Agroforestry News कृषिवानिकी समाचार

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Visit of DDG (NRM), ICAR

On 26 August 2025, Dr. A.K. Nayak, Deputy Director General (Natural Resource Management), Indian Council of Agricultural Research (ICAR), visited ICAR–Central Agroforestry Research Institute (ICAR–CAFRI), Jhansi. During his visit, he held detailed interactions with scientists, technical officers, research associates, and administrative staff to review ongoing research programmes and institutional progress.

Dr. Nayak emphasized the critical role of natural resource management (NRM) in addressing challenges such as land degradation, water scarcity, climate variability, and declining soil health. He appreciated the institute's contributions in agroforestry system development, tree improvement, carbon sequestration studies, and climate-resilient farming models. Also, he encouraged the scientific team to strengthen integrated NRM strategies aligned with national priorities, enhance farmer-centric, field-level validation of agroforestry technologies and promote convergence of genomics, precision forestry, and sustainable land-use planning

Strategic Highlights

- ICAR–CAFRI had the honour of hosting Mr. Takayuki Hagiwara, FAO Representative in India, along with Dr. Ashok Kumar Verma, Animal Feed Specialist, FAO. Detailed discussions were held with Dr. A. Arunachalam, Director, ICAR–CAFRI, focusing on agroforestry innovations, sustainable livestock integration, and collaborative opportunities.

- Dr. Sunil Tiwari, Director, ICAR–IIFSR, Modipuram, visited CAFRI and reviewed agroforestry-based farming system models. Discussions focused on organic and natural farming integration.

- The ICAR–CAFRI signed a Memorandum of Understanding (MoU) with Regen Organics to foster collaborative research and innovation in agroforestry and allied sectors. The partnership aims to strengthen action-oriented research that directly benefits farmers by integrating scientific expertise with field-level implementation. Through this collaboration, both institutions will work on developing and scaling sustainable agroforestry models, promoting tree-based farming systems, enhancing soil health, and improving potential carbon sequestration.

- As part of the Agroforestry Business Incubation Centre activities during July–December 2025, ICAR-CAFRI, Jhansi organized an Entrepreneurship Development Programme on *Bamboo: Propagation and Processing* on 30 July 2025 with support from the Uttar Pradesh Council of Agricultural Research. The programme aimed to promote bamboo-based entrepreneurship in the Bundelkhand region and trained 45 participants on high-yielding species selection, low-cost propagation methods, and value-addition processes including bamboo treatment (Boucherie method), slicing, stick making and incense-stick production.

Strategic Outreach

- Director, ICAR-CAFRI visited the Pulikulam Cattle Research Station, TANUVAS, as Chief Guest in a two-day awareness programme promoting silvipasture models for sustainable animal production. During the programme, the Director emphasized the importance of integrating trees, fodder crops, and livestock under silvipastoral systems to enhance productivity, improve soil health, and ensure year-round fodder availability.

- Farmers from the Bundelkhand region visited the ICAR- CAFRI and actively participated in the programme organized in connection with the launch of the 'Pradhan Mantri Dhan-Dhanya Krishi Yojana' and the '*Dalhan Atmanirbharta* Mission' on 11 October 2025. During the event, the farmers attended technical sessions and interacted with scientists to better understand the objectives of these national initiatives aimed at strengthening India's agricultural sector and enhancing farmers' prosperity.

- A two-day National Workshop on 16-17 October 2025 supported by IndusInd Bank and organized in collaboration with SSCE, CACS (Indian Institute of Technology Madras), SAFE, and ISAF partners, brought together researchers, financial institutions, policymakers, industry representatives, and farmers to deliberate on the theme: "Can trees pay farmers and heal the planet?"

- As part of the programme, cleanliness and hygiene awareness activities were also organized for workers and participants under the campaign linked with *Swachhata Hi Seva* 2025. Workers engaged in the event were briefed on the importance of maintaining clean surroundings, proper waste segregation, and personal hygiene practices at workplaces and in their communities.

Days and Weeks Observed

1–7 July – Van Mahotsav

A week-long tree plantation drive organized by ICAR–CAFRI to promote afforestation, environmental awareness, and community participation. Farmers, staff, and stakeholders actively planted trees, contributing to a greener and more sustainable environment.

