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From the Director's Desk

It is a matter of great pleasure to bring out the institute's newsletter and to present the significant R & D achievements and programmes / activities carried out by ICAR-CIAH, Bikaner (Rajasthan) and ICAR-CHES, Vejalpur (Gujarat) during July - December, 2022. To achieve the nutritional and income security and eco-system services in the hot arid and semi-arid regions of the country, systematic horticultural research and development has vital significance as Arid Horticulture Mission-2047. To meet-out the requirement of ever-increasing population and demand of raw material of the horticulture-based industry are the prime challenging issues. To mitigate theses, there is urgent need to create massive awareness and efforts for conservation and maintenance of crop-specific diversity and also their systematic utilization in a strategic mode for developing climate matching genotypes and resource based farming models for dry-land horticulture. In addition, there is utmost need to develop apposite, novel and specific technologies for production of quality fruits, vegetables and native crop-plant commodity of horticultural harnessing under the harsh climatic conditions. Besides, fresh and value-added product diversification, geographical branding and ease-access of technology are the frontier areas to promote under-utilize commodity from arid and tribal farm-lands. To achieve the goal, ICAR-CIAH, ICAR-CHES and AICRP-AZF centre's are fully dedicated to move up-ward jointly for best quality horticultural products from the resource constraints production sites of the country. The institute and national network system is doing hard to develop climate resilience varieties and production technologies with limited water and inputs under abiotic stresses conditions. During the period sincere efforts were made to visualize the institute activities through exhibitions, field days, demonstrations, trainings, work-

shops and crop-specific scientific meetings. Two prioritized task of the period are summarized below as unique out-put:-

Date palm: Action with national priority

(1) National consultation meet on date palm organized: To address the most specific priority, a national level consultation meet on date palm cultivation was jointly organized by Indian Council of Agricultural Research; Sardarkrushinagar Dantiwada Agricultural University and Indian Date Palm Society on 8th July 2022 at Date Palm Research Center, Mundra (Gujarat). A team of scientists from CIAH, research group workers of AICRP on AZF centres, crop professionals and progressive growers attended. The chief guest Dr. A. K. Singh, DDG (Horticultural Science), ICAR stated that the date palm is a potential crop of arid region to improve nutritional security and income. He stressed that quality planting material is the first order issue and therefore, there is utmost need to strengthen the date palm tissue culture multiplication. In addition, there is urgent need to develop early maturing and rain-tolerant varieties with clear objective to breed genotypes for processing quality (*chuhhara* and *pind*) production. Dr. R. M. Chauhan, VC, SDAU, Sardarkrushinagar and Dr. K. B. Kathiria, VC, AAU, Anand focused on the native germplasm conservation and utilization in Kachchh region. Dr. Vikramaditya Pandey, ADG (Horticulture), ICAR emphasized for strengthening of research on Indian date palm (*Phoenix sylvestris*). Dr. D. K. Samadia, Project Co-ordinator, AICRP-AZF and Director, ICAR-CIAH stated that ICAR has intensified research work on date palm by establishing three crop research stations i.e. Abohar, Bikaner and Mundra from year 1980's and emphasized on germplasm conservation and varietal promotion. Dr. C. M. Muralidharan, Organizing Secretary, emphasized to focus on fruit grading, marketing, processing and value-addition.

(2) National facility for date palm PEQ implemented: During this period of 2022, national level project "Establishment of Post Entry Quarantine (PEQ) facility for imported horticulture planting material of date palm" with financial assistance sanctioned of Rs. 621.425 lakh for PEQ on date palm at ICAR-CIAH, Bikaner was received as one time grant of 2022-23 from MIDH, Department of Agriculture & Farmers Welfare, Ministry of Agric. and Farmers Welfare, Govt. of India, New Delhi and planned work was implemented through CPWD for construction of hi-tech green-houses, shade-houses, water-storage reservoir (diggi, 25 lakh litre capacity) and many-more basic facilities including viruses detection laboratory.


