

# Spices News

JANUARY - JUNE, 2025



## In this issue

Research Updates	01
Outreach activities	03
Institute Technology	
Management Unit	06
Hindi Anubhag	10
Major Events	12
Publications	17
Students Corner	23
Personalia	24

### Research Updates:

#### *Predictive power of YREMs and BLUPs for selecting superior genotypes in perennial crops*

Contributor: Dr. M. S. Shivakumar; Dr. N. C. Sunitha; Dr. H. J. Akshitha; Dr. K. V. Saji and Dr. Sasikumar B

Study introduces the use of Yield Relative Environment Maximum (YREM) and Best Linear Unbiased Prediction (BLUP) as quantitative criteria for selecting the best performing genotypes and assessing the predictive power of single-year YREM and BLUP in predicting future performance in perennial crops, specifically using black pepper as a model crop. The study suggests that an YREM value below 0.41 and a BLUP value below 1.50 kgvine<sup>-1</sup> can be used as thresholds to reject inferior genotypes, while a YREM value above 0.66 and a BLUP value above 2.9 kgvine<sup>-1</sup> can be used to select superior genotypes. Among the evaluated cultivars, OPKM displayed better stability estimates. However, considering high mean yield along with all the stability estimates, the HP2173 ranked first. Despite using single-location multi-year trial data, the study found that single-year YREM and BLUP values exhibited significant predictive power in forecasting the future performance of genotypes. Additionally, the study suggests that using multi- year average performance (YREM and BLUP) as quantitative criteria to select or reject genotypes in future breeding programs is an effective approach. By shedding light on the successful application of YREM and BLUP in black pepper, we believe this research offers valuable insights applicable to other perennial

#### *Rapid simultaneous detection of piper yellow mottle virus and cucumber mosaic virus in crude extracts of black pepper through duplex reverse transcriptase-recombinase polymerase amplification-lateral flow assay (RT-RPA-LFA)*

Contributor: Dr. Ishwara Bhat

## Research updates

Piper yellow mottle virus (PYMoV) and cucumber mosaic virus (CMV) are the causal viruses associated with stunt disease in black pepper plants across the world. They primarily spread by vegetative means, and hence effective diagnosis of the viruses is important in limiting their spread. In the present study, a duplex reverse transcriptase-recombinase polymerase amplification-lateral flow assay (RT-RPA-LFA) for the simultaneous detection of CMV and PYMoV in crude extracts of black pepper leaf tissues was developed. Betaine was included in the assay to remove non-specific signals produced in negative controls. Key parameters including the concentration of primers, magnesium acetate, temperature, and time were optimized for the duplex RT-RPA-LFA. The sensitivity of the duplex RT-RPA-LFA was found to be 10 times more than that of duplex RT-PCR. The developed duplex RT-RPA-LFA was validated using field samples of different black pepper varieties collected from different regions. The crude extract used as the template facilitates fast, equipment-free onsite detection of both viruses within 30 min. The developed duplex RT-RPA-LFA proved useful for the cost-effective detection of both viruses that can be performed in a short time with reduced labour cost, compared to the existing techniques such as PCR, which is time-consuming and requires a sophisticated laboratory.

### **Cardamom hybrid – IISR Sujyothi**

Contributors: Dr. S. J. Ankegowda, Dr. Akshitha H. J., Dr. Mohammed Faisal Peeran, Dr. Shivakumar M. S., Dr. Balaji Rajkumar M. and Dr. Honnappa Asangi

- Malabar type, hybrid of IC 584095 × IC 547219
- High yielding (3805 kg/ha fresh and 705 kg/ha dry) hybrid
- 70 % of the capsules are >7 mm
- High essential oil content – 8.38 %



## Outreach Activities

### Training programmes

- ATMA SCPSC Training for Angadipuram block on 21.01.25 (31 participants)
- Black pepper Nursery training - Jeevani Krishikottam on 28.01.25 (9 participants)
- Five-day workshop on Molecular Biology & Bioinformatics – EMEA College of arts and science, kondotty during 03-07 February, 2025. (21 participants)
- ATMA interstate exposure visit of farmers from Erode (22 participants)
- ATMA interstate exposure visit of farmers from Ammapettai, Erode on 08.05.25 (20 participants)
- ATMA interstate exposure visit of farmers from Perundurai block, Erode on 13.05.25 (19 participants)
- ATMA interstate exposure visit of farmers from Salem on 13.05.25 (20 participants)
- ATMA SSEPERS interstate exposure visit of farmers from Erode block on 20.05.25 (23 participants)
- ATMA interstate exposure visit of farmers from Magundachavadi block, Salem on 22.05.25 (20 participants)
- Training for trainees from Malabar Botanical Garden on 29.05.25 (20 participants)
- Training for farmers from ATMA Salem on 05.06.25 (15 participants)
- Training for farmers from ATMA Kundalam block, Tiruppur on 19.06.25 (20 participants)
- Training for staff members from AVT during 23 – 24 June, 2025 (5 participants)
- Nursery training for farmers from MS Swaminathan Research Foundation Kalpetta on 25.06.25 (9 participants)

### Exhibitions

- National Horticulture Fair 2025 under the theme 'Horticulture for Viksit Bharat- Nutrition, Empowerment and Livelihood' at ICAR-Indian Institute of Horticultural Research, Bengaluru, Karnataka 27th February to 1st March 2025.
- Exhibition showcasing the varietal diversity of black pepper was displayed in Farmers awareness training programme on PPVFRA at KVK Gonikoppa on 27.03.25.

