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# अजैविक स्ट्रैस प्रबंधन समाचार

# Abiotic Stress Management News

## July to December 2024


भाकृअनुप- राष्ट्रीय अजैविक स्ट्रैस प्रबंधन संस्थान

बारामती, पुणे, महाराष्ट्र ४१३११५

ICAR-National Institute of Abiotic Stress Management

Baramati, Pune, Maharashtra 413115

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# Abiotic Stress Management News

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ICAR-National Institute of Abiotic Stress Management

बारामती 413 115, पुणे, महाराष्ट्र, भारत

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**Published By**

Dr K Sammi Reddy
Director, ICAR-NIASM


## *From the Director's Desk .....*

***Greetings from ICAR-NIASM***

I am pleased to present the most recent edition of the Institute's Newsletter, "Abiotic Stress Management News," which highlights the achievements and current endeavours at ICAR-National Institute of Abiotic Stress Management, Baramati. ICAR-NIASM is dedicated to improving resilience within agriculture by tackling the challenges presented by abiotic stresses. Extreme low/high temperatures, excess/deficit water availability and abiotic edaphic stressors are increasingly affecting agricultural production and overall productivity. The institute is instrumental in not only establishing the knowledge base regarding the impacts of these stressors on plants, animals, and fish, but also innovating suitable technologies for climate-resilient agriculture.

Interdisciplinary research is being done in various areas like, identification evaluation and development of breeding material resistant to abiotic stressors, such as drought, high temperatures and salinity; new plant health indices, Spatiotemporal analysis of rainfall and drought etc. This newsletter has provided snippets of all of these including the new initiatives and activities executed in the past half year.

I wish to extend my sincere gratitude to our dedicated scientists, collaborators, and personnel for their steadfast dedication to furthering the institute's objectives. My appreciation also goes to the Editorial Board for their diligent efforts in producing this newsletter, along with all ICAR-NIASM staff members for their significant contributions to this edition. I invite you to explore the newsletter's contents and join us in celebrating the accomplishments of ICAR-NIASM.

ksreddy

**31st December, 2024** **(K Sammi Reddy)**

# RESEARCH HIGHLIGHTS

## On-station and multi-location trials to assess the performance of promising chia mutants

*Boraiah KM, Harisha CB, Basavaraj PS, HM Halli*

The selected bulk-harvested progenies (M5) obtained from pedigree of 125 and 94 exhibiting minimal segregation, were sown during kharif 2024 in 5m × 6m plots with three replications to evaluate their performance. The progenies were grown separately in two distinct soil types: black and murrum/native, and various morphological and agronomic traits, including yield per plot, were recorded. In addition, promising mutant lines viz., 31 (Entire plant chlorosis), 75 (Phyllody type), 94 (purple pigmented), 125 (purple pigmented and double and bold seeded) and 148 (crinkled leaf) were evaluated across three different locations viz., ICAR, NIASM, Baramati; ICAR-CRIDA, Hyderabad; and ICAR-IISS, Regional Station, Bengaluru to confirm the consistency of trait expression across different agro-climatic conditions in 2024.

## Identification of promising foxtail millet accessions suitable to low soil nitrogen availability

*Boraiah KM, Harisha CB, Basavaraj PS, HM Halli*

Six foxtail millet accessions viz., FXM 70 (Ise 1805), FXM 74 (Ise 1704), FXM 21 (Ise 1162), FXM 34 (Ise 1511), FXM 39 (Ise 1575), and FXM 38 (Ise 1593) performing well under two recommended dose of fertilizers (RDF) and low soil nitrogen (RDF-N) conditions were further validated along with non-performing, nitrogen-sensitive accessions (Ise 1419, Ise 289, Ise 254) and a check variety (SiA 3156) during kharif 2024. The promising accessions showed significant yield improvements over the check under both RDF and low nitrogen conditions, making them ideal candidates for cultivation without compromising yield. Notably, Ise 1805 emerged as the top performer, exhibiting a 38.14% and 32.97% yield improvement over the check in RDF and low N conditions, respectively. Further, characterization of these accessions is essential to identify the specific traits and mechanisms associated with high nitrogen-use efficiency.

## Development of cowpea breeding materials for high-temperature stress tolerance

*Basavaraj PS, Boraiah KM, Harisha CB, HM Halli*

Large-scale screening of cowpea germplasm at multi-locations viz., ICAR-NIASM, Baramati, ICAR-NBPGR, RS, Jodhpur and NBPGR, New Delhi from 2021 to 2024 has led to shortlisting of twenty-five trait specific high temperature stress tolerant cowpea genotypes. Utilizing these trait specific germplasm, viz., CG140, CG86, CG39, CG219, CG195, CG86, CG4, CG250, CG60, CG149, CG88, CG86, CG82, CG3, CG127, CG129, DC15, GC3, PL3, PL4 and RC101, a total of 38 crosses (F1s) were made to develop new breeding materials for enhancing yield and high temperature tolerance. These F1s are currently being evaluated in the field for advancing the generation.

## Green synthesis of cerium nanoparticles (CeNPs) from *Parthenium hysterophorus* for potential application in alleviating water deficit stress in soybean

*Sushil S. Changan, PS Khapte, Neeraj Kumar*

Cerium nanoparticles (CeNPs) were synthesized using an eco-friendly green method, employing a plant extract from Parthenium hysterophorus. The plants were collected from the ICAR-NIASM campus for the experiment. Cerium nitrate, obtained from Himedia, served as the precursor for CeNP synthesis. Water-soluble phenolic compounds such as caffeic acid, ferulic acid, vanillic acid, anisic acid, fumaric acid, and sesquiterpene lactones, primarily parthenin and/or hymenin, present in the plant extract, acted as reducing agents. Initial characterization of the synthesized CeNPs was carried out using a UV-VIS spectrophotometer.

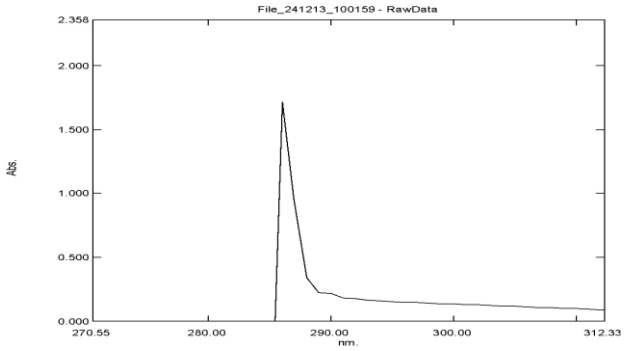



*Fig. 1. UV-Vis analysis of cerium nanoparticles*

Advanced characterization techniques such as TEM, SEM, and FTIR will be employed in subsequent analyses, along with evaluation of their potential for enhancing drought stress tolerance.

## Spatiotemporal analysis of rainfall and drought in agro-climatic zones of India

*Singh RN, Sonam, Vishnoi L, Singh AK, KS Reddy*

Long-term spatiotemporal rainfall trends in various Agro-climatic zones (ACZ) of India was performed using newly introduced Innovative Polygonal Trend Analysis (IPTA) and Innovative Trend Analysis (ITA) along with traditional Mann-Kendall (MK) or modified Mann-Kendall (m-MK) tests to analyze and map the trends of rainfall from 1901 to 2022. The results revealed significant trends in a substantial number of ACZ's and the findings were mapped. Apart from this, trends of drought were also analyzed using ITA and MK tests in ACZs of India using SPI and the findings were mapped.

