

FoodPro

CSIR - CFTRI Newsletter July - September 2025



Food Processing | Nutrition | Innovation | Value Addition
Traditional Foods | Food Machinery | Shelf Life | Food Quality
Nutraceuticals | Centre of Excellence | Pre & Probiotics | PMFME
Skill Development | Technology Transfer | Incubation



ಸಿ.ಎಸ್.ಐ.ಆರ್-ಕೇಂದ್ರೀಯ ಆಹಾರ ತಂತ್ರಜ್ಞಾನ ಸಂಶೋಧನಾಲಯ, ಮೈಸೂರು
ಸೀएसआईआर - केंद्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान, मैसूरु
CSIR – Central Food Technological Research Institute, Mysuru

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Dr. Giridhar Parvatam assumed charge as Director, CSIR-CFTRI



Dr. Giridhar Parvatam, Chief Scientist, assumed charge as the Director of CSIR-CFTRI on the afternoon of the 8th September 2025. Dr. Giridhar Parvatam addressed the staff and students on this occasion and highlighting the focus areas for R&D.

Dr. Giridhar Parvatam earned his MSc in 1991 and his PhD in 1996,

both from Kakatiya University in Telangana, India. His doctoral research focused on the prevalence of mycotoxins in various spices and dried fruits, highlighting the critical need for establishing rigorous controls to mitigate microbial spoilage throughout the supply chain, from production to consumer delivery. He joined CSIR-CFTRI in 1999 as Scientist 'B'. He served as the Chief Scientist at the Plant Cell & Biotechnology, and later took over as Head of the Food Safety and Quality Control Department at CFTRI in January 2024. He is also a professor at the Academy of Scientific and Innovative Research (AcSIR). He was a DAAD Fellow at the University of Bayreuth, Bayreuth, Germany (1995-96) and a BOYSCAST Fellow of DST at the Institute for Research and Development, Montpellier, France (2005-06).

Dr. Parvatam's research is in the areas of Plant Biotechnology and Food Science & Technology, focusing on the nutritional and nutraceutical potential of lesser-known plant sources. His work includes the in

vitro propagation of food-value plants, production of bioactive compounds and pigments (2H4MB, annatto dye, anthocyanins, betalains), and value addition through functional and health food formulations.

He has authored over 231 publications (8,500+ citations; H-index 53; i10-index 150), secured 9 patents, commercialised two technologies, and edited two books: Coffee Science: Biotechnological Advances, Economics, and Health (CRC Press, 2021), and Benefits & Tropane Alkaloids: Sources, Chemistry, Pharmacology and Biotechnology (Springer, 2025). He has supervised 17 Ph.D. students and more than 50 postgraduate dissertations.

Dr. Parvatam is a Fellow of the Royal Society of Biology (UK), the Association of Food Scientists and Technologists (India), the National Academy of Biological Sciences, and the Andhra Pradesh Akademi of Sciences. He is also an elected member of the National Academy of Sciences (India) and the Plant Tissue Culture Association of India.

He has received 16 awards from various scientific societies and organisations in India, including the Eminent Senior Scientist Award in 2023 – conferred by CSER (Centre for Societal and Environmental Research), Ranchi; the Prof. V. Puri Commemorative Medal (2021) from IBS; the Outstanding Young Scientist Award from ISMPP; and the Lalji Godhoo Smarak Nidhi Award from AFSTI. He has represented India at scientific forums across Europe, South America, and Asia.

Through his sustained contributions, Dr Giridhar Parvatam continues to advance food science & technology and plant biotechnology in India.

Research Highlights

Development and characterization of carrageenan-based antibacterial films incorporated with natural melanin pigment from niger seed hulls (*Guizotia abyssinica*) and their efficacy to enhance the shelf-life of strawberries

In the present study, melanin, a natural pigment, was extracted from Niger seed (*Guizotia abyssinica*) hulls and incorporated into carrageenan-based films to develop an innovative active food packaging system aimed at extending the shelf life of strawberries. The antibacterial efficacy of the carrageenan-melanin films was assessed against prevalent foodborne pathogens, demonstrating effectiveness against *Salmonella enterica*, *Staphylococcus aureus*, *Micrococcus luteus*, *Klebsiella oxytoca*, *Escherichia coli*, and *Bacillus cereus*, surpassing the chloramphenicol control. The incorporation of melanin notably suppressed microbial proliferation and effectively prolonged the shelf life of strawberries stored at ambient temperature ($25 \pm 2^\circ\text{C}$) for up to five days, while maintaining a significantly lower heterotrophic bacterial count during subsequent storage. Moreover, analysis of volatile organic compounds using an advanced electronic nose (E-nose) system provided insights into the freshness profile of strawberries over the storage period. In summary, the carrageenan-melanin film demonstrates significant potential as a sustainable packaging solution with enhanced antibacterial properties for the preservation of strawberries, representing an innovative approach to sustainable food packaging.

(Source: B.T. Sunil Kumar, Jeevan Prasad Reddy, V. Vanajakshi, Akshay H. Dasalkar, Sudheer Kumar Yannam, Umesh H. Hebbar, Sridevi Annapurna Singh, Development and characterization of carrageenan-based antibacterial films incorporated with natural melanin pigment from niger seed hulls (*Guizotia abyssinica*) and their efficacy to enhance the shelf-life of strawberries, *Food Control*, Volume 174, 2025, 111235)

Impact of processing techniques on the nutritional quality, antinutrients, and in vitro protein digestibility of milled soybean fractions

The study analyzed the quality characteristics of roller-milled soybean fractions subjected to various pre-milling treatments. The findings revealed that pre-milling processes such as germination, roasting, and hydrothermal treatment substantially improved the quality of the resulting milled products. These treatments effectively reduced antinutritional factors, increased antioxidant activity, and enhanced protein digestibility. Through particle size fractionation, roller milling played a crucial role in the distribution of nutritional and antinutritional components among the milled fractions. Semolina fractions exhibited high nutritional value, with coarse semolina containing higher ash, protein, fibre, iron, zinc, and phenolic content. All cotyledon fractions were found to be rich in essential mineral contents. As particle size decreased, phytic acid and trypsin inhibitor content reduced while protein digestibility improved. These findings emphasise the significant impact of physical separation during milling and the role of pre-milling treatments in altering the nutritional and antinutritional composition of the milled fractions. Such treatments serve as valuable tools for improving the quality of milling outputs. Semolina fractions, rich in protein, fat, and minerals, demonstrate strong potential as functional ingredients for developing high-protein food products with added health benefits. This study presented an innovative integration of pre-milling treatments and milling techniques, providing insights directly relevant to industrial-scale soybean processing and raw material optimization.

