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अजैविक स्ट्रैस प्रबंधन समाचार

Abiotic Stress Management News

January to June 2025

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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In this issue

Published By

Dr K Sammi Reddy
Director, ICAR-NIASM

From the Director's Desk .....

Greetings from ICAR-NIASM

It is with great enthusiasm that I introduce the latest issue of the Institute's newsletter, Abiotic Stress Management News. This publication captures the progress, achievements, and ongoing efforts at the ICAR-National Institute of Abiotic Stress Management (ICAR-NIASM), Baramati. Our Institute remains at the forefront of agricultural innovation, focusing on building resilience in farming systems challenged by various abiotic stress factors.

Agriculture today is increasingly threatened by extreme temperature fluctuations, irregular water availability, whether excess or scarcity, and other non-living environmental stressors that compromise both yield and productivity. ICAR-NIASM plays a pivotal role in expanding scientific understanding of how these stressors affect crops, livestock, and aquatic species, while also spearheading the development of technologies designed for climate-resilient agriculture.

Our interdisciplinary teams are engaged in a broad spectrum of research activities. These include the identification, assessment, and advancement of crop varieties with improved tolerance to drought, heat, and salinity; development of novel plant health indicators; and advanced spatiotemporal analyses of rainfall and drought patterns, among others. This edition of the newsletter presents highlights from these initiatives, along with insights into new projects and activities undertaken over the past six months.

I would like to express my heartfelt thanks to our team of dedicated scientists, research partners, and support staff whose commitment continues to drive the Institute's mission forward. I also commend the Editorial Board for their meticulous efforts in bringing this issue to fruition. My sincere appreciation extends to everyone at ICAR-NIASM who contributed to this publication.

KSReddy

31st July, 2025 **(K Sammi Reddy)**

RESEARCH HIGHLIGHTS

Enzymes/genes involved in C3-CAM photosynthetic transition in drought-stressed chickpea unveiled

Pal KK, Dey R, Changan SS, Boraiah KM, Basavaraj PS, Hanjagi PS

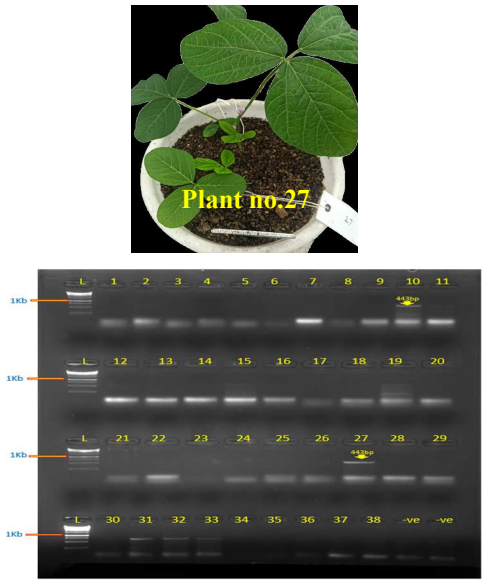
In a significant step forward, a team of scientists has unveiled the C3-CAM photosynthetic transition in drought-stressed chickpea (Accessions: ICC4958, JG16 and BDG75; tolerant to drought), as one of the mechanisms of drought tolerance. An experiment was conducted with three tolerant and three susceptible genotypes in a split plot design with three replications. The transition from C3 mode of photosynthesis to CAM ensured biomass gain and reproductive efficiency in prolong and intense drought stress (<10% moisture in both 0-15 and 15-30 cm zone) by maintain photosynthetic integrity behind closed stomata. During the transition, tolerant chickpea genotypes behave like a PCK (phosphoenolpyruvate carboxykinase; EC number: 4.1.1.38)-type plant and performed nighttime carboxylation and daytime decarboxylation to maintain photosynthetic integrity behind closed stomata in hotter and drier daytime and exhibited invert stomatal behaviour. The enzymes involved in carboxylation module viz. phosphoenolpyruvate carboxylase (PPC; EC number: 4.1.1.31) and NAD-malate dehydrogenase (MDH; EC number: 1.1.1.37) were quantified. Whereas tolerant genotypes produced PPC ranging from 153.15 to 255.19 µmole/mg protein/min at 00:00 h, it was 135.59-173.00 µmole/mg protein/min at 03:00 h under drought stress at 55 DAE. No irrigation was applied in the drought treatments after emergence and soil moisture went below 10% at 0-15 cm zone. In contrast, susceptible genotypes (PG 186, PUSA 362 and PUSA 244) produced 2.65 to 8.35 µmole/mg protein/min at 00:00 h and 2.31 to 4.40 µmole/mg protein/min at 03:00 h. In case of malate dehydrogenase, the tolerant genotypes produced NAD-MDH to the tune of 578.23 to 853.62 µmole/mg protein/min at 00:00 h and 386.55 to 575.63 µmole/mg protein/min at 03:00 h in tolerant genotypes. In susceptible genotypes, the range of MDH activity was in the range of 125.36 to 155.32 µmole/mg protein/min and 109.65 to 131.65 µmole/mg protein/min at 00:00 h and 03:00 h, respectively. Estimation of the enzymes involved in decarboxylation module viz. PEP-carboxykinase (PCK), NADP-Malic enzyme (NADP-ME) and NAD-Malic (NAD-ME) enzymes in the daytime revealed non-production of both NADP-ME and NAD-ME. However, there was production of PCK in the range of 161.61 to 337.91 µmole/mg protein/min at 09:00 h and 161.22 to 223.39 µmole/mg protein/min at 12:00 h in tolerant genotypes at 55 DAE. The leaf samples, collected in 3 h intervals in 24 h cycle including samples in both dawn and dusk were processed for cDNA synthesis from expressive transcripts. All possible genes of all isoforms of proteins/transporters were amplified to ascertain the involvement of a specific gene(s) for expression of a particular enzyme/transporter in the transition. Sequencing of the expressive transcripts, made so far, revealed the involvement of V-type proton ATPase (vha-a), tonoplast dicarboxylate transporter (tdt), pyruvate phosphate dikinase regulatory protein 1 (ppdk-rp1), phosphoenolpyruvate carboxylase 2/4 (ppc2/ppc4), phosphoenolpyruvate carboxylase kinase 1 (ppck1), and cytoplasmic malate dehydrogenase 1 (mdh1). Involvement of β-carbonic anhydrase 5 (bca5), phosphoenolpyruvate carboxykinase (pck1/2), pyruvate phosphate dikinase 1/2 (ppdk1/2), aluminum activated malate transporters (almt) and circadian rhythm accociated genes are being studied to decipher the network of pathways involved in C3-CAM photosynthetic transition in drought-stress chickpea. Besides, titratable acidity developed overnight and mesophyll succulence and anatomical studies are also being undertaken.

Chickpea in field (black soil). A: No irrigation after emergence and right irrigated check; 70 DAE. B: green plants represent tolerant genotypes having CAM transition

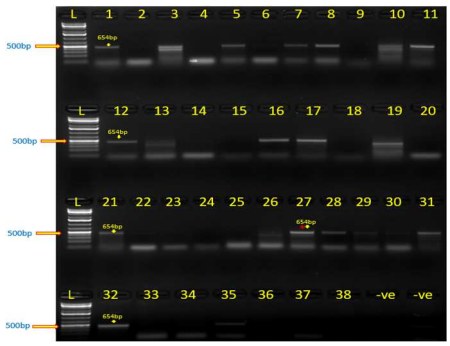
Genome editing for improvement of abiotic stress tolerance in soybean through targeted knockout of Poly (ADP Ribose) Polymerase 1 (PARP1) and Ethylene Insensitive 2 (EIN2)

Singh AK, Awaji S

Soybean production is increasingly constrained by abiotic stress and limited genetic diversity, while conventional breeding and genetic modification are hampered by the instability caused by random transgene integration. Precise genome editing holds promise for improving stress resilience by knocking out negative regulators. In this work, we targeted Poly (ADP Ribose) Polymerase 1 (PARP1) and Ethylene Insensitive 2 (EIN2) in soybean cv. JS 335. First, full-length gene sequences were identified via genome databases: two PARP1 isoforms (GmPARP1A on chromosome 3; GmPARP1B on chromosome 19), and three EIN2 isoforms (GmEIN2A on chromosome 3; GmEIN2B on chr 10; GmEIN2C on chr 13). Primers were designed based on Williams 82 reference sequences; PCR amplification of JS 335 genomic DNA was performed using a high-fidelity polymerase (GXL) to confirm gene sequences. Next, guide RNAs were designed targeting exonic regions: two gRNAs for PARP1; for EIN2 one gRNA common to GmEIN2B & GmEIN2C and another specific to GmEIN2A. These gRNAs were cloned into a shuttle vector pBlu/gRNA under the Arabidopsis thaliana U6 promoter and then transferred into the binary vector pCas9MDC123. Constructs including pCas9MDC123 PARP1A1B E2gRNA1/2, pCas9MDC123:EIN2E- 2gRNA1, pCas9MDC123:EIN2AE6gRNA, and pCas9MDC 123:EIN2B2CE6gRNA were validated by sequencing and restriction digestion, then mobilized into Agrobacterium tumefaciens strain GV3101. A total of 296 cotyledonary explants of the soybean cultivar JS 335 were co-cultivated with Agrobacterium carrying the pCas9MDC123 PARP1A1BE2gRNA1 construct. After glufosinate (5 mg/L) selection, only one shoot survived. This shoot regenerated into a normal shoot on selection medium, formed roots on rooting medium, and was successfully hardened in soilrite under lab conditions. In order to improve transformation frequency, two in planta transformation methods were attempted: (1) imbibing mature dry seeds overnight in sterile distilled water; and (2) agro-infecting 7-day-old seedlings. For the first method, healthy sterilized mature seeds were used; after overnight imbibing, an explant including one cotyledon and the epicotyl region was excised and agro infected. A total of 100 seeds were imbibed, and 50 cotyledon–epicotyl explants were agro infected and then transferred to soilrite in a greenhouse. Plants generated via the In planta method were screened for the presence of the Cas9 and Bar genes using PCR. Genomic DNA was extracted from tender leaves of 38 putative T_0 plants grown in the greenhouse, alongside wild type JS 335 (negative control). As positive controls, plasmid DNA (pCas9MDC123 PARP1A1BE2 gRNA1) was used. Two PCR assays were performed: one using primers "Cas Nos Forward / Nos Reverse" to detect Cas9, and another using "PAT Forward / PAT Reverse" to detect the Bar (PAT) gene. The expected amplicons were 654 bp for Cas9 and 443 bp for Bar. In these assays, plant #27 was consistently positive in PARP1A1B transformed plants. Similarly, for plants transformed with pCas9MDC123:EIN2E2gRNA1, 30 plants were screened. Plants #10 and #14 showed the expected PCR positive bands for both Cas9 and Bar. The PCR products from these positive plants were eluted from the gel and submitted for sequencing to verify the integration and sequence integrity.



Agarose gel electrophoresis of PCR screening using the PATFor-PATRev primer pair (Lane-L-1kb plus DNA Ladder, 1-38: GH grown plants -ve: Negative control-JS-335 plants)

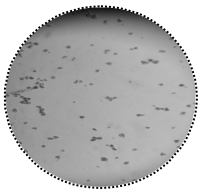


Agarose gel electrophoresis of PCR screening using Cas9NosFor -NosRev primers pair (Lane-L-1kb plus DNA Ladder, 1-38: GH grown plants -ve: Negative control-JS-335 plants)

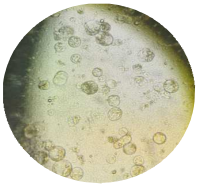
Stadardization of protoplast isolation protocol for plasmid free-RNP mediated genome editing in soybean

Singh AK, Awaji S, Boraiah KM, Basavaraj PS, Dr. Khapte PS, Changan S, Pradhan A, Wakchaure CG

To establish an efficient protoplast isolation system, we are standardizing the protocol using different tissue sources, including young leaves, immature cotyledons, and callus-derived suspension cultures from the soybean cultivar JS-335. The optimization process involves evaluating the response of these tissues to enzymatic digestion and comparing their yield and viability. In parallel, we are refining the composition of the isolation medium by adjusting enzyme concentrations, osmotic stabilizers like sucrose and mannitol, and incubation conditions to ensure maximum protoplast release with minimal cell damage. By systematically testing both tissue type and medium composition, we aim to identify the most responsive source and optimal conditions for obtaining healthy, intact and viable protoplasts suitable for plasmid-free RNP complex (preassembly of gRNA for target gene and Cas9 protein) transformation.



Protoplasts from young leaf



Protoplasts from immature cotyledons

Protoplasts from callus suspension culture

Enhancing soil moisture retention in tomato cultivation through Tradecorp Products: A field study

Kakade VD, Morade AS, Khapte PS, Pradhan A, Chavan SB, Harisha CB, Nangare DD

A field trial was conducted on tomato (cv. TO 6242, Syngenta) at plot E7 with transplanting on 15/01/2025 to evaluate ORO RZ and ORO TF products (2.5 and 5 l/ha), Kamasol Aqua, and Zeba under full irrigation (100% ETc) and deficit irrigation (75% ETc). Soil conditioners were applied on 13/01/2025 and deficit irrigation treatments initiated on 24/02/2025. During the initial phase, highest flowering percentage was noted in RZ 5, comparable with Kamasol Aqua, RDF, RZ 2.5, Zeba, and TF 5. Fruiting plants were maximum in RZ 2.5, at par with TF 2.5, TF 5, RZ 5, and Kamasol Aqua. At final harvest, cumulative fruit numbers were highest in TF 2.5 (27.75), followed by TF 5, RZ 2.5, and RZ 5, compared with 16.48 in RDF. Under deficit irrigation, RZ 2.5 (23.99) performed best compared to RDF (13.78). Overall, maximum fruit yield was recorded in TF 2.5 (24.87 t/ha), followed by RZ 5, whereas RDF yielded 15.96 t/ha. Under deficit irrigation, RZ 2.5 (21.35 t/ha) and TF 2.5 (20.95 t/ha) recorded the highest yields, highlighting their efficiency in sustaining productivity under water-limited conditions, while it was 14.24 in RDF.

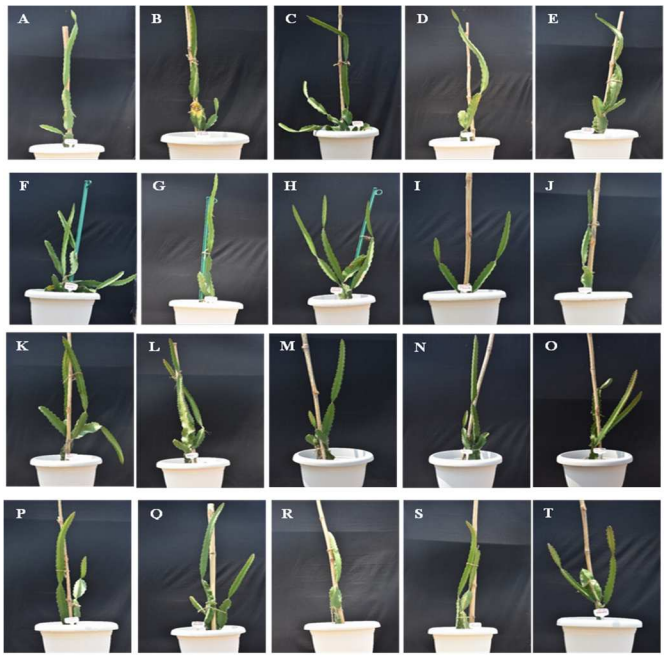
Plant growth and fruiting in tomato under different soil conditioners and irrigation treatments

Genotypic adaptations and mechanisms of salinity tolerance in dragon fruit (*Selenicereus spp.*)

Kakade VD, Morade AS, Chavan SB, Boraiah KM

The effects of salt stress on dragon fruit genotypes and their response were examined. Four dragon fruit

genotypes having white (Andaman white, local white) and red flesh (regular red and Andaman red) were irrigated with 0, 25-, 50-, 75-, and 100-mM saline water. Salt stress decreased new sprout formation, growth, and above- and below-ground biomass, except root elongation. The stress delayed sprouting in cutting by four and seven days at 50 mM and 100 mM respectively, compared to the control. The highest plant mortality (15.00%-16.66%) was observed at 75- and 100-mM salt stress. Irrespective of salt stress, white-fleshed genotypes exhibited the highest mortality (21.33% to 25.33 %) with maximum of 40% in local white genotype at 75 mM salt stress onwards. In this study, salt stress reduced chlorophyll pigments, NDVI, maximum quantum yield of PSII, and water use efficiency in studied dragon fruit genotypes. White-fleshed genotypes (Andaman white and local white) accumulated significantly more Na+ in their stems (54.19 ppm and 40.85 ppm, respectively) compared to red-fleshed genotypes (18.90 ppm and 9.81 ppm).