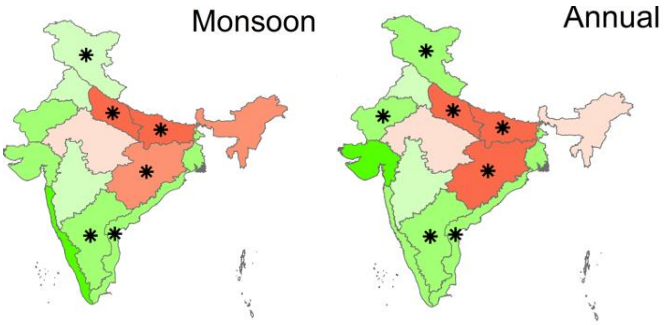



*Fig. 2. Spatial variations of monsoon and annual rainfall trends in ACZs of India*

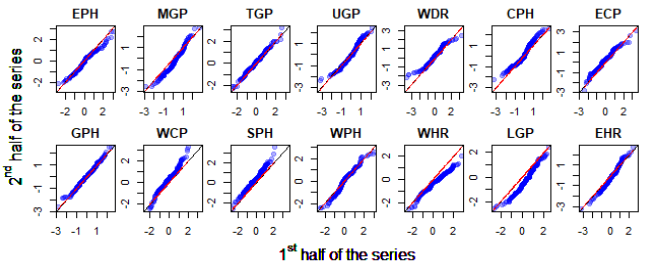



*Fig. 3. Results of ITA of SPI-3 for ACZs of India.*

## Assessment of effect of heat stress on physiological parameters in indigeneous goats

*Pawar SS, Kurade NP, Kochewad SA, Nirmale AV*

The study was conducted to assess the effect of heat stress on physiological parameters in indigenous goats breeds namely, Osmanabadi, Sangamneri & Konkan Kanyal during the summer months. The temperature and relative humidity inside the shed was recorded at a hourly interval throughout the day. The degree of heat stress in goats was calculated using temperature humidity index (THI) as an indicator of heat stress (Fig 4). It was observed that the goats were under variable degrees of heat stress throughout the experimental period. The THI levels in morning varied from 'normal to severe heat stress, whereas, in afternoon varied from 'heat stress to very severe heat stress'. The physiological parameters, namely, rectal temperature, heart rate and respiratory rate, were recorded at a regular interval during the study period. Measurements of physiological parameters were done twice daily, in the morning and afternoon hours, with a gap of three days between recordings i.e., twice weekly.

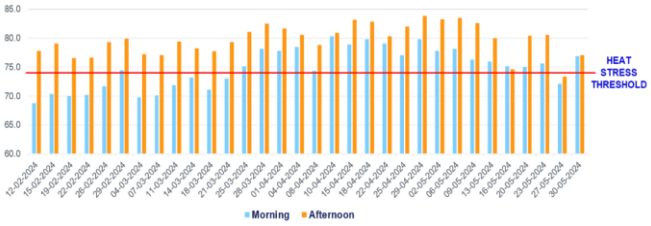



*Fig. 4. The THI levels observed in morning and afternoon during the experimental period.*

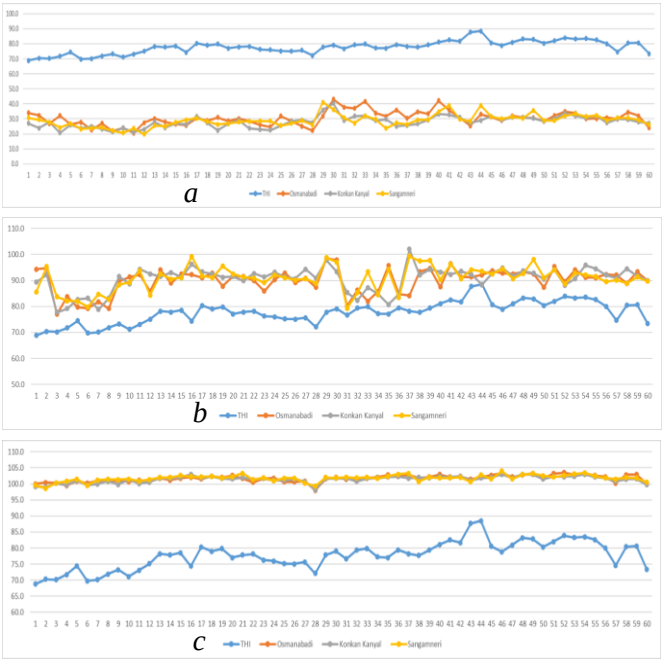



*Fig. 5. Association of THI with different physiological parameters; a. Respiration rate, b. Heart rate, c. Body temperature.*

These measurements were taken with the utmost care to minimize disturbance to the animals. Significant changes were observed in the goats

physiological parameters in response to THI, reflecting different breeds adaptive response to heat stress. Positive correlations were found between THI and each of the physiological parameters namely, respiration rate, body temperature, and heart rate in all the three goat breeds studied (Fig. 5 a,b,c). However, the degree of correlation varied between the breeds, indicating breed wise difference in heat stress response.

## Energy budgeting under CIFS

*Gopalkrishnan and CIFS Team*

The information on physical units in terms of inputs and outputs from individual components of CIFS, viz. crops, livestock, agroforestry, and fisheries, were collected for the period 2022-23 and 2023-24. The physical units under both inputs and outputs were converted to energy units using conversion coefficients published across the literature. The resulting energy units are converted to yearly units in terms of MJ/year/unit of the respective crop, livestock, or agroforestry component.

*Table 1: Energy indices derived for individual units of crop component under CIFS*

| Season | Crop | Total Energy Input (MJ) | Total Energy Output (MJ) | Energy Use Efficiency | Net Energy Gain (MJ) | Energy Profitability |
|---|---|---|---|---|---|---|
| Kharif | Pearl Millet | 1323.91 | 5334.65 | 4.03 | 4011 | 3.03 |
| | Green Gram | 1295.51 | 1764.97 | 1.36 | 469 | 0.36 |
| | Black Gram | 1207.96 | 1258.56 | 1.04 | 51 | 0.04 |
| | Red Gram + Hy. Sorghum | 1324.74 | 28773.54 | 21.72 | 27449 | 20.72 |
| | Hy. Sorghum | 1409.29 | 27402.00 | 19.44 | 25993 | 18.44 |
| Rabi | Chickpea | 935.74 | 1933.30 | 2.07 | 998 | 1.06 |
| | Ground nut | 759.46 | 26929.96 | 35.46 | 26171 | 34.46 |
| | Rabi Sorghum | 812.45 | 39586.55 | 48.72 | 38774 | 47.72 |
| | Safflower | 773.88 | 1528.08 | 1.97 | 754 | 0.97 |
| | Cluster bean | 675.21 | 2361.30 | 3.50 | 1686 | 2.49716 |

The total energy inputs and outputs are derived for each component by combining the energies of individual units under each component. From the above information, several energy indices were calculated to derive information on energy efficiency and profitability.

## Plant Health Index for optimizing hosts for Sandalwood

*SB Chavan, Harisha CB, VD Kakade, AS Morade, SS Changan and Ravi Kumar*

Principal Component Analysis (PCA) identified six critical variables influencing physiological and biochemical responses in sandalwood: total free amino acid, photosystem II, photosynthetic rate, water use efficiency (WUE), leaf temperature, and vapor pressure deficit. These variables explained 78.38% of the total variance, with PC1 contributing 41.03%, followed by PC2 (19.18%), PC3 (10.08%), and PC4 (8.09%). A Plant Health Index (PHI) was developed using these variables to assess sandalwood health across host species. The highest PHI values were recorded for *Cajanus cajan* (0.97), *Leucaena leucocephala* (0.86), *Acacia nilotica* (0.86), *Dalbergia sissoo* (0.85), and *Desmanthus virgatus* (0.81). In contrast, the lowest PHI values were observed for *Santalum album* growing alone (0.32) and *Cynodon dactylon* (0.34). The study revealed that sandalwood growing alone experienced significant health declines, highlighting its reliance on compatible hosts for nutrient absorption through haustorial connections. *Cynodon dactylon* showed poor compatibility with sandalwood, likely due to resource competition.

*Table 2. Categorization of sandalwood host based on PHI value*

| PHI Values | Inference | Hosts |
|---|---|---|
| **<0.25** | Unfavorable host | - |
| **0.25 to 0.50** | Less favorable host | *S. album* alone, *C. dactylon* |
| **0.50 to 0.75** | Favorable host | *A. indica, T. grandis, S. hamata, P. pinnata* |
| **>0.75** | Very favorable host | *C. cajan, L. leucocephala, A. nilotica, D. sissoo, D. virgatus* |

Host species such as *Cajanus cajan* and *Leucaena leucocephala* provided optimal conditions for sandalwood growth due to favorable physiological characteristics, including better nutrient translocation and reduced competition. Host species were categorized based on PHI values, with *Cajanus cajan, Leucaena leucocephala, Acacia*

*nilotica*, *Dalbergia sissoo*, and *Desmanthus virgatus* classified as very favorable, while *Santalum album* alone and *Cynodon dactylon* were categorized as unfavourable (Table 2). This study underscores the critical importance of host selection in enhancing sandalwood health and productivity, particularly in semi-arid regions.

