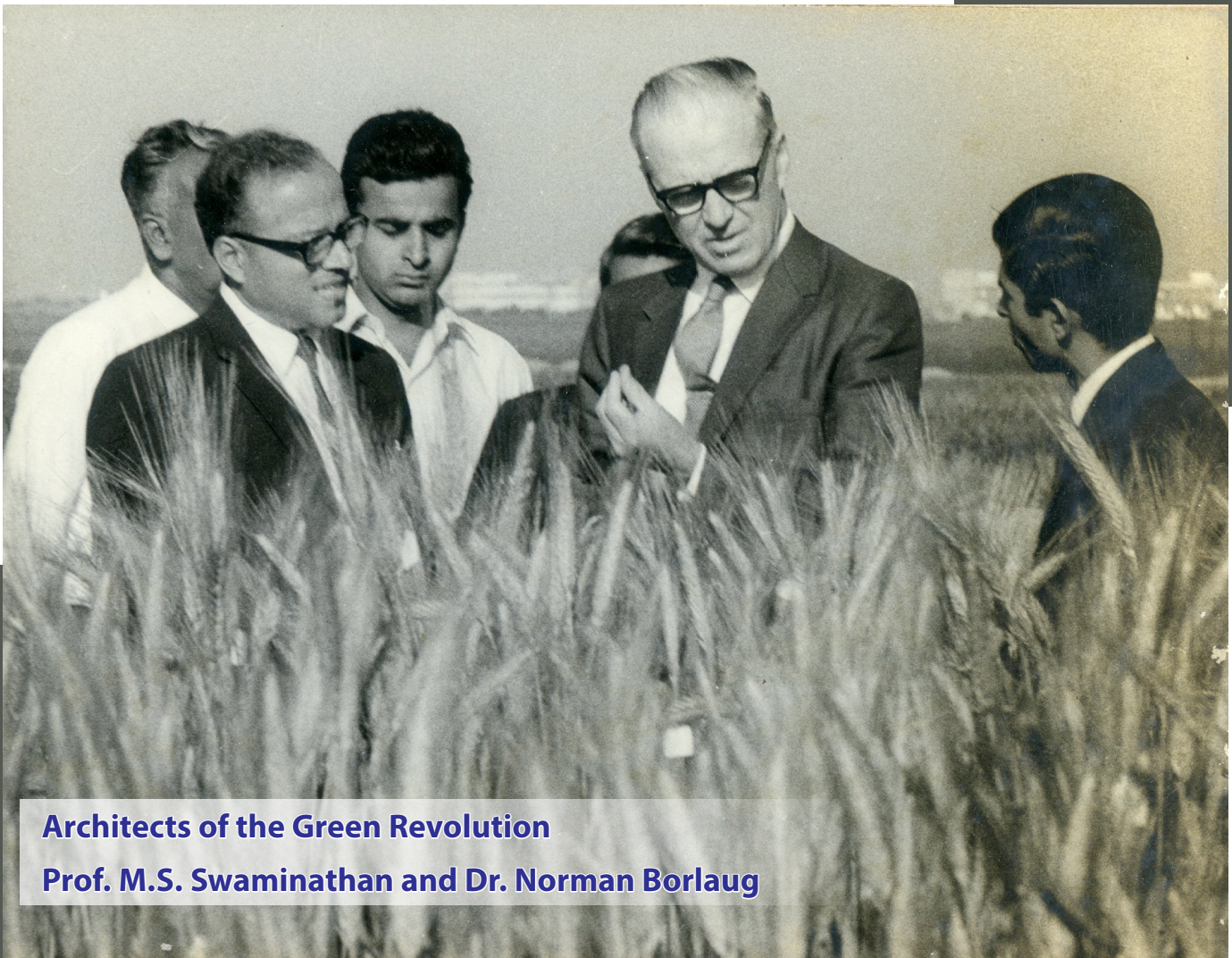




IARI NEWS



Architects of the Green Revolution

Prof. M.S. Swaminathan and Dr. Norman Borlaug





From Director's Desk

At the outset, we offer our heartfelt tribute to the visionary leader Prof. M.S. Swaminathan, aptly known as "Father of Indian Green Revolution", whose unmatched contribution to agriculture will always remain etched with golden letters in the history of Indian agriculture. His ground-breaking role in ensuring food security through development of high yielding varieties of rice and wheat led to transformation of the lives of millions of Indians. IARI will always strive to follow the path set by him.

