



# THE INDIAN SOCIETY OF AGRONOMY NEWSLETTER

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April–December, 2024

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## **Editorial Board, ISA Newsletter**

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Dr S.L. Jat  
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## **President's Message**

**Dr Shanti Kumar Sharma**

Dear ISA Members,

Namaskar and Jai Hind

It gives me immense pleasure to put before you the ISA Newsletter for April-December, 2024. The very purpose of bringing out the ISA Newsletter is to keep us informed about the latest advancements in agronomic research pertaining to crop production, soil health management, and sustainable farming practices, besides giving us insights on industry trends and important events being held during the period.

Futuristic Agronomy should not only consider, as how to grow crops effectively and profitably, but should also emphasize the conservation of natural resources and protecting the environment. The improved agronomy thus must focus towards the development of promising agrotechnologies for the benefits of the farmers. The dynamism of Agronomy should keep a pace with the advancement of knowledge for better understanding of the planet and environment.

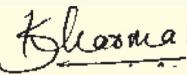
The Newsletter publishes breakthroughs, promising technologies or practices, new initiatives, management of natural resources, news items related to latest developments in the field of Agronomy. It covers news pertaining to workshops/brain-storming sessions held, personnel, awards and achievements. Besides the scientific and research achievements, the newsletter has compiled the important events, focusing capacity building, trainings and visits organized since April, 2024. The Newsletter also announces the upcoming workshops, conferences, or training sessions related to Agronomy.

The ISA Newsletter would help further to monitor new developments, validate existing models and methodologies, assessment of emerging trends and further possibility of adoption of emerging agronomic technologies in agriculture.

I wish that the information included in the Newsletter would be of use for all stakeholders, including researchers, scientists and students. I also extend good wishes to the Editorial team for bringing out this publication timely.



Best regards,

  
(S. K. Sharma)

## Editors desk

On behalf of the Editorial Board, with great pride and sincere privilege we are writing this message to present the ISA Newsletter for April to December, 2024. As the face of the ISA, the Newsletter brings all important happenings and activities held during the said period. With the contributions from all esteemed members, the editorial team has tried to compile the research achievements, meetings and seminars organized, upcoming events and personal growth of the esteemed members of the ISA. In the face of climate change, population growth, and dwindling resources, agronomic interventions may lead towards ecological sustainability, optimum resource efficiency and climate resilience. To increase agricultural productivity and sustainability, diversified food sources is as necessary as conserving soil health, reduce water usage, and enhance biodiversity is. Hence, the novel and newer technologies focusing green methods-led sustainability will prevail its importance in times to come. We rely on the information sent by our contributors from throughout the country to make it an up to date, vibrant and relevant publication. We hope you will enjoy reading this issue. We further invite you to submit your best contributions for this important publication which is the reflection of our Society.

With kindest regards,

Editorial Board, ISA Newsletter

## Tribute to past Presidents, ISA



### Dr Panjabrao Deshmukh: The Founder President of ISA

(27.12.1898 to 10.4.1965)

Dr Deshmukh, popularly known as Bhausaheb Deshmukh was a philanthropist, social activist and a leader to farmers in India. He was the State Minister of Agriculture in the cabinet during 17.4.1952 to 10.4.1962. With a barrister degree in 1921 and a M.A. Honours in Sanskrit, he was Ph.D. with the subject *Origin and*

*Development of Religion in Vedic Literature*. In 1931 he established Shivaji Education Society at Amravati. This society still operates 24 degree colleges, 54 intermediate colleges, 75 high schools, and 35 hostels. An Agricultural University bearing his name operates at Akola, i.e. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra. The Society acknowledges the outstanding contributions and the excellent achievements of Dr Deshmukh for the insights.

## Reflections

### Conservation of Agricultural Biodiversity and the role of custodian farmers

Dr. C. George Thomas

Former Chairman, Kerala State Biodiversity Board

Agricultural biodiversity or agrobiodiversity refers to the diversity of plants, animals, and microorganisms that are used directly or indirectly for food and other uses, including crops, livestock, forestry, and fisheries. It includes a wide array of resources, including commercial cultivars, breeding lines, wild progenitors, and landraces. The FAO defines agrobiodiversity as “The variety and variability of animals, plants, and micro-organisms at the genetic, species, and ecosystem levels that sustain the ecosystem structures, functions, and processes in and around production systems and that provide food and non-food agricultural products.”

