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IARI NEWS

Hon'ble President of India Smt. Droupadi Murmu conferred Bharat Ratna on Prof. MS Swaminathan (posthumously). The award being received by his daughter, Dr Nitya Rao.

News Index

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From Director's Desk

At the outset, we are thrilled to announce the posthumous conferment of the Bharat Ratna to our beloved Prof. M.S. Swaminathan, the Father of the Green Revolution in India, whose tireless efforts transformed Indian agriculture. IARI is committed to realizing his vision of making India a global leader in agriculture, transitioning from "Green to Evergreen Revolution".

In this quarter, our research was focused on identifying donors for stripe rust resistance from derivatives of wild species of *T. militinae*. Also, in maize we have for the first time, characterized the whole-genome of the 'Sikkim Primitive' landrace for its prolificacy. A nutritionally rich yellow-coloured carrot genotype has also been developed. Characterization of

seven chemosensory genes from *M. graminicola* revealed their putative association with nematode host-finding biology.

The Institute celebrated its 62nd Convocation, graced by the presence of Hon'ble President of India, Smt. Droupadi Murmu, as the Chief Guest. A total of 545 students were awarded degrees in the Convocation. During this quarter, from time to time, we also showcased our drone based near real-time crop health monitoring system and pesticide spray system before dignitaries. The Experiential Learning Unit on Drone Robotics and Machine Learning was inaugurated to enhance skill and expertise in this area. A number of capacity building programmes and high-end workshops were organized to strengthen the skills of farmers and students. We introduced open field days for *rabi* crops to facilitate discussions and idea exchange amongst scientists from various disciplines of IARI.

The Pusa *Krishi Mela* was successfully held at Simdega, Jharkhand and attracted a large number of farmers. We are happy that the Institute secured commendable externally funded research grants. I feel pleased to inform that two patents were granted by Govt. of India for the technologies developed at the Institute. We made significant progress by signing several MoUs related to seed production with private partners and agreements for the exchange of education, research and training activities with SAUs. Kisan Goshthis, exhibitions and demonstrations were organised for farmers and farm women.

I am sure that the information included in the newsletter would be useful to the farmers and stakeholders. I wish to congratulate all the scientists and staff of publication unit for bringing out the newsletter in time.

A.K. Singh
Director, ICAR-IARI

Bharat Ratna for Professor M. S. Swaminathan

Indian Council of Agricultural Research along with National Academy of Agricultural Sciences and ICAR-Indian Agricultural Research Institute, New Delhi, hosted a special celebration for the posthumous conferment of the prestigious Bharat Ratna award, the highest civilian award, to Professor M.S. Swaminathan, the eminent agricultural scientist, by the Government of India, on February 09, 2024. Professor M.S. Swaminathan, widely known as the Father of India's Green Revolution, is credited with saving millions of people from starvation through his groundbreaking work on enhancing the productivity of wheat and rice crops during the 1960s and 1970s. His progressive efforts in agricultural innovation revolutionized food production in India, making the nation self-sufficient. Professor Swaminathan also underscored the concept of transforming the "Green Revolution" into an "Evergreen Revolution," emphasizing sustainable agricultural practices that ensure long-term productivity and ecological balance.

During the celebration, the Dr. A.K. Singh, Director, ICAR-IARI and Secretary, NAAS, highlighted Professor M.S. Swaminathan's lifelong dedication and remarkable contributions to agricultural

Felicitation ceremony on posthumous conferment of Bharat Ratna to Professor M.S. Swaminathan