In this quarter, the Institute developed two high-yielding wheat varieties viz., HI1665 and HI 8840 with excellent quality traits, which have been recommended for cultivation in areas with restricted irrigation. Other major research highlights include enhancing

nitrogen and water use efficiency in maize-wheat cropping system by fertigation in split doses through sub-surface drip irrigation, integrating maize-wheat system with a bio-intensive cropping system to increase production efficiency and assessment of soil resilience index (SRI) in a long-term rice-rice system in acidic soils of Assam for selection of key indicators. A seedling resistant line of capsicum against *Phytophthora* leaf blight was also identified. The highest β -glucan content in Shiitake mushrooms, known for health benefits, was recorded in an accession from Manipur. Machine learning helped in characterizing nitrogen use efficient donors in rice using novel physiological traits. A number of farm implements developed by the Institute were certified by ICAR. We concluded the year-long programmes held at the Institute to mark the bicentenary birth anniversary of Mendel. Teachers' day was also celebrated with full zeal and enthusiasm by the students and faculty. 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 various crops to establish cross-talk amongst scientists from various disciplines of IARI. The QRT Team visited IARI during this period for reviewing the progress of the Institute and providing

critical suggestions for strengthening the research programmes. Under the Lab to Land initiative, we filed and renewed patents and copyrights of IARI technologies. *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.



Ashok Kumar Singh
Director, ICAR-IARI

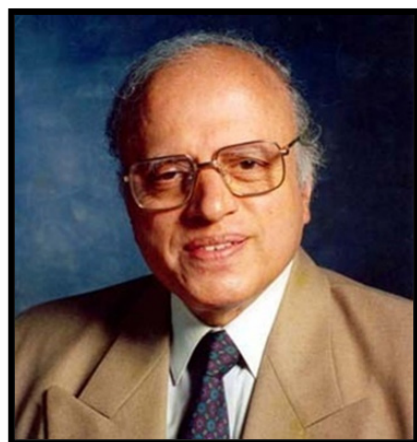
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Professor Monkombu Sambasivan Swaminathan (August 07, 1925 - September 28, 2023)



Professor M.S. Swaminathan was born in Kumbakonam, Tamil Nadu on August 7, 1925. His monumental impact on India's agricultural landscape by pioneering the Green Revolution, earned him the title of the 'Father of India's Green Revolution'. He pursued his undergraduation in Zoology from the University of Kerala followed by B.Sc. (Agricultural Science) from Tamil Nadu Agricultural University during 1940-1944. He completed

his IARI Associate degree from the Indian Agricultural Research Institute in 1949 and was a UNESCO Fellow at Wageningen Agricultural University. Subsequently, he earned his Ph.D. from the University of Cambridge, UK (1952) and undertook post-doctoral studies at the University of Wisconsin, USA (1952-1953).

After completing his Research Associateship at University of Wisconsin in 1954, he declined a

faculty position in USA and chose to return to India to serve his nation. He served as Director of the Indian Agricultural Research Institute (1961-72); Director General of ICAR and Secretary to the Government of India, Department of Agricultural Research and Education (1972-79); Principal Secretary, Ministry of Agriculture (1979-80); Acting Deputy Chairman and later Member (Science and Agriculture), Planning Commission (1980-82) and Director General, International Rice Research Institute, the Philippines (1982-88).

A testament to his vision towards India's food security was his collaboration with Nobel Laureate Dr. Norman Borlaug. Together, they introduced the high-yielding dwarf wheat varieties that transformed India from a nation dependent on food imports to an exporting nation. After steering the Green Revolution, he advocated for the Ever-Green Revolution, emphasizing holistic agricultural

development without harming the ecology. Professor Swaminathan's influence stretched beyond Indian shores. He played a pivotal role in setting up the International Institutes such as ICRISAT in Hyderabad and ICGEB in New Delhi. Later, he established a not-for-profit trust, M. S. Swaminathan Research Foundation (MSSRF) in 1988 for improving the lives of farming communities by employing modern science and technology for agricultural and rural development.