### Lectures Delivered

- Dr Shivakumar M S delivered a television talk in Farm TV on topics Improved varieties in black pepper on 10-12-2024.
- Dr Shivakumar M S delivered a lecture on Distinct characters in black pepper and cardamom for registration in Farmers awareness training programme on PPVFRA at KVK Gonikoppal on 27.03.25.
- Dr Shivakumar M S delivered a lecture on protection of plant varieties and registration guidelines for spices Farmers awareness training programme on PPVFRA at DATC, Kudige, Department of Agriculture on 13.05.25.
- Dr Biju C N delivered a lecture on "Disease management in nutmeg" during farmers training programme organized by Myristica Malabar Farmer Producer Company Ltd. at Karuvarakundu, Malappuram on 29.01.25.
- Dr Biju C N delivered a lecture on "Integrated pest and disease management strategies in ginger" during two days Workshop on "Seed Production and Plant Health Management of Ginger" at State Convention Centre, Shillong, Meghalaya during 25-26 February, 25.
- Dr Biju C N delivered a lecture on "Pest and disease management in turmeric" in the Technical Seminar on "Pest Disease Management in Coconut, Turmeric, Sugarcane and Banana" during Agricultural Exhibition and Seminar held at Vijayamangalam, Perundurai, Erode, Tamil Nadu on 12.06.25.
- Dr Jayashree E chaired the session and delivered a key note address on "Spice Processing and Value Addition" during the International Conference on 'Sustainable Foods-Water-Energy-Mechanization-Nexus and Whole grains' (SWEMF Nexus 2025) at Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Kumulur, Trichy, during 27-28 January 2025.

## Outreach Activities

- Dr Honnappa Asangi delivered a talk on improved production technology of ginger in the two-day workshop on "Seed Production and Plant Health Management of Ginger," organized by the Director of Horticulture, Govt. of Meghalaya during 25 – 26 February, 2025
- Dr Honnappa Asangi delivered a talk on advanced production aspects of black pepper, cardamom and other Spices at Maitri Kalabalaga Telangara, Yellapur, Uttara Kannada, Karnataka on 10.06.25.
- Dr. Alfiya PV delivered a lecture on advances in spice processing and value addition during the SCSP training at ICAR – CIFT on 25th February 2025.

### ***Capacity Building Programs attended by staff***

- Dr Honnappa Asangi attended the Value Links 2.0 Introductory Training organized by GIZ, in collaboration with the Ministry of Agriculture & Farmers Welfare, New Delhi during 5 – 9 May, 2025.

### ***Participation in Symposia/Seminars/Workshops/Conferences/Meetings***

- Dr Ishwara Bhat attended the National Conference on "Emerging issues and sustainable strategies in plant health management: A global perspective", organized by Indian Phytopathology in collaboration with ICAR-Central Citrus Research Institute at Nagpur during January 19-21, 2025
- Dr Biju C N attended the two day workshop on "Seed Production and Plant Health Management of Ginger" at State Convention Centre, Shillong organized by the Department of Horticulture, Shillong, Meghalaya during 25-26 February, 2025.
- Dr Jayashree E attended the International Conference on 'Sustainable Foods-Water-Energy-Mechanization-Nexus and Whole grains" (SWEMF Nexus 2025) at Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Kumulur, Trichy, during 27-28 January 2025.
- Dr Honnappa Asangi participated in the two-day workshop on "Seed Production and Plant Health Management of Ginger" at Shillong, Meghalaya during 25-26 February, 2025.
- Dr Honnappa Asangi participated in the 'National Conference on Digital Technologies for Transforming the Horticultural Sector' organized by Indian Academy of Horticultural Sciences (IAHS) at the ICAR-IARI, Pusa Campus, New Delhi on 28-30, January 2025.

### ***Representation in external committees***

- Dr Ishwara Bhat attended the Assessment Committee meeting for considering the promotion of Technical Category III (workshop staff including Engineering workshop staff) at ICAR-CPCRI, Kasaragod on 20-01-2025
- Dr Ishwara Bhat attended the Institute Management Committee of ICAR-IISR, Bengaluru held on 25-02-2025
- Dr Biju C N served as a panellist for the Technical Seminar on "Pest Disease Management in Coconut, Turmeric, Sugarcane and Banana" during Agricultural Exhibition and Seminar held at Vijayamangalam, Perundurai, Erode, Tamil Nadu on 12.06.25
- Dr Jayashree E participated as member in the 18th Committee meeting to appraise the proposals received from States/UTs for Common Incubation Centre establishment under PMFME through video conferencing organized by National Institute of Food Technology Entrepreneurship and Management (NIFTEM) – Thanjavur on 31-01-2025