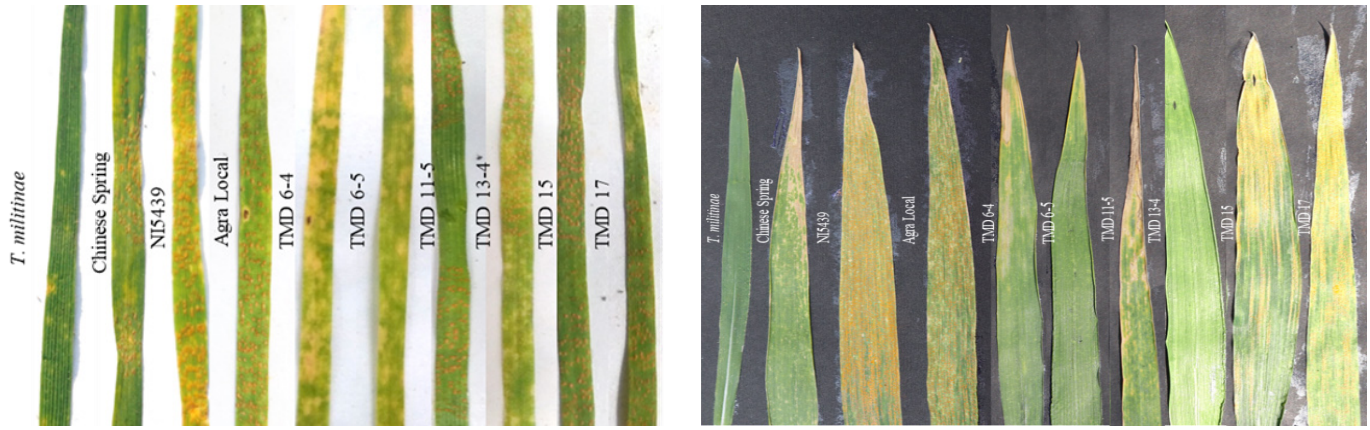
research, sustainable development, and food security. He emphasized that Professor Swaminathan's work exemplifies the transformative power of science which helped in shaping the agricultural landscape for farmers. Dr. Himanshu Pathak, Secretary, DARE, and DG, ICAR and President, NAAS, recollected his fond memories of working with Professor M.S. Swaminathan at ICAR-NRRI, Cuttack and shared the profound impact of Professor's work on the lives of the Indian farmers. The event was graced by the virtual presence of his daughters, Dr. Nithya, Dr. Madhura and Dr. Soumya from MSSRF, Chennai, who deliberated on the reflections of his life.

His efforts continue to guide and inspire future generations in the quest for a food-secure world.

Novel sources of rust resistance in *Triticum militinae* derivatives

Triticum militinae (2n=4X=28, A^tA^tGG) is a wild species of wheat belonging to the secondary gene pool and possesses resistance to many diseases. *T. militinae* derivatives (TMD lines; 21nos.) were developed and evaluated for leaf and stripe rusts at seedling and adult plant stages. Also, the developed lines were screened with markers of known genes from their close relatives *T. timopheevii* and Chinese Spring which were used in their development. Out of 21, ten TMD lines (7-5, 7-6, 9-1, 9-2, 11-5, 11-6, 12-12, 12-4, 12-8, and 15) were identified as source of novel genes for leaf rust resistance at seedling stage, eight (6-4, 6-5, 11-6, 12-4, 12-8, 12-12, 13-7 and 13-9) and three TMD lines (13-1, 13-3 and 13-4) as sources of novel genes for stripe rust resistance at seedling and adult plant stages, respectively. All TMD lines are cytologically stable and can be used in mapping and gene transfer in the future. (*Scientific Reports*, 2024, 14(1): 9408)

(Dr. Vinod and Coworkers, Division of Genetics)



Seedling and adult plant response of TMD lines towards stripe rust race 110S119

Prolific maize landrace 'Sikkim Primitive'- Whole genome-sequence analysis reveals unique genetic architecture

'Sikkim Primitive', a native landrace of North Eastern Himalayas, is characterized by 7-9 ears per plant compared to the usual 1-2 ears in maize. Whole genome resequencing revealed a total of 942,417 SNPs, 24,160 insertions, and 27,600 deletions in 'Sikkim Primitive'. The gene-specific functional mutations were classified as 10,847 missense, 402 non-sense and 8,705 silent mutations. The analysis revealed *Zm00001eb365210* gene encoding glycosyltransferases as the putative candidate underlying QTL (*qProl-SP-8.05*) for prolificacy in this landrace. This is the first report of whole-genome characterization of the 'Sikkim Primitive' landrace unique for its prolificacy (*Plant Cell Reports*, https://doi.org/10.1007/s00299-024-03176-0).

Unique architecture of 'Sikkim Primitive' showing prolific ears

(Dr. F Hossain & Coworkers, Division of Genetics)

Yellow Coloured Temperate Carrot Genotype (KS-17-1)

A promising yellow-coloured carrot genotype was developed through selection at ICAR-IARI Regional Station, Katrain. The genotype has yellow-colored blunt-type roots with an average root weight of 110 g, root length of 22.40 cm, root diameter of 13.80 mm and harvest index of 80.07%. The average root yield under field condition is 29.37 t/ha. For nutritional traits, CUPRAC, FRAP, total carotenoids and β-carotene were recorded as 2.96 µmol trolox/g, 0.95 µmol trolox/g, 0.94 mg/100 g and 1.21 mg/100 g, respectively.