His work was acknowledged with the first-ever World Food Prize in 1987 that led to his recognition as a great visionary and inspiring leader. He was also the recipient of Padma Shri (1967), Padma Bhushan (1972) and a Padma Vibushan (1989). Other notable awards conferred on him during his career are Shanti Swarup Bhatnagar Award, the Ramon Magsaysay Award, and the Albert Einstein World Science Award. In 1999,

TIME magazine ranked him as the most influential Asian figures of the 20th century alongside stalwarts like Mahatma Gandhi and Rabindranath Tagore. With his passing away on September 28, 2023, we have lost a visionary and compassionate leader who always kept the farmers at the heart of his initiatives. His loss has ended an era of agricultural research, education and extension that was full of disruptive innovation, but his teachings and contributions will remain imprinted in the annals of agricultural history inspiring countless generations for years to come. If "God appears to poor and hungry in form of bread" as quoted by Mahatma Gandhi, that God is Dr. Swaminathan, who should be worshipped by every citizen while taking his daily meal. Through our column, we pay our humble tribute to the stalwart who transformed the lives of farmers and millions of Indians through agricultural innovation and sustainability.

RESEARCH

Wheat Varieties Identified for Release

Two wheat varieties developed by ICAR-IARI, Regional Station, Indore were identified for release during 62nd All India Wheat and Barley Research Workers' Meet held from August 28-30, 2023 at Maharana Pratap University of Agriculture & Technology, Udaipur.

HI 1665: It is a bread wheat variety identified for restricted irrigation condition of Peninsular Zone. It is developed through hybridization of the popular sharbati wheat varieties HI 1531 (Harshita) and HI 1544 (Purna). It possesses an average yield of 3.3 t/ha and a potential

yield of 4.35 t/ha compared to the check variety HI 1605 (3.21 t/ha) under moisture stress condition. It has high level of resistance to leaf and stem rust and exhibits seedling resistance (all stage resistance) to 19 test pathotypes of stem rust and all the 23 test pathotypes of leaf rust. It has excellent quality with high

hardness index (85.5), hectoliter weight (81.5 kg/hl), chapati quality (7.3), biscuit spread factor (7.6) and sedimentation value (36.8 ml). It has high protein content (12.0%) along with low gluten index (44) and high level of grain zinc (40.0 ppm) and iron (39.0 ppm).



HI 1665: Field view and grain size

HI 8840: It is a durum wheat variety identified for restricted irrigation condition of Peninsular zone. It has significantly high-yield (3.02 t/ha) with a yield potential of 3.99 t/ha compared to durum wheat checks NIDW 1149 (2.95 t/ha) and UAS 446 (2.67 t/ha). It also has higher number of ear head/m² (332) and 1000 grain weight (43.63 g) compared to check and the qualifying variety. It is highly resistant to stem (ACI: Mean-6.9) and leaf (ACI: Mean-5.1) rusts, Karnal bunt and leaf blight. HI 8840 shows high protein content (11.9%), test weight (83 kg/hl), grain hardness index (95),

sedimentation value (40.5 ml) with an overall pasta acceptability value of 5.5. It has higher grain zinc (41.1 ppm) and iron (38.5 ppm) content compared to checks and the qualifying variety.

Nitrogen Management Using Sub-Surface Drip Fertigation (SSDF) in Maize-Wheat System

Application of 50% recommended dose of nitrogen (RDN) through SSDF in maize yielded on par grains with 100% RDN applied through conventional method, thus saving 25-50% N. Further, a yield advantage of 5.3% was observed with 4-splits (4S) of N compared to 3-splits (3S). In wheat, SSDF of 100 and 75% RDN increased yield by 10 and 7.5% respectively, over the same

applied through conventional method. Wheat yield with 50% RDN (SSDF) was comparable with 100% RDN (conventional), indicating a 50% reduction is N dose. Four splits improved the yield by 3% over 3-splits. Also, there was approximately 40-50% saving in irrigation water under SSDF.

Bio-intensive Cropping System for Profit Maximization and Environmental Sustainability

