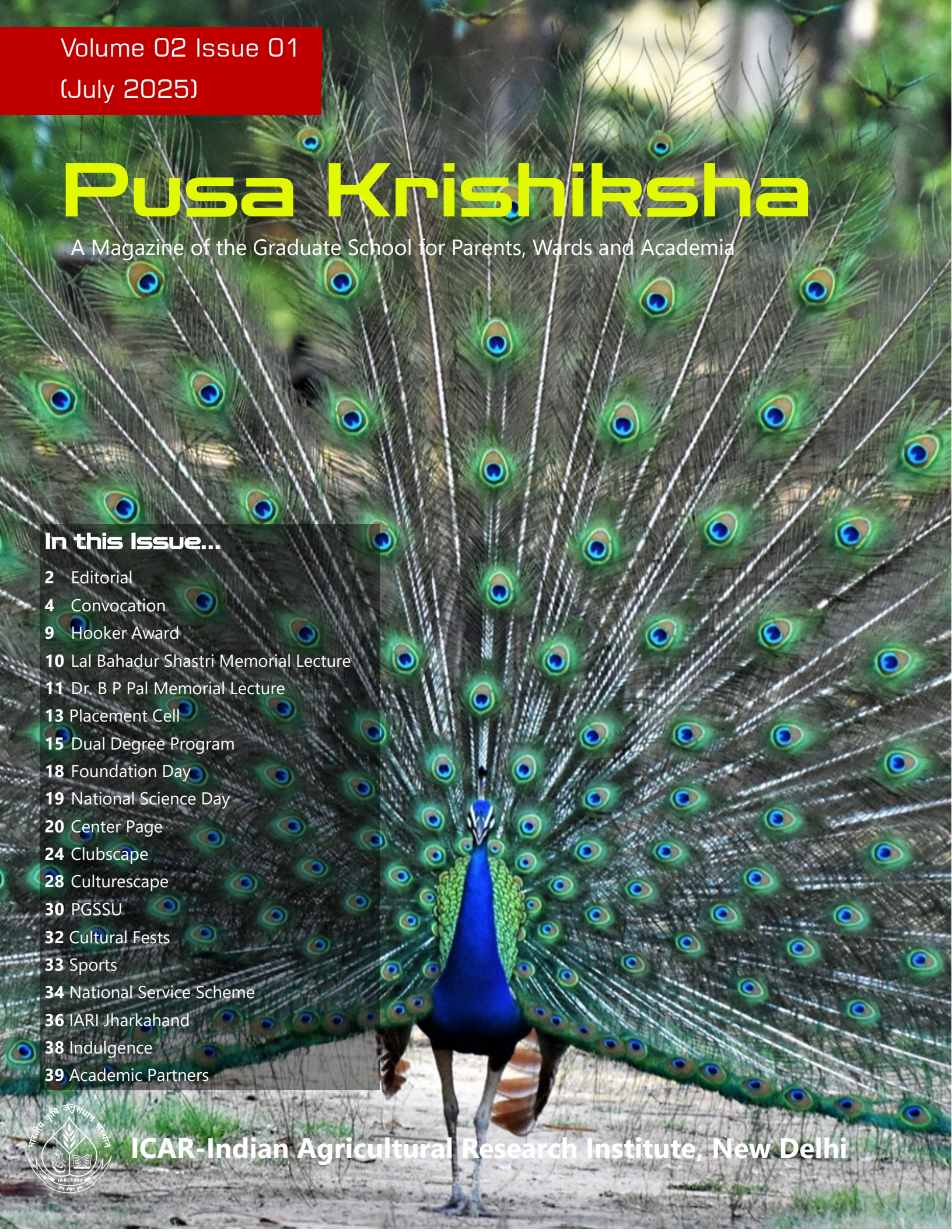
Volume 02 Issue 01
(July 2025)

Pusa Krishiksha

A Magazine of the Graduate School for Parents, Wards and Academia



In this Issue...

ICAR-Indian Agricultural Research Institute, New Delhi

From Patron's Desk

I extend my warmest congratulations to the editorial team for their outstanding work on the second issue of *Pusa Krishiksha* (January–June 2025). The inaugural issue (1–02/2024) gave us a glimpse of IARI's multifaceted achievements, capturing the Institute's unwavering commitment to excellence in research, academics, and extension. This second issue builds upon that legacy, presenting not only the vibrant activities of our campus but also the remarkable successes of our students and faculty in the first half of this year.

The past months have been particularly inspiring for the IARI community. Our Institute has continued to respond to complex agricultural challenges—ranging from climate change to food and nutritional security—through an integrated approach that brings together rigorous education, problem-driven research, and practical field application. Our graduates, equipped with this unique blend of knowledge and vision, continue to make their mark at the national level. I am delighted to note the success reaped by IARI students in recent recruitment examinations, with placements secured in prestigious institutions such as the Central Silk Board, various state agricultural universities, and key departments across the country. These accomplishments stand as a celebration of the dedication and capability of our scholars, who carry the IARI legacy of excellence wherever they go.

This issue also brings to light some of the most significant milestones of our academic calendar. The 63rd Convocation of IARI was a proud occasion, showcasing the academic brilliance and perseverance of our graduating students. The event reaffirmed IARI's role as a cradle of future leaders in agriculture. Equally enriching was the 55th Lal Bahadur Shastri Memorial Lecture, where distinguished thought leaders offered profound insights into the challenges and opportunities ahead. Both events exemplified our tradition of combining knowledge with vision, science with service, and education with nation-building.

As an institution, we remain deeply committed to sustaining our academic standards while adapting to the evolving requirements of accreditation agencies at the national and international level. Over the past two years, IARI has proudly held the top position in the Agriculture and Allied Sectors category of the NIRF rankings by the Ministry of Education, Government of India. This sustained performance fills us with optimism that the Institute will continue its leadership in the upcoming 2025 rankings as well.

The present issue of *Pusa Krishiksha* captures the transformative changes being introduced under the National Education Policy (NEP) 2020, including curricular reforms, sustainable practices on campus, innovative student activities, and the adoption of forward-looking research planning. It highlights how challenges are being turned into opportunities for growth and how our student community is actively engaging with these changes.

My heartfelt congratulations to all contributors of this issue. I am confident that *Pusa Krishiksha* will continue to reflect the dynamism of IARI, celebrate the achievements of its community, and showcase our long-term impact on Indian and global agriculture.

Dr. Ch. Srinivasa Rao

From Editor's Desk

Agricultural education in India is undergoing a transformative shift, moving from a traditional STEM approach to a comprehensive STEAM framework that integrates agricultural sciences with core disciplines such as science, technology, engineering, arts, and medical sciences. This evolution represents a reimagining of human resource development to meet the growing demands of India's agrarian economy. Just as medical and space technology missions have embraced interdisciplinary approaches to solve complex challenges, agricultural education must similarly equip students to address critical issues such as climate adaptation, sustainable farming, and food security.

ICAR's ongoing initiatives are bringing transformative changes to IARI's academic ecosystem, with a stronger emphasis on strategic academic partnerships and international collaborations. These collaborations enrich research exposure for students, create avenues for joint PhD and dual-degree programs, and provide access to cutting-edge laboratories, advanced bioinformatics, and high-end experimental facilities. At IARI, students are benefiting from such engagements, demonstrated through their exemplary performance in national and international competitions, hackathons, debates, and skill-development workshops, as well as through successful recruitments in organizations such as the Silk Board, ICAR institutes, and other central universities and government departments.

IARI's implementation of NEP 2020 exemplifies leadership in higher agricultural education by promoting multidisciplinary approaches, innovative curriculum frameworks, and holistic student development. The institute continues to nurture globally competent graduates capable of integrating technology, research, and field applications to address real-world agricultural challenges. The periodic review of academic programs, handholding support, and integration of skill enhancement courses alongside traditional curricula ensure that students are prepared for diverse career pathways, both in India and globally.

The second issue of Pusa Krishiksha (Jan–June 2025) embodies this evolution. It highlights IARI's transformative journey through detailed coverage of events such as the 63rd Convocation, the 55th Lal Bahadur Shastri Memorial Lecture, and the institute's international research collaborations. The magazine also showcases the remarkable achievements of students in competitions, cultural programs, and national recruitment drives, reflecting IARI's commitment to academic excellence and holistic development.

I extend my heartfelt congratulations to the editorial team for their exceptional work in producing this issue of *Pusa Krishiksha*. This vibrant publication not only documents IARI's ongoing legacy of innovation and excellence but also celebrates the bright prospects of agricultural education, research, and student success in the years to come.

Dr. Anupama Singh

IARI's Unbroken Legacy

ICAR–Indian Agricultural Research Institute, New Delhi, has a unique and rich tradition of celebrating a week-long convocation programme, during which diverse academic events are conducted to recognize and review the achievements and progress of PG and Ph.D. students. In addition, various award lectures are arranged to acknowledge the contributions of distinguished faculty and scientists and to motivate and inspire the students and faculty of the Institute.

The 63rd Convocation Week of the Graduate School, ICAR-IARI, New Delhi, was organized from March 17–22, 2025. The celebrations commenced with the presentations of Significant Postgraduate Students' Research by M.Sc./M.Tech. and Ph.D. students, nominated from different teaching disciplines of IARI, for consideration for the IARI Merit Medals and the NABARD–Professor V.L. Chopra Gold Medal & Best Student of the Year Award. These sessions, held on March 17 and 18, witnessed the participation of 22 M.Sc. and 21 Ph.D. students in this prestigious contest. Following the evaluation, five students each from the M.Sc. and Ph.D. categories were selected for the coveted IARI Merit Medals. In addition, one outstanding student from each category was honoured with the Best Student of the Year Award and the NABARD–Professor V.L. Chopra Gold Medal Award, which carried a gold medal and a cash prize of ₹25,000.

On March 19 and 20, 2025, professors from all teaching disciplines of IARI presented the School-wise Significant Educational Achievements of 2024. External experts were invited to review the quality and progress of students' research. Altogether, the research work of 400 PG and Ph.D. students (54, 63, 108, 51, 68, and 56 respectively from the Schools of Crop Improvement, Crop Protection, Natural Resource Management, Basic Sciences, Horticultural Sciences, and Social Sciences) was presented, offering the audience a comprehensive overview of the Institute's student research activities and achievements.

The lecture by the recipient of the XXVIII Hooker Award for the biennium 2022–23 was organized on March 20, 2025, followed by the 423rd meeting of the Academic Council of ICAR-IARI, during which several transformative decisions were taken to improve the academic ecosystem of the Institute.

On March 21, 2025, Dr. Rajesh S. Gokhale, Secretary, DBT, Government of India, delivered the 55th Lal Bahadur Shastri Memorial Lecture on the theme "The BioE3 Policy: Biotechnology for Economy, Environment and Employment." His knowledge, eloquence, and clarity mesmerized the audience. The lecture was followed by a press conference, during which the Director of ICAR-IARI, along with the Joint Director (Education) & Dean, Joint Director (Research), Joint Director (Extension), and Project Director, WTC, briefed the media about ongoing activities, new academic initiatives, and future plans of the Institute. The Board of Management meeting was also held the same afternoon, where several pathbreaking decisions were taken to strengthen institutional efficiency. To ensure flawless execution, a full-dress rehearsal of the convocation ceremony was held on the evening of March 21.

The much-awaited 63rd Convocation was held on March 22, 2025, at the Bharat Ratna C. Subramaniam Auditorium, NASC Complex, New Delhi. The Hon'ble Union Minister of Agriculture & Farmers' Welfare and Rural Development delivered the convocation address. The ceremony was further graced by the presence of Shri Bhagirath Choudhary and Shri Ram Nath Thakur, Hon'ble Union Ministers of State. Dr. Ch. Srinivasa Rao, Director , ICAR-IARI, presented the annual achievements of the Institute, while the Dean & Joint Director (Education) highlighted the academic accomplishments of the Graduate School.

A total of 415 students (M.Sc.: 226; M.Tech.: 10; Ph.D.: 179), including two international students, received their postgraduate and doctoral degrees at the ceremony. Institute-level awards, such as the H.K. Jain Memorial Award and the IVth NABARD Researcher of the Year Award, were also conferred upon the winners.

The convocation was streamed live on YouTube, enabling staff members, students, parents, and alumni who could not attend in person to witness the auspicious ceremony virtually. Following the convocation, the Director felicitated all student and faculty awardees at a special ceremony held at the Prof. M.S. Swaminathan Library Conference Hall. Farewell meetings for the graduating students were organized within their respective disciplines, where students and their parents shared experiences and reflections with faculty members.

The Institute congratulated all degree recipients on their success, acknowledged their dedication and hard work, and extended best wishes for their bright and impactful futures.

Best Student Awards

Dr. Rudra Gouda M. N. Receives Best PhD Scholar of the Year 2024 Award

The prestigious Best Student of the Year 2024 and NABARD–Professor V. L. Chopra Gold Medal at IARI has been conferred upon Rudra Gouda M. N. (Ph.D., Entomology, Roll No. 12003) in recognition of his outstanding research on the genomic and functional architecture of chemosensory proteins in *Bemisia tabaci*, a destructive whitefly pest threatening global agriculture. His thesis was titled, *Genome-wide analysis and identification, characterization, expression and functional analysis of odorant-binding proteins and chemosensory proteins in the whitefly, Bemisia tabaci*.

Guided by Dr. S. Subramanian, Professor, Division of Entomology, Rudra's pioneering work mapped the molecular basis of pest behaviour and resistance, opening new doors for eco-friendly pest management. His research focused on odorant-binding proteins (OBPs), chemosensory proteins (CSPs), and ejaculatory bulb proteins (EBPs)—molecules that regulate host detection, communication, and reproduction in insects.

Through genomic sequencing and phylogenetic analysis, Rudra identified 14 OBPs and 14 CSPs, including six novel proteins, and traced their evolutionary pathways across multiple cryptic species of *B. tabaci*. Expression profiling revealed OBP3, OBP8, CSP4, and CSP8 as central to insect development and host recognition, while OBP10 was linked to reproductive behaviour.

Functional assays provided breakthrough insights, showing OBP3 and OBP10 strongly bind to volatiles such as β-caryophyllene and limonene, compounds influencing whitefly attraction or repellence. Equally significant was his discovery that some CSPs interact with insecticides like imidacloprid and fipronil, implicating them in resistance mechanisms. His work on ejaculatory bulb proteins further clarified their role in reproductive success.

By integrating genomics, molecular biology, and behavioural ecology, Rudra Gouda's research offers actionable strategies to manage whitefly infestations sustainably. His findings pave the way for novel attractants, repellents, and genetic interventions, exemplifying IARI's leadership in advancing global food security through cutting-edge science.

Ms. Sneha Bharadwaj Awarded Best Student of the Year 2024 (M.Sc. Agronomy)

The *Best Student of the Year 2024 and NABARD–Professor V.L. Chopra Gold Medal* in the M.Sc. category has been conferred upon Ms. Sneha Bharadwaj (Roll No. 50096, Agronomy) under the guidance of Dr. C. M. Parihar, in recognition of her exemplary research addressing yield gaps and climate resilience in rice production systems of the northeastern hill (NEH) region of India. Her thesis, *"Analyzing the yield gap of rice in a hilly-ecosystem using bio-physical modelling for different nitrogen levels,"* provides a vital framework for sustainable intensification and resilient rice production in India's NEH region.

The NEH region, despite being resource-rich, faces significant productivity constraints due to inefficient resource management. Through two field experiments with rice varieties *Shahsarang* and *Mendri* at ICAR-RC-NEH, Umiam, Ms. Bharadwaj systematically evaluated nutrient and water management strategies to bridge yield gaps. Her findings established that the application of the 100% recommended dose of nitrogen (RDN) achieved superior crop performance, while integrated nutrient management (INM) with 5.0 t/ha FYM + 75% RDN sustained yields and enhanced soil organic carbon (SOC) by 2.72–6.17%.