(Source: T.V. Sreechithra, Suresh D. Sakhare, Impact of processing techniques on the nutritional quality, antinutrients, and in vitro protein digestibility of milled soybean fractions, *Food Chemistry*, Volume 485, 2025, 144565)

Products Developed

Process for the Production of Isomalto-oligosaccharides (IMOs) using Transglycosylating α -glucosidase

An indigenous technology has been developed at CSIR-CFTRI for producing isomalto-oligosaccharides (IMOs), slowly digestible functional oligosaccharides valued as prebiotics, sugar substitutes, and bulk fillers in the food industry. The process utilizes a novel transglycosylating

α -glucosidase enzyme sourced from *Aspergillus niger*, which enables the conversion of tapioca starch into two commercially viable products: IMO1 (a high-viscosity syrup concentrated to 70°Brix) and IMO2 (a stable white powder). The upstream process involves liquefaction of starch with



thermostable enzymes, followed by a combined saccharification and transglycosylation stage that generates isomalto-oligosaccharides. In the downstream stage, IMO1 production is achieved through purification and evaporation, whereas IMO2 requires an additional yeast fermentation step to remove residual fermentable sugars, followed by spray drying. The products, composed of isomaltose, panose, and related oligosaccharides with a degree of polymerization ranging from 2–10, have been validated for safety through acute toxicity studies in mice and carry a shelf life of around eight months under refrigerated conditions. The process is highlighted as the first one to be developed in India, offering significant cost advantages compared to imported products such as VitaFiber™ IMO. With applications spanning beverages, confectionery, bakery, sauces, functional foods, dental care, and alcoholic beverages, the technology holds strong potential for business-to-business (B2B) transfer, especially since the core enzyme technology has already been successfully transferred.

Ready-to-Eat Instant Millet Rice

The process for ready-to-eat instant millet rice, designed to meet the rising demand for healthy, convenient foods in fast-paced modern lifestyles, has been developed at CSIR-CFTRI. Millets such as foxtail, kodo, and proso are

nutritionally superior to polished rice, providing protein, dietary fiber, antioxidants, and essential minerals, but their long cooking times have limited their wider adoption. The innovation significantly reduces cooking time to about five minutes while retaining the natural flavour and nutrient profile, making the product suitable for preparing a variety of popular Indian dishes, such as lemon rice, puliyogare, curd rice, bisi bele bath, pongal, and sweet variants. The product offers exceptional convenience for working professionals during travel, emergency food supply, and disaster relief situations, while also serving as a healthy substitute for conventional rice. CSIR-CFTRI provides the standardized manufacturing process and guidelines for quality control, packaging specifications, and technical support, ensuring successful technology adoption. The innovation thus bridges health, convenience, and commercial opportunity in the growing functional food sector.



Technologies Transferred

- ✦ Virgin coconut oil
- ✦ Spice mix: *Puliogre*
- ✦ Instant products from Moringa leaves
- ✦ Fermented and dehydrated ready mix for *Dosa* batter
- ✦ Instant traditional food: *Sambar*
- ✦ Spice oleoresin: Turmeric
- ✦ Spice oleoresin enriched (process know-how for curcuminoids from turmeric oleoresin)
- ✦ Millet-based cookie
- ✦ Nutra chikki with added spirulina
- ✦ Value-added products from Figs (*Ficus carica* L)
- ✦ Modified atmosphere packaging of minimally processed vegetables
- ✦ Layered *Parotta* (South Indian)
- ✦ Freshness Keeper paper for extension of the Shelf life of Cut roses
- ✦ Multigrain cereal-legume bar & puffed rice bar
- ✦ Instant Ginger beverage (Ginger Tea)
- ✦ High protein biscuits
- ✦ Sugar-free biscuit
- ✦ Shelf stable muffins with natural preservatives
- ✦ Tamarind candy
- ✦ Spirulina-choco bar and spirulina-cereal bar
- ✦ Online fortification of Atta (Whole wheat flour)/ Maida (Refined wheat flour)
- ✦ Glucose-Amla beverage mix
- ✦ Marigold oleoresin
- ✦ Instant coffee cubes
- ✦ Turmeric powder from fresh turmeric rhizome
- ✦ Tutti fruity (Papaya/ Carrot)
- ✦ Coffee concentrate
- ✦ Foods for diabetics
- ✦ Low GI beverage for diabetics
- ✦ Dehydrated drumstick powder
- ✦ Dehydration of Bitter Gourd without pre-treatment

- ✧ Fruit dehydration: Banana
- ✧ Desiccated coconut
- ✧ Garlic & Ginger paste
- ✧ Roasted and flavoured cashew kernel
- ✧ Chikki/Nutra chikki (3 formulations)
- ✧ Chicken, Mutton & Prawn pickle
- ✧ Multigrain cereal-legume bar & puffed rice bar

Training Programmes Conducted

Analytical Quality Evaluation of Fortified Rice (01.07.2025 to 03.07.2025)

Rice, which is an excellent product for delivering micro-nutrients (B1, B6, and Niacin), is the number one staple food in Asian countries. This training programme covered topics related to quality aspects of fortified rice, Importance of Calibration of analytical instruments for Iron analysis - ICP-MS & ICP-AES, Mass spectrometry Principles and analysis of folic acid and vitamin B12 and Method validation of Iron in FRK and fortified rice using ICP-MS and HPLC analysis of Vitamin B9 and Vitamin B12 in Premix & Blending efficiency / Rapid detection of FRK, Sample preparation and extraction steps for FRK. Thirty-six participants attended the training programme.

