems critical to human health and the environment as well as safety of chemicals/products. The institution has taken initiatives on predictive toxicology and risk assessment using the vast knowledge base in the areas of biomarker development, alternate to animal models, mathematical modelling, and development of methods for detection of toxins/ adulterants/ environmental chemicals in different matrices to name a few. The institute has contributed significantly in understanding the mode of action of new chemical entities, engineered nanomaterials and genetically modified products on living systems for safe and sustainable development of new technologies. CSIR-IITR has world class infrastructure & human resource in toxicology and providing one stop solution to address environment and health issues.

## Training Program Schedule:

| S.No. | Topics   | Duration of Training | Oct   | Dec   | Jan   | Feb   |
|-------|--|----------------------|-------|-------|-------|-------|
| 1.    | Advance level of training on LC-HRMS with specific matrix                | 3 days               | 18-20 |       |       |       |
| 2.    | New techniques in microbiology   | 2 days               |       | 19-20 |       |       |
| 3.    | ISO-17025 training   | 2 days               |       |       | 15-16 |       |
| 4.    | Fatty acid profiling and trans fat                                       | 2 days               |       |       |       | 7-8   |
| 5.    | Training on opinion formation, FSS Regulations and Integrated Assessment | 2 days               |       |       |       | 22-23 |





## PUNJAB BIOTECHNOLOGY INCUBATOR (PBTI), MOHALI

### ਪੰਜਾਬ ਬਾਯੋਟੈਕਨੋਲੌਜੀ ਇਨਕੂਬੇਟਰ (ਪੀਬੀਟੀਆਈ), ਮੋਹਾਲੀ

Punjab Biotechnology Incubator (PBTI) under Department of Science, Technology & Environment (DSTE), Government of Punjab (GoP), is registered as a Society under Society Registration Act since 2005. The Chief-Secretary GoP, is the President of the Society and Principal Secretary–DSTE-GoP is the Vice President. PBTI is being professionally governed by a Governing Council under the Chairmanship of Chief Secretary, Punjab. The Chief Executive Officer is the Administrative Head of the Organization. PBTI is providing incubation and allied services including advanced analytical services to start-ups, entrepreneurs, industry, farmers, exporters, importers and other stakeholders in Agri, Food-Feed, Water, Environment & Health sectors.

PBTI is providing Services:

- NABL Accredited Advanced Analytical Facility
- Project Management Consultancy and Advisory (PMC/PMA) Services
- Up-Skilling and Human Resource Development Services
- Incubation Services
- Environment Resource Center



## Training Program Schedule:

| S. No. | Topics  | Duration of Training | Sep   | Oct   | Nov   | Dec   | Jan   | Feb   |
|--------|---|----------------------|-------|-------|-------|-------|-------|-------|
| 1.     | Hands on training on Honey Authenticity & Quality                           | 5 days               | 25-29 |       |       |       |       |       |
| 2.     | Hands on training on Residues analysis in Honey (Pesticide & Antibiotic     | 5 days               |       | 16-20 |       |       |       |       |
| 3.     | Hands on training on Trace metal analysis by ICP-MS in Food Commodities     | 5 days               |       |       | 20-24 |       |       |       |
| 4.     | Hands on training on Microbiological safety parameters in Food Commodities  | 5 days               |       |       |       | 11-15 |       |       |
| 5.     | Training on FSS Regulations   | 3 days               |       |       |       |       | 29-31 |       |
| 6.     | Workshop on Emerging Food Safety & Authenticity Concerns & Analytical Tools |                      |       |       |       |       |       | 15-16 |



## **NATIONAL INSTITUTE OF FOOD TECHNOLOGY, ENTREPRENEURSHIP AND MANAGEMENT (NIFTEM), SONIPAT, HARYANA**

### **राष्ट्रीय खाद्य प्रौद्योगिकी, उद्यमिता और प्रबंधन संस्थान (निफ्टेम), सोनीपत , हरियाणा**

The National Institute of Food Technology Entrepreneurship and Management (NIFTEM) was conceptualized by the Government of India on the persistent demand of the food industry to have an apex body as a “One Stop Solution Provider” for the various problems of the sector. The institute intends to act as a center of excellence and an apex world-class center of global standards in the area of food technology and management. It will cater to the needs of various stakeholders such as entrepreneurs, industries, exporters, policymakers, government, and existing institutions. NIFTEM would play a pivotal role in developing food standards, quality, accreditation, and certification; keeping a repository of international & national standards, and also advising the Government on matters related to international food standards. NIFTEM would be an apex information resource center on aspects of food processing including information on products, technologies, management practices, food standards, markets, etc. NIFTEM would specifically focus on providing comprehensive information to exporters in the food sector. NIFTEM would provide incubator services to enable entrepreneurs to develop sustainable businesses. The vision for NIFTEM is to set up an International center of excellence that integrates technological, managerial, and behavioral aspects of the Indian Food Processing industry with the clear objective of catapulting the sector to the number one position in the world. Unlike the existing food science institutes in India, NIFTEM will function as a center for integrated education, research, enterprise incubation, and outreach in the area of food science, technology, and business.

