



From the Director's Desk



The development of horticulture under the hostile climatic conditions of the hot arid region remains a formidable challenge. Nevertheless, sustained scientific research, technological innovations, and dedicated efforts have demonstrated that resilient and sustainable horticultural production is achievable even under these harsh environments, creating new opportunities for improving the livelihoods and nutritional security of rural communities. This underscores the need for continuous development of climate-resilient, location-specific horticultural technologies and their effective dissemination to farmers. Arid horticulture continues to serve as a vital pathway for enhancing income, employment, and sustainable agricultural development in the hot arid and semi-arid regions of the country.

ICAR-Central Institute for Arid Horticulture (ICAR-CIAH), Bikaner remains committed to addressing the challenges posed by extreme temperatures, erratic rainfall, poor soil fertility, and limited water resources through innovative research and technology development. The Institute is actively engaged in developing improved crop varieties, identifying superior and climate-resilient genotypes, standardizing advanced production and post-harvest technologies, and promoting sustainable horticultural production systems. During the year, the Institute achieved significant milestones, including the notification of improved varieties of khejri and kachri, identification of an improved bael variety for national release, development of advanced propagation protocols for ber and date palm, identification of a rain-tolerant date

palm genotype, development of climate-resilient pomegranate genotypes, and standardization of value-addition technologies for underutilized arid fruits. Through modern breeding approaches, biotechnology, plant health management, and post-harvest innovations, the Institute continues to enhance crop productivity, quality, resilience, and value addition while contributing towards transforming the Thar Desert into a productive and sustainable horticultural landscape. During the year, the Institute achieved several notable milestones. The varieties Thar Shobha (khejri) and Thar Kasturi (kachri) were notified and recommended for cultivation, while the improved bael variety Goma Yashi, developed at CHES, Vejalpur, was identified for national release. Advanced production technologies, including optimized propagation protocols for ber and date palm, identification of a rain-tolerant date palm genotype, development of climate-resilient pomegranate genotypes, standardized processing methods for peel of *Salvadora oleoides*, and identification of an orange-fleshed, carotenoid-rich watermelon genotype, were developed. These innovations are expected to strengthen climate adaptation, nutritional security, and livelihood enhancement in arid regions. The Institute continues to emphasize technology dissemination through training programmes, frontline demonstrations, field days, exhibitions, farmers' fairs, research-extension interactions, webinars, workshops, and digital platforms. A collaborative project supported through Corporate Social Responsibility (CSR) initiatives facilitated the large-scale promotion of Institute technologies among farming communities. During the year, ICAR-CIAH, Bikaner, along with CHES, Vejalpur, and KVK, Panchmahals, directly benefited around 10,000, 5,600, and 19,000 farmers and stakeholders, respectively, through training, demonstrations, and outreach programmes.

This Newsletter highlights a glimpse of the Institute's major research achievements, technology development, extension activities, capacity-building programmes, and collaborative initiatives undertaken during the year 2025, reflecting our continued commitment towards sustainable horticultural development and improved livelihoods in the hot arid regions of the country.


(Jagadish Rane)
Director

Research Spectrum

Identification of promising genotypes of pilu and gundi: A survey and exploration programme was conducted in the Balotra, Jalore, Sanchore, Sirohi, Pali, and Jodhpur districts of Rajasthan to identify promising genotypes of pilu (*Salvadora oleoides*), and gundi (*Cordia gharaf*), during May 2024. During the survey, one promising genotype of Pilu was marked in Balotra, three in Jalore, and one each in Sanchore and Pali were identified. Similarly, for Gundi, one promising genotype was marked in Jalore and another in Sirohi district. For each selected tree, morphological traits and GPS coordinates were recorded, and leaf and fruit samples were collected for further analysis. Cuttings from the identified genotypes were also collected for propagation purposes. (K.L. Kumawat).

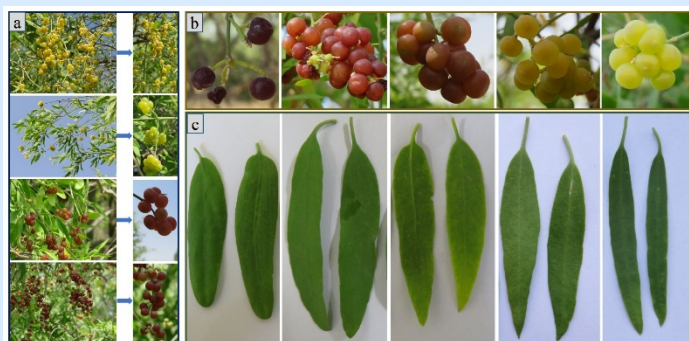


Fig. Variability observed in the natural population of Pilu during the survey, including differences in bearing habit (a), fruit color (b), and leaf shape (c)

Novel recombinant watermelon line (AHW/YF Sel.-1) developed: Developed a novel and trait specific watermelon line by hybridizing genetically diverse parents followed by rigorous phenotypic selection across successive generations. The novelty of the line AHW/YF Sel. 1 lies in its distinct yellow flesh colour. The traits of the developed line (AHW/YF Sel. 1) in F6 generation includes, non-lobed leaves, long ovary (1.3-1.8 cm), long fruits (21.0- 27.5 cm) with 2.4-4.1 kg weight and 13-14.5% TSS. (B.R. Choudhary)