Basics in Flour Milling and Quality Evaluation of Flour (07.07.2025 to 11.07.2025)

The training covered the critical aspects of Wheat quality and grading, Flour mill machineries, Principles of wheat cleaning, Wheat cleaning & conditioning flow sheet, Milling of wheat, Flour additives, Mill control, Unit operations in Milling, Flour constituents, Energy management, audit and its conservation in roller flour mill and demo on Commercial Milling and Test baking of bread, biscuit & cake. Twenty-eight participants attended the training programme.

Sensory Flavour Perception for the personnel from ITC (09.07.2025 to 11.07.2025)

The topics included are Sensory Flavour Perception-Multi-sensory experience, Analysis and Application of Flavour Constituents, Prerequisites for setting up the sensory laboratory and Methods of sensory analysis, Application of e- sensing techniques in Flavour analysis, Briefing sensory practical and Basic Tests: Taste, Colour, Odour, (Identification of few common odour compounds), Finger feel, Current trends in Flavour application in Food and Beverages, Qualitative Analysis - Ranking test & data analysis. Twelve participants attended the training.

Paddy Processing and Value Addition (sponsored by Taluk Agricultural office, Maharashtra) (31.7.2025 to 2.8.2025)

Thirty-four participants attended the training programme and covered some of the essential aspects like

Production and agronomy of Rice; Morphology and histology of grains, packaging for paddy, rice and rice products, drying of paddy and rice milling, and a visit to Rice Mill(Bannur) was also part of the training.

Spices Processing and Value Addition (4.8.2025 to 8.8.2025)

Due to the high antioxidant properties, spices play an active role as a medicine in the food. The topics included are Introduction to spices and their classification, Post-harvest operations of spices, Measurement of Quality parameters of spices, Essential oil extraction: Classical and advanced methods, Encapsulation techniques for spice components, Regulatory standards: FSSAI, AGMARK, and labelling, Storage Facility Design & Hygiene were taken. Forty-five participants attended the training.

Development of Probiotic over Millet Beverage and Probiotic Millet Curd (12.08.2025 to 14.08.2025)

The topics included are Probiotic supplementation through fermented millet-based functional foods, Millets: The wonder grains and resistant starch Processing and formulation of millet-based products, Scale-up of probiotic cultures for higher biomass yields, Development of probiotic millet curd, Sensory requirement for analysis of probiotic millet products, and analysing the anti- microbial & anti- oxidant activity of Probiotic millet products were covered under the programme. Thirty-four participants attended the training.

Parboiling of Paddy, Processing and Value Addition (20.08.2025 to 22.08.2025)

Seventeen participants attended the training and the topics included in the programme are Production and agronomy of rice; Morphology & histology of grains, an overview of CFTRI Technologies, FAQ analysis of Parboiled Paddy & Rice, parboiling of rice – methods, quality and properties, Convenience Parboiled Rice based products-flaking, puffing, popping, extrusion and Fortification, Safe storage of agriculture produce with special reference to paddy/rice.

Food Processing and Value Addition (sponsored by Assistant Director of Agriculture, Tamil Nadu) (26.8.2025)

The topics helped the participants gain knowledge about the extended shelf life of the food products, ensure safety, and improve the food's nutrition and palatability. The topics covered were the overview of CFTRI technologies in the Food Processing, Drying of paddy and Rice Milling, and Processing of fruits and vegetables. Twenty participants attended the training.

Analysis of Iron, Vitamin B9 and Vitamin B12 in Fortified rice (02.09.2025 to 04.09.2025)

Fortification increases the essential nutrients to improve the overall dietary quality and helps to prevent the population's widespread micronutrient deficiency. Eight participants attended the training.

Post-harvest technologies for Fruits and Vegetables (15.09.2025 to 17.09.2025)

The topics included are Post-harvest technologies in fruits and vegetables – An overview, Importance of fruits and vegetables to human health, Equipment for Processing of Fruits and Vegetables, and a visit to Pilot Plant, Packaging and handling of fruits and

vegetables and their processed products, Dehydration of vegetables & preparation of Osmo-air dried fruit, Preparation of jam, jelly, marmalade. Twenty-two participants attended the training.

Parboiling of Paddy, Processing and Value Addition (sponsored by Taluk Agriculture, Maharashtra) (15.09.2025 to 17.09.2025)

The topics covered related to the programs were in the areas associated with Morphology and Histology of grains, parboiling of rice – methods, quality and properties, ageing of paddy/rice, Milling of paddy and its properties, Physical properties of raw rice, calculation of milling yield. Thirty-three participants attended the training.



Short Term Training Programmes Schedule for October - December 2025

- ✦ Baking Science and Technology (06-10-2025 to 10-10-2025)
- ✦ Advance in Laboratory Animal Science: Technique, Ethics, and Welfare (13-10-2025 to 15-10-2025)
- ✦ Tomato Product (29-10-2025 to 31-10-2025)
- ✦ Grain Processing and Machinery (10-11-2025 to 14-11-2025)
- ✦ Application of Nanotechnology in Food Industry (18-11-2025 to 20-11-2025)
- ✦ Chromatographic Techniques (GC, HPLC, UHPLC) and their Analytical Approaches in Food Analysis (01-12-2025 to 05-12-2025)
- ✦ Training Program on Advanced Technique in Microbial Pathogen & Toxin Analysis (01-12-2025 to 05-12-2025)
- ✦ Fumigation, Prophylaxis and Pest Management Technique for Stored Food Commodities (05-12-2025 to 19-12-2025)
- ✦ Mammalian Cell Culture Technique (08-12-2025 to 10-12-2025)
- ✦ Nutri-Cereal Process & Products Technology (08-12-2025 to 12-12-2025)

New Collaborations

- ✦ **Karnataka Health Promotion Trust, Bengaluru (July 5, 2025)**
The aim is to work together to address malnutrition in the country and implement the wheat flour and oil fortification programs in government and non-government sectors using the expertise and technologies of CSIR-CFTRI.
- ✦ **Central Council for Research in Unani Medicine (CCRUM), New Delhi (July 16, 2025)**
To foster scientific and technical collaboration in areas that bridge Unani medicine and modern food technology to promote evidence-based traditional healthcare and nutrition.