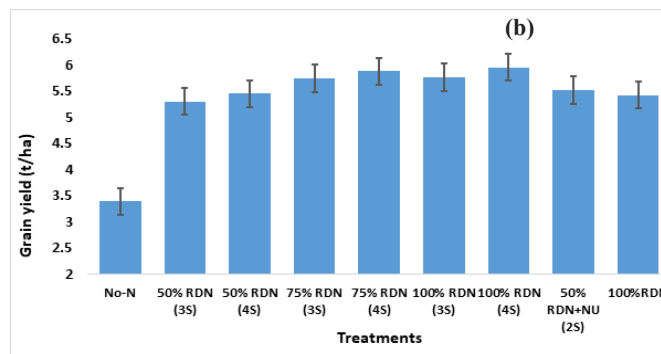
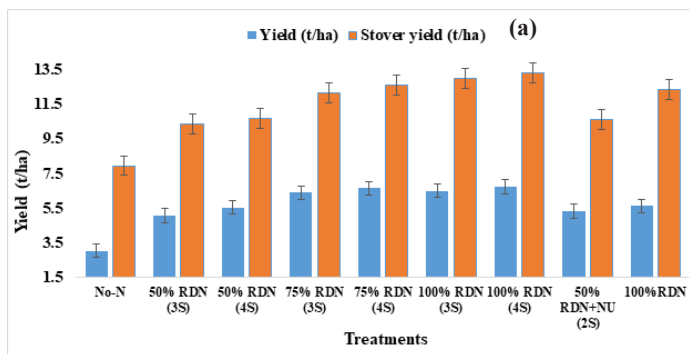
Temporal integration of maize + black gram (raised bed) + soybean (furrow)-chickpea (raised bed) +wheat (furrow) (3:2)-green gram (raised bed) + sunflower (furrow) (5:1) was found to be economically feasible with high productive efficiency (175%) compared to maize-wheat system.



HI 8840: Field view and grain size



Sub-surface drip fertigation (SSDF) system



Effect of sub-surface drip fertigation of N on yield of (a) maize (b) wheat



Green gram with sunflower integration

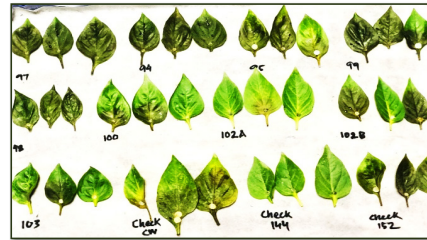
Soil Quality, Resilience and Crop Productivity under 32 Years old Long-term rice-rice System in Acidic Alfisol of Assam

Assessment of the quality and resilience of soil was carried out from different treatments at 0-15 cm soil depth under 32 years old long-term rice-rice cropping system situated at the Regional Rice Research Station of Titabar, Assam from eight treatments. The key indicators for soil quality were available Zn, available K, acid phosphatase activity, and bulk density. Soil resilience index (SRI) was calculated in terms of carbon mineralization with or without heat stress (48°C for 24 h) and addition of substrate (0.02g glucose/g soil). Integrated treatment with 50% NPK + 25% GM-N + 25% FYM-N had the highest SRI which can be recommended as a package of practice for rice-growing farmers in Assam.

CPCT-Selection-144: A Seedling Resistant Line of Capsicum against *Phytophthora* leaf blight (PLB) isolate *Belgaum MZ479061*

The leaf blight causal organism, *Phytophthora capsici* is a soil-borne oomycete which causes dark and water-soaked symptom on the leaves. CPCT-Selection-144, a seedling resistant line of capsicum

for *Phytophthora* leaf blight isolate *Belgaum MZ479061* was identified as a seedling resistant line of capsicum and submitted to NBPGR for registration (R1807323076).



Screening of Genotypes for PLB

β -Glucan-rich Shiitake Mushroom

Shiitake (*Lentinula edodes*) accessions were collected by ICAR-NEH, Manipur and screened for beta-glucan (functional polysaccharide with reported anti-obesity, anti-cardiovascular effects) content under the DBT-NER project at the Division