Performance of dragon fruit genotypes under salinity stress. LW (A-E: 0-100 mM); AW (F-J: 0-100 mM); RR (K-O: 0-100 mM); AR (P-T: 0-100 mM). (LW: Local white fleshed; AW: Andaman white fleshed; RR: Regular red fleshed; AR: Andaman red fleshed)

Additionally, white-fleshed genotypes (Andaman white, local white) showed higher Cl– accumulation in roots (0.36% and 0.27%, respectively). The regular red accumulated the most stem K+ (219.83 ppm), followed by Andaman red (206.32 ppm), while white-fleshed genotypes had the lowest. Consequently, 'regular red' and 'Andaman red' can be classified as efficient Na+ and moderately efficient Cl− excluders, respectively, enabling them to maintain normal morphological growth, physiological and biochemical processes under salt stress.

Identification of high temperature stress tolerant cowpea genotypes

Basavaraj PS, Boraiah KM, Harisha CB, HM Halli

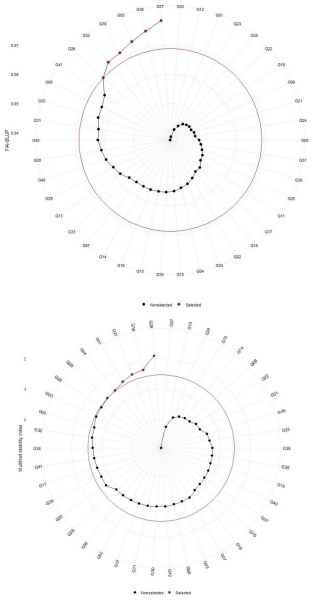
Cowpea is a crucial crop in heat-prone regions, but its reproductive stages are highly sensitive to high-temperature stress, reducing yield. To identify high temperature tress tolerant genotypes, 250 diverse cowpea accessions acquired from National Genebank NBPGR were evaluated under normal and heat-stressed (late sowing) conditions at Baramati and Jodhpur during 2022, 2023, and 2024. Growth, yield, and physiological traits were measured, and four multi-trait stability indices (MGIDI, MTSI, MTMPS, FAI-BLUP) were applied alongside mixed linear models. Heat stress during flowering (>35 °C) (20 days) led to failure to seed set in over 40% of accessions. Grain yield, pods per plant, and grains per pod showed high heritability and genetic variability, with yield negatively correlated to canopy temperature. Multi-trait indices identified 29 superior genotypes, eight of which (EC240920, IC488085, IC488270, IC402159, IC402161, IC426824, IC488067 and IC488272) were consistently found superior across all models. These genotypes showed high yield and stability across environments.

Identification of drought tolerant pigeonpea genotypes

Basavaraj PS, Boraiah KM, Harisha CB, HM Halli

Pigeonpea is an important legume crop in drought-prone regions, but its productivity is severely affected by water stress, especially during reproductive stages. In this study, 42 diverse genotypes, including advanced breeding lines, and germplasm obtained from University of Agricultural Sciences, Raichur along with checks were evaluated under control and drought-stress conditions during 2023 and 2024 at field conditions. Drought stress was imposed during reproductive

stage by withholding irrigation starting from 10 days prior to flowering continued till physiological maturity, where soil moisture reached less than 10% by gravimetric method. Key agronomic and physiological traits were recorded, and multi-trait stability indices (MGIDI, MTSI, MTMPS, and FAI-BLUP) along with mixed linear models were applied to identify drought-tolerant genotypes. Drought stress significantly reduced pod set and grain yield in susceptible genotypes. Based on multi-trait selection indices, six genotypes namely ICPX140217-B-1, KRG-33, NAM-2329, NAM-2282, IC-74058, and ICPX140196-B-1 were identified as drought-tolerant and stable across environments. These genotypes serve as valuable resources for developing climate-resilient pigeonpea cultivars.

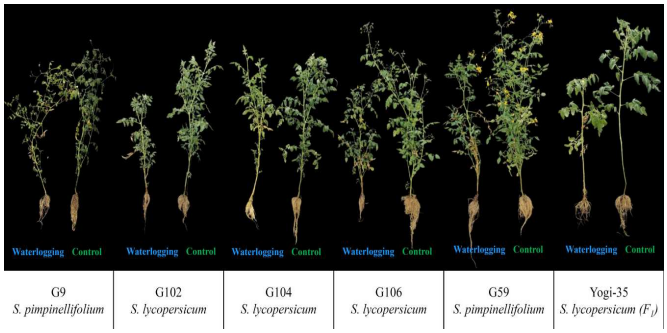


Identification of drought tolerant pigeonpea genotypes based on multi-trait indices

Identification of potential rootstocks for tomato grafting to alleviate water stress

Khapte PS, Changan SS, Pal KK

In the waterlogging experiment, 42 tomato accessions collected from ICAR-NBPGR, ICAR-IIHR, and WVC, Taiwan (through MTA) was screened. The results showed that most accessions (64.28%) had low survival (≤60%), while only 14.29% achieved 100% survival after six days of waterlogging. Among the 42 genotypes screened, more than 90% survived. Out of these, only five genotypes; three S. lycopersicum accessions (G102, G104, and G106), two S. pimpinellifolium accessions (G9, G59), and the tomato F1 hybrid 'Yogi-35'—were identified as fully tolerant (100%) based on shoot, root, and physiological traits. The tolerance observed in S. lycopersicum accessions can be attributed to the development of a maximum number of adventitious roots, an adaptive mechanism that improves oxygen uptake and sustains root function under hypoxic stress. In contrast, S. pimpinellifolium accessions did not produce adventitious roots, suggesting that their tolerance may be governed by alternative mechanisms.



Tomato accessions surviving six days of waterlogging

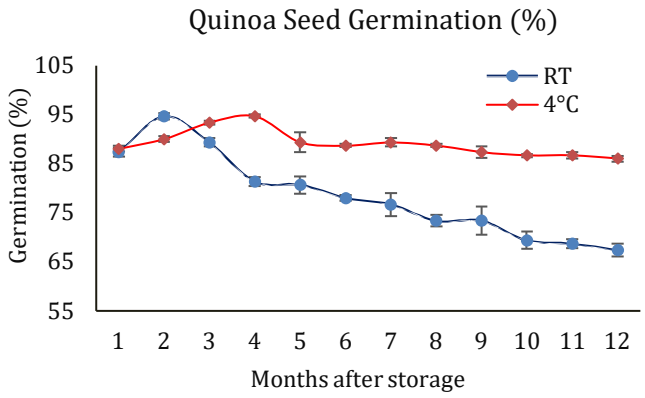
In eggplant, screening of 35 accessions collected from local exploration and from ICAR-IIHR through MTA revealed maximum tolerance, with more than half of the population (51.42%) maintaining 100% survival. Notably, accessions B27, B31, B32, B34, B37, B38, and B41 tolerated six days of waterlogging, likely due to their robust root system and superior physiological traits, which together enhanced survival under hypoxic conditions.

Effect of Storage Conditions on Quinoa Seed Germination and Viability

Changan SS, Pradhan A, Khapte PS, Pal KK

The present study aimed to evaluate the impact of storage temperature on the viability and germination of quinoa seeds over a prolonged period. Seeds were subjected to two distinct storage conditions: refrigerated at 4°C and stored at ambient room temperature (RT). The experiment spanned up to 12 months, with germination and viability assessments conducted at monthly intervals. Seeds were stored under both temperature regimes and tested at 0, 1, 2, 3, 4, 5, and up to 12 months post-

storage. For each time point, 50 seeds per replicate were used in germination assays. Seeds were placed in petri plates and incubated at 28°C to promote germination. Germination percentage and seedling vigor were recorded as primary indicators of viability. Key parameters measured during the experiment included germination percentage, shoot length, root length, shoot fresh weight, root fresh weight, shoot dry weight, root dry weight, and seed viability via Tetrazolium test. Across all recorded time points, quinoa seeds stored at 4°C consistently exhibited higher germination rates compared to those stored at room temperature. The superiority of cold-stored seeds was also evident in the associated seedling growth parameters, such as longer shoot and root lengths and greater biomass accumulation (both fresh and dry weights). Seeds stored at room temperature showed a more rapid decline in viability and vigor over time, suggesting the detrimental effects of ambient conditions on seed longevity. The study conclusively demonstrated that storage at 4°C significantly enhances the preservation of quinoa seed viability and promotes better germination outcomes compared to storage at room temperature.

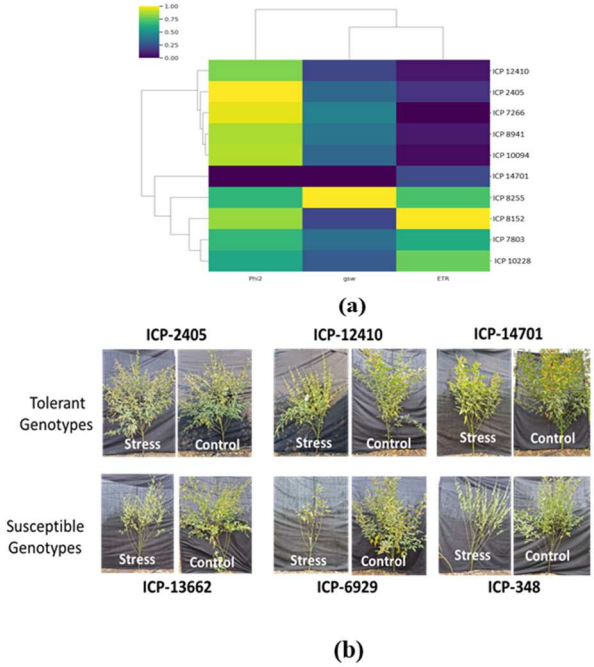


Effect of storage conditions and duration on quinoa seed germination

Identifying drought stress tolerant pigeon pea genotypes at reprodcutive stage

Hanjagi PS, Singh AK, Gurumurthy S, Gaikwad BB, Awaji SM, Naik S

This study was carried out to identify novel pigeon pea genotypes that are tolerant to multiple abiotic stresses. A whole-genome resequenced panel of 193 pigeon pea genotypes (from ICAR-IIPR, Kanpur) was evaluated for reproductive-stage soil moisture stress tolerance under field conditions during Kharif 2024 season with moisture deficit of -80 kPa at 15 cm and -60 at 45. Multi-trait assessment identified ten drought-tolerant genotypes (ICP 12410, ICP 2405 ICP 10228, ICP 8941, ICP 10094, ICP 14701, ICP 8152, ICP 8255, ICP 7803 and ICP 7266) from the field experiment. Key morphological and physiological parameters such as defoliation, SPAD chlorophyll index, photosynthetic efficiency, electron transport rate, leaf thickness, stomatal conductance, flower drop, test weight, and pod yield were characterized. Increased defoliation was one of the clear drought stress symptoms wherein the tolerant genotypes had lower defoliation, which can serve as a quick visual trait in screening pigeon pea genotypes for reproductive stage drought stress tolerance.



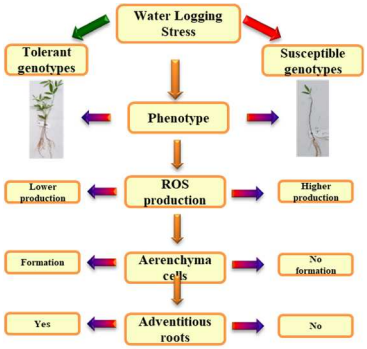
(a) Heatmap and clustering of pigeon pea genotypes based on Phi2, Gsw and ETR; (b) phenotypic variation in tolerant and susceptible genotypes under drought stress and control conditions

Assessment of drought tolerant pigeon pea genotypes for waterlogging (WL) stress at seedling stage

Hanjagi PS, Singh AK, Gurumurthy S, Gaikwad BB, Awaji SM, Naik S

Eight genotypes viz., ICP 12410, ICP 2405 ICP 10228, ICP 8941, ICP 10094, ICP 14701, ICP 8152, ICP 8255 were selected for this study that were

identified as reproductive stage drought stress tolerant in the field experiment. These genotypes were evaluated for waterlogging stress tolerance at knee-height stage using water logging tanks (for 7 days with 6 cm water above the soil surface). Histochemical analyses (NBT assay DAB assay) revealed differences in the accumulation of reactive oxygen species (ROS) under waterlogging stress, while anatomical studies visualized aerenchyma formation in roots of tolerant genotypes as a key adaptive mechanism. Gene expression analysis of selected WL stress responsive genes in the contrasting genotypes (CcActin was used as an internal control) had shown huge differences in their expression levels. Among which the strongest induction was observed for CcADH1 (23.54 to 18.33 fold) and for CcMn-SOD (13.82 to 10.43 fold) in tolerant genotypes (ICP 12410, ICP 2405 ICP 10228, ICP 8941, ICP 10094 and IPAV-16-1) whereas in the susceptible genotype (ICP 14701, ICP 8152, ICP 8255 and IPAC- 79) only mild induction of these genes (CcADH1-2.75 to 1.83, CcMn-SOD-2.14 to 1.57 fold) was observed. In contrast, there was downregulation of CcL-LDH (isoform A) gene (0.47 to 0.33-fold) in the susceptible genotypes indicating co-ordinated regulation of all the studied genes imparting WL stress tolerance in tolerant genotype.

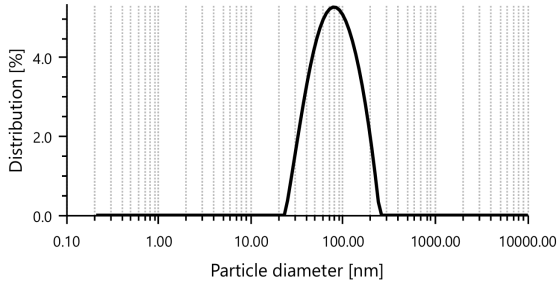


Graphical abstract that summarizes the response of tolerant and susceptible pigeon pea genotypes to water logging stress

Green synthesis of Cerium nanoparticles (AgNPs) from Parthenium hysterophorus weed and its application to alleviate abiotic stress

Changan SS, Khapte PS, Kumar N

Cerium nanoparticles (CeNP) were synthesized using a green synthesis approach with water extract of Parthenium plant. Characterization of the nanoparticles using a UV-Vis spectrophotometer and zeta analyzer revealed an average particle size of approximately 97 nm. Total flavonoids, phenol and tannin content were estimated in parthenium extract. Advanced characterization techniques such as TEM/SEM and FTIR will be employed in subsequent analyses. The study aimed to evaluate the potential of these CeNPs in mitigating water deficit stress in soybean, with further experiments being conducted to assess their efficacy under controlled conditions.



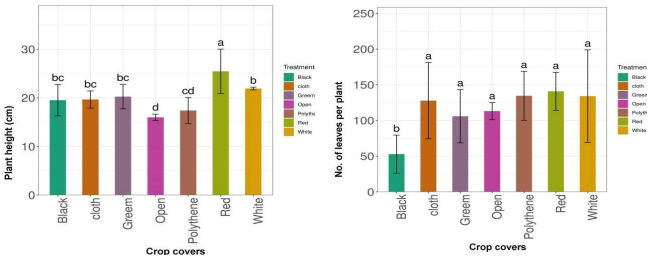
Estimation of particle size of cerium nanoparticles using zeta analyser

Effect of crop covers on rose-scented geranium

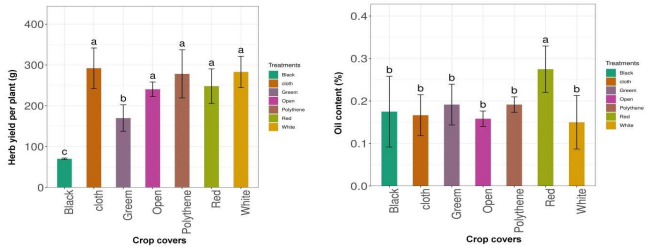
Harisha CB, HM Halli, Basavaraj PS, Boraiah KM

Geranium is highly demanding and one of the top ten highly traded essential oils in the world. It is a cool-season crop grown in hilly regions. However, the crop is highly variable due to changes in weather conditions during various seasons. To study the effect of light intensities on geranium growth and herb yield, various crop covers, including shade nets of green, red, black, and white, non-woven cloth, and polythene cover, were tried as crop covers using low tunnels. It was observed that red net leads to elongated growth, followed by white, green, non-woven cloth, and black. The Black net reduced the shoot production due to reduced light intensity. Non-woven cloth recorded the most significant number of leaves, followed by polythene sheet, white net and open. The black net showed the least number of leaves due to its enhanced internodal length. It was also observed that leaf area was lowest in black net and highest in cloth and white net. Non-woven cloth cover produced higher leaf weight and herb yield, followed by polythene, however, at par with white and open conditions. The essential oil content was highest in red net cover, which also produced higher oil yield per plant.