✦ **Alternative Protein Solutions Pvt Ltd (Good Food Institute India), Mumbai, (July 25, 2025)**

Engage in activities to accelerate research and development, as well as incubation and community engagement within the smart protein sector.



✦ **Vanna Extracts Pvt. Ltd., Bengaluru (July 29, 2025)**

Jointly explore, research and develop supercritical CO₂ extracts and other food-based raw materials.

✦ **SDM Institute for Management Development (SDMIMD), Mysore (August 14, 2025)**

To deliver a customized Soft Skills & Humanities

(SSH) course for the M.Sc. Food Technology students of CSIR-CFTRI will conduct the programme at the SDMIMD campus in Mysuru.

✦ **Graduate School of Global Food Resources (GFR), Hokkaido University, Sapporo, Japan, (August 28, 2025)**

A memorandum of cooperation was signed to support student exchanges through the Wandervogel Study Program for Japanese students and Sakura Science Programs for Indian students, as well as the development of educational curriculum and technologies for sustainable food production, management, and distribution.

✦ **Amity University, Chhattisgarh (September 29, 2025)**

Strategic positioning through collaborations between Amity University, Chhattisgarh and CSIR-CFTRI in meeting emerging scientific and technological challenges of society.



Entrepreneurs' Speak

Hanbal Chikki Factory

Hanbal Chikki, a brand by M/s Anantha Trading Company (ATC), was established in 2018 to bring India's traditional sweet Chikki to the new generation in its most authentic yet innovative form. In July 2023, the company set up its new facility, Hanbal Chikki Factory & Outlet, in Gulagalale, Sakleshpura, Hassan, conveniently located along NH 75. What began as a local



endeavour has quickly become a must-visit destination for travellers, tourists, and the community, thanks to its transparent open-kitchen concept and live sample-tasting experience.

Product Range and Brand

Inspired by the rich flora, fauna, and spice heritage of the

Western Ghats, Hanbal Chikki blends traditional wellness with modern food safety and packaging. The brand offers 30+ varieties of chikkis and brittles, including unique flavors like coffee, paan, ginger, and jackfruit, along with snacks like chakli and coconut-based Cocobars. With Trademark Registration for "Hanbal Chikki," the company highlights its commitment to originality and local pride.

Vision and Challenges

Hanbal Chikki aims to bring Chikki to the new generation, promoting healthy snacking with natural ingredients like jaggery and nuts. Despite strong growth, it faces challenges like raw material price fluctuations, better moisture-resistant packaging, and balancing artisanal quality with large-scale production.

Role of CFTRI

A cornerstone of Hanbal Chikki's innovation journey is its collaboration with the Central Food Technological Research Institute (CFTRI), Mysore, a constituent

laboratory of the Council of Scientific and Industrial Research (CSIR). As a licensed technology holder of CFTRI's chikki manufacturing process, Hanbal Chikki benefits from cutting-edge R&D in food science and technology.

CSIR-CFTRI's support extends across

- ✦ **Product Development** : Optimizing recipes for improved shelf life, texture, and nutrition.
- ✦ **Shelf-life and Packaging Solutions** : Advanced barrier films and moisture control methods.
- ✦ **Quality & Safety Systems** : Implementation of FSSAI compliance frameworks.
- ✦ **Pilot Scaling & Training** : Helping the Hanbal Chikki team scale artisanal recipes while maintaining sensory excellence.

Advice to Emerging Startups

- ✦ Hanbal Chikki's journey offers valuable lessons for new entrepreneurs in the food sector:
- ✦ Focus on product consistency – customers return for the same taste.
- ✦ Invest early in innovative packaging – it preserves quality and enhances brand appeal.
- ✦ Obtain FSSAI and GMP certifications before scaling up.
- ✦ Partner with research institutes like CFTRI for technical expertise.
- ✦ Start with targeted distribution (curated stores, D2C online sales) before going wholesale.

BIRAC BioNEST Incubation Centre visits of dignitaries to Incubation centre

- ✦ The Army Service Corps from the Indian Army visited the BioNEST Incubation Centre on 8th July 2025. The delegation explored innovations and technologies in the nutraceutical space, engaging with our startups.



- ✦ Shri Sarvanan Kumar, Managing Director of National Small Industries Corporation (NSIC), and Dr Suresh, at the BioNEST Incubation Centre. The dignitaries interacted with the incubatees, learning about their innovative ventures.

Events

Barista Training Program

The 5-Day Barista Training Program was co-organized by Coffee Board of India and BioNEST, CSIR–Central Food Technological Research Institute (CFTRI), from 1-5th September 2025 promoting skill development and entrepreneurship in the coffee sector. Participants received hands-on training in the art of brewing premium coffee and crafting signature coffee-based dishes. The program also offered an exclusive opportunity to explore CSIR-CFTRI's innovative food technologies.



Intellectual Property Clinic

CSIR–Central Food Technological Research Institute (CFTRI), Mysuru, organized an IP Clinic for Startups on 17th September 2025, aimed at empowering startups, entrepreneurs, researchers, and innovators with practical knowledge on intellectual property (IP) management. The session with IP attorney Mr Shivkumar covered a range of key topics, including an overview of patents, trademarks, and copyrights; assessing patentability and freedom to operate (FTO); strategies to avoid premature disclosure; and insights into cost-effective IP filing approaches. Participants also gained guidance on managing IP ownership in collaborations, understanding filing procedures and timelines, and leveraging intellectual property for commercialization, licensing, and partnerships. The clinic served as an interactive platform to enhance awareness and strengthen the IP ecosystem among emerging innovators in the food and allied sectors.



Mysuru Entrepreneurship Habba

An engaging panel discussion on “Challenges in the Food Business and Bioprocessing” was successfully conducted at the Mysuru Entrepreneurship Habba, co-hosted by BioNEST, CSIR–Central Food Technological Research Institute (CFTRI) and CII Young Indians Mysuru on September 12, 2025. The session brought together a dynamic mix of scientific experts from CSIR-

CFTRI and innovative entrepreneurs from the BioNEST incubator, who shared valuable insights on overcoming challenges in the food industry—from research and development to market scalability.