AHW/YF Sel. 1: A yellow fleshed watermelon

Unlocked the potential of *Momordica balsamina* for momordin content: Jhaarkarela or Balsam apple (*M. balsamina* L.) is a neglected, lesser known and climate resilient crop of Cucurbitaceae family known for its medicinal properties. The analysis of momordin content, an anti-diabetic and anti-cancer compound in fruits of *M. balsamina* (CIAHMB-1) was recorded to be 1103.13 ppm (on dry weight basis) which is double than *M. charantia* (504.10 ppm). (B.R. Choudhary)



Fig. *M. balsamina* on trellis system

Evaluation Trial of Unique Green-Seeded Fenugreek Lines:

A multi location evaluation trial was conducted to assess the performance of a unique green-seeded fenugreek germplasm line in collaboration with the ICAR-National Research Centre on Seed Spices (NRCSS), Ajmer. The trial included four green-seeded fenugreek lines along with three yellow-seeded varieties used as checks for comparison. Comprehensive data were recorded on plant growth, yield, and other key contributing traits at each trial location. (Pawan Kumar)



Fig. Trial field view Yellow seeded fenugreek Green seeded fenugreek

Optimizing Waste Wool as an Organic Amendment for Climate-Resilient *Ashwagandha* Cultivation:

This research concept explores the potential of waste wool as a sustainable organic amendment to enhance *Ashwagandha* (*Withania somnifera*) cultivation in arid regions. By integrating waste wool with farmyard manure (FYM), biochar, and recommended fertilizer doses (RDF), the study evaluated nine treatment combinations focusing on soil quality, nutrient availability, and plant growth. The results highlighted that the treatment comprising 75% waste wool + 100% FYM + RDF achieved superior root traits (root length: 19.63 cm; root girth: 12.60 mm), directly linked to medicinal value of *Ashwagandha*. Soil analysis revealed improved moisture retention (22.5%), organic carbon content (0.02%), and water-holding capacity (29.4%) in waste wool-amended plots, promoting vigorous root development and plant performance. The findings underline waste wool's role in resource recycling, soil enhancement, and climate resilience, offering an innovative approach for sustainable *Ashwagandha* production in water-scarce, hot arid ecosystems. (Anita Meena)



Ashwagandha (*Withania somnifera*) root growth pattern under different wool waste treatments under drip irrigation

Report of *Enterobacter cloacae* causing soft rot on cactus (*Opuntia ficus-indica* (L) Mill.) in India: Soft rot disease on cactus (*Opuntia ficus-indica* (L) developed typical mushy spot and water-soaked lesions often appeared at soil line, the infected area lost the colour from green to yellowish, turned into dark brown and eventually kill the plants. The bacterium isolates were characterized as *Enterobacter cloacae* based on 16S rDNA gene sequencing. (R.P. Meena)

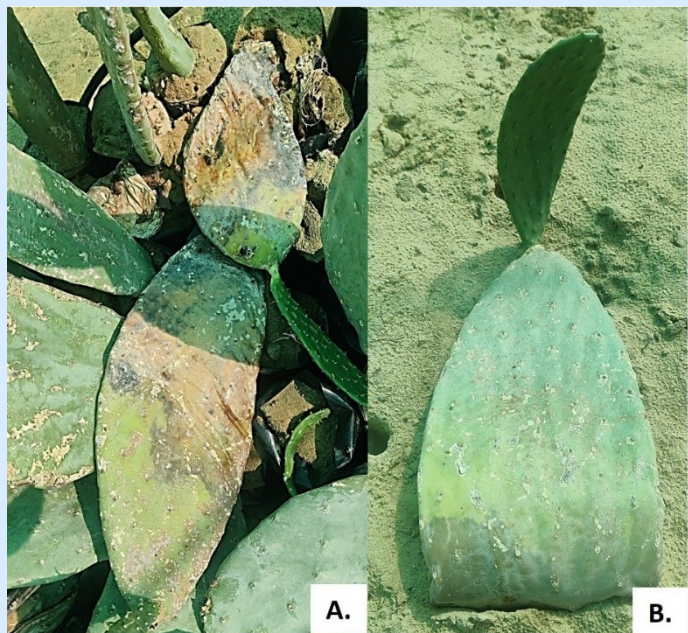


Fig. Symptoms of soft rot disease (a) on natural infected cactus plants in poly bags (b) infected plants of cactus in field condition.