## **Training Program Schedule:**

| S. No. | Topics   | Duration of Training | Sep   | Oct   | Nov   | Dec | Jan   |
|--------|--|----------------------|-------|-------|-------|-----|-------|
| 1.     | Awareness Training program on Measurement Uncertainty and analytical method validation for contaminants & safety parameters        | 2 days               | 27-28 |       |       |     |       |
| 2.     | Workshop on handling of sophisticated equipment's (LC-MS/MS, GC-MS and ICP-MS)   | 2 days               |       | 10-11 |       |     |       |
| 3.     | Hands-on training program on micronutrients any quality parameter analysis in Oils & Fats  | 2 days               |       |       | 21-22 |     |       |
| 4.     | Hands on training program on microbiological parameters for Food safety and Process Hygiene Criteria in Fruit & vegetable products | 2 days               |       |       |       | 4-6 |       |
| 5.     | Hands on training program on multi elements analysis in fresh fruit & vegetables by ICP-MS   | 2 days               |       |       |       |     | 8-9   |
| 6.     | Hands on training program on analysis of Macro & Micro Nutrients (Vitamin & Minerals) in food and agriculture products             | 2 days               |       |       |       |     | 29-31 |





## **NATIONAL DAIRY DEVELOPMENT BOARD (NDDB), CALF LTD., ANAND, GUJARAT**

### **राष्ट्रीय डेयरी विकास बोर्ड (एनडीडीबी), काफ लिमिटेड, गुजरात**

NDDB CALF, LTD is a multidisciplinary analytical laboratory set up in 2009 by National Dairy Development Board at Anand, Gujarat. CALF obtained its first NABL accreditation as per ISO 17025 in 2013 for about 200 tests/parameters and this accreditation has been renewed from time to time and our current NABL accredited scope includes about 3500 tests/parameters in various fields of analysis. CALF achieved a milestone in the year 2014 by becoming a Referral Laboratory (RL) of FSSAI for milk & milk products. Further, it has been declared as National Reference Laboratory (NRL) for Dairy & Dairy products by FSSAI in the year 2019. Under NRL, CALF has setup Proficiency Testing facility and obtained NABL accreditation as per ISO 17043 in the year 2021. CALF has obtained several recognitions from bodies like Bureau of Indian Standards (BIS) in 2017, Export Inspection Council (EIC) in 2018, Agricultural and Processed Food Products Export Development Authority (APEDA) in 2019. The laboratory has been awarded with the prestigious Prof. S.K. Joshi Laboratory Excellence award in 2022 under the category of testing laboratory from Quality Council of India, New Delhi. CALF laboratory's strength lies in testing of animal feed, food, water, dairy products, honey, fats & oils, cereals & fortified products etc. for compositional analysis, Residue analysis (Antibiotics, Pesticides, Heavy metals, Aflatoxins, Melamine, PAH, PCB, Dioxins etc.), Vitamins analysis, genetic testing of food products as well as conducting Proficiency Testing programs in chemical and biological disciplines. The laboratory has state of the art analytical facility equipped with instruments like LCMS-MS, GC-MS, HPLC, ICP-MS, ICP-OES, LC-IRMS, EA-IRMS, PCR, RT-PCR, TEMPO, VIDAS etc.

## Training Program Schedule:

| S.No. | Topic   | Duration of Training | Sep   | Oct   | Nov   | Dec   | Jan   | Feb |
|-------|---|----------------------|-------|-------|-------|-------|-------|-----|
| 1.    | Training on chemical analysis of milk and milk products (compositional parameters, adulterants analysis in milk)  | 5 days               | 25-29 |       |       |       |       |     |
| 2.    | Residue analysis of milk & milk products (Residues of antibiotics, pesticides & heavy metals)   | 5 days               |       | 16-20 |       |       |       |     |
| 3.    | Training on authenticity of food products (honey-delta 13C protein-honey ratio delta 13 C fructose-glucose 2-AFGP, Ghee-milk fat purity by beta-sitosterol & triglycerides profiling) | 5 days               |       |       | 20-24 |       |       |     |
| 4.    | Training on ISO-17025, Measurement uncertainty and method validation  | 3 days               |       |       |       | 27-29 |       |     |
| 5.    | Training on opinion formation, FSS Regulations & integrated assessment  | 2 days               |       |       |       |       | 22-23 |     |
| 6.    | Workshop on latest analytical techniques & quality tools used in Food analysis  | 2 days               |       |       |       |       |       | 5-6 |



## **ICAR-NATIONAL RESEARCH CENTRE FOR GRAPES (NRCG), PUNE**

### **भाकृअनुप-राष्ट्रीय अंगूर अनुसंधान केन्द्र (एनआरसीजी) पुणे**

The ICAR-National Research Centre for Grapes under Indian Council of Agricultural Research (ICAR), New Delhi was established on 18th January 1997 at Manjari, Pune. The mandate of the institute is Strategic and applied research on safe grape production and productivity. Transfer of technology and capacity building of stakeholders for enhanced and sustained production of grapes. National Referral Laboratory for Food Safety and Pesticide residue in fruits, NRL, ICAR-NRC for Grapes is accredited for testing of pesticide residues in different fruits and vegetables and aflatoxins in peanut and peanut products by NABL. The scope of accreditation includes 223 pesticides in fruits and vegetables and 4 aflatoxins (B1,B2,G1,G2) in peanut and peanut products. This is highest scope for pesticides among any ICAR institutes.