Growth of geranium under various crop covers & its leaf area



Plant height and number of leaves per plant due to various crop covers in geranium



Herb yield and oil content affected due to various crop covers in geranium

Salinity and drought tolerance studies in Mango (*Mangifera indica L.*)

Morade AS, Kakade VD, Boraiah KM, Changan SS, Chavan SB, Kumar N

During the summer season of 2024, about 450 fruits representing 16 local mango germplasm were collected and evaluated for their quality parameters. Among the tested accessions, 'Kohrale' exhibited the highest fruit total soluble solids (17.35 °B), while 'Kurnewadi' recorded the lowest (8.15 °B). The mean seedling germination period across the genotypes ranged from 21 to 45 days. Poly-embryonic cultivars such as 'Vellaicolumban' and 'Olour' produced a maximum of two seedlings per seed; however, these seedlings displayed comparatively lower vigour than those of local mono-embryonic genotypes. In contrast, local accessions 'Medhad-1' and 'Pandare-2' showed superior seedling vigour, reflected in greater seedling height, collar diameter, and number of leaves. In addition, 14 genotypes were screened for salinity tolerance under a pot experiment during 2024–25 using NaCl irrigation at concentrations of 0, 50, and 100 mM. The results revealed that 'Mulgoa' recorded the highest leaf injury index, whereas 'Olour' and 'Pandare-1' exhibited the lowest leaf injury symptoms at both 50- and 100-mM salinity levels.

Evaluation of Ambronics Pot in Alleviating Drought Stress in Tomato

Morade AS, Kakade VD, Khapte PD, Chavan SB, Nangare DD

A second field trial with the same treatment setup was carried out during the summer season of 2025. The findings revealed that the number of fruits and overall fruit yield (t/ha) were statistically similar under 100% and 75% irrigation levels. Among the cultivation systems, mulching recorded the highest fruit yield (40.63 t/ha), followed by the Talia Tray system (38.63 t/ha). Notably, pot cultivation under 75% ETc irrigation achieved a yield of 36.98 t/ha, which was statistically superior to 100% ETc irrigation under the control treatment. The planting system did not exert a significant influence on flowering, fruit setting, inter-nodal distance, or collar diameter during the flowering stage. However, soil temperature at the plant base during flowering was significantly reduced. Mulching recorded the lowest leaf moisture percentage, indicating susceptibility to heat stress. While fruit quality parameters remained unaffected by planting systems, irrigation levels had a significant effect on fruit TSS, size, and dimensions. Additionally, root fresh and dry biomass were lowest under the pot cultivation system.

Allometric Equations for Biomass and Carbon Estimation in Ultra-High Density Mango Plantations

Chavan SB, Paul N, Kakade VD, Morade AS

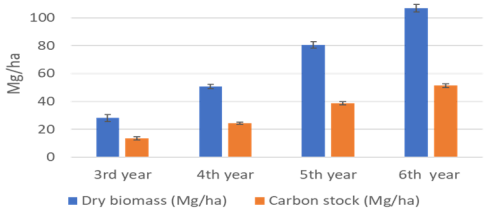
A study was conducted across different regions of Maharashtra and Bangladesh to develop allometric equations for biomass and carbon estimation in ultra-high-density (UHD) mango plantations. A total of 61 trees (ages 2.5 to 22 years) were harvested across varying spacings and tree densities. The study on ultra-high-density (UHD) mango plantations revealed distinct patterns of biomass and carbon dynamics across different age groups. Biomass partitioning indicated a stable proportion in stems, while leaf biomass was higher during the early stages and declined with age. In contrast, branch biomass showed a marked increase, rising from about 40% in young trees to 60–70% in older ones, reflecting greater structural expansion over time. Root-to-shoot ratios, ranging from 0.20 to 0.46, highlighted greater root allocation in younger plantations. Above-ground biomass (AGB) contributed nearly 70% across age groups, with the highest proportion (83%) observed in 22-year-old trees. Soil organic carbon (SOC) stocks varied between 9.48 and 33.54 Mg ha^{-1}, while total biomass carbon stocks ranged widely from 4.24 to 111.38 Mg ha^{-1}, depending on stand age and density. Notably, carbon sequestration rates increased with plantation age, ranging from 2.12 Mg C ha^{-1} yr^{-1} in 2-year-old plantations to 6.93 Mg C ha^{-1} yr^{-1} in 19-year-old plantations, underscoring the long-term potential of UHD mango systems in climate change mitigation.

Carbon sequestration rate in UHD mango plantations

Consultancy Project on Development of agroforestry business model for long-term sustainability Funded by MITCON, Pune

Chavan SB, Kakade VD, Morade AS, Ravi Kumar, Salunkhe VN

Growth assessments of Mahogany across Pune and Solapur showed steady increases in height (6.4–11.9 m) and DBH (7.5–14.8 cm) from 3 to 6 years. Biomass expansion factors (mean 1.82), root-to-shoot ratios (0.26–0.31), and wood density (0.48 g/cm^3) indicated consistent growth and wood quality. Dry biomass rose from 28.1 to 96.9 Mg ha^{-1}, while carbon stock increased from 13.5 to 51.3 Mg ha^{-1}, highlighting strong sequestration potential. With age, stems (37.5%) and branches (25.1%) contributed more to total biomass, while leaves declined and roots (5–22%) remained relatively stable. These patterns underscore Mahogany's suitability for carbon farming and agroforestry-based business models.



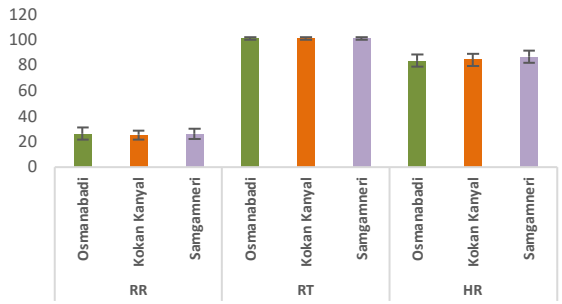
Dry biomass (Mg/ha) & carbon stock (Mg/ha) of Mahogany plantation

Comparative physiological responses to heat stress in three indigenous goat breeds

Pawar SS, Kurade NP, Kochewad SA, Nirmale AV

The comparative evaluation of physiological responses among Osmanabadi, Kokan Kanyal, and Sangamneri goats revealed significant breed-specific variations in heat stress adaptability. Respiration rate (RR), rectal temperature (RT), and heart rate (HR) are well-established indicators of thermal stress in small ruminants, reflecting the integrated action of thermoregulatory and cardiovascular systems. In the present study, the mean RR was lowest in Kokan Kanyal, while Osmanabadi and Sangamneri maintained moderate values. RR in Sangamneri showed the strongest correlation with other traits ($r = 0.6$, $p < 0.05$), suggesting a more sensitive respiratory adjustment to thermal load. Rectal temperature followed a similar trend, with Kokan Kanyal recording the lowest mean RT (101.0 °F), Osmanabadi intermediate (101.2 °F), and Sangamneri the highest (101.3 °F). RT of Kokan Kanyal goats showed the highest correlation with other parameters ($r = 0.6$, < 0.05), indicating a more efficient integration of body temperature regulation mechanisms. Heart rate, a direct reflection of cardiovascular adjustments under heat load, exhibited a different

pattern. Osmanabadi goats had the lowest HR, Kokan Kanyal showed moderate values, while Sangamneri exhibited the highest HR. Although the correlation strength of HR with other traits was lower than RR and RT, Sangamneri again showed the strongest associations, suggesting higher sensitivity of cardiovascular function to stress stimuli. Osmanabadi, in contrast, maintained lower HR with moderate correlations, reflecting cardiovascular stability under stress. Taken together, the results highlight that Kokan Kanyal goats demonstrate superior thermoregulatory efficiency, as evidenced by their lowest RR and RT along with the strongest integration of body temperature with other traits. This suggests that Kokan Kanyal may be inherently better adapted to hot and humid conditions. Osmanabadi goats exhibit moderate adaptability, balancing physiological parameters with stable cardiovascular responses, making them reasonably heat-tolerant. In contrast, Sangamneri goats appear more heat-sensitive, as reflected by their elevated RT and HR, but also show the strongest trait correlations, indicating a more reactive physiological system under thermal stress. Overall, these breed-specific differences underline the importance of considering indigenous variability in goat breeding and management strategies for climate resilience. Results suggest that Kokan Kanyal goats could serve as promising genetic resource for hot-humid regions, while Osmanabadi offers balanced adaptability.



Comparative analysis of physiological parameters

Identified potential and high yielding stable mutant lines in chia

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

Based on the yield increment over the wild or non-mutant parent variety, shortlisted the six entries which were outperformed non-mutant/wild type. These selected entries can be further evaluated under the AICRN on potential crops for their possible release. All these entries are belong to same pedigree (94) selected from purple pigmented plant in M2. Bold seeded mutant line also potential to be evaluate under AICRN on potential crops.

Mutant lines/ wild type	Entries code	Yield per ha (Kg/ha)	Yield increment over	Yield increment over	Maturity (Days)
94-2-3	-	895.56	47.80	5.13	108
94-2-1	NIASMCHIA 2020-1	965.19	59.29	13.30	111
94-3-1	NIASMCHIA 2020-2	1019.26	68.22	19.65	112
94-3-3	NIASMCHIA 2020-3	1026.67	69.44	20.52	111
94-3-5	NIASMCHIA 2020-4	997.04	64.55	17.04	113
94-1-3	NIASMCHIA 2020-5	1004.44	65.77	17.91	104
94-1-1	NIASMCHIA 2020-6	1094.81	80.68	28.52	104
Local Black	NIASM SELECTION (Check-1)	851.85	-	-	115
Chiampion white	Chiampion (Check-2)	605.93	-	-	117

Confirmation of earliness traits of extra early mutant plant Chia

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

During kharif 2024 in the M5 generation identified the single plant from chia mutant line 141-1-1 which flowered almost 20-25 days early compared wild/parental variety.

Single plant identified form chia 141-1-1 mutant line during kharif 2024 (left) and plants (right) grown from seeds selected from the identified extra early flowering plant during 2025.

The spikes/panicles from the identified plant were harvested and threshed separately. In order to confirm the trait, about 10-20 seeds were sown in pots during last week of May 2025 and maintained 4 plants. The panicle initiation was observed in all the plants within 40 DAS in the first week of July prior to commencement of short day. This implies that the identified plant expressing photo-insensitive trait besides an earliness. Photo-insensitive trait will be validated by sowing throughout the year at 15 days interval in next year.

Identified promising foxtail millet accessions suitable for low soil available nitrogen

Boraiah KM, Harisha CB, Basavaraj PS, Halli HM

Six 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 both recommended dose of fertilizers (RDF) and low soil nitrogen (RDF-N) conditions were characterized along with poor performing, nitrogen-sensitive accessions (Ise 1419, Ise 289, Ise 254) and a check variety (SiA 3156) during summer 2025. All the promising lines particularly FXM 70 (Ise 1805) and FXM 74 (Ise 1704) consistently performed under both the conditions with maintaining better photosynthesis and root growth under low N condition.

Confirmation of self-incompatibility trait and flesh colour variation in dragon fruit

Boraiah KM, Harisha CB, Basavaraj PS, Kakade VD, Halli HM, KK Pal

Based on consistent results observed over four years (2021–2024) in all NDFR-1 (Neera C) plants, selected from the ICAR-CIARI, Andaman clone and grown at three different sites within the NIASM campus-where no fruiting occurred under natural pollination, bagging, or manual selfing-the selected clone was considered self-incompatible. To confirm the trait, the flowers were monitored during the first flowering cycle in May 2025 for fruiting after being subjected to open/natural pollination, self- and cross-pollination. Fruit set was noticed only upon cross-pollination, with no fruiting in open and self-pollination treatments. This confirms the self-incompatibility mechanism in the clone. Further, different hybrids fruits developed at ICAR-NIASM were sliced and photographed to confirm their flesh color of hybrids.

NDFW-1 X NDFR-1 | *NDFR-1×NDRW-1 and NDFR-1×NDRW-2* | *NDFW-1 X NDFW-2*

Marginal quality water remediation by constructed wetland and integrated aquaponics

Kumar P, Harisha CB, Kumar N

Designing constructed wetland and integrated aquaponics system for the treatment of marginal quality waters (saline ground water, agricultural drainage water, sewage wastewater etc.), simultaneous cultivation of aromatic herbs cultivation and ornamental fish rearing. In these Constructed wetland and integrated aquaponics system various aromatic herbs were screened viz. Vetiver, Lemongrass, Citronella, Palmarosa, Calamus, Sweet Basil, Geranium, Patchouli, Rosemary, Marjoram, Brahmi and Mint for NIASM wastewater treatment. Among all, Vetiver and Calamus were found to be the most suitable plants in wetland system and Mint in aquaponics system. About 15 kg mint leaf herb was harvested from aquaponics system and 15.1 ml oil were extracted. Spear mint (Mentha spicata) has shown better growth and oil recovery (8.06 kg and 9.1 ml) than water mint (Mentha aquatic, 7.04 kg and 5.0 ml). Mints grown in Treated water with ornamental fishes has shown higher oil recovery 0.47-0.55 ml/100g (Spear mint) and 0.33- 0.30 ml/100g (Water mint) than control tanks. Extracted oils from wetland and aquaponics system was used for developing fourteen value added products viz. Aroma candle, Vaporiser, Car/room freshener, Detergent liquid, Toilet cleaner, Detergent powder, Hand wash, Dish wash, Floor cleaner, Floral aroma gift cards, Incense stick, Dhoop, Soap, Room spray. In the aquaponics system various ornamental fishes were screened viz. Goldfish, Widow tetra-fish and Molly fish. In aquaponics system Molly fish has outperformed as it has shown 400% increase in fish number while Gold fish and Widow tetra fish has shown 400% increase in body weight after one year of culturing. In untreated water 100% fish mortality and in treated water 50% Goldfish and 75% Widow

tetra fish mortality was observed. In these ornamental fishes' total carotenoid content and total anthocyanin content was estimated at various wavelengths viz. 340nm, 450nm, 520nm, 640nm, 750nm (UV, Visible & Near IR). Freshwater Goldfish and Molly fish has shown the highest total carotenoid content 10.007 µg/g and 10.860 µg/g; respectively while in Treated Water Goldfish, Widow tetra and Molly fish the highest total anthocyanin content 0.095, 0.097, 0.095 mg/g; respectively.



Collection and conservation of phytoremediation plants for remediation of degraded & polluted soil

Kumar P, Boraiah KM

Identified and collected and conserved 44 Phytoremediation plants for remediation of degraded & polluted soil (salts, heavy-metals, toxic chemicals etc.) from different sites of Baramati. These plants were found from various published reports for remediating and improving soil health. We utilized these plants in our research for further exploration, potential and applications viz. (i) Crop hyper-accumulators: Sunflower (Helianthus annuus), Brassica-sp., Spinach-sp., French bean, Soyabean-sp., Castor oil, Amaranthus-sp., Hemp-sp., Dhaincha (Sesbania bispinosa); (ii) Tree species: white willow (Salix alba), Indian willow (Salix tetrasperma), Eucalyptus species, Agathi (Sesbania drummondii), Khair (Acacia catechu), babul (Acacia nilotica), Moringa, Neem, Coconut; (iii) Horticultural ornamental plants: Kochia, Pteris vittata, Lolium perenne, Hydrocotyle umbellata, Sorghastrum nutans; (iv) Fodder plants: Lucerne, Berseem, Napier grass, Para grass, Arugula; (v) Agricultural weeds: Cannabis-sp., Billy goat weed (Ageratum-sp.), Horseradish (Armoracia-sp.), Saltbush (Atriplex-sp.), Arabidopsis-sp., Wild cabbage, Purslane (Portulaca), Cyperus iria, Phalaris minor, Eleusine indica, Solanum nigrum; (vi) Wasteland plants: Achyranthes-sp., Lantana-sp., Datura, Phragmites-sp., Arundo, Typha, Water hyacinth, Spikerush etc.