(D. K. Samadi)
 Director

Research Spectrum

(b). At H. Q., Bikaner

Breeding for improvement of pomegranate under hot arid region: A total of 154 crosses were attempted including Jalore seedless, Bhagwa, Mridula and Ruby pomegranate cultivars and selection CIAH PG-4 and AHPG C-1 during *hasta bahar*-2022 to develop the hybrid with fruit cracking and quality improvement of pomegranate under hot arid region. All the pomegranate cultivars in which hybridization was done were found to be cross compatible. Fruit set in different cross combinations ranged from 7.14 % to 28.57 %. Maximum fruit set was recorded in cross G-137 × Gul-e-shah Red (28.57%) while minimum fruit set was recorded in cross Jalore seedless × CIAH PG-4 (7.14 %) (**R. Kumar, P. Kumar, J.S. Gora and Chet Ram**)



Emasculation



Pollination



Bagging

Genetic variability through mutation in pomegranate under hot arid region: Pomegranate variety Jalore seedless seeds were harvested from mature fruit and chemicals EMS (0.1, 0.3 and 0.5 %) and Colchicine (0.01, 0.05 and 0.1 %) treatment were given for different time interval (6 and 24 hrs.). Maximum seed germination was recorded in Colchicine at 0.01 % con. treated for 6 hrs while minimum was found for EMS at 0.5 % con. Treated for 24 hrs. Maximum survival % was recorded in Colchicine at 0.01 % con. treated for 24 hrs whereas no survival was found for Colchicine at 0.5 % for 24 hr and all the EMS con. At 24 hrs treatments (**Pawan Kumar, Ramesh Kumar, M.K. Choudhary and K.L. Kumawat**).



Evaluation and domestication of Jhaar karela (*M. balsamina* L.): *Jhaar karela* (*M. balsamina* L.) is an important vegetable crop while it is neglected and lesser known belonging to Cucurbitaceae family. It is commonly known as Balsam apple (English) and *Jungle karela* or *Jhaar karela* (Hindi). It possesses a wide range of medicinal and nutritional properties. Keeping in view the importance, evaluated a purified line (CIAHMB-1; IC-0644742) during rainy season of 2022 on drip and trellis system. The single plant produced 200-230 marketable fruit/ plant and yielded 1.4-1.5 kg in fruiting duration of 60-75 days. The fruit weight varied from 7.30-9.0 g. (**B.R. Choudhary, Hanuman Ram and S.K. Maheshwari**)



CIAHMB-1

Daisy and Fremont mandarin - Promising citrus cultivars in arid region: Daisy is an interspecific hybrid of Fortune mandarin and Fremont mandarin, and it is performing better continuously in arid climatic conditions. Its canopy is modified as compared to other existing commercial cultivars of citrus, as the leaves are thick, large, and curling in nature. These characteristics tolerate sub- and supra-temperature stress. Daisy is producing medium to large (210–240 g), mid-season (15 November–15 December), juicy (55–62%), less seeded (3-5), TSS (14–16 °Brix), less acidity, high productivity (80-120 kg plant⁻¹ 4th fruiting year) and an attractive dark saffron rind colour. Similarly, Fremont mandarin is performing outstanding in arid conditions based on climatic adaptability, plant growth, fruit yield where other mandarin like kinnow is producing less- or scattered flowering and fruiting. It is producing medium sized (130-150 g), high juice (52-55%), TSS (12-13 °Brix), ripening index (11-14) and yield (60-80 kg plant⁻¹ 4th fruiting year). It gets matured in the mid-November to mid-December month and fetching remunerative market price. These cultivars are recommended for arid regions with good management practices to avoid canker and granulation maladies (**J.S. Gora, R. Kumar, R.C. Balai, P. Kumar**).