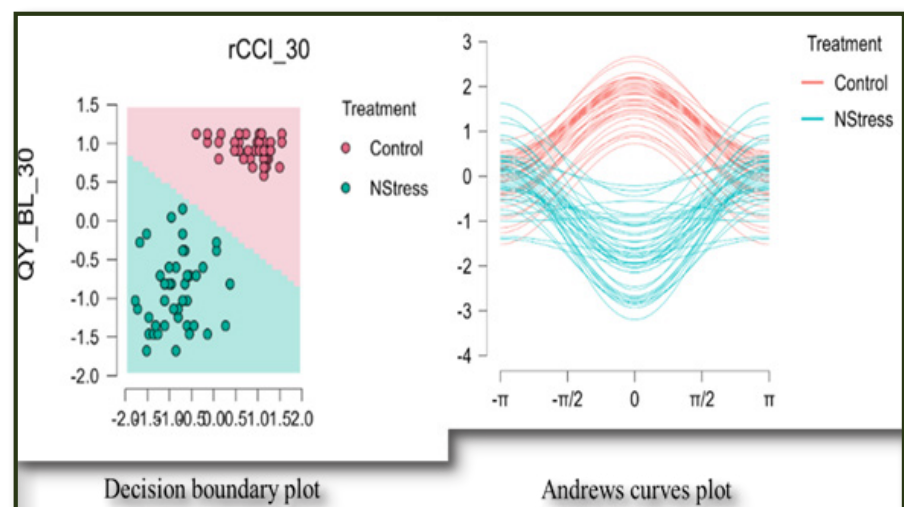
 β Glucan-rich Shiitake Mushroom

of Biochemistry, IARI. The accession IMP/2022/08 had the highest (46%) globally recorded β -glucan content which has been deposited as Indian Type Culture Collection (ITCC) Accession No 9272.

Novel Physiological Traits for Nitrogen Stress Assessment and Identification of Superior Rice Donors with Enhanced Nitrogen Use Efficiency (NUE)

Fifteen rice genotypes with contrasting NUE traits were selected and evaluated under two N stress conditions viz., urea @ 120 Kg/ha (N+) and 0 Kg/ha (N0) at four different phenological growth stages i.e., 30 (tillering), 60 (maximum tillering), 90 (flowering), 120 days (maturity) after transplanting.

The machine learning-based multivariate linear discriminant analysis (ML-LDA) deciphered two novel traits viz., relative chlorophyll content index (rCCI) and Quantum yield (QY) at 30 days after transplanting as plant N stress response indicators. The Multi-trait Genotype-Ideotype Distance Index (MGIDI) led to selection of two superior rice genotypes (Cauvery and BAM 3690) with higher NUE.



The contrasting relationship between nitrogen uptake efficiency (NUpE) and grain number per plant (GNPP) in genotype groups with higher NUE ($R=0.94$) and lower NUE ($R=0.32$) emphasized the highest breeding value of NUpE (heritability: 0.92; genetic gain: 26.8) for breeding rice genotypes with improved NUE.

Certification of Farm Implements and Machinery by ICAR

The following farm implements and machinery developed by Division of Agricultural Engineering were certified by ICAR

1. Power Winnower
2. Onion seed extractor
3. Wheel hand hoe
4. Manual paddy thresher
5. Manual chaff cutter
6. Pusa electric seed entering retrofit module for cultivator
7. Pre-germinated paddy thresher
8. Agri-Robot model
9. Manual multi-crop planter

EDUCATION

Concluding Ceremony of the Year-long Celebrations of the Bi-centenary Birth of Gregor Johann Mendel

The concluding ceremony of the year-long celebrations of the bi-centenary birth of Gregor Johann Mendel was organized by the Genetics Club, Division of Genetics, The XV Genetics Congress Trust and The Indian Society of Genetics and Plant Breeding on the July 20, 2023 at the Dr. B.P. Pal Auditorium, ICAR- IARI, New Delhi. On this occasion, Dr. Sowmya Swaminathan, Chairperson, MSSRF and Former Director General, Indian Council of Medical Research, delivered a lecture on “Community Genetics in a Clinical Scientist’s Perspective”. Professor R.B. Singh, Former Chairman, ASRB chaired the programme and Dr. R.P. Sharma, President, The XV Genetics Congress Trust was the guest of honour for the function which was attended by a large number of students and faculty members. The programme was also



Concluding Ceremony of Bi-centenary Celebrations



Teacher’s Day Lecture at Dr. B. P. Pal Auditorium

webcast live in the ICAR-IARI-YouTube channel for the benefit of the students and faculty across the country.

Celebration of Teachers’ Day

The Graduate School ICAR-IARI and the Genetics Club jointly organized the Teachers’ Day on September 05, 2023 at Dr. B.P. Pal Auditorium of the Institute to pay tribute to former Hon’ble President of India, Dr. S. Radhakrishnan, who was a renowned teacher par excellence. On this occasion, Professor Ashutosh Sharma, President, Indian National Science Academy (INSA) and Institute Chair Professor, IIT Kanpur and Former Secretary, Department of Science and Technology, delivered the Teachers’ day lecture on “Education, Research and Innovation in Brave New World”. He emphasized on the importance of creativity and innovation in addressing issues like climate change and sustainable development. Professor Anupam

Verma, Former Dean and Joint Director (Education) chaired the programme which was attended by a large number of students and faculty members.