Parthenium Awareness Week – 20 August 2025

Focused on eradicating the invasive Parthenium weed, protecting crops and biodiversity. Activities included field removal of Parthenium and release of a policy paper on sustainable weed management. Program graced by Dr. J.S. Mishra, Director, ICAR–Directorate of Weed Research.

15 August – Independence Day

Celebrated the 79th Independence Day with Dr. A. Arunachalam and all staff, emphasizing national pride and a commitment to a green and sustainable future.

15 October – Mahila Kisan Diwas

Celebrated to honor women farmers for their contributions to agriculture. Dr. Anuradha Agrawal, Project Director ICAR-DKMA, was the Chief Guest.

16 October – World Food Day

Celebrated in collaboration with the Society for Science of Climate Change and Sustainable Environment to highlight sustainability and innovation. Dr. Anita Gupta, Advisor, DST, was felicitated for her contributions to environmental leadership and social responsibility.

3 December – National Agriculture Education Day

Observed to promote agricultural and agroforestry education. Students, educators, and scientists participated to emphasize the importance of translating scientific innovations to rural communities.
Chief Guest: Dr. Ashwani Lochan; Director: Dr. A. Arunachalam.

Events Organized

13 October 2025 – National Workshop on Agroforestry & Carbon Credits

A workshop focused on synergizing carbon credit mechanisms with agroforestry models to promote climate-resilient livelihoods. Scientists, farmers, and stakeholders discussed practical strategies for carbon markets and sustainable land use.

14–23 November 2025 – Winter School on Agroforestry Innovations

Organized by Ram A., Yadav A., Anuragi H., Kumar N., & Arunachalam A., this 10-day winter school on "Agroforestry Innovations for Climate-Resilient Development, Transformative Land Use, and Livelihood Security" was sponsored by UPCAR. Participants engaged in hands-on training, lectures, and field visits, learning advanced agroforestry techniques, climate-smart practices, and strategies to enhance rural livelihoods.

16 December 2025 – HRD Training on iGOT–Karmayogi Portal

Training for ICAR–CAFRI employees to enhance digital learning and capacity building through the government's iGOT–Karmayogi platform, fostering effective use of online tools for professional development.

FARMERS CORNER

Farmers actively participated in key initiatives supporting agriculture and rural livelihoods at ICAR–CAFRI. They engaged with PM Kisan Samman Nidhi, benefiting from government income support, attended the launch of schemes promoting crop productivity and pulse self-reliance, and celebrated Mahila Kisan Diwas, honoring the vital contributions of women farmers in sustaining agriculture and communities.

Research

CAFRI Decodes *Melia dubia*: Pioneering Genomics for Agroforestry

ICAR–CAFRI has made a significant advancement in agroforestry research through its de novo whole-genome sequencing of Melia dubia Cav., a multipurpose tree species valued in wood-based industries and highly suitable for agroforestry due to its ease of propagation and wide adaptability. Recognizing its economic and ecological importance, CAFRI assembled a draft genome of 246.5 Mb at 35.34× coverage, annotated with 37,014 non-redundant protein-coding genes. The analysis identified 111,256 genomic variants, including 95,389 SNPs, and revealed 2,597 protein families, 4.8 Mb (2.33%) of repeat sequences, and 690 tRNAs. Phylogenetic studies showed that Melia dubia is closely related to M. azedarach and *Khaya senegalensis* within the Meliaceae family.

This genomic resource generated by CAFRI provides a strong foundation for molecular breeding, trait improvement, and conservation genomics. Future directions include pangenomic analysis and CRISPR-based functional studies to enhance the genetic applications of Melia dubia for sustainable forestry and climate-resilient agroforestry ecosystems.