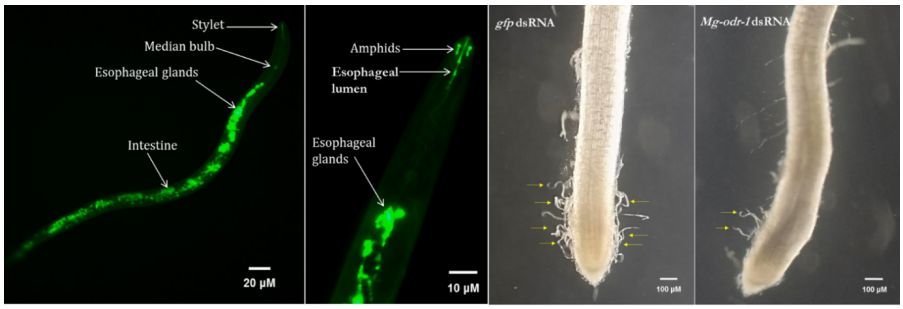
(Dr. Rajkumar and Coworkers, IARI Regional Station Katrain)

Yellow coloured temperate carrot KS-17-1

Characterization of Chemotaxis-related genes from *Meloidogyne graminicola*

Seven chemosensory genes (*Mg-odr-1*, *Mg-odr-3*, *Mg-odr-7*, *Mg-tax-4*, *Mg-tax-4.1*, *Mg-osm-9,* and *Mg-ocr-2*) were characterized from *M. graminicola* that were putatively associated with nematode host-finding biology. All the genes were highly transcribed in the early life stages and RNA interference (RNAi)-induced downregulation of each candidate gene perturbed the normal behavioral phenotypes of *M. graminicola*, as determined by examining the tracking pattern of juveniles on Pluronic gel medium, attraction to and penetration in rice root tip with developmental progression in rice root.

(Dr. T.K. Dutta, Division of Nematology)



Tracking of dsRNAs targeting chemosensory genes in the nematode body

RNAi worms were less successful in locating host roots compared to control worms

RNAi-based functional validation of nematode chemosensory genes

EDUCATION

62nd Convocation, The Graduate School

The 62nd Convocation of The Graduate School, ICAR-IARI, New Delhi was organized on February 09, 2024 in the Bharat Ratna C. Subramaniam Auditorium, NASC Complex, New Delhi. The Hon'ble President of India, Smt. Droupadi Murmu graced the occasion as the Chief Guest and the Union Minister of Agriculture and Farmers Welfare, Shri Arjun Munda presided over the function. It was also attended by the dignitaries from ICAR namely, Dr. Himanshu Pathak, Secretary (DARE) & Director General (ICAR) and Shri. Sanjay Garg, Additional Secretary (DARE) & Secretary (ICAR). On this occasion, the President acknowledged the unparalleled contribution of IARI towards research and development in agriculture and its dissemination

Hon'ble President of India, Smt. Droupadi Murmu at the 62nd Convocation of ICAR-IARI

to the grass root level. She was pleased to note that the Institute has developed over 200 new technologies, more than 100 varieties between 2005 and 2020 and also holds over 100 patents. Shri Arjun Munda released the IARI publications and varieties for the year 2023.

Dr. A.K. Singh, Director of ICAR-IARI, presented the Director's Report and provided comprehensive insights into the Institute's advancements in wheat and Basmati rice varieties. Dr. Anupama Singh, Joint Director (Education) and Dean of ICAR-IARI, New Delhi, presented the Dean's Report.

The Hon'ble President of India awarded IARI merit medals to six M.Sc./M.Tech. and five doctoral students.

A total of 545 students (224 M.Sc., 15 M.Tech. and 306 Ph.D.), including five international students received their Post Graduate and Doctoral degrees in the Convocation.

Drone Technology for Precision Agriculture

Shri. Arjun Munda, Hon'ble Minister of Agriculture and Farmers' Welfare, Govt of India visited ICAR-IARI on January 01, 2024 to appraise the experiment on Precision Farming in Mustard under the ICAR-Network Program on Precision Agriculture.

The advanced technologies like drone based near real-time crop health monitoring system using new-age imaging sensors and artificial intelligence; drone based pesticide spray system with enhanced use efficiency were showcased during the visit. Also, sensor based real time soil parameter estimation of soil health for site specific precision nutrient application was demonstrated.