## Genotypic responses to salt stress in dragon fruit

*VD Kakade, Amrut Morade, SB Chavan, KM Boraiah*

This study examined the effects of salt stress on four dragon fruit genotypes irrigated with saline water at 0, 25, 50, 75, and 100 mM. Salt stress reduced new sprout formation, growth, and biomass (above- and below-ground) but had varied effects on root elongation. Sprouting was delayed by 4-7 days at 50-100 mM compared to the control, with the highest mortality (15 %-16.66 %) at 75-100 mM. White-fleshed genotypes showed the highest mortality (21.33 %–25.33 %). Salt stress reduced chlorophyll content, NDVI, photochemical quantum yield of PSII, and WUE. White-fleshed genotypes (Andaman White and Local White) accumulated more Na+ in stems (54.19 ppm and 40.85 ppm) and Cl– in roots (0.36 % and 0.27 %) than red-fleshed genotypes. In contrast, Regular Red had the highest stem K+ (219.83 ppm), followed by Andaman Red (206.32 ppm). These results indicate Regular Red and Andaman Red are efficient Na+ and moderately efficient Cl– excluders, enabling better tolerance to salt stress.

## Differential nutrients (Na, Cl, and K) uptake in local mango germplasm under salinity stress

*Amrut S. Morade, Vijaysinha D. Kakade, K. M. Boraiah, Sushil S. Changan, Sangram B. Chavan, and Neeraj Kumar*

The study conducted to evaluate salinity tolerance in ten mango genotypes under controlled pot conditions using three irrigation treatments with NaCl concentrations of 0 mM (control), 50 mM, and 100 mM exhibited differential morpho-physiological responses and nutrient uptake patterns under salinity stress for local mango genotypes. Fig. 6 highlights the differential ionic responses among mango genotypes under salinity stress obtained for leaf, stem and root analysis for Na, Cl and K contents in mango germplasm. Genotypes L11M9 and L5M5 demonstrate traits conducive to salinity tolerance, while others, like Kesar and NT, are more sensitive. Salinity stress reduced potassium uptake, with a marked potassium deficiency induced by chloride ions. Leaf Na content is relatively lower compared to the roots, suggesting exclusion mechanisms or restricted translocation of Na to the shoots in certain genotypes like L5M5 and L11M9. Genotypes like Kesar and NT show high root Cl accumulation under saline conditions, potentially contributing to stress sensitivity. Highest leaf injury symptoms were observed marked by marginal leaf burning and chlorosis in these genotypes. Genotypes like L11M9 and L5M5 exhibited lower Na and Cl content in leaves and higher K content, even under 100 mM salinity, indicating salinity tolerance. These genotypes likely employ mechanisms like Na sequestration in roots, Cl exclusion, and efficient K uptake or retention.

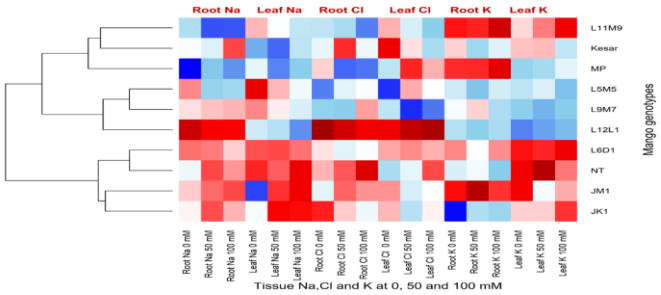


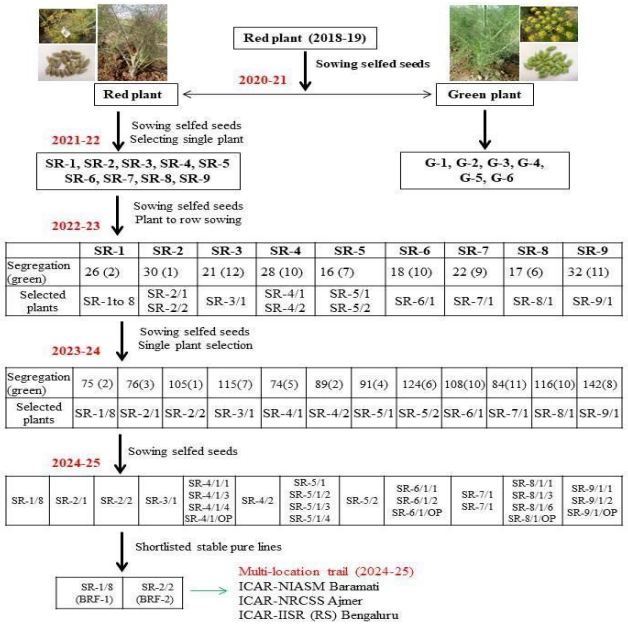

*Fig. 6. Tissue Na, Cl and K influenced by salinity and mango genotypes*

## Red/Bronzy fennel genotype- consistent performance over the generations

*Harisha CB, Boraiah KM, HM Halli*

A bronzy/red colour pigmented fennel genotype having pigmentation on the stem, leaves, and seeds was identified and selected from a single plant in the spice cafeteria in 2018. The single plant selection was advanced to select the pure lines during, 2021-22, 2022-23, 2023-24 and 2024-25 by selfing the individual plants and also allowing the pigmented plants for open pollination. The flow chart of the selection process is shown in Fig. 7. The final stable line SR1/8 and SR2/2 is selected in 2024-25 and were named as BR-1 and BR-2. During the winter season of 2024-25 pure line seeds along with green counterpart (normal pigmented fennel) were sown separately at three locations viz, ICAR-NIASM

farm, ICAR-NRCSS Ajmer, ICAR-IISR, Mau regional station, Bengaluru during 2024-25. The plants showed 100% uniformity (0 segregation) in colour development on leaves, and stem at all three study locations.




| | SR-1 | SR-2 | SR-3 | SR-4 | SR-5 | SR-6 | SR-7 | SR-8 | SR-9 |
|---|---|---|---|---|---|---|---|---|---|
| Segregation (green) | 26 (2) | 30 (1) | 21 (12) | 28 (10) | 16 (7) | 18 (10) | 22 (9) | 17 (6) | 32 (11) |
| Selected plants | SR-1to 8 | SR-2/1 SR-2/2 | SR-3/1 | SR-4/1 SR-4/2 | SR-5/1 SR-5/2 | SR-6/1 | SR-7/1 | SR-8/1 | SR-9/1 |

| Segregation (green) | 75 (2) | 76(3) | 105(1) | 115(7) | 74(5) | 89(2) | 91(4) | 124(6) | 108(10) | 84(11) | 116(10) | 142(8) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Selected plants | SR-1/8 | SR-2/1 | SR-2/2 | SR-3/1 | SR-4/1 | SR-4/2 | SR-5/1 | SR-5/2 | SR-6/1 | SR-7/1 | SR-8/1 | SR-9/1 |

| SR-1/8 | SR-2/1 | SR-2/2 | SR-3/1 | SR-4/1/1 SR-4/1/3 SR-4/1/4 SR-4/1/OP | SR-4/2 | SR-5/1 SR-5/1/2 SR-5/1/3 SR-5/1/4 | SR-5/2 | SR-6/1/1 SR-6/1/2 SR-6/1/OP | SR-7/1 SR-7/1 | SR-8/1/1 SR-8/1/3 SR-8/1/6 SR-8/1/OP | SR-9/1/1 SR-9/1/2 SR-9/1/OP |
|---|---|---|---|---|---|---|---|---|---|---|---|

*Fig. 7. Selection flowchart for red/bronzy fennel genotypes*

Red and green fennel at ICAR-NIASM Baramati (2024-25)

Red and green fennel at ICAR-IISR, Regional Station Bengaluru (2024-25)

Red and green fennel at ICAR-NRCSS Ajmer (2024-25)

*Fig. 8. Bronzy/red pigmented fennel plants performance at different locations*

## Creating genetic variability in groundnut and dragon fruit by mutation breeding

*Boraiah KM, Basavaraj PS, Harisha CB, HM Halli, KK Pal*

The gamma radiation-based mutation breeding was used to create genetic variability in groundnut and dragon fruit. Groundnut seeds of the Kadri Lepakshi variety (a drought-tolerant and high-yielding cultivar) were subjected to gamma irradiation at