NRL, ICAR-NRC for Grapes is accredited “Proficiency Testing Provider” for pesticide residues in fruits and vegetables and aflatoxins in peanut and peanut products. NRL, ICAR-NRCG is being recognized as the National Reference Laboratory (apex laboratory in the country) for pesticide residues and aflatoxins in all matrices by Food Safety and Standard Authority of India. ICAR has also recognized this lab as the National Referral Laboratory of pesticide residues and food safety in fruits.

## Training Program Schedule:

| S. No. | Topics  | Duration of Training | Sep   | Oct  | Dec | Jan  | Feb |
|--------|---|----------------------|-------|------|-----|------|-----|
| 1.     | Advance level training programme on specific instruments with specific matrix   | 5days                | 11-15 |      |     |      |     |
| 2.     | Contaminants, Toxins and Residues (e.g. pesticides, Heavy metals, Antibiotics, Dioxins, PCBs etc.,  | 5 days               |       | 9-13 |     |      |     |
| 3.     | Method validation<br>(Analytical quality control (accuracy and precision) in pesticide residue analysis.<br><br>Analytical quality control (accuracy and precision) in mycotoxin analysis | 5 days               |       |      | 4-8 |      |     |
| 4.     | ISO-17025 training  | 2 days               |       |      |     | 9-10 |     |
| 5.     | Measurement of Uncertainty  | 1 day                |       |      |     | 11   |     |
| 6.     | Training on opinion formation (Decision rule in pesticide residue analysis & Decision rule in mycotoxin analysis  | 1 day                |       |      |     |      | 8   |
| 7.     | A workshop on pesticide residue analysis for compliance to FSSAI standards  | 1 day                |       |      |     |      | 9   |



## **ICAR-CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY (CIFT), KOCHI**

### **आईसीएआर-केंद्रीय मत्स्य प्रौद्योगिकी संस्थान (आईसीएआर-सीआईएफटी) कोच्चि**

ICAR-Central Institute of Fisheries Technology (CIFT) being a premiere government organization has been continuously working on the quality and safety of fish and fishery products since its inception. CIFT was set up in 1957 is the only national center in the country where research in all disciplines relating to fishing and fish processing is undertaken. The institute functions with the following mandates such as a) Basic and strategic research in fishing and processing b) Design and develop energy efficient fishing systems for responsible fishing and sustainable management c) Development of implements and machinery for fishing and fish processing and d) Human resource Development through training, education and extension. In India, ICAR-CIFT was involved in the formulation of several international and national standards pertaining to the quality and safety of fish and fishery products. Apart from this, ICAR-CIFT was the driving force for setting the standards for packaged drinking water in India. Based on the pioneering work carried out by Central Institute of Fisheries Technology, FSSAI recognized ICAR-CIFT as the National Referral Laboratory as well as National Reference Laboratory for fish and fishery products. ICAR- CIFT is also an ISO 9000 and NABL 17025: 2017 accredited institute with more than 360 parameters in the scope of chemical, biological and mechanical accreditation. ICAR-CIFT has extended its support to FSSAI in formulation of development of food safety standards, food testing protocols and development of code of practice. Recently ICAR-CIFT had contributed to the preparation of Manual of Methods for testing fish and fishery products which is released by FSSAI.

## Training Program Schedule:

| S. No. | Topic  | Duration of Training | Aug   | Oct     | Dec   | Jan     | Feb  |
|--------|--|----------------------|-------|---------|-------|---------|------|
| 1.     | Hands on training on measurement of uncertainty  | 2 days               | 24-25 |         |       |         |      |
| 2.     | Workshop on requirement for proficiency testing provider as per ISO 17043: 2023 and statistics as per ISO 13528:2022: For NRLs and Referral Labs | 5 days               |       | 16 - 20 |       |         |      |
| 3.     | Advanced training on analysis of pharmacologically active substances in fish and fish products using LC-MS/MS                                    | 5 days               |       |         | 18-22 |         |      |
| 4.     | Hands on training on advanced microbiological techniques   | 5 days               |       |         |       | 8-12    |      |
| 5.     | Advanced training on analysis of residues, contaminants, and toxins in fish and fish products  | 5 days               |       |         |       | 29 - 31 | 1- 2 |
| 6.     | Training on opinion formation, FSS regulation, and integrated assessment.  | 2 days               |       |         |       |         | 7-8  |





