

# FoodPro

CSIR - CFTRI Newsletter October - December 2024



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  
सीएसआईआर - केंद्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान, मैसूरु  
CSIR – Central Food Technological Research Institute, Mysuru

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## Research Highlights

### Enrichment of Peanut butter using *Curcuma Longa* (turmeric) industrial by-products and its impact on shelf life

The potential of using *Curcuma longa* (turmeric) industrial by-products, specifically Curcuminoid Removed Turmeric Oleoresin (CRTO), to enhance the shelf life and nutritional profile of peanut butter has been demonstrated. This sustainable approach capitalizes on the antioxidant properties of turmeric by-products to delay rancidity, improve product stability, and provide health-promoting benefits.

#### Shelf Life Extension

- ⤴ **CRTO Integration:** Incorporating CRTO oil and curcuminoids into peanut butter formulations effectively delays rancidity, extending shelf life.
- ⤴ **Microbial Safety:** The safety of CRTO-enriched peanut butter was confirmed for six months at 27 °C and 65% RH, and for four months at 37 °C and 95% RH.

#### Nutritional and Health Benefits

- ⤴ **Antioxidant Properties:** Curcuminoids in CRTO contribute to oxidative stability, reducing spoilage risks.
- ⤴ **Health Promotion:** Enriched peanut butter offers potential anti-inflammatory and antibacterial benefits due to curcuminoid and turmerone content.
- ⤴ **Improved Bioavailability:** Nut butter formulations improve the bioavailability of curcuminoids, enhancing their health-promoting effects.

#### Sensory and Consumer Acceptance

- ⤴ **Sensory Appeal:** Sensory evaluations revealed that

CRTO oil and curcuminoids maintained desirable taste and texture.

- ⤴ The enrichment process does not significantly alter sensory qualities, making it well-accepted by consumers.

This study underscores the value of leveraging agro-industrial byproducts for sustainable food solutions. By extending shelf life and enhancing nutritional benefits, CRTO-enriched peanut butter represents a significant advancement in clean-label food product development with immense potential for the food industry.

### Modification of Sorghum grains for enhancing the potential of kafirin as a potential functional food ingredient

Kafirin, Sorghum storage protein, is one of the most neglected proteins within prolamin class due to its poor digestibility. However, the last decade research has spotlighted kafirin for its potential as a functional food ingredient with antioxidant and starch-digestion inhibition properties. Considering that sorghum is a staple crop in southern parts of India and in semi-arid regions of the world, it becomes crucial to understand how appropriate processing of sorghum can maximize its health benefits. Therefore, the sorghum grains were modified by using combinations of infrared thermal and enzymatic treatments. The starch-hydrolysis inhibition property of modified kafirin was explored as a natural carbohydrate inhibitor. The combination treatment effectively modified kafirin and promoted the development of a high molecular weight subunit, which improved the overall antioxidant activities of kafirin. This modified kafirin exhibited significant scavenging activity, with increased antioxidant capacity across DPPH,

FRAP, and ABTS assays. Further, combination treatment enhanced kafirin's ability to inhibit  $\alpha$ -amylase and  $\alpha$ -glucosidase, enzymes responsible for starch digestion. When incorporated into corn starch, modified kafirin boosted resistant starch content, suggesting its

use in developing diabetic-friendly food products with lower glycemic impact. This research opens new avenues for using kafirin in the food industry, particularly in the development of healthier, low-glycemic foods.

## New Technologies

### Process for the Production of Multigrain Pizza Base

The development of a multigrain pizza base represents a significant improvement over traditional pizza dough, offering higher levels of protein and fiber while maintaining taste and convenience. By incorporating nutrient-dense ingredients such as millets alongside wheat, this innovation addresses concerns about the nutritional value of pizza and reflects a broader trend towards healthier food options. With a shelf life of 5 days at room temperature, it presents a practical solution for both consumers and producers. Pizza, a quintessential fast food, has become popular globally over the past two decades due to its affordability and ease of preparation. However, its frequent consumption, particularly among teenagers and middle-aged individuals, raises concerns

about the nutritional deficiencies associated with refined wheat flour used in most pizza bases. A new multigrain pizza base combining whole wheat and millet has been developed, significantly improving protein and fiber content compared to traditional bases.



