

भा.कृ.अनु.प. - भा.कृ.अनु.सं., झारखंड
ICAR – IARI, JHARKHAND

सूचना पत्र | NEWSLETTER

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From Director's Desk

It is my pleasure to present the April-June 2026 issue of the ICAR-IARI, Jharkhand Newsletter. This quarter witnessed significant achievements in research, academics, extension, capacity building and institutional development, reaffirming our commitment to sustainable and climate-resilient agricultural development in the Eastern Plateau and Hill Region.

A key highlight was the celebration of the 12th Foundation Day of the Institute, marking the Institute's progressive journey in agricultural research, education and extension. The inauguration of new infrastructure facilities worth ₹20.55 crore further strengthened our research and academic capabilities. The Institute also organized a high-level consultative meeting for finalization of the Jharkhand State Seed Policy. The release of pigeonpea variety Vanshika (IPA 15-21) and lentil variety Pusa Avantika (PDL-1) by the State Variety Release Committee represented important milestones in crop improvement and seed availability.

Research activities remained vibrant and multidisciplinary, encompassing evaluation of okra hybrids, acid-soil tolerance in pigeonpea, conservation of Vanda tessellata, fruit bagging in mango, evaluation of cape gooseberry genotypes, ethnomycology, plant growth-promoting rhizobacteria, value addition of Mahua, crop diversification, resource-conservation technologies and summer mungbean production. Research on local goats and quality seed production further strengthened the Institute's diversified scientific portfolio.

Academic activities included educational exposure visits, student placements, higher-education achievements, recognition of academic excellence, Agaaz 3.0, farewell of graduating students and national-level recognition of B.Sc. student in the Viksit Bharat Agri Hackathon.

Extension and capacity-building initiatives included campaigns on balanced fertilizer use, Khet Bachao Abhiyan, SCSP input distribution, scientific goat farming and training on natural and integrated farming. The Institute also organized programmes related to climate-resilient agriculture, PM-KISAN, environmental protection, health, cleanliness and yoga.

I sincerely appreciate the dedicated efforts of our faculty, staff, students, farmers, collaborators and editorial team. ICAR-IARI, Jharkhand remains committed to scientific innovation, quality education and farmer-centric technologies for a resilient and prosperous agricultural future.

Dr. Ch. Srinivasa Rao
Director, ICAR-IARI, Jharkhand

HIGHLIGHTS

Dr. Ch Srinivasa Rao Director, Indian Agricultural Research Institute (IARI), Jharkhand conferred with Prestigious Prof M.S. Swaminathan Award 2026



Fig.1 Dr. Ch. Srinivasa Rao, Director, receiving the prestigious Prof. M.S. Swaminathan Award 2026

Dr. Ch. Srinivasa Rao, Director, ICAR-IARI, Jharkhand received the prestigious Prof. M.S. Swaminathan Award 2026 from Shri M. Venkaiah Naidu, Hon'ble Former Vice President of India, on 18 April 2026 for his outstanding contributions to climate-resilient agriculture and sustainable resource management. The 9th edition of the award, instituted by the Retired ICAR Employees Association in collaboration with Nuziveedu Seeds Limited, coincided with the birth centenary of Prof. M.S. Swaminathan, architect of India's Green Revolution. Dr. Rao's contributions include resource conservation technologies, soil health improvement, water-use efficiency, and district-level contingency planning for climate variability, facilitating sustainable agricultural practices across millions of hectares. The ceremony was attended by eminent dignitaries, including Tummala Nageswara Rao and Vidya Sagar Rao, highlighting the importance of agricultural innovation for food security and sustainable development.

12th Foundation Day Celebrated with Grandeur at IARI Jharkhand









Fig 2. Glimpses of foundation day celebration and award ceremony at IARI, Jharkhand

The 12th Foundation Day of the Institute was celebrated with great enthusiasm on 28 June 2026, highlighting its achievements in agricultural research, education and extension. Dr. M.L. Jat, Secretary, DARE & DG, ICAR, virtually graced the occasion and congratulated the Institute and emphasized climate-smart agriculture, natural resource conservation and innovation-driven research. Dr. D.K. Yadav, DDG (Crop Science), ICAR, Guest of Honour, stressed multidisciplinary research, precision agriculture, digital technologies and effective technology dissemination. Dr. Ch. Srinivasa Rao, Director, ICAR-IARI, presented the Institute's achievements and future roadmap covering climate-resilient agriculture, natural resource management, crop improvement, horticulture, quality seed production and farmer-oriented extension, while Dr. C. Viswanathan, Joint Director (Research) reaffirmed commitment to scientific excellence and farmers' welfare. Institute publications were released, and awards/ commendation certificates were presented to scientists, faculty, technical and administrative staff, meritorious students, progressive farmers, best FPO, media representatives and outsourcing personnel. Scientists, students, staff, farmers and other stakeholders actively participated in the celebration.

Inauguration of New Infrastructure Facilities Worth ₹20.55 Crore at IARI, Jharkhand







Fig 3. Glimpses of inauguration of new infrastructure facilities at IARI, Jharkhand

As part of the 12th Foundation Day celebrations, Dr. M.L. Jat, Secretary, DARE & DG, ICAR, virtually inaugurated six newly developed infrastructure facilities worth ₹20.55 crore at ICAR-IARI, Jharkhand, including the Swami Vivekananda Academic Complex, Jaipal Singh Munda Sports Complex, Tulsi Health Centre, Kusum Shopping Complex, two Type-IV residential quarters, and one tower of Type-III quarters (Palash Vihar). The facilities will strengthen research, teaching, student

welfare, residential and recreational amenities. Following the inauguration, Dr. D.K. Yadav, Dr. Ch. Srinivasa Rao, Dr. C. Viswanathan, Dr. S.K. Mahanta and Dr. Vishal Nath, along with scientific, technical and supporting staff, students and CPWD officials, visited the newly inaugurated facilities.

ICAR-IARI Jharkhand Organizes High-Level Consultative Meeting for Finalization of Jharkhand State Seed Policy



Fig 4. Glimpses of Jharkhand state seed policy meeting

Under the leadership of Dr. Ch. Srinivasa Rao, Director, ICAR-IARI, a high-level consultative meeting to finalize the Draft Jharkhand State Seed Policy was held on 24 June 2026 at Krishi Bhavan, Ranchi, chaired by Shri Bidyanand Sharma Pankaj, Director of Agriculture, Government of Jharkhand. Building on recommendations of the 2025 National Workshop on Strengthening Research and Seed System, Dr. Ch. Srinivasa Rao emphasized the importance of a strong seed system and institutional collaboration for enhancing agricultural productivity, seed security, and farmer prosperity. Shri Bidyanand Sharma Pankaj appreciated ICAR-IARI's scientific and technical support and expressed confidence that the proposed Seed Policy would strengthen Jharkhand's seed sector and benefit farmers. Distinguished scientists, policymakers, administrators and members of the Seed Policy Committee from ICAR-IARI, ICAR-IIAB, Birsa Agricultural University, Department of Agriculture, Government of Jharkhand, and other stakeholder organizations participated.

(Santosh Kumar, Saheb Pal, Akash A & Narendra Singh)

Pigeonpea variety, *Vanshika (IPA 15-21)*, released by SVRC Jharkhand



Fig 5. Pigeonpea variety, Vanshika (IPA 15-21) released for area expansion in Jharkhand

(Monu Kumar, Anima Mahato, Dipak Kumar Gupta, Priya Ranjan Kumar)

The pigeonpea variety IPA 15-21 (Vanshika) was identified and released by the State Variety Release Committee (SVRC) during a meeting chaired by Aboobacker Siddique P, Secretary of the Department of Agriculture, Animal Husbandry & Cooperative held on 21 May 2026 for cultivation under Kharif timely sown, rainfed conditions in Jharkhand. Developed from NDA 1 × MAL 13 at ICAR-IIPR, the variety is high yielding and resistant to multiple diseases, recording a yield of 1634 kg ha^{-1} with 13.57% superiority over the best check IPA 203. It matures in 239-248 days and produces attractive, light-brown medium-sized seeds (13 g/100 seeds) with high milling recovery.

