



ICAR- National Institute of Secondary Agriculture E-NEWSLETTER



Director's Desk

The past quarter has been marked by a series of meaningful academic, capacity building, and outreach activities at ICAR-NISA. The institute continued to strengthen its engagement with farmers, extension agencies, and other stakeholders through trainings, field visits, live-streamed national programmes, and awareness activities. The institute also made notable progress in research and development. Ongoing studies include assessment of soil moisture dynamics in drip-irrigated fields, encapsulation of curcuminoids extracted from Lakadong turmeric, and in-vitro digestion evaluation of nanocellulose-stabilized β -carotene emulsions. Efforts are also underway on development of bigel-based real-time fish freshness indicators, establishment of a pilot plant for guar gum derivatives, and design of suitable equipment for cinchona debarking.

Key events included observance of Vigilance Awareness Week and Rashtriya Ekta Diwas, organization of farmer-centric programmes such as Kisan Diwas, live streaming of major Government of India initiatives, on-farm trainings and field visits. These activities reflect the institute's commitment to transparency, national unity, and farmer welfare. The outputs of our research and outreach efforts have resulted in several publications, awards, and the active participation of scientists in national and international scientific congregations has further enhanced the visibility and recognition of the institute.

I appreciate the dedicated efforts of the scientific, technical, and administrative staff in successfully implementing these programmes. I also acknowledge the cooperation of farmers and partner organizations. Together, we shall continue to work towards strengthening secondary agriculture and promoting sustainable livelihoods.




(Abhijit Kar)

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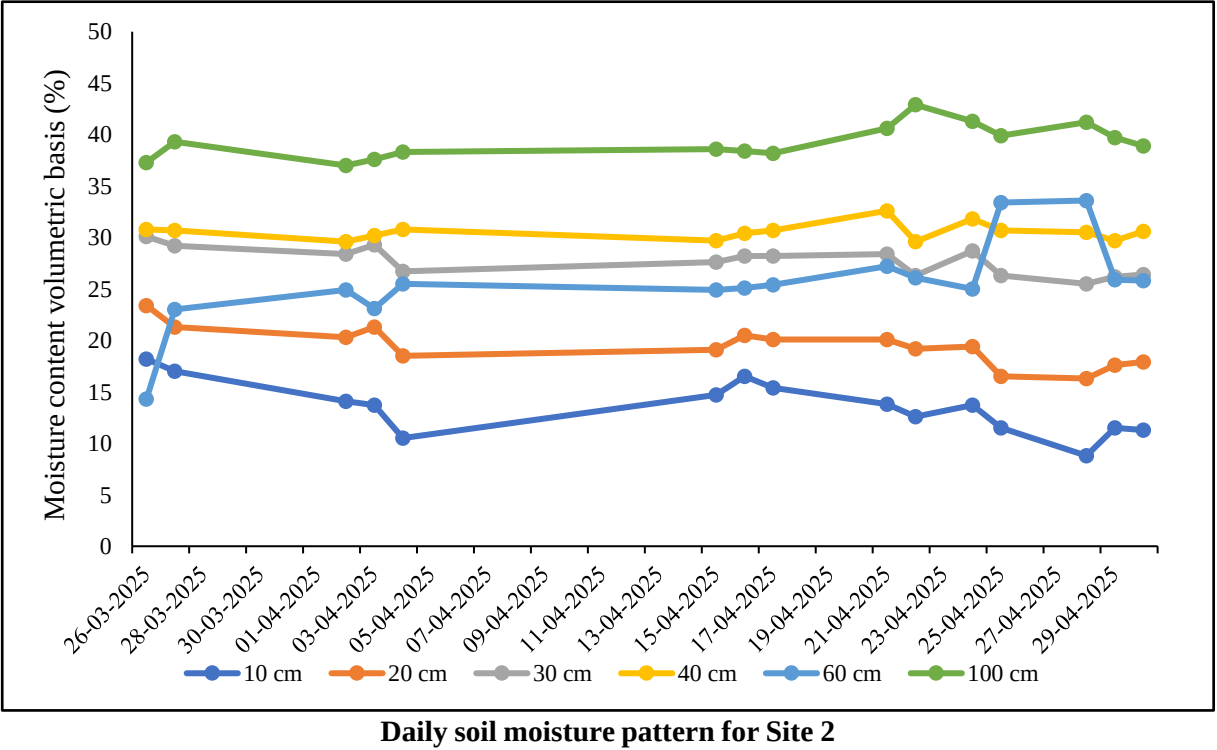


RESEARCH HIGHLIGHTS

Spatio-temporal variation of soil moisture patterns in a drip irrigated strawberry field