Using the APSIM (Agricultural Production Systems Simulator) model, she further demonstrated that nitrogen limitation accounted for yield gaps of 2.80 t/ha in *Shahsarang* and 1.63 t/ha in *Mendri* under rainfed conditions. Importantly, simulation results revealed that early transplanting before July 5th reduced yield losses by ~28% under current conditions and by 29–52% under projected climate scenarios, while late transplanting drastically lowered yields. Supplemental irrigation and higher plant density proved effective in mitigating losses under delayed planting, enhancing resilience.

IARI Merit Medal Awards

IARI Merit Medals are prestigious recognitions presented to meritorious students from diverse disciplines at both the Doctoral and Master's levels. These medals are presented during the 63rd Convocation of IARI in recognition of their consistent academic performance, research excellence, and commitment to advancing agricultural sciences.

Doctor of Philosophy

Five scholars were honoured with the IARI Merit Medal in recognition of their distinguished contributions in their respective fields of study.

The agricultural sector in India has transformed from dependence on food aid to becoming a major food producer. However, farmers continue to face economic challenges, highlighting the need for innovative solutions such as agri-entrepreneurship, as advocated by the Dalwai Committee. Guided by Dr. M. S. Nain, Mr. Sujay Basappa Kademani conducted this study, titled "*A Study on Institutional Interventions for Agri-Entrepreneurship Development*", which analyzed institutions promoting entrepreneurship, assessed the effectiveness of their support, identified determinants of successful interventions, and explored constraints and recommendations.

The study focused on selected institutions from Telangana and Rajasthan, involving 200 entrepreneurs and 43 professionals. Findings revealed that most institutions (56.3%) were affiliated with academic or research organizations, emphasizing entrepreneurship development and national outreach. Key support areas included training and workshops, certification (68%), and business/ financial model development (56.3%). Institutional support was satisfactory in production, marketing, and technical dimensions but weaker in legal, bureaucratic, and financial aspects. Determinants of effective interventions included psycho-personal, socio-economic, and institutional factors, with emphasis on project formulation, vocation-oriented syllabi, long-term strategic involvement, and Training Institute-Industry-Market-Entrepreneur (T-I-M-E) linkages.

Constraints included limited priority lending, delays in grants, and lack of prototype testing facilities. Recommendations focused on transparent evaluation, post-programme financial support, streamlined administration, and fostering an entrepreneurial culture among farmers. This work was recognized with the IARI Merit Medal for the student's outstanding contribution.

Under the guidance of Dr. R. M. Sharma, Mr. Narendra Singh conducted a study titled "*Evaluation of Interspecific Citrus Scion Hybrids for Fruit Quality and Health -Promoting Compounds*", focusing on the biochemical changes during the maturity of 16 interspecific citrus hybrids (*C. maxima* × *C. sinensis*) to determine their optimum harvest stage. The research assessed total soluble solids (TSS), titratable acidity (TA), TSS/TA ratio, BrimA, and juice percentage, correlating these parameters with organoleptic scores. In Delhi's subtropical conditions, the fruits reached optimum maturity between 15th October and 15th November. At maturity, the hybrids showed TSS of 8.93–11.47°B, TA of 0.72–1.84%, TSS/TA ratio of 5.68–12.77, and ascorbic acid content of 37.86–71.15 mg/100 mL. Fruit weight, peel thickness, and juice content ranged from 282.0–584.77 g, 4.29–9.28 mm, and 22.9–48.2%, respectively. Hybrids SCSH-9-10/12, SCSH-11-15/12, and SCSH-17-19/13 were superior with high juice acceptability (≥5.0) and juice content (≥40%). Mineral analysis revealed wide variation, with P, K, Ca, Mg, Fe, Zn, Mn, Cu, Na, and Cl content differing significantly among genotypes, while select hybrids exhibited superior micronutrient profiles and low limonin content (<1 mg/L) maintaining high juice acceptability even after 24 hours. This work was recognized with the IARI Merit Medal for its outstanding contribution to citrus fruit science.

Under the guidance of Dr. Firoz Hossain, Mr. Hriipolou Duo conducted a doctoral study titled "*Analysis of Genetic Variability, Molecular Characterization and Marker-Aided Enrichment of Methionine in Maize*", addressing the deficiency of sulphur-containing essential amino acid, methionine, in traditional maize endosperm protein. Multilocation evaluation of 48 inbreds revealed significant variation in methionine content (0.031–0.305%). A 7 × 7 half-diallel mating design indicated the predominance of additive gene action for methionine accumulation. Molecular characterization of *aspartate kinase-2* (*ask2*), *floury-2* (*fl2*), delta zein structural-10 (*dzs10*), and delta zein structural-18 (*dzs18*) genes revealed key SNPs and InDels, including T→A in ask2, C→T in *fl2*, misfit transposable element in *dzs10*, and multiple InDels in *dzs18*.

Introgression of favorable alleles of *ask2*, *fl2*, and *dzr1* into elite parents (PMI-PV5 and PMI-PV6) of the hybrid Pusa HQPM5 Improved enhanced methionine content by 1.38-, 1.83-, and 1.82-fold, respectively, with recurrent parent genome recovery ranging from 84.3–93.8%. Reconstituted hybrids exhibited methionine levels of 0.26–0.35%, compared to 0.19% in the original hybrid. Expression analysis showed highest transcript abundance at 20 days after pollination (DAP), coinciding with peak methionine accumulation. The enriched genotypes also demonstrated superior seedling vigor, root development, and antioxidant enzyme activity. The methionine-rich maize hybrid developed in this research has been nominated for AICRP trials, representing the first report of high methionine biofortified maize hybrids.

In recognition of his outstanding doctoral research under the guidance of Dr. Ajay Arora, Division of Plant Physiology, Mr. Sukumar Taria has been awarded the IARI Merit Medal for his thesis, "*Stem Reserve Mobilization and Stay-Green Traits for Yield Stability in Wheat under Combined Heat and Drought Stress*". His work focused on understanding the genetic basis of stay-green (SG) and stem reserve mobilization (SRM) traits and pyramiding them to enhance resource availability and yield stability under abiotic stress conditions. A field experiment was conducted during the rabi season 2021–22 using a population of 220 recombinant inbred lines (RILs) developed from a cross between HD3086 (SG) and HI1500 (SRM) under control, drought, heat, and combined heat-drought stress treatments.

Genotyping of 21-day-old seedlings was performed using the 35K Axiom Wheat Breeder Array, followed by QTL mapping using Inclusive Composite Interval Mapping software. Eleven, two, and one QTLs were identified for SPAD value, leaf senescence rate (LSR), and stem reserve mobilization efficiency (SRE), respectively. Candidate gene analysis linked SG with chlorophyll synthase, 7-HCAR, rubisco small subunit, P5CS, and L-ascorbate peroxidase-2; LSR with K+ transporter-9, glycine decarboxylase-1-like, and aspartyl protease family proteins; and SRE with endoglucanase-8-like, NCED1, serine-threonine protein kinase OSR1-like, and pentatricopeptide repeat-containing proteins.

Validation through physiological and gene expression studies in rabi 2022–23 identified superior lines HDHI 113 and HDHI 87 combining SG and SRM traits. Additionally, 44 major QTLs from main culm components were mapped for transfer into elite wheat cultivars. Mr. Taria's research provides a robust framework for breeding wheat with improved yield stability under combined heat and drought stress, demonstrating innovation, scientific rigor, and practical relevance, earning him the prestigious IARI Merit Medal.

In recognition of his outstanding doctoral research under the guidance of Dr. Chander Parkash, Division of Vegetable Science, Mr. Pradeepkumara N. has been awarded the IARI Merit Medal for his thesis, "*Development of Mapping Population and Identification of QTLs Associated with Extended Shelf-Life in Cucumber (Cucumis sativus* L.)". His study focused on dissecting the genetic basis of shelf life and flowering traits in cucumber to facilitate the development of improved varieties with enhanced post-harvest performance. A total of 125 F_2 progenies from a cross between DC-48 (extended shelf life) and DC-83 (Pusa Long Green) were evaluated over three consecutive crop seasons—*Kharif*-2022, Summer-2022, and Summer-2023—at IARI, New Delhi.

A survey of 1,200 SSR markers revealed 106 polymorphic markers between the parental lines, which were used to construct a chromosomal linkage map spanning 1,175 cM with an average marker interval of 25 cM. Inclusive Composite Interval Mapping (ICIM-ADD) identified 32 QTLs for five key traits across seven chromosomes. Significant QTLs included those controlling fruit firmness at multiple positions (*qBF7.3, qMiFF7.3, qMeFF7.3*), fruit shrinkage across chromosomes 1, 3, and 4, retention of green color (*qRGC7.1–7.3*), days to first female flower (*qDFFF3.3.1*, *qDFFF3.1*), and node of first female flower, with the major QTL *qNFFF2.2* explaining 13.1% phenotypic variation.

This comprehensive research provides a robust framework for marker-assisted breeding in cucumber, enabling the development of varieties with extended shelf life and optimized flowering. The study demonstrates innovation, scientific rigor, and practical relevance, making a significant contribution to vegetable crop improvement and earning Mr. Pradeepkumara N. the prestigious IARI Merit Medal.

Master of Science/Technology

Celebrating her remarkable contribution to rural development and climate

adaptation, Ms. Simran Pundir has been awarded the IARI Merit Medal for her Master's thesis, "*Rural Women Leadership in Climate Change Adaptation and Sustainable Livelihood*", conducted under the guidance of Dr. R. N. Padaria. Her research focused on assessing the vulnerabilities of rural women to socio-economic challenges, financial instability, and climate variability, while examining their adaptive behaviours, decision-making capacities, and leadership potential. The study was conducted on 200 women farmers in Uttarakhand, comprising 100 members of Self-Help Groups (SHGs) and 100 non-members, employing a correlational design complemented by qualitative methods to explore the influence of leadership on resilience and adaptation.

An index integrating Exposure, Sensitivity, and Adaptive Capacity revealed that SHG members (LVI = 0.355) were less vulnerable than non-members (LVI = 0.439), highlighting the protective influence of structured leadership networks. Indigenous Technical Knowledge (ITK) practices, including water conservation, organic pest management, and crop diversification, were documented through focus group discussions and validated using the QuIK method, emphasizing their potential for scalable climate adaptation strategies. Adaptation behaviours were further analyzed using an extended Theory of Planned Behaviour framework, while leadership competencies—including influencing, managing, and decision-making—were significantly higher among SHG members (mean = 17.3–16.5) compared to non-members (mean = 9.4–9.8).

The study underscores the critical need for gender-sensitive policies, targeted interventions, and promotion of rural women's leadership to enhance climate resilience and sustainable livelihoods. Ms. Pundir's work provides actionable insights for policymakers, extension workers, scientists, and researchers, making a significant and lasting contribution to rural development, earning the prestigious IARI Merit Medal.

For his pioneering work in diabetes research, Mr. Mohammed Salman C.K. has been awarded the IARI Merit Medal for his doctoral thesis, "*Development and Validation of Glucose Nanosensor for Predicting Inherent Glycemic Response*", conducted under the guidance of Dr. Veda Krishnan, Division of Biochemistry. His study addressed the need for rapid, cost-effective, and accurate glycemic response assessment.

He developed a high-throughput *in vitro* digestion protocol integrated with an electrochemical glucose nanosensor and machine learning models, achieving a 37-fold reduction in per-sample costs and superior predictive accuracy (MAE = 0.81, RMSE = 0.89). The optimized protocol evaluated 53 rice accessions, revealing predictive GI of 46.98–87.26 and IGP of 21.12–77.5.

The V_2O_5/Ti_3AlC_2 nanosensor demonstrated high specificity and accuracy (R^2 = 0.857) in complex food matrices. Machine learning models, including decision trees (R^2 = 0.991) and random forests (R^2 = 0.984), enhanced predictive performance, establishing a novel correlation between pGI and IGP (R^2 = 0.645). This transformative approach advances nutritional labeling, crop breeding, and dietary management, earning him the prestigious IARI Merit Medal.

Recognizing his innovative application of artificial intelligence in agricultural research, Mr. Sourav Chakrabarty has been awarded the IARI Merit Medal for his doctoral thesis, "*Identification of Agriculturally Important Insects Associated with Cruciferous Crops (Brassicaceae) Using Artificial Intelligence*", conducted under the guidance of Dr. P. R. Shashank, Division of Entomology. His study focused on the identification and management of both pest and beneficial insects associated with crucifer crops.

He identified 20 insect species and provided detailed morphological descriptions for 14 species, alongside a comprehensive checklist of 289 agriculturally important insects, analyzing their species and functional diversity. A novel YOLOv5l-based single-stage object detection model was developed using 2,730 curated images from fields and polyhouses. The model achieved an average accuracy of 99.5%, precision 92.0%, recall 83.0%, and F1-score 0.87%, with lower computational complexity than larger variants, making it suitable for integration into the AI DISC mobile application.

This study represents a first-of-its-kind approach linking taxonomic insect identification with AI-based detection, providing a robust tool for precision pest management.

Addressing a critical challenge in ornamental horticulture, Mr. Shorya Sharma has been awarded the IARI Merit Medal for his doctoral research, "*Screening of Marigold Genotypes (Tagetes spp.) Against Alternaria Leaf Spot Under In Vitro and In Vivo Conditions*", conducted under the guidance of Dr. Reeta Bhatia Dey, Division of Floriculture and Landscaping. His study focused on identifying marigold genotypes resistant to *Alternaria alternata*, the primary pathogen causing leaf spot and inflorescence blight, to reduce fungicide dependence and promote sustainable cultivation.

Phenotypic evaluation revealed significant variation in plant growth and floral traits among sixty marigold genotypes. Pathogenicity assays identified the most virulent isolate, I-3, confirmed through morphological, molecular, and phylogenetic analyses, and used for systematic in vitro and in vivo screening. Five genotypes—AMS-48, AMS-123, Pusa Parv, Pusa Utsav, and MGO-3—showed moderate and consistent resistance, demonstrating potential as valuable sources for breeding disease-resistant varieties.

This research provides actionable insights for developing improved marigold cultivars, advancing sustainable horticultural practices, and reducing environmental impact, earning Mr. Sharma the prestigious IARI Merit Medal.

Advancing the frontier of crop biofortification, Mr. K. Victor Paul has been awarded the IARI Merit Medal for his doctoral research, "*Genetic Variability and Molecular Analysis of Folate Accumulation in Maize Kernels*", conducted under the guidance of Dr. Rajkumar Uttamrao Zunjare, Division of Genetics and Plant Breeding. His study focused on evaluating folate (vitamin B9) accumulation in maize, a critical nutrient for human growth and prevention of neural tube defects.

Forty-eight maize inbreds were analyzed at 15, 30, and 45 days after pollination for 5-methyltetrahydrofolate, 5-formyltetrahydrofolate, and total folate content, revealing significant genetic variability and strong genotype × developmental stage interactions. SSR marker analysis of 78 candidate genes identified 30 polymorphic markers and three clusters of genotypes, highlighting high conservation and dispersion of folate traits. Expression analysis of GTPCH1, SAM, and CTM genes demonstrated GTPCH1's pivotal role in early folate biosynthesis, with SAM and CTM contributing to folate metabolism during kernel maturation.

High-folate inbreds such as PMI-SWT016, PMI-PV7, and MGU213wx were identified as potential donors for biofortification programs. This first-of-its-kind study in India to develop folate-enriched maize.

Honoring Collective Spirit of an Indian Scientist

Dr. Gyan P. Mishra

On being conferred the Hooker Prize 2025, Dr. Gyan Prakash Mishra of the Indian Agricultural Research Institute (IARI), New Delhi, humbly described it as "*a recognition not just of my work, but of the collective spirit of Indian agricultural science*." He was presenting his award lecture during 63rd Convocation celebrations of IARI on 20 March 2025 before an august audience. The award, instituted in 1971 by Richard Hooker and Lady Winfred Hooker, honors transformative contributions to Indian agriculture. Dr. Mishra is currently leading the Seed Science and Technology Division at IARI as Head.