Agrobiodiversity is under threat due to monocultures, habitat loss, and unsustainable agricultural practices. Since the 1900s, about 75% of plant genetic diversity has been lost globally as traditional local varieties have been replaced by genetically uniform, high-yielding cultivars. Additionally, 30% of livestock breeds face extinction. This genetic erosion impacts ecosystem services such as carbon sequestration, pollination, water supply, erosion control, and pest management, necessitating urgent conservation efforts.

### Conservation of crop genetic resources

Recognizing the decline in crop diversity, various *ex-situ* and *in-situ* conservation approaches have been developed. *Ex-situ* conservation involves maintaining genetic resources in controlled environments, such as gene banks, seed banks, field gene banks, and in-vitro gene banks. There are over 1,750 gene banks worldwide, housing around 7.4 million accessions. These facilities ensure the preservation of diverse crop species and their varieties and landraces for future use, even if they are lost in natural habitats. *In-situ* conservation strategies

focus on preserving genetic resources within their natural habitats, including traditional farming systems where local cultivars are maintained by resourceful farmers. On-farm preservation of agrobiodiversity through custodian farmers is a major opportunity.

## Global and Indian efforts in conservation of agrobiodiversity

Several international initiatives have been started to conserve agricultural biodiversity of the world by safeguarding seeds and other genetic materials, viz. Global Crop Diversity Trust (Crop Trust), CGIAR Gene bank Platform, and the Svalbard Global Seed Vault. India is home to rich agrobiodiversity and established extensive facilities dedicated to conserve agricultural biodiversity, including five National Bureaus for Plant Genetic Resources (NBPGR), Agriculturally Important Insect Resources (NB AIR), Animal Genetic Resources (NBAGR), Agriculturally Important Micro-organisms (NB AIM), and Fish Genetic Resources (NB FGR). In addition, one seed vault has also been established, the Indian Seed Vault in Ladakh.

## Custodian farmers and agrobiodiversity conservation

Several farming communities around the world contribute some level of *in-situ* conservation of agrobiodiversity. The 'custodian farmers' maintain a diverse portfolio of traditional crop species and varieties adapted to local conditions, and promote the use and conservation of local biodiversity among their friends and neighbours, thereby supporting the *in-situ* conservation of genetic resources. Identifying and supporting custodian farmers is crucial, and this responsibility can be taken up by various Research and Development institutes, the Department of Agriculture, and the State Biodiversity Boards.

Four-cell analysis (FCA) is a rapid assessment method used to evaluate the extent and distribution of crop diversity among farming communities. This approach categorizes crop species, landraces, and cultivated varieties (cultivars) based on abundance and distribution, helping researchers and policymakers understand the current status of agrobiodiversity and develop targeted conservation strategies. A four-cell analysis can begin by conducting a focus group discussion (FGD) among farmers from a particular village. The group should have knowledge of the local species, cultivars, and landraces of various crops. It can be used to assess genetic diversity within a species (intra-specific) or

species diversity within a genus (inter-specific). Once done and repeated every 3-5 years, FCA can highlight the rate of biodiversity loss, providing critical insights for future interventions.

While custodian farmers help in conserving agricultural biodiversity, their work is often driven by non-economic motivations such as cultural pride or personal interest. To ensure the sustainability of their efforts, it is vital to provide support that goes beyond financial incentives, including technical training, access to resources, and community recognition. Integrating conservation education into community practices and involving younger generations is crucial. Efforts should also be made to transfer valuable seed samples to formal conservation centres with specialised facilities for *ex situ* conservation to safeguard against potential loss.