## Technologies Transferred

- ✦ Process for production of semolina (Sooji/Rava) from millets and preparation of multimillets semolina
- ✦ Instant *Upma* mix from millets and multimillets semolina
- ✦ Instant Rava *Idli* mix from millets and multimillets semolina
- ✦ Energy Food - new formulation
- ✦ Instant gravy mixes (dehydrated) (11 formulations)
- ✦ A process for the production of Multigrain Pizza base
- ✦ Eggless cake premix
- ✦ Gongura leaf powder
- ✦ Spray dried refined Papain
- ✦ Ready-Mix *Dosa*
- ✦ Marigold Oleoresin
- ✦ Layered parotta (South Indian)
- ✦ Instant traditional food: Rasam
- ✦ Shelf-stable jowar flour
- ✦ Spice oil: pepper
- ✦ Instant traditional food: Sambar
- ✦ Ready mix: *Idli*
- ✦ Ready mix: *Dosa*
- ✦ Virgin Coconut Oil
- ✦ Millet based cookie
- ✦ Gluten free biscuit
- ✦ Dipping oil formulation for grapes

## IPR in the Horizon

### Patents Filed

- ✦ Sustainable active packaging carrier and method for preparation of the same. Rajesh S Matche, Sachin R Chaudhari, Rajat Chandel. 3-Oct-2024, 202411075607.
- ✦ An irreversible time-temperature indicator assembly

and method of preparing thereof. Rajesh S Matche, Sachin R Chaudhari, Suraj Payyadakkath. 17-Dec-2024, 202411100237.

### Patents Granted

- ✦ An improved process for the roasting of groundnut kernels using pulsed infrared radiation. Hangalore

Umesh Hebbar, Mysore Nagaraja Rao Ramesh, Sukumar Debnath. 533015

- ✦ An integrated electrospray-freeze-drying device. Chinnaswamy Anandharamkrishnan, Padma Ishwarya Shankaran. 201611032531. 542934

## Training Programmes Conducted

- ✦ **Cereal and Grain Processing** was organized during 28.10.2024 to 30.10.2024. Around 22 participants attended this programme. The training programme covered topics related to processing of pseudo-cereals & its products, millet based products, processing of grains (pulse and cereal), grain processing machinery, flaking of grains, utilization of by-products. Demonstration of grain packaging and roller flour mill was conducted.

- ✦ **Post-Harvest technologies for Fruits and Vegetables** was organized during 04.11.2024 to 08.11.2024. Around 22 participants attended this programme. The training programme covered topics related to post-harvest spoilages of fruits and vegetables and their control measures, microbial examination of produce, methods of storage for extension of shelf life of fruits and vegetables, equipment for processing of fruits and vegetables and visit to pilot plant, modified atmosphere and controlled atmosphere storage of fruits and vegetables for extending shelf life etc.,

- ✦ **Sensory Evaluation of Cow Ghee** was organized during 11.11.2024 to 13.11.2024. Around 8 participants attended this programme. The training programme covered topics related to processing of Ghee for product development, instrumental evaluation of cow ghee with E-Nose and E-tongue, sensory evaluation of Cow Ghee using IS 7770 standard methods.

- ✦ **Food Processing, Preservation and Quality Control** was organized during 18-11-2024 to 20-11-2024. Around 15 participants attended this hands on training programme.

- ✦ **Fumigation, Prophylaxis and Pest Management Techniques for Stored Food Commodities** was organized during 22.11.2024 to 06.12.2024. Around 43 participants attended this programme. The training programme covered topics related to detection of insect infestation in stored food commodities and storage premises, CFTRI technologies for commercialization, biological and traditional techniques in food commodity storage, modern instrumentation techniques for pesticide residue analysis etc.,

- ✦ **Baking Science and Technology** was organized during 25.11.2024 to 29.11.2024 & 09.12.2024 to 13.12.2024. Around 21 & 8 participants attended this programme. The training programme covered topics related to wheat quality and grading, milling, nutritional aspects of bakery products, manufacture of cakes, biscuits, recent trends in baking industry and CFTRI technologies on bakery products / bakery setup etc.,



- ✦ **Food Process Engineering and Recent Advances** was organized during 02.12.2024 to 06.12.2024. Around 11 participants attended this programme. The training programme covered topics related to food machinery for traditional foods, drying, freezing, EMR based processing, evaporation, extrusion, membrane filtration, high pressure processing. Demonstration of pilot plant machineries on drying & roasting, extrusion processing, evaporation, membrane filtration and freezing was conducted.