Building a Pipeline from Gene to Field

"*One defining feature of my research has been developing a pipeline approach—from identifying useful traits, to genetic characterization, marker development, and deployment in breeding programs*," Dr. Mishra explained. This integrated method has already resulted in eight registered genetic stocks, serving as the foundation for new crop varieties.

Varietal Breakthroughs in Pulses and Vegetables

"*In pulses and vegetables, the aim was always impact at scale*," he said. His lentil varieties now cover more than 15% of India's area, while the mung bean variety Pusa 1641 is widely adopted. In vegetables, his work on okra produced Kashi Lalima, India's first red-fruited okra, which created new market opportunities. "*We also released Kashi Chaman and Kashi Baingani in French bean*," he added, noting that several varieties have been licensed to seed companies, ensuring both farmer access and institutional revenue.

Transgenics: Expanding Scientific Frontiers

Dr. Mishra has also pushed India's frontiers in transgenic research, working on peanut and potato for drought and salinity tolerance, and resistance to fungal and viral pathogens. "*We used genes like ADR1B1A, mannitol dehydrogenase, and defensin to confer resistance*," he explained. Although release depends on regulation, these efforts strengthened India's biotech capacity.

High-Altitude Agriculture at DRDO

Recounting his tenure in Leh with DRDO, he said, "*Supplying fresh food in extreme cold deserts was a challenge. We developed permafrost-based zero-energy storage facilities and grew 78 vegetable species under Ladakh's unique conditions—something that drew global recognition*."

Molecular Advances in Groundnut and Pulses

"*In groundnut, we created 366 stress-related markers when genomic resources were scarce, mapped QTLs for rust and stem rot resistance, and developed high-oleic lines with better nutrition, shelf life, and disease resistance*," he said. In pulses, his team identified and mapped multi-flowering traits in pea and lentil, with up to 15 flowers per peduncle. "*We also found resistant lines for Mungbean Yellow Mosaic Virus and even a unique lentil mutant producing both black and white seeds on the same plant*," he added.

> ***Seed science and crop genetics will drive the next wave of breakthroughs. We must aim for sustainability, nutritional security, and farmer prosperity, while contributing to global agricultural challenges...***

Seed Science for Farmers

"*One of the proudest innovations is the Speedy Seed Kit, which assesses seed viability in 2–4 hours instead of days. It has already been commercialized and welcomed by industry*," Dr. Mishra noted.

An Integrated Philosophy

Reflecting on his career, Dr. Mishra emphasized, "*My philosophy has always been integration—genomics, molecular tools, conventional breeding—all directed towards farmer impact. Whether it is developing early-maturing lines, mapping yield-related genes, or introducing practical seed technologies, the focus remains on productivity, resilience, and profitability*."

Gratitude and Vision Ahead

He acknowledged the support of mentors, colleagues, students, and funding agencies including ICAR, DRDO, DBT, DST, ICARDA, HarvestPlus, WorldVeg, and ICRISAT. "*Science is never a solo effort*," he remarked.

Looking ahead, Dr. Mishra is optimistic: "*Seed science and crop genetics will drive the next wave of breakthroughs. We must aim for sustainability, nutritional security, and farmer prosperity, while contributing to global agricultural challenges*."

Through his pioneering work spanning crop breeding, molecular genetics, biotechnology, and farmer-centered innovations, Dr. Gyan Prakash Mishra has made an outstanding and enduring contribution to agricultural science in India.

Biotechnology to Drive India's Future

Delivering the 55th Lal Bahadur Shastry Memorial Lecture, Prof. Rajesh S. Gokhale, Secretary, Department of Biotechnology (DBT), Government of India, on 21 March 2015, underlined biotechnology as the cornerstone of India's next growth revolution. Addressing scientists, students, and policymakers, he presented the recently approved BioE3 Policy – Biotechnology for Economy, Environment and Employment, positioning it as a transformative framework for national development.

From Famine to Food Security

Recalling India's journey from the Bengal Famine of 1943 to today's food-secure nation, Dr. Gokhale credited scientists and agricultural institutions for ensuring self-reliance. He emphasized, however, that challenges persist: "*While we have solved the problem of food scarcity, nearly 800 million people globally remain hungry and 2.8 billion cannot afford healthy food. Our responsibility is to design sustainable food systems that meet nutritional needs without straining the planet.*"

Biotechnology as the New Industrial Revolution

Placing biotechnology within the arc of industrial revolutions, Dr. Gokhale described the coming era as the "Bio Revolution", following mechanization, electrification, and digitization. "*The next 25 years will be defined by the industrialization of biology. Efficiency, precision, and sustainability will emerge from biological systems.*" He urged India to lead this wave, unlike in the past when it lagged in adopting industrial change.

The BioE3 Policy Framework

The lecture's highlight was the exposition of the BioE3 Policy, approved by the Union Cabinet in August 2024. The policy envisions biotechnology as a driver of economic, environmental, and employment gains through six strategic areas:

- Climate-resilient agriculture
- Carbon capture and utilization
- Bio-based chemicals and enzymes
- Smart proteins and functional foods
- Precision biotherapeutics
- Marine and space biotechnology

To scale innovations, the government will establish bio-manufacturing hubs and bio-AI hubs, bridging gaps between laboratory discoveries and industrial deployment.

Circular Bioeconomy and Sustainability

Dr. Gokhale stressed that India's future must be rooted in a

circular bioeconomy, where no resource goes to waste. Innovations such as biodegradable cloth, bioplastics, and biofuels demonstrate how waste can be recycled into valuable products. "*Nothing should go waste. Every crop residue, livestock by-product and industrial discharge must be converted into a utility*," he asserted.

Food, Agriculture and Health

The lecture underscored pressures on India's food and livestock systems. Rising demand for milk, eggs, and meat amid resource constraints and greenhouse gas

Prof. Rajesh S. Gokhale

emissions calls for new solutions. Precision fermentation and smart proteins were identified as critical, with examples such as non-dairy milk produced in Bengaluru. He cautioned against losing Indian innovations to foreign takeovers.

In agriculture, speed breeding centres in Varanasi, Ludhiana, and Mohali now enable varietal development in just two years, compared to seven earlier. In healthcare, biotechnology promises personalized treatments, marking a decisive shift from conventional medicine to biology-driven healthcare.

Challenges Ahead

Acknowledging hurdles, Dr. Gokhale cited biomass logistics, scalability, cost-effectiveness, policy uncertainty, and lack of public awareness. He stressed that India cannot replicate Western models of growth but must chart its own course through the twin transitions of digital and green technologies.

A Call to Young Scientists

Concluding, Dr. Gokhale appealed to young scientists to embrace end-to-end innovation and lead India's bio-industrial future. "*Biology will build the next technology revolution. It will touch food, water, energy, environment, plants, animals, and humans*," he said. The BioE3 Policy, he emphasized, offers India the chance to lead, not follow, in the coming revolution.

Transitioning Indian Agriculture

From Commodity Focus to Agri-Food Systems

The IARI, New Delhi, witnessed a momentous convergence of ideas, legacy, and leadership during the 32nd Dr. B.P. Pal Memorial Lecture, organized by the Graduate School and the Genetics Club on 28 May 2025. The distinguished speaker, Dr. M. L. Jat, Director General of ICAR and Secretary, DARE, delivered a compelling address on the theme, "*Transitioning from Commodity-Centric Agriculture to Agri-Food System is a Must for Viksit Bharat @2047*." The session was presided over by Padma Bhushan Dr. R.S. Paroda, Chairman, Trust for Advancement of Agricultural Sciences (TAAS) and former DG, ICAR — himself an architect of India's modern agricultural research framework.

Honouring a Legacy of Scientific Excellence

Welcoming the audience of faculty, students, and national dignitaries, Dr. Anupama Singh, Dean and Joint Director (Education), IARI, paid rich tributes to Dr. Benjamin Peary Pal — revered as both the Father of Roses in India and the Father of the Indian Agricultural Research System. She recalled that the memorial lecture series was instituted in 1994 by Bharat Ratna Dr. M.S. Swaminathan, to perpetuate Dr. Pal's vision of science-led growth. "*Just like roses, Dr. Pal's aura should always bloom around IARI*," she quoted.

Dr. Pal's pioneering introduction of the trimester and credit-based education system, his global research excellence, and his selfless donation of personal assets to IARI remain enduring symbols of scientific dedication.

A Bridge Between Generations

Introducing the speaker, Dr. R.S. Paroda traced the evolution of India's agricultural research landscape — from the days when Dr. Pal led IARI to his own early years in the system. With characteristic warmth, he recalled Dr. Jat's rise from a small village in Rajasthan to the helm of ICAR, describing him as "*a man of head and heart, deeply committed to science on the ground*."

"*Dr. Jat*," he observed, "is *not only an accomplished scientist but a man of action — one who has worked shoulder-to-shoulder with farmers to make conservation agriculture a reality across five million hectares*." Having watched his professional journey from IARI to international platforms like CIMMYT and ICRISAT, Dr. Paroda remarked that Dr. Jat's appointment as DG-ICAR brings "*fresh dynamism and the promise of reform rooted in field experience*."

A Profession of Pride

Delivering his lecture, Dr. M.L. Jat began with humility and conviction: "*Farming is not just a livelihood — it is a profession of pride. Agricultural science is a service to humanity*." He paid heartfelt homage to Dr. B.P. Pal, Dr. M.S. Swaminathan, and Dr. Paroda, describing them as "*a lineage of Bharat Ratna and Padma awardees whose vision built the foundation on which we stand today*."

Linking his theme to the national aspiration of Viksit Bharat @2047, Dr. Jat emphasized that India's journey to developed-nation status must begin in its villages and farmlands. "*The four pillars of a developed India*," he said, "*are the poor, women, youth, and farmers. If we cannot uplift and empower these four, we cannot achieve a Viksit Bharat*."

From the Green Revolution to a Systems Revolution

Dr. Jat acknowledged the Green Revolution as a turning point that ensured national food security, even under increasing climatic stress. Yet, he noted, the challenges of the 21st century — from water scarcity to soil degradation and climate extremes — demand a new revolution based on systems thinking.

"*Today, we can no longer afford to think in silos*," he said. "*Agriculture, water, soil, energy, biodiversity, and markets are deeply interconnected. The time has come to move from a commodity-centric approach to a sustainable agri-food system that links production, nutrition, and ecology.*"

He highlighted how, despite consecutive abnormal climatic years, India's food grain production continues to rise — a result of scientific resilience. Yet, he cautioned that this success should not mask growing concerns of malnutrition, environmental decline, and economic disparity.

Megatrends and the Need for Integration

Dr. Jat listed several global megatrends that demand urgent attention — climate change, biodiversity loss, youth unemployment, and changing consumption patterns.

"*We have already crossed six of the nine planetary boundaries*," he warned. "*The agri-food system contributes one-third of global emissions. It is time we act — and act now.*" Tracing the fragmentation of agricultural governance across nine ministries — from water and fertilizers to food processing and rural development — he noted that the sector's increasing complexity calls for greater coordination and integration rather than further division. "*We cannot merge ministries*," he said with realism, "*but we can make them work together. Coordination is the key to efficiency.*"

Connecting the Dots: A Systems Approach

At the heart of his message was a call for a shared national vision based on collective action. "Our research institutions must function as one system, one team, one purpose — for the nation," he asserted.

He identified four interconnected pillars essential for sustainable transformation:

- Sustainable Production
- Sustainable Environment
- Sustainable Livelihoods
- Sustainable Nutrition

"*Today, ninety percent of our effort goes into production*," Dr. Jat said. "*We must connect the other three dots — because food, environment, and income security cannot exist in isolation.*"

Reforms Rooted in Science

Dr. Jat underlined that the transformation must be science-led and data-driven. He advocated for a multi-criteria sustainability framework that measures not just yields but environmental and nutritional outcomes. "*Quantity is not enough. It's time for quality*," he emphasized. He called for repurposing subsidies into incentives that reward efficiency and sustainability. "*Subsidies often support inefficiency*," he said candidly. "*Instead, we must incentivize conservation, innovation, and circularity.*"

A key element of his lecture was the systems-based landscape management model that has shown promising results in Bundelkhand—improving ground-water levels, increasing crop diversity, and restoring ecosystems. "*Transformation happens*," he said, "*when we plan by landscapes and water budgets, not just by crops.*"

Data, Delivery, and the Human Element

In an era of digital transformation, Dr. Jat stressed the creation of a robust data ecosystem for ICAR, enabling open, responsible data sharing to fuel artificial intelligence and big data analytics. "*Data generated through public resources is a national asset*," he reminded, "*not private property.*" He also emphasized the science of delivery, beyond conventional extension. "*To deliver technology*," he said, "*we must first change behavior. That requires science — the science of communication, partnership, and business models.*" A strong advocate for youth and women in science, Dr. Jat urged reorientation of agricultural education to build "quality human capital" and promote entrepreneurship. "*Let us not produce degree-holders*," he remarked, "*but change-makers who lead the next generation of agri-innovation.*"

One NARS, One Vision

Dr. Jat's lecture culminated in a stirring appeal for institutional reform and unification within the National Agricultural Research System (NARS). "*We must link the country's goals to institutional goals — and those to personal goals*," he said. "*If our individual work does not contribute to national progress, we must redefine our purpose.*"

He announced that new policies on data management, gender inclusion, and communication strategy are under preparation and will be unveiled on ICAR's Foundation Day. "*We are working towards a more efficient, transparent, and accountable system*," he affirmed.

Concluding with optimism, he said, "*We must move from isolation to integration, from linear thinking to circular systems, from analysis to synthesis. Change will not come from outside — we must change ourselves, together.*"

From commodity to system, from farm to food — the journey of Indian agriculture continues, inspired by science, guided by vision, and sustained by hope

Turning Vision into Action

Responding to the lecture, Dr. R.S. Paroda described it as "*a treat and a fresh outlook for ICAR International.*" Applauding Dr. Jat's clarity and passion, he said, "*The message is clear — business as usual will not work. It's time for action.*"

Dr. Paroda emphasized that while India's agricultural research system is strong, it must guard against fragmentation and complacency. "*We must ensure ICAR remains a unified family*," he said. "*Disintegration weakens innovation.*"

Drawing lessons from global experiences, he urged Indian agriculture to emulate systems that encourage decisive governance and ground-level implementation. "*We must think globally but act locally*," he said. "*Leadership like Dr. Jat's gives us hope.*"

He also reiterated the need for quality in education, gender-inclusive leadership, and entrepreneurial training for youth. "*It's time to train youth not for white-collar jobs*," he said, "*but for creating jobs, for becoming agripreneurs.*"

Toward a Greener, Smarter Future

Turning to sustainability, Dr. Paroda called for a renewed focus on carbon sequestration through agroforestry and conservation agriculture. "*We must make our grey areas green — not by giving more water, but by using less water more wisely*," he noted. Citing India's growing success in biofuels and solar power, he added, "*The next green revolution must be a green-by-design revolution, balancing productivity with planetary health.*"

He concluded with a hopeful reflection: "*In Dr. M.L. Jat, we see dynamism and vision. Dr. B.P. Pal's soul would be proud to see the system he founded growing into one of the best in the world. Let us nurture it and make it thrive.*"

The audience rose in a standing ovation — a gesture that bridged generations of scientists. The event concluded with a vote of thanks by Dr. H.K. Dikshit, President, Genetics Club, who expressed gratitude to all dignitaries, faculty, and students.