Lentil variety, Pusa Avantika (PDL-1), released for area expansion in Jharkhand by SVRC

The lentil variety Pusa Avantika (PDL-1) was identified and released for area expansion in Jharkhand by the State Variety Release Committee (SVRC) during a meeting chaired by Aboobacker Siddique P, Secretary of the Department of Agriculture, Animal Husbandry & Cooperative held on 21 May 2026. The small-seeded variety matures in 108-120 days, with yield potential of 10 q ha^{-1}, and outyielded the national check HUL-57 by 13%, with no visible disease under natural/farmers' field conditions. It is suitable for timely to medium-late sowing in rice-fallow conditions at a seed rate of 35-40 kg ha^{-1}.



Fig 6. Pusa Avantika (PDL-1) lentil variety released for area expansion in Jharkhand

(Anima Mahato, Monu Kumar, Priya Ranjan Kumar)

RESEARCH

Evaluation of Hybrids for Yield and Yield-Contributing Traits in Okra

A total of 21 hybrids have been generated by using 10 genotypes as parents following line (3) × tester (7) mating design. The genotypes have been evaluated during the summer season of 2026 in comparison with two commercial hybrids as checks (Basanti and Radhika). The parents, VRO-123 and VRO-125 were good general combiners for improving average fruit weight, while the crosses viz., VRO 416-10-1 x VRO-123, VRO-120 x Gayatri and VRO-120 x Hisar Unnat were good specific combiners for average fruit weight. For number of fruits per plant, Kashi Chaman, VRO-416-10-1, VRO-123 and VRO-125 were good general combiners. Crosses like Kashi Chaman x VRO-112, Kashi Chaman x VRO-125, VRO 416-10-1 x VRO-123, VRO 416-10-1 x VRO-125, VRO-120 x Gayatri, VRO-120 x Hisar Unnat, VRO-120 x Kashi Lalima, VRO-120 x Kashi Pragati were found superior for fruit yield per plant over the standard check variety, Radhika (F_1).



Kashi Chaman x VRO-112 | *Kashi Chaman x VRO-125* | *Kashi Chaman x VRO-123* | *VRO-416-10-1 x VRO-125* | *VRO-416-10-1 x VRO-123* | *VRO-120 x VRO-125*

Fig 7. Representative okra hybrids derived from different crosses

(*Saheb Pal*)

Conservation and Morphological Characterization of *Vanda tessellata* (Roxb.) Hook. ex G. Don: An Endangered Medicinal Epiphytic Orchid



Fig 8. Natural habitat and morphological characterization of Vanda tessellata (Roxb.) Hook. ex G. Don (A) Epiphytic growth on a Mahua (Madhuca longifolia) tree in its natural habitat (B) Plant showing the monopodial growth habit, strap-shaped leaves and profusely developed aerial root system (C) Flowering inflorescence (D) Front view of the flower showing characteristic brown tessellation and violet lip; (E) dissected floral parts used for morphological characterization

Vanda tessellata (Roxb.) Hook. ex G. Don is a medicinally important epiphytic orchid naturally distributed in the deciduous forests of India. During field explorations around Hazaribagh, Jharkhand, naturally occurring plants, predominantly growing on Mahua (Madhuca longifolia) trees, were collected and established in the nursery for ex-situ conservation and characterization. It is a monopodial orchid with an erect stem (30-120 cm), leathery strap-shaped leaves arranged distichously, numerous aerial roots, and fragrant, long-lasting flowers produced during March-May. The greenish-yellow flowers (40-50 mm) with characteristic brown tessellations and a bluish-purple trilobed lip make the species readily distinguishable from other *Vanda* species. Besides its ornamental value, *V. tessellata* has ethnomedicinal importance, with roots and leaves traditionally used for rheumatism, fever, bronchitis, dyspepsia, ear infections, and wound healing. Its natural populations are threatened by deforestation, mining, forest fires, and indiscriminate collection. Conservation and characterization of this indigenous orchid will support its propagation, sustainable utilization, germplasm conservation, and development of multiflowered hybrids.

(Shantesh Kamath)

Advancing Research on Acid Soil Tolerance and Reproductive Development in Pigeonpea

A study conducted on understanding the molecular and physiological mechanisms governing phosphorus-use efficiency, acid soil tolerance, and flowering regulation in pigeonpea (*Cajanus cajan*). A comprehensive expression profiling of the phosphate transporter (PHT) gene family was undertaken under phosphorus-deficient and acidic soil conditions using quantitative real-time PCR (qRT-PCR). Differential expression of candidate genes in root and shoot tissues of determinate and indeterminate pigeonpea genotypes provided valuable insights into genotype-specific adaptive responses. Genome-wide analyses were further strengthened through transcriptomic investigations, co-expression network analysis, and Gene Ontology (GO) enrichment to identify key molecular pathways linking phosphorus acquisition with flowering transition. Comparative

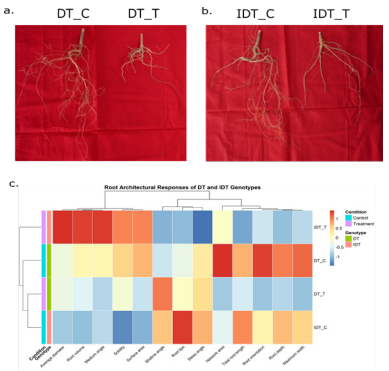


Fig. 9 Root architectural responses of contrasting pigeonpea genotypes under neutral and acid-affected soil conditions

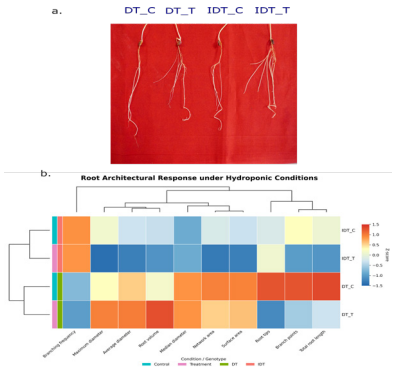


Fig. 10 Root architectural variation in DT and IDT pigeonpea genotypes under hydroponic (Low P) conditions

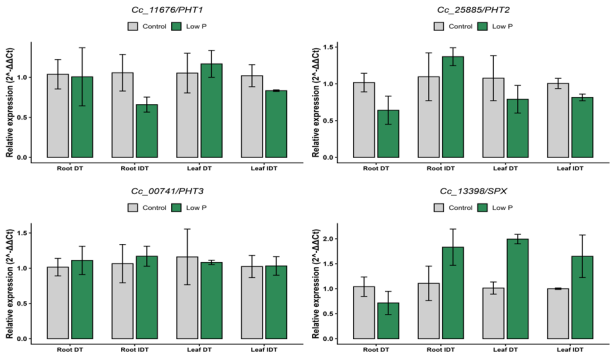


Fig. 11 Relative expression analysis of selected phosphorus transporter (PHT) genes in pigeonpea under phosphorus-deficient conditions

(Heatmap showing the standardized expression pattern (Z-score) of root architectural traits measured using RhizoVision Explorer in determinate (DT) and indeterminate (IDT) genotypes under control (C) and treatment (T) conditions)

root architecture studies under hydroponic and soil-based stress conditions also revealed significant alterations in root growth and morphology associated with phosphorus deficiency. In addition, physiological assessments including chlorophyll content, membrane stability index, relative water content, and reactive oxygen species accumulation were integrated with molecular data to better understand plant responses to acidic soils. The findings generated during this period contribute to the identification of promising candidate genes for developing pigeonpea cultivars with enhanced phosphorus-use efficiency, improved adaptation to acidic soils, and stable productivity under resource-constrained environments.

(Sougata Bhattacharjee)

Fruit Bagging Helps Produce Safe and Superior Quality Mangoes



Fig 12. Effect of fruit bagging on external appearance of mango fruits compared with unbagged fruits

Fruit bagging using white, yellow, brown, and pink bags was successfully demonstrated on bearing trees of mango varieties Amrapali, Mallika, Dashehari, Arunika, and Pusa Arunima at ICAR-IARI, Jharkhand to improve fruit quality and reduce losses due to insect pests. Bagging improved fruit appearance and colour, reduced peel blemishes, fruit fly infestation, and anthracnose, and increased the proportion of premium-grade fruits enabling farmers to obtain higher market prices. The study also demonstrated that fruit bagging provides an effective, eco-friendly alternative for fruit fly management, one of the major constraints in mango production in the region. The technique provides an eco-friendly alternative to pesticide-based fruit fly management, minimizes pesticide residues, and supports the production of safer, higher-value, export-quality mangoes.