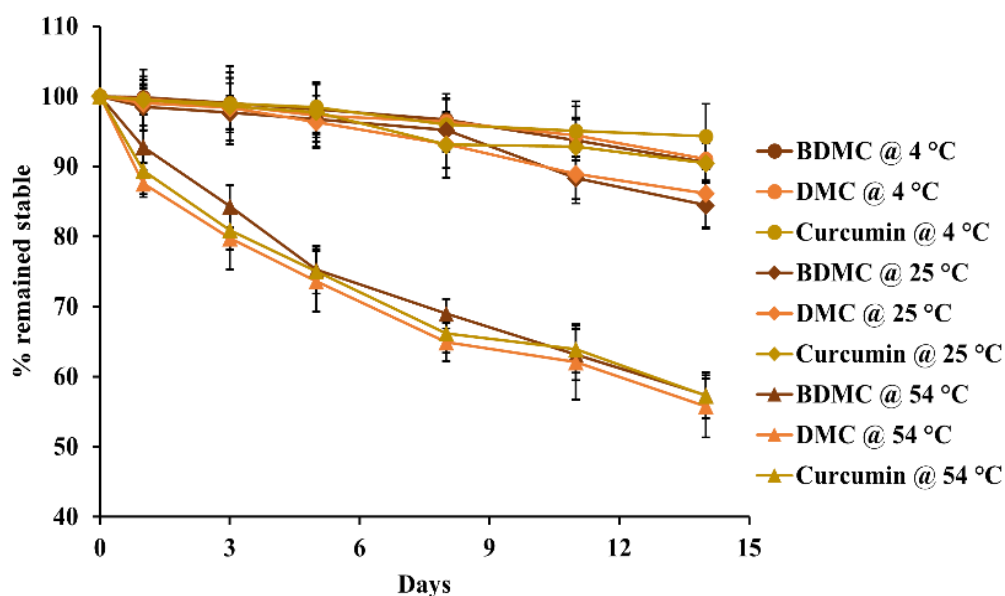
A study has been undertaken to assess the spatial and temporal variability of soil moisture in a drip-irrigated strawberry field. Understanding moisture distribution within the active root zone is essential for improving irrigation scheduling and water-use efficiency, thereby supporting precision irrigation and sustainable strawberry production. Crop growth and yield under drip irrigation are strongly influenced by the availability, movement and storage of soil water in the root zone. To evaluate spatial and vertical variations in soil moisture, PR2/6 sensor access tubes have been installed at three locations (≈ 3 m spacing) in the institute’s Instructional Research Farm (IRF), representing different soil hydrophysical properties. The experiment have been conducted during the pre-monsoon season from March 26 to April 30, 2025.

At Site 1, mean soil moisture increased with depth from $16.64 \pm 4.63\%$ at 10 cm to $39.30 \pm 1.47\%$ at 100 cm. Site 2 has shown a similar trend, ranging from $13.60 \pm 2.59\%$ at 10 cm to $39.30 \pm 1.66\%$ at 100 cm, with maximum moisture occurring at 40 cm. Site 3 has exhibited comparatively lower moisture in the upper layers ($6.10 \pm 1.45\%$ at 10 cm), with a gradual increase towards deeper layers ($35.63 \pm 0.71\%$ at 100 cm). Across all sites, the surface layer (10 cm) consistently showed the lowest moisture, while the deepest layer (100 cm) exhibited the highest values (up to 42.9%), indicating downward movement of irrigation water and contribution from capillary rise. Moisture content at 30 cm generally exceeded that at 40 cm, except at Site 2, suggesting greater water retention within the active strawberry root zone (~ 0 –26 cm). The 60 cm layer has depicted the most variable moisture pattern, likely due to the combined effects of percolation and capillary forces. Temporal analysis indicated slightly elevated moisture on irrigation days. Peak moisture occurred at 30 cm for Sites 1 and 3 and at 40 cm for Site 2, followed by a decline at deeper layers. Overall, irrigation and rainfall predominantly influenced soil moisture up to 30 cm depth, while groundwater effects became more pronounced below this zone.



Encapsulation of curcuminoids from *Lakadong* turmeric in a shellac matrix and storage stability of the encapsulates

For enhancing the storage stability of curcuminoids, the curcuminoid extract derived from *Lakadong* turmeric has been encapsulated with 1-3% shellac using a pH-induced simple coacervation technique, achieving maximum encapsulation efficiencies of 86%, 76%, and 70% for curcumin, Demethoxy curcumin (DMC) and Bis-demethoxy curcumin (BDMC), respectively, and a maximum total curcuminoid loading of 1.43%. Characterization through FT-IR and FE-SEM have confirmed curcuminoid encapsulation. The stability of the encapsulated curcuminoids within the shellac matrix has been assessed at three temperatures: low (4 ± 2 °C), ambient (25 ± 2 °C), and accelerated (54 ± 2 °C). The findings indicated that all three curcuminoids remained stable when stored at 4 ± 2 °C. A degradation of only 10-15% can be observed for each curcuminoid at 25 ± 2 °C across all formulations. Conversely, storage at 54 ± 2 °C resulted in more than 45 % degradation of the encapsulated curcuminoids within 14 days. Notably, in all formulations, curcumin has exhibited greater stability than BDMC or DMC, even at elevated temperatures. The data further indicated that shellac concentration did not affect the stability of the curcuminoids, as similar patterns have been observed across all samples and temperature regimes. To enhance understanding of the stability of the encapsulated curcuminoids and facilitate comparisons among formulations, the stability data have been fitted to a first-order degradation kinetics model. Among the shellac-encapsulated formulations, superior stability has been achieved at higher shellac concentrations, particularly at low ($k = 0.0034$ - 0.0069) and ambient ($k = 0.0059$ - 0.0115) temperatures. However, this effect was less evident under accelerated temperature conditions ($k = 0.0368$ - 0.0515). This study suggests that shellac improves the stability of encapsulated curcuminoids at low and ambient temperatures.