## Outreach Activities

### Awards/ Honours/ Recognitions

- Dr Shivakumar M S received best oral presentation in the National Symposium on Spices and Aromatic Crops—Strategies for Smart Production, Product Diversification and Utilization (SYMSAC XI) (07-09 January 2025) for article-titled 'Leveraging YREM and BLUP for genotype selection in black pepper breeding under temporal environmental variability'.
- Dr Shamsudheen M received the second best paper award 2025 by ICAR-Directorate of Cashew Research, Puttur for the research paper, Mangalassery, S., Mog, B., Manjunatha, K., Muralidhara, B. M., Adiga, J. D., Veena, G. L., & Chandran, K. P. (2025). The impact of cashew (*Anacardium occidentale* L.) on biological activity, nutrient cycling and carbon sequestration in tropical soil. *Journal of Plant Nutrition*, 48(14), 2388-2404. <https://doi.org/10.1080/01904167.2025.2479763>
- Dr Maneesha S R received the best oral presentation award in the National Symposium on Recent Trends in Omics in Plant Biology held at ICAR-IISR, Kozhikode during 21-22 May 2025.
- Dr Sharon Arvind was Conferred Fellow of Indian Society for Spices 2025 during National Symposium on Spices and aromatic crops- Strategies for smart production, product diversification and utilization, SYMSAC-XI held at ICAR-IISR, Kozhikode Kerala during 08 January 2025.
- Dr Sharon Aravind received the J S Pruthi Best Research Paper Award for the Research paper entitled "Screening small cardamom (*Elettaria cardamomum* Maton) field gene bank accessions for phenotypic characters, yield potential and disease resistance", authored Sharon Aravind, C N Biju, S J Ankegowda, M S Shivakumar, R Senthil Kumar and M F Peeran
- 'Dr. J.S Pruthi Award- 2019' for the best research paper entitled 'Effect of modified atmosphere storage on the shelf life and quality of black pepper and turmeric' published in the Journal of Spices and Aromatic Crops (JOSAC), Vol. 28(1): 20-26, 2019 authored by Zachariah T.J., Jayashree E. and Shiva K.N. awarded by Indian Society for Spices, Kozhikode during the National Symposium on Spices and Aromatic Crops (SYMSAC-XI) held at ICAR-IISR on 7 January 2025.
- 'Dr. H.S Mehta Memorial Best Oral Presentation Award-2025' for the oral presentation entitled 'Optimization of process parameters for the development of microencapsulated spray dried sambar oleoresin and evaluation of its quality' authored by Archana R., Jayashree E., Anees K. and Alfiya P.V. 2025 awarded by Indian Society for Spices, Kozhikode during the National Symposium on Spices and Aromatic Crops (SYMSAC-XI) held at ICAR-IISR during 7-9 January 2025
- ICAR-IISR received the best exhibition stalls award in the 'National Horticulture Fair- 2025' under the theme 'Horticulture for Viksit Bharat- Nutrition, Empowerment, and Livelihood' held from 27th February to 1st March 2025 at ICAR-Indian Institute of Horticultural Research, Bengaluru.
- ICAR-IISR, Regional Station, Appangala received the Rajbhasha Shield Award for FY 2024-25 for performance in the implementation of the Official Language and evaluation of half-yearly reports by the Town Official Language Implementation Committee (TOLIC), Madikeri.

## Institute Technology Management Unit

- During the period twenty-six (26) licenses were issued for various technologies developed by ICAR-IISR and a revenue of 20.85 Lakhs was generated
- Four patent applications were filed, three copyright applications were filed and one variety was filed for Protection of Plant Varieties and Farmer's Rights Authority (PPV& FRA) registration.
- Facilitated the consultancy visit of IISR scientist for guidance in cultivation and spices disease management to V.K Plantation, Nilgiris, Tamil Nadu, Puliarmala & Purakkadi Estate, Wayanad, Kerala, Kodi Estates, Chikkamagalur, Karnataka.
- Conducted a virtual interactive session as part of World Intellectual Property Day Celebrations 2025 on 29th April 2025 under the theme "Patents in Agriculture-Strategic Research Orientation. Dr. Shweta Sharma, Registered Patent Agent & Principal Associate, M/s Khurana and Khurana, Greater Noida, Uttar Pradesh, ICAR Empanelled attorney, delivered the lead talk on the topic "Navigating Agricultural Patenting in India."
- Exhibited technologies and products in various National level programmes.

### ***Commercialization of Technologies:***

Sl. No.	Name of Technology/ Know-How	Name of Contracting Party	Date of Licensing	Revenue Earned (in Rs.)
1.	Black Pepper IISR Chandra	Raju Alex Kozhikode, Kerala	07-01-2025	75000
2.	Black Pepper IISR Chandra	Changappa C R, Kodagu Karnataka	07-01-2025	75000
3.	Black Pepper IISR Chandra	Jain Irrigation Systems Ltd, Jalgaon, Maharashtra	07-01-2025	75000
4.	Black Pepper IISR Chandra	Mr. E K Devassia, Pulpally, Wayanad, Kerala	07-01-2025	75000
5.	Turmeric IISR Prathibha	Kalesh M, Meppayur, Kozhikode, Kerala	07-01-2025	37500
6.	Spice flavoured Millet Cookies	Mehna Riswi T K Malappuram, Kerala	07-01-2025	10000
7.	Turmeric IISR Prathibha	Abdul Nabeel P, Kozhikode, Kerala	03-02-2025	37500
8.	A micronutrient composition for ginger and a process for its preparation for soil pH above 7	AIRR Organics and Biofertilizers Private Limited, Bengaluru, Karnataka	21-02-2025	187500
9.	Ginger IISR Vajra	Natura Nursery & Agro Products, Kozhikode, Kerala	21-02-2025	75000
10.	Ginger IISR Vajra	Techthota Agritech Pvt Ltd, Bangalore, Karnataka	21-02-2025	75000