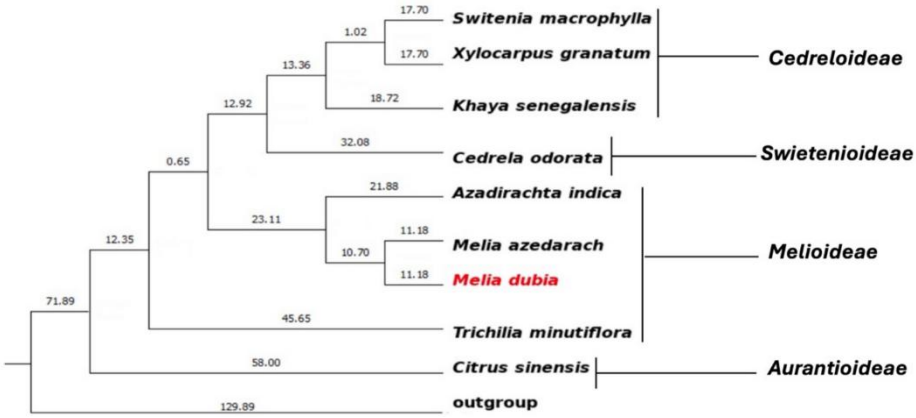

Figure 1. Phylogenetic relationship among the species of the Meliaceae

Leaf litter production dynamics in different agroforestry systems

Leaf litter production varied significantly with tree species and age. The highest annual litter was recorded in 22-year-old *Hardwikia binata* (1293 g/tree/year), while the lowest was in 7-year-old *Acacia senegal* (241.5 g/tree/year). On average, *H. binata* (1176 g/tree/year) produced the most litter, followed by A. nilotica (911 g/tree/year), whereas *A. senegal* produced the least (287 g/tree/year). Peak litter fall generally occurred in April for A. indica, *H. binata*, and *A. nilotica*. In *D. sissoo*, maximum litter was observed in January (14-year-old) and November (28-year-old) trees. Younger trees generally produced more litter than older ones, except in *A. senegal*. *H. binata* > *A. nilotica* > *A. indica* / *D. sissoo* > *A. senega*l.

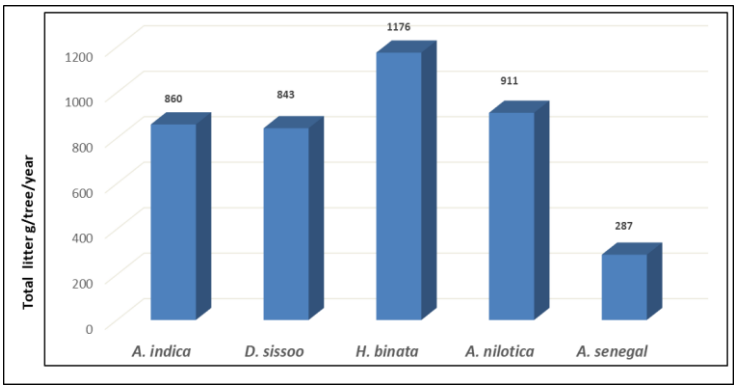

Figure 2. Total Annual leaf litter production from different agroforestry systems in Jhansi