*Fig.9. Spectrum of variability oberved in M2 generation in groundnut*

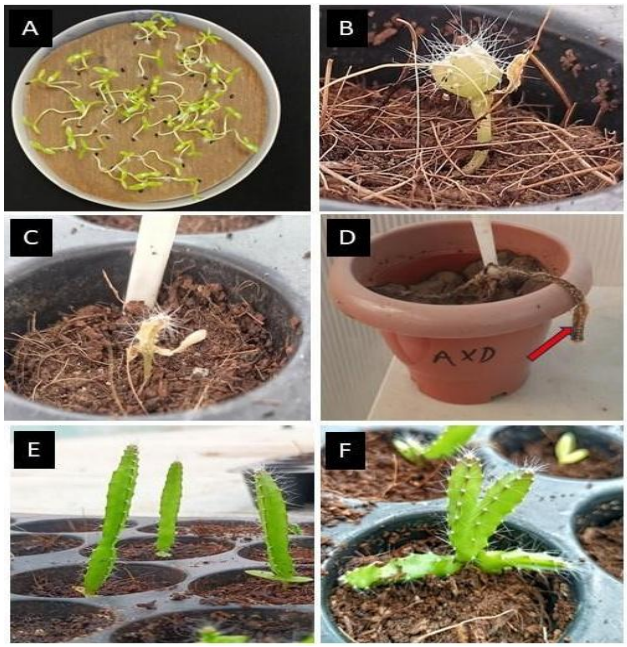



*Fig.10. Early germination and seedling growth of M1 generation due to higher dose. Normal germination and growth at early stage, later seedlings starts yellowing (B),wilting (C) and mortality (D). Abnormalities seedling (F) due to lower dose of gamma irradiation and normal seedling (E) growth in wild types.*

three doses (150 Gy, 200 Gy, and 250 Gy) to address issues such as bitter kernel and haulm taste, seed viability, and kernel size. A significant reduction in germination was observed in the irradiated seeds (M1), especially at the 250 Gy dose, compared to the un-irradiated Kadri Lepakshi seeds.

Approximately 1000 M1 plants were randomly selected and sown using the plant-row method during the Kharif 2024. Mortality in the M2 generation was minimal, although the plants displayed sterility and the absence of pods. The M2 generation exhibited considerable variability in both morphological and quantitative traits. Selected plants from M2 will be raised during rabi-summer 2025 using the single plant progeny method for further selection based on desired traits, stability, and expression. Similarly, to improve floral traits that promote early pollination in the white-fleshed variety, dragon fruit seeds were irradiated with a revised low dose of gamma rays (after standardization) at 50, 100, and 150 Gy to induce genetic variability. The revised doses did not affect seedling survival but impacted germination including few morphological abnormalities, such as branched cladodes instead of the typical single main cladode in the M1 seedlings. The seedlings raised will be hardened before transplanting into the field for further studies. Since crop is vegetatively propagated, mutants will remain in the M1 stage.

### Evaluation of the dragon fruit hybrids (F1) for fruit quality and consumer acceptability

*Boraiah KM, Basavaraj PS, Harisha CB, HM Halli, KK Pal*

The fruits of hybrids, created by crossing different varietal (flesh) types, were analyzed for quality and evaluated for taste and consumer acceptability through organoleptic testing. It was observed that the hybrids exhibited variation in quality traits, including variegated flesh colour, taste, and consumer acceptance, suggesting differential inheritance of these traits. These findings will need to be confirmed through genetic and inheritance studies in the future.


*Fig 11. The variation observed for flesh colour in different hybrids of dragon fruit and organoleptic (sensory evaluation) test (below) of dragon fruit hybrid.*

## NEW INITIATIVES

### ICAR-NIASM signs MOU with Baramati Cattlefeeds Pvt. Ltd.

On July 25, 2024, ICAR-NIASM and Baramati Cattlefeeds Pvt Ltd (Hindustan Feeds) formalized a collaborative partnership through the signing of a Memorandum of Understanding (MoU). The MoU was signed by Dr K Sammi Reddy, Director of ICAR-NIASM, and Mr Sachin Mane, Director of Hindustan Feeds. During the meeting, the participants engaged in detailed discussions about the scope and objectives of the proposed area of collaboration i.e., feed alternatives and enteric methane emission in cattle using metagenomics approach. Members from both organizations attended the MoU signing event.

### Extension of MoU between ICAR-NIASM and Ambronics Private Limited, Parbhani

Ambronics Private Limited, Parbhani extended the MoU with ICAR-NIASM for one year with an additional budget of 4.16 lakh to conduct second-year field trial.

### NABARD-funds project "Development of Climate Resilient CHARA Bank for Round-the-Year Fodder Availability in Drought-Prone Regions"

With a financial outlay of ₹25.18 lakhs and a project period of three years (2024-2026), this project aims objectives to ensure year-round fodder availability under rainfed conditions, develop Standard Operating Procedures (SOPs) and bankable models for fodder systems, and assess their impact on milk yield and the economics of dairy farmers. Three fodder models viz. Hedge Leucaena + Lucerne + Marvel (Rainfed conditions); Multi-tier model (Leucaena + Desmanthus + Cenchrus + Sesbania Boundary) and Boundary plantation of fodder species (Leucaena/Sesbania/Desmanthus) were implemented on 21 farmers' fields across seven

villages in Baramati Tehsil: The project demonstrates the potential of climate-resilient fodder systems in enhancing livestock productivity and farmers' income in drought-prone areas.

# MAJOR EVENTS

## Capacity Building Program on "Efficient Administration and Financial Management"

ICAR-NIASM successfully concluded the "Capacity Building Program on Efficient Administration and Financial Management" for KVK administrative personnel across India on July 5, 2024. Dr K Sammi Reddy, Director, ICAR-NIASM was the Chief Guest at the valedictory session held. The valedictory session was honoured by the presence of Shri S K Pathak, Joint Secretary (Finance), ICAR, New Delhi as the Guest of Honour virtually. Dr SK Das, CFAO and Programme Director, presented a comprehensive program report. He elaborated on the program's milestones, its impact on administrative efficiency, and a comparative analysis of participants' performance, showcasing significant improvements.

Dr Aliza Pradhan, Programme Coordinator, highlighted the program's success in strengthening administrative competencies. Participants appreciated the well-structured sessions, emphasizing their enhanced skills in financial management, GeM, GFR, PFMS, and vigilance. Shri Pathak stressed the importance of financial management in agricultural extension, lauding the program's role in empowering KVK personnel. Dr Reddy reaffirmed ICAR-NIASM's commitment to administrative excellence in agricultural extension. The event concluded with a vote of thanks followed by the National Anthem.

## Pre-Examination Training Programme for LDCs

ICAR-NIASM successfully organized an Online Pre-Examination Training Programme on August 21, 2024, aimed at enhancing the knowledge and career prospects of Lower Division Clerks (LDCs) in the ICAR System. The program prepared participants for the Limited Departmental Competitive Examination (LDCE) for the post of UDC. Dr K Sammi Reddy, Director ICAR-NIASM, chaired the inaugural session as Chief Guest.

Dr SK Das, Chief Finance and Accounts Officer and Programme Director, provided an overview of the program's significance. The 17-day training, held from August 21 to September 6, 2024, covered General Awareness, English Comprehension, Noting & Drafting, Office Procedures, ICAR Rules & Bye-Laws, and Audit Manual. A total of 42 participants from 23 ICAR Institutes across 14 States/UTs engaged in 10 online sessions led by experts from ICAR institutes, ISTM, and other government departments. The valedictory session on September 6, 2024, was chaired by Dr Reddy, who emphasized the program's role in strengthening ICAR's administrative framework. Dr Das presented the program report, highlighting its impact. The program was successfully coordinated by the ICAR-NIASM organizing team, ensuring effective training delivery.

## Tree Plantation Programme "Plant4Mother"

As per the Ministry of Agriculture and Farmers Welfare, Government of India, a tree lantation program under the initiative "Plant4Mother" was organized on August 29, 2024 in the agroforestry

block at ICAR-NIASM, Baramati. During this plantation drive, 17 NSS volunteers of BSc (Agriculture) from IARI-Baramati Hub, along with scientific staff institute, planted mango grafts of the Kesar variety. Dr Rinku Dey, Head of the School of Soil Stress Management, addressed the gathering and highlighted the benefits of tree plantation and its critical role in ensuring environmental security. Following the plantation drive, a "Tree Rally" was organized on the ICAR-NIASM campus, during which students gave slogans advocating for tree plantation. This program was organized by NSS In-charge, Mr Paritosh Kumar, with the support of Dr SB Chavan, Scientist (Agroforestry), and Dr Harish CB, Scientist (MAP).