Visit of Hon'ble Minister of Agriculture and Farmers' Welfare, at IARI to review the drone based technologies

Development of Experiential Learning Unit (ELU)

An Experiential Learning Unit on Drone Robotics and Machine Learning was inaugurated on March 22, 2024 at Division of Agricultural Physics, for developing skills and expertise in drone components and function, sensors, aerial remote sensing and machine learning.

Experiential Learning Unit on Drone Robotics and Machine Learning inaugurated by Dr. Himanshu Pathak, Secretary (DARE) and DG (ICAR)

International Day for Women and Girls in Science

Dr. Malavika Dadlani, Former Joint Director (Research), ICAR-IARI, New Delhi, delivered a Lecture on 'Women in Science' through virtual mode on the event held on February 14, 2024.

World Water Day

Water Technology Centre, ICAR-IARI, celebrated the 'World Water Day' on March 22, 2024 on the central theme "Water for Peace". Dr. Himanshu Pathak, Secretary (DARE) and Director General (ICAR) graced the occasion as chief guest and highlighted the crucial role of water, the impacts of climate change - especially the irregularity of rainfall patterns and the significance of water conservation and management. Dr. A.K. Singh, Director, ICAR-IARI, New Delhi, informed the house on the efficient water storage at IARI farm through Amrit Sarovar reservoir. Dr. P.K. Singh, Agriculture Commissioner, Government of India, emphasized on adoption of various government water conservation and management

Dr. Himanshu Pathak, Secretary (DARE) and Director General (ICAR) addressing on the World Water Day

programs. Dr. P.S. Brahmanand, Project Director, WTC, ICAR-IARI, briefed about the 10-point action plan for sustainable agricultural water management.

Lectures

The 54th Lal Bahadur Shastri Memorial lecture was delivered by

54th Lal Bahadur Shastri Memorial Lecture

Dr. Himanshu Pathak, Secretary (DARE) & Director General (ICAR), New Delhi on February 08, 2024, on the topic "Transforming Agricultural Education for an Aspiring India". The session was chaired by Dr. Panjab Singh, President, FAARD, Varanasi & Former Secretary (DARE) & DG (ICAR), New Delhi.

Field Day for Rabi Crops

Field day on Indian Mustard with focus on quality breeding *viz.* low erucic acid and glucosinolates lines, and chickpea wilt sick plot along with a visit to seed production unit was organized by the Division of Genetics on February 20, 2024 for demonstration, discussion and exchange of ideas among the scientists of various IARI divisions.

Field day for *rabi* crops was organized by the Division of Genetics on March 28, 2024, for wheat, chickpea, and lentil. Climate-smart wheat varieties, quality breeding along with rust breeding work and abiotic stress-resilient varieties were demonstrated.

Field day on Chickpea at ICAR-IARI, New Delhi

Field day on wheat varieties

ICAR-IARI Regional Station, Indore, organized two field days on wheat (i) at Devda Krishi Farm, Barkheda Kaytha, Ujjain on January 01, 2024 and (ii) at village Hatod, Sardarpur block of Dhar district on February 28, 2024 under the SCSP project wherein 15 front-line demonstrations were organized.

Field day on wheat organized by ICAR-IARI Regional Station, Indore at Devda Krishi Farm, Barkheda Kaytha, Ujjain

EXTENSION

Front-line Demonstration of various crops

Demonstration of Pusa decomposer at a large-scale

Pusa decomposer Wettable Powder *in-situ* demonstrations were conducted at farmers' fields in Haryana and Punjab by the Division of Microbiology and Ebro India Pvt Ltd on January 08, February 06 and March 15-19, 2024 in an international training program on "Conservation of Rice Germplasm and Productivity Enhancement through Mechanization" organized by the Division of Genetics, ICAR-IARI, New Delhi.

Cluster front-line demonstrations of crops

During this quarter, cluster front-line demonstrations on various crops cultivated under the NARI project were organized by KVK, Shikohpur, Gurugram.