Graduates Appointed as Assistant Professors

IARI proudly celebrated a remarkable achievement as twenty-four of its students earned selection as Assistant Professors at prestigious agricultural universities, marking a defining milestone in their academic and professional journeys. Among these exceptional scholars, twenty-two secured positions at Dr. Rajendra Prasad Central Agricultural University in Pusa, Bihar, while two students were appointed at the University of Agricultural Sciences in Bangalore. This outstanding accomplishment not only reflects the individual expertise and dedication of the students across diverse fields of agricultural science but also underscores IARI's enduring legacy of academic excellence, research leadership, and commitment to nurturing the next generation of leaders in agriculture.

Dr. Ch. Srinivasa Rao, Director of IARI, warmly congratulated all the successful students, praising their perseverance, hard work, and unwavering commitment to their chosen fields. He extended his best wishes for their professional and personal growth, encouraging them to continue upholding the institute's high standards of excellence. This achievement is a testament to the institute's holistic approach to education and research, providing students with the knowledge, skills, and confidence to excel on national and international platforms. The success of these young professionals not only brings pride to IARI but also inspires current and future students to strive for excellence and make meaningful contributions to the development of agriculture in India and beyond.

The Silk Route of Success

IARI has once again demonstrated its academic excellence, with 36 students emerging successful in the Central Silk Board's nationwide selection for 122 Scientist-B posts, conducted by the Ministry of Agriculture and Farmers Welfare, Government of India. IARI candidates excelled across disciplines, securing all positions in Plant Genetic Resources and Farm Machinery and Power Engineering. In Entomology, they claimed 11 of 17 posts; in Soil Science, 3 of 4; in Genetics and Plant Breeding, 4 of 7; and in Agricultural Statistics, 2 of 3 posts.

Beyond numbers, IARI students achieved nearly all top three ranks, reflecting their strong academic foundation, rigorous training, and comprehensive preparation. The newly appointed Scientists will now contribute to India's sericulture sector, advancing research, innovation, and growth under the Central Silk Board.

Dr. Ch. Srinivasa Rao, Director, IARI, congratulated the successful students and acknowledged the pivotal role of IARI's academic and research leadership, including Dr. Anupama Singh, Dean, and Dr. Viswanathan Chinnusamy, Joint Director (Research). This remarkable achievement underscores IARI's continued role as a premier institution for nurturing future leaders in agricultural research and development, highlighting the institute's research-oriented environment, mentorship, and commitment to excellence.

Roadmap to Corporate World

On January 7, 2025, Dr. K.S. Thyagarajan, Head of Corporate Affairs and Sustainability (Agri) at PI Industries Ltd, delivered an insightful lecture and interacted with students of the IARI auditorium of the Division of Agricultural Engineering, IARI. The event was designed to guide and inspire students by highlighting the growing and evolving career opportunities available to agricultural graduates in the corporate sector.

Dr. Thyagarajan discussed the diverse roles in agribusiness, agri-input industries, supply chain management, sustainability projects, and research-driven corporate initiatives. He emphasized the importance of blending scientific knowledge with managerial and entrepreneurial skills to succeed in dynamic corporate environments. Students from multiple disciplines actively participated in the interactive session, posing questions and discussing real-world scenarios, gaining practical insights into recruitment trends, required skill sets, and career pathways in agribusiness and allied sectors.

The lecture provided students with a clear understanding of how they can leverage their academic training, research experience, and innovation skills to explore opportunities in both established companies and startups. The session concluded with motivational guidance from Dr. Thyagarajan, encouraging students to remain adaptable, continuously update their skills, and pursue excellence. The event was highly appreciated by students and faculty alike, reinforcing IARI's commitment to bridging academic learning with professional opportunities in the corporate agricultural sector.

Pusa Krishi Incubation Bootcamp 2025

Pusa Krishi and The Graduate School, ICAR-IARI, jointly organised an engaging bootcamp for IARI students on May 2, 2025, at the Agricultural Engineering Auditorium, IARI. Pusa Krishi is the agribusiness incubation hub of ICAR-IARI, established in 2014 to foster innovation and entrepreneurship in agriculture. It supports startups through programs like UPJA (Agricultural Production Systems Simulator) and ARISE (Agro Incubation for Sustainable Entrepreneurship), offering grants and mentorship to transform research into viable ventures. The bootcamp to familiarise them with its flagship incubation programs, UPJA and ARISE. The session was chaired by Dr. Anupama Singh, Joint Director (Education) and Dean, IARI, and brought together students, faculty, and incubation experts to explore opportunities for student-led entrepreneurship in agriculture. The programs provide grant-in-aid support of ₹25 lakhs, ₹5 lakhs, and a newly launched ₹4 lakh grant specifically designed to encourage research-based innovations by students.

During the session, the Pusa Krishi Team emphasised the critical role of research-driven entrepreneurship in transforming the agricultural sector. They explained that the newly introduced ₹4 lakh grant aims to support students in advancing their research, validating innovative technologies, and facilitating commercialisation. Practical guidance was offered on project design, idea pitching, funding applications, and scaling agricultural innovations into viable ventures. The bootcamp encouraged students to think creatively, identify opportunities, and leverage institutional support to translate their ideas into impactful solutions. By bridging research and entrepreneurship, the initiative aims to empower students to become future leaders in agri-innovation and contribute to sustainable agricultural development in India.

Beyond Boundaries

IARI scholars at WSU bring global perspectives to India's agricultural challenges

The IARI fosters global research collaborations to prepare its students for pressing agricultural challenges. Among these initiatives, the dual-degree program with Western Sydney University (WSU), Australia, exemplifies the institute's vision of combining national expertise with international exposure.

Dual Degree PhD scholars Pasupuleti Snehalatha, Prajwal R, Rabiul Alam, Gowthami G. V., and Jaykishan Ravjibhai Korat lead cutting-edge research across diverse domains—from plant-parasitic nematode diagnostics and hyperspectral

Dual degree program establishes strategic international collaborations that can empower young scientists to combine innovation, technology, and practical insight

imaging for crop quality to wheat resilience under high temperature, hydroponics with treated wastewater, and mango genomics. Their work advances scientific understanding while addressing global challenges in sustainable agriculture, food security, and climate-resilient farming.

At WSU, these scholars benefit from state-of-the-art laboratories, greenhouse facilities, next-generation sequencing platforms, advanced bioinformatics support, and interdisciplinary collaborations across campuses. Seminars, workshops, and conferences sharpen their technical and communication skills while fostering a global perspective on agricultural problems. Interaction with international researchers, industry partners, and growers further enhances the relevance and applicability of their work.

The program also develops personal growth, adaptability, and resilience as students navigate diverse academic cultures, rigorous research expectations, and logistical challenges such as biosecurity regulations and financial management. These experiences complement the strong foundation and mentorship provided by IARI, ensuring that students remain rooted in India's agricultural priorities while contributing solutions with global impact.

Nematodes under Scanner

"*My experience has been truly rewarding and transformative*," says Pasupuleti Snehalatha, a dual-degree Ph.D. scholar pursuing her research under the MoU between IARI and the Hawkesbury Institute for the Environment (HIE) at Western Sydney University (WSU).

Her work focuses on developing point-of-care diagnostic methods for plant-parasitic nematodes—a problem critical

The collaborative atmosphere and access to advanced resources at WSU have greatly enhanced the efficiency and pace of my research...

to both Indian and Australian agriculture. At WSU, Snehalatha has gained access to advanced laboratories, collaborative research groups, and a culture that fosters innovation. "*The collaborative atmosphere and access to advanced resources at WSU have greatly enhanced the efficiency and pace of my research*," she notes.

Academic life abroad has provided more than technical training. Regular seminars, workshops, and networking opportunities have broadened her perspective and sharpened her experimental design skills. Collaborating with global experts has pushed her to think critically about research outcomes and long-term applications.

The transition, however, was not without challenges. Navigating new administrative systems, adapting to documentation requirements, and managing research budgets initially tested her patience. High living costs and charges for research facilities also posed financial hurdles. Like many international students, she faced the difficult task of balancing part-time work with demanding research commitments. Yet, she views these experiences as part of her growth—developing adaptability, resilience, and problem-solving skills.

Ms. P. Snehalatha

At the core of Snehalatha's journey is the strong foundation built at IARI. With its emphasis on global linkages and mentorship, IARI provides its students with the skills and opportunities to thrive internationally while addressing pressing agricultural issues at home.

For aspiring scholars, Snehalatha's story is a proof that IARI not only equips its students for advanced research but also empowers them to shine on the global stage.

Growing the Future of Urban Farming

"My academic journey at WSU has been both enriching and transformative," introspects Gowthami G. V., a dual Ph.D. scholar at the ICAR–Indian Institute of Horticultural Research (IIHR), Bengaluru, student research partner of IARI. She is doing her research at the School of Engineering, Design and Built Environment, Western Sydney University (WSU), Australia.

Her research addresses a pressing challenge in modern agriculture—developing hydroponic and vertical garden systems irrigated with treated wastewater. By studying the physico-chemical properties of different growth media and their influence on plant growth and water dynamics, she aims to contribute to sustainable horticulture in water-scarce conditions. This complements her work back in India, where she focuses on irrigation water quality, substrate behavior, and crop responses under varied cultivation systems. *"The integration of both research strands provides a holistic view of resource-efficient cultivation,"* she explains.

At WSU, Gowthami gained access to advanced laboratories, modern greenhouse facilities, and strong technical assistance that enabled her to establish experiments with confidence. *"Initially, adapting to a new climate, academic system, and social environment was difficult,"* she recalls. *"But those challenges taught me adaptability, resilience, and problem-solving."* Gradually, through collaboration and mentorship, she began to thrive.

Ms. Gowthami G.V.

Participation in HDR seminars, international conferences, and workshops further expanded her perspective. Regular interactions with supervisors and peers not only refined her experimental designs but also sharpened her scientific communication. Learning new experimental protocols and analytical techniques deepened her technical expertise, adding strength to her doctoral work.

Reflecting on her journey, Gowthami emphasizes the value of global exposure combined with IARI's academic foundation. *"This program has broadened my outlook on sustainable horticulture and resource management. It equips me with both scientific rigor and personal growth, preparing me to make meaningful contributions when I return to India,"* she says.

Her advice to aspiring scholars is clear: *"Be open to challenges. With IARI's support and international collaborations, every challenge becomes an opportunity to grow."*

Decoding Mango Genomes

His journey highlights the strength of IARI's international programs, demonstrating how the institute equips its scholars like Jaykishan Ravjibhai Korat with the expertise and exposure to address global agricultural challenges while staying rooted in national priorities. Jaykishan is a dual-degree Ph.D. scholar at Western Sydney University (WSU) from ICAR–Indian Agricultural Research Institute (IARI) conducting research in horticultural genomics at ICAR-Indian Horticultural Research Institute (IIHR), Bengaluru.

"My journey at WSU has been truly enriching, both personally and professionally," says Jaykishan. His work focuses on fruit science and mango improvement, using next-generation sequencing and advanced bioinformatics to enhance crop quality and resilience. *"The high-end facilities at WSU give me the confidence to design experiments that would have been difficult back home,"* he explains.

> ***These interactions help me understand how innovations in fruit genomics can impact agriculture***

Collaboration is a highlight of his experience. Working with growers, breeders, and international scientists has expanded his perspective on the global significance of his research. *"These interactions help me understand how innovations in fruit genomics can impact agriculture worldwide,"* he adds. Part-time work opportunities also provide support for living expenses, making it easier to focus on research.

Mr. Jaykishan Rajivbhai Korat

Being away from home comes with challenges. Jaykishan misses family, cultural traditions, and familiar food. Delays in transferring plant genetic materials due to strict biosecurity regulations sometimes affect timelines. *"These hurdles teach resilience and careful planning,"* he notes.

Despite these challenges, Jaykishan emphasizes the overall benefits. *"WSU has not only advanced my technical skills but also broadened my vision of how science, collaboration, and innovation can shape the future of agriculture globally,"* he reflects.

Precision, Robotics, and Global Research

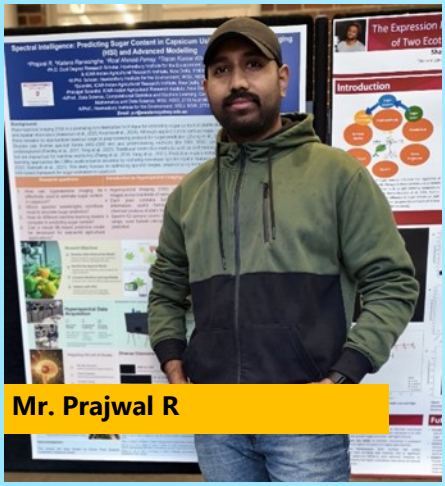
For Prajwal R, a dual Ph.D. scholar at the Hawkesbury Institute for the Environment (HIE), Western Sydney University, research is not just about solving problems—it is about reimagining the future of agriculture.

At WSU, Prajwal's work is centered on the prediction of sugar content in capsicum leaves and fruits using hyperspectral imaging (HSI). By combining preprocessing techniques, spectral feature selection, and machine learning models, he is developing non-destructive methods to assess crop quality—an innovation with potential to transform food production and supply chains. This complements his earlier research at IARI, where he designed and optimized autonomous tomato harvesting systems using robotic arms, machine vision, and sensor-based controls. Together, these projects represent a seamless bridge between automation and quality monitoring, offering a holistic path toward sustainable agriculture.

What makes this journey remarkable is

> ***The environment here keeps you on track, while also encouraging you to think innovatively....***

the supportive ecosystem at WSU. Prajwal highlights the efficiency of



Mr. Prajwal R

research funding, the ease of procuring materials, and quick reimbursements for project expenses. Weekly guidance sessions with supervisors, combined with seminars and conferences, have expanded his academic exposure and sharpened his ability to communicate complex ideas. *"The environment here keeps you on track, while also encouraging you to think innovatively,"* he shares.

Life outside the lab has also played a role. From free shuttle services and student community events to food pantries and organized housing, WSU provides a vibrant and inclusive student experience. The only challenge, Prajwal admits, is navigating the high cost of living in Sydney—something that demands careful planning.

Through this global partnership, IARI equips its scholars with world-class opportunities and exposure. For Prajwal, it is a chance to merge cutting-edge technologies from two continents and contribute meaningfully to the future of agriculture.

Growing Wheat for a Warmer Future

"*My research focuses on deciphering the source–sink relationship in wheat under high temperature stress, aiming to provide healthier grains for a warmer future*," says Rabiul Alam, a dual Ph.D. scholar at the School of Science, Western Sydney University (WSU).

Mr. Rabiul Alam

For Rabiul, the experience at WSU has been exciting. "*The research labs here have world-class facilities with strong interdisciplinary and intercampus collaborations. Students can tap into specialized resources across engineering, food sciences, or health sciences, regardless of their home base. That openness is incredible*," he explains.

Beyond the facilities, what stands out is the welcoming spirit of faculty and peers. "*The warmth and support of colleagues make the academic journey much more rewarding. My research has blended seamlessly with WSU's system, and the guidance I've received has been invaluable*," he adds.

Rabiul notes that the quality of life and campus infrastructure in Sydney are impressive—from well-maintained laboratories and classrooms to strict adherence to safety protocols and chemical handling SOPs. "*The discipline and upkeep reflect a culture of respect for*

> ***The warmth and approachability of colleagues and faculty create an atmosphere that encourages collaboration***

science," he remarks.

Yet, he emphasizes that IARI remains unique. "*While WSU offers advanced technology and a global research culture, work at IARI is far more directly connected to agriculture and real-world challenges. That focus keeps research grounded in impact*."

Rabiul's journey highlights the strength of IARI's international programs. His advice for aspiring students is simple: "If you want to experience high-tech research in a supportive environment, WSU is the place to be."

Celebrating the Birth of IARI

A Week of Creativity and Camaraderie

Every year, IARI pauses to celebrate its glorious legacy on April 1, the day of its foundation. Known fondly as the Pusa Institute, IARI traces its beginnings to 1905, when it was established at Pusa (in present-day Bihar) with generous support from American philanthropist Henry Phipps. After the devastating earthquake of 1934, the institute was relocated to Delhi in 1936, where it grew into the country's premier national institute for agricultural research, education, and extension. It was here that the Green Revolution found its roots, transforming India from a food-deficit nation into a self-sufficient powerhouse. Today, IARI remains at the forefront of scientific innovation, nurturing generations of scholars who continue to shape agriculture in India and beyond.