(Vishal Nath, Narendra Singh, Krishna Prakash, Shantesh Kamath, Dipak Kumar Gupta)

Cape gooseberry genotypes evaluated at ICAR-IARI, Jharkhand



Fig 13. Cape gooseberry genotypes evaluated under field conditions at ICAR-IARI, Jharkhand

Performance of cape gooseberry genotypes (*Physalis peruviana*) were evaluated under the agro-climatic conditions of the Eastern Plateau Region for the second year with the objective of identifying superior genotypes possessing high productivity, desirable fruit quality, and enhanced nutritional value. Genotype IGCG-3 exhibited the earliest flowering (66.04 days), highest fruit set (78.89%), maximum number of fruits per plant (32.01), and the shortest duration from fruit set to maturity (53.20 days), indicating its superiority for earliness and reproductive efficiency. At fruit ripening stage, IGCG-1 had the highest fruit weight, i.e., with calyx (13.08 g), and without calyx (12.58 g). The highest TSS was recorded in IGCG-2 (21.40 °Brix), while IGCG-1 registered the highest reducing sugar (8.99%) and total sugar (11.14%) contents. The highest ascorbic acid (84.54 mg 100 g^{-1} FW) and flavonoid content (55.10 µg g^{-1} FW) were recorded in genotype IGCG-1. Total phenolic content was highest in IGCG-4 (3.57 mg GAE g^{-1} fresh weight). Mineral

analysis further indicated differential accumulation of essential macro- and micronutrients among the genotypes during fruit development, highlighting their nutritional potential.

(Vishal Nath, Narendra Singh, Saheb Pal, Dipak Kumar Gupta and Anima Mahato)

Ethnomycology Research in Tribal Regions of Jharkhand



Fig 14. Field survey and documentation of wild edible mushrooms and associated indigenous knowledge in tribal regions of Jharkhand

A research project on 'Ethnomycological Documentation, Microbiome Profiling, Nutritional Assessment and Seasonal Diversity Mapping of Wild Edible Mushrooms in Tribal Regions of Jharkhand' has been initiated to document the diversity, indigenous knowledge, nutritional significance and microbiome of wild edible mushrooms used by tribal communities. During the reporting period, a structured questionnaire was developed, and extensive field surveys and data collection are presently in progress across selected districts of Jharkhand.

(Srinivasaraghavan A)

Development and Sensory Evaluation of Value-Added Mahua Laddu



Fig 15. Value added product from Mahua (Madhuca longifolia)

Mahua Laddu was developed using dried Mahua (*Madhuca longifolia*) flowers blended with traditional ingredients such as ghee, dry fruits, coconut, sesame, dates, jaggery and cardamom to enhance its taste, texture and nutritional value. The preparation involved proper cleaning and processing of dried Mahua flowers, followed by blending with the selected ingredients, shaping into uniform laddus and hygienic packaging. The developed product was subjected to sensory evaluation using a 9-point hedonic scale, considering appearance, aroma, texture, taste and overall acceptability. The Mahua Laddu exhibited excellent sensory performance, recording scores of 8.6 for appearance, 8.4 for aroma, 8.5 for texture and 8.7 for taste, with an overall acceptability score of 8.55 out of 9. The encouraging sensory response demonstrates the potential of Mahua flowers for developing appealing and nutritious traditional food products and provides an opportunity for their diversified utilization and value addition.

(Ranjit Singh, Prabhat Kumar Guru, Himani Priya, Nirmal, Mukesh Tiwari, S.K. Giri)

Isolation and Characterization of Potential Plant Growth-Promoting Rhizobacteria from Diverse Agroecosystems



Fig. 16 Rhizosphere Sampling and Isolation of Potential Rhizobacteria

Rhizosphere soil samples were collected from seven locations representing different crops and agro-ecological conditions, including Hazaribagh, Odisha, Telangana, West Bengal, East Singhbhum and ICAR–IARI Jharkhand farm, for isolation of potential bacterial strains. Samples represented mustard, rice, maize, chickpea, fallow land and rice–wheat cropping systems. Bacterial isolation and purification were carried out using different culture media, namely YEMA, Nutrient Agar, Jensen's agar, Soil Extract Agar (SEA) and Pikovskaya's agar. Approximately 100 distinct rhizobacterial morphotypes were obtained based on differences in colony morphology, indicating considerable cultivable bacterial diversity among the sampled soils. The purified bacterial cultures are being screened for acid-stress tolerance, considering their potential application in acidic soils. Biochemical characterization and evaluation of important plant growth-promoting traits and nutrient-mobilizing abilities are also underway. Promising acid-tolerant and plant growth-promoting isolates will be selected for further characterization and development of an efficient microbial bioformulation for acidic soils.

(Himani Priya, Ranjit Singh, Manoj Chaudhary, Asha Kumari, Akash A)

Crop Diversification in Maize-based Intercropping with Leafy Vegetables in the Chhotanagpur Plateau Region

A field experiment has been initiated during *kharif* 2026 to evaluate maize-based intercropping systems with leafy vegetables, namely amaranthus, basella and coriander. The study comprises seven treatments: sole maize, sole amaranthus,

sole basella, sole coriander, maize + amaranthus (1:2), maize + basella (1:2) and maize + coriander (1:2), laid out in a Randomized Block Design (RBD) with five replications. The experiment aims to assess the effects of these cropping systems on the herbage yield of leafy vegetables, maize grain yield, system productivity indices, weed suppression and soil health parameters. The findings will help identify a suitable maize-based intercropping system with leafy vegetables for enhancing farmers' income in the Chhotanagpur Plateau Region.

(Kashinath Teli, Saheb Pal, Dipak Kumar Gupta, Himani Priya, Preeti Singh, Pavithra K N and Somashekhar V G)



Fig. 17 Layout preparation for sowing of kharif maize and leafy vegetables

Resource Conservation Technologies for Enhancing Wheat Productivity in the Chhotanagpur Plateau Region

During *rabi* 2025-26, a research trial was conducted for optimizing resource conservation technologies in wheat cv. HD 2967. The study comprises of two main plot treatments *i.e.*, Plain bed and FIRB (Furrow Irrigated Raised Bed); two sub-plot



Fig. 18 Field view showing crop performance, harvesting and recording of observations for wheat

treatments *i.e.*, No mulch and Cereal Straw mulch @ 5 t/ha; five sub-subplot treatments *i.e.,* Control, Multi-micronutrient spray at tillering stage (30 DAS), Multi-micronutrient spray at jointing/stem elongation stage (60 DAS), Multi-micronutrient spray at flowering stage (90 DAS) and Multi-micronutrient spray at tillering, jointing and flowering stage (30, 60 and 90 DAS) laid in split-split design with three replications. The impact of these treatments on growth, yield and resource use efficiency of wheat will be analysed to optimize RCTs for improved wheat production.

(Kashinath Teli)

Optimizing Spacing and Sowing Time for Higher Productivity of Summer Mungbean



Fig. 19 Field view showing crop performance of summer mungbean

During Summer 2026, sowing time and spacing were optimized for mungbean cv. Virat under the Chhotanagpur Plateau region. Among Four sowing dates (10 March, 20 March, 30 March, and 10 April) and two spacings (25 × 10 cm and 30 × 10 cm), 20 March sowing with 30 × 10 cm spacing recorded the best growth and yield attributes, producing the highest plant height (38.06 cm), leaf area (849.30 cm^2 $plant^{-1}$), number of leaves (27.05 $plant^{-1}$), branches (14.42 $plant^{-1}$), pods $plant^{-1}$ (106.18), pod length (7.27 cm), seeds pod^{-1} (11.32) and test weight (3.74 g), resulting in the highest pod yield (1590.98 kg ha^{-1}) and seed yield (837.66 kg ha^{-1}). The next best treatment was 20 March sowing at 25 × 10 cm spacing, while delayed sowing on 10 April markedly reduced crop performance.