Identification of *Orthotospovirus*, “watermelon bud necrosis virus” by using newly devised degenerate primers with PCR: Bud necrosis is most common and devastating disease of watermelon observed regularly in the fields on water melon crop in both seasons. The disease incidence was ranging from 25 to 70% and causes significant yield losses. To identify the associated type species of virus two sets of degenerate primers were devised by aligning the sequences of all the genera of orthotospoviruses from NCBI GenBank to amplify the partial RdRp and coat protein genes. The novel primes partial of RdRp and CP genes amplified the expected size of amplicon 600 bp and 640bp on 1.2% agarose under the Gel doc system. Further the amplicons were sequenced and confirm the specificity. (R.P. Meena)



Fig. (a) Typical symptoms of WB necrosis disease used for RNA isolation (b) Gel profile of amplicons using devised primers lane M- 100bp DNA ladder, 1- -ve sample, 2-full CP amplicon, 3- RdRp and 4- partial CP amplicon

Breeding and Quality Evaluation of Promising Pumpkin Lines: Two promising lines mini-box type (local type) pumpkin were advanced to F5 and F6 generation and analyzed for different biochemical composition, antioxidants activity and nutritional contents. (L.P. Yadav)



Fig. Different views of advanced pumpkin elite germplasm

Management of bacterial blight of pomegranate: A field trial was conducted for the management of bacterial blight of pomegranate caused by *Xanthomonas campestris* sp. *punicae* during rainy season of 2025. Pomegranate variety ‘Bhagwa’ was taken to test field efficacy of botanicals, essential oil, bactericides and fungicides against this disease. Eleven treatments were taken in the field trial against bacterial blight of pomegranate. Among 11 treatments, Clove oil (0.2%) + 2 bromo-2-nitro 1,3-propanediol (Bronopol) @ 0.05% + Copper oxychloride (0.25%) was found the most effective treatment against bacterial blight with minimum disease index (PDI) of 13.91% and highest disease control of 52.15%, followed by Thyme oil (0.2%) + Bronopol (0.05%) + Copper oxychloride (0.25%) with disease index of 16.72% and 42.48% disease control. (S.K. Maheshwari and Ramesh Kumar).



Fig. Pomegranate fruits infected by bacterial blight disease

Molecular mapping of fruit and leaf shape associated genes/QTLs in watermelon: A set of 110 watermelon-specific SSR markers were profiled in watermelon parental lines, F1 hybrid and F2 mapping populations. The WMSSR markers were screened between two parental lines (AHW/BR-22 and YF 5-2-7) and their hybrid progeny (F1) for getting insights into polymorphic (informative) SSR markers with their distinguish power to differentiate the heterozygosity. As a result, six WMSSR markers were able to differentiate and identify F1 as true hybrid. These six polymorphic SSR markers were analyzed among 267 F2 populations generated by selfing of F1 progeny. The segregation pattern of all the markers were expected to be in 1:2:1 ratio. The Chi-square test of SSR marker segregation in the F2 population revealed WMSSR27 as most significant and possible closely linked molecular marker to loci/QTLs associated with traits of interest on chromosome 2. (Chet Ram, B.R. Choudhary, Hanuman Ram, Pawan Kumar).

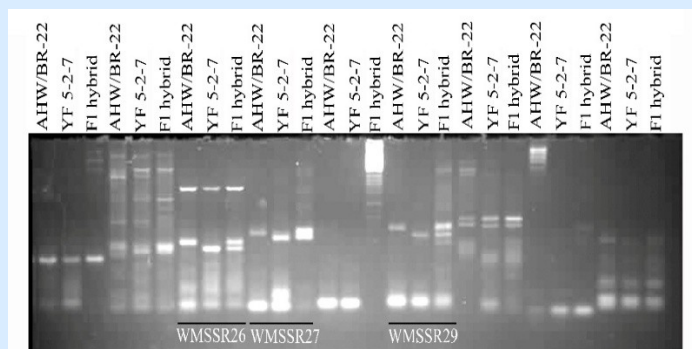


Fig. Screening of WMSSR markers between parental lines and their hybrid progeny (F1) for getting polymorphic SSR markers

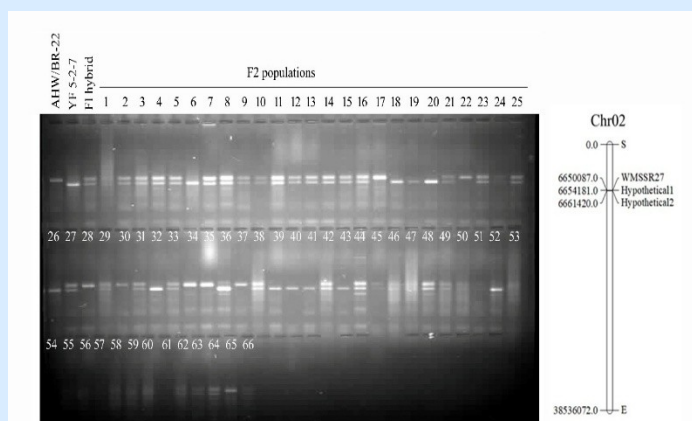


Fig. Segregation of SSR alleles among F2 populations of watermelon and linkage association of SSR marker with putative genes/QTLs