This year, the Foundation Day celebrations began a week early, filling the campus with color, ideas, and energy. A blend of literary and artistic contests showcased the immense creativity of IARI's students, proving that science and art can flourish hand in

hand.

Quiz Competition: A Battle of Wits

The celebrations kicked off on March 24, 2025, with the much-anticipated Quiz Competition. UG and PG students locked horns in a spirited battle of knowledge, with UG participants fielding two teams per discipline and PG students competing in groups of three. The atmosphere crackled with excitement as rapid-fire rounds tested everything from current affairs to agricultural innovations. Cheers erupted with every correct answer, while suspense hung thick in the air during close finishes. Beyond the fun, the competition highlighted how curiosity and quick thinking define the IARI student community.

Painting Competition: Genius Strokes

If the quiz tested sharp minds, the Painting Competition on March 25 celebrated artistic expression. With just 60 minutes and a surprise theme, students translated their ideas onto canvas in a flurry of brushstrokes. What emerged were vibrant pieces that captured both the science and soul of agriculture—fields bursting with crops, farmers at work, and futuristic visions of sustainable farming. The creativity on display reminded everyone that agriculture is not only a profession of toil

and technology but also of beauty and imagination.

Speech Competition: Voices of Vision

The week concluded on a powerful note with the Speech Competition on March 26. UG students took on the theme "Indian Agriculture 2047: My Vision," articulating dreams of climate-resilient farming, technological integration, and farmer prosperity as India marches toward its centenary of independence. PG students addressed the thought-provoking topic "Artificial Intelligence in Agriculture: Opportunities and Ethical Concerns." Their speeches, delivered in both Hindi and English, reflected a nuanced understanding of the promise and pitfalls of AI in food systems. From futuristic drones in paddy fields to the ethics of data use, the talks captured the blend of tradition and technology that defines modern agriculture.

The passion and clarity with which the students spoke left the audience spellbound, showcasing not just their academic strength but also their commitment to shaping the future of Indian agriculture.

A Collective Effort

Behind the scenes, the guidance of faculty mentors—Dr. Shruti Sethi, Dr. Ratna Prabha, and Dr. Bishnu Maya

Bashyal—was instrumental in making the celebrations a success. Their encouragement ensured that students stepped onto the stage with confidence and creativity.

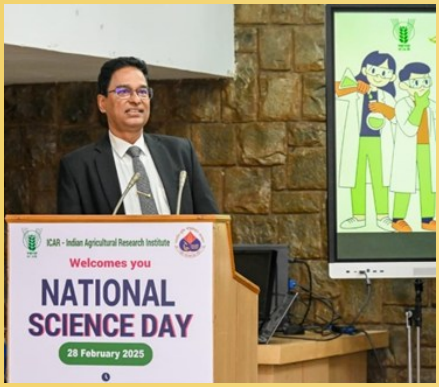
More Than a Celebration

The Foundation Day events were more than just contests; they were an affirmation of the vibrant, holistic spirit of IARI. They brought together students from different disciplines, created a platform for sharing ideas, and highlighted talents that often remain hidden behind laboratory walls.

As the week drew to a close, one thing was clear: IARI is not just an institution of science but also a community that values imagination, dialogue, and vision. If this year's celebrations are anything to go by, the next Foundation Day will bring even more brilliance, energy, and inspiration to the heart of Pusa.

Taking Science to the Grassroots

IARI celebrated National Science Day (NSD) on February 28, 2025. The event was attended by Dr. Ch Srinivasa Rao, Director; Dr. Anupama Singh, Dean & Joint Director (Education) at IARI, New Delhi; and Mr. Manoj Chaudhary, Principal of N.J.V. Public School in Bajauta Kahair, Aligarh (UP), along with his staff and students. Approximately 100 schoolchildren from the School



participated in the NSD celebration. The program began with a welcome address by Dr. M.R. Khan, followed by an introductory speech from Dr. Anupama Singh. She emphasized the importance and significance of NSD and encouraged children to embrace science, highlighting the potential of children from rural areas for leadership in science education and research. Dr. Singh also announced that IARI plans to adopt

schools in rural areas to foster curiosity in science and encourage students to choose careers in the field.

Dr. Ch Srinivasa Rao encouraged the students with an insightful and friendly speech, taking the time to interact with them and inquire about their interests and food habits. He encouraged the students to pursue science and prepare for educational and professional careers

in the field. In his address, Dr Rao highlighted the significance of scientific aspirations and the transformative journey of India from a nation struggling with food security to becoming self-sufficiency and a food exporter.

IARI provided each student with a vegetable seed kit containing seven different varieties. Dr. Rao and Dr. Singh personally handed out the kits to each student and showered blessings, thanking the principal and staff for escorting the children from Aligarh to IARI in New Delhi. Outside the NRL auditorium, the SciTech Club of IARI's undergraduate students showcased the shortlisted entries from essay writing and drawing competitions held as part of the NSD celebration. An insect exhibition, organized by the National Pusa Collections, Division of Entomology, IARI, was arranged for school children to observe various types of insects observed in nature. Student volunteers from the Pusa Graduate Student Union and research scholars from different divisions of IARI interacted with the children, explaining the exhibitions. Additionally, visits to the Discovery Centre, Integrated Farming System, Centre for Protected Cultivation (hydroponic and aeroponics), and National Agricultural Museum (NSAC Complex) were arranged to demonstrate various agricultural research activities and advancements in science, particularly in agriculture. A demonstration of drones used for spraying crop fields was also conducted. The event concluded with a note of encouragement for students to strive towards becoming future scientists, innovators and leaders in the field of science.

Perspectives of Eminence

IARI Must Lead Innovations

Prof. Raj S. Paroda

In an exclusive interview with Ms. Nimmala Sreevalli, Literary Secretary of the Pusa Graduate School Student Union (PGSSU), Prof. R. S. Paroda, former Director General of ICAR and former Chairman of the Global Forum on Agricultural Research (GFAR), FAO, reminisced about his days in active service and emphasized why should IARI be recognized as one of the world's leading agricultural institutions.

How did the National Agricultural Technology Project (NATP), which you spearheaded, modernize agricultural education and research? What specific changes did you implement to align agricultural curricula with the needs of a rapidly changing world?

When I think of the future of Indian agricultural education, I strongly believe we must modernize our approach. My vision, shaped significantly through the National Agricultural Technology Project (NATP), is that our institutions can no longer remain confined to crop sciences alone. If we want to be globally competitive, our universities need to broaden their faculties and curricula to meet the complex, interdisciplinary demands of the modern world.

For me, the model of U.S. Land-Grant Universities has always been a guiding example. They evolved beyond agriculture to include faculties of Medicine, Liberal Arts, and Veterinary Science, which gave them the interdisciplinary flexibility needed to solve contemporary challenges. Why shouldn't we do the same? Take something as simple as evaluating the nutritional quality of a forage crop—you cannot rely only on a chemistry lab. You need to collaborate with animal nutritionists, use *in-vitro* analysis, and bring in expertise across disciplines. That is the level of integration we must aspire to.

At the same time, I must stress the importance of Basic Sciences—Botany, Physics, and Chemistry. These are the foundations of everything we do. Yes, we have strong departments like Soil Science at IARI, but we cannot allow basic sciences to fade into the background. It worries me that bright students are increasingly avoiding these fields. Without strong basic sciences, how can we ever hope to lead in emerging areas like Environmental Science?

Ultimately, if we want our universities to remain relevant, attract and retain young talent in an increasingly urbanized society, and aim for the top global position, we must embrace this holistic, interdisciplinary model of education. Only then will Indian agricultural education achieve the stature it deserves.

"Ultimately, if we want our universities to remain relevant, attract and retain young talent in an increasingly urbanized society, and aim for the top global position, we must embrace this holistic, interdisciplinary model of education. Only then will Indian agricultural education achieve the stature it deserves."

Given your international experience with organizations like the FAO and GFAR, how do you think Indian agricultural education compares to global standards, and where do we need to improve?

From my international experience with organizations like the FAO and GFAR, I have come to realize that while Indian agricultural education has a strong foundation, it is critically vulnerable to complacency. Too often, I hear the sentiment that "we are the best." In my view, this attitude is dangerous—it discourages us from striving toward true global excellence. If we seriously wish to see our institutions ranked among the top 100 globally, alongside places like Harvard and Oxford, we must rethink how we engage internationally. It cannot just be about numbers; it has to be about the quality of academic exchange and genuine openness at the institutional level.

To move in this direction, several things must improve. First, we need to substantially increase the number of active Letters of Agreement with leading international institutions. Second, sandwich programs should not be optional—they must be mandated. Such programs, where education, training, and research are structured both in India and abroad, provide our students with invaluable exposure and perspective.

Faculty development is just as important. Under NATP, we started a program to invite some of the best professors from abroad on sabbatical, so they could teach here and fill critical knowledge gaps. Unfortunately, the impact was limited. Many institutions were reluctant to acknowledge their deficiencies, and visiting experts often felt their expertise was underutilized. This, I believe, reflects a cultural issue. Unless our institutions clearly express both the desire and the need for global expertise, these opportunities will be wasted.

For me, the message is clear: we cannot rest on past achievements. If we are to achieve global parity, our institutions must embrace a forward-looking culture, driven by openness, collaboration, and the will to be world-class.

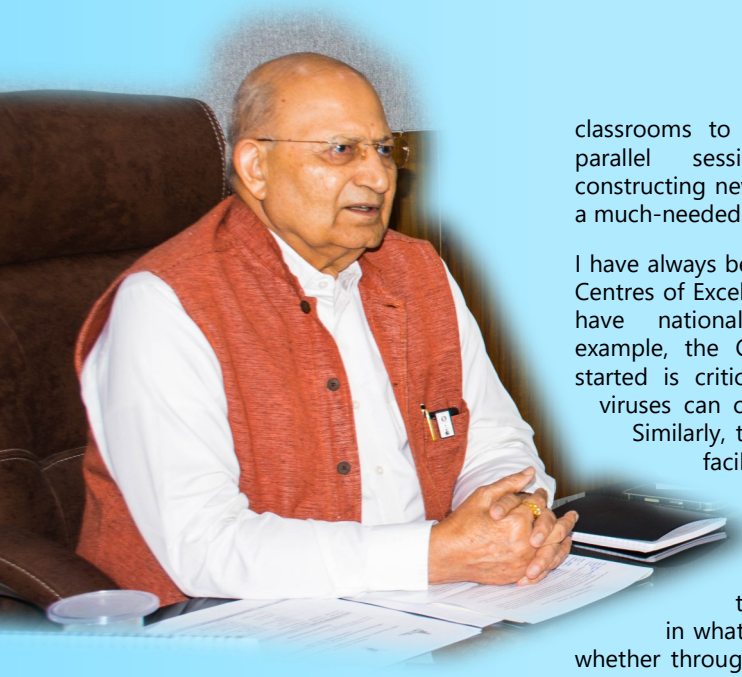
We cannot rest on past achievements. If we are to achieve global parity, our institutions must embrace a forward-looking culture, driven by openness, collaboration, and the will to be world-class.

IARI has been attracting foreign students for a long time, but the numbers used to be limited due to Government regulations. Post NEP 2020, how do you feel IARI should project itself as an international higher education institution and attract global talents?

When I think about IARI's evolution into a truly global institution, I am convinced that the first obstacle we must overcome is complacency. Too often, there's a sense of "we are the best," but if we are serious about being world-class, that attitude is our greatest barrier. My personal goal for IARI has always been ambitious: if we cannot become number one globally, then we must at least be firmly within the first 100, alongside universities like Harvard, Stanford, and Oxford.

To reach this, I believe we must attract the best global talent through structured, meaningful academic exchange. I remember how U.S. universities partnered with Indian agricultural universities in the past, creating models of collaboration that brought real value. Building on this, I see three key areas of focus for the future. First, IARI must proactively establish strong MOUs and Letters of Agreement with leading international institutions. Second, we need to introduce sandwich programs that allow students to combine training, education, and research both here and abroad, blending the strengths of both systems. Third, we must actively invite top foreign professors on sabbatical. I initiated such a program under NATP, providing facilities and support, but it faltered because domestic institutions were reluctant to admit gaps, and visiting faculty often felt their expertise was underutilized. Reviving this initiative requires a clear institutional openness and a genuine desire for growth.

The key is transparency. Institutions must openly express their need to improve, rather than seeing collaboration as a weakness. In the past, my efforts were limited by institutional pride and personal reluctance—foreign experts felt "not needed," and domestic institutions did not acknowledge gaps. Post-NEP 2020, this culture must change. Collaboration should be seen as a measure of strength. I also strongly support programs like the International Agriculture Course, which I requested after returning from Tashkent. Using the expertise of global IARI alumni, such as Dr. Tamboli in Washington, we can combine international exposure with the deep network and roots of IARI, giving students a truly global perspective while remaining grounded in our home institution.



As a student at IARI, and inspired by the institutional legacy of innovation, could you share a core memory or a specific incident from your life or your time at IARI that truly ignited the spirit of innovation in you, particularly regarding agricultural advancement in India? What was that pivotal moment that shaped your drive for change?

My personal journey with IARI has shaped everything I am today. Had I not come here, I might have only known Rajasthan, my home state, and never truly understood India. IARI gave me a Commonwealth Fellowship to go abroad, where I realized where we stand in global agriculture. It also gave me the chance to witness the Green Revolution firsthand and see how farmers truly benefited. I remember sowing those small packets of seeds that came all the way from Mexico—I enjoyed every moment, dibbling them in the fields myself. Dr. Swaminathan and Dr. Borlaug would visit, and we students actively participated in the fieldwork. Being part of that, I saw how this institution was making remarkable strides, and as a student, I always wanted to give back in whatever way I could.

Later, when I became President of the Indian Science Congress, I insisted that the Congress be held at IARI. Until then, despite Dr. Swaminathan having been President, it had never been organized here—perhaps the facilities weren't adequate at the time. When it was finally held, I worked on modernizing classrooms to accommodate multiple parallel sessions, paving roads, constructing new gates, and giving IARI a much-needed facelift.

I have always believed IARI should have Centres of Excellence in areas where we have national-level expertise. For example, the Centre for Virology we started is critical because seed-borne viruses can create serious problems. Similarly, the protected cultivation facility, which I had inaugurated by the President of Israel, is another milestone. I have tried to give back to IARI in whatever small ways I could, whether through these initiatives or by taking charge of the IARI Alumni Association—not for the position, but to contribute meaningfully before the end of my life.

Opportunities abound for IARI to lead in areas like post-harvest technology, regenerative agriculture, micro-irrigation, and conservation agriculture under the Rice-Wheat Consortium System. I have always encouraged proactive innovation—anything we develop here, like rhizobial cultures in microbiology, should be scaled and applied. We must also continue our legacy in areas like rose breeding, started by Dr. B.P. Pal, while creating new Centres of Excellence for training in protected cultivation. IARI has the expertise, the history, and the potential to lead—and I have always tried to support it in realizing that vision.

> ***Whatever I am today is because of IARI. If I had not come here, I would not have known India, but may only Rajasthan, where I am coming from.***

As a visionary in global agriculture what would be your concrete message to IARI to take future challenges in agriculture?

When I think about IARI's role in innovation, I see it as moving beyond the Green Revolution. We must lead a Second-Generation Revolution, focused on sustainability and resource efficiency. Personally, I committed myself to pushing IARI to lead initiatives like the Rice-Wheat Consortium System and to expand the Zero-Till Program. We have become a leader in the country, but can not stay there if we do nothing.