## ICAR-NIASM Organized Six Day Training Programme on "Climate Smart Agriculture"

ICAR-NIASM successfully conducted a six-day training programme on "Climate Smart Agriculture" during 2-7 September 2024. This programme sponsored by the Directorate of Agriculture and Food Production, Government of Odisha under the World Bank project on 'Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA). A total budget of ₹22,65,636 was allocated for three such training programmes. The first batch comprised 17 Group A and B agricultural officers (11 male, 6 female) from 10 districts of Odisha. The inaugural programme was presided over by Dr K Sammi Reddy, Director, ICAR-NIASM. Dr SD Gorantiwar, Former Director of Research, MPKV, Rahuri and Mr Dipak Das, DDA, OIIPCRA Project, Odisha were the Guests of Honour. On this occasion, a book on "Strategies for Abiotic Stress Management in Agriculture" by Dr Harisha et al released. The training programme comprised of field visits for practical experience and theory classes on mitigation and adaptation innovations for climate smart agriculture. Trainees visited automation technologies at farmers' fields of Satara district, automated weather units, Farmer Producer Companies (FPCs), value-addition industries, and high-tech nurseries. The valedictory session was held on September 7, 2024 under the Chairmanship of Dr K Sammi Reddy, Director, ICAR-NIASM, who emphasized the training's relevance in today's context and urged participants to apply the knowledge at the field level.

## Training cum Technology Demonstration on "Mixed Silage of Sugarcane Tops"

The ICAR-NIASM organized two Trainings cum Technology Demonstrations on the "Mixed Silage of Sugarcane Tops" on September 9, 2024 and 19th November 2024, under the Development Action Plan for Scheduled Castes (DAPSC) 2024-25. Dr K Sammi Reddy, Director, ICAR-NIASM graced the occasion as chief guest. Dr K Sammi Reddy, in his inaugural address, emphasized the importance of adopting the technology of mixed silage of sugarcane tops to improve livestock production during scarcity periods. The Heads of the Schools namely, Dr KK Pal (SWSM), Dr DD Nangare (SSSPS) and Dr Rinku Dey (SSSM) were also present during the function. During the training, the farmers were guided on various aspects of livestock management. Dr AV Nirmale guided the participants on the importance of balanced nutrition in livestock. Dr NP Kurade briefed on the technology of mixed silage and its importance in the scarcity regions. Dr SS Pawar (Member Secretary, DAPSC Committee) proposed a vote of thanks.

A highlight of the event was the field demonstration of the mixed silage-making process, allowing participants to witness firsthand the practical application of the techniques discussed during the lecture sessions. About 135 dairy farmers belonging to scheduled castes were benefitted through this programme. The beneficiary farmers were provided with the silage bags and culture/inoculum for making silage. These farmers will be further

provided with Dairy kit comprising 50 kg concentrate feed, 10 kg mineral mixture, two stainless steel buckets, milk can (10 ltr.), milk measures (1 ltr. and 0.5 ltr.), deworming tablets and two plastic ghamelas.

## Plantation Drive at ICAR-NIASM, Baramati

On the auspicious occasion of September 17, 2024, ICAR-NIASM, Baramati, organized the second phase of the plantation drive as part of the Global Campaign #EkPedMaaKeNaam #Plant4Mother, launched by the Hon'ble Prime Minister of India on World Environment Day 2024. A total of 165 saplings were planted by the institute's staff within the premises. The species planted included approximately 100 sandalwood, 40 mango and 25 other minor species. The participants pledged their commitment to the cause of plantation and environmental sustainability. In addition, the Livestock Section of ICAR-NIASM contributed to the initiative by planting saplings of Samanea saman (rain tree), mango, and Bougainvillea along the unit's premises. Dr K Sammi Reddy, Director of ICAR-NIASM, highlighted the numerous benefits of plantation and emphasized the importance of tree planting in addressing current environmental challenges. This drive marks a significant step towards the institute's ongoing commitment to environmental stewardship and sustainability.

## Foundation Stone laying of Type-V Quarters & Inauguration of institute facilities

Dr SK Chaudhari, Deputy Director General (NRM), ICAR, New Delhi, visited the ICAR-NIASM on September 27, 2024. During his visit, he laid down the Foundation stone for Chandrabhaga Residency (Type-V quarters) at the institute's Malegaon campus. He also inaugurated the newly constructed Experimental Poultry Shed in the livestock research facility and Water Treatment Plant at the institute. Dr SK Chaudhari addressed the institute staff in the Sardar Vallabhbhai Patel Auditorium. Dr K Sammi Reddy, Director, ICAR-NIASM, during his welcome address, briefed the chief guest about the institute's recent achievements. During the occasion, DDG (NRM) distributed ICAR technology certificates to the scientists, felicitated housekeeping staff, and released the institute's publications. He wholeheartedly congratulated the Director and the staff for their contributions for developing ICAR-NIASM into an institute of national repute. He also emphasized the need for further dedicated efforts to raise the institute to international standards. He stressed upon the importance of teamwork for the successful execution of the projects to the staff of ICAR-NIASM. The programme concluded with a vote of thanks delivered by Dr NP Kurade, Convener of programme.

## Inauguration of 'Sanitary Pad Machine' under DAPSC 2024-25

On October 9, 2024, the inauguration of Sanitary Pad Machine, distributed under the DAPSC 2024-25 program, took place in Sansar village, located in Indapur Tehsil. The event was graced by Chief guest, Dr K Sammi Reddy, Director, ICAR-National Institute of Abiotic Stress Management, Baramati. The machine was given to the Jagruti Mahila Bachat Gat, a women's self-help group based in Hinganewadi, Sansar. This initiative aims to empower rural women by providing them with the resources to produce sanitary pads locally, thereby promoting hygiene and self-sufficiency within the community. During the ceremony, the chairman and member secretary of the group, Mrs Shelar and Mrs Surekha Chavan, expressed their enthusiasm and confidence in the machine's potential to serve not only their group but also the rural women in neighbouring villages. They

extended their heartfelt gratitude to Dr K Sammi Reddy and the entire DAPSC implementation team for facilitating this vital resource. Dr K Sammi Reddy provided insightful guidance on maximizing the machine's utility and assured the group of ongoing support to enhance its functionality. He emphasized the importance of such initiatives in fostering women's empowerment and improving health outcomes in rural areas. DAPSC team's efforts is an important step toward improving women's health and economic independence in the region, illustrating the positive impact of community-driven initiatives in addressing local needs.

## Training Programme on "Climate Smart Agriculture" for Agriculture Officers of Odisha Government

ICAR-NIASM, successfully conducted a six-day training programme on "Climate Smart Agriculture" during 14-19 October, 2024 for second batch of Agriculture officers from Government of Odisha. This programme sponsored by the Directorate of Agriculture and Food Production, Government of Odisha under the World Bank project on 'Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA). A total budget of ₹22,65,636 was allocated for three such training programmes. This batch comprised 19 Group A and B agriculture officers (14 male, 5 female) from 10 districts of Odisha. The inaugural programme was presided over by Dr K Sammi Reddy, Director, ICAR-NIASM, Shri Rashmi Ranjan Nayak, Additional Secretary to Government of Odisha, Dept of Water resources and Project Director, OIIPCRA, and Dr. Vijay Kolekar, Agronomist, POCRA. The training programme comprised of field visits for practical experience and theory classes on mitigation and adaptation innovations for climate smart agriculture. Trainees visited POCRA field implementation site at Dharashiv, Osmanabad, research units (dragon fruit, chia, pigeon pea, integrated farming system model, agroforestry fields) of ICAR-NIASM, KVK Baramati, Centre of Excellence Diary Unit, climate smart interventions at BAIF, Urulikanchan, automated weather units, Farmer Producer Companies (FPCs), value-addition industries, and high-tech nurseries. The valedictory session was held on October 19, 2024 under the Chairmanship of Dr K Sammi Reddy, Director, ICAR-NIASM, who emphasized the training's relevance in today's context and urged participants to apply the knowledge at the field level.