(Kashinath Teli)

Assessment of Morphometric, Reproductive, and Carcass Traits of Local Goats of Jharkhand



Fig. 20 Recording of Body Weight and Morphometric Measurements in Local Goats

Approximately 500 local goats from two blocks of Hazaribagh district were characterized for morphometric, reproductive and production traits, revealing considerable variability. The average adult body weight ranged from 16.0 to 21.2 kg in males and 15.66 to 19.96 kg in females. In male goats (bucks), the body length, height at withers, chest girth, and paunch girth ranged from 43.25-50.23 cm, 37.75-51.95 cm, 51.00-53.25 cm, and 56.25-59.86 cm, respectively. The corresponding measurements in female goats (does) ranged from 51.46-56.51 cm, 52.02-57.13 cm, 55.62-62.27 cm, and 63.92-69.72 cm, respectively. Assessment of reproductive performance indicated that the age at first oestrus in doelings ranged from 6.83 to 7.43 months, while the age at first mating in bucklings ranged from 6.75 to 7.00 months. The service

period varied between 2.33 and 3.12 months, and the average litter size ranged from 1.42 to 2.17 kids. Carcass evaluation showed that the preferred slaughter age for non-castrated male goats was 10-12 months, with a live body weight of 12-15 kg. Market analysis revealed a higher economic value for male goats, with chevon prices ranging from Rs. 350-380 per kg, compared to Rs. 250-270 per kg for female goats. Based on coat colour and morphometric characteristics, five distinct local goat strains were identified. Among these, the brown-coloured strain exhibited the highest body weight and superior morphometric measurements, followed by the completely black-coloured strain.

Seed Production Unit: Advancing Quality Seed Production at ICAR-IARI, Jharkhand



Fig. 21 Field view of seed production plots

During Kharif 2025-26, the Seed Production Unit produced 4,830 kg of Truthfully Labelled (TL) seed over 3.60 ha, comprising paddy MTU 1010 (4,100 kg), IR 64 (650 kg) and pigeonpea Pusa 151 (80 kg). For Kharif 2026–27, the programme has been expanded to about 9.5 ha, covering CR Dhan 320 paddy (3.0 ha), Pusa 151 pigeonpea (5.0 ha) and dhaincha (1.5 ha) for green manure seed production, strengthening quality seed availability, seed security, sustainable soil health and agricultural productivity in Jharkhand.

ACADEMICS AND EDUCATION

The academic environment at ICAR-IARI, Jharkhand continued to promote quality education, experiential learning, and holistic development of students. During the reporting period, various academic, practical, and student-oriented activities were organized to strengthen learning and encourage interaction among students.

Educational tour cum exposure visits of B.Sc. (Ag.) students

An educational tour cum exposure visit was organized on 28-29 May 2026 for third-year B.Sc. (Agriculture) students under the guidance of Dr. Ranjit Singh and Dr. Asha Kumari to enhance practical learning and industry exposure. The tour focused on protected cultivation, secondary agriculture, post-harvest management and value addition of fruits and vegetables, hi-tech horticulture, and food safety and quality standards followed in agro-industries. Students visited ICAR-National Research Centre on Litchi, Muzaffarpur, Radha Krishna Food Impex Pvt. Ltd., Muzaffarpur, ICAR-IARI Regional Station, Pusa, and Dr. Rajendra Prasad Central Agricultural University (RPCAU), Pusa, Samastipur, Bihar.



Fig. 22 Glimpses of B.Sc. (Ag.) students educational tour cum exposure visits

Students' Placement and Higher Education Achievements

Final-year B.Sc. (Agriculture) students of ICAR-IARI, Jharkhand achieved notable milestones in higher education and career placements during the quarter.

Name	Details of Achievement	Picture
Mr. Ashish Behera	Secured admission to the PGDM in Agri-Business Management (PGDM-ABM) programme at MANAGE, Hyderabad	
Ms. K. Priyanka	Selected by PRADAN (Professional Assistance for Development Action)	
Mr. Saqib Alam	Recruited by Shakti Biotech Pvt. Ltd. as a Marketing Executive	

Mr. Arun Yadav	Recruited by Shakti Biotech Pvt. Ltd. as a Marketing Executive	
Mr. Kumar Vishal	Selected by DS Group, Greater Noida, as a Management Trainee	

IARI Best Student Awards for Academic Excellence

Students of ICAR-IARI Jharkhand received prestigious IARI Best Student Awards for excellence in academics, sports and co-curricular activities. Mr. Rohit Kumar received the *IARI Academic Distinction Award*, Ms. Athira A. K. the *IARI Outstanding Sports Achiever Award*, and Ms. K. Priyanka the *IARI Cultural/Literary Ambassador Award*. The awards were conferred online in the presence of the Director, Dean and Associate Deans of IARI, recognizing students' excellence and all-round development.



Fig. 23 B.Sc. (Agriculture) students virtually receiving the IARI Best Student Awards

Recognition of Outstanding Students (28 June 2026)

On the occasion of the 12th Foundation Day of ICAR-IARI Jharkhand Hub, meritorious students were recognized for their excellence in academics, extracurricular activities, and leadership. The awardees included Piyush Gartia (First Year), Priya Saini (Second Year), Kanishka Gupta (Third Year), and Harsh Kumar Singh (Fourth Year).



Fig. 24 IARI Best Student Award B.Sc. (Agriculture) recipients recognized for academic excellence students

Celebration of Agaaz 3.0: Freshers' Welcome Ceremony for the 2025-26 Batch

The B.Sc. (Agriculture) students of IARI Jharkhand organized a Freshers' Welcome Ceremony Agaaz 3.0, on 1 April 2026 by B.Sc. (Agriculture) students to welcome the newly admitted 2025-26 batch. The programme provided a platform for interaction between senior and junior students and helped foster a sense of belonging, teamwork, and institutional camaraderie.



Fig. 25 Glimpse of Agaaz 3.0: Freshers' Welcome

Farewell to the Graduating Batch B.Sc. (Agriculture) (Hons.)

The final-year B.Sc. (Agriculture) (Hons.) batch comprising 54 students successfully completed their degree programme on 24 June 2026. A farewell programme (*Pratham Samabartanam*) was organized on 25 June 2026, during which the Director and the Joint Director (Research) addressed the graduating students, congratulated them on their achievements, and encouraged them in their future academic and professional pursuits. Degree Completion Certificates and commemorative mementos were presented to all graduating students. A cultural programme was also organised by junior batches for this occasion (*AGRICOS 22-26*) on 29th June 2026.



Fig. 26 Glimpse of Farewell for Graduating Batch

National-Level Recognition in Viksit Bharat Agri Hackathon

Mr. Saswat Sundar Rath, a second-year B.Sc. (Agriculture) student, was selected to pitch his innovative idea at the national-level Viksit Bharat Agri Hackathon organized by the Indian Council of Agricultural Research (ICAR) on 8 April 2026. His concept, "*Vadraa: AI-powered Agricultural Execution & Open Data Platform*," showcased the potential of artificial intelligence and open-data technologies in advancing precision agriculture and digital farming. His idea was also shortlisted by NIAM, Jaipur, and a-idea by NAARM, Hyderabad.





EXTENSION AND OUTREACH ACTIVITIES

Intensive Campaign on Balanced Use of Fertilizers under *Mera Gaon Mera Gaurav*

ICAR-IARI Jharkhand conducted awareness programmes and village visits during May 2026 across Hazaribagh District under the *Mera Gaon Mera Gaurav* initiative as part of ICAR's Intensive Campaign on Balanced Use of Fertilizers. Five multidisciplinary teams of scientists visited 25 villages and sensitized farmers on balanced fertilization, integrated nutrient management, soil test-based fertilizer application, organic amendments, and bio-fertilizers. Farmers were encouraged to reduce indiscriminate use of chemical fertilizers and adopt sustainable practices such as organic farming, natural farming, precision agriculture, and the use of organic manure, vermicompost, compost, green manure, and bio-fertilizers. The programme emphasized improving soil health, fertilizer-use efficiency, crop productivity, and environmental sustainability. The campaign was coordinated by Nodal Officer Dr. B. N. Mandal under the guidance of Campus-in-Charge Dr. Sanat Kumar Mahanta and Director Dr. Ch. Srinivasa Rao.