Daisy mandarin



Fremont mandarin

Crossability /hybridization study in *Ziziphus* species: Addressed a question on crossability between the different ber species and within the species (*Ziziphus mauritiana*) conserved at ICAR-CIAH, Bikaner. Several crosses were attempted between *Ziziphus mauritiana* cultivars i.e. Gola and Seb with the *Ziziphus nummularia* (used as a donor parent) to develop trait specific genetic material i.e. early maturity, frost and drought tolerance in the hyper arid condition. We have found 15% fruit setting in the combination of Gola (*Z. mauritiana*) × *Z. nummularia* but no fruit setting with the combination of Seb (*Z. mauritiana*) × *Z. nummularia*. For intra-specific crossability attempted large number of crosses within the different cultivars of *Z. mauritiana* i.e. Gola × Reshmi, Seb × Reshmi, Gola × Kathaphal, Gola × Reshmi, Gola × Mehrun, Gola × Tikadi,

Tikadi × Gola. In these combinations Gola × Reshmi and Gola × Mehrun show maximum crossability followed by Gola × Kathaphal but there were no fruit set between Seb × Reshmi, Gola × Tikadi and Tikadi × Gola (**M.K. Choudhary, D.K. Sarolia and Pawan Kumar**).

Standardization of selfing technique in Chilli: Chilli (*Capsicum annum* L.) is an often-cross pollinated crop. Artificial self-pollination is much required to attain homozygosity to develop inbred lines in this crop. Therefore, different methods (Cotton, Butter paper bag, Whole plant cover and Selected branch cover with net bag) were used to find the most appropriate method of selfing in chilli. Due to regular and high wind velocity in hot-arid region, cotton was unstable and it might be displaced from the particular unopened flower bud which results in natural open pollination. In case of butter paper bag, fruit set was there but due to excess heated environment during the flowering season, proper seed development was hampered and quality seeds could not be harvested. When whole single plant was covered, plant growth was reduced, got stunted with thickened leaves and flowering as well as fruiting were reduced drastically. Selected single branch cover with net bags method was found the most suitable and appropriate approach for selfing in which a single branch was taken and all opened flowers as well as already set fruits were removed with the help of forcep. After that the branch was tightly covered with net bag so that insect mainly bees/bumble bees could not enter inside the bag. The sufficient number of selfed fruits was harvested and seed quality was also better (**Hanuman Ram, A.K. Verma and D.K. Samadia**).



Selected single branch cover with net bag

Enhancement of pollen storability and its effect on fruit set on date palm cultivar Khuneizi: In general, only fresh pollens are used for fertilizing female inflorescences. However, pollen storability was enhanced by low temperature storage. It was found that the pollen stored under refrigerator condition can be used up to 12 months for pollination with fruit set 70-84 per cent and fresh pollen fruit set 89-91 percent but lowest 53-66 per cent fruit set was recorded pollen stored at normal temperature. Such simple and innovative interventions can maintain the pollen viability for longer period with little impact on fruit set. (**Ramkesh Meena, M.K. Choudhary and Chet Ram**)



Study on callus induction process in date palm (*Phoenix dactylifera* L.) cv. Barhee: The explants (made from shoot tip of Barhee variety of date palm) of about 0.5-1.0 cm in length was prepared and immediately inoculated aseptically on the callus induction media fortified with different concentrations of 2, 4-

Dichlorophenoxyacetic acid (2,4-D). The response of embryogenic callus initiation from explants was successfully obtained with higher concentration of 2, 4- D (100 mg/l). However, lower concentration of 2, 4- D did not showed any callus initiation activity in any of the explants of date palm even after two years of inoculation. Later on obtained callus was multiplied many fold and treated for optimizing callus maturation and somatic embryogenesis process (**K. Kumar, D. Singh, Chet Ram and R.K. Meena**)



Callus initiation in date palm cv. Barhee

Patent: Noval biopesticide compositions and formulation from tumba (*Citrullus colocynthis*) for insect control (Patent No. 407022 Dated: 19/09/2022): The present invention describes the isolation and characterization of the novel biopesticide compositions and formulations obtained from tumba with desi cow urine effective against pest management and capable of surviving as effective biocontrol agent.