Environment-friendly, economically viable, state-of the-art model farm for abiotic stressed regions

Kumar P, Nangare DD

Farm waste management is one of the major components for making any farm environment-friendly and economical. Vermicomposting is one of the waste management methods and we evaluating the impact of crop residue, their mixing, different starter material, earthworm species on composting time, recovery percentage and nutrient composition using two earthworm species Red wiggler worm (Eisenia fetida) and African night crawlers (Eudrilus eugenia). In last five years (2020-2024) by managing institute farm waste produced approx. 12,334 kg vermicompost (4385 kg in 2020, 3071 kg in 2021, 2109 kg in 2022, 1445 kg in 2023, 1324 kg in 2024) at NIASM vermicomposting unit.

Effect of types of crop residue: Based on composting time and compost recovery Crop residue can be divided into three groups (i) fast decomposing and high recovery (2-4 months and >90%) e.g. Farm weed, Wheat straw, Chia, Marigold, Little millet waste), (ii) medium decomposing and recovery (4-6 months and 70-90%) e.g. Paddy, Soyabean, Ragi, Groundnut, Sunflower, Bamboo, Turmeric, Bajra, Chickpea, Geranium, Foxtail millet) and (iii) slow decomposing and low recovery (>6 months and <60%) e.g. Cocunut leaf, Quinoa, Typha & Vetiver, Orchard waste, Sugarcane leaf, Lemongrass).

Effect of changing starter material: In vermicomposting, a "starter" is a living material like cow dung or biogas slurry which introduces the initial microbial population, nutrients, and moisture needed to kick-start the decomposition process by breaking down organic matter into a suitable food source for the worms and speed up the decomposition process, making the compost pile healthy, aerated, and moist where earthworms can grow & reproduce and transform waste into vermicompost. We have tried different starter materials viz. cow dung; goat faeces, half decomposed FYM or leftover waste from prior vermicomposting cycle. Goat faeces have shown the higher compost recovery and took relatively less composting time compared to cow dung. While half decomposed leftover waste from prior

vermicomposting cycle have shown the lowest compost recovery, took more composting time and reduced earthworm yield compared to cow dung.

Effect of Mixing of waste: Mixing of high N containing waste reduces the composting time and increases the recovery percentage of high carbon containing materials by reducing their C: N ratio e.g. mixing Wheat straw with farm weed (5 to 4 months and 80% to 85%), Sugarcane trash with farm weed (8-10 to 6 months and 35% to 65%), Sugarcane trash with quinoa and chickpea waste (10 to 8 months and 34% to 40%), Groundnut waste with Chia waste (4 to 3 months), Soyabean waste with Wheat straw and Bamboo waste (6 to 4 months).

Conversion of Sugarcane crop residue into Bio-engineered pellet/cake for alleviation of multiple edaphic stresses of semiarid tropics

Kumar P, Kochewad SA, Harisha CB, Kumar N, Wakchaure GC, Dey R

Crop residue burning is one of the major global environmental challenges. In India every year >500 million tons' crop residues are produced and of which >92 million tons are burned, while in Maharashtra >46 million tons of crop residue produced and 8-million-ton burnt, mainly the Sugarcane trash. Sugarcane produces 10 to 12 tonnes of dry leaves per hectare. Sugarcane trash contains 28.6%-organic Carbon, 0.4% Nitrogen, 0.15% Phosphorus, 0.5% Potassium and so their decomposition takes >6 months while ~50% recovery in composting due to wider C: N ratio (>60:1) while ideal C: N ratio 20–30:1 is required for biogas and compost production. Residue burning affects soil health by increasing soil temperature, depleting soil nutrients and soil carbon, killing soil micro-organisms, release harmful air pollutants (CO, NO_2, SO_2, VOCs, PM-10 & PM-2.5 etc.) and greenhouse gases (CO_2, CH_4 and N_2O) in the environment. By considering these problems, a project was started for converting the Sugarcane crop residue into Bio-engineered pellet/cake using cow-dung and molasses as natural binders and mainly for soil incorporation and alleviation of multiple edaphic stresses e.g. water absorption, nutrient supply, organic carbon and soil microbial diversity enrichment, soil salinity & sodicity amelioration, soil heavy metal adsorption, soil temperature and soil pH balance by mulching, soil erosion control along with waste management & protecting the environment from residue burning. The prepared Biomass pellets of 25% and 50% binder's composition has shown >6 times of water absorption of their weight and have shown potential of salt removal capacity from saline groundwater pH 12%, EC 49%, sodium 62%, bicarbonate 35%, Calcium + Magnesium 10%, chloride 22%, sulphate 15%, phosphate 8%, nitrate 25%.

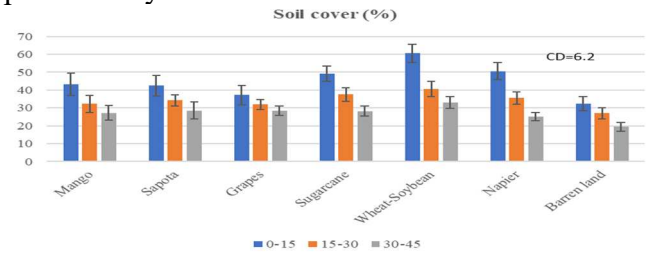
Environment-friendly, economically viable, state-of-the-art model farm for abiotic stressed regions

Rajagopal V, Nangare DD

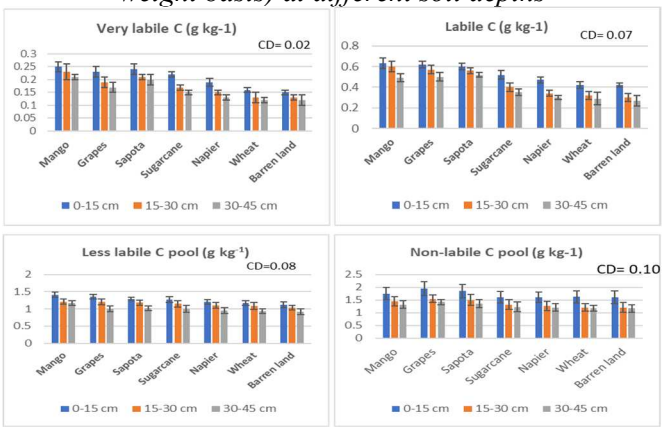
Effect of Land Use on Soil Carbon and Nitrogen Dynamics of the gravelly barren land situations

Introduction of arable crops at the initial period of rocky barren land transformation could accelerate soil development compared to the perennial field crops and fruit orchards. The results clearly showed that the introduction of arable crops, particularly the wheat–soybean system, provided the highest soil cover (up to 60% at the surface and 45% even in deeper layers), demonstrating their strong potential to accelerate soil development during the initial phase of rocky barren land transformation. In contrast, perennial crops like Napier grass and sugarcane achieved moderately high soil cover (≈50%) and fruit orchards such as mango, sapota, and grapes showed only gradual improvement, while barren land maintained the lowest cover (<35%) across all depths due to continued erosion and lack of vegetation. These findings confirm that land use systems strongly influence soil protection and organic matter buildup, with faster canopy closure and residue return from arable crops driving quicker gains in soil cover. Therefore, arable crops should be recommended in the early stages of land transformation for rapid improvement, followed by integration of perennial field crops and fruit orchards to sustain soil cover, enhance subsurface

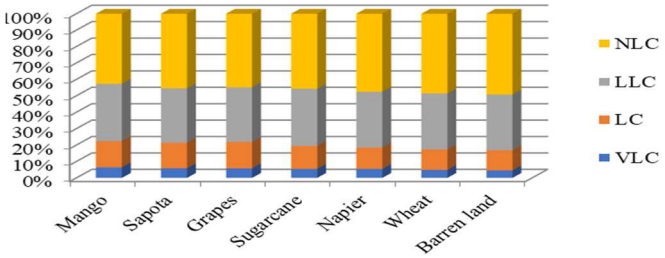
soil quality, and ensure long-term stability and productivity.



Effect of land use system on soil cover (w/w, on dry weight basis) at different soil depths



Long term effect of different land use systems on soil carbon dynamics of the surface (0-15 cm) and subsurface layers (15-45cm) in the shallow gravelly barren land



Relative proportions of different carbon pools (Very Labile C – VLC, Labile C – LC, Less Labile C – LLC, Non-Labile C – NLC) across land use systems

Land use system impact on carbon pools at different soil depths after 10 years on the shallow and gravelly land

Across all land use systems, the non-labile carbon pool (39–42%) dominates, followed by less labile carbon (34–37%), with labile carbon (≈18%) and very labile carbon (5–6%) forming smaller fractions. This depth-wise pattern reflects enrichment of all carbon fractions at the surface due to litter input and microbial activity, with progressive depletion at subsurface layers where organic matter inputs are minimal. The nirtogen pools for land use systems followed in the order of Fruit orchards (mango, grapes, sapota) > Perennial field crops (sugarcane, Napier) > Annual crop (wheat) > Barren land. This pattern shows that perennial systems enrich both active (very labile, labile) and stable (less labile, non-labile) carbon pools, while barren land remains depleted due to lack of organic inputs and erosion. In perennial systems, mango was best for very labile, labile, and less labile pools, while Grapes excelled in non-labile carbon storage. Compared to barren land, these systems improved carbon pools by 23–77%, with strongest benefits at the surface but also meaningful gains at subsurface depths due to perennial root inputs. The transformation of barren land into perennial or diversified systems not only boosts fertility but also enhances soil resilience, structure, and carbon sequestration potential.

Land use systems effect on soil N dynamics over the period of 10 years under the stony land situations

After 12 years of land use conversion on stony soils (40–60% gravel), orchard systems showed striking improvements in all nitrogen pools compared to barren land. For mineral N, mango and grape orchards recorded the highest values (23–25 kg ha^{-1} at 0–15 cm) compared to barren land (12–15 kg ha^{-1}), nearly doubling available inorganic N. In terms of total organic N (TON), mango and sapota maintained the largest pools (880–900 kg ha^{-1} at 0–15 cm) against barren land (320 kg ha^{-1}), a nearly threefold increase, while still retaining higher contents at subsurface layers (500 vs 210 kg ha^{-1} at 30–45 cm). The non-hydrolysable N fraction, representing long-term reserves, was also highest under mango orchards (290 kg ha^{-1} at surface vs 120 kg ha^{-1} in barren soils), showing the strong stabilization effect of perennial litter and woody residues. Within hydrolysable organic N sub-fractions, mango orchards led with amino acid N (200 vs 68 kg ha^{-1} in barren soils), amino sugar N (104 vs 22 kg ha^{-1}), and hydrolysable NH_3-N (122 vs 40 kg ha^{-1}), while grapes had the greatest hydrolysable unknown N (320 vs 63 kg ha^{-1}). These results highlight that hydrolysable fractions, especially amino sugar N and hydrolysable unknown N, are the most sensitive pools to land use changes in stony soils, as they directly reflect microbial turnover and organic input diversity absent in barren systems. Across all systems, nitrogen pools declined with depth (0–15 > 15–30 > 30–45 cm), yet orchards sustained significantly

greater amounts than barren land even at 30–45 cm (e.g., TON, 500 vs 210 kg ha^{-1}; non-hydrolysable N, 160 vs 85 kg ha^{-1}), emphasizing the importance of subsoil pools as long-term nutrient reservoirs in these fragile landscapes. From a practical standpoint, enhancing both labile pools (amino acid, amino sugar, hydrolysable NH_3-N) and stable pools (non-hydrolysable N, hydrolysable unknown N) under orchards translates to improved soil quality through better structure, aggregation, and microbial activity, greater soil fertility via a steady mineralizable N supply, and sustainability by reducing nutrient losses and building long-term resilience in shallow, gravelly soils.

Long term impact of land use systems on soil mineral N fractions (NH4-N and NO3-N) of the stony land.

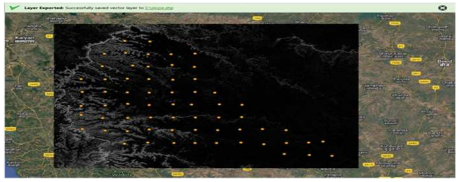
Land use	Total Organic N fraction (kg ha^{-1})				Hydrolysable N (kg ha^{-1})			
	0-15 cm	15-30 cm	30-45 cm	Mean	0-15 cm	15-30 cm	30-45 cm	Mean
Mango	906.2±64.5	620.0±47.0	372.1±36.2	632.8±65.2	616.2±43.1	390.1±38.2	202.2±42.1	402.8±40.6
Sapota	900.0±59.1	595.0±44.0	382.1±41.3	625.7±61.2	611.3±52.5	362.5±42.1	200.0±23.5	391.3±45.1
Grapes	865.5±52.1	620.0±42.1	386.5±35.2	624.0±52.3	584.0±58.4	415.2±41.5	198.2±35.6	399.1±45.2
Sugarcane	565.2±60.3	475.6±40.0	305.6±30.2	448.8±44.9	355.0±35.2	282.0±30.0	152.1±15.2	263.0±37.2
Napier	600.0±62.1	445.0±36.1	345.6±34.6	463.5±41.1	382.1±38.2	260.0±30.2	165.5±18.2	269.2±28.6
Wheat	375.6±42.1	285.3±34.6	230.0±41.0	297.0±36.5	145.2±14.5	135.2±20.1	95.2±16.2	125.2±25.4
Barren land	300.6±40.1	225.5±31.2	210.0±30.5	245.4±35.2	115.6±10.6	95.2±20.0	90.2±15.6	100.3±16.5
Mean	644.7±68.2	466.6±53.4	318.8±46.2		401.3±46.2	277.2±41.3	157.6±30.6	
Sources	Sig (0.05)	CD value			Sig (0.05)	CD value		
Land use	0.006	81.3			0.000	25.0		
Depth	0.000	25.2			0.008	72.5		
Land use X Depth	0.003	60.5			0.003	45.2		

Spatial variability of soil water availability in Pune district

Rajagopal V, Pradhan A, Gaikwad B

The distribution of soil profiles across slope classes demonstrates a strong relationship between slope gradient and soil texture, directly influencing soil quality and available water dynamics. On steeper slopes (>15% and 10–15%), soils were dominated by coarser textures such as sandy clay loam, sandy loam, and loamy sand. These lighter textures reflect the impact of continuous erosion, limited soil formation, and the downslope movement of finer particles, resulting in relatively lower soil available water content (SAWC). As slope gradients decreased to gentle (5–10%) and very gentle (3–5%), heavier textures such as clay and clay loam became increasingly common, indicating greater stability, reduced erosion losses, and deposition of fine materials. The nearly level (1–3%) and level (<1%) slope classes contained the highest number of soil profiles, where clay, clay loam, and loam dominated. These conditions favoured better aggregation, moisture retention, and nutrient storage due to the accumulation of finer particles and organic matter. Key findings highlight that slope position is a major driver of soil-water relationships: coarser textures at upper slopes

reduce water retention, while finer-textured soils in lower slopes enhance SAWC. In addition, lower slope soils also showed greater organic carbon content, which not only improved soil structure but also enhanced infiltration and water-holding capacity, reinforcing the close link between organic matter and SAWC.



Sampling location of the study areas

The grid-based sampling approach across diverse slope gradients and textures proved effective in capturing spatial variability in soil properties, ensuring that the data set represents both erosional and depositional zones. This robust sampling design allowed for the development of predictive models where landscape position emerged as a key factor determining soil texture, organic matter content, and ultimately soil available water capacity.

Appraisal of nutrient management systems influence on soil quality and resilience under rice cultivation at different landscape positions

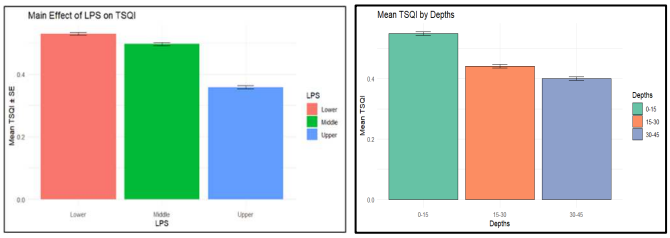
Rajagopal V, Halli HM, Chavan SB, Pal KK

Nutrient management systems (NMS) play a vital role in enhancing soil quality and resilience under rice cultivation across different landscape positions by improving physical, chemical, and biological functions of soils while reducing nutrient losses. In lowlands, where prolonged submergence often causes denitrification and leaching, integrated NMS with organic amendments and site-specific fertilizer use improve nutrient-use efficiency, maintain soil organic carbon and nitrogen pools, and buffer against greenhouse gas emissions.