Fig. 27 Glimpses of Campaign on Balanced Use of Fertilizers

Awareness programme on Khet Bachao Abhiyan

ICAR-IARI Jharkhand organized awareness programmes and village visits across Hazaribagh District from 1-30 June 2026 under the *Khet Bachao Abhiyan*. Five multidisciplinary teams sensitized farmers on balanced fertilization, integrated nutrient management, soil test-based fertilizer application, organic amendments, and bio-fertilizers. Farmers were encouraged to reduce excessive use of chemical fertilizers and adopt sustainable practices such as organic farming, natural farming, precision agriculture, and the use of organic manure, vermicompost, compost, green manure, liquid fertilizers, and bio-fertilizers. The campaign emphasized improved soil health, fertilizer efficiency, sustainable crop production, and environmental protection. The programme was coordinated by Dr. B. N. Mandal (Nodal Officer) under the guidance of Dr. Sanat Kumar Mahanta (Campus-in-Charge) and Dr. Ch. Srinivasa Rao (Director).



Fig. 28 Glimpses of Awareness programme on Khet Bachao Abhiyan

SCSP Activities of IARI Jharkhand

Input distribution under SCSP

To enhance the livelihoods and improve the socio-economic status of Scheduled Caste farming families through sustainable agricultural practices, quality agricultural inputs were provided to promote crop diversification, increase farm productivity, and strengthen household nutritional security. Under this initiative, 4.50 quintals of maize seed, 2.00 quintals of moong seed, and 350 vegetable kits were distributed to 350 beneficiary farmers, comprising 70 male and 280 female farmers, in the Badkagaon and Barhi blocks of Hazaribagh district during April–June 2026. The distribution of these inputs is expected to encourage the adoption of improved crop production technologies, enhance crop yields, generate additional farm income, and create sustainable livelihood opportunities for the beneficiary farming households.



Fig. 29 Glimpses of Input distribution to farmers under SCSP

Scientific Goat Farming Training under SCSP- A Post-Training Assessment

A training programme on "Scientific Goat Farming" was conducted to enhance the knowledge and skills of rural livestock farmers on improved goat farming practices under SCSP. A post-training assessment of 30 participating goat farmers indicated that 86.67% of the respondents depended on farming as their primary occupation, while 80% were small and marginal farmers owning less than one acre of land. The assessment revealed that 100% of the farmers practiced grazing-based feeding, 86.67% supplemented

goats with concentrate feed, and 56.67% used mineral mixtures. Disease severity (80%) along with high incidence of diseases (73.33%), and limited access to veterinary services (53.33%) emerged as the major constraints affecting goat production. Farmers expressed a strong demand for further technical guidance, with 90% identifying scientific feeding as the highest training priority, followed by awareness of government support schemes (86.66%), disease management (80%), and improved breeds and scientific goat farming (80%). The findings provide valuable insights for designing need-based extension programmes and strengthening goat-based livelihood interventions in Jharkhand.



Fig. 30 Glimpses of Scientific Goat Farming Training Assessment

(Pavithra, K.N., Shilpi Kerketta and Krishna Prakash)

SPECIAL EVENTS

Samuhik Charcha on Climate-Resilient Agriculture Held under Mission Karmayogi – SADHANA Saptah

As part of Mission Karmayogi- SADHANA Saptah (2-8 April 2026), a Samuhik Charcha on the theme "Climate-Resilient Agriculture" was organized at ICAR- IARI, Jharkhand on 8 April 2026. The programme aimed to promote knowledge sharing and collective deliberation on sustainable agricultural practices for enhancing climate resilience. The discussion focused on climate-smart technologies, including precision irrigation, renewable energy, AI-driven nutrient management, carbon footprint estimation, carbon credit generation, and Integrated Farming Systems for reducing greenhouse gas emissions while improving agricultural sustainability. Technical presentations were delivered by Dr. Prabhat Guru, Senior Scientist (FMPE) on carbon footprint estimation in agriculture, Dr. V.B. S. Chauhan, Senior Scientist (Vegetable Science) on tuber crops as climate-resilient crops, and Dr. Nirmal, Senior Scientist (Agroforestry) on the role of Integrated Farming Systems in sustainable agriculture. Dr. S. K. Mahanta, Campus In-charge & Principal Scientist (Animal Nutrition) highlighted greenhouse gas emissions from the livestock sector. The discussion was further enriched by the inputs of Dr. Dipak Kumar Gupta, Dr. Kashinath G. Teli, Dr. Akash A., Dr. Santosh Kumar, Dr. Ranjit Singh, and Dr. Pavithra K.N. The session was moderated by Dr. Vishal Nath, Academic Coordinator & Principal Scientist (Horticulture). The programme concluded with an interactive discussion involving scientists, technical, administrative, and supporting staff, reinforcing the importance of interdisciplinary approaches for climate-resilient agriculture. The entire group discussion was recorded and uploaded to the Mission Karmayogi Portal as a knowledge resource for stakeholders and future reference.



Fig. 31 Glimpses of Samuhik Charcha on Climate-Resilient Agriculture

Farmers Participate in Live Telecast of PM-KISAN 23rd Installment at ICAR-IARI, Jharkhand

ICAR-IARI, Jharkhand, organized a special programme on 20th June 2026 for the live telecast of the Hon'ble Prime Minister's address during the release of the 23rd installment of PM-KISAN Samman Nidhi. Around 75 farmers from nearby



Fig. 32 Glimpses of 23rd installment of PM-KISAN Samman Nidhi

villages participated in the programme and learned about government initiatives for farmers' welfare. Scientists conducted interactive sessions on modern crop production, high-yielding varieties, natural farming, crop diversification, water conservation, and climate-resilient agriculture. The programme strengthened the institute's efforts towards technology dissemination, farmer capacity building, and promotion of sustainable agricultural practices for enhanced productivity and income.

World Environment Day celebration with Plantation Drive



Fig. 33 Glimpses of World Environment Day celebration

The ICAR-Indian Agricultural Research Institute (IARI), Jharkhand, observed World Environment Day 2026 with a special program organized by its National Service Scheme (NSS) unit. The event commenced with a plantation drive along the boundary of the Bahadur Dam within the institute's farm area. This drive symbolizes the institute's ongoing commitment to environmental conservation, ecological balance, and sustainable horticulture. The event witnessed active participation from the entire community of IARI Jharkhand, with all students, scientific, administrative, and technical staff members present to plant saplings and pledge their support toward a greener future.

Cleanliness Drive (Swatchta hi Seva) Conducted on 5 June, 2026 at ICAR-IARI, Jharkhand



Fig. 34 Glimpses of Cleanliness Drive at IARI Jharkhand

As part of the National Service Scheme (NSS) activities and in observance of World Environment Day, a Cleanliness Drive was organized on 5 June 2026 at ICAR-IARI, Jharkhand by the students of B.Sc. (Agriculture) 1st Year. The programme aimed to create awareness among students about environmental conservation, campus cleanliness, and the harmful effects of invasive weeds. During the drive, under the guidance of Dr. Vandana and Dr. Asha Kumari the students actively participated in the eradication of Parthenium (*Parthenium hysterophorus*) from various areas of the campus. The drive witnessed enthusiastic participation from all students, who worked collectively to ensure the successful removal of the weed from the designated areas. The programme reinforced the values of community service, environmental responsibility, and teamwork among the participants.

Blood Donation Camp organized at IARI Jharkhand



Fig. 35 Glimpses of Blood Donation Camp

On the occasion of World Blood Donor Day, the National Service Scheme (NSS) Unit of ICAR-IARI, Jharkhand, in collaboration with Aarogyam Hospital, Hazaribagh, organized a Voluntary Blood Donation Camp at the institute campus. The theme was *'Give Blood, Give Hope: Together We Save Lives*.' The camp witnessed enthusiastic participation from scientists, officers, staff members, students, and contractual employees of the institute. A total of 60 units of blood were voluntarily donated, demonstrating the institute community's commitment to humanitarian service and social responsibility.