- ✦ **Nutri-Cereal Process and Products Technology** was organized during 09.12.2024 to 13.12.2024. Around 7 participants attended this programme. The training programme covered topics related to grain processing & products-an overview, maize milling machinery & process, processing of minor millets, small millet based products, shelf stable millet flours and products. Demonstration of roller mill, ragi products (Papad, murukku & flaking), small millet products (Beverage, ragi rice, puffed grain), instant multigrain was conducted.

- ✦ **Awareness Programme on Nutrition Intervention for Children and Women** was organized during 10.12.2024; 12.12.2024 & 13.12.2024. Around 24, 33 & 68 participants attended this program respectively. The training program covered topics related to malnutrition; deficiencies and consequences, nutrition intervention programmes of CSIR –CFTRI, significance of hygiene and microbial

safety in foods, quality criteria in food processing, preparation of nutritious foods from pushti, improvements in traditional cooking methods.

- ✦ **Fruit and Vegetable Processing** was organized during 05.12.2024 to 08.12.2024. Around 20 participants attended this hands on training programme.
- ✦ **Processing of Millets for Value Added Products** (Farmers from Bagalkot, North Karnataka) was organized on 13.12.2024. Around 15 participants attended this programme.

- ✦ **Spices and Flavours Current Trends in Processing, Formulations and Quality Evaluation** was organized during 16.12.2024 to 20.12.2024. Around 37 participants attended this programme. The training programme covered topics related to current trends and technological advances in value addition to Spices and Flavors, Spice based value added products & technology - National /Global perspective, quality aspects and regulatory standards of Spice based value added products, evaluation of Quality aspects of turmeric and other Spices, infestation control, storage and shelf life of spice products etc.,

## Short Term Training Programmes Schedule (January - March 2025)

- ✦ Sophisticated analytical instruments in food applications GC- MS, LC-HRMSMS, FT-IR, NMR, E-Nose & E-Tongue (06-01-2025 to 10-01-2025)
- ✦ Essentials of Packaging Technology for Thermal Processing Applications in extension of Shelf Life and Food Safety (22-01-2025 to 24-01-2025)
- ✦ Integrated Solid Waste and Wastewater Management in the Food Industry (10-03-2025 to 14-03-2025)

## Entrepreneurs' Speak

### MTC Traders

**About Company** : MTC TRADERS has been established in the year 2018. MTC Traders has gained immense expertise in the trading of Tamarind, tamarind seed, tamarind seed powder etc. The supplier company is located in Chittoor, Andhra Pradesh and is one of the leading sellers of Tamarind products. The company has licensed the Tamarind candy technology from the Institute in the year.

**PRODUCT RANGES IN BRAND** : The brand offers a diverse range of product sizes to cater to different customer needs, including 1kg, 500g, and 250g options. Whether you are looking for a larger quantity for family use or a smaller size for convenience, the brand ensures there's a suitable option for every preference.

**VISION** : The vision of the brand is to become globally available, ensuring that people all over the world can enjoy its unique offerings. Specifically, the goal is for

every Indian to experience and savor the distinct taste of this tamarind candy.

**CHALLENGES**: A main challenge in working with tamarind products is maintaining hygiene and the removal of fibrous stalks from the tamarind. During processing, tamarind pulp can contain natural fibers that may not be desirable in the final product. These fibrous threads need to be carefully separated to maintain the quality and smoothness on the product.

**ROLE OF CFTRI** : CSIR-CFTRI has helped in transforming my dreams into reality for manufacturing the product. CSIR-CFTRI provided the necessary expertise, resources, and technological support that guided me through the entire process.

**ADVICE** : Empower rural Indian entrepreneurs and help them easily engage in exports, it is crucial to simplify the system and make it accessible to improve their livelihood.