To support newer shift, I felt it was essential to establish a new Centre of Excellence for Conservation Agriculture. The goal was to rigorously up-scale and out-scale these practices, creating new "green areas" and achieving sustainable intensification. This requires a scientific commitment that goes far beyond what we have accomplished in the past.

One area where innovation is urgently needed is Protected Cultivation. I believed IARI should establish a top-tier Centre of Excellence for Training in this field. Otherwise, we risked falling behind other centers, like those in Haryana, which, with external support, were already offering superior practical training in high-value horticulture. At the same time, I emphasized the importance of reinvigorating IARI's core research reputation, especially in fields like Microbiology and culture collection.

Ultimately, my vision for IARI has always been about vigilance—constantly assessing national needs, developing cutting-edge innovations, and ensuring that these innovations are both technologically refined through up-scaling and broadly adopted by farmers through out-scaling. That is how an institution stays relevant and truly leads the way.

Brushstrokes of Innovation

On 28th February 2025, the Sci-Tech Club, in collaboration with the Arts, Photography & Filmmaking Club of IARI, New Delhi, hosted an inspiring poster-making competition titled "Strokes of Science" to commemorate National Science Day 2025. The event sought to creatively bridge scientific thought and artistic expression under the theme "Advancements in Science."

To encourage originality, each participant was assigned a unique science or industry-related topic through a lucky draw, ensuring a wide canvas of ideas and interpretations. From agricultural technologies and biotechnology to renewable energy and space research, the posters reflected the vast and diverse spectrum of modern scientific achievement.

With colors, strokes, and imagination, students brought complex scientific concepts to life in forms that were both visually compelling and intellectually engaging. The artworks demonstrated how creative expression can serve as a powerful medium for science communication—transforming technical ideas into accessible narratives that inspire curiosity, imagination, and understanding.

The competition saw enthusiastic participation and keen competition. Judges appreciated the depth of thought, originality, and visual impact of the entries, noting how well they highlighted the transformative role of science in shaping society. The winner was Nitya Mehta, a first-year undergraduate student, whose entry stood out for creativity, clarity, and artistic finesse.

Beyond being a creative showcase, "Strokes of Science" embodied IARI's commitment to fostering scientific temper in engaging, participatory formats. By blending research with artistic imagination, the competition not only celebrated National Science Day but also reinforced the idea that science, when communicated with creativity, can reach and inspire audiences far beyond the laboratory.

Painting a Visual Canvas

The *Art, Photography and Filmmaking Club* of IARI, New Delhi, organized a vibrant photography competition as part of the *IARI Premier League* celebrations, which concluded on March 19, 2025. The event drew enthusiastic participation from across the campus community, with both students and staff showcasing their creativity, technical skill, and unique perspectives through the lens.

Photography, as a form of artistic expression, has the power to capture fleeting moments and transform them into narratives that resonate with audiences. Participants embraced this spirit, presenting images that ranged from candid campus life to thought-provoking compositions inspired by nature, research, and culture. The entries highlighted not just technical proficiency but also the creativity and originality that reflect the vibrant energy of IARI's community.

The presence of Dr. Ch. Srinivasa Rao, Director , ICAR-IARI, who felicitated the winners, added distinction to the occasion. He was joined by Dr. C. Viswanathan, Joint Director (Research), whose support further underlined the significance of such initiatives. Dr. Rao's words of appreciation recognized the artistic endeavors of the participants and encouraged them to continue nurturing their creative interests alongside academic and professional pursuits.

Events like this photography competition play an important role in highlighting the holistic culture of IARI. While the institute is globally renowned for its academic excellence and cutting-edge agricultural research, it also fosters platforms for cultural and artistic expression. The competition, set against the backdrop of the spirited *IARI Premier League*, served as a reminder that innovation, whether in science or art, thrives in an environment that values curiosity, creativity, and community engagement.

Quiz to Conserve: Students Champion Biodiversity

To commemorate the International Day for Biological Diversity, the Nature Club at IARI organized an engaging and educational quiz competition on May 22, 2025. Celebrated globally on this date each year, the International Day for Biological Diversity was established by the United Nations to highlight the vital importance of biodiversity and to remind humanity of its responsibility to safeguard the living world. The theme for 2025 underscored the role of biodiversity in ensuring ecological balance, supporting sustainable development, and enhancing resilience against climate change. For students and researchers at IARI, this observance served not only as a reminder of the rich diversity of life on Earth but also as a call to action to conserve and use biological resources wisely.

The quiz was designed with the primary objective of raising awareness about biodiversity conservation and inspiring participants to appreciate the intricate web of relationships that connect all living organisms. Students and research scholars were invited to test their knowledge in a competitive yet collaborative setting, which made learning dynamic and enjoyable. The event drew enthusiastic participation from undergraduate students, whose energy and curiosity reflected their keen interest in environmental issues.

The competition covered a broad spectrum of questions related to biodiversity, including global and Indian initiatives for conservation, endangered species and their habitats, the role of biodiversity in food and nutritional security, ecological services provided by ecosystems, and innovative practices in sustainable agriculture. The quiz encouraged participants to think critically about the threats facing biodiversity—such as habitat destruction, climate change, invasive species, and unsustainable exploitation—and to explore possible solutions.

One of the most enriching aspects of the event was the discussion sparked during and after the quiz rounds. Participants debated the importance of preserving genetic diversity in crops, the role of pollinators in agriculture, and the need to balance development with ecological integrity. These exchanges deepened the appreciation for biodiversity as more than a collection of species, but rather as the foundation for life-support systems on which humans depend.

The event concluded with the felicitation of winners, who were presented with eco-friendly prizes such as indoor plants. The winners were Tamal Gayen (B.Tech Biotechnology), Dikshit Soni (B.Sc Agriculture), and S. Vignesh (B.Sc Agriculture). All three are first-year undergraduates, and their performance demonstrated not only strong knowledge but also a genuine passion for environmental issues. Their achievement underscored the potential of young students to become ambassadors of conservation and to carry forward the message of sustainability. The symbolic prizes emphasized the importance of nurturing living systems and carrying the spirit of conservation into everyday life.

By the end of the program, participants and attendees alike recognized the importance of taking forward the message of the International Day for Biological Diversity. The quiz served as a powerful reminder that biodiversity underpins human survival, from providing food, medicine, and raw materials to regulating climate and maintaining soil and water health.

The Nature Club's initiative was widely appreciated as a resounding success, not only for its lively conduct but also for the awareness it generated. The event reaffirmed IARI's commitment to cultivating environmentally conscious citizens and underscored the role of youth in shaping a future where development and biodiversity conservation go hand in hand.

Tamal Gayen (Left), Dikshit Soni (Middle) and S. Vignesh (Right)

Breaking Free from Plastic

Students Conduct Cleanliness Drive on World Environment Day

In observance of World Environment Day on June 5, 2025, the Nature Club of IARI took a hands-on approach to ensure environmental action by organizing a campus-wide Plastic Clean-Up Drive. This global day, celebrated annually under the aegis of the United Nations, serves as a reminder of the urgent need to protect and preserve our environment. Each year, World Environment Day focuses on a pressing theme that resonates worldwide. In 2025, the emphasis was on "Beat Plastic Pollution", making the club's initiative timely and highly relevant.

The drive was designed not only to address the visible menace of plastic pollution but also to instill a sense of collective responsibility among students, research scholars, and staff for maintaining a clean and green campus. Volunteers enthusiastically participated in cleaning the Arjun Path and the surroundings of Shishir Hostel, both of which are busy areas prone to littering. Armed with gloves, bags, and an unwavering sense of commitment, the participants collected a significant volume of discarded wrappers, bottles, and plastic carry bags.

The occasion was graced by Dr. Anupama Singh, Dean & Joint Director (Education), IARI, who highlighted the importance of reducing plastic use in daily life. She underscored the urgent need to target single-use plastic items, as these are the most harmful and persistent forms of waste. Dr. Anupama also emphasized that while collection is important, the real impact comes from segregation, proper disposal, and recycling, ensuring that plastic waste does not re-enter the ecosystem.

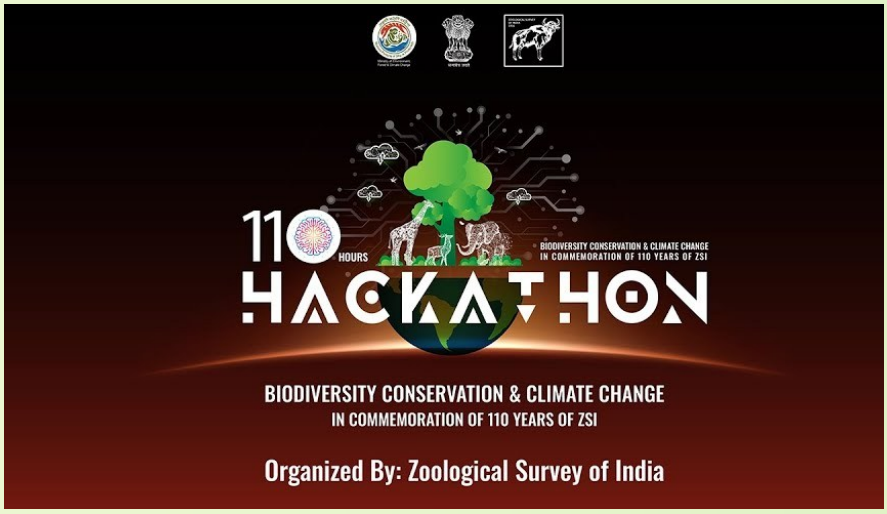
The event witnessed active support from Dr. Shashank P.R., Club Coordinator, as well as advisors Dr. P. K. Bhowmick and Dr. Ashish Khandelwal, whose presence encouraged students and volunteers alike. Their guidance added value to the activity by linking it with broader environmental goals and ongoing sustainability initiatives at IARI.

In 2025, the emphasis of World Environment Day was '*Beat Plastic Pollution*'

Beyond leaving the campus visibly cleaner, the clean-up drive became a symbolic and practical reaffirmation of the message of World Environment Day. It reinforced the timeless principle of "Reduce, Reuse, and Recycle", urging participants to translate these practices into everyday habits. The initiative also conveyed that while policies and technologies are essential for tackling global challenges, individual actions collectively form the foundation of environmental protection.

By the end of the program, participants felt not just the satisfaction of contributing to a cleaner environment but also the deeper realization that safeguarding nature begins with small, consistent efforts. The event thus succeeded in making World Environment Day more than just a commemoration—it became a call to action and a step toward a more sustainable future.

SciTech Club Team in ZSI Hackathon



The SciTech Club team proudly participated in the Hackathon organized by the Zoological Survey of India (ZSI), a premier institution under the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. ZSI, well-known for its pioneering research in biodiversity, conservation, and taxonomy of Indian fauna, provides platforms that encourage young scholars and innovators to contribute to environmental sustainability. The event offered our team an excellent opportunity to showcase innovative ideas and engage with like-minded students and researchers. It was a remarkable experience that strengthened our commitment to advancing science, technology, and environmental protection.

Established in 1916, ZSI has completed 110 years of pioneering work in documenting and conserving India's rich faunal diversity. As part of its anniversary initiatives, ZSI has been conducting nationwide hackathons to encourage students and researchers to apply modern tools, technology, and innovation for solving environmental challenges. These hackathons are designed to foster creativity and interdisciplinary collaboration while aligning with national priorities in biodiversity management.

As a part of the broader nation-wide 110-hour hackathon initiative by ZSI, hackathons took place at various ZSI centers, and two key IARI teams participated in the regional rounds held at ZSI Solan Center and ZSI Dehradun Center.

Apoorv Singh, Hayan Basumatary and Ujjwal Khatri during Hackathon

The six-hour hackathon held at ZSI's Northern Regional Centre in Dehradun was themed "Hackathon on Himalayan Biodiversity." The event held on 28 May 2025 at the ZSI Solan Centre was under the theme "Trans-Himalayan Biodiversity". Participants brainstormed innovative, technology-driven solutions addressing biodiversity challenges in the Himalayan region. The event showcased interdisciplinary collaboration and was part of efforts to celebrate ZSI's legacy while inspiring conservation through innovation.

The IARI team comprising Mr. Chetan Prakash, Mr. Kaushiki Kumar, and Mr. Aakash Biswas, all from the B.Tech Agricultural Engineering program, were selected to represent their institution at the ZSI Solan Center on May 23, 2025. Their project focused on sustainable agricultural practices and innovative solutions for wildlife conservation in farming landscapes. This team mainly focused on Conserving the native himalayan honey bee species (*Apis labrosia*) using economical means. Another team consisting of Mr. Apoorv Singh (B.Tech Biotechnology), Mr. Hayan Basumatary, and Mr. Ujjwal Khatri participated in the event held at the ZSI Dehradun Center on May 22, 2025. The team presented solutions for integrating biotechnology in wildlife conservation and biodiversity management. They focused on stopping forest fires using Methane Sensors which were made using software thereby making it easy for the person to track the sensors.

The team lead by Mr. Apoorv Singh emerged victorious at the Dehradun centre by winning the 1st prize in the hackathon. Their innovative approach for conservation using biotechnology impressed the judges, and they were selected for the second round of the hackathon, which will take place in Pune. The team comprising of Chetan Prakash, Kaushiki Kumar, and Aakash Biswas, representing B.Tech Agricultural Engineering, stood 5th in the event.

A Mosaic of Melodies

Celebrating IARI's Cultural Diversity

The Indian Agricultural Research Institute (IARI), New Delhi, is not only renowned for its academic and research excellence but also for fostering a vibrant, culturally diverse community. Students from different states bring with them unique traditions, languages, and cuisines, creating a mosaic of Indian culture on campus. Being away from home often over some miles of kilometres, students naturally miss their native customs, especially at the time of festivals. Therefore, festivals became a bridge across distances, providing a platform for shared joy, bonding, and collective celebration.

Festivals at IARI are more than rituals they are moments of unity, happiness, and mutual respect. They remind us that it is not necessary to belong to a specific culture to celebrate; the spirit, enthusiasm, and willingness to participate create the true essence of festivity. Festivals also serve as a reflection of our roots, helping students connect with the agricultural heritage of our country and understand the value of farmers in sustaining life.

Beyond academics, students at IARI also showcase their multifaceted talents. They actively participate in cultural programs, sportive events, and creative activities that foster teamwork, discipline, and leadership. These engagements not only promote physical fitness and mental well-being but also contribute to the all-round skill development of students, preparing them to excel both professionally and personally.

Moreover, such celebrations and extracurricular pursuits bring students from diverse regions together, nurturing cultural exchange and mutual appreciation. They instil confidence, creativity, and a sense of belonging, transforming education into a holistic journey. IARI thus becomes not just a place of learning, but a vibrant community where knowledge, culture, and values harmoniously coexist.

A Harvest of Happiness: *Pongal & Sankranti*

In this spirit, a group of Telugu students organized *Sankranti* (*Pongal*) at IARI. While this harvest festival is called Makar Sankranti in North India, Lohri in Punjab, and Pongal in Tamil Nadu, the underlying ideology is the same: celebrating the harvest and honouring the efforts of farmers. As Telugu students, we prepared Pongal with newly harvested rice in traditional earthen pots, offering prayers to Surya Bhagavan (Sun God) for health, prosperity, and a bountiful harvest. The festival beautifully reminds us, even as future agriculturists and students of IARI, to respect and value the hard work of farmers who feed the nation.

From the sun-kissed fields of Tamil Nadu and Andhra Pradesh, we bring you the joyous rhythm of harvest festivals.....

The celebration included sports, cultural activities, and *Muggulu* (rangoli) competitions, where students from all states participated enthusiastically. Each *Muggulu* depicted themes reflecting rural harvest festivals and village-level traditions, showcasing the rich cultural and agricultural diversity of India. Prizes were awarded to encourage participation, and the event created a sense of community, joy, and inclusiveness among all students.