Identification and characterization of heat stress responsive genes in chilli: To know the complexity and structural divergence in heat stress responsive genes of chilli, a total of 199 genes encoding heat shock protein (CaHSP) were identified through a genome-wide survey of the *Capsicum annuum* genome. The gene structural analysis revealed that 164 genes having complex exon-intron arrangements and 35 possessing single exon configurations. Chromosomal mapping revealed chromosome 1 containing the highest number of CaHSP genes. Motif analysis indicating both conserved and lineage-specific functions. Phylogenetic analysis classified the genes into seven major groups, reflecting functional divergence. Promoter analysis identified 135 *cis*-regulatory elements, grouped into 07 functional categories, many associated with heat stress response. Gene network analysis revealed strong interaction networks among *CaHSP* proteins. Gene Ontology annotation indicated involvement of *CaHSP* genes in critical biological processes, including response to heat stress. *In silico* expression profiling demonstrated dynamic transcriptional regulation of the *CaHSP* genes in heat stress conditions. The expression of selected CaHSP genes across tissues indicated varied organ-specific functional roles under natural and stress conditions. Expression analysis revealed seven genes like PHT80239, PHT87991, PHT87992, PHT63920, PHT63921, PHT63922, and PHT85485 significantly up-regulated in the tolerant genotype as compared to control. (Chet Ram, B.R. Choudhary, Hanuman Ram, Pawan Kumar)

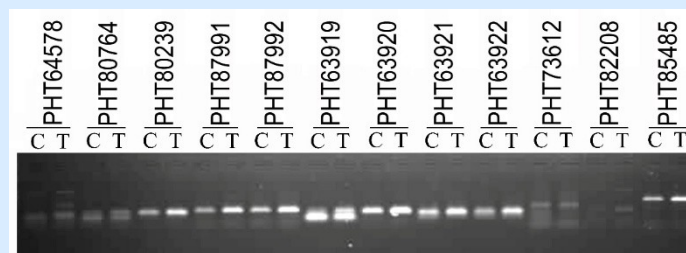


Fig. Expression analysis of CaHSP genes during heat stress treatment between heat tolerant (DLS-161-1) and heat susceptible (PusaSadabahar) genotypes of chilli. The alphabets C and T indicate the heat tolerant (DLS-161-1) and susceptible (Pusa Sadabahar) genotypes, respectively

Serendipitous Gift from Nature: An Aonla field trial at the institute, unintentionally became a long-term natural selection experiment when grafted varieties failed and deshi rootstocks were left unmanaged for nearly 12 years under harsh arid conditions. From the abandoned Aonla block, two superior seedling genotypes—CIAHA-1 and CIAHA-2—were serendipitously discovered. These genotypes showed excellent adaptation, superior fruit quality, high ascorbic acid, phenolics, TSS, better mineral content, lower fruit drop, stress tolerance, and yields comparable to the check variety NA-7. Their consistent performance under low-input conditions highlights nature's role in innovation and supports their potential release as nutritionally superior Aonla varieties. (M.K. Jatav)



Fig. Plant morphology and fruit character of CIAHA-1



Fig. Plant morphology and fruit character of CIAHA-2



Fig. Transverse section and fruit character of CIAHA-1, CIAHA-2 and NA-7

Fruit drop management and fruit quality improvement in senile orchard of Ber cv. Gola (*Ziziphus mauritiana* L.): A field experiment comprising nine treatments was conducted to evaluate their effectiveness in managing fruit drop and improving fruit quality in a senile orchard of ber (*Ziziphus mauritiana* L.). The results revealed that T_9 [T_4 + GA_3 (50 ppm) + NAA (30 ppm)] was the most effective treatment, recording the highest fruit set (16.75%), number of fruits (13.44), fruit weight (98.5 g), fruit length (33.83 mm), fruit width (32.33 mm), total soluble solids (18.4 °Brix), and 12% higher fruit yield (17.9 kg/tree) compared to the control (16.0 kg/tree). The superior performance of this treatment may be attributed to the combined application of GA_3 and NAA during the fruit-set stage, which enhanced fertilization, improved hormonal balance, increased fruit retention, and reduced fruit drop. (Roop Chand Balai, M. K. Jatav, D. K. Sarolia, R. P. Meena, S. R. Meena and Manpreet Kaur)



Fig. Fruit drop management in Ber orchard

Consumer Preferences and Consumption Patterns of Fruits: This study examines consumer preferences for major fruits in the hot arid regions of Rajasthan and identifies the socio-economic, climatic, and product-related factors influencing these choices. Primary data were collected from 150 respondents using a structured questionnaire administered through KoBo Toolbox. Preferences were analyzed for arid and semi-arid fruits, tropical and sub-tropical fruits, and temperate fruits. Ordered logistic regression assessed factors affecting fruit consumption frequency, while Tobit regression examined determinants of category-specific preferences. Results show that banana and mango are the most preferred fruits due to their availability and cultural significance. Apple is favored among temperate fruits for its perceived health benefits, whereas apricot receives lower preference. In the arid category, pomegranate and citrus are highly preferred because of affordability and health benefits. Fruit consumption frequency increases with age, urban residence, and taste preferences, while education, health benefits, availability, and cultural factors strongly shape preference for arid fruits. (Manpreet Kaur, S.R. Meena and R.C. Balai)