New Incubates

The following two new incubates have enrolled with the CSIR-CFTRI incubation centre

Gusteau Foods Private Limited

The company specialises in plant-based food colours sourced from fruits, vegetables, and flowers while preserving their natural nutrients. These colours are free from artificial or synthetic additives and ensure purity, safety, and clean-label compliance. They deliver vibrant, stable hues suitable for various food applications. The advanced extraction process retains bioactive compounds, enhancing visual appeal and nutritional value.

Thin Charm Organics LLP

The company strives to offer tasty, healthy, and affordable food supplements to tackle nutrient deficiencies in India. It specializes in protein enhancers for meals, curries, snacks, health drinks, smoothies, and milkshakes. These solutions aim to enrich everyday diets with essential nutrients without compromising on flavor. Focused on accessibility and nutrition, the company supports healthier lifestyles across diverse communities.

Accomplishments by BioNEST incubatees

“Enable the शक्ति” 2025, which is India's premier platform for empowering women and LGBTQ+ entrepreneurs, providing a robust environment for pitch competitions, mentorship, networking, and transformative knowledge-sharing. The 2025 edition (the 3rd Edition) showcased 100 exceptional entrepreneurs, culminating in a competitive pitch event where 15 finalists (10 women, 5 LGBTQ+) presented their innovative solutions and business models to potential investors. Ms. Sayanika Deka from Svasta Samridhi Pvt Ltd (Indimeat) was selected as a finalist at the event.



Events

National Workshop on “Initiatives and Progress to address Hidden Hunger” (July 3-4, 2025)

National Workshop on “Initiatives and Progress to address Hidden Hunger” organised by CSIR-CFTRI in association with Innovation Hub for Rice Fortification & IIT, Delhi was held during 3rd- 4th July 2025. Dr. B. Sesikeran, former director of the National Institute of Nutrition (NIN), was the chief guest, and Dr Sridevi Annapurna Singh, director of CSIR-CFTRI, presided over the function. Dr. Jatindra K Sahu, Project Coordinator, IIT, Delhi; Prof. Reena Das, Head, Dept. of Haematology, PGIMER, New Delhi; Dr. Ajay Kumar Khara, Former Deputy Commissioner, Child Health, Gol, New Delhi, graced the event.

Platinum Jubilee Lecture Series 2024-25 (July 8, 2025)

Under the Platinum Jubilee Lecture Series 2024-25, the ninth lecture was held on 8th July 2025 at the CSIR-CFTRI campus. Prof. Kannan Srinivasan, Director, CSIR-Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar, Gujarat, was the Chief

Guest and Distinguished Speaker who delivered the Platinum Jubilee Lecture on “Importance of Collaboration & Partnerships in Science & Technology: Recent Examples at CSIR-CSMCRI”. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, presided over the event.



Research Council Meeting (July 22-23, 2025)

The 3rd Meeting of the 12th Research Council (RC) of CSIR-CFTRI was held on 22nd- 23rd July 2025, at CSIR-CFTRI under the Chairmanship of Dr. Chindi Vasudevappa, Chairman, Research Council and other RC members. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, presented Major Achievements & Developments of CSIR-CFTRI, and other Scientists

presented their project R&D work to the RC.



Product Launch (July 24, 2025)

In collaboration with CSIR- CFTRI, McDonald's, India launched the product "Protein Plus Slice" at Mumbai on 24th July, 2025. Shri. Yogesh Kadam, Hon'ble Minister of State for Food and Drugs Administration, Government of Maharashtra, inaugurated this nutrition-focused initiative. Dr Sridevi Annapurna Singh, Director of CSIR-CFTRI and Shri. Akshay Jatia, Executive Director, McDonald's India (W&S), launched the Protein Plus Slice in the presence of the CFTRI Scientific and McDonald's Teams.



National Symposium on "Plant Proteins: Structure–Function, Human Nutrition and Technological Advances" (July 25, 2025)

The National Symposium on "Plant Proteins: Structure–Function, Human Nutrition and Technological Advances" was organised as part of the CSIR-CFTRI Platinum Jubilee Lecture Series on 25th July 2025 at the CFTRI Campus. Dr. V. Prakash, Former Director, CSIR-CFTRI and Distinguished Scientist, CSIR, delivered the 10th Invited Talk entitled "The continuing unique global saga of Plant Proteins @Cheluvamba Campus...*Yesterday, Today and Tomorrow" as part of the Platinum Jubilee Lecture Series. Prof. H.S. Savithri, Former Professor, Dept. of Biochemistry, Indian Institute



of Science, Bangalore, delivered the 11th Invited talk entitled "Decoding the structure and function of plant viral proteins: Relevance to plant protein research and

biotechnology" as part of the Platinum Jubilee Lecture Series.

The Symposium was inaugurated by Dignitaries Dr. V. Prakash, Former Director, CSIR-CFTRI, Dr. H.S. Savithri, Professor, IISc, Dr Rekha S. Singhal, Professor, ICT Mumbai; Dr. G. Narahari Sastry, Former Director, NEIST, Jorhat & Professor, IIT Hyderabad; Dr. Viswajanani J. Sattigere, Outstanding Scientist, TKDL, CSIR Hqrs, New Delhi and Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, who presided over the Function. Dr. P. Giridhar, Organising Secretary, welcomed the gathering and briefed them about the importance and relevance of the Symposium. The Dignitaries released the Souvenir of the Symposium.

As part of this, CSIR-CFTRI launched its Collaborative Product with McDonald's India, "Protein Plus Slice" in the presence of Dignitaries, McDonald's Team and CFTRI Scientific Team. On this occasion CSIR-CFTRI also signed a Memorandum of Understanding(MoU) with Good Food Institute (GFI) India.