Health Check-up Camp Organized on World Health Day, 2026



Fig. 36 Glimpses of Health Check-up Camp

Marking World Health Day (7 April, 2026), the National Service Scheme (NSS) Unit of ICAR-Indian Agricultural Research Institute (IARI), Jharkhand organized a Free Health Check-up Camp at the institute campus in collaboration with Loknayak Jay Prakash Eye Hospital, Hazaribagh. The initiative aimed to promote preventive healthcare, create awareness

on healthy lifestyles, and provide accessible medical services to students, scientists and institute staff. A team of experienced medical professionals conducted comprehensive health examinations, including general health screening, blood pressure and blood sugar assessment, eye examination, and medical consultation, while offering guidance on disease prevention, balanced nutrition, and healthy living practices. The camp witnessed enthusiastic participation from students, employees, and local residents, reflecting the commitment to community welfare and public health.

International Day of Yoga celebration at IARI Jharkhand

The institute celebrated the 12th International Day of Yoga with a campus-wide yoga session. The theme was '*Yoga for One Earth, One Health*.' Faculty members, students, and staff participated enthusiastically, reaffirming the importance of yoga in promoting physical fitness, mental well-being, and a healthy lifestyle.



Fig. 37 Glimpses of International Day of Yoga celebration

Tarang: A Vibrant Cultural Evening at ICAR-IARI, Jharkhand

As part of the 12th Foundation Day celebrations of ICAR-IARI, Jharkhand, a colourful cultural programme, 'Tarang', was held on 27 June 2026. The evening featured classical and folk dances, patriotic and devotional songs, instrumental music, skits, and group performances by students, children of faculty members, and staff. The programme was graced by the Director, ICAR-IARI, Jharkhand, along with Heads of Divisions, scientists, officers, staff, students, and invited guests. The performances reflected India's rich cultural diversity, creativity, and team spirit. The event fostered camaraderie, institutional pride, and a strong sense of belonging among the ICAR-IARI family. Appreciation certificates were presented to participants in recognition of their enthusiastic contributions, making "Tarang" a memorable highlight of the Foundation Day celebrations.



Fig. 38 Glimpses of Cultural Evening at ICAR-IARI, Jharkhand

Institute Research Council Meeting Held at IARI-Jharkhand

The Institute Research Council (IRC) Meeting of ICAR-IARI, Jharkhand, was held on 25-26 June 2026 under the chairmanship of Dr. Ch. Srinivasa Rao, Director, ICAR-IARI, Jharkhand, in the presence of Dr. Viswanathan Chinnusamy, Joint Director (Research), ICAR-IARI, New Delhi. The meeting commenced with the felicitation of the Chairman, the Joint Director (Research), and the newly joined scientists, followed by the welcome address delivered by Dr. S. K. Mahanta, In-charge, PME Cell. The meeting reviewed 9 new project proposals and 30 ongoing institutional research projects. The meeting emphasized the need to strengthen multidisciplinary, outcome-oriented, and location-specific research addressing the priority needs of Jharkhand and Eastern India. Scientists were encouraged to actively pursue externally funded projects, publish quality research, and develop technologies with tangible field impact. The House also highlighted the importance of promoting research on indigenous resources such as Mahua, Sal, and Palash, strengthening inter-institutional collaborations, enhancing seed production and technology dissemination, and integrating research, teaching, and extension activities for greater benefit to farmers and the agricultural sector.



Fig. 39 Glimpses of IRC Meeting

CAPACITY BUILDING PROGRAMMES/TRAININGS ORGANIZED

IARI-Jharkhand Organized 5-Day Farmers' Training Programme on Natural and Integrated Farming

ICAR-Indian Agricultural Research Institute (IARI), Jharkhand, Gauria Karma, organized a five-day farmers' training programme on "*Techniques and Practices of Natural Farming and Integrated Farming System*" from 30 March to 3 April 2026. The programme was conducted under the coordination of Dr. Dipak Kumar Gupta and sponsored by ATMA, Pakur, with the objective of strengthening farmers' knowledge and practical skills in sustainable agricultural production. A total of 20 progressive farmers participated in the training programme. The intensive curriculum included 15 expert lectures and five hands-on practical sessions, providing participants with both theoretical knowledge and practical exposure to various

aspects of natural farming and integrated farming systems. The training focused on promoting sustainable and resource-efficient agricultural practices that can improve farm productivity while maintaining soil health and ecological balance. The practical sessions enabled farmers to gain first-hand experience in the application of recommended techniques and practices.





Fig. 40 Glimpses of Training programme on Natural and Integrated Farming

STRENGTHENING RESEARCH INFRASTRUCTURE

Strengthening of Laboratory Infrastructure at ICAR-IARI Jharkhand

Laboratory facilities at ICAR-IARI Jharkhand were strengthened to provide improved infrastructure for research, teaching, and students' practical activities. The Soil Science, Crop Science, Horticulture, Animal Nutrition, and Microbiology laboratories were upgraded with the installation of reagent racks, wall-mounted chemical storage racks, display almirahs, culture racks, and another essential laboratory furniture. These facilities provide systematic, safe storage of chemicals, reagents, cultures, samples, and laboratory materials while enhancing laboratory functionality. In addition, the Farm Laboratory under Animal Nutrition was established and operationalized to facilitate research, sample processing, teaching, and hands-on practical activities. The strengthened infrastructure will provide an improved working environment and support quality research and academic activities at the institute.



Fig. 41 Glimpses of Strengthened laboratory infrastructure IARI Jharkhand

(Ranjit Singh, Priti Tigga, Himani Priya)

Automatic Weather Station Installation at IARI-Jharkhand

Under the institute project "Assessment and mapping of natural resources of IARI-Jharkhand (CRSCIARIJSIL2022009)", the India Meteorological Department (IMD), Ranchi, was approached to install an Automatic Weather Station (AWS) at the IARI-Jharkhand campus. The installation was successfully completed by IMD Ranchi in March 2024. Since then, IARI-Jharkhand has been actively monitoring and accessing the recorded meteorological datasets. A comprehensive summary of the weather data recorded by the AWS during the last three months (May – July 2026) is detailed below:

I. Meteorological Extremes & Summary

- Maximum Temperature: 42.3 °C (Recorded on May 23, 2026)
- Minimum Temperature: 18.2 °C (Recorded on May 1, 2026)
- Peak Single-Day Precipitation: 44.5 mm (Recorded on July 21, 2026)
- Total Cumulative Rainfall: 407.0 mm

II. Monthly Meteorological Matrix

Month	Total Rainfall (mm)	Maximum Temperature Range (°C)	Minimum Temperature Range (°C)
May 2026	79.5	28.1 – 42.3	18.2 – 28.8
June 2026	75.5	32.2 – 39.4	23.2 – 34.4
July 2026	252.0	28.0 – 34.7	23.6 – 28.4

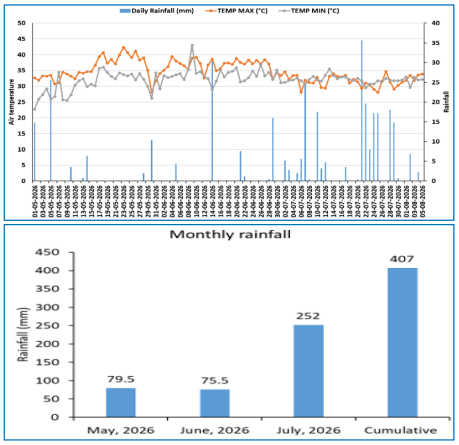


Fig. 42 Temporal variation in daily maximum and minimum air temperature and rainfall at IARI-Jharkhand

(Dipak Kumar Gupta)

Establishment of Engineering Workshop unit at ICAR-IARI, Jharkhand

A dedicated Engineering Workshop has been established at ICAR-Indian Agricultural Research Institute (IARI), Jharkhand to support teaching, research, training, and development in agricultural engineering and farm mechanization. The workshop is equipped with essential facilities for cutting, grinding, drilling, welding, and molding, enabling students, scientists, and technical personnel to gain practical exposure to workshop practices, machine components, fabrication techniques, and agricultural machinery development. The facility will support hands-on teaching and skill development, as well as the design, fabrication, repair, and modification of farm implements and agricultural machinery. It will also facilitate student practical classes, research experiments, prototype development, technology demonstrations, and training programmes related to farm machinery and power. The establishment of this Engineering Workshop is an important step towards strengthening practical education, innovation, indigenous farm machinery development, and region-specific mechanization technologies for the farming conditions of Jharkhand and Eastern India.