The invention focuses on the isolation of this biopesticide compositions and formulations that are known to possess pesticidal properties and are derived from natural sources having biological origin. This biopesticide compositions and formulation controlling the insects (*Helicoverpa armigera*, *Spodoptera exigua*, *Diphania indica* etc.) and vectors (Aphid and white fly) through repellent, deterrent, antifeedent and stopped the respiration. This biopesticide compositions and formulation containing botanical plant (tumba) and deshi cow urine which is eco-friendly and safety for environment. (**Shravan M Haldhar, M.K. Berwal, R Bhargava and P L Saroj**).

Incidence of root knot nematode in pomegranate orchards: Survey programmes of pomegranate (*Punica granatum* L.) orchards variety 'Bhagwa' were conducted in November-December, 2022 at Rajoriya Krishi Farm (Adsar village); Rashmi Krishi Farm (Kanasar village); Jain Krishi Farm (Kanasar village) and CIAH, Beechwal of Bikaner district for incidence of root knot nematode. Plants of pomegranate variety 'Bhagwa' were established in the orchards. Incidence of root knot nematode was found up to 12.67% in pomegranate orchards. At initial stages of infestation, no flowering, little leaf symptom and foliage showing nutrient deficiency-like symptoms was observed on infected plants with stunted growth while on later stage of infestation, leaf yellowing and wilting of plants with knots on the roots were observed. Root system is manifested

by retarded growth and falling of mature plants. With the increase in nematode population, feeder roots are invaded and destroyed as fast as they are formed. The resulting setback in the uptake of plant nutrients leads to production of smaller fruits (S.K. Maheshwari, Ramesh Kumar and R. P. Meena).



Knots/galls produced in pomegranate roots by root knot nematode

(b). At CHES, Vejalpur

Promising lines of Yardlong bean CHESVC-15 (IC-649015):

The selective genotype has attractive long & dark purple red colour pods rich in anthocyanins (190-200mg/100g). It is an early flowering and early maturing genotype and takes 35-36 days for first flowering and 44-46 days after sowing for first harvesting of fresh tender pods. The pods have 52.50 cm length, 2.5cm girth and 23.0g pod weight. The total number of pods per plant varies 180-200 pods/plant with an average yield of 2.5 to 3.0kg/plant of fresh pods can be obtained.

CHESVC-16 (IC-649016): The selective genotype has attractive long & light green colour pods. It is an early flowering and early maturing genotype and takes 29-30 days for first flowering and 36-38 days after sowing for first harvesting of fresh tender pods. The pods have 52.0-54.0cm length, 3.30cm girth and 28.0-30.0g pod weight. It gives 150-180 number of pods/plant with an average yield of 3.0kg/plant of fresh pods (Gangadhara K., L.P. Yadav, V.V. Apparao and A.K. Verma).



Metaxenia, cauliflory and vivipary in bael: First time, we found that the source of pollen exerted a direct influence on the size, shape and styler end cavity shape of fruit, and the speed of development and on the time of ripening of fruit (Fig 1.) in the asexual propagated bael plant.



Metaxenia effect; a-effect of pollen grain on fruit shape and maturity, b-pollen effect on shape of styler end cavity Cauliflory

Generally, woody flowering plants produce inflorescences on new growth and or young leafy shoots. It was observed that the bael tree produced fruits from the main trunk to one year old shoots in some of the germplasm. It was also observed that flower and fruits appeared on trunk, primary, secondary tertiary, fourth, fifth and sixth branches, and first, second, third, fourth, fifth and sixth year growth of growing shoots (Fig.2). Bael is a cauliflorous example of fruit tree. This character is bestowed by nature so that fruiting branches could bear the load of fruit till maturity. In general, cauliflorous blossoms are sturdy and well attached to stem and can withstand in aberrant climatic conditions.



Fruit on main trunk, b- Flowering on primary shoot Vivipary

Bael fruits as usually remain free from viviparous seeds, occasionally it can be seen under rainfed semi-arid conditions. As appeared physically, it was tree ripened fruit harvested from the tree from the field gene bank at CHES, Godhra. The seeds manifest light yellow coloured radical embedded in mucilage of locule cavity (Fig. 3). Vivipary is considered as genetic mutation but its manifestation can be modified by the environment. Reduced production or insensitivity of fruit to abscisic acid has also been marked as a feature of vivipary. (A.K. Singh).