Extension programmes and activities

1. Trainings (on/off campus)

(a) Trainings in general

- One day training programme was conducted on “Improved production technologies of summer vegetables” at Tejarasar village, district, Bikaner on 20.02.2025.
- Training programme was conducted on “Improved production technologies of summer vegetables” at Gigasar village, district, Bikaner on 21.02.2025.
- One day training programme was conducted on “Improved production technologies of Kharif vegetables at Khinchiya (4 KHM) village, district, Bikaner on 11.07.2025.
- A training programme was conducted on “Modern technologies of ridge gourd production” at Husangsar village, district-Bikaner on 13.07.2025.
- The training programme on “Use and importance of Agri-Drone in Agriculture was conducted at Lunkarnsar, Bikaner on 04.07.2025.
- Three-days training programme was conducted on “Capacity building of stakeholders on aonla processing and value addition at the Institute from on 26.11.2025 to 28.11.2025.
- There was organized a three days Entrepreneurship Development Programme (EDP) on ‘Capacity building of stakeholders in aonla processing and value addition’ during 26-28 November, 2025 under Ayana Solar funded Project entitled ‘Training and Skill Development in Arid Horticulture
- A three days Entrepreneurship Development Programme (EDP) on ‘Vegetative Propagation of Khejri through bud-grafting’ was organized during 04-06 August, 2025 for farmers under NABARD funded project.



- Three days Entrepreneurship Development Programme (EDP) on ‘Bud-grafting technique for clonal multiplication of Khejri’ was organized during 12-14 August, 2025 for farmers under NABARD funded project.



- A three days Entrepreneurship Development Programme (EDP) on 'Capacity building of stakeholders in khejri-bud grafting techniques for self-employment' was organized during 14-16 October, 2025 under Ayana Solar funded Project entitled 'Training and Skill Development in Arid Horticulture.
- Organized one-day training programme on "Capacity Building, Training, and Awareness Programme on "Women Safety and Dignity at the Workplace" under the POSH Act on 30th December 2025 at the Institute. **(Lal Chand and Roop Chand Balai)**
- An entrepreneurial Development Training Programmes were conducted for skill upgradation in Khejri bud grafting, benefiting more than 60 participants, and over 5,000 quality planting materials of Khejri cv. *Thar Shobha* were distributed.
- A three days Entrepreneurship Development Programme (EDP) on 'Khejri bud-grafting, production and value addition' was organized during 08-10 September, 2025 for officials of Rajasthan Olive Cultivation Limited (ROCL), Jaipur.



(b). Trainings under SCSP Scheme.

- A training programme for women was organized during celebration of "International Women Day" at the Institute on 08.03.2025.
- One day training programme was organized on "Improved production technologies of Kharif vegetables" at the Institute on 27.05.2025
- One day training programme was organized on "Improved production technologies of Kharif vegetables" at the Institute on 19.06.2025
- One day training programme was organized/conducted on "Improved production technologies of Kharif vegetables" at the Institute on 20.06.2025
- A training programme was organized/conducted on Improved production technologies of Rabi vegetables on 11.10.2025
- A training programme was organized/conducted Improved production technologies of arid vegetables 19.11.2025
- A training programme was organized/conducted on "Arid horticulture and post-harvest management" at the Institute on 22.12.2025



(c). Trainings under TSP Scheme

- Training programme on "Nutri-garden and distribution of improved vegetable seed" under TSP Scheme on 30.07.2025 at Amarapur panchayat (Borikua, Gujia, garada Mahudia and Amarpura village etc. of Udaipur district (Rajasthan) organized by ICAR-CIAH, Bikaner.
- Training programme on "PoshanVatika and distribution of improved vegetable seed" under TSP Scheme 30.07.2025 at Khandabri Gram panchayat village of Dungarpur district (Rajasthan) organized by ICAR-CIAH, Bikaner, Rajasthan.
- Training programme on "Plant propagation techniques for fruit crops distribution of fruit crops planting materials" under TSP Scheme on 01.08.2025 at KVK, Dungarpur district (Rajasthan) organized by ICAR-Central Institute for Arid Horticulture, Bikaner, Rajasthan.

(d). Trainings under HRD

- Conducted three-months internship/training programmes on "Micro-Propagation of Horticultural Crops" for two students under the HRD programme, under the mentorship of Dr. Dhurendra Singh, Principal Scientist (Biotech.), during 18.02.2025 to 17.05.2025 and 25.08.2025 to 24.11.2025. **(Roop Chand Balai, Nodal Officer-HRD)**



(e). Trainings under the AYANA- CSR Project

Under the under the AYANA- CSR Project, 08 farmers'/stakeholders trainings programme were conducted/organized.

(e). Field day/ days/ weeks/ fortnights/ campaigns, etc. organized/carried out

During the year 2025, 07 field day/ days/ weeks/ fortnights/ campaigns, etc. were organized/carried out among which, major are Poshan Pakhwara (08-22 April, 2025), World Soil health Day-2025 (05 December, 2025), Kisan Diwas (23 December, 2025).





- **Vikshit Krishi Sankalp Abhiyan (VKSA):** A nationwide (VKSA) Vikshit Krishi Sankalp Abhiyan (29 May 2025 to 12 June 2025) was organized during which 48,000 farmers/ stakeholders of 92 villages of Bikaner district were covered.