Engineer’s Day Celebration

Engineer’s day was organized by the Division of Agricultural Engineering on September 15, 2023. Dr. Pitam Chandra, Former Director of ICAR-CIAE, Bhopal and ADG-PE (ICAR) was the Chief Guest of the occasion. He gave a thought-provoking talk, signifying the contribution of agricultural engineers towards agricultural growth.



Engineer’s Day organized by the Division of Agricultural Engineering

EXTENSION

Mission/Special Programmes

- **Swachh Bharat Abhiyan** -Awareness on crop residue management and converting farm waste to wealth was organized at KVK Gurugram on July 05, 2023. During the programme, farmers were advised against burning crop residues and instead using it for making compost.



Swachh Bharat Abhiyan organized by KVK Gurugram

- **Natural Farming:** Two awareness programmes on natural farming were conducted by KVK Gurugram during July 16 and September 26, 2023. During the programmes, preparation of vermi-compost, vermi wash, Jeevamrut, Ghan Jeevamrut, Panchgavya etc. were discussed by KVK experts. A total of 218 farmers and farm women participated.
- **RAWE:** One-month (August 07-September 06, 2023) RAWE programme was organized by KVK Gurugram for seventh semester agriculture students to train them on practical aspects of different skills such as vegetative propagation, bee keeping, mushroom production technology, soil and water testing, *Trichoderma* production, protected



RAWE programme for B.Sc. (Ag.) Students

cultivation, lay out of orchards, kitchen gardening, natural, integrated, goat and dairy farming system.

Celebration of ICAR Foundation and Technology Day

KVK Shikohpur celebrated ICAR Foundation Day on July 16-18, 2023 with participation of 286 farmers and farm women. KVK Shikohpur organized a *Kisan Goshthi* and an exhibition on different technologies developed by ICAR-IARI, New Delhi. The planting materials of papaya (Arka Prabhat, Pusa Nanha), seeds of wheat, mustard, chick pea, pigeon pea, summer moong varieties were also displayed for the benefit of the farmers. During the programme live interaction with Hon'ble Minister of Agriculture and Farmers' Welfare, Shri Narendra Singh Tomar's was telecast for the farmers, farm women and extension workers.

Kisan Goshthi

Two *Kisan goshtis* were organized on Popularization of Natural farming on August 25, 2023

at Tatarpur, Pataudi, Gurugram and August 29, 2023 at Pukharpur, Gurugram on vegetable cultivation under natural farming situation. During the event vegetable cultivation under natural farming and the preparation methods of Jeevamrut, Gahn Jeevamrut, Neemastra, Beejamrut was discussed. A total of 59 farmers participated in the programme.

Parthenium Eradication Awareness week

Parthenium Eradication Awareness week was observed from August 16-22, 2023 at KVK Gurugram to remove the *Parthenium* from the campus.



Parthenium eradication from KVK campus



Visit to millet field by farm women

Celebration of *Poshan Maah*-2023

KVK, Gurugram celebrated *Poshan Maah* from September 01-30, 2023 during which two awareness programmes on nutritional aspects and production technologies of different millets were conducted by Deputy Director Agriculture, Nuh, Haryana. A four days training programme on establishment to nutri-garden at house hold level was organized at Dhani Chitrasen village which was attended by 34 rural women. Three lectures were organized on “Production Technologies and Post-Harvest Management for Major and Minor Millets” and one on “Health Benefits and Value Addition in Millets” with a participation of 91 farmers and farm women.

Trainings

- **Farmers Training Programmes** – One-day training programmes (4 nos.) were organized for the farmers by KVK Shikohpur, Gurugram.
- **Integrated farming system** on July 05, 2023 at village Hazipur, Sohna block wherein different components of Integrated Farming System like crop, livestock, fodder, duck farming, fishery etc. were discussed with participation of 25 farmers.
- **KVK, Gurugram organized** five days training on “Health Benefits and Value Addition of Millets” on July 31 to August 04, 2023, for rural women at

KVK Gurugram, attended by 23 women. The participants were educated in the nutritional value and health benefits of various millets and were given hands-on-training for preparation of various millet recipes.

- **Integrated disease management in cauliflower** was organized at *Uncha Majra* block, Pataudi Gurugram on August 03, 2023. During the training various diseases and their control measures were discussed. Farmers were advised to follow an integrated approach to control the diseases and reduce the residual impact of fungicides and pesticides. A total of 22 male farmers attended the programme.
- **Integrated pest management in pigeonpea** was organized on August 17, 2023 at Safedanagar Village, Pataudi, Block Gurugram to apprise the farmers about control measures for pests in pigeon pea. During the training control measures of all types of insects (flower- and pod-feeding Lepidoptera, pod-sucking Hemiptera, and seed-feeding Diptera and Hymenoptera), pests and their control measures were discussed. A total of 25 farmers participated in the programme.