Prof. Rekha Singhal delivered the invited Talk on "Plant Proteins: So Near and Yet so Far!". Dr G. Narahari Sastry delivered the invited Talk on "Machine learning and AI applications in protein structure-function, drug discovery and healthcare." Dr. Viswajanani J. Sattigere delivered an invited talk on "Traditional foods and modern concepts on nutrition – Unity in diversity". Lastly, Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, delivered the talk on "My Odyssey with Proteins for Nutrition, Functionality and Health". The research scholars and students displayed the Scientific Posters as part of this National Symposium. Nearly 180 registered participants and delegates attended this symposium. Valedictory Function was held at the end, wherein Dr. A.G. Appu Rao, Former Head, Protein Chemistry & Technology, presided over the function and felicitated the Director.

Tech Connect 2025- Bridging Innovation and Enterprise (July 30, 2025)

A collaborative roadshow between CSIR-CFTRI and the National Small Industries Corporation (NSIC), was held at Cheluvamba Hall, CFTRI Campus, Mysore on 30th July 2025. The event focused on connecting innovative food and allied processing technologies with MSMEs, entrepreneurs, and industry stakeholders. Shri Saravanakumar R, Zonal General Manager- South Zone, NSIC Bangalore, was the Chief Guest for the event. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, presided over the event. Dr. Aashithosh Ashok Inamdar, Head, Technology Transfer and Business Development, CSIR-CFTRI, briefed the gathering on the event overview and highlighted the programme. As a centrepiece of Platinum Jubilee year festivities, the dignitaries formally unveiled the Book "The Living Campus", which captures the Institute's rich heritage, scientific accomplishments, and vibrant campus culture.

A Panel discussion was held as part of this workshop with a focus on CSIR-CFTRI Technologies. More than 150 participants registered for the event, including 95 MSMEs from various districts across Karnataka and Tamil Nadu, along with members of Farmer Producer Organizations (FPOs), Laghu Udyog Bharati (LUB), CSIR-CFTRI incubatees, scientific staff, and students.



Phenome India Health Cohort Project (August 6-10, 2025)

As part of the CSIR Phenome India Health Cohort Project, a five-day extensive health check-up camp of Phase II collection was conducted at CSIR-CFTRI, from 6th-10th August 2025. This camp was inaugurated by Dr. Bhaskar Narayan, Director (Additional Charge), CSIR-CFTRI, in the presence of Dr. Prakash M. Halami and Dr. Muthukumar S.P., who are coordinating this project at the institutional level. This camp was held for staff and their family members, including retirees.

National Webinar on “Gut Microbiota of Indian Tribals (August 13, 2025)

As part of the year-long celebrations of Jan Jatiya Gaurav Varsh 2024–25, a National Webinar on “Gut Microbiota of Indian Tribals” was held on 13th August 2025, which was organised by CSIR-CFTRI in association with Microbiologists Society, India (MBSI). The eminent speakers Dr. Sharmila Mande, Advisor, TCS Research, Mumbai; Dr. Yogesh Shouche, Director, SKAN Resaerch Trust, Bangalore; Dr. Rupjothi Talukdar, Adjunct Professor, Division of Gastroenterology, Johns Hopkins University, USA; Dr. Indranil Chattopadhyay, Associate Professor, Dept. of Biotechnology, Central University of Tamilnadu, Thiruvavur and Dr. Mojibur Khan, Professor & Head, Life Sciences Division, IASST, Guwahati, Assam delivered the invited talks in this webinar. Dr. Prakash M. Halami, Chief Scientist & Head, Microbiology & Fermentation Dept., welcomed the gathering and briefed them about this webinar. Dr. N. Bhaskar, Director (Additional Charge), CSIR-CFTRI, presided over the event. About 200 members participated in this webinar.

Independence Day (August 15, 2025)

As part of the 79th Independence Day celebrations, Shri Rajesh Matche, the Director's Nominee, CSIR-CFTRI, hoisted the National Flag in front of the Main mansion on 15th August 2025 and delivered the Independence Day speech.

National Sports Day (August 29, 2025)

National Sports Day (In memory of Major Dhyan Chand) event was held on 29th August 2025 at CSIR-CFTRI Campus. National Sports Day Pledge was administered to Staff and students by the Controller of Administration. Walkathon, Fun Games and a Cricket Tournament, were conducted for Staff and students as part of it, and prizes were distributed to the winners.



Teachers' Day Celebration (September 8, 2025)

AcSIR Science Club - “Ahar Anveshan” conducted Teachers' Day Celebration on 8th September 2025, and students welcomed the teachers and paid tributes to them. Dr. Bhaskar Narayan, Director (Additional Charge), CSIR-CFTRI, addressed the gathering and distributed prizes and awards to AcSIR students who won the essay competition that was conducted as part of it.



Workshop on Scientific Writing (September 8, 2025)

Association of Food Scientists and Technologists (AFST) India Hqrs, Mysuru along with CSIR-CFTRI organized a workshop on “Scientific Writing & Ethics in Enhancing Publication (SWEEP) Success” which was held on 8th September 2025 at CFTRI Campus. Dr Chindi Vasudevappa, Chairman, Research Council, CSIR-CFTRI Mysuru & Former Vice Chancellor, NIFTEM-Kundli, was the Chief Guest, Dr Bhaskar Narayan, Director, IITR, Lucknow & Director (Additional Charge), CSIR-CFTRI, Editor-in-Chief, JFST, presided



over the Function. Dr Aashitosh Inamdar, Chief Scientist & Head, TTBD and Hon. President, AFST(I) and Mr Basavaraj Mundalmani, Hon. Secretary, AFST(I), were present. Curtain Raiser of 31st ICFoST 2025 by dignitaries was also held during the event. About 200 students and staff attended this workshop, and various eminent speakers delivered talks as part of the workshop.

National Conference & Expo on “Tribal Food and Nutrition (September 11-12, 2025)

National Conference & Expo on “Tribal Food and Nutrition” was held during 11th-12th September, 2025 at Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, jointly organised by CSIR-CFTRI and Dept. of Food Technology, Ballarpur Institute of Technology.

Engineer's Day Celebrations (September 15, 2025)

58th Engineer's Day celebrations were held on 15th September, 2025, on the occasion of the 165th Birthday of Bharat Ratna Sir M.Visvesvaraya, wherein Shri. Rajesh Matche, the Director's nominee, offered floral tributes and addressed the gathering. Dr. Umesh Hebbar, Chief Scientist & Head, Food Engineering Dept., welcomed and coordinated the event.