## BIRAC BioNEST Incubation centre

The BIRAC- BioNEST incubator facility at CSIR-CFTRI is designed to nurture entrepreneurial talent in food

bioprocessing and biotechnology research.

## Workshops and Events

- ✦ One-day 3D printing workshop was organized where participants were introduced to emerging trends of 3D printing and their application in the food sector. The participants also witnessed live demonstrations of designing, slicing, and printing of 3D food models using a 3D printer.



- ✦ A Global Bio India (GBI) roadshow was organized in the institute. The event was organized as a prelude to the GBI event organized by BIRAC. It featured a series of informative sessions and panel discussions and also provided information on the incubation facilities at the Institute.



- ✦ Participation at Global Bio India in New Delhi: The incubation facilities at CSIR-CFTRI were showcased at Global Bio-India 2023 at Bharat Mandapam, Pragati Maidan, New Delhi. The platform enabled us to showcase existing facilities and to bio-partner with industries, startups, incubators, and other enablers.
- ✦ The incubation facilities of CSIR-CFTRI were exhibited in the 30<sup>th</sup> ICFOST held at Navi Mumbai. The BioNEST members also took part in networking and hackathon events.

## New Startups

### BioNEST has on boarded the following startups

**1) Sugarcane Innovation Pvt Ltd.** : The company focuses on Sugar Can formula technology. Their innovative additive can be incorporated into high-sugar, high-calorie beverages and foods. Sugar Can formula intends to lower the Glycemic Index (GI) of these products and helps reduce the rate at which sugar is absorbed into the bloodstream.

**2) Abhaya Foods Pvt Ltd.** : They aim to develop a range of coconut-related products including ready-to-drink fruit blended carbonated beverage of matured coconut water obtained from VCO process. Other products include ice creams, desserts and milkshakes.

**3) Iniya Bioprobes Pvt Ltd.** : It is dedicated to the sustainable production of natural pigments derived from microbial sources like microalgae, fungi, and bacteria. Targeting the food, cosmetics, pharmaceutical, and textile industries, they offer eco-friendly alternatives to synthetic dyes. They have a strong commitment to environmental stewardship and product safety, Iniya Bio probes caters to meet the growing demand for sustainable and natural products through CRISPR technology

**4) One gram Pvt Ltd.** : The company aims to produce Germinated Brown Rice (GBR) by utilizing optimal germination techniques so as to maximize the yield of GABA and ensure a low GI product.

BioNEST incubation facility is pleased to announce that Sugar Can Innovation Pvt Ltd has successfully raised a pre-series round of 3.5 Crores in January 2025.



## New Collaborations

- ✦ **Koneru Lakshmaiah Deemed to be University, Guntur, (October 3, 2024)**  
Strategic positioning through collaborations between both institutions in meeting emerging scientific and technological challenges of the society.

- ✦ **All India Institute of Ayurveda, New Delhi (October 15, 2024)**  
Sharing of existing facilities and available expertise at the respective institutions to extend and strengthen the functional relationship between both the institutes.

✦ **Nestle R & D Centre India Pvt. Ltd., New Delhi (October 22, 2024)**

To promote industry-academia linkage and collaborate with each other for undertaking joint

projects of common interests including scientific projects, capability building & skill development.

## Events

### Gandhi Jayanthi (October 2, 2024)

Gandhi Jayanthi celebration and “Swachhata Hi Seva”(17<sup>th</sup> Sep-2<sup>nd</sup> Oct,2024) with the theme Swabhav Swachhata and Sanskar Swachhata event was conducted on 2<sup>nd</sup> October, 2024 at CSIR-CFTRI, Mysuru. As part of it, Swachhata Shramdan was undertaken by students and staff of CSIR-CFTRI.



### CSIR-Foundation Day (October 7, 2024)

83<sup>rd</sup> CSIR Foundation Day celebrations were held on 7<sup>th</sup> October, 2024. Dr. S.V. Suresha, Vice Chancellor, University of Agricultural Sciences, Bangalore(UAS-B) was the Chief guest and delivered the CSIR Foundation day Lecture. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided for the event. The dignitaries distributed prizes to school children who won CSIR Foundation Day competitions, Meritorious students and also mementoes to retirees and staff who completed 25 years of service.



