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From the Director's Desk

I am feeling immense pleasure by bringing out this six monthly Newsletter of the ICAR-Central Institute for Arid Horticulture, Bikaner (Rajasthan). Ever since its inception, ICAR-CIAH is dedicated in conducting strategic research and developmental programmes to boost up the horticultural production in hot arid and semi-arid regions of the country. The Institute is actively engaged in research activities such as development of improved varieties and production technologies of arid horticultural crops which are able to give high yield with quality production under prevailing abiotic and biotic stresses in hot arid and semi-arid climatic conditions. The long term goal of the Institute is to turn the barren and unproductive lands of the hot arid and semi-arid regions of the country into productive green with rewarding horticultural belts so as to reinforce the socio-economic status of rural inhabitants of the regions. Thus, the Institute is dedicated to serve the farmers and stakeholders of arid and semi-arid regions by developing location specific arid horticultural technologies, introduction of new genotypes/crops from iso-climatic conditions, feasible package and practices which can lead to successful production of horticultural crops under adverse climatic condition of arid and semi arid regions of the country.

During the reported period of time, various experiments were conducted and various new techniques/technologies were developed/envisaged. The variety of sponge gourd (Thar Tapish), ridge gourd (Thar Karni) and longmelon (Thar Sheetal) was recommended for

release and notification. The variety of muskmelon (Thar Mahima) was identified at institute level. The late maturing, rain tolerance and light red colour berry seedling genotype (CIAH/DP/F-03) of date palm was identified. Similarly, the technology for *sangri* value addition was developed. The Institute developed a complete protocol from harvesting to processing, packaging and marketing to promote commercial utilization of this desert tree DNA fingerprinting of watermelon cultivars and muskmelon variety was done. Identified a promising genotypes of date palm for fresh consumption. RBOH genes responding multiple abiotic stresses in watermelon was identified and molecular diversity in pomegranate was assessed during the period.

Under the of HRD programmes, a National Webinar on "Indian JuJube" and 'Low Tunnel Vegetable Production' as a part of "Azadi Ka Amrit Mahotsav" were organized to exchange the generated information of R&D among researchers/ students/ farmers/ stakeholders .

Various farmers' programmes and activities like trainings, farmers' advisories, FLDs, method demonstrations and interactions, research-extension-farmers-interaction meetings, visit to farmers' fields, activities for women empowerment, celebration of seed sale/distribution day/days, weeks, distribution of inputs, technical literatures, etc., works were carried out during the period. Some technological exhibitions of the Institute were displayed out of the Institute in different Kisan Mela/programmes, among them some were honored with Best Technological Exhibition Awards. Several programmes/activities were also organized under Mera Gaon Mera Gaurav (MGMG) Scheme in adopted villages of the Institute during the reported period of time. In addition to above, various technological advisory work (One line / telephonic/off line discussions/ guidance/Question.-Answer) with farmers were also performed. Moreover, several programmes/ activities like training; technological interaction and input distribution among SC farmers/ farm women were also organized under ongoing SCSP Scheme in the Institute. The major programmes/activities and achievements of the Institute including its regional station and KVK during last six months are being highlighted through this Newsletter in brief.

(B. D. Sharma)
Director

Research Spectrum

(a). At H. Q., Bikaner.

AHSG/2015/F5/01 (Thar Tapish): Sponge gourd variety identified and recommended for release: The variety developed by the institute i.e. AHSG/2015/F5/01 named as Thar Tapish of sponge gourd has been identified and recommended for release and notification for Zone-IV during 40th Annual Group Meeting of AICRP (Vegetable Crops) held online during 15-17 June, 2022. The variety exhibited earliness and seasonal range for days to first harvesting of tender fruits is 49.2–52.4 DAS. Tender fruits are green–dark green in colour, long, straight, slightly curved neck in shape and have shining lusture. The variety is good yielding (137.51 q/ha) in comparison to check (Pusa Supriya, 115.06 q/ha and Kashi Divya, 117.94 q/ha) on overall mean basis, and it is 19.51 and 16.59 % higher over checks, respectively. The variety is suitable for both summer and rainy season cultivation under dryland climate (**D.K. Samadia, A.K. Verma and S.M. Haldhar**).