Antioxidants and nutritional counters of drumstick (*Moringa oleifera* L.) germplasm under rainfed semi-arid region. The thirty four genetic resources along with Thar Harsha variety *M. oleifera* were undertaken in this study. The total phenolic (TP) content (mg GAE/100 g) in pod (26.36 - 39.90), pulp (151.54 - 232.70), rind (73.37 - 169.06) and leaves (448.21 - 970.16) were recorded. Likewise, the vitamin C content ranged between 313.02 - 502.57 mg/100 g in leaves and 193.03 - 266.11 mg/100 g in pods. The pod, pulp and leaf of CHES D-40 accession recorded the highest TP content. While, the rind of CHES D-42 accession recorded the maximum TP content. Similarly, leaves and pods of CHES D-40 showed the highest vitamin C. In 2, 2-diphenyl-1-picryl-hydrazyl-hydrate (DPPH) assay, the antioxidant activity of *M. oleifera* accessions leaves varied from 14.83 to 31.29 $\mu\text{mol TE/g}$. The accession CHES D-40 recorded the highest N, K, Ca, S, and Fe in leaves. Whereas, P and Cu in CHES D-42, Mg and Zn in CHES D-34 leaves. The protein varied from 21.58 to 29.87 g/100 g in leaves, while in pod, 13.00 to 18.00 g/100 g. These results revealed that the potentiality of *M. oleifera* leaves in context to antioxidants and nutrients can be

included in diets to supplement our daily nutrient needs (L.P. Yadav and Gangadhara K.).

Farmers' programmes/extension activities.

(a). At H.Q. Bikaner

❖ Trainings.

- Conducted 05 days collaborative training programme organized with MANAGE Hyderabad in virtual /online mode on "Extension strategies for promotion climate resilient horticultural technologies in arid and semi-arid regions" from 11.10.2022 to 15.10.2022 at ICAR-CIAH, Bikaner. (S. R. Meena, RC Balai, Ramesh Kumar, R. P. Meena and Hanuman Ram)



- Conducted one day farmers' training entitled as "improved production technologies of kharif vegetables" at, 4JMD, Khara, Bikaner on 07.07.2022.
- Organizing of farmers training programme at Lacchadsar village of Churu district on "commercial production of arid vegetables and postharvest management" on 09.09.2022.
- Organizing of farmers training programme at Napasar village of Bikaner district on "Ber Based cropping system" on 19.09.2022.



- Organizing of farmers training programme at Sinthal (Belasar) village of Bikaner district on "Ber Based cropping system" on 20.09.2022.
- Organized 3 days on-campus farmer training on "Propagation of arid fruits and vegetables" and distribution of agri. input under SCSP scheme during 20-09-2022 to 22-09-2022 (M.K.Choudhary, M.K. Jatav, B.R.Choudhary, R.C. Balai, Anita Meena, P.S. Gurjar).



❖ Trainings under SCSP & TSP Schemes.

During the reported period of time 26 training programmes under SCSP and 07 ST farmers training programme under TSP Scheme were conducted on different topics/aspects related to improved arid horticultural production technologies (M.K. Jatav, B.R. Choudhary, R.C. Balai, Anita Meena, SR Meena and PS Gurjar).



❖ Trainings conducted for women empowerment.

Trainings programmes for women empowerment and skill development of SC and ST women farmers were organized time to time under different occasion like International women day, National women day under women farmers farmers training programmes under SCSP and TSP during the reported period (Anita Meena, M.K. Jatav, B.R. Choudhary, Roop Chand Balai, M.K. Choudhary) .



- ❖ Training on Kishan Agri Drone:** Farmers Training for Kishan Agri Drone was conducted at farmers field on 05.12.2022. The aim of this training was to use of Drone in agriculture for efficient use of nutrient and pesticide spraying. (R.C. Balai, Ramesh Kumar, R.P. Meena and Hanuman Ram)



❖ Front Line Demonstration (FLDs)

- Conducted FLDs of Kachri (AHK-119), sponge gourd (Thar Tapis), ridge gourd (Thar Karani), snapmelon (AKS-82) and veg. clusterbean (Thar Bhadvi) on the field of Sh. Rewat Ram Kumawat S/o Sh. Hanumana Ram Kumawat, 4JMD, Khara, Bikaner on 07.07.2022.