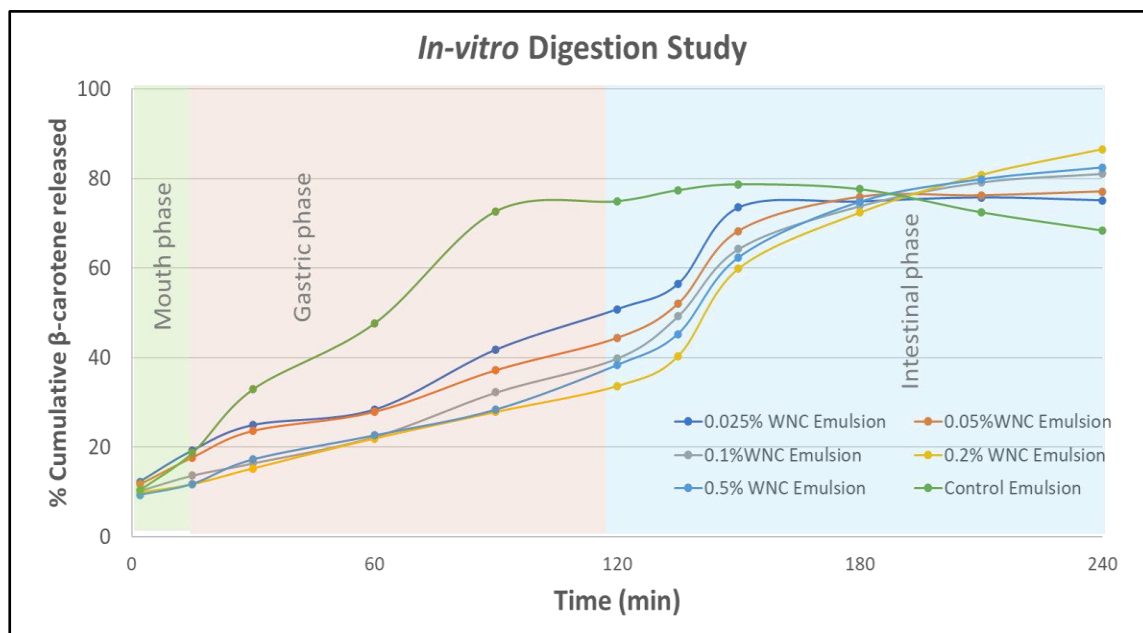
Storage stability of curcuminoids in 1% shellac-encapsulated formulation

In-vitro digestion study of water hyacinth nanocellulose stabilized emulsion of β -carotene

An in-vitro digestion study is a laboratory-based method used to simulate the human gastrointestinal (GI) digestion process under controlled conditions, without the need for human or animal testing. The in-vitro digestion studies of β -carotene aim to understand how it is released from water hyacinth (WH)

nanocellulose stabilized emulsion, solubilized, and made accessible for absorption in the human digestive tract.

The following figure illustrates the cumulative release of β -carotene (%) during an in-vitro digestion study across different concentrations of WH nanocellulose-stabilized emulsions compared to a control emulsion. The in-vitro digestion study has demonstrated that nanocellulose concentration plays a crucial role in regulating the bioaccessibility of β -carotene. The 0.2% and 0.5% WH nanocellulose emulsions has exhibited the highest release, i.e. 86.52% and 82.42%, respectively, during the intestinal phase, underscoring the role of nanocellulose in facilitating micellization and improving bioavailability. These findings suggest that WH nanocellulose offers dual functionality: enhancing emulsion stability and protecting bioactives during gastrointestinal digestion.