Pusa *Krishi Vigyan Mela*

The Pusa *Krishi Vigyan Mela* 2024 themed 'Krishi Uddhamita-Samridh Kisan' was organised during March 10-12, 2024 at Albert Ekka Stadium, Simdega, Jharkhand. The *Mela* was inaugurated by Sh. Arjun Munda, Hon'ble Union Minister of Agriculture and Farmers' Welfare. Dr. A.K. Singh, Director, IARI; Dr. S.C. Dubey, VC, BAU, Ranchi, Dr. Sujoy Rakshit, Director, ICAR-IIAB Ranchi, Dr. Vikas Das, Director, NRC Litchi, Dr. Vishal Nath, OSD, ICAR- IARI, Jharkhand and Dr. R.N. Padaria, Jt. Director (Extension), IARI were present on the occasion. On this occasion two farmers Sh. Meenu Mahto and Sh. Bina Oraon from Jharkhand were awarded the IARI –Innovative Farmers Award.

The three-day event was visited by more than 4000 farmers, entrepreneurs, State Agricultural officials, school children and other visitors.

The Valedictory function organized on March 12, 2024 was graced by Sh A.K. Singh, District Collector, Simdega.

In-situ demonstration of Pusa decomposer Wettable Powder

Union Minister of Agriculture and Farmers Welfare, Shri Arjun Munda visiting the stall of the Division of Agriculture Extension at Pusa *Krishi Vigyan Mela*

Training Programmes

Training	Salient Features
	• Two training programs on "Enhancing Water and Crop Productivity through Micro-irrigation" on January 04, 2024 and "Per Drop More Crop" on February 01, 2024 were organized by the Water Technology Centre. • Participants-42

Training	Salient Features

- Two training programs on "Mycorrhiza and Compost Production" and "Farm Water Conservation Technologies, Irrigation Hardware Usage, Crop Diversification for Cultivating Need-based High-value Crops and High-density Plantation" were organized by the Division of Microbiology on January 10, 2024
- Participants-55

- Training programs on "Novel Processing Techniques for Horticultural & Arable Crops" from January 15-20, 2024; "Entrepreneurship Opportunities for Management of Food Loss and Waste in Agricultural & Industrial Sectors for Environmental Sustainability" from January 22-31, 2024; "Crossroads of Intellectual Property & Artificial Intelligence" from March 19-20, 2024 were organized by the ZTM & BPD Unit
- Participants- 46

- Division of Plant Pathology organized a four-day farmers' training programme on "Mushroom Cultivation Technology for Entrepreneurs/Farmers/SGH" under the SCSP Plan from February 20 - 23, 2024
- Participants-30

- Training programmes on "Health Benefits & Value Addition in Millets" from January 22-25, 2024 at village Hasanpur; "Integrated Pest Management in Cucurbits" from March 05-08, 2024; "Integrated Disease Management in Cucurbits" from March 12-15, 2024 was organized at village Tajnagar by KVK Shikohpur, Gurugram
- Participants-150

- National Workshop on "Future Food Systems Summit" was organized by the Division of Agricultural Extension on February 21-22, 2024
- Participants-25

Training	Salient Features
	• Three training programs of two-days duration each on "Preparation and Use of Different Natural Farming Inputs" were organized by KVK, Shikohpur from February 20-21, February 22-23, 2024 and February 29-March 01, 2024 • Participants-120
• Three days of "Hands-on Liquid Chromatography-High Resolution Mass Spectrometry Workshop" was organized by the Division of Agricultural Chemicals and Sciex from March 06-08, 2024 • Participants- Staff and students of the Division of Agricultural Chemicals and four participants from outside	
	• A training program on "Managing Carbon to Improve Soil Health and Combat Climate Change" was organized by the Division of SS&AC from March 18-23, 2024 • Participants-25

Mission/Special Programmes

Farmer Awareness Program

Farmer Awareness Program under Gramin Krishi Mausam Sewa (GKMS) project of Indian Meteorological Department was organized by the Division of Agricultural Physics on January 24, 2024 at Darayapur Kalan Village, District: North-West Delhi. Total 97 farmers participated.

Farmer Awareness Program at Darayapur Kalan Village

International Women's Day

KVK, Shikohpur, Gurugram, organized a one-day *Goshthi* on the occasion of International Women's Day on March 08, 2024. Dr. Anamika Sharma, Head, KVK, motivated the participating women to form self-help groups to initiate enterprise for self-sustenance. A total of 52 women participated.