Fig : VikshitKrishiSankalpAbhiyan

Celebration of Foundation Day of the Institute: The 33th Foundation Day of the Institute was celebrated on 01.10.2025 in which more than 300 scientists and other staff of the Institute, farmers, personnel of local sister Institutions of ICAR, SKRAU, Bikaner, line departments other participated in the programme. Dr. Manoj Dixit, VC, MGSU, Bikaner was the Chief Guest, Dr. Anil Kumar Punia, Director, NRCC, Bikaner was special guest of honour and Dr. Jagadish Rane, Director, of the Institute (ICAR-CIAH, Bikaner) Chaired the function.



Fig: Celebration of 33rd Foundation Day of the Institute

- In compliance to ICAR guidelines, Swachhta Hi Sewa Programme was organized at ICAR-CIAH, Bikaner including CHES and KVK, Vejalpur from 17th September to 02nd October, 2025.
- In compliance to ICAR guidelines, Special Campaign 5.0 was organized at ICAR-CIAH, Bikaner including CHES and KVK, Vejalpur from October 02-31, 2025.
- In compliance to ICAR guidelines, Swachhta Pakhwada was organized at ICAR-CIAH, Bikaner including CHES and KVK, Vejalpur from December 16-31, 2025. Farmers day (Kisan

Diwas) was also organized under Swachhta Pakhwada programme on 23rd December, 2025 by inviting farmers at the institute.



- Organized “Ber Technology Week” at ICAR-CIAH, Bikaner during 17–21 February 2025, comprising field visits and interactive sessions for students, farmers, scientists, extension personnel, and other stakeholders, with the participation of 350 beneficiaries. The programme was inaugurated by Dr. K.S. Khokhar, Former Vice-Chancellor, CCSHAU, Hisar, and the valedictory session was graced by Dr. A.K. Gehlot, Former Vice-Chancellor RAJUVAS, Bikaner.



- Live webcast of the 21st installment under the PM Kisan Samman Nidhi Yojana: This programme was organized on 19.11.2025 at the Institute in which more than 150 farmers, students, scientist, technical, and others including political representative including Dr. Vishwanath, MLA, Khajuwala, Bikaner; Sh. Shyam Panchariya ji, District president, BJP, City, & others were attended the programme to see the live webcast programme of Hon'ble PM of our country on the occasion of releasing the 21st installment under the PM Kisan Samman Nidhi Yojana.



2. Demonstration conducted

- During 2025, 10 FLDs of improved production technologies of a ride vegetables including Kachri (AHK-119), Snapmelon (AHS-82), Ridge gourd (Thar Karni), long melon (Thar Shetal) at Tejarasar, Gigasar, Husangsar and Khinchiya village of Bikaner district. In addition to above, 20 ffield demonstration of Khejri variety Thar Shobha were conducted under NABARD funded project during August-September, 2025. (S.R. Meena, D.K. Sarolia, R.C. Balai and Manpreet Kaur and others).



3. Technological exhibitions displayed

Organized and participated in nine technological exhibitions during 2025 at NRCSS, Tabiji, Ajmer (19 January 2025); ICAR-National Research Centre on Camel, Bikaner (11 January 2025); 14 BD, Khajuwala, Bikaner (28–29 January 2025); SKRAU, Hanumangarh (8–10 March 2025); SKRAU, Bikaner (25–27 March 2025); RAC Campus, Bikaner (27 July 2025); ICAR-IIMR Regional Research Station on Pearl Millet, Barmer (21 September 2025); and ICAR-CIAH, Bikaner (1 October 2025 and 11 October 2025). The institute received the Best Exhibition Award at 14 BD, Khajuwala, Bikaner and NRC Camel, Bikaner.



4. Visits of farmers/ students/ NGOs/ stakeholders and others to the Institute

During 2025, more than 2,400 farmers/ students/NGOs /stakeholders and others visited the Institute. (S.R. Meena, R.C. Balai and Manpreet Kaur)



5. Other Important extension activities

- The scientist of the Institute held/organized more than 100 on/off campus Research- Extension - Farmers- Interface- Meetings during the were held during the VKSA Kharif

campaign -2025 and other programmes and activities of the Institute during the reported period of time.

- The scientist of the Institute held/organized various farmers' programmes and activities like visit, meetings/group discussion training, interaction, Research-Extension - Farmers- Interface- Meetings (REFIM), diagnostic and problem-solving visits, etc., in adopted villages under MGMG Scheme and in others villages during the reported period of time.
- More than >3000 technical folders/literature were distributed among the farmers/ clients/stakeholders
- There were made > 50 diagnostic and advisory visits to farmer's fields to solve their problems and provide technical help/suggestions for their better crop production/farming system.
- The scientists of the Institute delivered than 150 technical lectures (online /offline) during the different farmers' trainings, during the VKSA Kharif campaign -2025 and other programmes.
- Several on/offline technological advisories/guidance/Qns.-Ans were given/communicated to various farmers and metrological advisories were also provided/ forwarded time to time.
- Communicated several agricultural technologies to farmers and other stakeholders through participation in meetings, advisory programmes, and extension events organized by State line departments, KVKs, SAUs, and other organizations during the reporting period. These included Scientific Advisory Committee (SAC) meetings of KVK Sardarshahar (Churu), Zonal Research and Extension Advisory & Review Committee (ZREAC) meetings at ARS, SKRAU, Bikaner, monthly meetings organized by the Office of the Joint Director (Extension), Bikaner Division, and meetings convened by the Commissioner, Command Area Development (CAD), Bikaner, among others.