## Training Program on Sustainable Nutrient Management and Agroforestry for Soil Restoration

The ICAR-NIASM organized a two-day training program titled "Nature Positive Solutions for Shifting Agrifood Systems onto Sustainable Pathways" on October 21-22, 2024. The theme focused on "Nutrient Management Systems and Agroforestry Models for Restoring Soil Quality and Resilience." Held in Akole Tehsil, Ahmednagar district, Maharashtra, the program aimed to educate farmers on sustainable practices under a project funded by Boversaity International and IWMI New Delhi, with BAIF and ICAR-NIASM implementing it in the Akole cluster. On the first day, farmers visited demonstration plots established in 60 locations across different landscapes to observe sustainable farming practices. On the second day, Dr K Sammi Reddy, Director, ICAR-NIASM, distributed soil health cards to 50 beneficiaries and explained the significance of these cards in reducing fertilizer use. He stressed that the soil health card system could cut fertilizer use by 30-80% and advocated for making these cards mandatory for

crop loans and fertilizer purchases. He also highlighted the long-term damage caused by the Green Revolution and the need for integrated farming systems. Dr SB Chavan delivered a talk on agroforestry models for livelihood and environmental security, while farmers explored various agroforestry sites, including Aonla-based systems, dragon fruit cultivation, high-density mango orchards, silvipasture units, and Climate-Smart Integrated Farming Systems.

## Monitoring Visit to NABARD Fodder Systems Project Area

A monitoring visit for the NABARD-supported project "Development of Climate-Resilient CHARA BANK (Fodder System) for Round-the-Year Fodder Availability for Livestock in Drought-Prone Regions" was conducted on November 9, 2024. The team included Shri Ajinath Tele (AGM, NABARD), Shri Dinesh, Mrs Ananya (Assistant Managers, NABARD), and Dr SB Chavan (Principal Investigator). At ICAR-NIASM, 21 farmers interacted with NABARD officials. Dr Chavan presented progress on input procurement, farmer selection, and the establishment of demonstration plots, with sowing completed for 10 farmers and more layouts in preparation. Shri Tele encouraged farmers to actively engage and share their experiences to promote the project's success. Farmers expressed strong interest in the Multi-tier models and Leucaena-Cenchrus-Desmanthus (1:1:1) system. The team visited the demonstration plot at NIASM, where progress on challenging soils was highly appreciated. Field visits to farmers' plots in Karha, Waghaj, and Jalgaon Supe highlighted the need for field boards to enhance visibility and awareness. This visit reinforced the project's importance and commitment to fostering climate-resilient fodder systems for drought-prone regions.

## Training Programme on "Climate Smart Agriculture" for Agriculture Officers of Odisha Government

ICAR-NIASM, successfully conducted a six-day training programme on "Climate Smart Agriculture" during 11-16 November, 2024 for third batch of Agriculture officers from Government of Odisha. This programme sponsored by the Directorate of Agriculture and Food Production, Government of Odisha under the World Bank project on 'Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA). A total budget of ₹22,65,636 was allocated for three such training programmes. This batch comprised 23 Group A and B agriculture officers (14 male, 5 female) from 10 districts of Odisha. The inaugural programme was presided over by Dr K Sammi Reddy, Director, ICAR-NIASM. The training programme comprised of field visits for practical experience and theory classes on mitigation and adaptation innovations for climate smart agriculture.

Trainees visited SRT trials on Paddy at Bhor, research units (dragon fruit, chia, quinoa, pigeon pea, integrated farming system model, livestock units, agroforestry fields) of ICAR-NIASM, KVK Baramati, Centre of Excellence Diary Unit, climate smart interventions at BAIF, Urulikanchan, ICAR-

NRC, Grapes, automated weather units, Farmer Producer Companies (FPCs), value-addition industries, and high-tech nurseries. The valedictory session was held on November 16, 2024 under the Chairmanship of Dr Vijay Kolekar, Agronomist, PoCRA, Maharashtra, and Dr Ajay K Singh, Principal Scientist and Head, SASM, who highlighted the training's significance in the current context of climate change.

## Celebration of World Soil Day 2024

ICAR-NIASM celebrated "World Soil Day- 2024" programme under the theme " Caring for Soils: Maesure-monitor-manage" at Katphal Village, Tehsil- Baramati, District- Pune on December 5, 2024. About 105 participants including 36 females from the village and institute participated in the programme. The programme was chaired by the Hon'ble Director of the institute, Dr K Sammi Reddy. Dr NP Kurade, Chairman, DAPSC implementation committee; Dr Aliza Pradhan, Dr A.V. Nirmale members of the DAPSC committee attended the programme. Additionally, the village Sarpanch, members of the gram panchayat attended the programme. At the onset of the programme, Grampanchayat members welcomed the chief guest along with all the other organisers. On the occasion, soil health cards were distributed to 50 farmers thereby promoting awareness about monitoring of soil health. Various inputs were also distributed to the identified DAPSC beneficiaries from the village.

## Frontline demonstration of multifunctional ratoon drill (MRD)

A one-day frontline demonstration cum field trial on the "Multifunctional Ratoon Drill Machine," emphasizing the importance of the SORF (Stubble Saving, Off-Baring, Root Pruning, and Fertilizer Placement) practice, was organized at Khandaj Village, Tal-Baramati, Dist.-Pune, on December 13, 2024. The primary objective of the demonstration was to raise awareness about the benefits of conservation agriculture (CA) practices, such as adopting chickpea intercropping in trash-retained fields with minimal soil disturbance in ratoon crops, among sugarcane farmers. The event was organized by the CRPCA team. Approximately 22–25 progressive farmers and officials from the Malegaon Sugar Mill participated. They expressed gratitude to ICAR-NIASM for conducting scheduled CA field trials over the past five years, which have contributed to resource conservation and enhanced profitability in the ratoon sugarcane system.

## ICAR-NIASM participated in exhibition at ATARI, Pune

On the occasion of Farmers' Day programme, ATARI, Pune organized the farmers' programme and exhibition on 23rd December, 2024 at ATARI, Pune. Hon Shivraj Singh Chouhan, Minister of Agril and farmers' Welfare, Govt of India, Hon Devendra Fadanavis, Chief Minister of Maharashtra and Hon Chandrakant Dada Patil Minister of Govt of Maharashtra inaugurated the exhibition and addressed the farmers gathering.

More than 1000 farmers attended this programme. NIASM has displayed various climate resilient technologies such as Climate smart integrated

farming system, Waste water treatment plant through models, Cultivation of Dragon fruit in degraded lands, Silage making through sugarcane tops, Cultivation of Chia crop, SORF machine etc through posters in the exhibition.

## Swachhata Hi Seva campaign

The Swachhata Hi Seva 2024 campaign at ICAR-NIASM, Baramati, commenced with a pledge-taking event on September 14, 2024, led by Dr K Sammi Reddy, Director of ICAR-NIASM. The event involved staff and students vowing to uphold cleanliness, followed by a collective effort to uproot parthenium weeds around the campus. Subsequent activities included an online Swachhta Pledge led by Dr H Pathak, DG, ICAR on September 17, 2024, a Shramadhan program to clean the pond area on September 19, 2024, a painting competition for local school children on September 20, 2024 and a debate competition on September 23, that focused on the Swachh Bharat initiative and plastic usage. September 27, 2024 organized a Rangoli competition on showcased creativity awareness/ theme on climate change and swacchata and on the same day organized a mega event of Safai Mitra Suraksha Shivir to recognize the housekeeping staff and provided them with safety kits. The event was presided over by Dr SK Chaudhari, Deputy Director General (NRM), in the presence of Dr K Sammi Reddy, Director of ICAR-NIASM.

The campaign culminated in a series of impactful events leading up to Swachhata Diwas on October 2, 2024 commemorate Gandhi Jayanthi, which included a cleanliness drive at Tukai Mata Mandir and various activities aimed at fostering community involvement in maintaining cleanliness. The celebration featured a Shramadhan session focused on cleaning residential areas and a "Run for Swachhata" initiative for children. The campaign concluded with a valedictory program on October 3, 2024, where prizes were awarded to winners of various competitions. Dr K Sammi Reddy commended the efforts of the Swachhta committee and encouraged ongoing participation in future cleanliness initiatives. The campaign successfully reinforced the significance of cleanliness and community engagement in promoting a sustainable and cleaner environment.

## ICAR-NIASM participated in Global Soils Conference

ICAR-NIASM participated in exhibition of Global Soils Conference held during 19-22 November, 2024 at NASC, New Delhi. Dignitaries of ICAR Hon'ble Dr. Himanshu Pathak, Director General and Dr. S. K. Chaudhari DDG (NRM), ICAR visited the exhibition stall and appraised the research activities of the institute. ADG, Directors of ICAR institutes and dignitaries other than ICAR institutes also visited NIASM stall during exhibition.