Goshthi on International Women's Day

Kisan Goshthis-

- A *Kisan Goshthi*-cum-farmer's award program was organized at KVK, Shikohpur, Gurugram, on January 09, 2024. Few farmers were awarded the Millenium Farmers' Award .
- Participated-90

- A *Kisan Goshthi*-cum-awareness program on "*Kisan Samman Nidhi Yojana*" was organized at KVK, Shikohpur, Gurugram on January 28, 2024. The program showed a live broadcast of Prime Minister Shri Narendra Modi's address to the farmers.
- Participated-70

CAPACITY BUILDING

- A 21-day training (ICAR-CAFT) on "Recent Advances in Analyzing Quantitative and Qualitative Data in Social Sciences" was organized by the Division of Agricultural Economics from January 05-25, 2024
- Participants-20

- A 14-days workshop on "Conservation of Rice Germplasm and Productivity Enhancement through Mechanization" was jointly organized by the Divisions of Genetics and Agricultural Engineering from January 29 - February 10, 2024
- Participants were from Cambodia, Lao PDR, Myanmar and Vietnam

- An ICAR (HRM) sponsored training program on 'Good Agricultural Practices (GAPs) for Enhancing Resource-Use Efficiency and Farm Productivity" was organized for the technical staff of SAUs and ICAR Institutes at the Division of Agronomy, from March 07-13, 2024
- Participants-25

- A workshop entitled "Food Matrix Characterization Techniques: Nutrients to Nutrient Bioavailability" was organized by the Division of Biochemistry from March 19-23, 2024
- Participants-25

MISCELLANEOUS

Research Grants

Externally Funded Projects Sanctioned and Implemented (₹ > 15 lakh)

Title	Amount (in lakhs)	Duration	Funding Agency	Principal Investigator
Sensor-based integrated vertical farming for horticultural crops and aquaponic system	37.62	January 02, 2024 - January 01, 2027	ICAR-NASF	Dr. Murtaza Hasan, PS, CPCT
Thematic Area 3: Rice-based health and nutrition	66.41	January 02, 2024 - January 01, 2028	ICAR-IRRI	Dr. Haritha Bollinedi, S, Genetics
Enhancing abiotic stress tolerance in wheat and pearl millet: Insights from integrated epigenetic, physiological and molecular interventions	30.76	March 01, 2024 - February 01, 2027	ICAR-NASF	Dr. Sudipta Basu, PS, Seed Science & Technology
The development of a handled senor technology for non-destructive quality prediction of two economically important medicinal plants and the improvement of their quality	43.36	March 01, 2024 - February 28, 2027	ICAR-NASF	Dr. Virendra Singh Rana, PS, Agricultural Chemicals
Development, standardization and optimization of microbial and botanical pesticides and their formulations as efficient delivery systems for the management of agricultural, stored grain pests, nematodes and tick parasites	27.26	March 01, 2024 - February 28, 2027	ICAR-NASF	Dr. Virender Singh Rana, PS, Agricultural Chemicals
Bio-nano sulfur formulation of methanotrophs for decarbonization, disease resistance and sustaining productivity in the rice-oilseed cropping system	22.10	March 01, 2024 - February 28, 2027	ICAR-NASF	Dr. Rajesh Kumar, PS, Agricultural Physics
Deciphering Agricultural Soil Microbes for sustainable management of lignocellulosic wastes and bioremediation of chlorpyrifos (DT50) contaminated sites	80.31	March 08, 2024 - February 01, 2027	ICAR-NASF	Dr. Livleen Shukla, PS, Microbiology
Development of infectious clone, point-of-care diagnostics and transcriptome profiling for apple (*Malus domestica*) exhibiting mosaic disease associated with apple necrotic mosaic virus in the Northwestern Himalayan region of India	35.449	March 01, 2024 - February 01, 2027	ICAR-NASF	Dr. Susheel Kumar Sharma, SS, Plant Pathology
Generation of mapping population and identification of genomic regions associated with protein content in pearl millet	50.00	March 19, 2024 - March 18, 2026	ICAR-IIMR under EFC 2023-2026	Dr. S. P. Singh, PS, Genetics