## Institute Technology Management Unit

11.	Ginger IISR Surasa	Prahladan AP, Kannur, Kerala	21-02-2025	50000
12.	Ginger IISR Surasa	Sunil Thomas, Kottayam, Kerala	21-02-2025	50000
13.	Ginger IISR Surasa	John Joseph, Kozhikode, Kerala	21-02-2025	Exempted
14.	Black pepper Subhakara	Eden Nursery Gardens, Coimbatore, Tamil Nadu	26-03-2025	25000
15.	Nutmeg IISR Keralashree	Eden Nursery Gardens, Coimbatore, Tamil Nadu	26-03-2025	25000
16.	Turmeric IISR Pragati	Mohammed Umar Akthar, Adilabad, Telangana	28-03-2025	75000
17.	Ginger IISR Vajra	Kapileswar Agro & Biotech Services Pvt Ltd Kalahandi, Odisha	28-03-2025	75000
18.	Turmeric IISR Pragati	Agri life spices and plants, Kolkata, West Bengal	28-03-2025	75000
19.	Ginger IISR Varada	E K Devassia, Pulpally, Wayanad, Kerala	28-03-2025	75000
20.	A micronutrient composition for ginger and a process for its preparation (soil pH below 7)	Natura Nursery & Agro Products, Kozhikode, Kerala	15-04-2025	1,87,500
21.	A jaggery-based product and a process for preparing the same	Xignature Foods, Thrissur Kerala	25-04-2025	1,12,500
22.	Ginger IISR Vajra	Jain Irrigation systems Ltd., Jaigaon, Maharashtra	16-05-2025	100000
23.	Turmeric IISR Pragati	Jain Irrigation systems Ltd., Jaigaon, Maharashtra	16-05-2025	100000
24.	Black Pepper IISR Chandra	Maneesh Gambhira D, Dambekana Kasaragod, Kerala	16-05-2025	75000
25.	A micronutrient composition for black pepper and a process for its preparation	Future Biotech, Dharwad, Karnataka	16-05-2025	2,25,000
26.	Black Pepper IISR Chandra	M Chetan Appaiah, Bengaluru, Karnataka	10-06-2025	75000

## Institute Technology Management Unit

## Management of IP Portfolios

IPRs	Application/ Registration No.	Name of Innovation/ Technology/ Product/ Plant Variety	Date of application Filed/ submitted	Date of Application Granted/ Registered**
Patents	1) 202511009558	Spice-flavored fruit chews and a method for preparing the same using vacuum impregnation technique	05-02-2025	Filed on 31-12-2024
	2) 202511031583	Nano-particle-based liquid formulation and a method of preparing the same thereof	31-03-2025	Filed on 31-03-2025
	3) 202511034841	In-vitro process for microrhizome induction and rapid hardening in rhizomatous plants	09-04-2025	Filed on 09-04-2025
	4) 202511038727	An innovative tool kit for analysis and visualization of next-generation sequencing data (NGS)	22-04-2025	Filed on 22-04-2025
	5) 567347	An antimicrobial composition for coating rhizomes and tubers and a process for its preparation	08-10-2020	Granted 11-06-2025
Copyrights	1. SW-20266 2025	ZoNMD: Zingiber officinale Molecular Marker Database	27-01-2025	Granted 25-03-2025
	2. SW-2025020578	Spice-AgroTech	03-01-2025	Granted 23-05-2025
	3. SW-2025021155	IISR-eZnProbe	09-06-2025	Granted 05-08-2025
Plant Variety	1. REG 2025 0295	Ginger - IISR SURASA	26-03-2025	Filed

## Participation in Exhibitions/Seminars

Sl. No.	Name of Programme (Training/ workshop/ Seminar etc.) attended	Organized By (Name of Institute)	Days of Programme (Date from - to)	Participant (Name)
1	'Harnessing Plantation Sector for Sustainable Development Goals'.	ICAR- Central Plantation Crops Research Institute, Kasaragod	3-5 January 2025	ITM-ABI staff
2	National Symposium on Spices and Aromatic Crops- Strategies for Smart Production, Product Diversification and Utilization SYMSAC-XI	Indian Society for Spices at ICAR-IISR, Kozhikode, Kerala	7-9 January 2025	ITMU In charge, Rakesh M Raghavan & Staff

## Institute Technology Management Unit

3	Matsyamela &Foundation Day Celebration	ICAR-Central Marine Fisheries Research Institute, Kochi	01-03 February, 2025	ITM-ABI staff
4	National Science Expo- Kerala Science Congress 2025	Kerala State Council for Science, Technology, and Environment (KSCSTE)	7-10 February 2025	Dr. TE Sheeba Dr. Sajesh V K Rakesh M Raghavan ITM-ABI staff
5	RISE UP 2.0 (Resourcing Innovations and Spice Entrepreneurship for Unlocking Potential) Startup Conclave,	ICAR-IISR, Kozhikode	19-21 February 2025	ITMU In charge, Rakesh M Raghavan & Staff
6	EKASVA -2025	National Institute of Technology	4-5 March 2025	ITM-ABI staff
7	Delivered a talk on 'Entrepreneurship Opportunities for Island Youth and Women in Spices, Arecaanut and Medicinal Plants.'	ICAR-Central Island Agricultural Research Institute	5-7 March 2025,	Dr. T E Sheeba