Thar Mahima: Muskmelon variety identified: Thar Mahima is an improved variety of muskmelon developed through single plant selection method. It is promising with respect to first fruit picking (75-80 DAS), high TSS (11.58-11.80%), fruits weighing 780-900 g with 2.8-3.2 cm thick flesh having salmon orange colour, 0.30-0.48 cm thick rind and small seed cavity (2.8-3.2 cm). It produced 4-5 fruits per plant which are round and attractive with netted surface having sutures. Leaves have deep lobing. Rind colour is attractive at marketable stage. Flesh colour is salmon orange. It is responsive to low tunnel and net house cultivation. It produced an average marketable fruit yield of 193.7 q/ha in on-station trials conducted during three consecutive years from 2018 to 2020 (**B. R. Chaudhary**).



Varieties recommended for notification: The varieties developed by the institute viz., Thar Karni of ridge gourd and Thar Sheetal of longmelon have been recommended for notification during the 29th meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Horticultural Crops held on 23rd March, 2022 at New Delhi and subsequently notified vide Gazette Notification number S.O. 3254 (E) dated 20-07-2022 for commercial cultivation in Rajasthan state (**B.R. Choudhary**).



Thar Karni: Ridge gourd



Thar Sheetal: Longmelon

Identification of late maturing rain tolerant type genotype:

The late maturing, rain tolerance and light red colour berry seedling genotype (CIAH/DP/F-03) of date palm has been identified. The fruits are of medium size, attractive colour and appearance, good texture. The time of ripening is last week of August to first week of September. The weight of fruit (10.11 g), fruit length (3.15 cm), width of fruit (2.38 cm), TSS (32.8 °Brix) and fruit yield (15 kg per palm) was recorded in second harvest. It can be used for fresh consumption and preparation of processed product (**R.K. Meena**).



Technology developed for sangri value addition to harness economic potential:

Khejri (*Prosopis cineraria*) is a versatile leguminous tree species of multiple uses. The green pods locally known as *Sangri* utilized for vegetable and pickle purpose. The *sangri* is a priced vegetable sold at high cost both in fresh green and dehydrated form (Rs. 10 - 200 and 600-1000/kg, respectively) and it is the main component of both *Panchkuta* and *ker-sangri* vegetable which are regarded as royal delicacies of western Rajasthan. ICAR-CIAH, Bikaner has developed a Khejri variety named as *Thar Shobha* which is thornless, dwarf, tolerant to temperature extremes, gives high yield both for uniform pods and fodder (*loong*).

For commercialization of *sangri*, uniform quality standards need to be developed for fresh pods, dried product and packaging material. Therefore, ICAR-CIAH, Bikaner has developed a complete protocol from harvesting to processing, packaging and marketing to promote commercial utilization of this desert tree. Tender, seedless, 10-22 cm long, deep green or green color pods, harvested after 10-16 days of pod setting were found highly suitable both for dehydration and vegetable purpose. Blanching treatment was standardized and 5 minutes boiling in hot water was observed optimum for getting good quality dried *sangri*. The final dried product recovery was varied from 25.85 to 28.05% of fresh weight. Dried *sangri*, packed in food grade zip-lock stand-up pouches and plastic boxes of 100, 200 and 250 g capacity with labeling was found highly appropriate for retail marketing. The dried *sangri* price in market is from ₹ 600-800

per kg. Thus, the technology of processing, packaging and marketing of *sangri* have rewarding business opportunities for rural women, youth and farmers in north-west Rajasthan (**P.S. Gurjar, D.K. Samadia, M.K. Berwal, A.K. Verma and H. Ram**).