Enhancing climate resilience and ensuring food security with genome editing tool under scheme Crop Science for Food and Nutritional Security, EFC (2023-2026).	6000.00	March 20, 2024 - March 19, 2026	ICAR-EFC (2023-2026)	Dr. C. Viswanathan, Joint Director, IARI
Development of millet protein isolate blends and enhancing its yield, quality, and functionality through processing methods for sustained protein nutrition and food industrial application	60.06	January 12, 2024 - January 11, 2027	DST-SHRI	Dr Suneha Goswami, SS, Biochemistry
Diversifying resistance base in Indian lead wheat cultivators: through marker-aided introgression of rust resistance genes from NILs developed	45.00	January 16, 2024 - January 15, 2026	DBT-ATGC Grant	Dr. H. Prashanth Babu, S, Genetics
Optimization and characterization of beverages from minor millets and exploring the nutritionally essential bioactive for women's health using integrated omics approaches	30.75	January 25, 2024 - January 24, 2026	DST-SHRI	Dr. Neelam Upadhyay, S, Food Science and post-harvest technology
Mainstreaming corn-based biopolymers as an alternative to single-use plastic	43.62	February 27, 2024 - February 26, 2027	DBT	Pranjal Yadav, S, Plant Physiology
Development of ultra-low volume microbial liquid for precise deposition	54.97	March 01, 2024 - February 28, 2027	DST-TDP	Dr. Livleen Shukla, PS, Microbiology
Systematic studies on micromoth subfamily Olethreutinae (Lepidoptera: Tortridae) from India	44.77	March 18, 2024 - March 17, 2027	DST-CRG	Dr. P.R Shashank, SS, Entomology
Decoding the molecular mechanism of a pathogenicity-related transcriptional regulator Fow2 of *Fusarium oxysporum* in vascular wilt of tomato	35.13	March 19, 2024 - March 18, 2027	DST-CRG	Dr. V. Shanmugam, PS, Plant Pathology
Functional characterization of potential candidate virulence gene(s) of *Magnaporthe grisea* and identification of its molecular host targets pearl millet	39.24	March 19, 2024 - March 18, 2027	DST-CRG	Dr. G Prakash, SS, Plant Pathology
Standardization, performance evaluation and field demonstrations of plasma-sized water (PW) treatment for enhanced planting value in wheat, mustard, lentil and tomato crops against heat stress & normal conditions	24.73	January 18, 2024 - January 18, 2025	Plaza Water Solutions India Pvt. Ltd	Dr. Shiv Kumar Yadav, PS, Seed Science & Technology
Testing, validation and field evaluation for performance of functional greenhouse films (ExxonMobil) against 200µm (market preference) used in polyhouse cultivation	30.54	February 07, 2024 - February 07, 2027	ExxonMobil Company India Pvt Ltd	Dr. M.C Singh, PS, CPCT
Performance evaluation of hybrids of cucumber and okra for growth and yield	34.97	March 21, 2024 - March 21, 2025	Indian Farmer Fertilizer Cooperative Limited, New Delhi	Dr. P.K Upadhyay, S, Agronomy
Long-term evaluation of POLY-4 (polyhalite) for enhanced productivity resource use efficiency and sustainability of rice-wheat system under trans IGP	70.51	March 22, 2024 - March 22, 2027	Anglo-American Crop Nutrient India Private Limited	Dr. Rajiv Kumar Singh, PS, Agronomy

Technology Commercialization

Under the Lab to Land Initiative, nine ICAR-IARI technologies were commercialized to six industry partners during January-March 2024, generating a total revenue of ₹ 17,19,000.

IP management

During this quarter, the ZTM & BPD Unit has filed six trademarks, one copyright and two patents.

ITMC Meeting

One ITMC meeting was organized on March 22, 2024, during which 13 technologies for IP protection and 33 technologies for commercialization were approved.

Incubation Activities

BEEJ

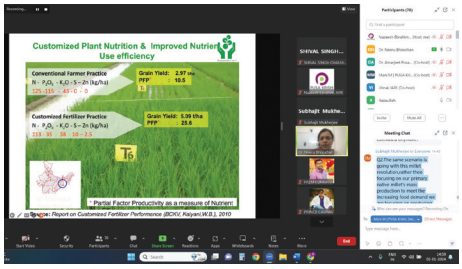
The two-week program under Beej for young entrepreneurs and early-stage startups to learn, generate, build and scale startup ideas in the agriculture sector was organized by the ZTM & BPD unit from January 02-12, 2024.

SHITIJ

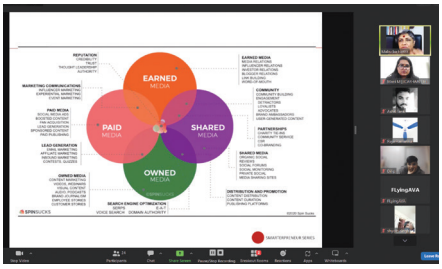
Phase three of Shitij, a year-long incubation program was organized by the ZTM & BPD unit from January 29- February 01, 2024.

SAMARTH

PUSA Krishi hosted its flagship event, SAMARTH 2024 - Empowering the Incubators from February 20th to 22nd, 2024 at NASC Complex, New Delhi. The event was coordinated by Dr. Akriti Sharma, CEO, Pusa Krishi, with the participation of 29 KPs and RABIs.



Online program under Beej



SHITIJ incubation program

Pusa Krishi hosted its flagship event, SAMARTH 2024

Review meeting by DG ICAR

A comprehensive review meeting on January 01, 2024 marked the onset of the New Year by bringing together the staff of ICAR Headquarter, DARE, ASRB, and ICAR Institutes at IARI premises in New Delhi. Dr. Himanshu Pathak, Secretary (DARE) & DG (ICAR) presided over the meeting. Furthermore, medals were presented to the the staff who excelled in sports events across the ICAR network.

Dr. Himanshu Pathak, Secretary (DARE) and Director General (ICAR) presenting the overall Sports championship trophy for Eastern Zone to Director, ICAR-IARI

Corporate Membership

In this quarter, the ZTM & BPD unit enrolled five new industry partners and renewed the memberships of three, generating a revenue of ₹ 31,500.

National Youth Day

ICAR-Indian Agricultural Research Institute, New Delhi, celebrated the National Youth Day on January 12, 2024. The NSS wing of The Graduate School in association with the Indian Red Cross Society, organized a Blood donation camp and Walkathon on the Campus with the aim of "Holistic

Dr. Anupama Singh, Joint Director (Education) & Dean (ICAR-IARI), New Delhi with the students of The Graduate School during the blood donation camp

Development and Social Welfare." A total of 59 students donated blood to the camp.

Awards and Recognitions

- Dr. Veda Krishnan, Scientist, Division of Biochemistry was selected as a member of the Global Young Academy (GYA) 2024 amongst 45 new members from 30 countries.
- B.Tech (Agricultural Engineering) second year students won the Best Technical Presentation award in the All India Research Scholar Summit organized by IIT Chennai from March 04-07, 2024.

Memorandum of Understanding (MoU) signed

- ICAR-IARI signed an MoU with Tamil Nadu Agricultural University on January 05, 2024 for academic and cultural exchange in teaching, research and other activities.
- ICAR-IARI signed an MoU on January 22, 2024 with Jawaharlal Nehru Krishi Vishwa vidyalaya (JNKVV), Jabalpur, MP for seed production of vegetable varieties.
- ICAR-IARI signed an MoU on February 22, 2024 with VNMKVV, Parbhani for agricultural education, research and extension exchange.
- ICAR-IARI signed an MoU on February 27, 2024 with NRC Banana for seed production and sale of seed for rice varieties released by ICAR-IARI.
- Division of Agricultural Engineering, ICAR-IARI, New Delhi signed an MoU with M/s Bhoomi Agro Industries, Rajkot (Gujarat) to carry out Ph.D. student research work on "Design and Development of Smart Seeder for Rice and Wheat Crops."

Publications with NAAS rating >10.0

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ICAR-IARI signs MoU with NRC Banana

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National & International Visits at IARI

Visit of Shri Arjun Munda, Hon'ble Minister of Agriculture & Farmers Welfare to Integrated Farming Systems (IFS) model on January 17, 2024

Visit of trainees of Haryana Agricultural Management and Extension Training Institute (HAMETI), Jind, at ICAR-IARI, Regional Station, Karnal, on January 23, 2024

Visit of trainees from Vietnam, Lao PDR, Myanmar and Cambodia at the ICAR-IARI, Regional Station, Karnal, on February 06, 2024

Visit of Shri Ashok Barnwal, Additional Chief Secretary, MP Government to ICAR-IARI Regional Station, Indore on February 21, 2024

Visit of VCs and Directors of ICAR Institutes to Integrated Farming Systems (IFS) model on February 26, 2024

Visit of farmers/FPC entrepreneurs at the Seed Processing Unit, ICAR-IARI, Regional Station, Karnal on February 28, 2024

Visit of 38th Batch of Indian Foreign Service Trainees from Sushma Swaraj Institute of Foreign Service, Ministry of External Affairs on March 14, 2024

Visit of Officials of D1 Tech Global Corporation Inc., Headquarters in Vancouver, Canada, on March 19, 2024

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