Execution of license agreement with startups/farmers for IISR technologies

## Institute Technology Management Unit

### Agri Business incubator

- Participated and showcased technologies and services in the XI edition of the National Symposium on Spices and Aromatic Crops (SYMSAC XI) on the theme "Strategies for Smart Production, Product Diversification and Utilization," held from 7–9 January 2025 at ICAR–Indian Institute of Spices Research (IISR), Kozhikode, hosted by the Indian Society for Spices (ISS).
- Participated in the Exhibition-cum-National Seminar on 'Harnessing Plantation Sector for Sustainable Development Goals' held from 3–5 January 2025 at ICAR–Central Plantation Crops Research Institute (CPCRI), Kasaragod.
- Participated in the Mission 1000 MSME Conclave organized by the Department of Industries & Commerce, Government of Kerala, on 9th January 2025 at IMA House, Kochi. Participated in the Innovation Showcase by presenting technology design innovations and projects relevant to the SME sector, and engaged in B2B discussions with SMEs to explore collaborations and innovation adoption.
- Organized Resourcing Innovations and Spice Entrepreneurship for Unlocking Potential (RISE UP 2.0) - Entrepreneurs Meet and Agri Expo from February 19–21, 2025, bringing together entrepreneurs, students, and industry stakeholders to foster collaboration in the agriculture and spice sectors. The three-day conclave featured the NavUdyam program, including an Idea Hackathon and Startup Orientation. The Udayam 2.0 Agri Expo showcased over 70 entrepreneurs presenting farm tools, bio-inputs, and innovative spice products. The Udyamitha Business Meet highlighted ready-to-market technologies, while the Udyamika Conclave focused on women entrepreneurs. The event witnessed a footfall of over 1,000 visitors, with 60 entrepreneurs exhibiting their innovative products.

### Hindi Anubhag

#### राजभाषा कार्यान्वयन समिति की बैठक

जनवरी-जून 2025 की अवधि में राजभाषा कार्यान्वयन समिति की दो बैठकें आयोजित की गईं। बैठकें दिनांक 3 फरवरी 2025 तथा 2 जून 2025 को निदेशक डॉ. आर. दिनेश की अध्यक्षता में संपन्न हुईं। समिति ने राजभाषा कार्यान्वयन की गतिविधियों की समीक्षा करके सुधारने के लिए सुझाव दिया।

#### हिंदी कार्यशाला

जनवरी-जून 2025 की अवधि में भारूदनुप-भारतीय मसाला फसल अनुसंधान संस्थान, कोपिक्कोड, आईआईएसआर क्षेत्रीय केंद्र, अप्पंगला, प्रायोगिक प्रक्षेत्र एवं कृषि विज्ञान केंद्र, पेरुवण्णामुषि के अधिकारियों तथा कर्मचारियों के लिए दो कार्यशालाएं आयोजित की गईं।

पहली कार्यशाला 10 फरवरी, 2025 को आईआईएसआर समिति कक्ष में आयोजित की। प्रस्तुत कार्यशाला में श्रीमती माया एस., वरिष्ठ प्रबंधक, बैंक ऑफ बडौदा, कोपिक्कोड ने "राजभाषा नीति, नियम एवं हिंदी टिप्पणी" पर व्याख्यान दिया।

## Hindi Anubhag

दूसरी कार्यशाला दिनांक 13 जून, 2025 को ऑनलाइन रूप में आयोजित की जिसमें डॉ. विनोद कुमार यादव, कनिष्ठ अनुवाद अधिकारी, राष्ट्रीय पुस्तकालय, कोलकाता ने “विभिन्न अनुवाद उपकरण और कंठस्थ 2.0 दूल” के बारे में व्याख्यान दिया। प्रस्तुत कार्यशाला में आईआईएसआर मुख्यालय के अलावा क्षेत्रीय केंद्र, अप्पंगला, प्रायोगिक प्रक्षेत्र, पेरुवण्णामुषि, कृषि विज्ञान केंद्र, पेरुवण्णामुषि के अधिकारियों एवं कर्मचारियों ने सक्रिय रूप से भाग लिया।



दिनांक 10 फरवरी, 2025 को आईआईएसआर समिति  
कक्ष में आयोजित कार्यशाला का दृश्य



दिनांक 13 जून, 2025 को ऑनलाइन रूप  
में आयोजित कार्यशाला का दृश्य

### राजभाषा निरीक्षण

दिनांक 8 जनवरी, 2025 को डॉ. सुधाकर पांडे, सहायक महानिदेशक, भारतीय कृषि अनुसंधान परिषद ने संस्थान की राजभाषा कार्यान्वयन का निरीक्षण किया।

### नगर राजभाषा कार्यान्वयन समिति

दिनांक 29 मई, 2025 को अपराह्न 3.30 बजे नगर राजभाषा कार्यान्वयन समिति की बैठक संपन्न हुई। प्रस्तुत बैठक में सुश्री. एन. प्रसन्नकुमारी, मुख्य तकनीकी अधिकारी ने भाग ली। हिंदी प्रकाशन

- एआईसीआरपीएस वार्षिक प्रतिवेदन 2024 का कार्यकारी सारांश।
- आईआईएसआर वार्क प्रतिवेदन 2024 का कार्यकारी सारांश।
- काली मिर्च के विषाणु रोग और उसका प्रबंधन।

### राजभाषा रिपोर्ट

संस्थान के राजभाषा कार्यान्वयन की तिमाही एवं वार्षिक रिपोर्ट तैयार करके भारतीय कृषि अनुसंधान परिषद, नई दिल्ली को भेज दिया। तिमाही रिपोर्ट एवं वार्षिक रिपोर्ट राजभाषा विभाग, नई दिल्ली की वेब साइट पर भराया गया।

## Major Events

### National Symposium on Spices and Aromatic Crops (SYMSAC-XI)

The National Symposium on Spices and Aromatic Crops (SYMSAC-XI) – Strategies for Smart Production, Product Diversification, and Utilization was successfully held at ICAR-IISR, Kozhikode from 7th to 9th January 2025. The event, organized by the Indian Society for Spices (ISS) in collaboration with ICAR, ICAR-IISR, Spices Board, DASD, and ICAR-NRCSS, brought together experts and stakeholders to discuss the latest trends and technologies in spice and aromatic crop production. The Chief Guest, Dr Sanjay Kumar Singh, Deputy Director General (Horticultural Science), ICAR, emphasized the need for the adoption of modern technologies in spice cultivation. He urged for the promotion of varieties and technologies developed by ICAR to be adopted by farmers on a large scale, while also highlighting the importance of income sustainability and shifting towards climate-positive practices.