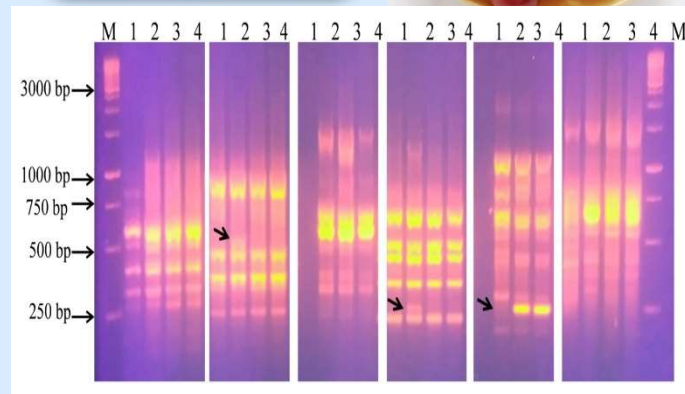


Process of *sangri* processing and packaging

Cultivation technology of Ridge gourd under different salinity level of irrigation water in arid region: Ridge gourd is a very important Indian vegetable crop. The growth and yield attributes of ridge gourd crop were recorded and it was found that increase in the salinity level of irrigation water did not significantly affect the growth parameters like number of vine, number of leaf/vine, vine length, leaf length, leaf width, number of male and female flowers. The maximum yield of ridge gourd (99 q/ha) was observed in treatment of salinity level-1 @ (.5EC_(dSm-1) + 50% organic + 50% inorganic) followed by salinity level-2 @ (2 EC_(dSm-1) + 50% organic and 50% inorganic and salinity level-3 @ 4EC_(dSm-1) + 50% organic and 50% inorganic and yield response (%) also followed same treatment. It was also observed that increase in the salinity level of irrigation water significantly affected the yield parameters like fruit weight (249.58 g) fruit length (23.5 cm) and fruit diameter (8.46 cm). The treatment of 50% organic + 50% inorganic gave the significantly good result with different level of salinity in irrigation water (**Anita Meena, M.K. Jatav and R.C. Balai**).

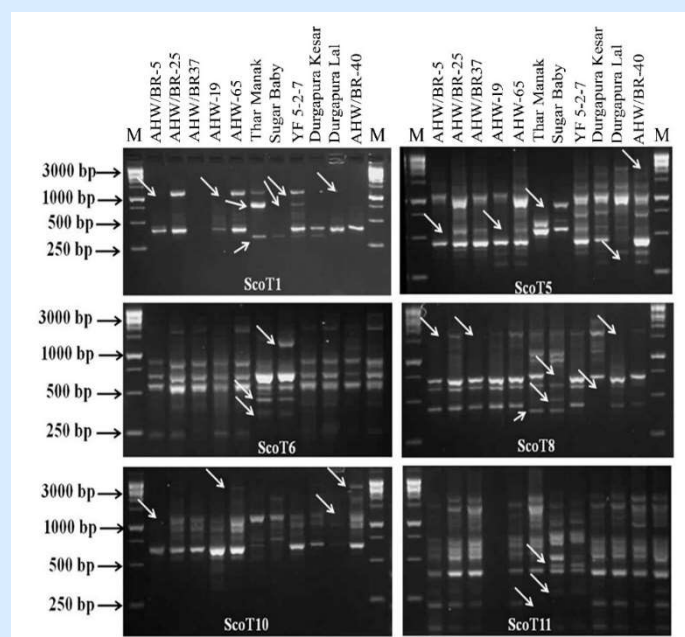
Identification of promising genotypes of date palm for fresh consumption.

CIAH/DP/F2: It is an early to mid-season (second week of July) ripening genotype was identified which possessed berry colour dark red, crunchy in taste and suitable for fresh consumption at doka stage. The genotype is seems to be similar to Khuneizi variety of date palm, therefore the genotype (CIAH/DP/F2) was characterized along with three related varieties using 12 ScoT markers for checking the duplication among the genotypes of date palm. Three ScoT markers were produced specific bands to genotype CIAH/DP/F2. Thus, the genotype CIAH/DP/F2 is different among the rest three genotypes which showed similarity at genetic level. In identified genotype, the morphological attributes was recorded as follows: average weight of bunch (6.50 kg), number of bunches per plant (11.0), number of strands per bunch (67.0), Number of harvested berry per strands (14.20), weight of fruit (7.50 gm), fruit length (32.5 mm), width of fruit (21.5 mm), TSS (26.8 °Brix) and yield per palm (65 kg per palm) (**R K Meena and Chet Ram**).



Profiling of ScoT markers on four genotypes of date palm for checking duplication and identification of CIAH/DP/F2.