### CSIR-CFTRI tableau in Mysuru Dasara (October 12, 2024)

The Mysuru Dasara Procession, which took place on 12<sup>th</sup> October, 2024, featured the CFTRI tableau. The Institute's contributions to society and the nation were emphasized in the tableau. Additionally, it demonstrated the range of technology the institute has developed.

### Directors Meeting of CSIR laboratories (October 22-23, 2024)

The meeting of all Directors of CSIR laboratories was held during 22-23<sup>rd</sup> October, 2024 at Mysuru organized by CSIR-CFTRI. Dr. N Kalaiselvi, Director General, CSIR and Secretary, Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India was the Chairperson of the meeting. The Directors of various CSIR institutes across India and Heads of units from CSIR headquarters participated in the meeting.



### CSIR-CFTRI Foundation Day (October 22, 2024)

CSIR-CFTRI 75th Foundation day i.e. Platinum Jubilee celebration was held on 22nd October, 2024. Sri Yaduveer Krishnadatta Chamaraja Wadiyar, Hon'ble Member, Parliamentary Standing Committee on Science & Technology, Environment & Forests, Govt. of India and Hon'ble Member of Parliament, Mysuru-Kodagu Lok Sabha Constituency was the Chief Guest and addressed the gathering through Online mode. Dr. N. Kalaiselvi, Director General, CSIR and Secretary, DSIR, Govt. of India was the Guest of Honour for this Event in the august presence of Former Directors of CSIR-CFTRI, Dr. V. Prakash, CSIR Distinguished Scientist, Dr. Ram Rajasekharan and Dr. KSMS Raghava Rao. The Director General, CSIR, Dr. N. Kalaiselvi delivered the 75th CSIR-CFTRI Foundation Day address. Former Directors of CSIR-CFTRI, Dr. V. Prakash, Dr. Ram Rajasekharan and Dr. KSMS Raghavarao shared messages and thoughts during this event. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided for the event. The dignitaries released three books namely **Handbook on Millets of Bharat-Nutritional Profile Volume 1, Roots to Wings CSIR-CFTRI Employees Compendium (1950-2024) and Platinum Jubilee Plant Book**. New Products were also

launched and MoU was exchanged in presence of dignitaries. New Facility of Biodegradable Cutlery from Millet Bran was inaugurated by DG, CSIR. Platinum Jubilee logo of CSIR-CFTRI was launched and audio of CSIR-CFTRI song was also released. All the Directors of CSIR laboratories and Heads of units from CSIR Hqrs were present on the occasion.

On the occasion of World Environment Day, our honourable, Prime Minister Shri. Narendra Modi launched the 'Ek Ped Maa Ke Naam' campaign, or "Plant4mother" a unique initiative combining environmental responsibility with a heartfelt tribute to mothers. 'Ek Ped Maa Ke Naam' is a movement that reflects India's commitment to a sustainable and environmentally conscious future. In this connection, to Commemorate 75th Foundation Day of CSIR-CFTRI, the tree plantation drive for the staff was inaugurated by Director, CSIR-CFTRI. As part of this initiative, all the staff planted the saplings at CFTRI staff quarters complex. Also, collective efforts to make a "PLATINUM JUBILEE GARDEN at CSIR-CFTRI, MYSURU" with plantation drive of 75 unique plants, Dr. (Mrs.) N. Kalaiselvi, Director General, CSIR & Secretary DSIR inaugurated the plantation drive by watering the tree sapling - followed by all the CSIR Directors, Heads of units from CSIR Hqrs, CSIR Distinguished & Outstanding Scientists and Former Directors of CSIR-CFTRI, Mysuru.



### Kannada Rajyotsava (November 1, 2024)

Kannada Rajyotsava celebrations was held on 1<sup>st</sup> November 2024. Dr. Banjagere Jayaprakash, Former President Kannada Book Authority, Kannada writer and critic, was the Chief Guest and addressed the gathering. The Chief Guest and Director, CSIR-CFTRI hoisted the Flag.