Training on health benefits and value addition of millets

Display of Divisional Technologies during the G-20 Program

Division of Genetics and Agricultural Engineering exhibited their technologies at the exhibition organized for the visitors of G20 programme on September 09-10, 2023.



Display of Divisional Technologies and varieties during the G-20 Program

CAPACITY BUILDING

High End Workshop on Phenomics

Division of Plant Physiology organized a DST-SERB sponsored high end workshop on “Phenomics, the NGP for trait dissection and crop improvement” during July 10 to 19, 2023. Students were trained on application of imaging technologies in agriculture.

Industry Problems-Academia Solutions (iPAS 2023) Conclave

Industry Problems-Academia Solutions Conclave (iPAS 2023)

was jointly organized by Indian Society of Agriculture Engineers Delhi Chapter, Headquarters Delhi and ICAR -IARI, New Delhi during July 27-28, 2023. The Conclave attracted more than 200 delegates including 30 Industry partners, three progressive farmers, two startups and more than 150 academicians/researchers. Dr. K.K. Singh, Honb’le Vice Chancellor, Sardar Vallabh Bhai Patel University of Agriculture and Technology, Meerut graced the occasion and asserted that joint efforts of academia and industry can

lead India towards development. The guest of honour Dr. S.N. Jha, Deputy Director General (Engineering), ICAR and President, ISAE, emphasized upon application of modern tools and techniques in developing new machines.

Training Programme on Genome Editing: The Next Frontier in Agricultural Innovation

A post graduate students’ training programme entitled “Genome Editing: The Next Frontier in Agricultural Innovation”



Display of drones at the Conclave

was conducted from August 28 to September 06, 2023 at the Division of Plant Physiology. A total of 49

student-trainees, representing 24 different institutes from 17 different states attended the programme. Dr.

T. Mohapatra, Chairman, PPV & FRA graced the inaugural session as the Chief Guest.



Training programme for post graduate students

MISCELLANEOUS

Research grants

Title	Amount (in lakhs)	Duration	Funding Agency	Principal Investigator
STI Hub in Anta block of Baran District, Rajasthan for improving the livelihood of SC Community through selected agriculture technologies developed by IARI	166.57	2023-2026	DST-SERB	Dr. Rajeev Kaushik, PS, Division of Microbiology
Design and development of riding type multi-utility prime mover and matching equipment for small farm mechanization	41.95	2023-2026	DST	Dr. Satish Lande, S, Division of Agricultural Engineering
Genetic variation for lipoxygenase activity and molecular characterization of LOX3 gene for reducing rancidity in high oil maize	35.03	2023-2026	DST	Dr. Vigenesh Muthusamy, S, Division of Genetics
Genetic improvement of yield and nitrogen use efficiency in rice using CRISPR-Cas genome editing	34.49	2023-2026	DST -SERB	Dr. Lekshmy Sathee, SS, Division of Plant Physiology
Development of doubled haploids in hot and sweet peppers for creating and utilizing novel genetic variations	32.91	2023-2026	DST -SERB	Dr. Manisha Mangal, PS, Division of Vegetable Science
Assessing the role of quality and stability of soil organic carbon (SOC) in maintaining soil health and crop productivity under different agro-ecological regions of India	33.58	2023-2026	DST -SERB	Dr. Sunanda Biswas, SS, Division of Soil Science and Agricultural Chemicals
Establishment of nitrogen efficient wheat production system in Indo-Gangetic Plains by the development of BNI technology	13.00	2023-2028	Japan International Cooperation Agency (JICA)	Dr. Pradeep Kumar Singh, PS, Division of Genetics