## Swachhata Pakhwada at ICAR-NIASM

The Swachhata Pakhwada 2024 at ICAR-NIASM, Baramati (16-31 December 2024) was marked by a series of activities aimed at promoting cleanliness, waste management, and environmental sustainability. The event kicked off on December 16 with a pledge-taking ceremony led by Dr K Sammi Reddy, Director, where all staff pledged to uphold cleanliness. A committee meeting on December 18 reviewed progress on maintaining cleanliness standards and managing waste, including the disposal of old records and junk materials. On December 20, a cleanliness drive was conducted at the School of Water Stress Management, focusing on the disposal of packaging waste and sanitizing the office premises. A visit to the Waste Water

Treatment Unit on December 26 highlighted the process of recycling waste water for agricultural and aquaculture applications. On December 30, a stocktaking of old books and records at the School of Water Stress Management led to the compilation of junk materials for disposal. The Pakhwada concluded on December 31 with an awareness session on cleanliness followed by a Shramadhan, where students and staff collected plastic waste and removed noxious weeds including parthenium weeds from the campus. Throughout the fortnight, the staff and students demonstrated strong commitment to maintaining a clean and eco-friendly campus, successfully integrating waste management and sanitation into daily practices.

## Trainings/Seminar/Workshop/Symposia/Conference organized

| SN | Training (Period) | Beneficiaries details (Numbers) | Organizers |
|---|---|---|---|
| 1 | Five-day Training Programme on "Blended Learning Programme - Writeshop Programme on Climate Change (27-31st August 2024) | NABARD Officials (21) | Sangram B Chavan, VD Kakade, Amrut Morade (as coordinators) and BB Gaikwad, Basavraj, and Harisha CB (Co-coordinators) |
| 2 | Six-day Training Program on "Climate-Smart Agriculture" (2-7 September, 2024) funded by sponsored by the Directorate of Agriculture and Food Production, Government of Odisha | Group A & B Officials (17) | Sangram B Chavan & Aliza Pradhan (Course Director)<br>SA Kochewad, PS Khapte, K Ravi Kumar, & Nobin Paul (Co-course Directors) |
| 3 | Six-day Training Program on "Climate-Smart Agriculture" (14-19 October 2024) funded by sponsored by the Directorate of Agriculture and Food Production, Government of Odisha | Group A & B Officials (20) | Sangram B Chavan & Aliza Pradhan (Course Director)<br>Gopalakrishnan B., AS Morade, VD Kakade, Shushama Awaji (Co-course Directors) |
| 4 | Six-day Training Program on "Climate-Smart Agriculture" (11-16 November, 2024) funded by sponsored | Group A & B Officials (23) | Sangram B Chavan & Aliza Pradhan (Course Director) Prashant |

| SN | Training (Period) | Beneficiaries details (Numbers) | Organizers |
|---|---|---|---|
| | by the Directorate of Agriculture and Food Production, Government of Odisha | | Kumar, Sushil Chnagan, RN Singh, Navyashree, P (Co-course Directors) |
| 5 | Three-day training On-location Training Programme on Adaptation Techniques in Climate Smart Agriculture (CSA) sponsored by BIRD NABARD, Lucknow (16th to 18th December 2024) | Bankers and training officers (24) | Sangram B Chavan, VD Kakade, Amrut Morade as coordinators, and Kartikeyan, K Ravi Kumar, Navyashree, and Nobin Paul as co-coordinators |
| 6 | Two-day training program titled "Nature Positive Solutions for Shifting Agrifood Systems onto Sustainable Pathways" on October 21-22, 2024 | Farmers (50) | V Rajagopal, Sangram B Chavan and HM Halli |
| 8 | One Day Workshop on “Management of Mahogany Based Agroforestry Systems” March 23, 2024 | MITCO officials and farmjers (30 nos) | Sangram B Chavan, VD Kakade, Amrut Morade, Vanita Salunkhe, Ravi Kumjar |
| 13 | Efficient Administrative and Financial Management for the Administrative Personnel of KVKs in India, (19th June to 5th July, 2024) | KVK Staff (175) | SK Das, HM Halli, Aliza Pradhan, Nobin Paul |
| 14 | Pre Examination Training (for Limited Departmental Competitive Examination for the Post of Upper Division Clerks (in ICAR System (21st August to 6th September, 2024) | UDC aspirants across ICAR (50) | SK Das, HM Halli, Aliza Pradhan, Dayanand Kharat, Trilok Saini |
| 15 | Orientation Training Programme for T1 staff of ICAR-NIASM (12 Aug. 2024-31 July 2025) | T1 staff of NIASM (5) | Rinku Dey (Training Coordinator) |
| 16 | Internship training for S.Y.B. Voc. QCI students of Shardabai Pawar Mahila Arts, Commerce, and Science College Shardanagar, Malegaon (Bk.) (19 | Students (15) | Rinku Dey, Karthikeyan N, Rajagopal V, Hanamant M Halli |

| SN | Training (Period) | Beneficiaries details (Numbers) | Organizers |
|---|---|---|---|
| | December, 2024 - 9 January , 2025; 15 days). | | |
| 17 | Internship training for M.Sc. Microbiology students of Shardabai Pawar Mahila Arts, Commerce, and Science College Shardanagar, Malegaon (Bk.) (19 December, 2024 - 9 January , 2025; 15 days). | Students (8) | Rinku Dey,<br>Karthikeyan N |

## Workshops/Seminar/Symposia/Conference/Training attended

| Name of staff | Title of Seminar/Workshop/ Symposia/Conference/Training attended | Venue | Organised by | Dates |
|---|---|---|---|---|
| **Dr NC Paul** | Training programme on "Geospatial Technologies & Applications" | NRSC (ISRO), Hyderabad | NRSC (ISRO), Hyderabad | 01-05th July 2024 |
| | Training programme on "International Research Conference on Sustainable Financing for Food Security and Farm Income" | CAB, RBI, Pune | CAB, RBI, Pune | 11-12th September, 2024 |
| | Global Soils Conference 2024 | NASC Complex, New Delhi | Indian Society of Soil Science, New Delhi | 19-22nd November 2024 |
| | Eleventh International Triennial Calcutta Symposium on Probability and Statistics | University of Calcutta, Kolkata | University of Calcutta & Calcutta Statistical Association, Kolkata | 27-30th December, 2024 |
| **Mr K Ravi Kumar** | Global Soil Conference, 2024 | NASC Complex, New Delhi | Indian Society of Soil Science, New Delhi | 19-22nd November 2024 |
| **Ms P Navyasree** | Training program on “Multivariate Data Analysis Using R” (On-line Mode) | Online mode | ICAR-NAARM, Hyderabad | 22- 26th July, 2024 |

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| **Dr VD Kakade** | Global Soil Conference, 2024 | New Delhi | Indian Society of Soil Science, New Delhi | 19-22th November 2024 |
| **Dr JH Kadam** | Farmers Workshop on Turmeric | ZP Satara | SDAO, Satara | 13th December, 2024 |
| | Abiotic Stress Management in Ginger | Online | Pani Foundation, Mumbai | 29th October, 2024 |
| | Turmeric processing and Value addition | Online | State level Technical Institute-PMFME | 12th November, 2024 |
| **Dr Prashantkumar S Hanjagi** | One-day training program by the Technical Experts/Scientists of LI-COR INC., USA on use of LI-COR Products and equipments. | Hotel Ibis, Viman Nagar, Nagar Road, Pune | DTPLENVIRO TECHSOLUTIONS (OPC) PVT. LTD. | 24th July 2024 |
| | National Conference of Plant Physiology - 2024 on "Frontiers in cell to whole plant physiology: bridging science and sustainability" | ICAR-Central Plantation Crops Research Institute Kasaragod, Kerala | Indian Society for Plant Physiology, New Delhi & ICAR-Central Plantation Crops Research Institute, Kerala | 17-19th December 2024 |
| **Dr Sushma M Awaji** | One-day training program by the Technical Experts/Scientists of LI-COR INC., USA on use of LI-COR Products and equipment. | Hotel Ibis, Survey No 32, Viman Nagar, Nagar Road, Pune | DTPLENVIRO TECHSOLUTIONS (OPC) PVT. LTD. | 24th July 2024 |
| **Dr KM Boraiah** | National Youth Convention on "New Perspectives for Sustainable Agriculture and Livelihood Security (NYC-NPSALS) | Online | Institute of Agricultural Sciences, Banaras Hindu University | 22-23rd August 2024 |