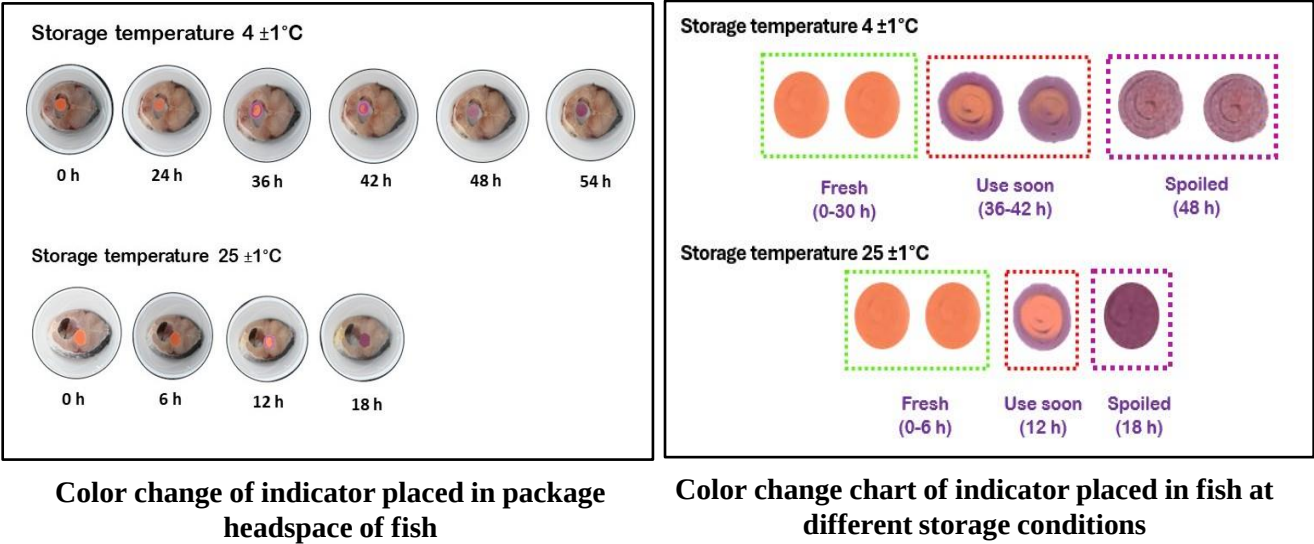


***In-vitro* digestion study of the WH nanocellulose stabilized emulsion of β -carotene**

Bigel based 3D printed intelligent indicator for real-time freshness monitoring of fish

A bigel-based composite system integrating oleogel and hydrogel phases has been developed and optimized for lac dye immobilization to fabricate paste based, colorimetric freshness indicator for probable use as 3D printing ink. The oleogel phase has been formulated with sunflower oil and beeswax, while the hydrogel phase consisted of guar gum and κ -carrageenan. Bigels with varying hydrogel-to-oleogel (H/O) ratios (80:20, 75:25, 70:30, and 77.5:22.5) have been systematically evaluated to identify a formulation with optimal rheological performance and printability. Among the tested compositions, 77.5:22.5 (H/O) ratio has demonstrated superior structural integrity and extrusion stability, and was therefore selected as the optimized formulation. The optimized bigel exhibited shear-thinning behavior, confirming its suitability for extrusion-based 3D printing, and showed excellent printability on polyethylene and paper-based packaging substrates. Upon exposure to ammonia vapor, the immobilized lac dye produced a distinct and rapid color transition from orange-red to purple, indicating high sensitivity toward volatile basic compounds associated with food spoilage. The practical applicability of the developed indicator has been validated for real-time monitoring of fish freshness in plastic containers and sealed with shrink-wrap films stored under refrigerated (4 ± 1 °C) and ambient (25 ± 1 °C) conditions.

The observed color transition of the indicator from orange-red to purple correlated strongly with the deterioration of fish quality, occurring when physicochemical parameters, such as pH, total viable count, and total volatile basic nitrogen (TVB-N) exceeded acceptable limits. Based on the distinct color change, the indicator successfully differentiated three freshness stages: ‘fresh’, ‘use soon’, and ‘spoiled’.



Translational research to promote secondary agriculture

As part of the ongoing research and extension activities, a needs assessment survey has been conducted among farmers to identify their information requirements, preferred communication channels, and existing knowledge gaps. Simultaneously, an impact assessment of training programmes has been undertaken to evaluate the adoption of scientific technologies in lac cultivation and to document key constraints faced by farmers. The data collected have been compiled, and data entry and statistical analysis are currently in progress, which will provide evidence-based insights for strengthening future translational research and extension strategies in secondary agriculture.

EDUCATIONAL AND CAPACITY BUILDING PROGRAMMES

Sl. No.	Name of programme	No. of programme/ batch	No. of beneficiaries
1.	Farmers’ training programme on “Scientific methods of Lac cultivation, primary processing and utilization”	01	25
2.	Master trainers training programme on “Scientific methods of Lac cultivation, primary processing and utilization”	03	126
3.	Master trainers training programme on “Foundation Training for Beekeepers”	01	25
4.	One day training cum exposure visit	07	401
Total		12	577

EVENTS

Celebration of Vigilance Awareness Week at ICAR-NISA, Ranchi

In accordance with the guidelines of the Government of India, ICAR–National Institute of Secondary Agriculture, Ranchi, observed Vigilance Awareness Week from October 27 to November 02, 2025 as part of the Vigilance Awareness Campaign (August- November, 2025).