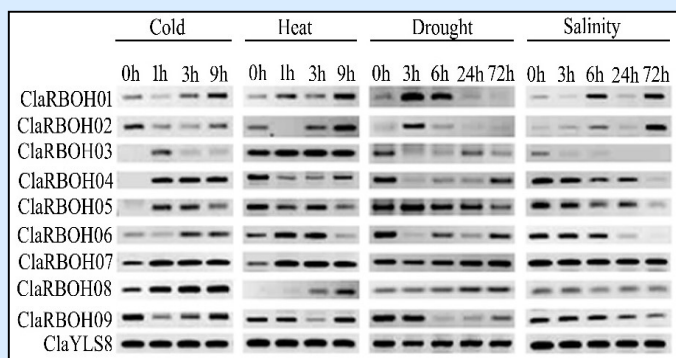
DNA fingerprinting of watermelon cultivars using functional molecular markers: DNA fingerprinting of 08 watermelon genotypes including 4 advance lines (AHW/BR-5, AHW/BR-25, AHW/BR-37 and AHW/BR-40) and 4 varieties (AHW-65, YF 5-2-7, AHW-19 and Thar Manak) identified at Institute level was done along with 3 commercially released varieties namely Durgapura Kesar, Durgapura Lal and Sugar Baby using sixteen ScoT and 25 CBDP markers. Consequently, eleven ScoT and 16 CBDP markers produced varietal-specific bands and differentiated the cultivars and advance lines to comparative controls (**Chet Ram, B.R. Choudhary, M.K. Berwal, A.K. Verma and K. Kumar**).



PCR profiling of ScoT markers on genomic DNA of watermelon cultivars

DNA fingerprinting of muskmelon cv. Thar Mahima: DNA fingerprinting of muskmelon cv. Thar Mahima was done using 15 CBDP markers. The profiling of CBDP markers was done using PCR amplification of marker-specific primers on genomic DNA of Thar Mahima and 6 known varietal genotypes of muskmelon used as comparative control. The PCR amplicons were analysed electrophoretically on 1.2% agarose gel and visualised under Syngene gel documentation system. The banding pattern in Thar Mahima variety was scored and fidelity of the specific bands was compared with banding pattern of 6 known varietal genotypes (comparative control). Out of 15 CBDP markers, twelve markers got amplified on genomic DNA of analyzed melon cultivars and out of 12 markers, four CBDP markers namely CBDP2, CBDP4, CBDP7 and CBDP12 were able to produce Thar Mahima-specific bands and differentiated the variety to comparative known genotypes of musk melon (Chet Ram and B.R. Choudhary).

Identification of RBOH genes responding multiple abiotic stresses in watermelon: For identification of Respiratory Burst Oxidase Homologs (RBOH) genes as multiple abiotic stress responsive genes in watermelon, the expression of 9 *ClaRBOH* genes was validated during drought, salinity, cold and heat stress in watermelon using semi-quantitative reverse transcription PCR (semi-qRT-PCR) analysis. The *yls8* gene (house-keeping gene) of watermelon was used as an internal control. Out of 9 *ClaRBOH* genes analyzed during cold stress, four genes (*ClaRBOH01*, *ClaRBOH06*, *ClaRBOH07* and *ClaRBOH08*) were up-regulated during cold stress. The *ClaRBOH1* and *ClaRBOH8* genes were gradually expressed in heat stress condition. Similarly, two genes (*ClaRBOH07* and *ClaRBOH09*) were gradually expressed as up-regulated fashion in time course experiment during drought stress in watermelon. During salinity stress, most of the genes shown down-regulation except *ClaRBOH01* and *ClaRBOH02* which were up-regulated at 6 h and 72 h (Fig. 2). These results indicated that the *ClaRBOH1* and *ClaRBOH8* genes might have potential roles against multiple abiotic stress responses in watermelon (Chet Ram, M.K. Berwal, A.K. Verma and K. Kumar).



Expression pattern of *ClaRBOH* genes during multiple abiotic stresses in watermelon

Assessment of molecular diversity and population structures among pomegranate germplasm: To assess the molecular diversity and population structures among pomegranate germplasm, ninety-six genotypes of pomegranate were characterized using 14 SSR markers. The fourteen SSR markers produced 40 alleles with an average of 2.85 alleles per primer. The PIC value generated by SSR markers was ranged from 0.078 to 0.52 with an average of 0.4136. The UPGMA clustering of the germplasm of pomegranate was distinguished the germplasm with two major groups. The group II was further divided into three sub-groups. The group I was consisted with 24 genotypes.

The population structure analysis revealed three major populations including admixtures within populations. The populations I and III showed more admixtures as compared to population II which showed pure type of population with some extend (Chet Ram and R. Kumar)

Farmers' programmes/extension activities.

(a). At H.Q. Bikaner

❖ Trainings.