Factors	Levels	Descriptions
A. Slopes		
S1	Lower slope area	There are six villages and each village represent all three slopes positions and all the nutrient management systems were imposed
S2	Middle slope area	
S3	Upper slope area	
B. Nutrient Management systems		
MS1	Farmers practice	Based on preliminary survey, we fixed the nutrient dose; application of 30 kg N, 15 kg P and 38 kg K) ha^{-1} Against 100:50:50 kg N,P and K ha^{-1}.
MS2	Inorganic systems	The system in which 100% nutrients supplied through inorganic fertilizers such as urea, SSP and MOP.
MS3	Organic systems	The organic manures used to 100 % crop nitrogen requirement. FYM 20 t ha^{-1} was applied. The balance amount of P was adjusted with the Bioprom (0.3t ha^{-1}).
MS4	INM_FYM systems	Applied 70% of N recommendation through urea and 30% through FYM applying 6 t ha^{-1}. 70% of the recommended P and K was applied after taking into consideration of supply from FYM.
MS5	INM_Biochar systems	The recommended dose of fertilizer will be applied. A full dose of biochar, the carbon source, (6 t ha^{-1}) applied 20-30 days before the rice puddling operations

Soil Quality assessed by SQI at Different slope areas and soil depths

On mid-slopes, prone to runoff and moderate erosion, balanced fertilization combined with crop residues or green manures enhances aggregate stability, nutrient retention, and microbial activity, thereby sustaining soil fertility. In uplands, where soils are shallow, less fertile, and more erosion-prone, integrated approaches restore nutrient



balance, improve soil organic matter, and strengthen microbial resilience, making soils more adaptive to stresses. Thus, NMS not only enhance soil health but also build resilience, ensuring sustainable rice productivity across variable landscape positions.

NEW INITIATIVES

ICAR-NIASM accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL)

ICAR-NIASM was accredited for the Soil Testing laboratory (NSTL) by NABL on May 19, 2025, Certificate No. TC-16098. The accreditation has been obtained with 13 soil parameters such as pH, EC, Organic Carbon, available Nitrogen, available Potassium, available Phosphorus, available Zinc, available Manganese, available Iron, available Copper, available Boron, available Sulphur.

National Accreditation Board for Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

NIASM SOIL TESTING LABORATORIES

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

ICAR-NATIONAL INSTITUTE OF ABIOTIC STRESS MANAGEMENT, MALEGAON, BARAMATI, MAHARASHTRA, INDIA

in the field of

TESTING

Certificate Number: TC-16098

Issue Date: 19/05/2025 Valid Until: 18/05/2029

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of thislaboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: INDIAN COUNCIL OF AGRICULTURAL RESEARCH (MINISTRY OF AGRICULTURE AND FARMERS WELFARE), GOVERNMENT OF INDIA

Signed for and on behalf of NABL

Anita Rani
Director

N. Venkateswaran
Chief Executive Officer

ICAR-NIASM participates in VKSA 2025 as a Nodal Centre for Maharashtra and Gujarat state

The Viksit Krishi Sankalp Abhiyan (VKSA-*Kharif*)-2025 was launched under the guidance of the Hon'ble Agriculture Minister Shri. Shivraj Singh Chouhanji during May 29 to June 12, 2025 throughout the country with the following objectives: Providing information about modern techniques for *kharif* crops; Providing information on government schemes and policies; Information on crop and fertilizer selection according to soil health card; Prepare innovation document by getting feedback from farmers. As the nodal centre of implementing the programme in the state of Maharashtra and Gujarat, allocation and monitoring the activities under different KVKs located in these two states were supervised by ICAR-NIASM, Baramati. Besides, for participation in VKSA on daily basis, a total of 13 teams were formed involving all scientists of the Institute and participated along with KVKs, SAU scientist, FPOs, NGOs, ATMA and other state department officials located in Pune, Nandurbar, Ahmednagar, Satara and Sangli districts. All the scientists of ICAR-NIASM, Baramati interacted with the farmers, took feedback about the problems faced by the farmers and advice and guide them about the available technologies with the ICAR institutes and SAUs to solve their problems. The scientists also discussed with the farmers about the technologies being developed at ICAR-NIASM, Baramati for tackling issues related to abiotic stresses. The scientists also informed the farmers about package of practices for improving soil health, conservation agriculture, organic and natural farming, quality seeds and varieties, and other package and practices for different crops being cultivated in the regions during the upcoming *kharif* season. The farmers were also updated about the various schemes of central and state government for the benefit of the farmers. ICAR- NIASM Scientists covered total 450 villages in five districts. During the campaign period following VIPs also addressed the farmers about importance of VKSA at various events in selected KVKs.

Evaluation of quinoa entries as adaptive trials

ICAR-NIASM, Baramati has been included as a volunteer centre under the AICRN on Potential Crops to conduct breeding trials of potential crops, primarily quinoa, chia, and buckwheat. During Kharif 2025, a total of 13 entries of quinoa- VLQ-3, VLQ-4 (Almora), RMQ-2501, RMQ-2502, RMQ-2503 (Mandor), and EC896208, EC896212, EC896206, EC896076, EC896205, EC896061, EC896066, EC896068 (Shimla)—were evaluated under Initial Varietal Trial (IVT), along with one

entry, VLQ-1, under Advanced Varietal Trial-I (AVT-I).

Field view of breeding trails of Quinoa

C3-CAM photosynthetic transition involved in imparting drought tolerance in soybean

Soybean is a major rainfed crop of tropics known to be susceptible to drought. Attempts have been made in understanding the existence of C3-CAM photosynthetic transition, if any, in soybean. To identify such phenomenon, 80 GWAS characterised genotypes of soybean including eight released cultivars, obtained from ICAR-IISR on MTA, were evaluated for drought tolerance, photo-insensitivity and CAM transition. Six genotypes (CAT1706, EC546882, EC528623, JS 80-20, EC546882 and EC528623) exhibited CAM transition while imparting drought tolerance. Rate of night-time carboxylation ~7.5 µmole/m^2/s and also exhibited invert stomatal behavior. Real time validation, titratable acidity overnight and quantification of enzymes involved in CAM transition are underway.

MAJOR EVENTS

Workshop-cum-frontline demonstration

Institute organized a one-day workshop-cum-frontline demonstration on 'Enhancing Sugarcane Productivity using Conservation Agricultural Practices and Engineering Interventions' for sugarcane farmers on 27 January 2025 at ICAR–NIASM, Baramati. A total of 50 sugarcane farmers from the nearby villages of Malegaon Kh, Malegaon BK, Khandaj, and Pandhare participated

ICAR-NIASM celebrated 76th Republic Day

76th Republic Day was celebrated with great patriotic fervor at ICAR-NIASM, Baramati, on 26th January 2025 under the esteemed chairmanship of Dr K Sammi Reddy, Director, ICAR-NIASM. The celebration commenced with the ceremonial puja of the idols of Mahatma Gandhi and Netaji Subhas Chandra Bose, paying homage to the great leaders of India's freedom struggle. This was followed by the unfurling of the National Flag by Dr K Sammi Reddy, accompanied by the singing of the National Song, filling the atmosphere with patriotic spirit. Dr. Reddy addressed the gathering, comprising all staff members, and emphasized the importance of working with dedication and commitment for the upliftment of farmers and the greater good of the nation. He inspired everyone to strive for excellence and guided the staff on collective efforts needed to elevate ICAR-NIASM's position within the ICAR system. The program concluded with a vote of thanks, followed by a group photograph and the distribution of sweets to all present. The event was smoothly anchored by Sh Dayanand Kharat, AAO.

ICAR-NIASM participated in ICAR-west zone sports tournament at ICAR-CICR, Nagpur

ICAR-NIASM Sports contingent participated in ICAR-west zone sports tournament organized at ICAR-CICR, Nagpur from February 01-04, 2025. Institute sports contingent participated in all the sports events with sportsmanship spirit and gave our best performance in the respective events. A brief report on performances of the team is as follows. In the individual events, Smt Purnima Ghadge secured a Silver Medal in Women's Chess. Dr Nobin Paul reached the finals in both the Men's 100 m and 200 m races. In Women's Carrom, Dr Sushma advanced to the quarterfinals, while in Mixed Carrom, the pair of Dr Sushma and Dr Rajkumar reached the

semifinals. In the team events, the Men's Badminton team, comprising Dr Hanamant Halli (Captain), Dr Vijay Kakade, Dr Gurumurthy, and Mr Prakhar, finished as Runners Up. The Cricket team, under the captaincy of Dr PS Hanjagi, reached the semifinals. The Volleyball Smashing team, led by Captain Dr Harisha, and the Kabaddi team, captained by Dr Goraksha Wakchaure, both reached the quarterfinals. In athletics, Dr Sushil Changan and Dr PS Hanjagi achieved a fourth-place finish in the Javelin and Shotput throw events.

Organization of Annual Sports Meet-2025

The Annual Sports Meet-2025 was organized in the institute during February 12-17, 2025. Various outdoor (Track & field events, cricket, football and volleyball) and indoor games (Chess, carom and table tennis) were conducted for all the staff and students of ICAR-NIASM, Baramati. All the staff and students of ICAR-NIASM, IARI-NIASM Hub actively participated in the sports meet displaying true sportsmanship. The event was organized by the institute sports committee.

ICAR-NIASM celebrated 17th Foundation Day

ICAR-NIASM celebrated its 7th Foundation Day on February 21, 2025. On this occasion, two Foundation Day lectures were organized. Ms Rashmi Darad NABARD deliberated on the "Role of NABARD in climate resilient Agriculture" and Dr VM Mayande, Former Vice Chancellor, Dr PDKV, Akola delivered the motivational speech on "Motivation: a key virtue of individuals". Dr K Sammi Reddy, Director, ICAR-NIASM, highlighted the Institute's achievements during the last year and future targets besides acknowledging the role of former Directors, besides former and present staff in the development of the Institute. Dr PL Patil, Hon'ble, Vice Chancellor, UAS, Dharwad, who graced the occasion as Chief Guest, appreciated the progress made by ICAR-NIASM during its 16 years of journey and particularly during last year under the dynamic leadership of Director, Dr K Sammi Reddy. He also acknowledged the vision of former Union Agricultural Minister, Hon'ble, Shri Sharadchandraji Pawar, for timely establishment of Institute of international repute. Guest of honour, Dr VM Mayande Former VC, Dr PDKV, Akola during his motivational speech emphasized the role of ethics and spirituality in scientific endeavours. Dr Vijay Mahajan, Director ICAR-DOGR, Pune, appreciated the involvement of women in the Foundation Day celebration and also emphasized the need for the empowerment of women in farming activities. Various publications of the Institute, viz. ICAR-NIASM Newsletter, DAPSC Annual Report (2022-23), book on "Multiple stress tolerance crop varieties in India" and technical folder on "Nutritional profile of quinoa and millets" were released by the Guests. During this occasion, progressive farmers from various fields such as crop, horticulture and Animal husbandry were felicitated for their achievements. Awards were distributed to staff for their outstanding contributions and also to winners of sports events. The programme was concluded by vote of thanks by Dr NP Kurade, Convenor of the programme. In the afternoon session, the cultural programme was organized by ICAR-NIASM students.

One-day demonstration-cum-awareness program under CRPCA

ICAR-NIASM organized a one-day demonstration-cum-awareness program on CRPCA research activities, along with the distribution of SCSP inputs (Kitchen Utensil kits and dairy cans) to scheduled caste beneficiaries and farmers, on 27th March 2025 at ICAR–NIASM, Baramati. About 60 beneficiaries and farmers participated in the event.

Farmers of Karanje Village appreciated ICAR-NIASM DAPSC Activities

On the occasion of the 134th Birth Anniversary of Bharat Ratna Dr Babasaheb Ambedkar celebrated on April 14, 2025, the Grampanchayat members of Karanje village organized a felicitation ceremony for ICAR-NIASM, Baramati. The event was held in recognition of the valuable support extended by ICAR-NIASM and the DAPSC Implementation Committee to Scheduled Caste (SC) beneficiaries for improving their livelihoods under the DAPSC scheme for 2024–25. As a mark of appreciation, the Sarpanch and villagers felicitated Dr K Sammi Reddy, Director, ICAR-NIASM. They also felicitated Dr NP Kurade, Chairman, DAPSC Implementation Committee, along with Mr Ravi Kumar and Rajkumar, committee members who were present at the event. Other key contributors for successfully implementing the DAPSC scheme (2024–25) were also acknowledged on the ocassion, including Drs. SS Pawar (Member Secretary), DD Nangare, AV Nirmale, BB Gaikwad, SB Chavan, VD Kakade, Aliza Pradhan' all of whom played significant roles as committee members. The villagers expressed their heartfelt gratitude to the Director and DAPSC Implementation Team for adopting Karanje village under the DAPSC scheme and extending vital support to SC beneficiaries to enhance their livelihoods. In response, Dr K Sammi Reddy, assured continued assistance and committed to extending the benefits of the scheme to the remaining eligible beneficiaries in the village.

Field day cum farmers-scientist interaction meet on "Awareness about DAPSC programme and need assessment"

ICAR-NIASM organized a field day cum-farmers-scientist-interaction meet on "Awareness about DAPSC programme and need assessment" under DAPSC 2022-23 scheme on 29 April, 2025 at Dhakale and Loni Bhapkar villages of Baramati Tehsil, Dist. Pune. Dr Nirmale welcomed the Sarpanch and the participants for the programme. Dr Nangare informed about various activities of the institute. Dr Kurade briefed about the DAPSC scheme of Government of India and various interventions/activities carried out under the programme for individual beneficiaries as well as self-help groups. Dr Nirmale briefed about various success storied emerged under the DAPSC programme carried out by the institute. All DAPSC committee members interacted and responded to the queries raised by the beneficiaries about the scheme. More than 75 beneficiaries, including 16 females participated in the programme. The programme was conducted and coordinated by the DAPSC Implementation Committee members, namely, Drs. NP Kurade and AV Nirmale (Convenors) and Drs. DD Nangare, SS Pawar, BB Gaikwad, SB Chavan, VD Kakade, Rajkumar, Ravikumar, AV Nirmale, Aliza Pradhan (Co-convenors).

Celebration of International Day of YOGA-2025

On the eve of 11th edition of International Day of Yoga, various activities were planned at ICAR-NIASM, Baramati. The circular for awareness program on yoga was issued under the guidance of the Director. On June 21, 2025, the day celebration started with mass practicing of YOGA from 8.00 am to 9.00 am in Amphi Theatre at Admin Building. Dr. Pravin Taware (ACTO) introduced the program with brief information on 'Common Yoga Protocol' designed by the Ministry of AYUSH, Govt. of India. He demonstrated the various loosening exercises, asanas, pranayama and dhyan. The Director, Dr. K. Sammi Reddy, in concluding remarks, highlighted the importance of Yoga in everyday life. The Director also advised to arrange such awareness programs for staff and students at frequent intervals. Total 28 members of NIASM staff comprising of the Scientists, Technical and Administrative personnel along with Research scholars, Young Professionals and Students participated the program with enthusiasm.

Organization of Blood Donation Camp

A Blood Donation Camp was organized at ICAR-NIASM, Baramati, on the occasion of World Blood Donor Day on 26th June 2025, in collaboration with the NIASM Cultural and Recreation Club (NCRC) and Akshay Blood Bank, Solapur. This camp was inaugurated by Dr K Sammi Reddy, Director ICAR-NIASM, Ms Pornima Pawar, Sarpanch, Malegaon Kh. and Mrs. Hemalata Taware, RTO, Baramati During the inauguration session, Dr K Sammi Reddy, Director of the institute, emphasized the importance of blood donation. On this occasion, a total of 60 individuals, including staff, students, YPs, SRFs, RAs, and field staff donated blood with much enthusiasm and solidarity. The camp was coordinated by Sh Dayanand Kharat, General Secretary of NCRC, under the supervision of Shri Mahesh Khubdikar, Chief Administrative Officer, Dr NP Kurade, Vice-President of NCRC, and Shri Junaid Pathan, Administrative Officer with able guidance and encouragement from Dr K Sammi Reddy. The blood bank issued certificates to all the donors and assured to provide blood free of cost for a period of life time to all the donors and their family members in case of emergency situations in the future. A team of around 10 members, including health professionals from Akshay Blood Bank, Solapur, and AMAs of ICAR-NIASM, ensured the event was conducted flawlessly. The Director also acknowledged the services of the volunteers and the NIASM Cultural and Recreation Club (NCRC). Lastly, the team leaders of Akshay Blood Bank praised the efforts of ICAR-NIASM in achieving such a great response from the donors and presented a trophy as a token of appreciation to ICAR-NIASM, Baramati.