As part of the week-long activities, the Integrity Pledge was administered to all employees on October 27, 2025 by Dr. Abhijit Kar, Director, reaffirming the Institute’s collective commitment to a corruption-free environment and ethical conduct in official duties. A capacity building programme was organized on October 28, 2025, wherein Shri Hardik A. Tamgadge, Administrative Officer, delivered a presentation aimed at strengthening officials’ understanding of vigilance-related aspects such as investigation procedures, procurement norms, ethics, and digital security, with the objective of preventing corruption and enhancing transparency.

Further, a lecture titled “Vigilance: Our Shared Responsibility” was conducted on October 29, 2025 by Dr. Niranjan Prasad, Head, ABA Division & Vigilance Officer. The lecture highlighted the causes and consequences of corruption and emphasized the importance of collective responsibility in promoting integrity and supporting national development. The observance of Vigilance Awareness Week at ICAR–NISA reinforced the institute’s commitment to ethical governance and its resolve to uphold the core values of integrity, transparency, and accountability.



Staff members taking integrity pledge

Celebration of Rashtriya Ekta Diwas at ICAR-NISA

ICAR–NISA, Ranchi, observed Rashtriya Ekta Diwas on October 31, 2025 to commemorate the 150th Birth Anniversary of Shri Sardar Vallabhbhai Patel, the Iron Man of India. The day was celebrated to promote the values of national unity, integrity, and collective responsibility.

On this occasion, a Unity Pledge was administered to all employees of the institute, reaffirming their commitment to the ideals of unity, integrity, and dedication to the nation. To highlight the life and contributions of Sardar Vallabhbhai Patel, a 30-minute short video showcasing his role in nation-building and integration of India was screened for the employees. In addition, a quiz contest was organized to spread awareness about vigilance and ethical practices. The programme witnessed active participation from staff members, and winners were suitably recognized.



**Staff during video screening on
Rashtriya Ekta Diwas**

Valedictory ceremony of the Master Trainer's Training Programme

ICAR–NISA, organized the valedictory ceremony of the Master Trainer's Training Programme on “Scientific Methods of Lac Cultivation, Primary Processing and Utilization” on November 17, 2025. Welcoming the dignitaries and participants, Dr. Abhijit Kar, Director, ICAR–NISA, emphasized the importance of equipping master trainers with scientific knowledge to strengthen grassroots capabilities in lac cultivation and processing. He highlighted that such capacity-building initiatives play a vital role in improving productivity and enhancing rural livelihoods. Hon'ble Minister Smt. Shilpi Neha Tirkey graced the occasion as the Chief Guest and stressed the need to promote scientific awareness among farmers to improve the production of lac and other agro-forestry-based products. The programme, sponsored by SIDKOFED, witnessed the participation of 38 trainees from Chaibasa and Kharsawan districts. Certificates were distributed to the participants by the Hon'ble Minister during the ceremony. Memorandum of Understanding (MoU) was also exchanged between ICAR–NISA, Ranchi and SIDKOFED, to strengthen collaborative efforts in the areas of natural resins, gums, and secondary agriculture.



Hon'ble Minister presenting certificate to a trainee



Trainees with officials of ICAR–NISA and SIDKOFED

Live streaming of the release of the 21st instalment of PM-KISAN

ICAR–NISA organized the live streaming of the release of the 21st instalment of PM-KISAN on November 19, 2025. Smt. Annapurna Devi, Hon'ble Union Cabinet Minister for Women & Child Development, Government of India, graced the occasion as the Chief Guest. Dr. Abhijit Kar, Director welcomed the dignitaries and highlighted the institute's improved technologies and innovative practices aimed at enhancing farmers' income and sustainability.



Director, ICAR–NISA presenting memento to the Hon'ble Minister



Live streaming of PM-KISAN programme

In her address, the Hon'ble Minister emphasized key Central Government schemes including PM-KISAN, PM Fasal Bima Yojana, Kisan Credit Card, and Rashtriya Krishi Vikas Yojana, underlining their role in ensuring farmers' financial security and access to institutional support. She also highlighted the growing contribution of agri-startups and innovations in improving productivity, value addition, and market linkages. Farmers from various districts of Jharkhand, along with ICAR–NISA staff, actively participated in the programme, making the event informative and impactful.

Live streaming of PM Dhan Dhaanya Krishi Yojana launch

ICAR- NISA organized a live streaming of the launch of PM Dhan Dhaanya Krishi Yojana on October 11, 2025. During the programme, several schemes and projects of various Ministries of the Government of India were inaugurated and foundation stones were laid. Farmers from different parts of Jharkhand participated in the event. A Scientist–Farmer interaction was also conducted, focusing on natural farming practices, pulses, and oilseed cultivation. The interaction provided a platform for knowledge exchange and strengthened awareness about sustainable agricultural practices among the participating farmers.