## Promising agro-technologies

### Effect of Polyhalite on growth and productivity of wheat under rice-wheat system

Vipin Kumar, Kapila Shekhawat, Rajiv K Singh and S S Rathore

To assess the effect of multi-nutrient carrier polyhalite mineral, a study was conducted in wheat under rice-wheat sequence at research farm of ICAR-IARI, New Delhi. The different treatments were employed to compare the efficacy of conventional fertilizer MOP, combination of MOP and bentonite as S-source and novel potassium (K) source polyhalite. Among the twelve treatments, 100% recommended K through polyhalite out-performed other treatments in terms of crop growth, yield, net returns (Net B-C ratio: 2.31) and soil health. A respective increase of 19.9 & 7.5% in grain yield was observed with 100% K (polyhalite) and MOP +



bentonite over 100% K (MOP). The application of K @75% RDF through polyhalite was also found at par with 100% K through MOP. The additional quantity of S applied through bentonite can be omitted in wheat if 100% K is applied through polyhalite. Whereas, net gain of 5 kg/ha in available K was observed with 100% K through polyhalite over 100% K through MOP in terms of soil K buildup. Similarly, a net gain of 2 kg/ha in soil available S was also observed with 100% K through polyhalite over 100% MOP in terms of buildup.

## New initiatives

### Building partnerships

1. Dr. Shanti Kumar Sharma, President, ISA & Assistant Director General (HRM), Indian Council of Agricultural Research, New Delhi visited USA and delivered the Keynote Address at the Symposium on Indo-US Collaboration for Global Agriculture on 11<sup>th</sup> November, 2024 in San Antonio, Texas, USA during the Annual International Meeting of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America during 10-13 November, 2024. He held a meeting with Dr. Kristen S. Veum, President of the American Society of Agronomy and Research Leader in Pasture Systems & Watershed Management Research at USDA in University Park, Park, Pennsylvania and Jim Cudahy, the CEO, American Society of Agronomy for collaboration and dis-cussed about joint collaboration & participation International Agronomy Congress by ISA during 2025 in India. He also held the discussions with researchers at The Association of Agricultural Scientists of Indian origin for joint activities with ICAR and ISA.



CEO, ASA



President, American SA Dr Kristen

2. A Scientist Interaction seminar at Mandala Hall of Jaypee Siddhartha New Delhi on strengthening research collaboration with Industry. The dis-

cussion was held on improving agronomic efficacy of alternate P sources under predominant cropping systems in India. The team from the Division of Agronomy mobilised resources through Industry-academia collaboration. Padamshree Dr Arvind Kumar, the eminent agronomist, Dr PS Brahmanand, PD WTC, IARI, Scientists from Division and other sister institutes activity participated in deliberations.



3. The MoU was signed between the Division of Agronomy, ICAR-Indian Agricultural Research Institute, New Delhi and Maruti Suzuki Pvt Ltd. A contract research project for developing Centre of Excellence in organic farming entitled, "Evaluation, outreach and up-scaling of fermented organic manures for sustainability enhancing productivity and reducing environmental footprints of predominant cropping systems in India" under CSR Funding of 40.87 Crores.



### Events organised

1. The Annual Review & planning Meeting of Inter-cropping project held at ICAR-IIFSR during 13-15 May, 2024.
2. Dr. Arjun Tayade, Head, Division of Crop Production CICR, ICAR, Nagpur, delivered very



informative guest lecture on the topic 'High density planting system of cotton' on 25<sup>th</sup> June 2024 at Department of Agronomy, VNMKV, Parbhani. Dr. Tayade focused on canopy management technique for HDPS in cotton, evaluation of chemical defoliant augmenting leaf senescence for mechanical picking in Bt Cotton, shredding and residue incorporation, climate-adaptive intercropping practices in cotton, foliar nutrient management, furrow opening for moisture conservation and organic cotton etc. The post graduate students and faculty members attended and interacted on this topic.

**3. Organization of Guest lecture series by Parbhani Chapter Indian Society of Agronomy, Department of Agronomy, VNMKV, Parbhani**

A guest lecture series by eminent Agronomist was organized by Parbhani Chapter of Indian Society of Agronomy. Dr. Mudalgiriappa, Chief Scientist, AICRP for Dryland Agriculture, Bangalore, was invited as resource person to deliver lecture on 'Rainfed farming for alfisols of Karnataka' on 21<sup>st</sup> June 2024 at Department of Agronomy, College of Agriculture, VNMKV, Parbhani. The M.Sc & Ph.D students as well as faculty members from Agronomy Department attended the guest lecture. He covered the important aspect of dryland farming i.e. contingent crop planning, rainfall and runoff relationship for design of farm pond, compartmental bunding, broad-bed furrow technology, alternate land use system etc.