- Conducted 08 days programme/training (ONLINE) during the "Regional Awareness Campaign on Natural and organic farming of arid horticultural crop under *Bharat Ki Ajadi Ka Amrit Mahotsava* at the Institute from 01.02.2022 to 08.02.2022.
- Conducted Five days Training programme organized by ICAR-CIAH Bikaner in collaboration with ATMA-Jhunjhunu from 21.03.2022 to 25.03.2022.
- Organized a one day farmers' training programme on "Natural Farming" on the occasion of Mega Campaign held "Annadata Devo Bhava" under the programme *Azadi Ka Amrit Mahotsava*, Government of India at Himtasar village of Bikaner district on 24.04.2022 (S.R. Meena and R.C. Balai).

❖ Trainings under SCSP Schemes.

During the reported period of time 16 training programmes including trainings under SCSP Scheme were conducted on different topics/aspects related to improved arid horticultural production technologies (M.K. Jatav, R.C. Balai, Anita Meena, Hanuman Ram, Pawan Kumar Poonia and SCSP Committee).



❖ Trainings conducted for women empowerment.

Trainings programmes on women empowerment and women farmers were organized time to time under different occasion like International women day, National women day under SCSP farmers training programmes etc. during the reported period (Anita Meena, M.K. Jatav, B.R. Choudhary, Roop Chand Balai, M.K. Hanuman ram, Pawan Kumar)



Front Line Demonstration (FLDs).

- Conducted 02 FLDs of improved variety of kachri (AHK-119) and snapmelon (AHS-82) at KVK, Chandkothe, Churu on 14.03.2022 through Dr. Aditi Gupta, SMS, Home Science (seed sent through Bhawani Shankar, Driver, KVK, Churu on 14.03.2022).



- Conducted FLDs of improved variety of kachri (AHK-119) and snapmelon (AHS-82), ridge gourd (Thar Karani), long melon (Thar Sheetal) at the field of Sh. Bhanwar Lal (Pappu) Meghwal (Kadela) of Ambasar village of Bikaner district on 09.03.2022.

In addition to above FLDs, > 30 method demonstration of the production technologies of arid horticulture were also performed at the Institute to the visiting farmers or while

❖ Organization of Exhibitions.

- The Institute participated and displayed technological exhibition of the Institute in National Kisan Melea-2022 organized by ICAR-CSWRI, Avikanagar (Tonk) at its campus on 04.01.2022 where our exhibition was honoured with SECON "BEST EXHIBITION AWARD". Hon'ble Minister of Agriculture and Farmers Welfare of States GIO, Sh. Kailash Ji Chaudhary was the Chief Guest of this Kisan Mela.



- The Institute participated and displayed the technological exhibition of our Institute during "International Camel Festival" to be organized at NRCC Campus, Bikaner on Sunday dated-06.02.2022. During this festival, our Institute was honoured with SECOND BEST EXHIBITION AWARD.
- The Institute Participated and displayed the technological exhibition of the Institute in Farmers' Fair" organized by NRCSS, Tabiji, Ajmer on 11.03.2022. Hon'ble Minister of States for Agriculture and Farmers' Welfare, GOI, New Delhi, Sh. Kailash Chaudhary, was the Chief Guest of the above fair. During this farmers' fair, our Institute was honoured with "BEST EXHIBITION AWARD".



- The Institute participated and displayed the technological exhibition of the Institute in "Shri Mallinath Pesu Mela Tilwara" organized by CAZRI, Jodhpur and Department of Livestock, Barmers during 01.04.2022 to 03.04.2022.
- The Institute participated and displayed the technological exhibition of the Institute In "Mega show of ICAR Technologies and State Level Kisan Mela" organized by ICAR-CSWRI, Avikanagar, at CCS-NIAM, Jaipur on 31.05.2022.



- The Institute participated and displayed the technological exhibition of the Institute on the occasion of celebration of "49th Foundation Day" of ICAR-CSWRI Arid Region Campus, Bikaner on 07.04.2022. During our Institute was honoured with "BEST EXHIBITION AWARD" during the above programme.
- The Institute participated and displayed technological exhibition of the institute during the Kisan Mela organized by KVK-1 (SKRAU) Bikaner under National Campaign on "Kisan Bhagidari, Prathamika Hamari under Azadi ka Amrit Mahotsva on 26.04.2022 at KVK-1 (SKRAU) Bikaner (Rajasthan).



Exhibition at Kisan Mela organized by KVK-1 (SKRAU) Bikaner 26.04.2022.