Visit of sub Committee of Parliament on Official Language (September 25, 2025)

The Second sub-committee of Parliament on Official Language undertook an inspection tour of the Central Government Offices of Bangalore and Mysore, wherein an interaction with CSIR-CFTRI officials was held on 25th September 2025 at Bangalore. An exhibition showcased the institute's efforts to implement Hindi in official work. Dr. P. Giridhar, Director, CSIR-CFTRI, and other senior officials, attended the exhibition and engaged with the Committee members. Shri Ujjwal Raman Singh, Chairperson of the Parliamentary Committee,



commended the institute's commitment to promoting Hindi and expressed satisfaction with the progress made. He recognised these efforts and presented a certificate to the Director and staff, declaring the inspection outcome as satisfactory.

Open Day on CSIR Foundation Day (September 26, 2025)

On the occasion of the 84th CSIR Foundation Day 2025, the Students-Scientists Connect programme- Open day was observed at CSIR-CFTRI on 26th September 2025 for School students under the CSIR JIGYASA programme. Nearly 250 students from Jawahar Navodaya and Kendriya Vidyalaya schools visited CSIR-CFTRI, and facilities, demonstrations, and displays were shown to them. Prof. Anil Kumar, Dept. of Computer Science, Sri Jayachamarajendra College of Engineering, interacted with students about Social Media and its effects.



CSIR Foundation Day (September 29, 2025)

84th CSIR Foundation Day was celebrated on 29th September 2025, at CFTRI Campus. Chief Guest Dr. W.Selvamurthy, President, Amity Science, Technology and Innovation Foundation (AISTF), delivered the Foundation Day Address on the topic “Food and Nutrition Security for Vikshit Bharat.” Dr. P. Giridhar, Director, CSIR-CFTRI, presided over the function. The Chief Guest presented prizes to the children who had excelled in the CSIR-Foundation Day competitions held earlier. Mementoes were also distributed to staff who retired last year and those who completed 25 years of service.



Indo-Japan Scientific Exchange Programme (September 21-30, 2025)

The Sakura Science Exchange Program (SSP), administered by the Japan Science and Technology (JST) Agency, was held at Hokkaido University from 21st-30th September 2025. In conjunction with this, the Global

Center for Food, Land and Water Resources (GCF), Faculty of Agriculture, organized an International Symposium at Hokkaido University on September 22, 2025. A total of seventy participants attended the event, including Dr. Suresh Kumar G, Principal Scientist at CSIR-CFTRI (invited guest speaker), and Ms. Priyanshi M. Jain, Ph.D. Scholar from CSIR-CFTRI, presented a poster at the symposium. As a goodwill gesture, mementoes from CSIR-CFTRI were presented to Prof. Teruo Sone, Dean of the Graduate School of Global Food Resources, Hokkaido University, following the inaugural ceremony of the GCF International Symposium. Under the Sakura Science Exchange Program, all participants from various parts of India visited different departments, laboratories, and professors at Hokkaido University to explore ongoing research activities.



Visitors:

- ✦ Maj Gen Mohit Mahendroo, DCCI, ASC Centre & College, visited CSIR-CFTRI and its facilities on 8th July 2025.

- ✦ ASC Senior Officers (20 members) from ASC College, Bangalore, who are participants of Adv. Sup Mgt & Food Tech Course (ASMAFT- 21) visited CSIR-CFTRI and its facilities on 8th July 2025.
- ✦ Shri. V. Balasubramnian, IAS, Former Addl. Chief Secretary, Govt. of Karnataka & Adviser, Karnataka Mines Environment Restoration Corporation (KMERC), Bangalore visited CSIR-CFTRI on 23rd September, 2025. He interacted with the Director and scientists on implementing nutritional intervention programmes for anganawadis and school children.
- ✦ Nagaland Team of Enhancing Landscape and Ecosystem Management (ELEMENT) led by Amongla. C. Dy Project Director, Nagaland Project, World Bank, visited CSIR-CFTRI and its facilities on 23rd September 2025 and interacted with the Director and the Scientists for future Collaborations in the area of Food processing and also visited some of the facilities of the Institute.
- ✦ Prof. Hiroaki Katsuragi, Dept. of Earth and Space Science, The University of Osaka, Japan, visited CSIR-CFTRI and its facilities on 29th September 2025 and interacted with the Director and the Scientists in Food Process Engineering. His research expertise lies in granular physics, which is relevant to food processing and related material behaviour.

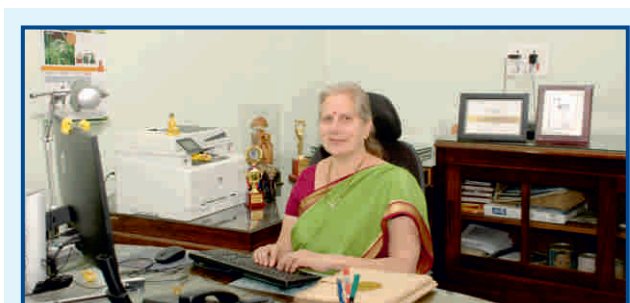
Upcoming Events

- ✦ CSIR-CFTRI 75th Anniversary and Platinum Jubilee celebrations.
- ✦ 31st Indian Convention of Food Scientists and Technologists(ICFoST-2025) with Focal Theme: 'INDULGE' - Innovation in Nutrition, Dietetics,

Upcycling and Local foods on Gastronomic Engineering" Event to be held at NIFTEM, Thanjavur during 18th-20th December 2025, organized by AFSTI and AFSTI(Thanjavur Chapter) in association with CSIR-CFTRI, NIFTEM and CSIR-NIIST.

Retirees

- ✦ Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, superannuated from CSIR service on July 31, 2025, after a distinguished career marked by visionary leadership and scientific excellence. During her tenure from January 2021 to July 2025, the institute made significant developments in food science and technology research, innovation, and outreach. She spearheaded initiatives in sustainable food processing, nutrition security, and industry collaboration, strengthening CFTRI's role as a national leader in food research. The CSIR-CFTRI



fraternity expresses its heartfelt appreciation for her dedicated service and invaluable contributions and

extends warm wishes for a healthy, happy, and fulfilling retired life.