- Conducted FLDs of ridge gourd (Thar Karani), snapmelon (AKS-82) and Khejri (Thar Shobha- 10 budded plants + 20 rootstock) and in-situ budding on the field of Sh. Mahendra Singh Shekhawat, Vill.- Arjunsar, Teh.- Lunkaransar, Distt.- Bikaner on 09.07.2022 (Sunday).



- Conducted FLDs of Kachri (AHK-119), ridge gourd (Thar Karani) and snapmelon (AKS-82) on the field of Sh. Sita Ram Godara S/o Sh. Mohan Ram Godara, Village-Shekhasar, Teh.- Lunkaransar, Distt.- Bikaner on 12.07.2022.

❖ Technological exhibitions displayed.

- The Institute participated in "National Sammelan on" Ozone Layer, its depletion and impact on living being (ODIL-2022) organized at NRCC, Bikaner on 16.09.2022 (S. R. Meena and R. C. Balai).
- The Institute participated in Jaipur Agriculture Expo-2022 at Jaipur from 21.09.2022 to 24.09.2022 (S. R. Meena and J. S. Gora).



- The institute participated and displayed the technological exhibition in GB International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) held at Hotel Pullman, New Delhi during 19-24th September, 2022 with the theme "Celebrating the guardians of crop diversity" on plant genetic resources for food and agriculture (Pawan Kumar, Lokesh Kumar).



❖ Organization/Celebration of days/ weeks/ fortnights/campaign, etc.

- Celebration of Kishan Diwas:** The Kishan Diwas was celebrated at Salasar village of Kolayat block of Bikaner distt. on 23 Dec., 2022.



- Celebration of 94th "ICAR Foundation Day"** in online mode on 16.07.2022
- Celebration of 8th Nation Handloom Day:** 8th Nation Handloom Day was celebrated on 7th August, 2022 during which created the awareness about the importance of Indian Handlooms and their products through email, whatsapp, mobile and others.
- Observance of "Parthenium Awareness Week"** from 16 - 22 Aug., 2022.
- Ghar Ghar Tiranga Campaign:** Under "Azadi Ka Amrit Mahotsav- Ghar Ghar Tiranga Campaign" was carried out in different local villages/ areas, schools and several farmers/ people/ students/ teachers during which they were provided with National Flag (Tiranga Jhanda) to hoist the it on their home during the period of from 13th - 15th August, 2022.

- **Celebration of Institute's foundation Day:** Institute celebrated its 30th Foundation Day 01.10.2022 in which Ex-Director Dr. O.P. Pareek was the chief guest of the function.



- **Organization of "Hindi Pakhawada"** programmes from 14.09.2022 to 30.09.2022.
- **Cyber Jaagroota Divas Annual Day Celebration** programme organized at the Institute on 06.10.2022.
- Anti-corruption week was organized in the Institute from 31.10.22 to 07.11.2022.
- **'World Soil Health Day'** was celebrated at farmer's field of Salasar village on 05.12.2022.



- Various activities/events organized under *Swachhata Abhiyan* from 16.12.2022 to 30.12.2022

• Other extension activities:

- More than > 300 farmers, students, field workers, supervisors, SMS, dignitaries/ NGO, etc. were visited to Institute during the reported of time.



- About 20 on/off campus Research- Extension - Farmers-Interface- Meetings to inculcate the knowledge and awareness among the farmers about improved production technologies of arid horticultural crops. The activities like visit, meetings/group discussion training, interaction, etc., were also organized for empowerment of farm women, particularly in the field of arid horticulture.



- Various farmers' programmes and activities like visit, meetings/group discussion training, interaction, Research-Extension - Farmers- Interface- Meetings (REFIM), diagnostic and problem solving visits, etc., were conducted in adopted villages under MGMG Scheme of the ICAR/Institute.