Staff and farmers during live streaming of PM Dhan Dhaanya Krishi Yojana launch

Hands On Training At ICAR-NISA, Ranchi

ICAR-NISA organised 2-days hands-on training on "**Multivariate Analysis and Design of Experiments in Chemometrics and Spectroscopic Applications**" using **UnscramblerX**, in association with **SCIENCE4U Analytics and Research Solutions Pvt. Ltd.**, Bangalore, during December 18-19, 2025. A total of 15 participants including scientists and students of ICAR-NISA participated in this event. The training course leader Mr. Bhanu Prakash R helped the participants analyse chemometric and spectroscopic data and design of experiments through real problems and answered all the queries during the participatory session. Dr. Debandya Mohapatra, convenor of the training program, briefed the participants about usage of the **UnscramblerX** software and hoped for wide usage of this software for data analysis and design of experiments.

Farmer's Day Celebration at ICAR-NISA, Ranchi

ICAR-NISA, Ranchi, organized Kisan Diwas (Farmers' Day) on December 23, 2025. Farmers and students from different parts of Jharkhand participated in the programme. A scientist- farmer interaction was held, focusing on the institute's improved technologies and innovative practices aimed at enhancing farm productivity and income. The interaction provided an effective platform for knowledge exchange and awareness on sustainable agricultural practices. On the occasion, the Hon'ble Union Minister of Agriculture & Farmers Welfare addressed farmers across ICAR institutions through an online interaction, inspiring the farming community and reaffirming the Government's commitment towards farmers' welfare and sustainable agriculture.



Live streaming of the address by the Hon'ble Union Minister

PUBLICATION AND PUBLICITY

Research papers

Edde, M., Mohapatra, D., Kate, A., Naik, R., Tripathi, M. K., & Singh, K. P. (2025). Comparative analysis of various pretreatments vis-à-vis infrared heating on selected quality characteristics of kodo millet. *Journal of Food Measurement and Characterization*. <https://doi.org/10.1007/s11694-025-03611-0>

Ghoshal, S., Dutta, A., Mandal, A., & Saha, S. (2025). An optimized technique for ultrasound-assisted extraction of xanthophylls from marigold (*Tagetes erecta* L.) using saturated fatty acid-based hydrophobic deep eutectic solvent. *Journal of Molecular Liquids*, 437, 128398. <https://doi.org/10.1016/j.molliq.2025.128398>

Manik, S., Mohapatra, D., Kate, A., Giri, S. K., Tripathi, M. K., Singh, K., & Babu, V. B. (2025). Application of artificial neural network for assessment of protein content, fat content, and rancidity indicators as affected by storage conditions and *Rhizopertha dominica* infestation in pearl millet. *Journal of Food Measurement and Characterization*. <https://doi.org/10.1007/s11694-025-03592-0>

PUBLICATION AND PUBLICITY

Paul, A., Dutta, A., Kundu, A., Banyal, N., Chawla, G., Dahuja, A., & Saha, S. (2025). Selective separation and characterization of acylated and non-acylated anthocyanins via resin adsorption–desorption method. *Microchemical Journal*, 219, 115976. <https://doi.org/10.1016/j.microc.2025.115976>

Paul, A., Dutta, A., Kundu, A., Ghosh, A., Chawla, G., & Saha, S. (2025). Adsorption-guided purification of rose petal anthocyanins. *Biomass Conversion and Biorefinery*, 15(23), 30571–30586. <https://doi.org/10.1007/s13399-024-06331-5>

Selvan, S. S., Mohapatra, D., Kate, A., Tripathi, M. K., & Kar, A. (2025). Fatty acid profiling for discriminating fermented and non-fermented pearl millet (*Pennisetum glaucum* L.) grains under different storage temperatures. *Scientific Reports*, 15(1), 34210. <https://doi.org/10.1038/s41598-025-15785-0>

Sharma, S. C., Pandey, S. K., Prasad, N., Raj, H., Giri, S. K., & Kar, A. (2026). Design and performance evaluation of a manual blazer for sustainable Karaya gum production from *Sterculia urens*. *Bioresource Technology Reports*. (Accepted for publication)

Shelake, P., Mohapatra, D., & Sabat, M. (2025). Development of recurrent neural network (RNN)-based model for predicting the temporal decomposition kinetics of gaseous ozone in the presence of onion (*Allium cepa* L.) bulbs. *Food Analytical Methods*, 18(11), 2394–2401. <https://doi.org/10.1007/s12161-025-02866-z>

Thombare, N., Mohanasundaram, A., & Sharma, K. K. (2025). Natural resin-derived adhesives for sticky insect traps: Development and field evaluation in mustard and okra. *International Journal of Adhesion and Adhesives*, 146, 104244. <https://doi.org/10.1016/j.ijadhadh.2025.104244>