Fig. 43 Established workshop section at IARI-Jharkhand

(Prabhat Kumar Guru, Mukesh Kumar Tiwari, Ranjit Singh)

AWARDS AND RECOGNITIONS

Awards Received

Dr Himani Priya Awarded Prestigious Crawford Fund Fellowship Award from Crawford Fund, Australia

Dr Himani Priya, Scientist, ICAR-IARI, was awarded the prestigious Crawford Fund Fellowship Award and visited CSIRO, Waite Campus, Urbrrae, South Australia, as a Visiting Scientist for three months from 5th April 2026 to 5th july 2026. During the fellowship, she successfully completed advanced training on "*High-throughput molecular and bioinformatics tools for understanding soil and plant microbiomes for sustainable agricultural production*." The programme provided hands-on exposure to cutting-edge molecular, sequencing and bioinformatics approaches for soil and plant microbiome research and strengthened opportunities for India-Australia scientific collaboration.





Dr. Krishna Prakash, received Best Overall Scientists Award at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand



Dr. Sougata Bhattacharjee received Best Scientists Award (Men) at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand



Dr. Nuzaiba P.M. received Best Scientist Award (Women) at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand



Dr. Kashinath G. Teli, received Best Teacher Award at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand



Shri Subodh Neeraj, received Best Administrative staff Award at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand



Shri Vikash Kumar, received Best Technical Staff Award at Institute during 12th Foundation Day of ICAR-IARI, Jharkhand

Patent Granted

- **Patent: Automated Crop Management System (Patent No. 584029) –** An intelligent decision-support system integrating automation for efficient crop monitoring and precision crop management.
- **Patent: System for Climate-Based Agricultural Advisories and a Method Thereof (Patent No. 586215) –** A technology for generating location-specific, climate-based agricultural advisories to support timely farm decision-making and climate resilience.
- **Registered Design: Handheld Smart Support and Monitoring Device for Single Cotyledon Grafting in Cucurbits (Design Registration No. 498415-001) –** A novel ergonomic device developed to improve the precision and efficiency of single cotyledon grafting in cucurbit crops.



पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India
डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

डिजाइन सं. / Design No. : 498415-001
तारीख / Date : 13/04/2026
परस्परिकता तारीख / Reciprocity Date* :
देश / Country :

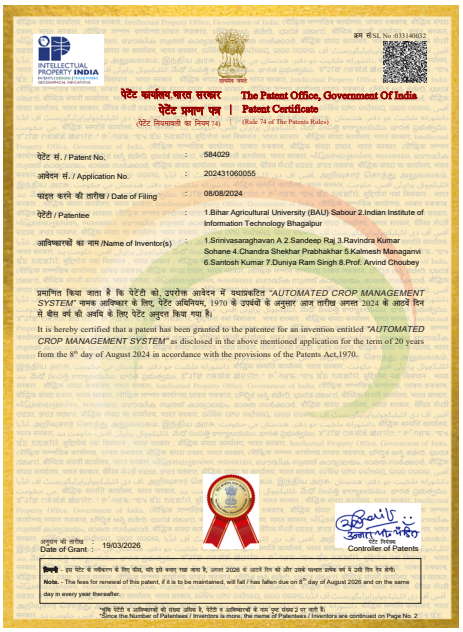
प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो HANDHELD SMART SUPPORT AND MONITORING DEVICE FOR SINGLE COTYLEDON GRAFTING IN CUCURBITS से संबंधित है, का पंजीकरण, बेनी 10-05 में 1.Dr. Kunal Anand 2. Dr. Ajay Bhardwaj 3.Dr. R.B.Verma 4.Dr. Srinivasaraghavan A 5.Dr. Paramveer Singh 6.Dr. Sachin AJ 7.Dr. Surabhi Sangam 8.Sanjana kumari 9.Dr. Amrita Kumari 10.Dr. Vishal Tripathi के नाम में उपयुक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 10-05 in respect of the application of such design to HANDHELD SMART SUPPORT AND MONITORING DEVICE FOR SINGLE COTYLEDON GRAFTING IN CUCURBITS in the name of 1.Dr. Kunal Anand 2. Dr. Ajay Bhardwaj 3.Dr. R.B.Verma 4.Dr. Srinivasaraghavan A 5.Dr. Paramveer Singh 6.Dr. Sachin AJ 7.Dr. Surabhi Sangam 8.Sanjana kumari 9.Dr. Amrita Kumari 10.Dr. Vishal Tripathi.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्यधीन प्रावधानों के अनुसरण में।
In pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

जारी करने की तिथि Date of Issue : 02/07/2026

महानियंत्रक पेटेंट, डिजाइन और व्यापार चिह्न
Controller General of Patents, Designs and Trade Marks



पेटेंट कार्यालय,भारत सरकार The Patent Office, Government Of India
पेटेंट प्रमाण पत्र | Patent Certificate

पेटेंट सं. / Patent No. : 584029
आवेदन सं. / Application No. : 202431060055
फाइल करने की तारीख / Date of Filing : 08/08/2024
पेटेंटी / Patentee : 1.Bihar Agricultural University (BAU) Sabour 2.Indian Institute of Information Technology Bhagalpur
आविष्कारकों का नाम /Name of Inventor(s) : 1.Srinivasaraghavan A 2.Sandeep Raj 3.Ravindra Kumar Sohane 4.Chandra Shekhar Prabhakhar 5.Kalmesh Managanvi 6.Santosh Kumar 7.Duniya Ram Singh 8.Prof. Arvind Choubey

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित "AUTOMATED CROP MANAGEMENT SYSTEM" नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2024 से आठवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "AUTOMATED CROP MANAGEMENT SYSTEM" as disclosed in the above mentioned application for the term of 20 years from the 8th day of August 2024 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख Date of Grant : 19/03/2026

Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए चौथे, सातवें तथा दसवें वर्ष और उसके पश्चात प्रत्येक वर्ष के उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 8th day of August 2026 and on the same day in every year thereafter.



पेटेंट कार्यालय,भारत सरकार The Patent Office, Government Of India
पेटेंट प्रमाण पत्र | Patent Certificate

पेटेंट सं. / Patent No. : 586215
आवेदन सं. / Application No. : 202431066259
फाइल करने की तारीख / Date of Filing : 02/09/2024
पेटेंटी / Patentee : Bihar Agricultural University (BAU) Sabour
आविष्कारकों का नाम /Name of Inventor(s) : 1.Santosh Kumar 2.Srinivasaraghavan A 3.Aditya Sinha 4.Mitesh Vishwas Sawant 5.Saurabh Kumar Jha 6.Tarakesh Lakshman Botta 7.Sarim Raj Shakya 8.Sanjay Kumar

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित "SYSTEM FOR CLIMATE-BASED AGRICULTURAL ADVISORIES AND A METHOD THEREOF" नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2024 से दूसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "SYSTEM FOR CLIMATE-BASED AGRICULTURAL ADVISORIES AND A METHOD THEREOF" as disclosed in the above mentioned application for the term of 20 years from the 2nd day of September 2024 in accordance with the provisions of the Patents Act,1970.

अनुदान की तारीख Date of Grant : 01/04/2026

Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए चौथे, सातवें तथा दसवें वर्ष और उसके पश्चात प्रत्येक वर्ष के उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 2nd day of September 2026 and on the same day in every year thereafter.

Dr. Saheb Pal received Best Oral Presentation Award During the 4th Indian Horticulture Summit cum International Conference; Held During 28-30/01/2026 at RLBCAU, Jhansi, Uttar Pradesh.