## **ICAR- INDIAN INSTITUTE OF HORTICULTURAL RESEARCH (IIHR), BANGALORE आईसीएआर- भारतीय बागवानी अनुसंधान संस्थान, बैंगलोर**

The ICAR-Indian Institute of Horticultural Research (IIHR) is a premier institute conducting basic, strategic, anticipatory and applied research on various aspects of fruit, vegetable, ornamental, medicinal crops and mushrooms. ICAR-IIHR has established Food Safety Referral Laboratory (FSRL) for contaminant analysis. The laboratory is one of the referral laboratories of FSSAI and accredited by NABL as per ISO 17025:2017 for chemical (pesticide residues and heavy metals) and biological contaminant analysis in horticultural commodities/products and pesticide residues in water. Recently, the lab has taken up the quality parameters testing of horticultural commodities and has also applied for Integrated assessment (FSSAI-NABL) this year.

Presently, five scientists of different disciplines are carrying out their responsibilities in respective disciplines/scopes. The lab is equipped with complete facilities required for the analysis of samples under scope. It has been accredited for pesticide residue (133), heavy metal (6) analysis, quality parameters (9) and food borne pathogens (5). A facility is being developed to set up a Regional Honey Testing Lab for South Indian States. A facility is also being created for the analysis mycotoxins in agricultural commodities. The scope of laboratory is being expanded for pesticide residues (more than 200), heavy metals (12), and quality parameters (32).

## Training Program Schedule:

| S. No. | Topic   | Duration of Training | Sep   | Oct   | Nov   | Dec   | Jan |
|--------|---|----------------------|-------|-------|-------|-------|-----|
| 1.     | Detection of heavy metals (Cd, Pb, Cr, Ni, As and Hg ) in fruits and vegetables using GFAAS | 3 days               | 12-14 |       |       |       |     |
| 2.     | Analysis of pesticide residues in fruits and vegetables                                     | 3 days               |       | 11-13 |       |       |     |
| 3.     | Analysis of nutritional composition in fruits and vegetables                                | 3days                |       |       | 21-23 |       |     |
| 4.     | Microbiological analysis of horticultural products  | 5 days               |       |       |       | 11-15 |     |
| 5.     | Workshop on Food Safety in fruit & vegetable products                                       | 1 day                |       |       |       |       | 30  |







## **ICAR- NATIONAL MEAT RESEARCH INSTITUTE, HYDERABAD** **आईसीएआर- राष्ट्रीय मांस अनुसंधान केंद्र, हैदराबाद**

The ICAR-National Meat Research Institute (ICAR-NMRI) is a constituent research institution under Indian Council of Agricultural Research. It has 17 members of faculty and a number of post-graduate and doctoral researchers working in the area of meat science and microbiology. The institute has a research facility equipped with state of the art platforms such as genomics and proteomics facilities, meat processing, packaging and slaughterhouse byproduct and waste management as well as residue analysis facilities. The Institute has ISO/IEC 17025:2017 certified NABL accredited Food Testing Laboratory for Molecular Biomarker Analysis (DNA) for Animal species identification, molecular biomarker analysis (DNA) for Wildlife meat species identification, and Halal compliance through detection of porcine DNA in meat and meat products, Food Microbiology and Meat Nutrient and Residue Analytical laboratories and recognized as a National Referral Laboratory for meat and meat products by Food Safety and Standards Authority of India. The institute has developed simple, rapid, user-friendly, cost-effective, highly specific, point-of-care and sensitive lateral flow immunoassays for detection of pork and chicken. ICAR-NMRI has been working in the field of foodborne pathogens, neglected zoonotic diseases and mitigation of antimicrobial resistance and developed convergence with various scientific departments to work on zoonoses, food safety and environmental hygiene. The institute has been working on one health mode in the areas of zoonoses, AMR and food safety and also conducts awareness campaigns through societal approaches and has been part of nationwide networks on one health. The institute has also developed portable meat processing units and technology for economic use of slaughterhouse waste and organically certified sheep for the first time in the country.

## Training Program Schedule:

| S.No. | Topic  | Duration of Training | Sep | Oct   | Nov   | Dec   | Jan     | Feb |
|-------|--|----------------------|-----|-------|-------|-------|---------|-----|
| 1.    | Hands-on training on determination of safety parameters in meat and meat products as per FSSR 2011 (General including all parameters)  | 5 days               | 4-8 |       |       |       |         |     |
| 2.    | Hands-on training on determination of safety parameters in meat and meat products as per FSSR 2011 (General including all parameters)  | 5 days               |     | 16-20 |       |       |         |     |
| 3.    | Hands-on training on basic and advanced molecular techniques in food testing (Specialized with reference to meat species identification)   | 5 days               |     |       | 20-24 |       |         |     |
| 4.    | Hands-on training on microbiological testing of meat & meat products as per FSSR, 2011 (Specialized with reference to basic & advanced techniques for process hygiene criteria and food safety criteria) | 5 days               |     |       |       | 18-22 |         |     |
| 5.    | Hands-on training on determination of residues & contaminants in meat as per FSSR, 2011. (Specialized with reference to detection of antibiotics, pesticides & heavy metals)                             | 5 days               |     |       |       |       | 29 - 31 | 1-2 |