### Vigilance Awareness Week (November 5, 2024)

Vigilance Awareness week valedictory programme was held on 5<sup>th</sup> November 2024. Sri B.G. Dinesh, Judge & Secretary, District Legal services authorities, Mysore was the Chief Guest and delivered the talk on vigilance. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided for the event and Sri K. Ravi Kumar, CoA welcomed the gathering. The Chief Guest distributed prizes and certificates to staff and students who won in the competitions held as part of Vigilance Awareness Week.



### India International Science Festival (IISF) 2024 (November 6, 2024)

As part of India International Science Festival (IISF) 2024 celebrations with theme "Transforming India into a Science and Technology Driven Global Manufacturing Hub". Curtain Raiser event was held at CSIR-CFTRI on 6<sup>th</sup> November, 2024. Prof. S.N. Hegde, Former Professor and Chairman, Dept. of Zoology, University of Mysore was the Chief Guest and delivered a talk on the topic "Scientific Attitude". Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided over the function





### One Week One Theme (November 11, 2024)

One Week One Theme (OWOT) Agri. Nutrition and Biotech (ANB) was held at CSIR-CFTRI campus on 11<sup>th</sup> November, 2024 wherein Prof. Matam Vijay Kumar, Director, The University of Toledo-Microbiome Consortium(UT-MiCo), Department of Physiology and Pharmacology, University of Toledo, USA was the Chief Guest and delivered the talk on “Dietary Fiber and Gut Microbiota Dysbiosis in Liver cancer”. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided over the function. As part of OWOT, Industry Project Agreement Exchange and panel discussion on ANB Theme were held.



### Jan Jatiya Gaurav Divas (November 18, 2024)

Jan Jatiya Gaurav Divas 2024 was celebrated as part of 150<sup>th</sup> Birth anniversary Year of Dharti Baba Bhagawan Birsa Munda on 18<sup>th</sup> November 2024 at CSIR-CFTRI. Dr. Harshawardhana, Deputy Director & Head of Office, Southern Regional Centre, Anthropological Survey of India, manav Bhavan, Mysore was the Chief Guest and delivered the Invited Talk on “Birsa Munda as an Anthropologist”. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI presided over the function. As part of celebrations, the dignitaries inaugurated the programme by lighting the lamp and paid homage by offering floral tributes to Bhagawan Birsa Munda portrait.



### Constitution Day (November 26, 2024)

Constitution Day was celebrated on 26<sup>th</sup> November, 2024 at CSIR-CFTRI, Mysuru. Prof. Muzaffar H. Assadi, Former Vice Chancellor(I/C), University of Mysore was the Chief Guest and delivered the Chief Guest address. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI, presided over the function. All the assembled staff read

the Preamble of the Constitution.



### Workshop on Journal Publishing (November 26, 2024)

Half day workshop on Journal Publishing by Springer Nature was held on 26<sup>th</sup> November 2024 wherein Dr. Priya Sharma, Springer Nature India was the Resource Person.

### Symposium on Integration of National Standardization and Food Ecosystem (November 29, 2024)

Half day Symposium on Integration of national Standardization and Food Ecosystem was held on 29<sup>th</sup> November 2024 organised by CSIR-CFTRI in association with Bureau of Indian Standards (BIS)& Association of Food Scientists and Technologists (AFST) India. Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI inaugurated the event and delivered the Inaugural address. Dr. S. Barbuddhe, Director, ICAR-National Meat Research Institute, Hyderabad was the Chief Guest and delivered Key note address entitled “Present Contours and Future Research & Development in Food Sector: The Meat Industry Perspective”. Shri Debasish Mahalik, BIS, New Delhi; Mr. Rajesh K., LICIOUS, Bangalore and Dr. M. Muthukumar, ICAR-NMRI, Hyderabad presented talks during technical session.



### Research Council Meeting (December 4-5, 2024)

Second meeting of 12<sup>th</sup> Research Council Meeting of CSIR-CFTRI was held on 4-5 December, 2024 under the Chairman Ship of Dr. S Ayyappan, Chairman, Research Council and other RC members. Dr. Sridevi Annapurna

Singh, Director, CSIR-CFTRI presented major achievements & developments of CSIR-CFTRI and other HODs presented their Departmental R&D work to the RC.