❖ Organization/Celebration of days/ weeks/ fortnights

- Celebrated "World Pulses Day" at the Institute on 10.02.2022
- Celebrated "National Science Day" On 28.02.2022 at Shanskar Bal Bharati Sec. School, Bechwal Bikaner in which more than 100 students/teacher participated and the Scientists/technical of the Institute delivered the lecture on different relevant topics during the programme.
- Celebrated "Seed Distribution Day" at the Institute on 10.02.2022
- Celebrated "International Women Day" at the Institute on 08.03.2022.
- Organized "PM Kisan Samman Nidhi Fund Programme" in virtual mode at the Institute on 01.01.2022 during which several farmers were called/interacted in virtual mode.
- Celebrated "National Girl Child Day on 24.01.2022 in Library-cum Video Conferencing Hall of the Institute in which girls of the staff colony and others participated.
- Organized "Regional Awareness Campaign on Natural and organic farming of arid horticultural crop under *Bharat Ki Ajadi Ka Amrit Mahotsava* at the Institute from 01.02.2022 to 08.02.2022 in virtual mode (online).
- Organized Mega National Campaign on "*Kisan Bhagidari, Prathamikta Hamari*" under the programme *Azadi Ka Amrit Mahotsava*, Government of India during 25.04.2022 to 30.04.2022.
- Organized a National Campaign on "Kisan Bhagidari, Prathamikta Hamari under Azadi ka Amrit Mahotsava at Farmers' fields in the villages of Bikaner district like Sarahkunjiya, Khara, Beechwal, Pemasar, local nursery entrepreneurs, etc., on "*Diversification of farming through arid horticulture*" on 28.04.2022.
- Celebration of World Environment Day: ICAR-Central Institute for Arid Horticulture enthusiastically celebrated World Environment Day on 5th June 2022. On the occasion plantation work was done in the institute.
- The activities like talk on importance of cleanness-cleaning and *Swacchata* in our daily life and on the part of our health, environment, farming; experience sharing on *Swacchata* by farmers, and officials of civil societies, officials of Gram

Panchaya, students, teachers, felicitation of farmers/officials of civil societies, etc., were organized during the reported period of time.

❖ Other extension activities:

- More than > 500 farmers, students, field workers, supervisors, SMS, dignitaries/ NGO, etc. were visited to Institute during the reported of time.



- More than 16 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 > 1250 technical folders/literature were distributed among the farmers/ clients during different extension programmes/activities/ exhibitions, occasions.
- There were made > 11 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.

❖ **Presentation/ participation/ organization of Workshop /Seminars/ Symposia/ Conference.**