Participation in Training/Workshop/Meetings/Symposia and HRD

- Ram A., Yadav, A., Anuragi, H., Kumar N., & Arunachalam A. organized a 10 days winter school on "Agroforestry Innovations for Climate-Resilient Development, Transformative Land Use, and Livelihood Security sponsored by UPCAR from 14-23 November 2025 at ICAR-Central Agroforestry Research Institute, Jhansi, U.P.
- Ashok Yadav attended 11th Indian Horticulture Congress – 2025 and International Meet "Horticulture for Inclusive, Equitable and Sustainable Growth" 06–09 November, 2025 University of Agricultural Sciences, Bengaluru, Karnataka, India by Indian Academy of Horticultural Sciences (IAHS), New Delhi.
- Dr. Ashok Yadav organized and attended the project implementation and monitoring meeting (PIMC) on 24th November 2025, under the NABARD-funded pomegranate project, i.e. "Development and evaluation of pomegranate-based agroforestry systems in Bundelkhand region for higher productivity and economic returns in the farmer's field.
- Dr. Sukumar Taria attended (Virtually) and delivered oral presentation on "Validation of stem reserve mobilization QTLs in wheat under combined heat and drought stress" in Research Catalyst Global Symposium, organised by NaviClar and Euraxess India, in collaboration with European Molecular Biology Organization (EMBO) and Indian National Young Academy of Sciences (INYAS) during 16-18th Sept, 2025.
- Bijoy Chanda and Harish Sharma completed 114th Foundation Course for Agricultural Research Service (FOCARS) conducted at ICAR–NAARM, Hyderabad, from 07th July 2025 to 16th October 2025.
- Dr. Ronak Yadav and GP Sandeep attended 115 Foundation Course for Agricultural Research Service (FoCARS) Training at NAARM, Hyderabad.
- Dr. Sushil Kumar, Senior Scientist, attended Sixth International Agronomy Congress: Re-envisioning Agronomy for Smart Agri-food systems and Environmental Stewardship during November 24-26, 2025 at CSIR-NPL, New Delhi.
- Priyanka Singh Participated in 21-day online training program titled "Advanced Statistical and Machine Learning Techniques for Data Analysis Using Open-Source Software for Abiotic Stress Management in Agriculture" to be held from 16 July to 5 August 2025, organized by the School of Social Sciences and Policy Studies (SSSPS), ICAR-NIASM, Baramati.
- Participated in 10 days winter school on "Agroforestry innovations for climate resilient development, transformative land use and livelihood security" at ICAR-CAFRI, Jhansi during 14-23rd November, 2025.
- Dr. K Rajarajan organized a Two-month internship training for a student of Master of Science in Biotechnology from Madurai Kamaraj University, Tamil Nadu, during 27 May to 29 July, 2025, at ICAR-CAFRI, Jhansi.
- Invited lecture at the Two day training on Morden Nursery Techniques and Quality seedling Production for Forest Guards and Foresters (Online) at FCRI, TNAU on 26.06.2025.
- Dr. Suresh Ramanan S Invited lecture on Career opportunities in the academics and research fields of Forestry for Final Year B.Sc. Forestry Student at RLBCAU on 28.07.2025
- Dr. Suresh Ramanan S served as rapporteur in the National Consultation on Scaling Agroforestry organized by TAAS at New Delhi on 18.09.2025
- Dr. Suresh Ramanan S served as Course Coordinator for Training on Agroforestry for the Officials for Maharashtra Forest Department on 11-13th August 2025 at ICAR-CAFRI, Jhansi - 20 participants
- Dr. Suresh Ramanan S served as Course Coordinator Training Coordinator for One-Day training on Climate modelling at ICAR-CAFRI on 26th August 2025 – 15 Participants.
- Dr. Arunachalam, Director, ICAR-CAFRI Organized a 3-days Training of Trainers on Agroforestry Nursery Assessment and Accreditation at Gangtok, Sikkim during 17–19 July 2025
- All the Scientists and Technical Personnel's were participated as a team member in Vikshit Krishi Sankalp Abhiyan (VKSA) in the month of June 2025, and briefed farmers on the agronomic management of Kharif crops for higher production and resource utilization.

Publications

Policy Paper

- Arunachalam A, Mishra JS, Ram A., Dev I , Yadav A, Choudhary V.K, Kumar N, Handa A.K. (2025). Weed Management for Sustainable Agroforestry: Policy Insights. Indian Society of Agroforestry, Indian Society of Weed Science, ICAR-Central Agroforestry Research Institute and ICAR-Directorate of Weed Research. Policy Paper 01:15p.

Journal Article

- Anirudh Samadhiya, Sirvi, A. R., Kumar, N., Dev, I., Debnath, S., Singh, R., Yadav, A., Singh, P., Pandey, S., Anuragi, H., Handa, A. K., & Arunachalam, A. (2025). Tree integration in conservation agriculture: A case study of teak+bael-based agroforestry in the Bundelkhand region. Indian Journal of Agricultural Sciences, 95(3), 361–367.
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Books, Chapters and Technical Bulletins

- Ram A., Yadav, A., Anuragi, H., Kumar N., & Arunachalam A. 2025. Agroforestry Innovations for Climate-Resilient Development, Transformative Land Use, and Livelihood Security. Training Manual 2025/1 (215p). ICAR-Central Agroforestry Research Institute, Jhansi, Uttar Pradesh (ISBN: 978-81-971641-6-3)