Through such celebrations, IARI fosters cultural understanding, social cohesion, and respect for agriculture. Participating in Pongal allows students to connect with their roots, celebrate the significance of harvest, and strengthen bonds across cultures, creating memories and friendships that transcend regional boundaries. Festivals are not just occasions of joy, they are celebrations of life and unity, reminding us that agriculture and culture together form the foundation of our society.

The Indian Agricultural Research Institute (IARI), Pusa, witnessed a vibrant celebration of the Tamil harvest festival, Thai Pongal, organized by the Tamil students' association, Pusa Tamil Cholai.

More than a hundred Tamil students pursuing undergraduate, postgraduate, and doctoral programs in various agricultural disciplines at IARI came together to mark the occasion. The festivities began early in the morning with the traditional Pongal pot ceremony, followed by cultural events

including kummi dance, *uri adithal* (pot breaking), tug of war, and sugarcane biting competitions, which added to the festive spirit.

In the evening, the celebration continued with a traditional mulai paari procession across the university campus, accompanied by folk music and dances, showcasing the rich cultural heritage of Tamil Nadu.

The event was graced by several dignitaries, including IARI Director Dr. Srinivasa Rao, Joint Director (Research) Dr. Viswanathan Chinnusamy, Dean Dr. Atul Kumar, Project Director of the Water Technology Centre Dr. Brammanand, Head of Crop Genetics Dr. Gopalakrishnan, and Head of Seed Science Dr. Gyan Mishra. Agricultural scientists from various departments, along with alumni and their families, also participated in the celebrations, making it a memorable occasion.

Dancing into Diversity

Manipuri's Graceful Rhythms

From the serene landscapes of the Northeast emerges the captivating art of Manipuri dance, a tradition that embodies both divinity and grace. Rooted in the lush hills and valleys of Manipur, this classical form is more than just performance; it is a spiritual offering that blends music, rhythm, and storytelling into a seamless expression of devotion.

Manipuri dance is often associated with the Ras Leela—the eternal tale of Lord Krishna and Radha—where each movement reflects profound emotions of love, surrender, and spirituality. Unlike other classical forms, Manipuri is marked by its subtle, rounded gestures, fluidity, and restrained elegance. The dancer's body becomes an instrument of softness, conveying a story without overt dramatization. The costumes, with their distinctive cylindrical skirts, vibrant colors, and delicate veils, add to the ethereal aura, creating the impression of floating figures in motion.

From the serene landscapes of the Northeast, witness the enchanting and fluid movements of the Manipuri dance form, a true representation of grace.

Accompanied by traditional instruments like the pung (drum) and cymbals, the performance transports the audience to a divine realm where rhythm and melody intertwine. Every step, glance, and gesture resonates with centuries-old traditions, passed down with reverence.

To witness Manipuri dance is to experience serenity in motion—a timeless art that continues to preserve the spiritual essence of India's cultural heritage.

Pusa Unplugged - PGSSU Celebrations

Pusa Graduate School Students Union conducts a series of events

Jam-A-Lot: A musical retreat

On 28 December 2024, the Pusa Graduate Students' Union (PGSSU) of ICAR–IARI hosted a vibrant Jam Session at the Golden Jubilee PG Cafeteria, transforming a chilly winter evening into a warm and cheerful celebration. Organized by the Cultural Secretary, Mr. Kirubhakaran S, along with the PGSSU team, the event aimed to bring students together through music and cultural exchange. The cafeteria, lit with fairy lights and decorated with playful sketches of musical symbols, offered a cozy, festive setting.

Students took turns with guitars, soulful songs in various regional languages, soft beats, and whistles, while the

audience responded with claps and spirited sing-alongs. The open and informal format emphasized sharing joy over performance, creating a relaxed space where everyone could unwind from academic pressures. The evening culminated in a lively group song, echoing with applause and leaving students with lasting memories of camaraderie and togetherness.

The Aurora Chronicle

The PGSSU of ICAR–IARI ushered in the New Year with Aurora, a lively DJ Night held at Vasant Ground that brought students together for a spirited year-end celebration. The evening opened with a cultural showcase featuring eight high-energy dance numbers and six soulful song performances. From contemporary and freestyle dances to heartfelt solos, engaging duets, and dynamic group fusions, the stage

radiated talent and enthusiasm, drawing repeated rounds of applause.

Following the performances, the DJ set the night ablaze with electrifying mixes, vibrant lights, and countdown excitement that kept the crowd dancing into the late hours. A specially designed selfie point, lit with colorful decorations, added a playful touch, allowing students to capture memories of the night.

The event highlighted PGSSU's commitment to fostering cultural engagement and student leadership. With meticulous arrangements for sound, safety, and entry, the evening flowed seamlessly, thanks to the dedicated efforts of volunteers. Aurora concluded with warm New Year wishes, laughter, and cherished memories of togetherness that perfectly set the tone for the year ahead.

The Hybrid Harvest

The Trust for Advancement in Agricultural Sciences (TAAS) and PGSSU of ICAR–IARI hosted a vibrant cultural programme on 9 January 2025 at the A.P. Shinde Auditorium, NASC, New Delhi, as part of the National Symposium on Hybrid Technology for Enhancing Crop Productivity. Led by Cultural Secretary Mr. Kirubhakaran S, the event showcased performances by students from various programmes and batches, celebrating India's rich cultural diversity.

Students presented state-themed acts, blending classical, folk, and modern styles such as Yakshagana, Lal Bhagra, and Sambalpuri. Song performances ranged from soulful solos to lively group renditions in multiple languages, while dance groups performed in traditional costumes, keeping the audience engaged and cheerful.

The programme highlighted student leadership, creativity, and teamwork, earning appreciation from faculty and participants alike. Dr. R. S. Paroda, Former DG ICAR and Chairman (TAAS), and Dr. Bhag Mal, Secretary (TAAS), expressed special appreciation, joining students over high tea as a token of recognition and encouragement for the performers.

The Asian Aquanaut

At the 14th Asian Fisheries and Aquaculture Forum on 12 February 2025, ICAR-IARI students presented a cultural programme at the Bharat Ratna C. Subramaniam Auditorium, NASC Complex. Led by Mr. Kirubhakaran S, with support from Mr. Soham Luhana, Mr. Sivapragasam, and Ms. Nimmala Sreevalli, the event was guided by the IARI Cultural Committee. Students performed a fusion of classical dances—Bharatanatyam, Odissi, Kuchipudi, Kathak—devotional songs, mime acts highlighting soldiers' lives, folk dances, and freestyle performances. The finale honored fisherman Milan Tare, leaving a lasting impression. Delegates gave a standing ovation. Dr. Joykrushna Jena and Dr. Ch. Srinivasa Rao praised the students and hosted a special dinner, celebrating cultural leadership.

Brainy Bowl: A Quiz for Future Voters

On January 12, 2025, the IARIcollaboration with the Post-Graduate Students' Union (PGSSU) and the Election Commission of India, organized a quiz competition titled "Brainy Bowl" to mark National Youth Day.

The event was designed to celebrate youth participation in democracy and to enhance awareness of India's electoral system. Far beyond a routine competition, it sought to instill knowledge about voter registration, the role of the Election Commission, and the significance of the fundamental right to vote.

The competition generated enthusiastic participation from students, reflecting their keen interest in becoming informed and responsible citizens. Alongside the main quiz, students also engaged in interactive sessions, debates, and discussions that encouraged deeper exploration of election-related themes. Topics included the history of elections in India, the structure and functions of the Election Commission, and the critical impact of each vote in shaping democracy.

This hands-on approach transformed the quiz into a dynamic learning platform, moving beyond mere trivia to foster civic responsibility. For many students, who are soon to become first-time voters, the event offered an opportunity to connect democratic principles with practical knowledge.

The atmosphere was both competitive and inspiring, showcasing how educational initiatives can serve as catalysts for civic engagement. The event underscored the potential of the youth to safeguard and strengthen India's democratic fabric.

A Tribute to Visionaries

IARI campus witnessed a significant and thought-provoking event commemorating the Bharat Ratna Dr. Babasaheb Ambedkar and Mahatma Jyotirao Phule Jayanti. The program was jointly organized by the PUSA Graduate School Students' Union (PGSSU), the Babasaheb Ambedkar & Birsa Students' Association (BABSA), and the PUSA SC/ST Employees Welfare Association, bringing together students, staff, and faculty members in a collective spirit of remembrance and learning.

The celebration was carefully structured to honor the remarkable legacies of two eminent social reformers who profoundly reshaped India's social and educational landscape. A special lecture titled "Youth and the Constitution: A Message from Babasaheb" shed light on the foundational principles of the Indian Constitution and emphasized their enduring relevance in guiding the nation toward justice, equality, and fraternity. This was followed by an engaging session on "Jyotirao Phule: The Pioneer of Education for All," which underlined his visionary efforts to promote equality, gender justice, and expand access to education across marginalized communities.

A highlight of the event was the quiz competition on "Dr. B. R. Ambedkar and the Constitution." Conducted in two competitive rounds, it witnessed enthusiastic participation from multiple student teams of three members each. The competition not only tested factual knowledge but also encouraged deeper reflection on Ambedkar's immense contribution to constitutional thought, social justice, and democratic ideals. All participants received certificates and mementos, while the winners were honored with cash prizes, adding vibrancy and excitement to the spirit of celebration.

The event concluded with expressions of gratitude to the organizers and speakers for curating a meaningful program that inspired the young audience. Through these activities, IARI reaffirmed its commitment to promoting inclusivity, awareness, and respect for the vision of reformers whose transformative ideas continue to inspire generations and shape modern India.

SpectraNova'25

A Celebration of Culture and Creativity

The IARI Cultural Fest 2025—SpectraNova'25—lit up the campus with color, rhythm, and creativity on May 16–17, 2025, at the Bharat Ratna C. Subramaniam Hall, NASC Complex. More than just a festival, SpectraNova'25 was a two-day celebration of art, imagination, and cultural vibrancy, offering students a platform to showcase their hidden talents and strengthening the sense of community at IARI, New Delhi.

IARI, known as the cradle of the Green Revolution, is equally a hub of culture and creativity. SpectraNova'25 carried forward this spirit, presenting a dazzling mix of performances and competitions reflecting the diversity, dynamism, and innovation of the student body.

A Grand Opening

The inaugural ceremony was chaired by Dr. R. S. Paroda, President of the IARI Alumni Association and Former DG of ICAR, along with Dr. Ch. Srinivasa Rao, Director, IARI; Dr. Anupama Singh, Dean and Joint Director (Education); Shri Sudhir Binchar, President, PGSSU; and Shri Kirubhakaran S, Social and Cultural Secretary, PGSSU. Dignitaries were warmly welcomed by PGSSU members with bouquets and mementos, setting the festive tone.

In his remarks, Dr. Paroda lauded the balance between academics and cultural pursuits, while Dr. Rao emphasized the importance of such events in holistic student development, inspiring creativity and confidence.

Off-Stage Highlights

Creativity flourished in eight off-stage competitions, including clay modeling, rangoli making, vegetable & fruit carving, poetry writing, and face painting. Story writing and treasure hunt events added imagination, teamwork, and a spirit of fun, while each entry reflected originality and enthusiasm.

On-Stage Extravaganza

The core of SpectraNova'25 lay in its 16 on-stage events. Solo and group dance, dual synchronization, skit, and ad-act kept audiences captivated. Music enthusiasts enjoyed soulful singing and instrumental performances, while short film screenings and photography showcased striking visual storytelling. Each performance reflected passion, precision, and cultural depth, transforming the NASC Complex into a hub of artistic brilliance.

Celebrating Champions

After two days of spirited competition, the UG Second Year students were crowned overall champions, with the UG First Year students as runners-up. The valedictory ceremony, graced by Dr. C. Viswanathan, Joint Director (Research), and Dr. Rabindra Nath Padaria, Joint Director (Extension), also included memento distribution for fresh batches of UG, PG, and Ph.D. students. Dignitaries commended students for their creativity, confidence, and teamwork, applauding their role in making the event unforgettable.

More Than a Fest

SpectraNova'25 went beyond competition—it celebrated unity, identity, and cultural heritage within the IARI community. For students, it was a welcome break from academics and a chance to express themselves through colors, words, rhythms, and melodies. For the audience, it was a reminder that IARI's strength lies not only in science but also in the creativity, vibrancy, and collaborative spirit of its people.

As the curtains fell, SpectraNova'25 left behind memories of applause, laughter, and shared pride. True to its name, the festival radiated a "spectrum" of talents and a "nova" of new beginnings, leaving everyone eager for the next celebration of culture at IARI.

Pitch Perfect

A Recap of the IARI Premier League 2025

The IARI Premier League (IPL) 2025, a unique Night Cricket Tournament, was successfully organized by the Pusa Graduate Students' Sports Union (PGSSU), IARI, New Delhi from 12–26 February 2025. This landmark event blended enthusiasm, skill, and community spirit, drawing overwhelming participation from students and staff alike.

Tournament Structure and Participation

The tournament featured eight vibrant teams: Puccinia Panthers, Mutant Strikers, Thunder Threshers, Mentha Supercats, Helico Challengers, Agro Avengers, Dominant Lethal Destroyers-11 (DLD-11), and Alphonso 11. Over 200 players competed in a league-cum-knockout format, with matches played under floodlights—making it one of the largest sporting events in IARI's history.

Inauguration

The inaugural ceremony on 14 February 2025 was graced by Dr. Himanshu Pathak, Secretary DARE & DG, ICAR, and Dr. Ch. Srinivasa Rao, Director, IARI. Their presence motivated players and set the stage for a spirited tournament.

League Stage and Playoffs

The league stage saw thrilling contests, close finishes, and outstanding individual performances. The top four qualifiers for the playoffs were:

- Puccinia Panthers
- Mutant Strikers
- Thunder Threshers
- Mentha Supercats

The playoffs followed the standard Q1–Eliminator–Q2–Final structure:

Qualifier 1: Puccinia Panthers defeated Mutant Strikers to advance directly to the final.

Eliminator: Thunder Threshers overcame Mentha Supercats to keep their hopes alive.

Qualifier 2: Mutant Strikers edged past Thunder Threshers to secure their place in the final.

The Grand Finale

The final match on 26 February 2025 featured Puccinia Panthers against Mutant Strikers. Dignitaries present included Dr. Ch. Srinivasa Rao, Director, IARI; Dr. Atul Kumar, Associate Dean; and Dr. Dinesh Kumar, Sports Coordinator. In a thrilling encounter, the Puccinia Panthers emerged as champions, showcasing composure, teamwork, and tactical brilliance.

The final drew over 500 spectators on the ground and reached a global audience of more than 80,000 viewers through live streaming on the CricHeroes app.

A Historic First: Girls in the IPL

The 2025 edition of the IPL was historic for another reason—it marked the first-ever participation of girls in the tournament. Their presence on the pitch was more than symbolic; it was transformative. With confident batting, sharp bowling, and cohesive teamwork, the girls proved that cricket at IARI knows no gender barriers. Their performance inspired the community and underscored the importance of inclusivity in campus sports.

The IARI Premier League 2025 set new benchmarks for student-led sports initiatives at the Institute.

IARI's Youth Power the National Youth Festival

From 6–13 January 2025, India's youth converged at Bharat Mandapam, New Delhi, for the National Youth Festival—also held under the banner Viksit Bharat Young Leaders Dialogue (VBYLD-2025). Among the many institutions contributing to its success, IARI stood out through the committed service of 43 undergraduate students who volunteered across multiple event functions.

As volunteers representing ICAR–IARI, New Delhi, these students played pivotal roles in event management, ushering participants, coordinating logistics, and supporting youth delegates from every corner of the country. Their presence ensured the event ran seamlessly, behind the scenes and front and center.

The festival itself was a reimagined format of the traditional National Youth Festival, with a greater emphasis on youth leadership, innovation, and dialogue. Over the seven days, the venue buzzed with seminars, cultural performances, youth debates, and innovation challenges—bringing together thousands of India's young voices to share ideas, dreams, and visions.