### Dr. B.R. Ambedkar Shradhanjali (December 6, 2024)

Shradhanjali to Visva Gnani Dr. B.R. Ambedkar, Father of Indian Constitution event was held at CSIR-CFTRI on 6<sup>th</sup> December, 2024 and Director and staff offered Floral Tributes to Dr. B R Ambedkar on the occasion.



### International School of Milling Technology (ISMT) Course Valedictory Function (December 6, 2024)

43<sup>rd</sup> International School of Milling Technology (ISMT) Course Valedictory function was held on 6<sup>th</sup> December, 2024 at CSIR-CFTRI wherein Shri Phaneendra. K., Operations Manager, Manikchand Group, Hyderabad was the Chief Guest and delivered the valedictory address. Dr. Sridevi Annapurna Singh, Director, CSIR-

CFTRI presided over the function. Dignitaries distributed Medals and Appreciation Certificates to students.



### Inauguration of Centre of Excellence for Millets and Incubation Centre (December 6, 2024)

Centre of Excellence for Millets and Incubation Centre was Inaugurated by Sri N. Chaluvayaswamy, Hon'ble Minister for Agriculture, Govt. of Karnataka on 6<sup>th</sup> December 2024. Sri K. Harish Gowda, Hon'ble MLA, Chamaraja Assembly Constituency presided over the function. The inaugural event held in the presence of Sri Bandi Siddegowda, MLA, Srirangapatna Assembly Constituency; Sri B.V. Sudarshan, Former Speaker, Legislative Council; Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI; Sri Y.S. Patil, IAS, Commissioner for Agriculture, Govt. of Karnataka. The dignitaries visited the Centre of Excellence for Millets and Incubation Centre and witnessed the operation of machines. They also visited other facilities such as CSIR-CFTRI showcase and Millet showcase.

## Visitors

- ✦ Prof. K. Sandeep Prabhu, Department Head and Professor of Immunology and Molecular Toxicology Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, USA along with 50 International Delegates (comprising of highly distinguished scientists and academic scholars) working in molecular nutrition and medical sciences visited CSIR-CFTRI and its facilities on 11<sup>th</sup> November, 2024. The visit was part of



International Conference on Trace Elements in Man and Animals (TEMA)-18 held during 8-12<sup>th</sup> November, 2024 at Bengaluru jointly organised by Pennsylvania State University, USA, Ramaiah Group of Institutions, Bangalore and co-partnered by CSIR-CFTRI.

- ✦ Master of Public Health students from Department of Public Health, KSHEMA, Nitte (Deemed to be



- ✦ University), Mangalore along with International Public Health students from the University of Gothenburg, Sweden visited CSIR-CFTRI and its facilities on 2<sup>nd</sup> December, 2024.
- ✦ Students from Christ University, Bangalore and six students from Singapore, as part of their ongoing

project on “Agriculture Sustainability” visited CSIR-CFTRI and PMFME Incubation Center on 12<sup>th</sup> December, 2024.

## Technical and Invited Talks

- ✦ Prof. Arun Kumar Bhunia, Professor, Microbial Pathogenesis and Food Microbiology, Purdue University, USA delivered expert talk entitled “Microbes as Medicine: Leaky Gut Repairing Strategies on 19<sup>th</sup> November, 2024 at CSIR-CFTRI, Mysuru. The talk was organized by CSIR-CFTRI and Association of Microbiologists of India, Mysuru Chapter.
- ✦ Dr. Yelloji-Rao Mirajkar, International Convener, Global Indian Scientists & Technocrats Forum, USA delivered talk on “Aahar Kranti: Uttam Aahar Uttam Vichar” on 10<sup>th</sup> December, 2024 at CSIR-CFTRI.



- ✦ Dr. Rajeswaran Jagadeesan, Senior Scientist, Queensland Department of Primary Industries (QDPI) & Adjunct Research Fellow, University of Queensland, Australia delivered expert talk on “Managing genetic resistance to insecticides: A multidisciplinary approach ensuring food sustainability and market access” on 19<sup>th</sup> December, 2024 at CSIR-CFTRI.
- ✦ Smt. S. Anuradha, Advocate, Mysore delivered awareness talk on “Prevention of Sexual Harassment (POSH) at Work Place” on 26<sup>th</sup> December 2024 at CSIR-CFTRI.