Trainings/Seminar/Workshop/Symposia/Conference organized

SN	Training	Beneficiaries	Organized by
1.	NBSC, Lucknow (NABARD) sponsored Write Shop Programme for Grade A, B and C Officers of NABARD from 2-6 June 2025 at ICAR-NIASM	26	ICAR-NIASM *(Course Director:* SB Chavan *Course Co-Directors:* JH Kadam, Nobin Paul, Navyashree P)

Workshops/Seminar/Symposia/Conference/Training attended

Name of staff	Title	Venue	Organised by	Dates
Dr R Dey **Dr KK Pal**	Training programme on 'Measurement of Uncertainty and Decision Rule' as per requirement of ISO/IEC 17025:2017	ICAR-NIASM, Baramati	ICAR-NIASM, Baramati	27 Feb 2025
Dr R Dey **Dr KK Pal**	Training program on requirements of Quality Management System for implementation of ISO/IEC 17025:2017 (General requirements for the competence of testing and calibration laboratories), required for NABL accreditation	ICAR-NIASM, Baramati	ICAR-NIASM, Baramati	03-05 March 2025
Dr SS Changan	Yoga Break at Workplace Course	Online mode	MDNIY, certified by DoPT, Karmayogi Bharat	13 May 2025
	Anger Management and Effective Public Interaction Course	Online mode	IIPA, certified by DoPT, Karmayogi Bharat	13 May 2025
	Introduction to Emerging Technologies Course	Online mode	DoPT, Karmayogi Bharat	27 May 2025
Dr SM Awaji	Training on "Abiotic stress management in agriculture for enhancing the farmer's income with special reference to millets/ fodder crops cultivation in arid and semi-arid regions of India"	Online mode	ICAR-IIMR and MANAGE, Hyderabad	06 Jan 2025
	Training "Decoding non-coding Genome: Insights into Gene Expression and Regulatory Interplay"	Online mode	ICAR-IASRI, New Delhi	25 Feb to 04 Mar 2025
	iGOT training program on "Building climate resilience in agriculture systems"	Online mode	Rockefeller Foundation	27 May 2025
	iGOT training program on "AI led digital transformation in agriculture"	Online mode	Wadhwani Foundation	28 May 2025
Dr JH Kadam	National Symposium on Spices and Aromatic Crops	ICAR-IISR, Calicut	ICAR-IISR, Calicut	07-09 Jan 2025
	National Conference on Value chain management in Spices and Aromatic Plants for Profit optimization and Resilience	Jain Irrigation Systems Limited, Jalgaon	Jain Irrigation Systems Limited, Jalgaon	18-19 Jan 2025
	Workshop on Turmeric Yield maximization	Kavate Tal. Wai Dist. Satara	Govt. of Maharashtra	27 Jan 2025
	Workshop on Ginger cultivation	Virtual	Pani Foundation, Mumbai	17 Jan 2025
	Workshop on Shetishala of Turmeric Crop	Virtual	Pani Foundation	29 Jul 2025
Dr Aliza Pradhan	International Conference on "Rainfed Agriculture: Building Pathways for Resilience and Sustainable Livelihoods"	ICAR-CRIDA, Hyderabad	ISDA and ICAR-CRIDA, Hyderabad	29-31 Jan 2025

	One Day training programme on "Measurement of Uncertainty and decision Rule" as per requirement of ISO/IEC 17025:2017	ICAR-NIASM, Baramati	ICAR-NIASM, Baramati	27 Feb 2025
	Three days training programme on "Requirements of Quality Management System" for implementation of ISO/IEC 17025:2017	ICAR-NIASM, Baramati	ICAR-NIASM, Baramati	03-05 Mar 2025
	1st International Farming Systems Conference (IFSC 2025) on "Transforming Food, Land and water systems under global climate change"	ICAR-IIFSR, Modipuram	FSRDA and ICAR-IIFSR, Modipuram	07-09 Mar 2025
Dr Basavaraj PS	2nd International Conference of ISDA on Rainfed Agriculture: Building Pathways for Resilience & Sustainable Livelihoods	ICAR-CRIDA, Hyderabad	ICAR-CRIDA, Hyderabad	29-31 Jan 2025
Dr PS Hanjagi	Participated in Abiotic Stress Management in Agriculture for Enhancing Farmers' Income with Special Reference to Millets/Fodder Crops Cultivation in Arid and Semi-Arid Regions of India	Online mode	ICAR- IIMR and MANAGE, Hyderabad	06-10 Jan 2025
Dr PS Khapate	National Conference on Digital Technologies for Transforming the Horticulture Sector organized by	NASC Complex, New Delhi	Indian Academy of Horticultural Sciences & ICAR	28-30 Jan 2025
Dr Harisha CB	Global Conference on Smart Horticulture for Prosperity and Nutritional Security	UHS Bagalkot, Karnataka	UHS Bagalkot, Karnataka	12-14 Feb 2025
Dr AS Morade	National Seminar on Digital Technologies for Transforming Horticulture Sector	ICAR-IARI, New Delhi	Indian Academy of Horticultural Sciences	28-30 Jan 2025
	Workshop on Dragon Fruit and Mango Crop Management and Processing	Dhumalwadi (Phaltan)	State Agri. Dept. & ATMA Unit (GoM)	11 Mar 2025

PERSONALIA

Awards/Recognitions

- Dr Kadam JH, Dr K Sammi Reddy and Dr Rinku Dey received Best Poster presentation Award in 'National Symposium on Spices and Aromatic Crops' held at ICAR-Indian Institute of Spices Research, Calicut, Kerala during 7-9 January 2025.

- Dr Kadam JH received Maratha Krishi Bhusahn Award-2025: Award is declared by Maratha Seva Sangh, Sindkhed Raja, Buldhana (MS) on 12th January, 2025
- Dr SS Changan delivered a radio talk titled "किसानवाणी - विकसित कृषी संकल्प अभियान - चर्चासत्र सहभाग" which was recorded on June 5, 2025, and broadcasted on June 7, 2025, at 7:30 PM by Akashvani Ahilyanagar (All India Radio).
- Pradhan A, Wakchaure GC, Shid, D, Minhas PS, Biswas AK, Reddy KS received Best Oral presentation award at 1st International Farming Systems Conference (IFSC 2025) on "Transforming Food, Land and water systems under global climate change", held at ICAR-IIFSR, Modipuram (07-09 March, 2025).

- Pradhan A, Rane J, Pal KK, Reddy KS received Best Oral presentation award at "International Conference on Rainfed Agriculture: Building Pathways for Resilience and Sustainable Livelihoods", held at ICAR-CRIDA, Hyderabad (29-31 January, 2025).
- Dr Aliza Pradhan received Farming Systems Research and Development Association (FSRDA) Young Scientist Award at the International conference (IFSC 2025) organised by FSRDA and ICAR-IIFSR on 7th March 2025.

- Dr PS Hanjagi was Elected as Councilor (West zone) of Association of Rice Research Workers, ICAR-NRRI, Cuttack for the Triennial term (January 2025- December 2028).
- Dr KK Pal nominated by Director NIASM on 07-01-2025 for participation in expert panel in FAD 34/ Panel IV "Plant Health Management" under Bureau of Indian Standards for development of the National Agriculture Code (NAC) of India
- Dr SB Chavan was selected as Editorial Board Member of Discover Forest (2025–2027), with expertise in carbon sequestration.
- Dr SB Chavan became Managing Editor of Indian Journal of Agroforestry, ISAF, Jhansi (UP).
- Dr PS Khapate received Best Oral Presentation Award at National Conference on Digital Technologies for Transforming the Horticulture Sector, organized by Indian Academy of Horticultural Sciences and ICAR at NASC Complex, New Delhi, from 28–30 January 2025.

- Dr R Dey nominated for participation in the expert panel in FAD 34/ Panel IV "Plant Health Management" under Bureau of Indian Standards for development of the National Agriculture Code (NAC) of India.
- Dr AS Morade received Best Oral Presentation Award at National Seminar on Digital Technologies for Transforming Horticulture Sector at seminar organized by Indian Academy of Horticultural Sciences at ICAR-IARI, New Delhi, during January 28-30, 2025.
- Dr AS Morade received Best Performance Award for outstanding contributions in popular article writing, on occasion of 17th Foundation Day of ICAR-NIASM.

Joining, Transfer and Promotion of Staff

Name of the staff	Date	Previous Institute
New Joinings		
Dr Santosha Rathod Senior Scientist (Agricultural Statistics)	15.04.2024	ICAR-IIRR, Hyderabad (Lateral Entry)
Dr SK Mishra Senior Scientist (Agricultural Meteorology)	15.05.2025	Punjab Agricultural University Ludhiana, Ludhiana (Lateral Entry)
Dr Mahesh Gupta Senior Scientist (Animal Physiology)	23.05.2025	Maharashtra Animal & Fishery Science University, Nagpur (Lateral Entry)
Dr Rafat Sultana Senior Scientist (Genetics and Plant Breeding)	12.06.2025	Bihar Agricultural University, Bhagalpur (Lateral Entry)
Dr Nintu Mandal Senior Scientist (Soil Science)	30.07.2025	Bihar Agricultural University, Bhagalpur (Lateral Entry)
Dr Nilesh Joshi Scientist (Genetics and Plant Breeding)	07.07.2025	New Joining
Dr Naveenkumar Scientist (Soil Science)	07.07.2025	New Joining
Dr Prabhat Kumar Scientist (Agricultural Statistics)	07.07.2025	New Joining

Glimpses of Viksit Krishi Sankalp Abhiyan (VKSA):

May, 29 to June 12, 2025

दैनिक बंधुता 8

तुंग येथे विकसित कृषि संकल्प अभियान यात्रा संपन्न

बंधुता न्यूज नेटवर्क

सांगली : विकसीत कृषि संकल्प यात्रा अंतर्गत भारत सरकारच्या कृषी व किसान कल्याण मंत्रालय, भारतीय कृषि अनुसंधान परिषद, नवी दिल्ली, कृषी विज्ञान केंद्र, सांगली, कृषी विभाग सांगली आणि आत्मा प्रकल्प सांगली यांच्या संयुक्त प्रयत्नातून आयोजित कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम मिरज तालुक्यातील तुंग गावामध्ये यशस्वीरित्या पार पडला.

कार्यक्रमास सरपंच विमलताई सूर्यवंशी, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, खउठ अजैविक ताण व्यवस्थापन संस्था बारामतीचे हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बराते, आत्मा प्रकल्प तालुका तांत्रिक व्यवस्थापक वैभव यादव, सहाय्यक कृषी अधिकारी प्रियांका चव्हाण, विकास मगदूम आदि मान्यवर उपस्थित होते.

डॉ. विपिन वाले यांनी पशुपालन या विषयावर सविस्तर मार्गदर्शन केले. दुधाचे दर फॅटवर अवलंबून असतात त्यामुळे दूध उत्पादक शेतकऱ्यांनी याची काळजी घ्यावी. पशूंच्या

माजावस्थेची (हीट सायकल) ओळख करणे शेतकऱ्यांसाठी अत्यंत गरजेचे असल्याचे त्यांनी यावेळी सांगितले. मृदा शास्त्रज्ञ शैलेश पाटील यांनी शेतकऱ्यांना माती परीक्षणावर आधारित खतांचा योग्य वापर करावा, यामुळे जमिनीचे आरोग्य टिकून राहते, असे आवाहन केले.

कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे म्हणाले, शेतकऱ्यांनी सेंद्रिय पद्धतीने भाजीपाला पिकवावा आणि सेंद्रिय अन्नाचा उपयोग करावा. घरच्या वापरासाठी जैविक पद्धतीने तयार केलेल्या भाज्यांचाच वापर करावा. हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा म्हणाले, मानव व पशुधनाच्या सुरक्षेसाठी दामिनी आणि मेघदूत या मोबाईल ॲपचा वापर करून नुकसान कमी करण्याचा प्रयत्न करावा.

यावेळी सर्व मान्यवरांनी मार्गदर्शन करताना शेतकऱ्यांच्या अडचणी सोडविण्यासाठी कृषी शास्त्रज्ञ नेहमीच त्यांच्या सोबत आहेत, असा विश्वास दिला. सूत्रसंचालन वैभव यादव यांनी केले. आभार प्रियांका चव्हाण यांनी मानले. कार्यक्रमास गावातील प्रगतशील शेतकरी, शेतकरी गट, शेतकरी मोठ्या संख्येने उपस्थित होते.

गुरूवार दि. १२ जून २०२५ — दैनिक सत्यदूत

तुंग येथे विकसित कृषि संकल्प अभियान यात्रा संपन्न

सत्यदूत । वृत्तसंस्था

● सांगली : विकसीत कृषि संकल्प यात्रा अंतर्गत भारत सरकारच्या कृषी व किसान कल्याण मंत्रालय, भारतीय कृषि अनुसंधान परिषद, नवी दिल्ली, कृषी विज्ञान केंद्र, सांगली, कृषी विभाग सांगली आणि आत्मा प्रकल्प सांगली यांच्या संयुक्त प्रयत्नातून आयोजित कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम मिरज तालुक्यातील तुंग गावामध्ये यशस्वीरित्या पार पडला.

कार्यक्रमास सरपंच विमलताई सूर्यवंशी, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, खउ-ठ अजैविक ताण व्यवस्थापन संस्था बारामतीचे हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बराते, आत्मा प्रकल्प तालुका

तांत्रिक व्यवस्थापक वैभव यादव, सहाय्यक कृषी अधिकारी प्रियांका चव्हाण, विकास मगदूम आदि मान्यवर उपस्थित होते.

डॉ. विपिन वाले यांनी पशुपालन या विषयावर सविस्तर मार्गदर्शन केले. दुधाचे दर फॅटवर अवलंबून असतात त्यामुळे दूध उत्पादक शेतकऱ्यांनी याची काळजी घ्यावी. पशूंच्या माजावस्थेची (हीट सायकल) ओळख करणे शेतकऱ्यांसाठी अत्यंत गरजेचे असल्याचे त्यांनी यावेळी सांगितले.

मृदा शास्त्रज्ञ शैलेश पाटील यांनी शेतकऱ्यांना माती परीक्षणावर आधारित खतांचा योग्य वापर करावा, यामुळे जमिनीचे आरोग्य टिकून राहते, असे आवाहन केले.

कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे म्हणाले, शेतकऱ्यांनी सेंद्रिय पद्धतीने भाजीपाला पिकवावा आणि सेंद्रिय अन्नाचा उपयोग करावा. घरच्या वापरासाठी जैविक पद्धतीने तयार केलेल्या भाज्यांचाच वापर करावा. हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा म्हणाले, मानव व पशुधनाच्या सुरक्षेसाठी दामिनी आणि मेघदूत या मोबाईल ॲपचा वापर करून नुकसान कमी करण्याचा प्रयत्न करावा. यावेळी सर्व मान्यवरांनी मार्गदर्शन करताना शेतकऱ्यांच्या अडचणी सोडविण्यासाठी कृषी शास्त्रज्ञ नेहमीच त्यांच्या सोबत आहेत, असा विश्वास दिला.

सूत्रसंचालन वैभव यादव यांनी केले. आभार प्रियांका चव्हाण यांनी मानले. कार्यक्रमास गावातील प्रगतशील शेतकरी, शेतकरी गट, शेतकरी मोठ्या संख्येने उपस्थित होते.

विकसित कृषी संकल्प अभियान अंतर्गत कसबे डिग्रज येथे शेतकरी मार्गदर्शन शिबिर

सांगलीच्या ५ तालुक्यातील ४५ गावामध्ये अभियान राबवले

बंधुता न्यूज नेटवर्क

सांगली : विकसित कृषी संकल्प अभियान अंतर्गत सांगली जिल्ह्यातील कसबे डिग्रज येथे शेतकऱ्यांसाठी मार्गदर्शन शिबिर आयोजित करण्यात आले. कृषि विस्तार शास्त्रज्ञ, वरिष्ठ शास्त्रज्ञ, मृदा शास्त्रज्ञ, कीड व रोग शास्त्रज्ञ, पशुवैद्यकीय शास्त्रज्ञ यांनी शेतकऱ्यांना मार्गदर्शन केले. या शिबिरास शेतकरी आणि महिलांनी उत्स्फूर्त प्रतिसाद दिला. यावेळी ड्रोनच्या साहाय्याने औषध फवारणी करण्याबाबतचे प्रात्यक्षिक घेण्यात आले.