The Guest of Honor, Dr Sudhakar Pandey, Assistant Director General (Flowers, Vegetables, Spices, Medicinal Plants), ICAR, discussed the need to establish benchmarks for developing colorant and nutraceutical varieties from spices. The event featured six technical sessions, including a special session on the Western Ghats Kokkam Foundation Lecture. The event showcased 14 lead talks from renowned scientists, along with 31 selected oral presentations and 89 posters. Awards were given for the best oral and poster presentations, along with an overall best award.

A crucial session on 'Farmers-Scientist-Industry-FPO' was organized, emphasizing the collaboration between different stakeholders to address the challenges faced by the spice industry. The symposium also delved into cutting-edge technologies such as gene editing, climate-smart agriculture, and safe spice production. An exhibition displaying innovative technologies from various research organizations was also held. Additionally, the symposium highlighted promising technologies for commercialization, including a rapid detection method for *Piper* yellow mottle virus, micronutrient-based foliar formulations for small cardamom growth, and innovative approaches to managing diseases in cardamom and fennel. Overall, the symposium provided a platform for sharing cutting-edge research and technologies that will shape the future of the spice industry, while emphasizing the importance of sustainable and climate-smart practices. Over 150 delegates participated in the symposium.



### DASD Sponsored Farmers Training Programme at ICAR- IISR RS, Appangala

ICAR - Indian Institute of Spices Research Regional Station, Appangala organized one day MIDH-farmers training programme on "Agro-Technological Practices for Sustainable Black Pepper Production" on 13.02.2025 sponsored by Directorate of Arecaut and Spices Development, Kozhikode. The programme was inaugurated by Dr. V. Srinivasan, Head, Division of Crop Production & PHT, ICAR-IISR, Kozhikode in the presence of other dignitaries Dr. K. Kandiannan, Principal Scientist, ICAR-IISR & PI-MIDH; Dr. C. K. Thankamani, Principal Scientist, Division of Crop Production & PHT, ICAR-IISR, Kozhikode; Mrs. Kamala Uthaiah, Gram Panchayat President, Bettageri and Dr. S. J. Ankegowda, Head of

## Major Events

the Station presided over the programme. Dr. Honnappa Asangi welcomed the gathering and Dr. Akshitha H J proposed vote of thanks.

### **Republic Day Celebration**



### **RISE UP – Startup Conclave**

The RISE UP Startup Conclave, hosted by the ICAR - Indian Institute of Spices Research, Kozhikode, from February 19-21, concluded successfully, bringing together entrepreneurs, students, and industry stakeholders to foster collaboration in the agriculture and spice sectors.

Dr. George Ninan, Director, ICAR-CIFT, Kochi, inaugurated the event. The first day featured the NavUdyam program, which included a theme-based Idea Hackathon and a Startup Orientation Programme. Thirteen teams presented their innovative ideas under six different themes at the institute. This program, conducted in collaboration with the Kerala Startup Mission, provided a platform for participants to present their ideas to an expert panel and gain valuable insights into launching and growing a startup. On the second day, Dr. R. Dinesh inaugurated the exhibition stalls for the Udayam 2.0 Agri Expo. Held at the IISR campus, the exhibition showcased around 70 small-scale entrepreneurs and agricultural product manufacturers. The diverse displays included farm tools, bio-inputs, seeds, and value-added products. Innovations developed at IISR, such as bio-capsules and unique spice varieties were also featured. Additionally, the 'Udyamitha' Business Meet was organized, where ICAR institutes, Kerala Agricultural University and NIFTEM Thanjavur presented their ready-to-market technologies. Entrepreneurial support schemes were also introduced by institutions such as the District Industries Centre, MSME-DFO and Department of Agriculture. On the third day, the 'Udyamika' – Women Entrepreneurs Conclave was held at the institute, addressing the unique challenges and opportunities for women entrepreneurs in the agriculture and spice sectors.

The event concluded with a valedictory session, during which Shri P. Prasad, Hon'ble Minister for Agriculture, Kerala, commended IISR for its continuous support of entrepreneurial efforts, recent research innovations, such as the spice-infused jaggery mix and also highlighted IISR technologies aimed at reducing wildlife-related damage to crops. During the event Honourable Minister presented awards for the best exhibition stalls and innovative products and handed over license agreements for the production of seed materials of IISR varieties – IISR Surasa, IISR Surya, and IISR Vajra – to the respective recipients.

## Major Events



### Golden Jubilee Lecture Series

Dr. R Selvarajan, Director, ICAR - National Research Centre for Banana, Thiruchirapalli delivered the 5th Lecture in the Golden Jubilee Lecture Series of ICAR - Indian Institute of Spices Research on the National Science Day.



### Agricultural awareness program

ICAR - Indian Institute of Spices Research, in collaboration with the District Panchayath, Kozhikode, organized an agricultural awareness program for selected beneficiaries under the SCSP Scheme. The program was inaugurated by District Panchayath President Sheeba Sasi at the District Panchayath Hall. Scientists from the institute Dr. Biju C N, Dr. Sajesh V K, and Dr. Lijo Thomas engaged with farmers on effective farming methods for Black Pepper and Turmeric. As part of the program, over 200 beneficiaries were provided with agricultural kits containing pepper vines, ginger seed materials, micronutrients, and biocapsules.