The IARI volunteers were not mere helpers. They became ambassadors of their institute—offering hospitality, guiding delegates, resolving issues, and ensuring that each event segment ran timely. For many, it was a chance to practice leadership, teamwork, and real-world problem solving. The experience forged connections, built confidence, and allowed them to engage with youth leaders beyond campus boundaries.

For IARI, this participation reaffirms the institute's commitment not only to agricultural excellence but also to nurturing socially aware, active citizens. The 2025 National Youth Festival will be remembered not just as a gathering of young talent but also as an occasion where IARI students stepped up to support a nation-wide celebration of youth, democracy, and vision.

Students Join Hands for National Integration Camp

Between 3–9 February 2025, Amity University, Jaipur, played host to the National Integration Camp (NIC) organized by the National Service Scheme (NSS), bringing together university-level volunteers from across India. Among them, four undergraduate students from IARI represented the institute, engaging in a wide range of activities aimed at unity, cultural exchange, and service.

For the IARI volunteers, the week was more than just campfire sessions and group games. It was an immersive journey into India's rich diversity—languages, traditions, and beliefs. Participants came together in workshops, cultural evenings, and community outreach, reinforcing bonds beyond regional identities. They shared poetry, dance, art, and local cuisines, each presentation a tribute to their heritage and a message of integration.

Service was the motto for every day. The volunteers from IARI contributed in organizing sessions, managing logistics, and assisting in the coordination of daily schedules. They helped set up campsites, arranged for community projects (clean-ups, awareness drives), and supported fellow volunteers. Their efforts ensured the smooth running of the camp and helped create an inclusive, friendly atmosphere where everyone felt welcome.

Leadership, teamwork, and empathy were key takeaways. Early-morning assemblies, group discussions on national issues, and interactive lectures instilled awareness of constitutional values and civic responsibility. Through heartfelt conversations and shared experiences, the IARI students developed a new appreciation for national unity.

The NIC proved to be more than a gathering—it was a crucible for personal growth and a platform for young citizens to strengthen the idea of "Unity in Diversity." For IARI, the participation of its students affirmed their role as not just scholars but citizens with a broader vision. As they return to campus, they bring back lessons in inclusion, humility, and the power of collaboration—fitting contributions to the legacy of service embodied in NSS.

NATIONAL SERVICE SCHEME

IARI Students Shine at Global Youth Summit

The Global Youth Summit 2025, organized by the Ministry of Youth Empowerment & Sports through NSS, was held from June 4–6, 2025, at the Yendurance Zone, Yenepoya, Mangalore, Karnataka. The summit brought together youth delegates from across India and a few international participants, fostering discussions on leadership, innovation, and social responsibility.

From IARI, New Delhi, two fourth year undergraduate students participated in this high-profile event: Satabdi Jena, B.Sc. (Hons) Agriculture, and Rupesh Bisoi, B.Sc. (Hons) Community Science. Both students played an active role in workshops, panel discussions, and interactive sessions designed to inspire youth leadership and promote innovative solutions for societal challenges.

The summit focused on themes such as climate action, rural empowerment, social entrepreneurship, governance, public health, and digital innovation. Satabdi and Rupesh contributed insights from their academic and research experiences at IARI, sharing perspectives on sustainable agriculture, food security, and community development. Their participation not only highlighted the global relevance of IARI's academic programs but also strengthened cross-cultural exchange and learning. Both students found the experience enriching, gaining exposure to national policy frameworks, networking with peers from diverse backgrounds, and learning practical strategies for youth-led community development.

INTER-AGRICULTURAL UNIVERSITIES SPORTS & GAMES MEET

IARI Contingent to Agri Varsity Meet

The XXII All India Inter-Agricultural Universities Sports & Games Meet was hosted at Acharya Narendra Deva University of Agriculture & Technology (ANDUAT), Kumarganj, Ayodhya, from May 1–6, 2025, bringing together athletes from across the country for a celebration of sportsmanship and camaraderie.

A strong contingent of 40 students from ICAR–IARI, New Delhi, proudly represented the institute, competing across a wide spectrum of sporting events. The students displayed not only skill and determination but also the values of teamwork, resilience, and discipline that define the spirit of the games. From athletics to team sports, every performance reflected their commitment to excellence and their readiness to compete at the national stage.

The event served as more than just a competition. It was a vibrant platform where young athletes interacted, exchanged experiences, and forged friendships with peers from other agricultural universities. Such exposure not only enhanced their sporting abilities but also broadened their perspectives on collaboration and mutual respect.

For IARI students, the meet was both a learning experience and a celebration of youth energy. Their enthusiastic participation underscored the institute's commitment to holistic development, where academics and sports go hand in hand.

Celebrating 11 Years of Excellence

Foundation Day 2025

On June 28, 2025, IARI, Jharkhand marked its 11th Foundation Day with a series of events that underscored its journey, achievements, and aspirations. The day was graced by Padma Bhushan Dr. Rajendra Singh Paroda, former Secretary (DARE) and Director General (ICAR), who served as the Chief Guest. The Honourable Director of ICAR-IARI, Dr. Ch. Srinivasa Rao, chaired the event, highlighting the institute's commitment to agricultural research and education.

Inception and Vision

Established in 2015, IARI Jharkhand was envisioned to advance agricultural research and education in the region. The foundation stone was laid by Prime Minister Narendra Modi in Gauria Karma village, Hazaribagh district. The institute focuses on integrated farming systems and multidisciplinary research encompassing food grains, oilseeds, pulses, horticulture, forestry, dairy, livestock, and fisheries.

Academic Growth and Student Engagement

Since inception, IARI Jharkhand has been committed to providing quality education. The institute began its academic programs as a Post Graduate Outreach Institute under the Post Graduate School of IARI New Delhi. Over the years, it has expanded its offerings and infrastructure to accommodate a growing number of students. The 11th Foundation Day celebrations included a tree plantation drive, symbolizing the institute's commitment to environmental sustainability and its role in promoting ecological balance through research and education.

Research and Infrastructure Development

IARI Jharkhand has made significant strides in research and infrastructure development. The institute has established state-of-the-art laboratories and research facilities that support its mission to enhance agricultural productivity and sustainability. The campus serves as a hub for innovation, where students and researchers collaborate to develop solutions tailored to the unique agricultural challenges of the region.

Community Engagement and Future Aspirations

The Foundation Day celebrations also emphasized the institute's role in community engagement. Dr. Paroda distributed fruit-bearing and environmentally beneficial plants to farmers, promoting ecological sustainability and improved farm productivity. This gesture underscored IARI Jharkhand's commitment to bridging the gap between research and practical application in the field.

The Foundation Day celebrations also

witnessed vibrant cultural performances by students, who showcased their diverse talents through music, dance, and drama, adding a festive spirit to the occasion.

Looking ahead, IARI Jharkhand aims to continue its trajectory of growth by expanding its academic programs,

enhancing research initiatives, and strengthening its ties with the agricultural community. The 11th Foundation Day served as a reminder of the institute's dedication to fostering agricultural innovation and education in Jharkhand and beyond.

Inspiring Vision and Academic Excellence

ICAR-IARI, Jharkhand students interact with Director, Dean and Academic Leaders

On 6th April 2025, IARI, New Delhi, organized an interactive session with undergraduate and postgraduate students, led by the Director, Dr. Ch. Srinivasa Rao, along with the Joint Director (Research), Dr. Viswanathan Chinnusamy. The session aimed to motivate students toward academic excellence, skill development, and active participation in campus life.

Addressing the students, Dr. Rao emphasized the vast scope and future prospects of agricultural education in India and abroad. He highlighted the importance of utilizing the institute's state-of-the-art research facilities, laboratories, and outreach programs to gain hands-on experience. Stressing experiential learning, he encouraged students to participate in fieldwork, experimental projects, and community engagement, which are vital for developing a future-ready skill set.

The Director also highlighted interdisciplinary research, innovation, and problem-solving as essential pillars for the next generation of agricultural leaders. Students were urged to explore collaborative projects, competitions, and knowledge-sharing initiatives. A lively Q&A session followed, enabling students to clarify doubts about research pathways, career options, and skill acquisition. This interaction not only motivated students but also helped develop self-confidence and a sense of purpose in their academic journey.

Building on the initial session, a hybrid interaction meeting was held on 26–27 June 2025, connecting IARI New Delhi and IARI Jharkhand. The Dean & Joint Director (Education), Dr. Anupama Singh, Associate Dean (Academic Partnership), Dr. Monika Joshi, and Associate Dean (UG), Harshwardhan Chaudhary, engaged with students and faculty members to discuss academic and administrative matters.

Key discussions included academic regulations, attendance compliance, student discipline, faculty shortages, and updates on educational tours, mentoring programs, student clubs, sports, library facilities, health services, and thesis deadlines. Students were encouraged to share feedback, express concerns, and ask questions, helping clarify doubts while fostering a constructive dialogue. The dialogue significantly helped students in bridging academic gaps between the New Delhi and Jharkhand campuses. It assured them of strengthened inter-campus cooperation, mutual support, and seamless access to institutional resources for fulfilling their educational aspirations, research requirements, and overall academic growth within the integrated IARI ecosystem. These interactions empowered students to gain a better understanding of institutional processes, develop self-confidence, and stay motivated to achieve their goals.

Both sessions collectively provided a platform for guidance, learning, and engagement. Students were able to align their academic objectives with the resources and opportunities available at IARI, strengthening their ability to excel in research, academics, and practical applications.

By connecting leadership with learners, IARI reinforced its commitment to creating a dynamic academic ecosystem. The interactions exemplify the institute's focus on holistic education, mentorship, and experiential learning, ensuring that students are not only academically competent but also confident, motivated, and ready to contribute meaningfully to the future of agriculture.

Students Lead Agri Innovation

FarmVerse Takes Flight

Mr. Varshan Anand, a B.Tech III student, made waves at the CAIE National Agri Hackathon in Gwalior on 27th June 2025. Competing against over 150 teams from across the country, Varshan's startup concept, "FarmVerse", stood out for its innovative approach to agriculture technology.

FarmVerse, designed to bridge gaps between farmers and modern agri-tech solutions, impressed the judges with its practical applicability and forward-thinking design. Varshan's team clinched the Third Prize, highlighting not just technical creativity but also entrepreneurial spirit.

His achievement is a testament to the growing trend of youth-led startups revolutionizing Indian agriculture, blending technology with traditional practices. For aspiring innovators, Varshan's success underscores the importance of problem-solving, practical implementation, and persistence in competitive national platforms.

Debating Minds at UDBHAV

Ms. S. Deepaadhirai, B.Tech Agri Engineering II year, represented her university at UDBHAV, the inter-university debate competition held during the 20th National Youth Awakening Festival at G.B. Pant University, Pantnagar, in January 2025.

Her articulate arguments and confident stage presence distinguished her among peers from universities nationwide. Tackling topics spanning agriculture, sustainability, and youth leadership, Deepaadhirai showcased not only knowledge but also critical thinking and persuasive communication.

This achievement highlights the holistic development of IARI students, who balance rigorous technical coursework with extracurricular platforms that hone public speaking, analytical reasoning, and leadership skills—qualities vital for the next generation of agricultural innovators.

Post-Harvest Pioneers

From 1st to 3rd June 2025, a team of B.Tech students—Krishna Bansal, Prajjwal Jondhale, Lakshit Yadav, Nitin Babaland, and Vipul Kumar Sharma—represented IARI at India's first International Agri Hackathon organized by the Department of Agriculture, Maharashtra, and MPKV College of Agriculture, Pune.

Competing in the Post-Harvest Technology and Waste Management domain, the team navigated a highly competitive field of national and international entries. Their project, praised for innovation and feasibility,

was shortlisted among the top solutions, showcasing IARI's emphasis on problem-solving, sustainability, and applied research.

The experience offered invaluable exposure to global perspectives in agri-tech, reinforcing collaboration, research application, and creative thinking—skills that will shape these students into the next generation of agricultural leaders.

Community Exposure

The B.Sc. (Hons) Community Science students at ICAR-IARI enriched their learning through diverse exposure visits and activities. They explored rural extension at KVK Shikhopur, textile innovations at NITRA Ghaziabad, dairy technologies at NDRI Karnal, and heritage crafts at the Crafts Museum. On campus, they actively participated in the IAA Function and Pusa Krishi Vigyan Mela 2025, while also joining the Indian Navy Half Marathon 2025. Skill enhancement came through a Sewing Machine Workshop, online NIPA course, and Knitting Machine demonstrations. These experiences broadened their academic, cultural, and practical horizons.

A Semester of Achievements and Engagements

Hyderbad Hub

The Hyderabad Hub of IARI continued to make its mark in 2025 with a series of academic, cultural, and student-centered activities that highlighted the vibrancy of its community and the strength of its academic ecosystem.

A key moment of the year was the visit of Dr. Ch. Srinivasa Rao, Director, IARI, whose interaction with students and faculty reinforced the institute's commitment to nurturing young talent and strengthening the Hub's role as an emerging center of excellence. His address emphasized the importance of aligning education, research, and extension to meet the challenges of sustainable agriculture, while assuring continued institutional support for students' academic growth and career development.

The Hyderabad Hub also joined the nationwide celebrations of International Yoga Day on 21 June 2025, where students, research scholars, and faculty participated enthusiastically. The event highlighted the value of holistic health and well-being in students' academic lives, blending traditional practices with the rigors of higher education.

In academics and research, the Hub's scholars brought laurels at national platforms. Mr. Subrata Bag, Ph.D. scholar, was honored with the *Best Thesis Award*, while Mr. K.G. Prasanna, Ph.D. scholar, received the *Best Paper Award* during the prestigious International Conference organized by ICAR–IIFSR on 8 March 2025. These accolades reflected the high-quality research being carried

out at the Hub and the mentorship provided by its faculty.

Student achievements extended beyond research to co-curricular domains. In a quiz competition organized by NIPHM, Hyderabad on 14 May 2025, the Hub's team emerged winners, showcasing their sharp intellect and awareness of contemporary agricultural issues. Further, Mr. Dhanraj D. won the *Second Prize* in the NAAS-YUVA competition,

adding another feather to the Hub's cap and reinforcing the culture of academic excellence.

Together, these events not only brought recognition to the Hyderabad Hub but also reflected its holistic approach to student development—balancing academic rigor with wellness, competitions, and research leadership. The consistent success of its students and scholars affirms the Hub's growing role in contributing to IARI's national mission of preparing the next generation of agricultural scientists and leaders.

With a blend of scholarly excellence, institutional support, and student energy, the Hyderabad Hub is rapidly emerging as a vibrant extension of IARI's legacy in agricultural education and innovation.

Lucknow Hub

The IARI Lucknow Hub, operating from ICAR–Indian Sugarcane Research Institute, joined the global community in celebrating World Environment Day on June 5, 2025, under the theme "Beat Plastic Pollution." UG, PG, and Ph.D.

World Environment Day

students participated enthusiastically in a "No Plastic Green Walk" around the campus. Carrying placards and slogans promoting eco-friendly habits. The

No Plastic –Green Walk

students spread the message of reducing single-use plastics and adopting sustainable alternatives in daily life. The walk symbolized the collective resolve of the young generation to safeguard the environment and promote responsible living. The event fostered environmental consciousness among the student community while reinforcing the institute's commitment to green practices and sustainable development.

Pusa Krishiksha

Published by
The Graduate School
ICAR-Indian Agricultural Research Institute
Pusa, New Delhi 110012, INDIA

Acknowledgements

The editors sincerely acknowledge the generous inputs received from various divisions, which have enriched the contents of this publication. We extend our special gratitude to all who have encouraged us for his valuable suggestions and the Graduate School staff for their support in convocation coverage. We also appreciate the assistance provided by the IQAC Office and the Office of International Affairs in compiling this edition. Their inputs have been instrumental in enhancing the quality of this publication.

ISSN: