



ICAR- National Institute of Secondary Agriculture E-NEWSLETTER



Director's Desk

Happy New Year!

I extend my warm greetings to all our stakeholders for a fruitful and prosperous 2025. I am delighted to share that this quarter has witnessed remarkable progress in both research and outreach. Our teams are advancing projects on developing non-destructive analytical techniques for quality detection of agri-produce, eco-friendly methods for isolating essential oils and cellulose, and creating market-ready fruit products. We are also undertaking research on lac dye recovery through alternate processes and conducting translational studies on export potential data for lac—addressing local needs and promoting rural livelihoods.

The Kisan Mela was successfully organized to educate and empower Jharkhand's farming community by sharing modern agricultural technologies, sustainable practices, and innovative solutions. Our participation in exhibitions and capacity-building programs conducted by ICAR-NISA has further strengthened knowledge exchange and scientific collaboration.

Through impactful publications, training sessions, conferences, and technology transfer, our scientists continue to promote innovation and best practices in agriculture. I congratulate our dedicated staff for their relentless efforts and take pride in sharing this newsletter celebrating our achievements and a promising year ahead.



(Abhijit Kar)

In this issue

- Research highlights
- Educational and capacity building programme
- Events
 - Kisan Mela and Agricultural Exhibition
 - Int'l Women's Day
 - Hindi workshop
- Participation in mela/ event
- Publication & publicity
- Visits
- Miscellaneous
 - Technology transfer & MoU
 - Participation in seminar/ conference
 - HRD
 - Other



RESEARCH HIGHLIGHTS

Effect of nylon net bagging on seed recovery in *Flemingia semialata* under pulse pod fly infestation

Flemingia semialata, a bushy leguminous host, crucial for lac cultivation, faces significant seed production losses due to severe infestation by the pulse pod fly (*Melanagromyza obtusa*), with limited scope for pesticide use owing to high honey bee activity during show only about 10% seed flowering.

Each inflorescence bears approximately 60-100 pods, with two seeds per pod, yet open inflorescences set due to pest damage. To address this, a field trial was conducted using 60 mesh nylon net bagging on 30 inflorescences, compared with 30 unbagged controls. Results showed a substantial improvement in seed recovery. Bagged inflorescences yielded 136.2 ± 5.8 seeds per inflorescence (85% seed set), compared to 15.7 ± 4.3 seeds (10% seed set) in controls. The bagging method effectively prevented pest infestation without adversely affecting the pollinators, offering an eco-friendly, scalable, and pollinator-safe solution for enhancing seed yield in lac host plantations.



Ecofriendly 60 mesh nylon net bagging for *F. semialata* seed production

Identification of honey bee forage-providing lac integrated cropping system model

Experiments were carried out at institute research farm of ICAR-NISA, Ranchi to identify honey bee forage providing crops which has an integration potential with lac cultivation. For Rabi season five crops, i.e. strawberry (variety-Winter Down), sweet corn (variety- Mithas), buckwheat (variety- Takane Ruby and common buck wheat), mustard (variety-Kalavati), ajwain (variety- JK ajwain) and coriander (variety-Green Aroma) were being evaluated for identifying possible synergy between lac culture and apiculture. Initial data demonstrated that strawberry yield enhanced up to 70% with incorporation of *Apis cerana* colony @ 2 colonies/acre in the lac based strawberry intercropping system. Such intervention also enhanced bee visit frequency on *F. semialata* plants by 65% leading to reduced sooty mold incidence on lac and enhanced seed set in *F. semialata*.



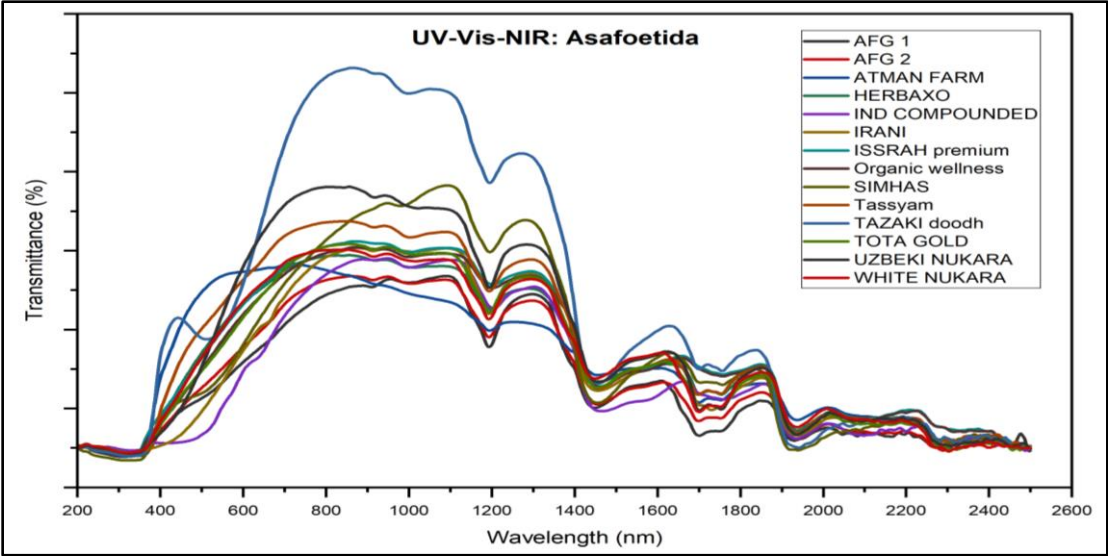
Honey bees visiting sweet corn for pollen



Strawberry (variety-Winter Down) intercropped with *F. semialata*

Spectroscopic study of Asafoetida

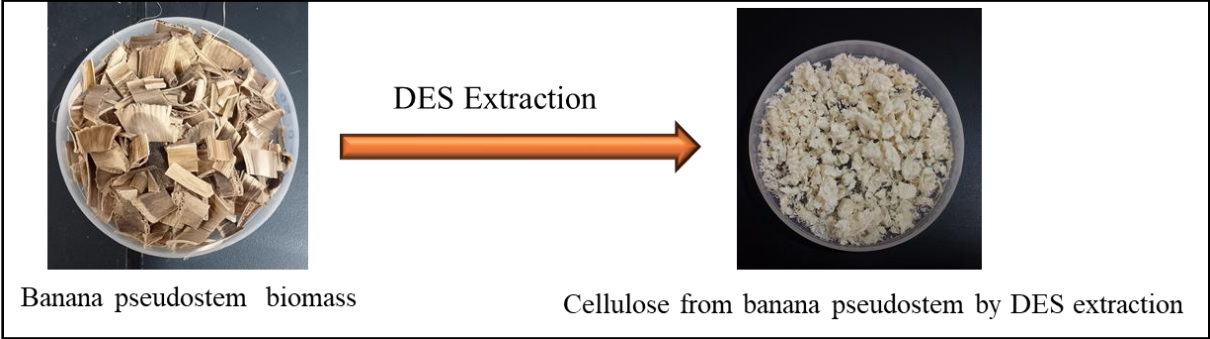
A total of 15 genuine samples of asafoetida (heeng), representing different production/source countries, including Tajikistan, Kazakhstan, Afghanistan, Uzbekistan, Iran, and India, were procured from various reliable sources. The asafoetida tears were cleaned to remove bark and impurities, air-dried, and powdered. The transmittance spectra of the asafoetida samples were recorded using a UV-VIS/ NIR Spectrophotometer with spectra manager software in the range of 200 to 2500 nm with a scan speed of 200 nm/min and bandwidths of 2.0 nm and 8.0 nm for the UV/Vis and NIR regions, respectively. The peaks and depressions in spectra showed strong and weak transmittance characteristics of the asafoetida components, respectively, within the range of the study. Based on the transmittance pattern, a spectral range of 300 to 1500 nm was found responsive to the variations in the samples. The relative values in the other regions of the spectra, however, differed from sample to sample, which might be due to source variations and the moisture content of the samples. The study offers insights into the spectral profiles of various asafoetida samples, which can aid in their quality control



UV-Vis-NIR spectra of asafoetida samples

Preparation of nanocellulose from Banana Pseudostem

Nanocellulose preparation from banana pseudostem was carried out using green method utilizing Deep Eutectic Solvents (DES). Oxalic acid (OA) and choline chloride (ChCl) were combined at molar ratio of 1:1 to prepare OA-ChCl DES. The banana pseudostem biomass was dispersed in the DES in different ratios (1:4, 1:6, 1:8, 1:10 and 1:12) and cellulose was extracted from the banana pseudostem biomass. The cellulose yield from the banana pseudostem biomass ranged between 21.07- 23.13%



Cellulose extraction from banana pseudostem using DES

with different ratio of the DES. The highest cellulose yield was obtained from the 1:8 ratio of the banana pseudostem with DES. The extracted cellulose suspension was redispersed in the aqueous solution and ultrasonicated for different time period (10, 20 and 30 min) for preparation of nanocellulose. Particle size reduced to 271 nm from 743 nm after 30 minutes of ultrasonication. FT-IR spectra of the prepared nanocellulose showed the characteristic peaks of cellulose.

Strawberry bites: Goodness of strawberries all year round

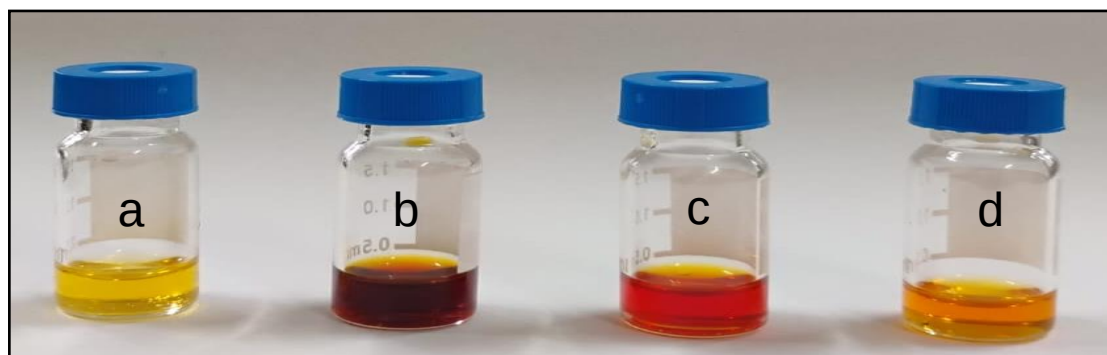
Pre-treatment and hot air drying parameters such as temperature and time were optimized to produce high-quality dried strawberries intended for dry fruit consumption. The resulting product was 100 % natural, sugar free, organoleptically appealing, and presented a viable, shelf-stable alternative to fresh strawberries, with promising applications in the health food and functional snack sectors. Physicochemical properties and storage study of the dried product have been carried out and it was found that product can be stored upto 8 months with retention of quality.



Hot air dried strawberries

Development of energy efficient and high recovery process for extracting essential oils from aromatic plants

Essential oils (EO) are odorous, volatile, hydrophobic and highly concentrated complex mixtures of secondary metabolites comprised of low-boiling point phenylpropenes and terpenes. The green extraction of essential oils (EOs) with Deep eutectic solvents (DESs) was explored as a novel and efficient alternative to conventional hydro-distillation. The EO from lemongrass was extracted using different DES, composed of choline chloride and urea (DES 1), choline chloride and oxalic acid (DES 2), and choline chloride and citric acid (DES 3), in various molar ratios at different concentrations (10%- 30%). The yield of EO was found to be 1.2 mL/100 g of fresh lemongrass. The extraction time reduced by 25-75% with different DES concentration compared to hydro-distillation. The antioxidant activity, measured as IC_{50} value in EO extracted with DES 1 was 1.075 mg/mL as compared to 2.821 mg/mL in DES 2, showing significantly higher activity in EO extracted with DES 1.



Lemongrass EO extracted by (a) hydro-distillation, (b) DES 1, (c) DES 2 and (d) DES 3 assisted hydro-distillation

Ultrasound assisted washing for lac dye recovery

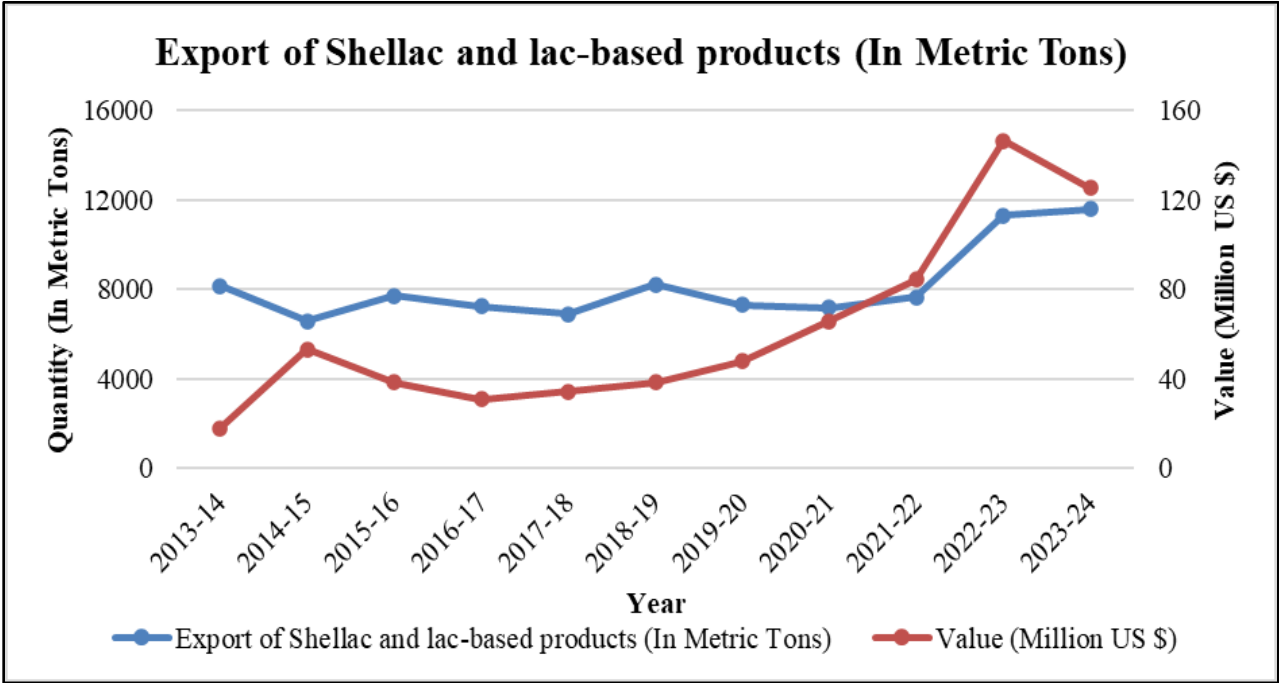
A feasibility study for improving lac dye recovery through ultrasound treatment was carried out. Crushed scrapped lac was washed under ultrasonication treatment at different temperatures (30, 40, 50 and 60 °C) and time (5, 10, 15 and 20 min) regimen, in a bath type sonicator (110 W, 40 KHz). Lac-dye content was determined using UV-vis spectrophotometer, with pure lac dye as standard. The highest lac-dye yield of 451.13 ppm was obtained at water temperature 60 °C for 20 min treatment under half-cycle of ultrasonication.



Lac dye recovered after ultrasonication

Translational Research to promote Secondary Agriculture

Export of shellac and lac-based products from 2013-14 to 2023-24 were collected and compiled from secondary sources. The export of shellac and lac-based products exhibited fluctuating trends between 2013-14 and 2023-24. In 2013-14, exports stood at 8,158.11 metric tons valued at \$17.81 million. Although volume declined to 6,569.18 metric tons in 2014-15, value surged to \$53.06 million due to increased global demand and rising prices. In 2015-16 and 2016-17, export volumes rose slightly, but values dropped to \$38.5 million and \$30.86 million, respectively, indicating possible price declines or market competition. From 2017-18 to 2021-22, export values steadily recovered, peaking at \$84.44 million in 2021-22, despite stable volumes around 7,500 metric tons, driven by demand in cosmetics, textiles, and varnishes. A sharp rise occurred in 2022-23 and 2023-24, with volumes reaching 11,288.63 and 11,588.96 metric tons, and values at \$146.35 million and \$125.29 million, respectively. This surge is attributed to the post-pandemic global economic recovery, increased industrial demand, and higher prices for lac-based raw materials.



Export of Shellac and lac-based products from 2013-14 to 2023-24

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”	06	324
2.	One day training cum exposure visit programme	16	1271
3.	Off Campus training on scientific methods of lac cultivation in different lac host plants	02	45
4.	Technology transfer/ training on process, product and quality evaluation	01	1
Total		25	1641

- 15 IFS Officers and ICFRE-IFP, Ranchi faculty visited ICAR-NISA, Ranchi on January 21, 2025 as part of one week compulsory training course on “Advancement in NTFP Research, Value addition and Marketing Strategies” and interacted with the Director and scientists of the institute. They also visited the museum and institute research farm and briefed about scientific lac cultivation, its uses, lac based integrated cropping system, etc.

EVENTS

Kisan Mela and Agricultural Exhibition 2025

The Kisan Mela-cum-Agricultural Exhibition 2025 was organized during February 20-21, 2025 at the ICAR-National Institute of Secondary Agriculture, Namkum, Ranchi. The event was graced and inaugurated by Smt. Shilpi Neha Tirkey, Hon’ble Minister for Agriculture, Animal Husbandry & Co-operatives, Government of Jharkhand. Distinguished guests included Mr. Abubakar Siddiqui, Principal Secretary, Department of Agriculture, Animal Husbandry & Co-operative, Government of Jharkhand; Mr. Rajesh Kachhap, Hon’ble MLA, Khijri; Dr. Abhijit Kar, Director, ICAR-NISA; and Dr. J. Ghosh, among others. The primary objective of the Kisan Mela was to empower and educate the farming community of Jharkhand with the latest agricultural technologies, sustainable practices, and innovations. It served as a dynamic platform for stakeholders such as farmers, researchers, policymakers, entrepreneurs, and extension agencies to engage in meaningful dialogue and collaboration aimed at transforming traditional agriculture into a modern and profitable enterprise. A special focus was placed on improving farmers' income and livelihood through grassroots-level technological interventions, aligning with the broader vision of sustainable agricultural development and rural prosperity. The event also played a pivotal role in spreading awareness about various Government schemes, innovations in agri-tech, and public-private partnership opportunities, particularly tailored to uplift tribal and marginal farmers. In her keynote address, Hon’ble Minister Smt. Shilpi Neha Tirkey emphasized the Government’s commitment to make farmers self-reliant and economically secure, with a vision to double their income. She highlighted the crucial role of science and technology in enhancing productivity, promoting organic farming, improving nutrition, and advancing agro-processing initiatives.

The mela hosted over 65 exhibition stalls representing ICAR institutes, Krishi Vigyan Kendras (KVKs), Farmer Producer Organizations (FPOs), Self Help Groups (SHGs), Non-Governmental Organizations (NGOs), and other government departments. Each stall showcased innovations and best practices across diverse agricultural domains. Kisan Gosthis were organized on a wide array of topics, including Scientific Lac Cultivation, Lac-Based Integrated Cropping Systems, Natural Farming, Cropping System Diversification, Farm Mechanization, Nutrient Management, Nutri-Gardens, Crop Production Techniques, Animal Husbandry & Poultry Science, Mushroom and Fishery Production, Minor Forest Produce Utilization and Tasar Sericulture. Overall, the Kisan Mela 2025 successfully facilitated knowledge exchange, encouraged innovation adoption, and fostered stronger connections among key players in the agricultural ecosystem, setting a promising direction for sustainable and inclusive agricultural growth in Jharkhand. Around 4000 farmers participated in mela and got benefitted through this programme.



Glimpses of Kisan Mela 2025

International Women's Day

ICAR-NISA proudly celebrated International Women's Day, featuring the inspiring presence of Dr. S. N. Trivedi, Chairman, Jharkhand State Committee of the Sri Aurobindo Society. His thought-provoking lecture on "Spirituality to Accelerate Action for Gender Equality" captivated an audience of students, staff, and family members from the ICAR-NISA community. The celebration also included an engaging cooking competition centered around the theme "Meal on a Dish," which saw remarkable participation from the NISA family. Awards were presented to the deserving winners.

Furthermore, cultural programs and quiz competitions were organized to empower women participants to shine and display their unique talents. The event was expertly convened by Dr. Debabandya Mohapatra, Chairman, Women's Cell making it a memorable and impactful occasion for all involved.



Int'l Women's Day celebrated at ICAR-NISA

Hindi Workshop-cum-Lecture

A 'Hindi Workshop-cum-Lecture' was organized at ICAR-NISA on March 27, 2025, with the objective of encouraging personnel to work confidently in Hindi and enhancing their understanding of the rules and regulations governing the Official Language. On this occasion, Shri Shailendra Nath Dubey, former Deputy Director (Official Language), Central Board of Indirect Taxes and Customs, Ranchi, delivered a lecture on '*Various Aspects of the Official Language Policy of the Union*'. Officers and staff members from the scientific, technical, and administrative cadres actively participated in the training.



Hindi Karyashala at ICAR-NISA

PARTICIPATION IN MELA/EVENTS

ICAR-NISA actively participated in 7 Kisan Melas and Agricultural Exhibitions organized by esteemed institutions, including the Ministry of Agriculture and Farmers Welfare, Indian Council of Agricultural Research (ICAR), State Forest Departments, Central Silk Board, State Agricultural Universities (SAUs), and Krishi Vigyan Kendras (KVKs). During these events, the institute showcased its innovative technologies and value-added products related to lac cultivation, lac-based processing, and secondary agriculture, with the objective of technology dissemination and enhancing farmer awareness. A wide spectrum of farmers and agricultural stakeholders engaged with the exhibits, gaining insights into sustainable lac production practices, pest management, and post-harvest value addition.

The demonstration of agro-technologies drew considerable attention, with thousands of farmers benefiting from interaction with experts and technical literatures. Dignitaries and senior officials from both state and central government agencies visited ICAR-NISA stall and commended the institute's contributions towards promoting lac-centric livelihood enhancement, bio-resource utilization, and rural agro-entrepreneurship. The proactive outreach efforts of the ICAR-NISA team were widely appreciated for their role in knowledge transfer, capacity building, and strengthening the secondary agriculture sector.



Visitors at ICAR-NISA exhibits

PUBLICATION AND PUBLICITY

Research papers

Kumar, R., Dutta, T. K., Mandal, A., Saha, S., Dutta, A., & Kundu, A. (2025). Nanoemulsions of essential oil of *Zanthoxylum alatum* for protection against *Meloidogyne incognita*. *Journal of Taibah University for Science*, 19(1), 2464461 <https://doi.org/10.1080/16583655.2025.2464461>

Udaykumar, M. S., Roy, A., Pandey, S. K., Patil, Manojkumar, Vaishnavi & Kar, A. (2025). Production and Export Dynamics of Natural Resins and Gums in India. *Indian Journal of Economics and Development*, 21(1), 105-112. (DOI: 10.35716/IJED-24429)

Puramshetti, L., Giri, S. K., Mohapatra, D., Tripathi, M. K., Kate, A., Kumar, M., Lalita & Mishra, A. (2025). Impact of ultrasonic-assisted extraction on the release of bioactive compounds from *Carica papaya* Linn. leaves using probe and bath sonication. *Biomass Conversion and Biorefinery*, 1-13. (<https://doi.org/10.1007/s13399-025-06755-7>)

Sasi, M., Kumar, S., Prakash, O., Krishnan, V., Tomar, V. G. S., Mishra, J., S. R., Arpitha, Kaushik, P., Rana, V. S., & Dahuja, A. (2025). Evaluation of Sensory Properties and Short-Chain Fatty Acid Production in Fermented Soymilk on Addition of Fructooligosaccharides and Raffinose Family of Oligosaccharides. *Fermentation*, 11(4), 194. (<https://doi.org/10.3390/fermentation11040194>)

Popular articles

Udaykumar, M. S., Sanjay Kumar Pandey, Thejaswi Kumar, J. and Suman, L. (2025). Exploring opportunities in fish processing and value addition in Karnataka. *Krishi Science – eMagazine for Agricultural Sciences*, 06 (01): 36-39.

Udaykumar, M. S., S. K. Pandey, Arbind Kumar Mahto and Dinesh Kumar (2025). Success Story of Amrit Lakra: From Daily Wage Workers to Successful Lac Farmers. *The Agriculture Magazine*, 04 (07): 395-397. (E-ISSN: 2583-1755)

Udaykumar M. S., S. K. Pandey, Vaishnavi, Arbind Kumar Mahto and Dinesh (2025). Empowering Farmers through ICT: Transforming Agriculture for Sustainable Growth. *The Agriculture Magazine*, 04 (07): 490-496. (E-ISSN: 2583-1755)

Book

Kiran Kotyal, Vivek Uam Chavhan, Udaykumar M. S., Dev Shaynee Vashisath and Deepak I P (2025). *Agricultural Economics and Agribusiness: Strategies for growth and innovation*. Stella International Publication, Kurukshetra-136118 (Haryana). (ISBN: 978-93-48909-19-0)

Book Chapters

R. Ramani, K.K. Sharma, N. Prasad, and N. Thombare (2025). Post Harvest Technology and Value Addition: Natural resins and gums. *In Handbook of Agricultural Engineering*, Revised Second Edition. DKMA, ICAR, New Delhi. pp. 926 – 954. ISBN: 978-81-7164-286-1.

Lalita, Aseeya Wahid, Rajendra Hamad, Shweta Manik, Debandya Mohapatra (2025). Processing mediated changes in micro-and macronutrients of colored cereals, Chapter 8. *In Colored Cereals: Properties, Processing, Health Benefits and Industrial Uses*, edited by Sukhvinder Singh Purewal, Ram Sarup Singh, CRC press, eBook: ISBN9781003454922. published on March 28, 2025

Visits

M. Tech and PhD (PFE) students visited the Food Corporation of India (FCI) godowns at Ranchi on January 15, 2025 along with Dr. Mohapatra, Pr. Scientist & Head and Dr. S. Kale, Scientist. The visit provided the students with practical exposure to storage and handling operations in the grain supply chain, helping them connect theoretical knowledge with real-world practices.

A field visit was conducted on February 17, 2025 to distribute brood lac to selected beneficiaries. The visit was led by Er. S. K. Pandey, Dr. J. Ghosh, Dr. Udaykumar M. S., and Mr. Dinesh Kumar as part of the project ‘Promoting Scientific Production and Post-Harvest Value Addition of Lac among Scheduled Caste Farmers of Purulia District, West Bengal.’ The team visited Pitidiri and surrounding villages in Jhalda Block, Purulia District, West Bengal, where they interacted with farmers and provided technical guidance on scientific lac cultivation practices, emphasizing their vital role in enhancing household income.

Dr. Udaykumar M. S., Scientist and Mr. P. Patmajhi, ACTO visited to Mr. Amrit Lakra’s farm in Jerkitoli Village, Namkum Block, Ranchi, Jharkhand, on March 19, 2025. During the visit, interactions were held with Mr. Lakra, and his success story ‘*From Daily Wage Worker to Successful Lac Farmer*’ was documented.

MISCELLANEOUS**Technology Transfer and MOU signed by ICAR-NISA, Ranchi**

MoU has been signed between ICAR-NISA and Manab Kalyan Welfare Society, Laxmi Narayan Market, Nehru Road, Ramgarh Cantt., Jharkhand on January 17, 2025 for providing technical guidance and support on secondary agriculture, apiculture, lac culture, modern farming practices, agro-processing & product development to uplift underprivileged farming communities and promote rural industrialization in Jharkhand.

Technology on Aleuritic acid has been transferred to Mr. Saket Saraogi, Scube Tutorials, Kolkata and training has been provided on the same from March 3-7, 2025.

Participation in Seminar/Symposia/Workshop/Conference

Dr. Udaykumar, M. S., Scientist participated in the 30 Days International Agriculture Winter School-cum-Training Program jointly organized by ICAR-ATARI (11 Zones) & all Krishi Vigyan Kendra; Chandra Shekhar Azad University of Agriculture & Technology, Kanpur; Indian Society of Genetics and Plant Breeding, New Delhi; Swami Keshwanand Rajasthan Agriculture University, Bikaner; D.Y. Patil Agriculture and Technical University, Talsande; Hindustan Agricultural Research Welfare Society, Agraon on 'Novel approaches in Agricultural Systems' from March 1-30, 2025 in Hybrid mode.

Dr. D. Mohapatra, Pr. Scientist & Head participated as a lead speaker in the International Conference on 'Sensors, Artificial Intelligence & Machine Learning' on January 23, 2025 organized by DSLD College of Horticultural Engineering & Food Technology, Haveri, Karnataka (online)

HRD

Dr. Nandkishore Thombare, Sr. Scientist completed 5 day 'Pedagogy Development Program' training at NASC Complex, New Delhi, from January 28 to February 1, 2025.

Dr. P. Sakare, Scientist attended ICAR-sponsored short course on 'Novel and Emerging Technologies in Food Processing to Achieve Food Sustainability and Nutritional Security', organized by Tamil Nadu Agricultural University, Tamil Nadu, from February 24 to March 5, 2025.

Dr. Sandeep Kumar, Scientist and Shri Indrajeet Kumar, Technician participated in the online workshops on the "One Nation One Subscription" initiative and successfully registered the Institute on this national digital resource platform during January–February, 2025. This initiative will enable researchers and staff to access a wide range of research and development resources free of cost.

Ms. Sonika Meena, Assistant and Shri Vishwanath Anand, Assistant completed Module II of Orientation Training Program at ICAR-CIFRI, Barrackpore, Kolkata from February 17-21, 2025.

Other

Shri Rahul Kumar, Assistant, ICAR-IIAB, Garhkhatanga, Ranchi) attended Phase – II of Module I Orientation Training Program at ICAR-NISA, Ranchi between January 13-17, 2025.

Dr. Archana Mahapatra, Scientist delivered two lectures for one day Farmer's training on 'Conventional and Advanced Processing Technology for Jackfruits' at ICAR- RCER, Farming System Research Centre for Hill and Plateau Region, Ranchi on February 6 and 7, 2025.

Dr. D. Mohapatra, Pr. Scientist & Head delivered an invited lecture on 'Importance & Detection of VOC in Storage' in the winter school on Technological Advances in Packaging and Storage of Fresh and Processed Agricultural Commodities" organized by ICAR-CIPHET, Ludhiana on 24th Feb 2025 (online)

Dr. D. Mohapatra, Principal Scientist & Head, has guided Ms. Monika Reddy (PhD) and co-guided Ms. Pravallika (PhD), both of whom were awarded their degrees on 30 January, 2025.

Dr. D. Mohapatra, Pr. Scientist & Head joined International Journal of Food Technology and Management as editorial board member.

Joining (Transfer basis)

Shri Kishore Tete, Technical officer joined on January 07, 2025

Dr. Mridusmita Debnath, Scientist joined on February 03, 2025

Smt. Kumudini Kachhap, UDC joined on February 20, 2025

Resignation

Shri Abhishek Kumar, Assistant resigned in January, 2025

Transfer

Shri Kishore Tete, Technical officer was transferred to ICAR-CIARI, Portblair on February 11, 2025

Retirements



Shri Raju Tirkey
MTS
31.01.2025



Shri Rupu Ram
MTS
31.01.2025



Shri Dipankar Ganguly
CTO
31.03.2025

Editor-in-chief

Dr. Debabandya Mohapatra

Editor

Dr. Archana Mahapatra

Technical Assistance

Mr. Indrajeet Kumar

Published by

Dr. Abhijit Kar, Director

ICAR-National Institute of Secondary Agriculture, Namkum, Ranchi - 834 010, Jharkhand

Phone: 0651-2260117, 0651-2261156 (Director)

Fax : 0651-2260202

E-mail : director.nisa@icar.gov.in, director.icar.nisa@gmail.com

URL : <https://nisa.icar.gov.in>