Ph.D.s Awarded



Navyashree P (2025) [Guide: Dr. B K Bettadaiah, Sr. Principal Scientist, Department of Plantation Products, Spices & Flavour Technology] Diversity oriented synthesis of zerumbone analogues and their anti-inflammatory activity in diabetic animal model, AcSIR.



Anushma V (2025) [Guide: Dr. Tanaji G Kudre, Principal Scientist, Department of Meat & Marine Science] Preparation, characterization and application of biofunctional sialoglycoprotein hydrolysate from rohu (*Labeo rohita*) roes, AcSIR.

Kodape Anup Ramdas (2025) [Guide: Dr. C S Vivek Babu, Sr. Principal Scientist, Department of Food Protectants & Infestation Control] Studies on aflatoxin-producing *Aspergillus flavus* and *Aspergillus parasiticus* in groundnuts and their mitigation strategies, AcSIR.



Anagha N (2025) [Guide: Dr. Rajagopal K, Chief Scientist, Department of Biochemistry] Mechanistic Understanding of Antitubercular Drug Resistance in *Bifidobacterium adolescentis*, AcSIR.



Pratiksha Prabhakar Gawali (2025) [Guide: Dr. Sudheer Kumar Yannam, Sr. Principal Scientist, Department of Traditional Foods & Applied Nutrition; Dr. Ezil Vendan S, Principal Scientist, Department of Food Protectants & Infestation Control] Development of

essential oil-based bio-fumigant and its efficacy against major stored-product insect pests, AcSIR.



Akshatha S (2025) [Guide: Dr. Sachin M Eligar, Principal Scientist, Department of Traditional Foods & Applied Nutrition] Feruloylated Arabinoxylan from Maize bran: Structural insights, anticancer effects on colon cancer cells and nutraceutical potential], AcSIR.

Soujanya K V (2025) [Guide: Dr. Suresh Kumar G, Principal Scientist, Department of Biochemistry; Co-supervisor: Dr. Jayadeep A, Chief Scientist (Retd.),] Development of finger millet (*Eleusine coracana*) seed coat and endosperm based functional food ingredients and their phenolic profile and bioactive properties], AcSIR.



Saarika P K (2025) [Guide: Dr. Mahejibin Khan, Principal Scientist, Department of Microbiology & Fermentation Technology] To understand the mechanism of ferulic acid-rich nutraceutical formulation to combat oxidative stress by modulating gut microbiota, AcSIR.



Monisha Arya (2025) (Guide: Dr. Giridhar P, Director] Implications of statistical and biotechnological methods for enhancing bioactive compounds in chili (*Capsicum annuum* L.), AcSIR.



Pratibha Kumar (2025) [Guide: Dr. Kunal Sharan, Sr. Scientist, Department of Molecular Nutrition; Co-supervisor: Dr. Ravi Kumar, Associate Professor, JNU University, New Delhi] Understanding the mechanism of MksBEF mediated genome condensation in *Mycobacterium smegmatis*, AcSIR.



Harshitha M (2025) [Guide: Dr. B K Bettadaiah, Sr. Principal Scientist, Department of Plantation Products, Spices & Flavour Technology] Synthesis of Conjugates of Low Molecular Weight Chitosan with Selected Nutraceuticals and Their Cytotoxicity Studies, AcSIR.



Naresh K S (2025) [Guide: Dr. Sachin R Chaudhari, Principal Scientist, Department of Plantation Products, Spices & Flavour Technology] Development and application of NMR Methods for quantification and encapsulation studies of curcuminoids], AcSIR.

Lagamawwa V Hipparagi (2025) [Guide: Dr. Nanishankar V Harohally, Sr. Principal Scientist, Department of Plantation Products, Spices & Flavour Technology] Synthesis of Amadori And Heyns Compounds Relevant to Flavours and Prebiotic Significance of Amadori And Heyns Reactions], AcSIR.



Md. Touseef Khan (2025) [Guide: Dr. Muthukumar S P, Chief Scientist, Department of Biochemistry] Effect of nano-encapsulated apocynin and vanillic acid from *Picrorhiza Kurroa* against fumonisin B1-induced abnormal fatty acid metabolism *in vitro* and *in vivo*], AcSIR.



Select Publications

- ▲ Prabhakar, Patole Reshma ; Reddy, Jeevan Prasad; Murthy, P.S. Keshava; Babu, C.S. Vivek. Assessing the role of biodegradable polymer composites in mitigating insect infestations of pearl millet: Focus on polylactic acid and polybutylene adipate terephthalate with phytochemicals, *Int. J. Biol. Macromol.*, 2025, 319, art. no. 145447. (IF: 8.5)
- ▲ Tissopi, Trisha ; Mistry, Dhruv ; Ranjan, Ritesh ; Upreti, Rakshit ; Kumar, Sandeep ; Kapoor, Mukesh ; Mutturi, Sarma. Role of Glu720 mutation in transglycosylating α -glucosidase derived from *Aspergillus neoniger* NCIM 1400, *Int. J. Biol. Macromol.*, 2025 319, art. no. 145644. (IF: 8.5)
- ▲ Suresh, Anagha Priya.; Ravilla, Jahnvi.; Janakiraman, N.; Sundaram, Gopinath Meenakshi. Mango ginger-derived exosome-like nanovesicles promotes diabetic wound healing via inducing the promigratory protein, follistatin-like 1, *Int. J. Biol. Macromol.*, 2025, 322, art. no. 146991. (IF:8.5)
- ▲ Cherita, Chris.; Punarvasu, T.P.; Kumar, P. Pramod.; Prashanth, K.V. Harish.; Chauhan, Vikas Singh. Nannochloropsis biomass alleviates high fat diet induced cardiac and hepatic metabolic disturbances in mice, *Food Biosci.*, 2025, 69, art. no. 106884. (IF: 5.9)



National Symposium on “Plant Proteins : Structure–Function, Human Nutrition and Technological Advances”



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