## **CSIR - CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE, MYSORE**

### **सीएसआईआर - केंद्रीय खाद्य प्रौद्योगिकी अनुसंधान संस्थान, मैसूर**

CSIR–Central Food Technological Research Institute (CFTRI), Mysore (A constituent laboratory of Council of Scientific and Industrial Research, New Delhi) came into existence during 1950 with the great vision of its founders, and a network of inspiring as well as dedicated scientists who had a fascination to pursue in-depth research and development in the areas of food science and technology. Research focus of CSIR-CFTRI has been revolved around broadly into the following areas (i) Engineering Sciences (ii) Technology Development (iii) Translational Research (iv) Food Protection and Safety. Food Technology being inter-disciplinary in nature the mandate or vision of the Institute is fulfilled through various R&D Departments and Support Departments along with its Resource Centres at Hyderabad, Lucknow and Mumbai.

The Institute provide analytical services, which include the determination of proximate composition, nutritional analysis (oils and fats, milk and milk products, sweets and confectionaries), analysis of food additives (preservatives, synthetic colours, artificial sweeteners, antioxidants, etc.), analysis of food contaminants (heavy metals, pesticides, Aflatoxins, antibiotics, etc.) and microbiological safety for food products. The facility is ISO 17025:2005 certified and accredited for more than 300 analytical parameters for chemical and biological testing of foods.

## Training Program Schedule:

| S.No. | Topic  | Duration of Training | Sep   | Oct | Nov | Dec   | Jan   | Feb   |
|-------|--|----------------------|-------|-----|-----|-------|-------|-------|
| 1.    | Microbiological tests in food samples                      | 3 days               | 25-27 |     |     |       |       |       |
| 2.    | GC & GC-MS based analysis of oils & fats                   | 3 days               |       | 4-6 |     |       |       |       |
| 3.    | Heavy metal and mineral analysis                           | 3 days               |       |     | 6-8 |       |       |       |
| 4.    | Vitamin profiling by HPLC/LC-MS                            | 3 days               |       |     |     | 18-20 |       |       |
| 5.    | Application of instrumental analysis in additives & toxins | 3 days               |       |     |     |       | 22-24 |       |
| 6.    | Pesticide analysis in various food matrices                | 3 days               |       |     |     |       |       | 21-23 |





## **NATIONAL INSTITUTE OF FOOD TECHNOLOGY, ENTREPRENEURSHIP AND MANAGEMENT, (NIFTEM), THANJAVUR**

### **राष्ट्रीय खाद्य प्रौद्योगिकी, उद्यमिता और प्रबंधन संस्थान (निफ्टेम) तंजावुर,**

The National Institute of Food Technology, Entrepreneurship and Management - Thanjavur (NIFTEM-T) is a pioneer Research and Educational Institution under the Ministry of Food Processing Industries, Government of India. The mandate of the Institute at its inception was to seek solutions for preserving high moisture paddy because the paddy harvest season in Southern India coincided with the tail end of the South West monsoon. The Institute is located at Thanjavur, the ancient capital of Chola Kingdom and the granary of Tamil Nadu. The National Institute of Food Technology, Entrepreneurship and Management - Thanjavur (NIFTEM-T) with its modern laboratories equipped with hi-tech instruments, is engaged in the R&D of food grain processing, value addition, by-product utilization through bio-processing, process and product development. Our Food Quality Testing Laboratory is NABL accredited and FSSAI referral. We have a hi-tech and cottage level food processing incubation cum training center. Hands-on-training on different food processing technologies, renting facilities and other supports are offered all thought the year to help the entrepreneurs to put in their innovative ideas for the development of new products. National Institute of Food Technology, Entrepreneurship and Management - Thanjavur (NIFTEM-T) offers B.Tech., M.Tech. and Ph.D. programs in Food Process Engineering and M.Tech. programs in Food Science and Technology and Ph.D. in Biotechnology.