Books Chapter

Corrêa da Silva, M., Rossi Borges, J. A., Wasonga, O. V., Forrer, C., Kamau, S., Karanja, N. N., Veith, C., Sharif, M., Umesh, K. B., & Kumar, U. (2025). Lessons learned from teaching an international virtual course on climate change. In W. Leal Filho, J. B. S. O. de Andrade Guerra, M. Sima, A. L. Salvia, F. Frankenberger, & T. Dibbern (Eds.), *The transformative power of higher education institutions in accelerating the implementation of the UN SDGs* (pp. 121–137). Springer Nature. ISBN 978-3-031-96250-9 (Print), ISBN 978-3-031-96251-6 (eBook)

Lohot, V. D., Chowdhury, A. R., Thombare, N., Pramanik, A., Ansari, M. F., Kar, A., Azmi, S. I., Makbul, S. A. A., Ali, M. A., & Akhtar, M. S. (2025). Phytopharmacology and methods of production of lac (*Kerria lacca* Kerr.) used in the Unani system of medicine. In *Crude drugs of Unani medicine* (Vol. 2: Phytochemistry and pharmacology aspects, pp. 357–378). Apple Academic Press. ISBN 9781998511983

Lyngdoh, M. E., Chettri, J., Kharchandy, V. F., Sheel, R., Choudhury, A. R., Sarkar, B., Pattanayak, A., Deori, S., Abedin, S. N., & Kadirvel, G. (2025). Synthesis of green zinc-oxide nanoparticles and its dose-dependent beneficial effect on spermatozoa during preservation: Sperm functional integrity, fertility and antimicrobial activity. In G. Slaughter, A. Marz, & M. Bahoura (Eds.), *The road toward nanobased diagnostics for health and disease*. Frontiers Media SA. <https://doi.org/10.3389/978-2-8325-7156-9>

Pathare, P. B., Mohapatra, D., Nikhil, C., Pawar, D., & Mahanti, N. K. (2025). Non-thermal techniques for fresh produce quality and safety. In P. B. Pathare (Ed.), *Postharvest handling and management* (pp. 21–48). CRC Press. ISBN 9781779641069

Technical Bulletin

Pavithra, K. N., Nath, V., Sinha, P. K., Kumar, N., Pal, S., Teli, K. G., Akash, A., Prakash, K., Udaykumar, M. S., & Rao, C. S. (2025). *Agriculture in Jharkhand: Status and SWOT analysis* (Technical Bulletin No. IARI-J/TeB-003/2025, pp. 1–36). ICAR–Indian Agricultural Research Institute, Jharkhand, Hazaribagh.

TV/ Radio talks

Dr. Nandkishore Thombare, Senior Scientist, delivered a television talk on November 26, 2025 on ‘गोद का उत्पादन एवं मूल्य संवर्धन’, which was telecast under the Krishi Darshan programme on Doordarshan on December 3, 2025.

Dr. M. F. Ansari, Principal Scientist, delivered a television talk on November 26, 2025 on ‘Importance of lac’, which was telecast under the Krishi Darshan programme on Doordarshan on December 3, 2025.

Participation in Seminar/Symposia/Workshop/Conference

Dr. Udaykumar, M. S., Scientist participated and presented paper titled “Exporting advantage: A decadal analysis of India’s natural resins and gums in global markets” in X International Conference on ‘Global Research Initiatives for Sustainable Agriculture and Allied Sciences’ held during October 5-7, 2025 in Hybrid Mode.

Dr. Debabandya Mohapatra, participated in the ESTIC-2025 (Emerging Science, Technology, and Innovation Conclave) organized by the Department of Science and Technology (DST), Government of India, in collaboration with ARCI, Hyderabad at the Bharat Mandapam, New Delhi during November 3-5, 2025.

Dr. Archana Mahapatra participated and presented a paper titled “Kinetic Modeling of Lemongrass Essential Oil Extraction by Deep Eutectic Solvents” in 59th Annual Convention of Indian Society of Agricultural Engineers on ‘Engineering Innovations for Agriculture 5.0’ and International Symposium on ‘Mechatronics and Robotics in Pre and Post Production Agriculture’ held during November 10-12, 2025 at ICAR-CIAE, Bhopal.

Dr. Priyanka Sakare participated and presented a paper titled “Bigel based 3D printed intelligent indicator for real-time freshness monitoring of fish” in 59th Annual Convention of Indian Society of Agricultural Engineers on ‘Engineering Innovations for Agriculture 5.0’ and International Symposium on ‘Mechatronics and Robotics in Pre and Post Production Agriculture’ held during November 10-12, 2025 at ICAR-CIAE, Bhopal.