❖ Organization of Winter School, Webinar/ Workshop/ Seminars/Symposia/ Conference, etc.

- Organized International conference on "Technology Innovation & Sustainable Development of Date palm" (ICDP-2025), Bhuj (Gujarat) during 29-30 June 2025.



❖ Visit of VIPs/ Dignitaries at the Institute/ CHES

- Dr. Mangala Rai, Former Secretary, DARE & Director General, ICAR, New Delhi, visited the institute and interacted with scientists on strengthening agricultural research and innovation on 24.02.2025.
- Dr. K.S. Khokhar, Former Vice Chancellor, CCS Haryana Agricultural University, Hisar, visited the institute and reviewed ongoing research programmes in arid horticulture on 17.02.2025.

- Sh. Ravi Shukla, Divisional Railway Office Manager, Bikaner, visited the institute and appreciated its research and extension activities on 18.03.2025.
- Sh. Rajan Vishal, Secretary, Agriculture & Horticulture, Government of Rajasthan, Jaipur, visited the institute and discussed strategies for promoting horticultural development in the state on 26.03.2025.
- Dr. D.P.S. Badwal, Chief Executive Officer, Agriculture & Horticulture, Jaipur, visited the institute and reviewed horticultural development initiatives on 22.04.2025.
- Dr. J.S. Sandhu, Former Vice Chancellor, SKN Agriculture University, Jobner, visited the institute and exchanged views on strengthening agricultural education and research on 19.06.2025.
- Sh. Nikhil Pareek, Director, Shren Investment Manager Private Ltd., Mumbai, visited the institute and explored opportunities for promoting agri-entrepreneurship and investment on 05.07.2025.
- Sh. Subhash Bishnoi, Additional Director, Government of Rajasthan, visited the institute and reviewed research activities supporting horticultural development on 08.07.2025.
- Dr. T.K. Joshi, Deputy Director, Hydrology Department, Bikaner, visited the institute and discussed water resource management for sustainable agriculture on 08.07.2025.
- Dr. Sita Ram Yadav, Registrar, Rajasthan University of Veterinary and Animal Sciences (RUHS), Lunkaransar, visited the institute and interacted with scientists on 30.07.2025.
- Dr. Harendra Raj Gautam, Former Head & Professor, YSP University of Horticulture & Forestry, Solan, visited the institute and discussed collaborative research in horticultural sciences on 11.09.2025.
- Dr. Pradeep Kumar Jatav, Deputy Director, National Horticulture Board, Jaipur, visited the institute and reviewed ongoing horticultural research and development activities on 11.09.2025.
- Dr. O.P. Yadav, Former Director, ICAR-CAZRI, Jodhpur, visited the institute and interacted with scientists on future research priorities for arid regions on 29.09.2025.
- Dr. D. Sivananda Pai, Assistant Director General (Agronomy), Advisory Services Division, New Delhi, visited the institute and reviewed research programmes related to climate-resilient agriculture on 29.09.2025.
- Dr. A.K. Puniya, Director, ICAR-National Research Centre on Camel, Bikaner, visited the institute and discussed collaborative research opportunities on 01.10.2025.
- Dr. M.S. Ladaniya, Former Director, ICAR-Central Citrus Research Institute, Nagpur, visited the institute and shared valuable insights on fruit crop research on 10.10.2025.
- Sh. Jethanand Vyas, MLA, Bikaner West, Bikaner, visited the institute and appreciated its efforts towards sustainable horticultural development on 11.10.2025.
- Dr. Jyotsana Sharma, Former Acting Director, ICAR-National Research Centre on Pomegranate, Solapur, visited the institute and discussed collaborative research on fruit crops on 13–14 November, 2025.
- Dr. Jai Singh Parihar, Indian Space Research Organization (ISRO), Ahmadabad, visited the institute and interacted with scientists on the applications of geospatial technologies in agriculture on 13–14.11.2025.
- Dr. Vishwanath Meghwal, MLA, Khajuwala, Bikaner, visited the institute and appreciated the institute's contributions towards agricultural development on 19.11.2025.
- Smt. Seema Vijay, Programme Head, Doordarshan, Jaipur, visited the institute and discussed dissemination of agricultural technologies through mass media on 03.12.2025.
- Dr. Manish Das, Director, ICAR-Directorate of Medicinal and Aromatic Plants Research (DMAPR), Anand, Gujarat, visited the regional station CHES, Godhra, Gujarat of the Institute on 27.03.2025.
- Dr. J.K. Patel, Directorate of Extension, Anand Agricultural University, Anand, Gujarat, visited the regional station CHES, Godhra, Gujarat of the Institute on 27.03.2025.
- Dr. M.J. Kaledhonkar, Head, ICAR-Indian Institute of Soil and Water Conservation, Research Station, Vasad, Gujarat, visited the regional station CHES, Godhra, Gujarat of the Institute on 27.03.2025.
- Dr. A.R. Kurubar, Director of Extension, University of Agricultural Sciences, Raichur, Karnataka, visited the regional station CHES, Godhra, Gujarat of the Institute on 28.04.2025.
- Sh. Kalpesh Patel, Director of Horticulture, Godhra, Gujarat, visited regional station CHES, Godhra, Gujarat of the Institute on 28.04.2025.
- Sh. Mahideep sinh Gohil, Vice President, BJP, Kalol Taluka, Gujarat, visited the centre and appreciated the centre's efforts in promoting horticultural development on 11.10.2025.