**4. ISA, Sabour Chapter, BAU Sabour conducted a meeting under the Chairmanship of Dr. A. K. Singh,**

Director Research, BAU, Sabour on 01.08.2024 for strengthening of the Sabour Chapter and to enhance the research initiatives and foster collaborative efforts in the field of natural resource management. The election process for the Office Bearers was conducted. The list of the total strength of Agronomy scientists under BAU, Sabour and the details of the society norms will be compiled. A WhatsApp group of all agronomist of BAU, Sabour and the registered students for promoting registration for Life membership of The ISA and opening of a society bank account need to be assured.



**5. A brainstorming Session on Carbon Farming was organized by Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K), Srinagar and ISA, New Delhi in collaboration with Holistic Agriculture Development programme (HADP), Govt of J & K.**



**6. The Agricultural University, Kota hosted the 7<sup>th</sup> Convocation. The Governor of Rajasthan and Chancellor Shri Kalraj Mishra presided the Chair in**



the presence of The Vice-Chancellor Dr Abhay Kumar Vyas and Dr Panjab Singh, Former Director General, ICAR and Former Vice-Chancellor, Banaras Hindu University, Varanasi.

- Diplomats from African countries visited the IFS Model established at IARI, New Delhi which ensure long term sustainability in Agri-food systems for resilient agriculture across the globe and more relevant to Africa.



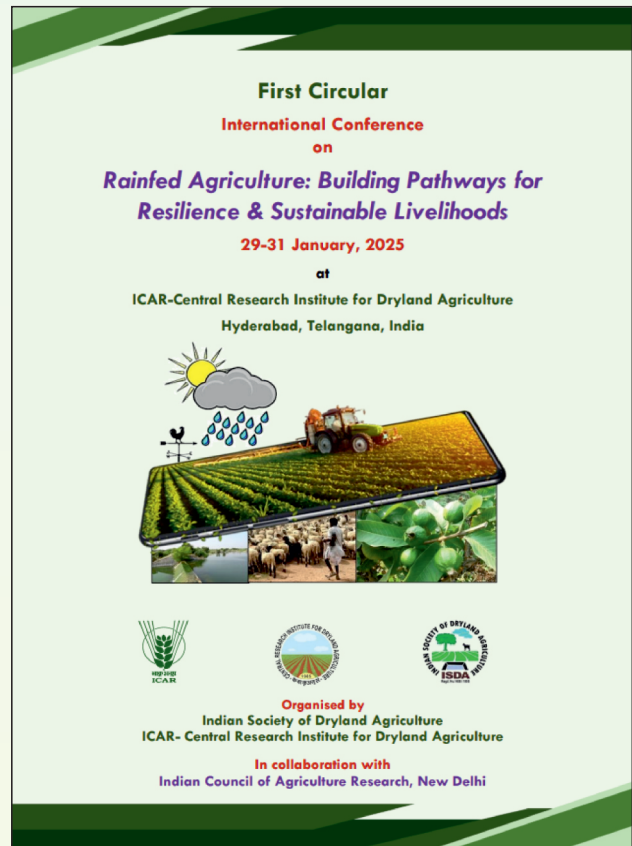
- Ministry of External Affairs of Combined Course for Diplomats from Rwanda, Libya, and South Sudan visited the Division of Agronomy, ICAR-IARI, New Delhi on 16 December 2024 and the IFS model.

### Trainings organized

1. A total of 636 participants participated in the *Short course on "Agronomic research for food security and environmental stewardship in changing scenarios"* organized by The Indian Society of Agronomy during 20-29 June, 2024.
2. A total of 1194 participants participated in the *Short course on "Hands-on Training on Statistical Analysis and Exploring the Role of Agriculture in Industry Domains"* organized by The Indian Society of Agronomy during 22-31 August 2024.

### Forthcoming events/programmes

1. Second International conference on Rainfed Agriculture: Building Pathways for Resilience & Sustainable Livelihoods during 29-31 January, 2025 at ICAR-CRIDA, Hyderabad, Telangana, India. (Hyd Conference).
2. 1<sup>st</sup> International Farming Systems Conference (IFSC 2025) on "Transforming Food, Land and Water Systems under Global Climate Change" during 7-9 March, 2025 is to be Organized by Farming Systems Research and Development Association (FSRDA), Meerut, ICAR – Indian Institute of Farming Systems Research, Modipuram, Meerut.