- Organized in one day Webinar organized during the Mega campaign on "ANNADATA DEVO BHAVA" under the programme *Azadi Ka Amrit Mahotsava*, Government of India in virtual (online) at ICAR-CIAH, Bikaner on 23.04.2022.
- Organized a webinar on "Diversification of farming through arid horticulture" at the institute in online/zoom/offline mode during which about 120 farmers, entrepreneurs, scientists, students and field workers participated.
- Attended IGFRDI Diamond Jubilee Online Lecture Series-2022 on "Entrepreneurship development in processing fodder and allied crops" organized by Agri-Business Incubation Centre of ICAR-IGFRDI, Jhansi in collaboration with Indian Society of Agriculture Engineering, New Delhi and Range Management Society of India, Jhansi.
- Dr. D.K. Samadia, attended 26th Research Worker Group Meeting of AICRP on Arid Zone Fruits at ANDUAT, Ayodhya (UP) from 28-30 April 2022, and act as panelist of Session-II : Plant Genetic Resource Management. He also attended 40th annual group meeting of AICRP on vegetable crops of IIVR, Varanasi from 15 - 18 June 2022 virtually.
- Dr. V. V. Apparao Attended the 2nd Horticultural Summit-2022 from April 27-29 in 2022 at Navasari agricultural University, Navasari, Gujarat, India.
- Dr. S.K. Maheshwari Attended National Symposium (online) on "Recent Trends in Phytopathology to Address Emerging Challenges for Achieving Food Security" organized by ICAR-VPKAS, Almora and Indian Phytopathological Society (Mid-Eastern Zone Chapter) during 21-22 February, 2022. He also Attended 2nd Indian Horticultural Summit 2022 on "Horticulture for Prosperity and Health Security" at Navsari Agricultural University, Navsari, Gujarat during 27-29 April, 2022.
- Dr. A.K. Singh Attended 2nd Indian Horticulture Summit-2022 organized at NAU, Navsari (Gujarat.) during 27-29 April, 2022.
- Dr. D. S. Mishra Participated in the National Webinar on 'Utilization of Fruit Waste for Economic and Nutritional Security' on February 11, 2022 organized by ICAR-NAHEP-IG at UBKV, Cooch Behar, West Bengal through virtual mode.
- Dr. D.K. Sarolia attended and presentation in KRIBHCO cooperative conference organized by Krishi Bhawan, Bikaner on 28 March, 2022 and "National webinar on significance of experimental designs in agricultural research" organized by SKN AU, Jobner, Jaipur on 29 June ,2022.
- Dr. B.R. Choudhary attended one day international webinar on 'Prospects of varieties/ crops developed through genome editing (regulatory framework, technologies and experience)' organized by PPV&FRA, New Delhi on 24.05.2022.
- Mr. R.C. Balai attended/Participated a Three days online training programme on "Competency enhancement programme for effective implementation of training functions by HRD Nodal Officers of ICAR from 21 to 23 Feb., 2022 on virtual mode
- Dr. R.P. Meena, attended IPS 8th International Conference (hybrid mode) on "Plant Pathology: Retrospect and Prospects".at Sri Karan Narendra Agriculture University, Jobner, Jaipur, Rajasthan, India during March 23-26, 2022.
- Dr. Anita Meena attended "International Conference on ICAAAS-2022 at HPU, Shimla on date 12-14 June 2022.
- Dr. L. P. Yadav attended 2nd Indian Horticulture Summit-2022: Horticulture for prosperity and health security held at NAU, Navsari (Guj.) during 27-29 April 2022 and "AGRF Summit virtually on 3 March, 2022.
- Dr. Gangadhara K. attended 2nd Indian Horticulture Summit-2022: Horticulture for prosperity and health security held at NAU, Navsari (Guj.) during 27-29 April 2022 and National Symposium on 'Self-Reliant Coastal Agriculture' organised by Association for coastal agricultural research (ACAR) held at ICAR-Central Coastal Agricultural Research Institute, Goa during 11-13 May 2022
- Dr. J.S. Gora participated in Mega Show ICAR & State Level Kisan Mela dated on 31.05.2022 organized by ICAR-CSWRI, Avikanagar at ICAR- NIAM, Jaipur Rajasthan.
- Dr. Kamlesh Kumar participated in 26th All India Coordinated Research Project on Arid Fruits (AICRP-AZF) meeting held at ANDUAT, Kumarganj, Ayodhya (UP) during 28-30 April 2022 and online 'National Seminar on Fruit production in Eastern Tropical Region of India: Challenges and Opportunities' held at ICAR-Indian Institute of Horticultural Research, Bengaluru' RRS, Bhubaneswar during 24-26 March 2022.
- Dr. Hanuman Ram "2nd Indian Horticulture Summit-2022" held at NAU, Navsari, Gujarat during 27-29 April 2022 and Attended ICAAAS-2022 "IVth International Conference in Hybrid Mode on Innovative and Current Advances in Agriculture & Allied Sciences-ICAAAS-2022" (An International Event)" during 12-14 June 2022" through virtual mode.
- Dr. Pawan Kumar participated in winter school on "Bio-fortification of Staple Food Crops Through Conventional and Molecular Approaches" organized by Department of Molecular Biology, Biotechnology & Bioinformatics, CCS Haryana Agricultural University, Hisar during January 03-23, 2022.
- Dr. M.K. Choudhary attended International Webinar on Citrus Postharvest Handling, Processing Technology, and Value Chain Management organized by Department of Agriculture and Environmental Sciences, National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Kundli, India on April 11, 2022.

❖ **Visit of VIPs/Dignitaries at the Institute.**

- Sh. Pramod Kumar, Supervisor, Agrizone Institute, Bikaner visited with Institute students on 25.05.2023.
- Dr. Alok Kumar, Supervisor, Shekhawati Institute, Sikar visited with Institute students on 18.06.2022.
- Sh. Kailash Kumar, LSA, Joint Director (Animal Husbandry) on 09.02.2022
- Sh. Shankar Lal Jat, Deputy, PD, ATMA, Churu on 10.02.2022
- Sh. Shravan Kumar, Veterinary Officer, Pasu Palan Vibhag, Sri Ganganagar on 03.03.2022
- Dr. Rajendra Singh Rathore, Assoc. Prof.& Comptroller of Examination, SKRAU, Bikaner on 05.05.2022
- Dr. P. K. Yadav, Prof. & Head, Div. of Hort., SKRAU, Bikaner on 31.05.2022