## Training Program Schedule:

| S.No. | Topic   | Duration of Training | Sep   | Oct  | Nov   | Dec   | Jan   | Feb   |
|-------|---|----------------------|-------|------|-------|-------|-------|-------|
| 1.    | Training on FSS Regulations, Sampling   | 2 days               | 22-24 |      |       |       |       |       |
| 2.    | Testing Rice Kernels and its specificity  | 5 days               |       | 9-13 |       |       |       |       |
| 3.    | Proximate Analysis for food additive, preservatives, synthetic color, and on the quality standard of various food products. | 5 days               |       |      | 20-24 |       |       |       |
| 4.    | New technique in microbiology   | 5 days               |       |      |       | 11-15 |       |       |
| 5.    | Vitamins, Amino acid profiling  | 3 days               |       |      |       |       | 8-10  |       |
| 6.    | Training on opinion formation   | 3 days               |       |      |       |       | 22-24 |       |
| 7.    | International conference on Food Safety and Quality assurance   |                      |       |      |       |       |       | 22-23 |





## CSIR- INDIAN INSTITUTE OF CHEMICAL TECHNOLOGY, HYDERABAD

### सीएसआईआर- भारतीय रसायन प्रौद्योगिकी संस्थान, हैदराबाद

The CSIR-Indian Institute of Chemical Technology (CSIR-IICT) is one of the oldest National Laboratories under the Council of Scientific & Industrial Research (CSIR). It started as the Central Laboratories for Scientific & Industrial Research (CLSIR) by the then princely State of Hyderabad in 1944. CSIR-IICT during its seventy-year journey has made its mark as a dynamic, innovative and result oriented R&D organization. The clientele spans all comers of the globe. In India it is the reliable destination of chemical and biotech industries. The reputation that CSIR-IICT could establish amongst the industrial clients as a reliable R&D partner, can be largely attributed to its rich pool of scientists with expertise in broad ranging research areas and simple and effective business development strategies.



## Training Program Schedule:

| S.No. | Topic  | Duration of Training | Sep  | Oct  | Dec   | Jan     | Feb   |
|-------|--|----------------------|------|------|-------|---------|-------|
| 1.    | Gas Chromatographic Analyses of Oils & Fats: (i) Fatty Acid Composition of Edible Oils (ii) Quantification of Trans-fats (Industrial and ruminant) (iii) Fatty acid Composition of Ghee (iv) Compositional Analysis of unsaponifiable matters.   | 5 days               | 9-13 |      |       |         |       |
| 2.    | HPLC analyses of Oils & Fats (i) Analyses of Tocols (ii) Analysis of Lignans UV-Visible Spectrophotometry (iii) Phosphorus Content (iv) Oryzanol for Rice Bran Oil refractive index using Refractometer  | 5 days               |      | 6-10 |       |         |       |
| 3.    | Analysis of Oils & Fats, Acid Value, Iodine Value, Sap Value, unsaponifiable Matters, Presence of mineral oils, castor oil, argemone oil etc., Peroxide Value, Colour by using Tintometer, Moisture content using Karl-Fischer Apparatus Pulsed NMR for solid fat content  | 5 days               |      |      | 11-15 |         |       |
| 4.    | Gas Chromatographic Analyses of Oils & Fats: (i) Fatty Acid Composition of Edible Oils (ii) Quantification of Trans-fats (Industrial and ruminant) (iii) Fatty acid Composition of Ghee (iv) compositional Analysis of Unsaponifiable matters  | 5 days               |      |      |       | 29 - 31 | 1-2   |
| 5.    | HPLC analyses of Oils & Fats (i) Analyses of Tocols (ii) Analysis of Lignans (iii) Analysis of Oils & Fats Acid Value, Iodine Value, Sap Value, Unsaponifiable Matters, Presence of mineral oils, castor oil, argemone oil etc., PV, color using tiny Peroxide Value, Colour by using Tintometer, Moisture content using Karl-Fischer apparatus. | 5 days               |      |      |       |         | 19-23 |



## **LIST OF REFERRAL LABS MAPPED WITH STATE FOOD TESTING LABORATORIES**

The Referral Laboratories are mapped with State Food Testing Laboratories for assisting in various essential activities such as method validation, execution of Inter-Laboratory Comparison (ILC), provision of training to the State Food Testing Laboratory personnel on integrated assessment requirements as outlined by the FSSAI and extending technical expertise regarding food testing.

| <b>S.No.</b> | <b>Name of Referral Laboratories</b>   | <b>Nearby State Food Testing Laboratories</b>                | <b>States</b>    |
|--------------|--|--|------------------|
| 1.           | National Dairy Development Board <b>(NDDB)</b> CALF Ltd, Anand, Gujarat                                | 1. Public Health Laboratory, Ahmedabad, Gujarat              | Gujarat          |
|              |  | 2. Food and Drugs Laboratory, Nizampura, Vadodara, Gujarat   |                  |
|              |  | 3. Public Health Laboratory, Vadodara, Gujarat               |                  |
|              |  | 4. Regional Food Laboratory, Bhuj, Kutch, Gujarat            |                  |
|              |  | 5. Regional Food Laboratory, Rajkot, Gujarat                 |                  |
|              |  | 6. Public Health Laboratory, Surat, Gujarat                  |                  |
| 2.           | National Institute of Food Technology Entrepreneurship and Management <b>(NIFTEM)</b> Kundali, Haryana | 1. Combined Food & Drugs Laboratory, Delhi                   | Delhi, Rajasthan |
|              |  | 2. Food Safety and Standards Laboratory, Ajmer, Rajasthan    |                  |
|              |  | 3. State Central Public Health Laboratory, Jaipur, Rajasthan |                  |
|              |  | 4. Regional Public Health Laboratory, Jodhpur, Rajasthan     |                  |
|              |  | 5. Food Safety and Standards Laboratory, Alwar, Rajasthan    |                  |
|              |  | 6. Public Health Laboratory, Udaipur, Rajasthan              |                  |
|              |  | 7. Regional Public Health Laboratory, Kota, Rajasthan        |                  |
|              |  | 8. Public Health Laboratory, Bharatpur, Rajasthan            |                  |