3. The Indian Society of Agronomy will organize Sixth International Agronomy Congress on



*“Re-envisioning Agronomy for Smart Agri-food Systems and Environmental Stewardship”* from 24–26 November 2025 at National Agricultural Science Complex (NASC) New Delhi, India.



## Chapters' activities

### Honours/Award and recognitions conferred on ISA members

1. **Coromandel Plant Nutrition Award** was given jointly to Dr. Ch. Srinivasa Rao, Director of ICAR-Indian Agricultural Research Institute, New Delhi and Dr. Vinod Kumar Singh, Director of ICAR-Central Research Institute for Dryland Agriculture, Hyderabad during the Inaugural Ceremony of FAI Annual Seminar 2024. Dr Rao's areas of work includes climate change, soil carbon sequestration, rainwater management, climate resilient villages and Dr Singh's work focuses on System agronomy, conservation agriculture, precision farming, and farming system.



2. **M.S. Swaminathan Award:** Dr. A. Latha, Professor, Kerala Agricultural University received the M.S. Swaminathan Award presented by Department of Agriculture Development & Farmers' Welfare, Govt. of Kerala, for research in Agriculture on 17 August 2024. Dr. Latha had popularized the varieties 'Manu Ratna' and 'Manu Varna' among the farmers of Kerala. Her contribution also involves 20 crop management techniques in rice and medicinal plants. In addition, Dr. Latha is involved in the development of agricultural machineries as Co-investigator.



**Dr. A. Latha receiving the M.S. Swaminathan Award for Best Researcher**

3. **Best Poster Award:** Ms. Aswani S., under the guidance of Dr. Anitha, S., Professor, Department of Agronomy, College of Agriculture, Vellanikkara, Kerala Agricultural University, Thrissur, Kerala, secured the award for the best poster presentation on the topic 'Drought management in rice with soil amendments' in the "International Conference on Building Small Holder Climate Resilience for Achieving Sustainable Food System" during September 2024 at Odisha University of Agriculture and Technology, Bhubaneswar.

### Personalia:

#### Obituaries

#### Dr Ratan Lal Yadav

(11.11.1949 to 7.7.2024)

Former Director IIFSR, Modipuram and IISR, Lucknow. The research areas were Agronomy of Sugarcane, cropping/farming system reaserch and organic farming.



**Dr Ratan Lal Yadav**

## Reach us through

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## Our strength

- Life members
- Publications
- Regular events

## Know about IJA

The Indian Journal of Agronomy has been indexed in web of science (Clarivate). The year of inception was 1956 and the current NAAS rating is 5.21. The other features are doi, scopus, open accessibility, on-line submission and tracking system.

## Why to become an ISA Member

- The benefits of becoming an ISA member includes free publication in ISA, rebate in registration fees of Indian Agronomy Congress/National Symposium, voting rights of elections and formation of EC, the benefits of travel grants, ISA Awards etc.
- A discount of up to 10% may be granted for group membership (A minimum five at one time)

## Indian Society of Agronomy Publications for sale

S No.	Title	Members (Rs.)	Libraries (Rs.)	Postal and handling Charges (Rs.)
1.	Agronomic Terminology	600.00	600.00	80.00
2.	Fifty Years of Agronomic Research in India	250.00	350.00	80.00
3.	Text book of Plant Nutrient Management	600.00	600.00	80.00
4.	Modern Concepts of Agronomy	600.00	600.00	80.00
5.	Weed Science of Management	600.00	600.00	80.00
6.	Climate Resilient Agronomy	600.00	600.00	80.00
7.	Frontier in Agronomy for Sustainable Agriculture	600.00	600.00	80.00
8.	Plant Nutrient Management	600.00	600.00	80.00

- N.B. : 1. Inland cheques drawn on **OTHER THAN** Delhi Banks must include bank **COLLECTION CHARGES** otherwise they will not be accepted.
2. Remittances should be payable to "Secretary, Indian Society of Agronomy" New Delhi
3. The Journal is mailed by registered post now. You are requested to provide E-mail address so as to intimate the registered post details.
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**Dear Esteemed Members,**

**We look forward to your valuable contributions and suggestions for improvement of the Indian Society of Agronomy News Letter at [isanews2017@gmail.com](mailto:isanews2017@gmail.com)**

**Editorial Board**

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