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|---|---|---|---|---|
| | International Conference on Current Innovations and Technological Advances in Agriculture and Allied Sciences | Online | GKU, Bathinda, Punjab | |
| | International Conference on "Contemporary Perspectives in Strategies for Conservation of Biodiversity and Realizing Sustainable Development Goals | Online | Pithapur Rajah's Government College, Kakinada | 4-5th, July 2024 |
| | Environmental Sustainability, Green Technologies, Innovations and Start-up Ventures on and beyond Earth" September, 12-13, 2024(Online). | Online | | 12-13th, September 2024 |
| **Dr SS Changan** | Hands-on Training on "Genome-Editing Technologies in Crops" | ICAR-IIRR, Hyderabad | ICAR-IIRR, Hyderabad | 14- 23rd October, 2024 |
| | 1st International Workshop-cum-Webinar on "CRISPR Genome Editing" | Virtual | Glostem | 22-26th July, 2024 |
| | Global Soil Conference, 2024 | NASC Complex, New Delhi | Indian Society of Soil Science, New Delhi | 19 -22nd November, 2024 |
| | IP Awareness Training program under National Intellectual Property Awareness Mission | Virtual | Intellectual Property Office, India. | 18th October, 2024 |
| **Dr PS Khapte** | Global Soils Conference 2024 | NASC Complex, New Delhi. | Indian Society of Soil Science | 19-22nd November, 2024 |
| **Dr DD Nangare** | 58th Annual convention of Indian Society of Agricultural Engineers' on 'Engineering innovations for next gen Digital agriculture' and International symposium on 'Agricultural engineering Education for aspiring youth in agriculture | VNMKV, Parbhani | VNMKV, Parbhani | 12-14th, November 2024 |

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|---|---|---|---|---|
| | Global Soil Conference 2024 | NASC Complex, New Delhi | Indian Society of Soil Science, New Delhi | 19-22nd November, 2024 |
| | One day workshop on 'Soil and water management challenges in Western Ghats region | Agriculture College, Pune | Ohio State University in collaboration with MPKV, Rahuri | 24th October, 2024 |
| **Dr GC Wakchaure** | 58th ISAE Annual Convention on 'Engineering Innovations for Next-gen Digital agriculture' and International Symposium on 'Agricultural Engineering Education for Aspiring Youth in Transforming Agriculture | VNMKV, Parbhani, Maharashtra, India | Jointly organized by Indian Society of Agricultural Engineers, New Delhi, and Vasantrao Naik Marathwada Krishi Vidyapeeth Parbhani | 12-14th November 2024 |
| **Dr AS Morade** | Global Soil Conference, 2024 | NASC, New Delhi | ISSS, New Delhi;<br>ICAR, New Delhi;<br>NASC, New Delhi | 19th November to 22nd November 2024 |
| **Dr HM Halli** | Global Soils Conference 2024 | NASC, New Delhi | Indian Society of Soil Science, International Union of Soil Sciences, Italy, ICAR, NAAS, New Delhi. | 19-22th November 2024 |
| | National Seminar on "Integrating Biochar Production, Carbon Sequestration and Carbon Trading for Carbon Neutral Farming | UAS Dharwad, Karnataka | Dr. S. V. Patil Foundation and University of Agricultural Sciences, Dharwad, Karnataka. | 5-6th December, 2024 |
| **Dr SB Chavan** | Global Soils Conference 2024 | NASC, New Delhi | Indian Society of Soil Science (ISSS) in collaboration with the International Union of Soil Sciences (IUSS) | November 19-22th, 2024 |

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| **Dr R Dey** | iGoT Training programme 'Yoga Break at Workplace' | Online | Morarji Desai National Institute of Yoga (MDNIY) | 23rd December, 2024 |
| **Dr DD Nangare, Dr KK Pal, Dr Paritosh Kumar, Dr NC Paul, Ms P Deshpande, Mr R Pawar** | Kisan Samman Diwas and exhibition | ATARI, Pune | ATARI, Pune | 23rd December, 2024 |

# PERSONALIA

## Awards/Recognitions

- Dr Aliza Pradhan secured first position in Hindi Extempore during Hindi Pakhwada 2025 from 24 September to 2 October 2024.
- Dr Aliza Pradhan secured first position in the Essay writing competition organised during Vigilance Awareness Week from October 28 to November 3, 2024 at ICAR-NIASM.
- Dr Boraiah KM, received best oral presentation for "Advancing Chia Varieties: The Role of Mutation Breeding in Enhancing Genetic Variability" during International Conference on Current Innovations and Technological Advances in Agriculture and Allied Sciences (August 29-31, 2024) GKU, Bathinda, Punjab.
- Dr Neeraj Kumar awarded as Fellow, Bihar Agriculture Science Academy (BASA) at Central Agriculture University, Bihar during October 2024.
- Dr Neeraj Kumar awarded as Member of National Academy of Sciences India (NASI) at NASI, Prayagraj, India during July 2024.
- Dr Sushil S Changan secured first position in Hindi Essay Competition during Hindi Pakhwada 2025 from 24 September to 2 October, 2024.
- Dr Sushil S Changan secured first position in Hindi Extempore during Hindi Pakhwada 2025 from 24 September to 2 October, 2024.
- Dr Sushil S Changan secured first position in Hindi Typewriting during Hindi Pakhwada 2025 from 24 September to 2 October, 2024.
- Dr Sushil S Changan, received Certificate of Excellence in Reviewing for an outstanding contribution to the quality of the Journal of Global Ecology and Environment on November 29, 2024.
- Dr KK Pal, received certificate of technology titled "SalGuard: A formulation of endophytes is a saviour of cultivation of groundnut in salt affected areas", presented during the 96th Foundation Day of ICAR on July 16, 2024 by the Chief Guest, the Hon'ble Union Minister of Agriculture, Shri Shivraj Singh Chouhan, at the NASC Complex, New Delhi.

- Dr Goraksha Wakchaure received certificate of technology titled "Trenching and Transforming Filled in Soil Technology" presented during the 96th Foundation Day of ICAR on July 16, 2024 by the Chief Guest, the Hon'ble Union Minister of Agriculture, Shri Shivraj Singh Chouhan, at the NASC Complex, New Delhi.

- Dr SA Kochewad, received best oral presentation award in IX$^{th}$ International Conference in Hybrid Mode on Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS-2024) during December 10-12, 2024 for research paper entitled "Effect of Feeding Sugarcane Trash-Based Complete Feed on Growth Performance, Haematological, Biochemical Parameters and Growth Hormone Gene Expression in Osmanabadi Goat Kids".
- Dr SA Kochewad, received best poster presentation award in 8$^{th}$ National Youth Convention on New Perspectives for Sustainable Agriculture and Livelihood Security' held at Banaras Hindu University, Varanasi during August 22-23, 2024. for research paper entitled "Climate resilient integrated farming system model for improving farmer livelihoods in semi-arid regions"
- Dr Nobin Chandra Paul, received Young Scientist Award (PACM YSA 2024) of Calcutta Statistical Association organized by University of Calcutta and CSA during December 27-30, 2024.

- Dr Sangram B Chavan, Nominated as Member of Indian Standards on 'Sustainable Agriculture' under the Environment and Ecology Department (EED) of the Bureau of Indian Standards (BIS) on September 10, 2024.

## Joining, Transfer and Promotion of Staff

| Name of the staff | Date | Previous Institute |
|---|---|---|
| **New Joining** | | |
| Dr JH Kadam, Principal Scientist | 05.09.2024 | Dr. BSKKV, Dapoli (MS) |
| Mr Prakhar Tiwari, Assistant | 30.09.2024 | New Joining |
| Mr Pratik Chandan, Assistant | 01.10.2024 | New Joining |
| Mr Vikas Chaudhary, Assistant | 01.10.2024 | New Joining |
| Mr Jayant Khaiwal, Assistant | 04.11.2024 | New Joining |
| Ms Pradnya Deshpande, T1 | 09.07.2024 | New Joining |
| Ms Suman Kumari, T1 | 22.07.2024 | New Joining |
| **Superannuation** | | |
| Mr Charles Ekka | 31.08.2024 | -- |

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(समतुल्य विश्वविद्यालय)

बारामती, पुणे, महाराष्ट्र ४१३ ११५

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