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| 3. | ICAR- Indian Institute of Horticultural Research <b>(IIHR)</b> Bangalore, Karnataka  | 1. Regional Public Health Laboratory, Nagpur, Maharashtra                    | Maharashtra            |
|    |  | 2. District Public Health Laboratory, Amravati, Maharashtra                  |                        |
|    |  | 3. District Public Health Laboratory, Solapur, Maharashtra                   |                        |
|    |  | 4. District Public Health Laboratory, Ahmednagar, Maharashtra                |                        |
|    |  | 5. District Public Health Laboratory, Satara, Maharashtra                    |                        |
|    |  | 6. Food Testing Laboratory, FDA, Bandra East Mumbai, Maharashtra             |                        |
|    |  | 7. Food & Drug Administration Laboratory, Nagpur (owned by FDA, Maharashtra) |                        |
| 4. | CSIR- Central Food Technological Research Institute <b>(CFTRI)</b> Mysore, Karnataka | 1. Food and Drug Administration laboratory, Aurangabad, Maharashtra          | Maharashtra, Karnataka |
|    |  | 2. District Public Health Laboratory, Jalgaon, Maharashtra                   |                        |
|    |  | 3. District Public Health Laboratory, Nanded, Maharashtra                    |                        |
|    |  | 4. State Water and Food Laboratory, Bangalore, Karnataka                     |                        |
|    |  | 5. Divisional Food Laboratory, Mysore, Karnataka                             |                        |
|    |  | 6. Divisional Food Laboratory, Kalaburagi, Karnataka                         |                        |
|    |  | 7. Divisional Food Laboratory, Belagavi, Karnataka                           |                        |
| 5. | ICAR- Central Institute of Fisheries Technology <b>(CIFT)</b> Cochin, Kerala         | 1. Regional Analytical Laboratory, Ernakulam, Kochi, Kerala                  | Kerala, Puducherry     |
|    |  | 2. Regional Analytical Laboratory, Kozhikode, Kochi, Kerala                  |                        |
|    |  | 3. Government Analyst Laboratory, Thiruvananthapuram, Kochi, Kerala          |                        |
|    |  | 4. Public Health Laboratory, Puducherry                                      |                        |
| 6. | ICAR-National Research Centre for Grapes <b>(NRCG)</b> Pune, Maharashtra             | 1. Regional Public Health Laboratory, Aurangabad, Maharashtra                | Maharashtra, Goa       |
|    |  | 2. District Public Health Laboratory, Kolhapur, Maharashtra                  |                        |

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|----|---|--|---|
|    |   | 3. Municipal Laboratory, Dadar West, Mumbai, Maharashtra                   |   |
|    |   | 4. Public Health Laboratory, Belapur, New Mumbai, Maharashtra              |   |
|    |   | 5. District Public Health Laboratory, Nashik, Maharashtra                  |   |
|    |   | 6. State Public Health Laboratory, Pune, Maharashtra                       |   |
|    |   | 7. District Public Health Laboratory, Sangli, Maharashtra                  |   |
|    |   | 8. Food and Drug Laboratory, Bambolim, Goa                                 |   |
| 7. | Punjab Biotechnology Incubator <b>(PBTI)</b><br>Mohali, Punjab  | 1. District Food Laboratory, Karnal, Haryana                               | Haryana,<br>Himachal Pradesh,<br>Rajasthan,<br>Uttarakhand,<br>Jammu and Kashmir,<br>Punjab |
|    |   | 2. State Food, Water and Excise Laboratory, Chandigarh, Punjab             |   |
|    |   | 3. Composite Testing Laboratory, Kandaghat, Distt. Solan, Himachal Pradesh |   |
|    |   | 4. Public Health Laboratory, Canal Road, Jammu                             |   |
|    |   | 5. Public Health Laboratory, Dalgate, Srinagar                             |   |
|    |   | 6. State Food & Drugs Laboratory, Mohali, Punjab                           |   |
|    |   | 7. Public Health Laboratory, Banswara, Rajasthan                           |   |
|    |   | 8. Public Health Laboratory, Bikaner, Rajasthan                            |   |
|    |   | 9. State Food & Drug Testing Laboratory, Rudrapur, Uttarakhand             |   |
| 8. | National Institute of Food Technology Entrepreneurship and Management <b>(NIFTEM-T)</b> Thanjavur, Tamil Nadu | 1. Food Analysis Laboratory, Coimbatore, Tamil Nadu                        | Tamil Nadu  |
|    |   | 2. Food Analysis Laboratory, Guindy, Chennai, Tamil Nadu                   |   |
|    |   | 3. Food Analysis Laboratory, Madurai, Tamil Nadu                           |   |
|    |   | 4. Food Analysis Laboratory, Salem, Tamil Nadu                             |   |
|    |   | 5. Food Analysis Laboratory, Thanjavur, Tamil Nadu                         |   |
|    |   | 6. Food Analysis Laboratory, Tirunelveli, Tamil Nadu                       |   |
| 9. | CSIR- Indian Institute of Chemical  | 1. Public Health Laboratory, Kolkata, West Bengal                          | West Bengal,<br>Bihar, Odisha   |