- More than >2000 technical folders/literature were distributed among the farmers/ clients during different extension programmes/activities/ exhibitions, occasions.
- Several diagnostic and advisory visits to farmer's fields to solve their problems and provide technical help/suggestions for their better crop production/farming system.



- During the reported period of time, various technological advisory work (One line / telephonic/off line/ discussions/ guidance/Qns.– Ans.) with farmers were also performed.
- Organized student's field school on organic kitchen gardening at Jawahar Navoday Vidyalay, Panchmahal Under "Swachta Pakhwara" on 20.12.2022



Student's field school on Organic Kitchen gardening in Panchmahal district, Gujarat during the "Swachta Pakhwara"

❖ Presentation/ participation/ organization of Workshop/Seminars/Symposia/conference.

(a). Director

- ❖ Dr. D. K. Samadia acted as a organizer of "30th Foundation Day of ICAR-CIAH" and Guest of Honour of the function on 01/10/2022 at ICAR-CIAH, Bikaner.
- ❖ He acted as a Guest of Honour in "World Camel Day Programme" organized by ICAR-NRCC, Bikaner on 22/06/2022.
- ❖ He acted as Guest of Honour in "ICAR Zonal Sports Tournament-2022" organized by ICAR-NRCC, Bikaner on 22/11/2022.
- ❖ He acted as a Guest of Honour in the "Consultation meet on date palm cultivation" jointly organized by Indian Council of Agricultural Research, Sardarkrushinagar Dantiwada Agricultural University and Indian Date Palm Society at Date palm Research Station, SDAU, Mundra-Kachchh, Gujarat on 08/07/2022.
- ❖ He acted as Chief Guest of virtual five days collaborative training programme "Extension strategies for promotion of climate resilient horticultural technologies in hot arid and semi-arid regions" organized by ICAR-CIAH, Bikaner and NIAEM (MANAGE), Hyderabad from 11-15 October 2022, and deliver an overview of arid horticulture dated 11/10/2022.
- ❖ He attended Institute Technology Management Committee meetings as chairman at ICAR-CIAH, Bikaner (06/06/2022, 29/08/2022).

- ❖ He attended series of special talk / lectures organized by ICAR, New Delhi during 2022 period.
- ❖ He attended a series of VC meetings for PEQ facilities as organized by MIDH Division, Department of Agriculture & Farmers Welfare, Krishi Bhawan, New Delhi.

(b). Others

- Dr. Hanuman Ram, attended National Conference cum 9th Rajasthan Science Congress held at SKNAU, Jobner during 15 -17 December, 2022.
- Dr. Pawan Kumar participated in GB International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) held at Hotel Pullman, New Delhi during 19-24th September, 2022 with the theme "Celebrating the guardians of crop diversity" on plant genetic resources for food and agriculture

Training/Meeting/Programme organized/attended.

- Institute organized "Consultation Meet on Date Palm Cultivation" at Date Palm Research Station, SDAU, Mundra on 8th July, 2022.



- Dr. Ramesh Kumar and Sh. Roop Chand Balai attended "District Level Technical Committee (DLC) Meeting" regarding scale of finance on 21 December, 2022 at Collectorate, Bikaner chaired by district collector Bikaner
- Dr. Ramesh Kumar, attended "Consultation Meet on Date Palm Cultivation" organized at Date palm Research Station, SDAU, Mundra on 8th July, 2022 and acted as Rapporteur in the plenary.
- Dr. Hanuman Ram, attended DBT-sponsored training on "Biosecurity and Biosafety: Policies, Diagnostics, Phytosanitary Treatments and Issues" organized by ICAR-NBPGR, New Delhi during August 02-11, 2022 through virtual mode.

❖ Visit of VIPs/Dignitaries at the Institute

During the reported period of time various VIPs / Dignitaries visited the Institute are as under.