## Major Events



### International Women's Day Celebration

The Institute Women Cell of ICAR - Indian Institute of Spices Research organized women's day celebration on the theme "For ALL women and girls: Rights, Equality, Empowerment." The event was graced by Smt. K C Rosakkutty, Chairperson of the Kerala State Women's Development Corporation as the Chief Guest. Renowned Malayalam writer Smt. B M Suhara was the Guest of Honour and addressed the IISR fraternity on women empowerment. An awareness session on "Empowerment through Fitness and Nutrition" was conducted by Mr. Muhammed Ashraf, Ex-Indian Army Coach and Former Mr. India, focused on the critical role of fitness and nutrition in empowering individuals. Dr. R Dinesh, Director, ICAR-IISR presided over the event. Dr. R Praveena extended the welcome to the attendees and Dr. R Sivaranjini delivered the vote of thanks.



### National Symposium on Recent Trends in Omics in Plant Biology

The ICAR-Indian Institute of Spices Research (ICAR-IISR), Kozhikode and the Bioinformatics and Integrative Genomics (BIG) Facility, ICAR-IISR successfully organized the 'National Symposium on Recent Trends in Omics in Plant Biology' from May 20–22, 2025, as part of its Golden Jubilee celebrations. The event brought together over 70 participants, including scientists, academicians, students and industry representatives from across India, to deliberate on the advances and applications of omics technologies in plant sciences. The 'National Symposium on Recent Trends in Omics in Plant Biology' commenced with the Pre- Symposium Workshop on May 20, 2025, which focused on hands-on training in transcriptomics, Genome Wide Association Studies, metagenomics and machine learning using tools such as Galaxy, R and Python. The workshop, limited to selected participants, aimed at capacity building for early career scientists and students, and was supported by expert trainers from reputed institutions. The workshop highlighted the demand for candidates possessing domain expertise and additional skills in bioinformatics.

## Major Events

### ***Viksit Krishi Sankalp Abhiyaan***

The ICAR-Indian Institute of Spices Research (IISR), Kozhikode, organized a series of outreach activities as part of the nationwide initiative, 'Viksit Krishi Sankalp Abhiyan', launched by the Union Ministry of Agriculture and Farmers Welfare in collaboration with ICAR. The campaign, ran from May 29 to June 12, with the objective of strengthening dialogue between agricultural scientists and farming communities.

As part of the programme, multidisciplinary teams comprising IISR scientists, officials from various state agriculture departments, and local stakeholders visited different regions to interact directly with farmers. The initiative, aligned with the Centre's 'Lab to Land' approach, focused on translating scientific advancements into practical solutions for farmers, while promoting sustainable agricultural practices. During the interactions, farmers were sensitised to emerging agricultural technologies, improved crop varieties, government schemes, natural farming innovations, drone-based applications, ICT-enabled cropping systems, crop diversification strategies, and farm mechanisation options. IISR Director Dr. R. Dinesh flagged off the campaign vehicle from ICAR-IISR headquarters on 29th May, 2025. IISR scientists actively participated in district-level programmes across Kerala and Karnataka, with the institute's Krishi Vigyan Kendra, Peruvannamuzhi, coordinating activities in Kozhikode district.



### ***9th Dr. Y.R. Sarma Memorial Lecture***

The 9th Dr. Y.R. Sarma Memorial Lecture was held at ICAR - Indian Institute of Spices Research in fond remembrance of Dr. Y.R. Sarma, an eminent plant pathologist and former Director of the institute. Jointly organized by the Dr. Y.R. Sarma Memorial Trust and ICAR-IISR, the lecture was delivered by Dr. Diby Paul, Professor of Biology, College of Life and Health Sciences at Truett McConnell University, Cleveland, USA and a former student of Dr. Sarma. The lecture was on the topic "Quorum Sensing and Quorum Quenching with Special Reference to Plant Pathogenic Bacteria", explaining the potential of this advanced technique in plant disease management. Dr. D. Prasad, Project Coordinator, AICRPS presided over the event. Dr. Homey Cheryan (Director, DASD), Mr. Ahammed Kutty, and Ms. Aruna Sreenivas addressed the gathering. Dr. Ishwara Bhat, Head, Division of Crop Protection, delivered the welcome address and Dr. Anuradha proposed the vote of thanks in the event.



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- M. P. Faisal, C. N. Biju, A. M. Sujatha, R. Gowri and S. J. Ankegowda. (2025). Phenotypic diversity, virulence and genetic characterization of *Colletotrichum gloeosporioides*, the incitant of leaf blight of small cardamom in South India. *Journal of Applied Horticulture*. 27(1): 118-125.
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Kerala pp 115