4th Indian Horticulture Summit-cum-International Conference-2026
Harnessing Indigenous and Underutilized Horticultural Crops for Sustainable Development, Health and Economic Resilience
Organized by
Society for Horticultural Research and Development, Uttar Pradesh
In collaboration with
RLBCAU, Jhansi and Division of Vegetable Science, ICAR-IARI, New Delhi
at
Rani Lakshmi Bai Central Agricultural University (RLBCAU), Jhansi, Uttar Pradesh

Best Oral Presentation Award

This is to certify that the paper entitled " Employing resistant citrullus species productivity of watermelon. (IHSIT-B/OP-803) " authored by Saheb Pal et al., has been adjudged as First Best Oral in the technical session VIII. Diseases and pest management of horticultural crops. during 4th Indian Horticulture Summit-cum-International Conference-2026.

(Dr Som Dutt)
Secretary, SHRD

(Dr Balraj Singh)
President, SHRD

4th IHS, SHRD,
28-30 JANUARY 2026

Recognitions as Major Academic, professional and Institutional Engagements

S. No.	Name	Activity / Event	Role / Contribution	Topic / Details	Date/Venue / Organization
1	Dr. Vishal Nath	National Conference	Co-Chair	Co-chaired a session on "*Strategic Framework for Quality Seeds and Planting Material in Horticulture for Amrit Kaal*."	28 May 2026 MPHU, Karnal
2	Dr. Vishal Nath	National Conference	Panellist	Participated as a panellist in the Open Session for "*Knowledge Sharing on Technology-Led Development*".	30 May 2026 MPHU, Karnal
3	Dr. Vishal Nath	INM Training Programme	Expert Lecture	Delivered an expert lecture on "*Essential Nutrient Deficiency Symptoms in Fruits and Their Impact on Production*."	15 June 2026 KVK, Ramgarh
4	Dr. Vishal Nath	National Conference	Keynote Address	Delivered a keynote address on "*Rootstocks for Fruit Production – A Perspective*" during the National Conference on "Strategic Paradigm of Quality Seed and Planting Material for Horticultural Crops in Amrit Kaal."	28-31 May 2026 MPHU, Karnal, in collaboration with CHAI, New Delhi
5	Dr. Saheb Pal	B.Ed. Final Viva-Voce Examination	External Examiner	Served as an external examiner for conducting the final viva-voce examinations of B.Ed. (Work Education-Horticulture) students.	9 June 2026 Department of Education, Vinaya Bhavana, Visva-Bharati, Shantiniketan
7.	Dr. Anima Mahto	Krishi Vyapar Mela	Distinguished Speaker / Resource Person	Invited as a Distinguished Speaker to deliver expert views on the status of pulse production in Jharkhand during the technical session *"Possibilities and Perspective of Jharkhand to Become a Leader in Production of Millets, Pulses and Oilseeds."*	16-18 June 2026, Morabadi, Ranchi
8.	Dr. Asha Kumari	Krishi Vyapar Mela	Distinguished Speaker / Resource Person	Delivered expert views on "Road Map for Jharkhand to Become a Leader in Millet Production (2026–2035)" in Jharkhand during the technical session "Possibilities and Perspective of Jharkhand to Become a Leader in Production of Millets, Pulses and Oilseeds."	16-18 June 2026, Morabadi, Ranchi
9.	Dr. Sougata Bhattacharjee	Student Development Programme	Organizer / Coordinator	Organized a Bootcamp and Pre-Placement Seminar for UG students through online mode, in collaboration with EduDAG and ICAR-IARI, New Delhi	29 May & 5 June 2026 Online, in collaboration with ICAR-IARI, New Delhi

VISITS OF NATIONAL AND INTERNATIONAL DIGNITARIES TO IARI, JHARKHAND

Visit of the Hon'ble Secretary, Department of Agriculture, Animal Husbandry & Co-operative, Government of Jharkhand

A meeting was held at IARI Jharkhand on 27th June 2026 during the visit of the Hon'ble Secretary, who emphasized research addressing Jharkhand's agricultural challenges, including seed self-sufficiency, soil health, irrigation and efficient land use. He also proposed a Centre of Excellence and opportunities for local students. Director IARI, Jharkhand, Dr. Ch. Sriinivasa Rao highlighted IARI Jharkhand's farmer-focused research and training initiatives. The meeting concluded with a



Fig. 44 Glimpses of Visit of the Hon'ble Secretary and interaction with IARI J Staff

shared commitment to strengthen collaboration between the institute and the Government of Jharkhand to promote sustainable, location-specific agricultural development and enhance farmers' livelihoods.

Visit of Joint Delegation from IARI New Delhi, CRIA and Cascade Climate to IARI-Jharkhand

A joint delegation from ICAR- IARI, New Delhi, the Carbon Removal India Alliance (CRIA), India, and Cascade Climate, Somerville, Massachusetts, USA, visited IARI-Jharkhand from 29th June to 1st July 2026. The visit focused on reviewing the ongoing CRIA project and assessing institutional facilities and the proposed site for the Enhanced Rock Weathering (ERW) experiment by Cascade Climate. The visit also explored opportunities for future international collaborations in climate-smart and sustainable agricultural research. The delegation comprised Dr. Arti Bhatia, Principal Scientist, IARI-New Delhi and PI, CRIA Project; Ms. Hara Wang, Co-Founder & Chief Programs Officer, Cascade Climate; Ms. Leah Marie Bridle, Operations Manager, Cascade Climate; and Ms. Srishti Singh, Lead (Policy & Research), CRIA.



Fig. 45 Glimpses of visit by A joint delegation from IARI New Delhi, the Carbon Removal India Alliance (CRIA), India, and Cascade Climate, Somerville, Massachusetts, USA

SELECTED PUBLICATIONS

Research articles

Akshay, Sharma, R.M., Singh, N., Sharma, N., Awasthi, O.P., Sethi, S., Rana, V.S., Jha, S.K., Sharma, V.K., Shivran, M., Vittal, H., Ali, A. and Dubey, A.K. 2026. Rootstock-mediated agronomic biofortification of citrus fruits: evidence from mineral nutrient profiling. *Horticulturae* 12(5): 530. https://doi.org/10.3390/horticulturae12050530 (**NAAS: 9.00**)

Das, K., Jaiswal, P. and Priya, H. 2026. Microbial innovations for climate-resilient agriculture: mechanisms, applications, and emerging technologies. *World Journal of Microbiology and Biotechnology* 42: 334. https://doi.org/10.1007/s11274-026-05031-8 (**NAAS: 10.70**)

Nayanika, G., Anima, M., Sougata, B., Koushik, C., Amrita, B., Nimai, Prasad, M. and Somnath, R. 2026. Genetic dissection of germination potential and coleoptile elongation in Aus rice under anaerobic conditions: GWAS and Donor Mining for climate-resilient direct seeded rice. *Journal of Plant Growth Regulation* (**NAAS: 10.40**)

Pandiselvam, R., Mandal, S., Singh, R. and Sahoo, P. K. 2026. Ozone engineering in food processing: a systems-level synthesis for nutritional security and quality preservation. *Journal of Food Measurement and Characterization*, 1-22. (**NASS: 9.6**)

Rajpoot, S. K., Dhakar, M. K., Singh, N., Nath, V., Kumar, C., Choudhary, J. S., Bishi, S. K., Bhavana, P., Kherwar, D., Das, B. and Das, A. 2026. In-situ characterization of wild *Annona squamosa* L. genotypes reveal rich genetic diversity and elite selections for crop improvement and conservation. *Scientific Reports, 16*: 17830. https://doi.org/10.1038/s41598-026-42155-1 (**NAAS: 10.40**)

Shekhar, R., Singh, A. K., Yadav, R. K., Choudhary, H., Asrey, R., Mishra, G. P., Narayanswami, B., Chaukhande, P., Gainiamliu, K. G., Mutthuraju, C., Kumar, R., Pal, S., Shaktawat, C., Singh, N. and Singh, J. 2026. Genetic variability, trait association, and multi-trait selection of new indeterminate tomato genotypes under protected cultivation. *Plants*, 15(11): 1760. (**NAAS: 10.10**)

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