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|     | Technology(IICT),<br>Hyderabad , Telangana                                 | 2. Central Food Laboratory, Kolkata, West Bengal<br>3. Food Testing Laboratory Siliguri, Darjeeling, West Bengal<br>4. State Public Health Laboratory, Bhubaneswar, Odisha<br>5. Combined Food & Drugs Laboratory, Patna, Bihar   |  |
| 10. | ICAR- National Meat Research Institute (NMRI) Hyderabad, Telangana         | 1. Regional Public Health Laboratory, Visakhapatnam, Andhra Pradesh<br>2. State Food Testing Laboratory, Raipur, Chhattisgarh<br>3. State Food Laboratory, Hyderabad, Telangana<br>4. State Food Laboratory, Bhopal, Madhya Pradesh<br>5. State Food & Drug Laboratory, Ranchi, Jharkhand   | Andhra Pradesh, Chhattisgarh, Telangana, Madhya Pradesh, Jharkhand |
| 11. | CSIR-Indian Institute of Toxicology Research (IITR) Lucknow, Uttar Pradesh | 1. Regional Public Analyst Laboratory, Agra, Uttar Pradesh<br>2. State Government Laboratory, Lucknow, Uttar Pradesh<br>3. Regional Public Health Laboratory, Varanasi, Uttar Pradesh<br>4. Government Public Analyst Laboratory Meerut, Uttar Pradesh<br>5. Regional Public Analyst Laboratory Jhansi, Uttar Pradesh<br>6. Regional Public Analyst Laboratory, Gorakhpur, Uttar Pradesh<br>7. Public Health Laboratory, Jalore, Rajasthan<br>8. Public Health Laboratory, Churu, Rajasthan | Uttar Pradesh, Rajasthan   |

## NODAL CONTACT PERSONS-TRAINING INSTITUTES

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| 3.     | Punjab Biotechnology Incubator (PBTI) Mohali, Punjab  | Dr. Simranpreet Kaur          | Scientist                         | 9814277896                 | pmc.pbti.dst@punjab.gov.in                             |
| 4.     | National Dairy Development Board (NDDB) CALF Ltd., Anand, Gujarat                               | Dr. Nihir Soni                | Scientist                         | 8866317566,<br>9726426501  | nhsoni@nddbcalf.com                                    |
| 5.     | ICAR-National Research Centre for Grapes (NRCG) Pune, Maharashtra                               | Dr. N.A. Deshmukh             | Senior Scientist                  | 020-26956070<br>8974036747 | nishant.deshmukh@icar.gov.in                           |
| 6.     | ICAR-Central Institute of Fisheries Technology (CIFT) Cochin, Kerala                            | Dr. Niladri Sekhar Chatterjee | Senior Scientist                  | 8129030807                 | niladri_icar@hotmail.com                               |
| 7.     | CSIR-Central Food Technological Research Institute (CFTRI) Mysore, Karnataka                    | Dr. Jayadeep A.               | Chief Scientist & Head            | 0821-2514972               | fsaqcl@cftri.res.in                                    |
| 8.     | ICAR-Indian Institute of Horticultural Research (IIHR) Bangalore, Karnataka                     | Mr. Partha P. Choudhury       | Principal Scientist & In-charge   | 9179457045                 | partha.choudhury1@icar.gov.in<br>parthatinku@yahoo.com |

|     |  |                           |                                     |              |                       |
|-----|--|---------------------------|-------------------------------------|--------------|-----------------------|
| 9.  | National Institute of Food Technology Entrepreneurship and Management <b>(NIFTEM-T)</b><br>Thanjavur, Tamil Nadu | Dr. R Vidyalakshmi        | HoD (Food Safety & Quality Testing) | 9750968409   | rvidya@iifpt.edu.in   |
| 10. | CSIR- Indian Institute of Chemical Technology <b>(IICT)</b><br>Hyderabad, Telangana                              | Dr. Pradosh P Chakrabarti | Chief Scientist                     | 040-27193179 | pradosh@iict.res.in   |
| 11. | ICAR-National Meat Research Institute <b>(NMRI)</b><br>Hyderabad, Telangana                                      | Dr. Vishnuraj M R         | Scientist                           | 9447779717   | vishnurajmr@gmail.com |

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