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- Alfiya P V, Jayashree E, Anees K and Shahala P. 2025. Development and Evaluation of turmeric oleoresin impregnated biodegradable films. In: Sovenir & Abstracts – SYMSAC XI 2025. Krishnamurthy K S, Mukesh Sankar S, Biju C N, Sivarajanji R, Shamsudheen M, Sajesh V, Sharon Aravind, Maneesha S R, Srinivasan V, Kandiannan K and Dinesh R (Eds.). 07-09 January 2025 National Symposium on Spices and Aromatic Crops – Strategies for Smart Production, Product Diversification and Utilization, Indian Society for Spices, Kozhikode, Kerala, India, pp. 127.
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- Meera M., Jayashree E, Alfiya P. V., Anees K. and Sarathambal C. 2025. Physicochemical and antioxidant characterization of blended spice flavoured jaggery cubes during storage. In: Sovenir & Abstracts – SYMSAC XI 2025. Krishnamurthy K S, Mukesh Sankar S, Biju C N, Sivarajanji R, Shamsudheen M, Sajesh V, Sharon Aravind, Maneesha S R, Srinivasan V, Kandiannan K and Dinesh R (Eds.). 07-09 January 2025 National Symposium on Spices and Aromatic Crops – Strategies for Smart Production, Product Diversification and Utilization, Indian Society for Spices, Kozhikode, Kerala, India, pp. 136.
- Akshitha, HJ, Shivakumar MS, Kandiannan K and Ankegowda SJ, 2025, Impact of low cost polytunnel on sprouting and growth of black pepper rooted cuttings in tropical hilly zone. National Symposium on Spices and Aromatic Crops-Strategies for Smart Production, Product Diversification, and Utilization (SYMSAC XI) organized by Indian Soci-

## Publications

ety for Spices held at ICAR-IISR, Kozhikode during 7-9 January 2025.

- Alfiya P V, E Jayashree, K Anees and P Shahala. Development and Evaluation of turmeric oleoresin impregnated biodegradable films. In: Sovenir & Abstracts – SYMSAC XI 2025. Krishnamurthy K S, Mukesh Sankar S, Biju C N, Sivarajanji R, Shamsudheen M, Sajesh V, Sharon Aravind, Maneesha S R, Srinivasan, Kandiannan K and R Dinesh (Eds.). 07-09 January 2025 National Symposium on Spices and Aromatic Crops – Strategies for Smart Production, Product Diversification and Utilization, Indian Society for Spices, Kozhikode, Kerala, India, pp 127.
- Poster presentation: K Sunisha, E Jayashree & P V Alfiya\*. Convectional sun drying, hot-air and vacuum drying of mace: An evaluation on drying kinetics and quality. In: Sovenir & Abstracts – SYMSAC XI 2025. Krishnamurthy K S, Mukesh Sankar S, Biju C N, Sivarajanji R, Shamsudheen M, Sajesh V, Sharon Aravind, Maneesha S R, Srinivasan, Kandiannan K and R Dinesh (Eds.). 07-09 January 2025 National Symposium on Spices and Aromatic Crops – Strategies for Smart Production, Product Diversification and Utilization, Indian Society for Spices, Kozhikode, Kerala, India, pp 133.

## Radio Programmes

Date of Broadcast	Program Name	Title	Participants
16.12.24	Akashvani Kozhikode - Varthatharangini	IISR Surasa	Dr. Thankamani C K
20.02.25	Radio Mango – Kozhikode Superfast	Udayam 2.0 – Call In	Dr. Sajesh V K
06.03.25	Akashvani Kozhikode – Vayalum Veedum	Rise Up - Report	Entrepreneurs
21.04.25	Akashvani Kozhikode - Varthatharangini	IISR Surya	Dr. Sajesh V K
02.05.25	Akashvani Kozhikode - Vayalum Veedum	'Samrambhakathva Vikanamam' – Part 1	Dr. Sajesh V K. Dr. Maneesha S R. Sheeba Veluthur. Raziya T. Shoubanath
03.05.25	Akashvani Kozhikode - Vayalum Veedum	'Samrambhakathva Vikanamam' – Part 2	Dr. Sajesh V K. Dr. Maneesha S R. Sheeba Veluthur. Raziya T. Shoubanath
22.05.25	Akashvani Kozhikode – Vayalum Veedum	'Kurumulak vilayile ettakurachilukal'	Dr. Lijo Thomas

## Press Releases

During the time period 41 press releases were issued by the Media, Publicity & Publication Committee.

## Students Corner

**PhD Awarded**

Name	Thesis Title
Theertha A P	Physiological and biochemical characterization of black pepper genotypes subjected to limited water availability
Nazmin Banu C V	Morpho-physiological and molecular responses of turmeric genotypes subjected to water stress
Mery Rincey K	Decoding interactions of the nematophagous fungus, <i>Pochonia chlamydosporia</i> , with black pepper

**Msc Dissertations**

S. No.	Name	Title of the M.Sc. thesis	University to which submitted	Degree
1.	Ms. Aleena Shajan T	Development of Liquid Spice blends for Culinary Preparations	Mahatma Gandhi University, Kottayam	M. Sc. Degree in Food Technology and Quality Assurance
2	Ms. Jithu Maria Joseph	“Studies on Vacuum impregnation of Cardamom Flavour into Ash Gourd ( <i>Benincasa hispida</i> )	Mahatma Gandhi University, Kottayam	M. Sc. Degree in Food Technology and Quality Assurance
3	Ms. Sahla Parvin M. K.	“Spray drying of ginger-lime juice: process optimization, powder characterization, and byproduct utilization”	Banaras Hindu University, Varanasi	M. Tech. in Food Processing and Technology
4.	Ms. Niya Frank	Softgel encapsulation of virgin coconut oil enriched with turmeric and black pepper oleoresin	Kerala University of Fisheries and Ocean Studies, Kochi	M.Sc. Degree in Food Science and Technology

## Personalia

### Retirement

Name	Post	Date
Dr. K Kandiannan	Principal Scientist	28.02.25
Dr. C K Thankamani	Principal Scientist	28.02.25
Mr. P Sundaran	Administrative Officer	28.02.25
Mr. T E Janardhanan	Senior Administrative Officer	30.04.25
Mr. K Jayarajan	Chief Technical Officer	31.05.25

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### Director

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