Dr. O.P. Pareek, Ex-Director, ICAR-CIAH, Bikaner visited the Institute on 01.10.2022



Chairman Dr. B. Singh, Vice Chancellor, ANDUT, Ayodhya and other dignitaries visited 28.09.2023

❖ Awards/Recognition

- Institute was honoured with "SECOND BEST EXHIBITION AWARD. during "National Sammelan on" Ozone Layer, its depletion and impact on living being (ODIL-2022" organized at NRCC, Bikaner on 16.09.2022
- Institute was honoured with "BEST EXHIBITION AWARD in Jaipur Agriculture Expo-2022 at Jaipur from 21.09.2022 to 24.09.2022.



- Dr. M.K. Berwal received Best oral presentation award for "The New Insights of Abiotic Stresses in Horticulture: Hot Arid Region of Western Rajasthan as Potential Avenue for Molecular Farming" during National conference: Emerging Innovations in Plant Molecules for Achieving Food and Nutritional Security held at NAU, Navsari during September 22-23, 2022.
- Dr. M.K. Berwal received "Outstanding Scientist Award" during the International Scientist Awards on Engineering, Science and Medicine, held on 09 & 10-Sep-2022, Organized by VDGGOOD® Professional Association (Reg no: U22190TN2019NPL127500).
- Dr. Hanuman Ram received best poster presentation award in National Conference cum 9th Rajasthan Science Congress held at SKNAU, Jobner during 15 -17 December, 2022.
- Dr. S K Maheshwari acted as Chairman for selection of YP-I on 26-07-2022 and 03-09-2022.
- Dr. S K Maheshwari nominated as Chairman for considering MACPS cases of Staff of this Institute on 30-11-2022.
- Dr. S. R. Meena, principal scientist, acted as Chairman of selection committee of team and players of different events/games for the in ICAR - Zonal Sport Tournament (West Zone) organized by ICAR-NRCC, Bikaner from 22-25 November, 2022.

- Dr. B. R. Chaudhary, principal scientist, acted as Chairman of Farm Visit Committee on the occasion of Foundation Day of ICAR-CIAH, Bikaner celebrated on 01-10-2022.
- Dr. B. R. Chaudhary, principal scientist, Acted as Chairman of Cycling during ICAR - Zonal Sport Tournament (West Zone) organized at ICAR-NRCC, Bikaner from 22-25 November, 2022.
- Dr. Ramesh Kumar, acted as Rapporteur in the plenary session during the "Consultation Meet on Date Palm Cultivation" organized at Date palm Research Station, SDAU, Mundra on 8th July, 2022.

❖ PROMOTION / MACPS

(a). Administrative personnel :

- Shri P.V. Nayak, Sr. Clerk, CHES, Vejalpur (Godhra) appointed on the post of Assistant in the Level 6, Pay Band-2 Rs.9300-34800 with Grade Pay of Rs.4,200/- (pre-revised) on transfer-cum-promotion basis at this Institute w.e.f. 19th December, 2022 (Forenoon).

(b). Supporting staff

- During the reported period of time, seven casual labours (TS) regularized to the post of Skilled Supporting Staff.

❖ Relieving on promotion/transfer/deputation

- Sh. H.S. Patel, Assistant relieved on 21.11.2022 (A.N.) on transfer to regional station CHES, Vejalpur.

❖ Resignation/superannuation

- Sh. G.F. Chauhan, Skilled Supporting Staff retired on superannuation from the Council's services in the afternoon of 31.10.2022
- Sh. D.S. Rawat, Skilled Supporting Staff retired on superannuation from the Council's services in the afternoon of 31.12.2022.
- Sh. F.P. Chauhan, Skilled Supporting Staff retired on superannuation from the Council's services in the afternoon of 31.12.2022.

❖ Demise

- Sh. Chhuttan Lal Meena, Assistant Chief Technical Officer, ICAR-CIAH, Bikaner expired on 26.07.2022.

• Other Curriculum Activities

- The Institute participated in ICAR Inter Zonal Tournaments organized by NRCC, Bikaner during 22.11.2022 to 25.11.2022 at the stadium of SKRAU, Bikaner.

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**Dr. D. K. Samadia, Director,
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