सांगली जिल्ह्यातील जत, पलूस, तासगाव, कवठेमहांकाळ आणि मिरज या पाच तालुक्यातील ४५ गावा मध्ये कांचनपूर येथील विज्ञान केंद्र यांच्या सहकार्याने २९ मे २०२५ पासून विकसित कृषी संकल्प अभियान राबवण्यात आले आहे.

कसबे डिग्रज येथील कृषी मार्गदर्शन शिबिरामध्ये शेतकऱ्यांना राज्य आणि केंद्र शासनाच्या कृषि विषयक योजनांची माहिती यावेळी देण्यात आली. त्याच बरोबर शेतकऱ्यांच्या समस्या जाणून त्यांना कृषी विषयक मार्गदर्शन करण्यात आले. रासायनिक मुक्त भाजीपाला आणि अन्नधान्य खायचे असेल तर सेंद्रिय शेती करावी, खारपड जमीन सुधारण्यासाठी भूमिगत निचरा प्रणालीचा वापर करावा. खरीप पिकांचे हंगाम पूर्व नियोजन कसे करावे. एकात्मिक कीड आणि रोग व्यवस्थापन कशा प्रकारे करण्यात यावे आणि पशुधन व्यवस्थापन या विषयी मार्गदर्शन करण्यात आले.

अजैविक ताण व्यवस्थापन संस्था बारामती, कृषि पशुवैद्यकीय महाविद्यालय शिरवळ, कृषि संशोधन केंद्र कसबे डिग्रज आणि कृषी विस्तार विभाग सांगली येथील शास्त्रज्ञ यांनी शेतकऱ्यांना मार्गदर्शन केले.

यावेळी अजैविक ताण व्यवस्थापन संस्था बारामती हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, कृषि विज्ञान केंद्र, कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बराते, कोलेगडन प्रा. तीर्थ जिल्हा विज्ञान सानप, मृदा शास्त्रज्ञ शैलेश पाटील, कृषि विस्तार शास्त्रज्ञ सचिन कोल्हे, माजी जिल्हा परिषद सदस्य विशाल चौगुले, ग्रामपंचायत सदस्य राजेंद्र काटकर, ग्रामपंचायत सदस्य विक्रम सूर्यवंशी, कसबे डिग्रजच्या कृषिसखी श्रीमती अमृता अजित कदम उपस्थित होते.

दैनिक क्रांती — सांगली, बुधवार, दि. ११ जून २०२५

शिपूर येथे कृषी संकल्प अभियान उत्साहात संपन्न

दै. क्रांती ↘ मिरज

विकसीत कृषि संकल्प यात्रा अंतर्गत भारत सरकारच्या कृषी व किसान कल्याण मंत्रालय, भारतीय कृषि अनुसंधान परिषद, नवी दिल्ली, कृषी विज्ञान केंद्र, सांगली, कृषी विभाग सांगली आणि आत्मा प्रकल्प सांगली यांच्या संयुक्त प्रयत्नातून आयोजित कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम मिरज तालुक्यातील शिपूर गावामध्ये उत्साहात संपन्न झाला.

कार्यक्रमास उपसरपंच राजू रामचंद्र देसाई, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, ICAR अजैविक ताण व्यवस्थापन संस्था बारामतीचे

हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बराटे, कृषी विभागाचे तालुका तांत्रिक व्यवस्थापक वैभव यादव, उपकृषी अधिकारी संतोष पांढरे आणि सहाय्यक कृषी अधिकारी विक्रांत गायकवाड आदि मान्यवर उपस्थित होते. कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले यांनी पशुपालन या विषयावर सविस्तर मार्गदर्शन केले.

पशूंच्या माजावस्थेची (हीट सायकल) ओळख करणे शेतकऱ्यांसाठी अत्यंत गरजेचे असल्याचे ते यावेळी म्हणाले. मृदा शास्त्रज्ञ शैलेश पाटील म्हणाले, मृदा आणि जल परीक्षणावर आधारित खतांचा वापर करावा, यामुळे जमिनीचे आरोग्य टिकून राहते. कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे म्हणाले, शेतकऱ्यांनी सेंद्रिय पद्धतीने भाजीपाला पिकवावा आणि सेंद्रिय अन्नाचा उपयोग करावा. घरच्या वापरासाठी जैविक पद्धतीने तयार केलेल्या भाज्यांचाच वापर करावा, असे त्यांनी सांगितले.

कार्यक्रमातील शास्त्रज्ञांनी शेतकऱ्यांना विश्वास दिला की, त्यांच्या अडचणी सोडवण्यासाठी कृषी शास्त्रज्ञ नेहमीच त्यांच्या सोबत आहेत. डॉ. सुधीर कुमार मिश्रा यांनी सांगितले की, बदलत्या हवामान, जमीन, हवा आणि पाण्याचा वापर सावधगिरीने करावा. त्यांनी हेही सुचवले की, मानव व पशुधनाच्या सुरक्षेसाठी दामिनी आणि मेघदूत या मोबाईल ॲपचा वापर करून नुकसान कमी करण्याचा प्रयत्न करावा.

सूत्रसंचालन सहाय्यक कृषी अधिकारी विक्रांत गायकवाड यांनी केले. आभार रणजीत देसाई यांनी मानले. या कार्यक्रमास शिपूर गावातील प्रगतशील शेतकरी, शेतकरी गट, महिला शेतकरी, सोबत उपसरपंच राजू देसाई, बाळासाहेब सूर्यवंशी, केदारी देसाई, मदन देसाई, धनाजी सूर्यवंशी, तानाजी कोळी, श्रीमंत नाईक व शेतकरी मोठ्या संख्येने उपस्थित होते.

बुधवार दि. ११ जून २०२५ — दैनिक सत्यदूत

शिपूर येथे कृषी संकल्प अभियान उत्साहात संपन्न

सत्यदूत । वृत्तसंस्था

● सांगली : विकसीत कृषि संकल्प यात्रा अंतर्गत भारत सरकारच्या कृषी व किसान कल्याण मंत्रालय, भारतीय कृषि अनुसंधान परिषद, नवी दिल्ली, कृषी विज्ञान केंद्र, सांगली, कृषी विभाग सांगली आणि आत्मा प्रकल्प सांगली यांच्या संयुक्त प्रयत्नातून आयोजित कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम मिरज तालुक्यातील शिपूर गावामध्ये उत्साहात संपन्न झाला.

कार्यक्रमास उपसरपंच राजू रामचंद्र देसाई, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, खउ-ठ अजैविक ताण व्यवस्थापन संस्था बारामतीचे हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बराटे, कृषी विभागाचे तालुका

तांत्रिक व्यवस्थापक वैभव यादव, उपकृषी अधिकारी संतोष पांढरे आणि सहाय्यक कृषी अधिकारी विक्रांत गायकवाड आदि मान्यवर उपस्थित होते.

कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले यांनी पशुपालन या विषयावर सविस्तर मार्गदर्शन केले. पशूंच्या माजावस्थेची (हीट सायकल) ओळख करणे शेतकऱ्यांसाठी अत्यंत गरजेचे असल्याचे ते यावेळी म्हणाले. मृदा शास्त्रज्ञ शैलेश पाटील म्हणाले, मृदा आणि जल परीक्षणावर आधारित खतांचा वापर करावा, यामुळे जमिनीचे आरोग्य टिकून राहते.

कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे म्हणाले, शेतकऱ्यांनी सेंद्रिय पद्धतीने भाजीपाला पिकवावा आणि सेंद्रिय अन्नाचा उपयोग करावा. घरच्या वापरासाठी जैविक पद्धतीने तयार केलेल्या भाज्यांचाच वापर करावा, असे त्यांनी सांगितले.

कार्यक्रमातील शास्त्रज्ञांनी शेतकऱ्यांना विश्वास दिला की, त्यांच्या अडचणी सोडवण्यासाठी कृषी शास्त्रज्ञ नेहमीच त्यांच्या सोबत आहेत. डॉ. सुधीर कुमार मिश्रा यांनी सांगितले की, बदलत्या हवामान, जमीन, हवा आणि पाण्याचा वापर सावधगिरीने करावा. त्यांनी हेही सुचवले की, मानव व पशुधनाच्या सुरक्षेसाठी दामिनी आणि मेघदूत या मोबाईल ॲपचा वापर करून नुकसान कमी करण्याचा प्रयत्न करावा.

सूत्रसंचालन सहाय्यक कृषी अधिकारी विक्रांत गायकवाड यांनी केले. आभार रणजीत देसाई यांनी मानले. या कार्यक्रमास शिपूर गावातील प्रगतशील शेतकरी, शेतकरी गट, महिला शेतकरी, सोबत उपसरपंच राजू देसाई, बाळासाहेब सूर्यवंशी, केदारी देसाई, मदन देसाई, धनाजी सूर्यवंशी, तानाजी कोळी, श्रीमंत नाईक व शेतकरी मोठ्या संख्येने उपस्थित होते.

सकाळ — पत्रकार किरण भदे

शिवऱ्यात सोयाबीनच्या बियाणांचे वाटप

शिवरे (ता.भोर) : शेतकऱ्यांना मार्गदर्शन करताना खास सुप्रिया सुळे.

नसरापूर, ता. ८ : शिवरे (ता.भोर) येथे 'विकसित कृषी संकल्प अभियान' अंतर्गत आयोजित कार्यक्रमात खासदार सुप्रिया सुळे यांच्या हस्ते शेतकऱ्यांना सोयाबीनच्या उन्नत बियाण्यांचे तसेच कीडनाशक व औषधांचे वाटप करण्यात आले. बारामती कृषी विज्ञान केंद्राच्या सहकार्याने या उपक्रमाचे आयोजन केले होते.

कार्यक्रमात राहुरी कृषी विद्यापीठाचे ज्येष्ठ निवृत्त कडधान्य शास्त्रज्ञ डॉ. बाळकृष्ण जमदग्नी यांनी सोयाबीन पिकाचे अधिक उत्पादन घेण्यासाठी आवश्यक असणाऱ्या तांत्रिक बाबी, पेरणी, कीड व रोग व्यवस्थापन आदींची माहिती दिली. दरम्यान, उपक्रमाअंतर्गत शिवरे गावातील ९० आणि रांजे गावातील १२ शेतकऱ्यांना सोयाबीनच्या उन्नत वाणांचे बियाणे वितरित करण्यात आले. त्यासोबतच आवश्यक कीटकनाशके व औषधे यांचाही पुरवठा करण्यात आला.

कार्यक्रमास प्रमुख पाहुणे म्हणून राष्ट्रीय अजैविक ताण व्यवस्थापन संस्था, माळेगाव चे संचालक डॉ. समी रेड्डी, प्रमुख व वरिष्ठ शास्त्रज्ञ, कृषी विज्ञान केंद्र बारामतीचे डॉ. धीरज शिंदे, विषयतज्ञ संतोष करंजे, संतोष गोडसे, उद्यान शास्त्रज्ञ डॉ. एस.एम. पवार, शिवरेच्या सरपंच अमृता गायकवाड, तालुका कृषी अधिकारी शरद धर्माधिकारी यांच्यासह केळवडे, कांबरे आणि शिवरे परिसरातील शेकडो शेतकरी मोठ्या संख्येने उपस्थित होते.

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जनमत

आटपाडीत विकसित कृषी संकल्प अभियानास उत्स्फूर्त प्रतिसाद

३०० हून अधिक शेतकऱ्यांचा सहभाग, शेती व पशुपालनातील नवतंत्रज्ञानाची माहिती

आटपाडी दि:०८ (प्रतिनिधी)- विकसित कृषी संकल्प अभियान-२०२५ अंतर्गत आटपाडी तालुक्यातील आटपाडी, मासाळवाडी, पिंपेवाडी, तडवळे, बनपुरी व करगणी या ठिकाणी शेतकरी जनजागृती कार्यक्रमाचे आयोजन करण्यात आले. या कार्यक्रमास ३०० हून अधिक शेतकऱ्यांनी उत्स्फूर्त प्रतिसाद दिला.

या कार्यक्रमामध्ये पशुपालन व संवर्धन या विषयावर डॉ. भोकरे साईनाथ, डॉ. गोकुळ सोनावणे व भा. कृ. प. नि. सम, बारामती येथील शास्त्रज्ञ डॉ. महेश गुप्ता व डॉ. व्ही. राजगोपाल यांनी खरीप हंगामातील आधुनिक शेती तंत्रज्ञान, सुधारित बियाणे, पीक संरक्षण, सेंद्रिय शेतीचे महत्त्व, हवामानानुसार शेती नियोजन, पाण्याचा कार्यक्षम वापर आदी विषयांवर सविस्तर मार्गदर्शन केले.

कृषी विभागाच्या विविध योजनांविषयी, अनुदान व सबसिडी बाबत श्री. सचिन बिरादार (मंडळ अधिकारी, आटपाडी) यांनी सोप्या भाषेत माहिती दिली. त्यामुळे शेतकऱ्यांमध्ये योजनांचा लाभ घेण्याबाबत उत्सुकता निर्माण झाली.

या कार्यक्रमाचे सुयशस्वी आयोजन कृषी विज्ञान केंद्र, तडसर येथील वरिष्ठ शास्त्रज्ञ डॉ. अनिल उलेमाले यांच्या मार्गदर्शनाखाली करण्यात आले. कृषी उत्पन्न

बाजार समिती, आटपाडी चे सभापती व सचिव, तसेच संबंधित गावांचे सरपंच व ग्रामपंचायतीचे पदाधिकारी यांनीही कार्यक्रमास उपस्थित राहून आपले सहकार्य नोंदवले.

कृषी विभागाचे श्री. प्रदीप कुमार चौकमले, प्रशांत पाटील, विशाल कवटे, शिवकन्या इंगळे, निकिता पिसाळ, अकिब शेख, मधुर माने यांनी कार्यक्रमाच्या नियोजन व यशस्वी अंमलबजावणीत मोलाची भूमिका बजावली.

कार्यक्रमाच्या यशस्वी आयोजनामुळे तालुक्यातील शेती व पशुपालनाच्या आधुनिक तंत्रज्ञानाचा प्रसार होण्यास निश्चित मदत होणार आहे. तालुक्याच्या कृषी क्षेत्राला आधुनिकतेची नवी दिशा देण्याचा प्रयत्न या उपक्रमातून होत असल्याचे मत अनेक शेतकऱ्यांनी व्यक्त केले.

खरीप हंगाम तयारीसाठी कृषि विभाग व कृषि विज्ञान केंद्र बांधावर

सातारा न्यूज :

वाई : सध्या सर्वत्र पाऊस जोरात सुरु आहे. अचानक सुरु झालेल्या पावसामुळे शेतीची गणिते थोड्या प्रमाणात बदलली असली तरी येणाऱ्या परिस्थितीत शेतीचे पुढील नियोजन कसे करावे याबाबत मार्गदर्शन करण्यासाठी कृषि विज्ञान केंद्र बोरगाव व महाराष्ट्र शासन कृषि विभाग यांनी थेट शेतकऱ्याच्या बांधावर संयुक्त मोहीम राबविण्यास सुरुवात केली आहे.

कृषी विज्ञान केंद्र बोरगाव यांच्या विकसित कृषी संकल्प अभियान व महाराष्ट्र शासन कृषी विभाग यांच्या खरीप हंगाम मोहीम अंतर्गत मौजे उडतारे येथे कार्यक्रमाचे आयोजन करण्यात आले होते. यावेळी राष्ट्रीय अजैविक ताण व्यवस्थापन संस्था बारामती येथील वरिष्ठ शास्त्रज्ञ श्री जितेंद्र कदम यांनी आधुनिक हळद लागवडीविषयी शेतकऱ्यांना सखोल मार्गदर्शन केले. तसेच अति पाऊस व पावसाचा खंडित कालावधी यावेळी पिकाची कोणती काळजी घ्यावी याविषयी मार्गदर्शन केले. यावेळी हळद पिकासंदर्भात शेतकऱ्यांच्या सर्व शंकांचे निरसन ही करण्यात आले.