Awards

Dr. Udaykumar M. S., Scientist (Agricultural Economics), received the Best Oral Presentation Award in Technical Session III at the Xth International Conference on Global Research Initiatives for Sustainable Agriculture and Allied Sciences, held from 5th to 7th October 2025 at MPUAT, Udaipur, Rajasthan, India, for presenting the research paper titled “Exporting Advantage: A Decadal Analysis of India’s Natural Resins and Gums in Global Markets”

Field Visits

Dr. Udaykumar, M. S., Scientist, along with ACTO, conducted a field visit on October 31, 2025 to the farms of Shri Roshan Lakra (Garke village), Shri Amrit Lakra (Jerki Toli, Rajaulatu Panchayat), and Shri Chandan Bina (Sogad village) in Namkum Block, Ranchi. During the visit, lac farmers were engaged and advised on scientific lac cultivation practices, with emphasis on Semialata and Calliandra host plant utilization, intercropping, and integrated pest and nutrient management.

A field visit was conducted on November 6, 2025 to Baghiya and Goir villages, Rania Block, Khunti district, Jharkhand, by Dr. Udaykumar M. S., Scientist and staff of ABD Unit, ICAR–NISA. During the visit, a success story video of Shri Philip Madki, a progressive lac farmer, was documented. Data from 20 farmers were collected for impact assessment of training programmes, and farmers were advised on scientific lac cultivation practices, including host plant utilization, intercropping, and integrated pest and nutrient management.

Dr. Udaykumar, M. S., Scientist conducted a field visit to Chandan Bina's farm in Sogad village, Panchayat-Rajaulatu, Block-Namkum, Ranchi-Jharkhand on 18th December, 2025, along with the ACTO to document a success story.

On-Farm Training-cum-Field Visits

On-farm training-cum-field visits on scientific lac cultivation were organized on November 16, 2025 at Banta village, Silli Block, Ranchi district, and on November 30 and December 14, 2025 at Jerki Toli, Rajaulatu Panchayat, Namkum Block, Ranchi, Jharkhand.



Field visit to promote scientific lac cultivation for livelihood improvement



On- farm trainings being imparted to farmers

Progressive farmers from the respective villages, master trainers, SIDHKOFED staff, and ABD Unit staff of ICAR–NISA participated in the programmes. The trainings focused on disseminating improved scientific practices for lac cultivation and strengthening farmers’ practical skills through field-based demonstrations.

Market Survey

Dr. Udaykumar, M. S., Scientist conducted a market survey on October 31, 2025 at Purana Rampur, Plandu Namkum, Ranchi, and Tutihari local lac markets to understand farmers’ marketing practices for harvested lac resin and to assess prevailing market prices.

HUMAN RESOURCE DEVELOPMENT

Senior scientists Dr Arnab Roy Chowdhury, Dr. Nandkishore Thombare, Dr. Anirban Dutta and scientists Dr. Archana Mahapatra, Dr. Priyanka Sakare and Dr. Bhukya Jithender successfully completed 2-day hands-on training on "Multivariate Analysis and Design of Experiments in Chemometrics and Spectroscopic Applications" using UnscramblerX, conducted at ICAR-NISA, Ranchi, in association with SCIENCE4U Analytics and Research Solutions Pvt. Ltd., Bangalore, during December 18 and 19, 2025.

MISCELLANEOUS

MoUs Signed by ICAR–NISA, Ranchi

MoU has been signed between ICAR- NISA and Sidho-Kanho Agriculture and Forest Produce State Co-operative Federation Limited, Ranchi for technical guidance and support in natural resins, gums, and secondary agriculture on November 17, 2025.

MoU has been signed between ICAR-NISA and Tamil Nadu Food Processing and Agri Export Promotion Corporation (Government of Tamil Nadu) on December 07, 2025 to promote sponsored research, product development, and innovation in the food processing sector.

Other

Technicians Shri Shravan Kumar Mandal and Shri Dinkar Kumar secured 2nd in 400 m race and 3rd in 100 m race, respectively during ICAR Inter-Zonal Sports Meet 2024, held at ICAR–Indian Sugarcane Research Institute (ISRI), Lucknow between November 04- 07, 2025.

Joining

- Dr. Parmanand Sahu, Scientist (27.10.2025)
- Shri Bhim Nayak, MTS (08.12.2025)
- Shri Yogendra Sharma, MTS (08.12.2025)
- Shri Sandeep Munda, MTS (08.12.2025)
- Shri Sajeet Kachhap, MTS (08.12.2025)
- Shri Binod Kumar Nayak, MTS (12.12.2025)
- Shri Lakhan Kumar, MTS (15.12.2025)
- Shri Ajit Kumar Mahto (18.12.2025)
- Shri Pramod Kumar Nayak, MTS (18.12.2025)

- Shri Vikash Oraon, MTS (22.12.2025)
- Shri Jitendra Nayak, MTS (22.12.2025)
- Shri Suresh Chandra Giri, MTS (29.12.2025)
- Shri Jitendra Kumar Nayak, MTS (30.12.2025)

Transfer

Dr. Mohd Ali, Scientist, was relieved on October 21, 2025 upon his transfer to ICAR-CAZRI (Sub-Centre Leh, Ladakh)

Resignation

Shri Amarjeet Bharti, Technician resigned on December 09, 2025

Retirement

Shri Nageshwar Mishra
MTS
31.12.2025

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