- Dr. Madhu, Director, ICAR-IISWC, Dehradun, Uttarakhand on 10/10/2022
- Dr. H.P. Singh, Former D.D.G. (Hort) ICAR New Delhi on 19/12/2022.
- Sh. Suresh Kumar Dir. (Admin./CAO, SA) CAZRI on 18/05/2022
- Sh. R. P. Varma A.O. DMAPR, Anand on 18/05/2022
- Sh. Raghunathan R. A.O. (Rtd.) CMFRI, Cochi on 18/05/2022

❖ Awards received

- Participated and displayed technological exhibition of the Institute in National Kisan Mele-2022 organized by ICAR-CSWRI, Avikanagar (Tonk) at its campus on 04.01.2022 where our exhibition was honoured with SECON **"BEST EXHIBITION AWARD"**.



- We participated and displayed the technological exhibition of our Institute during "International Camel Festival" to be organized at NRCC Campus, Bikaner on Sunday dated-06.02.2022. During this festival, our Institute was honoured with **SECOND BEST EXHIBITION AWARD**.



- Participated and displayed the technological exhibition of the Institute in Farmers' Fair" organized by NRCSS, Tabiji, Ajmer on 11.03.2022. Hon'ble Minister of States for Agriculture and Farmers' Welfare, GOI, New Delhi, Sh. Kailash Chaudhary, was the Chief Guest of the above fair. During this farmers' fair, our Institute was honoured with **"BEST EXHIBITION AWARD"**.



- The Institute participated and displayed the technological exhibition of the Institute on the occasion of celebration of "49th Foundation Day" of ICAR-CSWRI Arid Region Campus, Bikaner on 07.04.2022. During our Institute was honoured with **"BEST EXHIBITION AWARD"** during the above programme.
- Dr. S.K. Maheshwari received 'Fellow Award' in 2nd Indian Horticulture Summit- 2022 at Navsari Agricultural University, Navsari (Gujarat) during 27-29th April, 2022 and 'Second Best Oral' in oral presentation in 2nd Indian Horticulture Summit- 2022 at Navsari Agricultural University, Navsari (Gujarat) during 27-29th April, 2022.
- Dr. A.K. Singh received best oral presentation award in 2nd Indian Horticulture Summit-2022 on Horticulture for Prosperity and Health Security, 27-29 April, 2022 at the Navsari Agricultural University, Navsari, Gujarat.
- Dr. D. S. Mishra received Fellow of ISHRD Award-2019 & 2020 conferred by Indian Society of Horticultural Research & Development (ISHRD), Uttarakhand during Progressive Horticulture Conclave (PHC 2023) held at GBPUAT, Pantnagar, during 3-5 February 2023.
- Dr. R.P. Meena received best oral presentation award in the IPS 8th International Conference (hybrid mode) at Sri Karan Narendra Agriculture University, Jobner, Jaipur, Rajasthan, India during March 23-26, 2022.
- Dr. L. P. Yadav received Fellow of the SHRD Society in 2nd Indian Horticulture Summit – 2022 at NAU, Navsari, during 27-29 April 2022; best oral presentation award in 2nd Indian Horticulture Summit – 2022 at NAU, Navsari (Gujarat), during 27-29 April 2022 and best oral presentation award in National Symposium on 'Self-Reliant Coastal Agriculture' 2022 at ICAR-CCARI, Goa, during 11-13 May, 2022.
- Dr. Gangadhara K. received best oral presentation award in 2nd Indian Horticulture Summit – 2022 at NAU, Navsari (Gujarat), during 27-29 April 2022 and best oral presentation award in National Symposium on 'Self-Reliant Coastal Agriculture' 2022 at ICAR-CCARI, Goa, during 11-13 May, 2022.
- Dr. Hanuman Ram received "Young Horticultural Scientist Award" from Society for Horticultural Research and Development at NAU, Navsari, Gujarat on 27 April 2022 and best poster presentation award in National Conference cum 9th Rajasthan Science Congress held at SKNAU, Jobner during 15 -17 December, 2022.
- Dr. B. R. Choudhary, acted as reviewer of a research paper of Indian Journal of Agricultural Sciences.

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