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- राजकुमार प्रजापतिए आषीष कष्यपए सुरेष रमणन एवं एण अरूणाचलमण 2025ण स्थायी व्यावसायिक पारिस्थतिकी तंत्र के लिए मूल के रूप में बाँस कृषिवानिकी आलोकण 14 ;1द्धरू67.71
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Awards/Recognition

a) Individual

- Dr. Arunachalam, Director, ICAR-CAFRI Member, Governing Council of the Food and Land Use Coalition India (w.e.f. June 2025),
- Dr. Arunachalam, Director, ICAR-CAFRI Mentor, Scientific Advisory Committee (SAC), Tea Research Association, Tocklai Tea Research Institute, Jorhat (w.e.f. October 2025)
- Dr. Arunachalam, Director, ICAR-CAFRI Member, Editorial Board, The AUS's Digest (Official Monthly Journal of Arunachal University of Studies) (2025)
- Dr. A. Arunachalam, Director, ICAR–Central Agroforestry Research Institute (ICAR-CAFRI), recognised and conferred the Best Oral Presentation Award at the National Conference on Advances in Climate-Conscious Crop Science, held from 31 October to 2 November 2025 at Bengaluru, India. He also recognised for the Best Paper Presentation Award at the National Conference on Agroforestry Assisted Natural Farming, organised on 20–21 November 2025 at Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKAUST-Kashmir), India.
- Dr. A. Arunachalam as Member, Board of Governors, National Council for Skill Education under Sikkim Act, 2025 (Act. No. 16, 2023)
- Dr. A. Arunachalam as Member, Advisory Committee, PM-RKVY-Agroforestry `To create a database, information and knowledge support in the area of agroforestry', State Nodal Agency for Agroforestry, Karnataka Forest Department, Govt. of Karnataka.
- Dr. A. Arunachalam as Subject Expert, UPSC Panel of Advisers (Forestry, Agriculture, Biodiversity)
- Dr. Sushil Kumar, Senior Scientist, awarded ISA Associate Fellow during the Sixth International Agronomy Congress held 24-26 November, 2025 at CSIR-NPL, New Delhi.
- Dr. S. Taria awarded R.D. Asana Gold Medal Award-2025 for outstanding contributions in the field of Plant Physiology & Cognate Sciences by Indian Society for Plant Physiology (ISPP), New Delhi on 15th December 2025 during 6th International Conference on Plant Physiology (ICPP-2025) organized at Tamil Nadu Agricultural University (TNAU), Coimbatore, Tamil Nadu, India.

Project Completion Report

- K Rajarajan, A K Handa, and A Arunachalam (2025) Project Completion Report: Large-scale Screening, Identification and Promotion of Azadirachta indica Accessions for High Azadirachtin Yield. ICAR-Central Agroforestry Research Institute, Jhansi 284003, Uttar Pradesh, India. Duration: 2023 – December 2025. Project Code: NRMA/CAFRI/SOL/2023/003/00156. (Ongoing; to close by December 2025)

- Suresh Ramanan S, A Arunachalam, A K Handa, M S Syamili, and Naresh Kumar (2025) Project Completion Report: Development and Implementation of Seedling Certification Framework. ICAR-Central Agroforestry Research Institute, Jhansi 284003, Uttar Pradesh, India. Duration: September 2024 – December 2025. Project Code: NRMA/CAFRI/SOL/2024/006/00166.

Personnel

New Personnel

Dr. GP Sandeep, Scientist (Agricultural Extension) joined 07.07.2025
Dr. Ronak Yadav, Scientist (Agroforestry) joined 07.07.2025
Dr. Harish Sharma, Scientist (Agroforestry) joined 27.10.2025
Shri. Ravi Bansal and Shri. Lalit Gehlot, Assistant joined 08.09.2025

Transfer

Dr. YN Venkatesh, Scientist, Agricultural Entomology, transferred to ICAR-IIHR, Bengaluru.
Dr. RP Dwivedi, Principal Scientist, Agricultural Extension transferred to ICAR-CAZRI, Regional Research Station, Kukma-Bhuj, Gujarat on 04.08.2025
Dr. Ajay Pandey, Technical Officer transferred to ICAR-IIVR, Varanasi on 28.11.2025

Retirement

Shri. Shishupal Singh, CTO, retired on 31.07.2025
Shri. Gautam Saxena, Senior Administrative Officer retired on 28.11.2025

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