❖ Awards/Recognition

- Dr. Anita Meena was awarded with best poster presentation during the International conference at Bhuj, Gujarat during 29-30, June, 2025.
- Dr. Anita Meena was awarded with best oral presentation during the International Conference at MPUAT, Udaipur, Rajasthan, India during 05-07 October 2025.
- Dr. S. R. Meena was honoured with "STAR Excellence Award-2025" during STAR National Conference organized at RARI, Jaipur from 23-25 February, 2025.
- Dr. S. R. Meena was honoured with "Conference Gold Medal Award" during the STAR National Conference organized at RARI, Jaipur from 23-25 February, 2025.
- Dr. D. K. Sarolia worked as Convener in ATR & Plenary session and Rapporteur in SESSION-I PGRM during 29th Research Workers Group Meeting of AICRP on AZF held at MPKV Rahuri (Maharashtra) during 22-24 August, 2025.
- Dr. D.K. Sarolia worked as Convener in International conference on Technology Innovation & Sustainable Development of Date palm (ICDP-2025), Bhuj (Gujarat) during 29-30 June, 2025.
- The Institute's technological exhibition was displayed at the Kisan Mela and Exhibition organized by the Gram Panchayat, 14 BD, Panchayat Samiti, Khajuwala, Bikaner, during 28–29 January 2025. The Institute received the Best Exhibition Award at 14 BD, Panchayat Samiti, Khajuwala, Bikaner and at NRC Camel, Bikaner also received during the reported period of time.

- Dr. B.R. Choudhary acted as Co-organizing Secretary of International Conference held during 29-30 June, 2025 at Bhuj, Gujarat, India.
- Dr. B.R. Choudhary acted as Editor-in Chief of ISAH Indian Journal of Arid Horticulture.
- Dr. S.R. Meena was nominated and worked as one of the National Convener of STAR National Conference organized at RARI, Jaipur from 23-25 February, 2025.
- Dr. S.R. Meena was nominated as the Chairperson of the Poster Presentation Session at the STAR National Conference organized at RARI, Jaipur, during 23–25 February 2025.
- Dr. S.R. Meena was honoured as the "Guest of Honour" at the Kisan Mela/ Krishi Mahotsav organized jointly by ATMA (District Administration) and SKD University at Hanumangarh Headquarters during 8–10 March 2025.
- Dr. Chet Ram received “Best Oral Presentation Award” in ICDP-2025 organized by ICAR-CIAH, Bikaner at Bhuj, Gujarat during 29-30th June, 2025.
- Dr. K.L. Kumawat received best oral presentation award in Xth International Conference in Hybrid Mode on Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS-2025) during October 5-7th, 2025.
- Dr. K.L. Kumawat acted as rapporteur in “Varietal improvement” session, AICRP-AZF 29th Research Worker Group Meeting of AICRP on Arid Zone Fruits held during 22-24, August 2025, at MPKV, Rahuri (Maharashtra).
- Dr. M.K. Jatav was awarded with best oral presentation International Conference on GRISAAS-2025 held during 05-07 October 2025 at MPUAT, Udaipur, Rajasthan, India.
- Dr. Pawan Kumar acted as team co-ordinator in Swachhta Hi Sewa Programme organized at ICAR-CIAH, Bikaner during year 2025.

❖ Important Meetings held

- 29th Research Workers' Group Meeting of the AICRP on Arid Zone Fruits held at MPKV, Rahuri, Maharashtra, during 22–24 August 2025.
- Institute Research Council (IRC) Meeting held at ICAR-CIAH, Bikaner, on 6 August 2025.
- Institute Management Committee (IMC) Meeting of ICAR-CIAH, Bikaner held on 11 March 2025.
- Research Advisory Committee (RAC) Meeting held at ICAR-CIAH, Bikaner, during 13–14 November 2025

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**Dr. Jagadish Rane, Director,
ICAR-CIAH Bikaner-334 006 (Raj.)**

Compiled & Edited by:

**Dr. S.R. Meena, Principal Scientist
Sh. Roop Chand Balai, Scientist
Dr. R.K. Meena, Principal Scientist
Dr. Manpreet Kaur, Scientist**

**Photography by : Sh. Sanjay Patil, ACTO
Setting & design by : Sh. Bhojraj Khatri, STO**