Physiological basis of amelioration of heat stress through nitrogen management in wheat	30.50	2023-2026	CIMMYT, Mexico	Dr. Renu Pandey, PS, Division of Plant Physiology
Bio-efficacy evaluation of GPH1022 on stored Potato, Vijay Sales Corporation	11.49	2023-2024	UPL SAS Pvt Ltd.	Dr. Ram Asrey, PS, Division of FS&PHT
Evaluation of bio-efficacy of new agrochemical against pests in apple (<i>Malus X doemstica</i> Borkh)	18.20	2023-2025	Syngenta India Ltd.	Dr. Santosh Watpade, S, Regional Station, Shimla
Bio-efficacy of GF-4867 RB formulation of against fall armyworm, <i>Spodoptera frugiperda</i> in maize	12.64	2023-2025	Corteva Crop India Ltd.	Dr. Suresh M Nebapure, S, Division of Entomology
Investigation of impact of integrated drip cum mulch on crop growth, yield and economics of rice millets	15.07	2023-2024	Boruoge (India) Pvt Ltd	Dr. P.S. Brahmanand, PD, WTC
Urban Agriculture Expert: Climate- and nutrition- smart agriculture in Nauru Island	10330 (USD)	2022-2023	Asian Development Bank, Manila, Philippines	Dr. Shrawan Singh, SS, Division of Vegetable Science
Testing the quality of different Biofertilizers: Biopesticides and Decomposers samples	40.04	2023-2026	IPL Biologicals Ltd.	Dr. Livleen Shukla, PS, Division of Microbiology

Technology Commercialization

- During July-September 2023, under Lab to Land Initiative, 32 technologies of ICAR-IARI were commercialized and 24 MoA were generated, resulting in total revenue generation of ₹ 23.24 lakh.

IP management

During this quarter the following patents/copyrights/trademarks were filed/renewed/registered

Patent	2 Filed 2 Renewed 11 Form 27 Submitted
Copyright	6 Filed
Trademark	3 Trademark Hearing 1 Trademark Registered

Incubation Activities

UPJA/ ARISE for Agri Startups

The ZTM & BPD unit organized two- month incubation virtual

program wherein the cohorts of ARISE (pre-seed) 2023 and (Seed) 2023 were combined into one big cohort of 62 Startups from June 15, 2023 to August 16, 2023. During this programme, one-on-one technical, business and IP financial management mentoring sessions were arranged for startups. Mentors helped the startups in diverse areas like creating successful products, revamping the existing solutions, modifying the business model, finance and best go-to-market strategies. At the end of the programme, 16 startups were recommended for the pre-seed stage and 18 were selected for seed stage funding in the RC meeting conducted on the September 12-13, 2023.

Agripreneurship Development Programme (ADP)

ADP on “Skill Developments in Compost and Mycorrhizal Technology” was organized from

August 21-30, 2023 to impart training on compost technology for rapid biodegradation of agro wastes and to popularize application for crop production among the farming community.

ADP on “Tools and Techniques of Bioinformatics for Agriculture Research” was organized from September 11-16, 2023. The training helped the participants in strengthening the skills and knowledge of students and researchers in bioinformatics.

Shitij

Shitij, a year-long incubation program to nurture early-stage startups with capacity building, infrastructure and other resources to solve the big challenges in agriculture with innovative solutions was launched on September 01, 2023.

Corporate Membership

In this quarter, the ZTM & BPD unit enrolled four new

industry partners for membership and renewed the membership of five industry partners, thereby, generating revenue of ` 45,000.

Awards and Recognitions

- Dr. Anupama Singh, Dean, JD (Education); Dr. Kalyan. K. Mondal, JD(R) NIBSM Raipur; Dr. R. R. Burman, ADG (Agricultural Extension); Dr. Radha Prasanna, Head Division of Microbiology; Dr. Harsh

Kumar Dikshit, Professor, Division of Genetics; Dr. Debashish Chakraborty, Head Division of Soil Science & Agricultural Chemistry, ICAR-IARI, New Delhi were inducted as Fellow of National Academy of Agricultural Sciences, New Delhi from January 01, 2023. Dr. Ranjith Kumar Ellur, Scientist, Division of Genetics, ICAR-IARI, New Delhi was selected as Associate of National Academy

of Agricultural Sciences, New Delhi for the year 2023.

- Dr. Rajkumar Zunjare, Scientist, Division of Genetics, ICAR-IARI, New Delhi was awarded the NAAS Young Scientist Award 2022.

QRT meeting

QRT meeting was chaired by Dr. Mangala Rai, Chairman QRT & Former Secretary, DARE & DG, ICAR on July 03-04, 2023.



QRT meeting at ICAR-IARI

National & International Visits at IARI

Visit of Students of Centre for Community Medicine, AIIMS, New Delhi to IARI on August 11, 2023



Director, ICAR-IARI with students from AIIMS, New Delhi

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