तालुका कृषी अधिकारी वाई श्री प्रशांत शेंडे यांनी यावेळी कृषी विभागामार्फत राबवल्या

जाणाऱ्या विविध योजनांची शेतकऱ्यांना माहिती दिली व जास्तीत जास्त शेतकऱ्यांनी याचा लाभ घ्यावा असे आवाहन केले. कृषी विज्ञान केंद्र बोरगाव येथील शास्त्रज्ञ श्री संग्राम पाटील यांनी यावेळी सोयाबीन पीक लागवडीविषयी शेतकऱ्यांना सखोल मार्गदर्शन केले. सतत चालू असलेल्या पावसामुळे खरीप हंगाम थोडा लांबणीवर पडणार आहे त्यामुळे शेतकऱ्यांनी पेरणीची घाई करू नये असे आवाहनही त्यांनी केले.

या कार्यक्रमास कृषी विज्ञान केंद्र बोरगाव चे कार्यक्रम समन्वयक डॉ.महेश बाबर,डॉ भूषण यादगीरवार सर, उप कृषि अधिकारी निखिल मोरे,प्रदीप देवरे,बी टी एम, योगेश जायकर ए टी एम, सर्व सहाय्यक कृषि अधिकारी, सरपंच व शेतकरी उपस्थित होते.

पुढारी

बीज प्रक्रिया, उगवण क्षमता चाचणीचे प्रात्यक्षिक

पाथर्डी : पुढारी वृत्तसेवा

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शिपूर येथे विकसित कृषी संकल्प अभियान

बेळंकी : शिपूर (ता. मिरज) येथे कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम १० जून रोजी यशस्वीरीत्या पार पडला. या कार्यक्रमाला उपसरपंच राजू रामचंद्र देसाई, वरिष्ठ शास्त्रज्ञ प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, डॉ. सुधीर कुमार मिश्रा, डॉ. अभिजीत बाराटे, वैभव यादव, उप कृषी अधिकारी संतोष पांढरे, विक्रांत गायकवाड आदी उपस्थित होते. सूत्रसंचालन सहायक कृषी अधिकारी विक्रांत गायकवाड यांनी केले व आभार रणजीत देसाई यांनी मानले.

शिपूर : कृषी संवाद कार्यक्रमात शेतकऱ्यांना मार्गदर्शन करताना अधिकारी.

शिपूरमध्ये कृषी संकल्प अभियानांतर्गत मार्गदर्शन

एरंडोली : शिपूर (ता. मिरज) येथे कृषी संकल्प अभियान उत्साहात झाले. विकसित कृषी संकल्प यात्राअंतर्गत केंद्रीय कृषी व किसान कल्याण मंत्रालय, भारतीय कृषी अनुसंधान परिषद, कृषी विज्ञान केंद्र, कृषी विभाग आणि आत्मा प्रकल्प यांच्या संयुक्त विद्यमाने हा कार्यक्रम झाला. उपसरपंच राजू देसाई, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, अजैविक ताण व्यवस्थापन संस्था बारामतीचे हवामान शास्त्रज्ञ डॉ. सुधीर मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजित बाराटे, कृषी विभागाचे तालुका तांत्रिक व्यवस्थापक वैभव यादव, उपकृषी अधिकारी संतोष पांढरे, सहायक कृषी अधिकारी विक्रांत गायकवाड उपस्थित होते. प्रमुख डॉ. विपिन वाले यांनी पशुपालन विषयावर मार्गदर्शन केले. शैलेश पाटील यांनी मृदा आणि जल परीक्षणावर आधारित खत वापराबाबत संवाद साधला. सचिन कोल्हे यांनी सेंद्रिय शेतीबद्दल मार्गदर्शन केले. डॉ. सुधीर मिश्रा यांनी हवामान बदल व पाणी वापराबाबत मार्गदर्शन केले. सहायक कृषी अधिकारी विक्रांत गायकवाड यांनी सूत्रसंचालन केले. रणजित देसाई यांनी आभार मानले. बाळासाहेब सूर्यवंशी, केदारी देसाई, मदन देसाई, धनाजी सूर्यवंशी, तानाजी कोष्टी, श्रीमंत नाईक आदी उपस्थित होते.

केसरी

शिपूर गावामध्ये कृषी संकल्प अभियान उत्साहात पार पडले. यावेळी उपस्थित कृषी विभागाचे अधिकारी व मान्यवर.

शिपूर येथे कृषी संकल्प अभियान उत्साहात

केसरी वृत्तसेवा

सांगली : विकसीत कृषि संकल्प यात्रा अंतर्गत भारत सरकारच्या कृषी व किसान कल्याण मंत्रालय, भारतीय कृषि अनुसंधान परिषद, नवी दिल्ली, कृषी विज्ञान केंद्र, सांगली, कृषी विभाग सांगली आणि आत्मा प्रकल्प सांगली यांच्या संयुक्त प्रयत्नातून आयोजित कृषी संकल्प अभियान हा महत्वाकांक्षी कार्यक्रम मिरज तालुक्यातील शिपूर गावामध्ये उत्साहात संपन्न झाला.

कार्यक्रमास उपसरपंच राजू रामचंद्र देसाई, कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील, कृषी विस्तार शास्त्रज्ञ सचिन कोल्हे, खउ–ठ अजैविक ताण व्यवस्थापन संस्था बारामतीचे हवामान शास्त्रज्ञ डॉ. सुधीर कुमार मिश्रा, पशुवैद्यकीय महाविद्यालय शिरवळचे डॉ. अभिजीत बाराटे, कृषी विभागाचे तालुका तांत्रिक व्यवस्थापक वैभव यादव, उपकृषी अधिकारी संतोष पांढरे आणि सहाय्यक कृषी अधिकारी विक्रांत गायकवाड आदि उपस्थित होते.

कृषी विज्ञान केंद्र कांचनपूरचे वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले यांनी पशुपालन या विषयांवर सविस्तर मार्गदर्शन केले. पशूंच्या माजावस्थेची (हीट सायकल) ओळख करणे शेतकऱ्यांसाठी अत्यंत गरजेचे असल्याचे त्यांनी सांगितले. मृदा शास्त्रज्ञ शैलेश पाटील म्हणाले, मृदा आणि जल परीक्षणावर आधारितच खतांचा वापर करावा, यामुळे जमिनीचे आरोग्य टिकून राहते.

यावेळी उपसरपंच राजू देसाई, बालासाहेब सूर्यवंशी, केदारी देसाई, मदन देसाई, धनाजी सूर्यवंशी, तानाजी कोष्टी, श्रीमंत नाईक व शेतकरी मोठ्या संख्येने उपस्थित होते. सूत्रसंचालन सहाय्यक कृषी अधिकारी विक्रांत गायकवाड यांनी केले. आभार रणजीत देसाई यांनी मानले.

कुची येथे विकसित कृषी संकल्प अभियान

पशुधन, पिकांबाबत मार्गदर्शन

सकाळ वृत्तसेवा

घाटनांद्रे, ता. १० : कुची (ता. कवठेमहांकाळ) येथे विकसित कृषी संकल्प अभियानांतर्गत शेतकरी मेळावा झाला. त्यास शेतकऱ्यांचा उत्स्फूर्त प्रतिसाद मिळाला. भारतीय कृषी अनुसंधान परिषद, वसंत प्रकाश विकास प्रतिष्ठान संचलित कृषिविज्ञान केंद्र, कृषी विभाग (सांगली) व आत्मा प्रकल्प यांच्यातर्फे विकसित कृषी संकल्प अभियान हा महत्त्वाकांक्षी कार्यक्रम झाला.

सरपंच सहदेव गुरव यांच्या अध्यक्षतेखाली व 'आयसीएआर' अजैविक ताण व्यवस्थापन संस्था (बारामती) येथील हवामान शास्त्रज्ञ डॉ. सुधीरकुमार मिश्रा, कृषिविज्ञान केंद्र (कांचनपूर) येथील वरिष्ठ शास्त्रज्ञ व प्रमुख डॉ. विपिन वाले, मृदा शास्त्रज्ञ शैलेश पाटील व कृषिविस्तारतज्ज्ञ सचिन कोल्हे, डॉ. अभिजित बाराहाते यांच्या उपस्थितीत कार्यक्रम झाला.

डॉ. मिश्रा यांनी बदलते हवामान, पिकांची काळजी, मानवी व पशुधनासाठी 'दामिनी' व 'मेघदूत' या मोबाईल ॲपचा वापर करून नुकसान कमी करण्याचा प्रयत्न करवा, असे आवाहन केले. डॉ. विपिन वाले यांनी 'पशुपालन' यावर सविस्तर मार्गदर्शन केले. शेतकऱ्यांनी जनावरांच्या माजावर येण्याचा काळ ओळखणे महत्त्वाचे आहे. माती परीक्षण अहवालानुसार खतांचा वापर करावा, सेंद्रिय कर्ब वाढवण्यासाठी हिरवळीची खते, शेणखते टाकावीत. त्यामुळे जमिनीचे आरोग्य व्यवस्थापन करता येईल, असे आवाहन शैलेश पाटील यांनी केले.

कोल्हे यांनी मका पिकावर येणारी लष्करी अळी, सेंद्रिय भाजीपाला करून सेंद्रिय अन्नधान्य खावे. शेतकऱ्यांच्या समस्या सोडवण्यासाठी कृषितज्ज्ञ सोबत आहेत, अशी ग्वाही देण्यात आली. प्रगतिशील शेतकरी, शेतकरी गट, महिला शेतकरी व ग्रामस्थ मोठ्या संख्येने सहभागी झाले होते.

पुण्य नगरी

निर्यातक्षम हळद उत्पादनावर शेतकऱ्यांनी भर द्यावा: डॉ.कदम

सातारा / प्रतिनिधी

कवठे (ता.वाई) येथे हळद व ऊस पिकावर चर्चा सत्र व सोयाबीन बीज प्रक्रिया प्रात्यक्षिक प्रसंगी उपस्थितांना मार्गदर्शन करताना मान्यवर

'संशोधन शेतकऱ्यांच्या दारी' या संकल्पनेवर आधारित विकसित कृषी संकल्प अभियान' या महत्त्वाकांक्षी अभियानात खरीप हंगामातील नियोजन, पिकांचे सुधारित लागवड तंत्रज्ञान, अन्नद्रव्य व्यवस्थापन, कीड व रोग व्यवस्थापन, कृषीच्या विविध योजना आदींबाबत शेतकऱ्यांना बांधावर पोहचवण्यासाठी कवठे (ता.वाई) येथे हळद व ऊस पिकावर चर्चा सत्र व सोयाबीन बीज प्रक्रिया प्रात्यक्षिक आयोजीत करण्यात आले होते.

बारामती राष्ट्रीय अजैविक ताण व्यवस्थापन संस्था बारामती, मध्यवर्ती ऊस संशोधन केंद्र पाडेगाव व कृषी विज्ञान केंद्र बोरगाव येथील शास्त्रज्ञांनी मार्गदर्शन केले. प्रास्ताविक कृषी विज्ञान केंद्र बोरगावचे कार्यक्रम समन्वयक डॉ.महेश बाबर यांनी केले. कवठे कृषी क्रांती शेतकरी उत्पादक कंपनीचे अध्यक्ष अतुल डेरे यांनी हळद पिकाला गत वैभव प्राप्त होण्यासाठी प्रक्रिया करणे गरजेचे आहे. आमची कंपनी पुढील काळात प्रक्रिया सुरु करणार आहे, असे मत व्यक्त केले.

वरिष्ठ शास्त्रज्ञ डॉ.जितेंद्र कदम यांनी हळद पिकाला खते विभागून द्यावे तसेच सेंद्रिय खतांचा वापर करून निर्यातक्षम हळद उत्पादन करण्यासाठी प्रयत्न करावा, असे आवाहन डॉ.कदम यांनी केले. लालासाहेब सावंत यांनी उसाचे नवीन व जास्त उत्पन्न देणारे वाणाची लागवड करून शेतकऱ्यांनी उत्पन्न वाढवावे, असे मत व्यक्त केले.

संग्राम पाटील यांनी सोयाबीन बीज प्रक्रिया प्रात्यक्षिक करून दाखवले. डॉ.कल्याण बाबर यांनी हळद प्रक्रिया याविषयी माहिती दिली. निखिल रायकर यांनी कृषी विभाग महाराष्ट्र शासनाच्या विविध योजनेचे लाभ घ्यावा असे आवाहन केले. मंदाकिनी पोळ व शिवाजी डेरे यांनी विकसित कृषी संकल्प अभियान शेतकऱ्यांसाठी अतिशय उपयोगी आहे असे नमूद केले. प्रदीप देवरे यांनी आभार मानले.

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विकसित कृषिसंकल्प अभियान जिल्ह्यात उत्साहात सुरू

नंदुरबार : देशभरात केंद्रीय कृषी व कल्याण मंत्रालयाच्या माध्यमातून व भारतीय कृषी अनुसंधान परिषदेद्वारे विकसित भारत कृषिसंकल्प अभियान राबविले जात आहे. नंदुरबार जिल्ह्यात या अभियानात भारतीय कृषी अनुसंधान परिषदेचे शास्त्रज्ञ, कृषी विज्ञान केंद्र (नंदुरबार), माफसू (मुंबई), कृषी विभाग (नंदुरबार) व आत्मा (नंदुरबार) आदींचा सहभाग आहे. हे अभियान 'संशोधन शेतकऱ्यांच्या बांधावर' या संकल्पनेवर आधारित आहे.

या अभियानांतर्गत शनिवारी (७ जून) मानमोडे, भुलाणे, घोटाळी (ता. शहादा) येथे कार्यक्रम घेण्यात आले. डॉ. हेडगेवार सेवा समिती, कृषी विज्ञान केंद्राचे वरिष्ठ शास्त्रज्ञ व प्रमुख राजेंद्र दहातोंडे यांनी प्रास्ताविक केले. या वेळी त्यांनी विविध संस्थांच्या सहभागाने अभियान यशस्वी होत असल्याचे सांगितले. 'आत्मा'चे प्रकल्प संचालक दीपक पाटील यांनी नैसर्गिक शेती अभियान व त्यात समाविष्ट घटक याविषयी अवगत केले.

अभियानात सहभागी बारामती येथील राष्ट्रीय अजैविक तण व्यवस्थापन संस्थेचे शास्त्रज्ञ डॉ. काचेवाड यांनी पशुधन पालन करताना घ्यावयाची काळजी व फायदेशीर बकरीपालन या विषयावर मार्गदर्शन केले. मुंबई येथील माफसूचे शास्त्रज्ञ डॉ. सोले यांनी पावसाळ्यात जनावरांवर येणारे आजार व लसीकरण याविषयी माहिती दिली. कृषी महाविद्यालयाचे साहाय्यक प्रा. डॉ. गुंजाळ कापसातील एकात्मिक अन्नद्रव्य व्यवस्थापन या विषयावर मार्गदर्शन केले.

डॉ. हेडगेवार सेवा समिती, कृषी विज्ञान केंद्राचे विषय विशेषज्ञ पद्माकर कुंदे यांनी खरीप पिकातील रोग व किडींचे जैविक पद्धतीने व्यवस्थापन याविषयी मार्गदर्शन केले. विषय विशेषज्ञ जयंत उत्तरवार यांनी विविध श्रम कमी करणाऱ्या अवजारांविषयी व मूलस्थानी जलव्यवस्थापन याविषयी मार्गदर्शन करून पेरणी यंत्राचे प्रात्यक्षिक करून दाखविले. विषय विशेषज्ञ डॉ. वैभव गुरवे यांनी खरीप हंगामात घेतल्या जणाऱ्या भाजीपाला पिकांसह फळबाग व्यवस्थापनाविषयी मार्गदर्शन केले. प्रक्षेत्र व्यवस्थापक राजेश भावसार यांनी खरिपातील विविध पीक लागवडीची माहिती दिली.

कृषी साहाय्यक अधिकारी पटले यांनी शासनाच्या विविध योजनांविषयी माहिती देऊन बीजप्रक्रिया व बियाण्यांची उगवणक्षमता तपासणी प्रात्यक्षिके करून दाखविली. अक्षय ठाकरे यांनी गतवर्षी कृषी विज्ञान केंद्राद्वारे राबविलेल्या कापसातील घन लागवड आणि दादालाड तंत्रज्ञानाची यशोगाथा सांगितली. या वेळी उपस्थित शेतकऱ्यांनी कृषिरथावर असलेल्या विविध तंत्रज्ञानाची माहिती घेतली. या वेळी कृषी विभाग, आत्मा, पाणी फाउंडेशनचे अधिकारी व गावातील पुरुष-महिला शेतकरी उपस्थित होते.

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