## Awards and Prizes

- ✦ CSIR-CFTRI Main Mansion Garden awarded 1st Prize in "Mysuru Dasara 2024 Ornamental Gardens" contest



- ✦ Dr. Sridevi Annapurna Singh, Director, CSIR-CFTRI was bestowed with “AFST (I) Fellow” at 30<sup>th</sup> Indian Convention of Food Scientists and Technologists



(ICFOST) held at D.Y. Patil Deemed to be University, Navi Mumbai from 19<sup>th</sup>-21<sup>st</sup> December, 2024 organised by AFST, India in association with AFST, Mumbai Chapter.

- ✦ Dr. P. Prabhasankar, Chief Scientist & Head, FMBCT department was bestowed with “AFST (I) Fellow” at 30<sup>th</sup> Indian Convention of Food Scientists and Technologists (ICFOST) held at D.Y. Patil Deemed to be University, Navi Mumbai from 19<sup>th</sup> -21<sup>st</sup> December, 2024 organised by AFST, India in association with AFST, Mumbai Chapter.



## Ph.D.s Awarded



Sanjana J (2024). [Guide: Dr. C D Nandini, Sr. Principal Scientist, Department of Molecular Nutrition] Role of AMP-activated protein kinase modulation on hepatic O-GlcNAcylation in diet-induced hypercholesterolemia, AcSIR

of active packaging system – oxygen scavenger for bakery product, AcSIR.



Divya Yadav (2024). [Guide: Dr. P S Negi, Chief Scientist, Department of Fruit Vegetable Technology]. Development of a synbiotic nutraceutical formulation from mushroom waste for post-menopausal osteoporosis prevention, AcSIR.

Veena Kumari (2024). [Guide: Dr. Jayadeep A, Chief Scientist, Department of Food Safety & Analytical Quality Control Laboratory] Thermal treatment effect on finger millet quality characteristics and development of nutrient rich food formulation, AcSIR



Aishwarya Praveen (2024). [Guide: Dr. Sachin R. Chaudhari, Sr. Scientist, Department of Plantation Products, Spices & Flavour Technology] Understanding structure and profile of curcuminoids present in turmeric and their augmentation *ex vitro*, AcSIR



Pawde Subhash Vishwanath (2024) [Guide: Dr. P Prabhasankar, Chief Scientist, Department of Flour Milling, Baking and Confectionery Technology and Co-Supervisor Mr. R S Matche, Chief Scientist, Food Packaging Technology] Development

## Retirees

- ✦ Shri Sudhir G Walde, Sr. Principal Scientist, FMBCT Dept.
- ✦ Shri Velu V, Principal Technical Officer, Food Engineering Dept
- ✦ Shri. Puttaraju B V, Group C-(NT) Higher(MACP), Food Engineering Dept.

## Select Publications

- ✦ Nguyen A.Q., Mohammadi M., Alian M., Muralitharan G., Chauhan V.S., Balan V. Exploring the versatility of *Porphyridium sp.*: A comprehensive review of cultivation, bio-product extraction, purification, and characterization techniques, *Biotechnol. Adv.*, 2024, 77, art. no. 108471. (IF: 12.1)
- ✦ Semwal Jyoti., Meera M.S. Novel mode of kafirin modification using combination of enzyme and thermal treatment to expand its food application, *Food Chem.*, 2024, 460, art. no. 140489. (IF: 8.5)
- ✦ Praveen A., Hitlamani Veeranna., Nagarajan S., Matche R.S., Chaudhari Sachin R. Enrichment of Peanut butter using *Curcuma Longa* (turmeric) industrial byproducts and its impact on shelf life, *Food Chem.*, 2024, 461, art. no. 140839. (IF: 8.5)
- ✦ Bharadwaj M R, Sanjay; Prasad B R, Hari; Chaudhari, Sachin R. Understanding the maturity of coconut water through 1H NMR profiling and MPAES analyses, *Food Chem.*, 454, art. no. 139748. (IF: 8.5)

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