



CIAH Newsletter

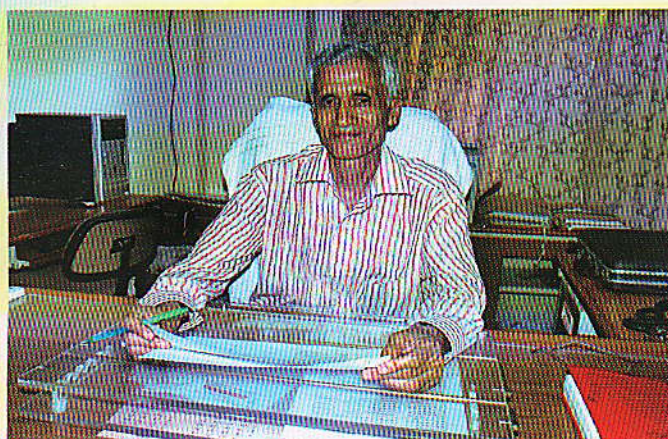


CENTRAL INSTITUTE FOR ARID HORTICULTURE
Beechwal, Bikaner-334 006, Rajasthan

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January-June, 2014

FROM THE DIRECTOR'S DESK



It gives me an immense pleasure in bringing out this six monthly newsletter of the ICAR-Central Institute for Arid Horticulture, Bikaner (Rajasthan). Owing to their strength such as vast area, ample of solar radiation, low incidence of disease and pests, unique biodiversity, etc., the hot arid and semi-arid regions have potential to become the horticultural bowl of India provided adequate scientific technologies are developed keeping in mind the dynamics of arid horticulture. In view of the above facts, the scientists of Central Institute for Arid Horticulture, Bikaner (Rajasthan) are working hard to develop the compatible technologies for the production of horticultural crops under scarce water conditions, extremes of temperatures, uncertainty of rain fall, poor soil condition, etc. The Institute undertakes basic, applied and strategic studies for developing technologies to enhance the production and productivity of the horticultural crops under stressful environmental conditions. The ultimate goal of the Institute is to change the barren and unproductive land of the hot arid and semi-arid regions of the country into productive green belts; besides, socio-economic upliftment of rural inhabitants of such areas. The Institute has developed several location-specific suitable ideal agro-techniques, varieties and other scientific approaches to encourage the horticultural development in hot arid regions. In this direction, the major efforts made by the Institute for the growth and development of arid horticulture during the last six months are being illustrated through this newsletter in brief.

S.K. Sharma

(S. K. Sharma)
Director

RESEARCH SPECTRUMS

1. Bikaner

Evaluation and maintenance of spongegourd germplasm :

During the reported period, there were evaluated 16 germplasm lines of spongegourd during rainy season of 2013 for yield and other horticultural traits. Observed a wide range of variation for days taken to 50% female flowering (44.60-53.93), node number on which first fruit appeared (11.8-18.8), ovary length (4.2-5.6 cm), fruit length (10.8-19.5 cm), fruit weight (62.4-97.0 g) and number of marketable fruits per plant (21.20-35.53). Among the evaluated germplasm the AHSG-28, AHSG-29 and AHSG-34 were found promising in respect of earliness, fruit length and yield. The seed of all the lines was maintained through selfing for further utilization. (Dr. B.R. Choudhary)



Fig. : AHSG-28: A promising line of spongegourd

Transcriptome profiling in *Z. nummularia* during low

moisture stress: Using standardized *in-vitro* technique, mRNA isolated from leaf samples of control and stressed (0.3MPa) *Z. nummularia* of Jaisalmer genotype. Transcriptome profiling was done and *De novo* transcriptome were assembled for both control and stressed plant samples. The trimmed reads were aligned to the assembled transcriptome (length \geq 150bp) using Bowtie2 program. Among transcripts identified, 283 transcripts found down regulated and 554 up regulated in comparison to control. The important down regulated transcripts identified are: LRR receptor like serine/threonine protein kinase, oligo peptide transporter OPT family, myrcene synthase, LRR protein kinase family isoform1, ATP binding cassette transporter, phytochrome kinase, pectinesterase inhibitor like-35, auxin efflux facilitator

isoform 1, multidrug resistance protein, pectin methyl esterase 3 and ABC transporter B family. Similarly some of the up regulated transcripts are: otokeratin, raffinose synthase family protein, wall associated receptor kinase like, acyl transferase like protein, cadmium/zinc transporting ATPase 3 like, sucrose synthase 6-like, cytochrome P-450 like, phosphatase 2C family protein and TT12-2 MATE transporter (Dr. P.N. Sivalingam, Dr. Dhurendra Singh and Dr. R. Bhargava)

Morphological characterization of mulberry: In order to allow effective use of plant genetic resources for the purpose of improved crop productivity and to develop new varieties more adapted to abiotic and biotic challenges under changing environmental conditions, breeders must have essential information about them. Therefore, mulberry (*Morus* sp.) genotypes viz., CIAH-1, CIAH-2, CIAH-3, Delhi Local, Gurgaon Local, SL-1, Ajmer, MI-315 and MI-380, available at Germplasm Block were characterized morphologically for qualitative and quantitative characters, during the period reported. Distinct variations have been noted in leaf lobes and leaf size. However, shape of leaf and leaf base were found to be cordate in all the studied varieties. Similarly, leaf arrangement, petiole attachment and second order vein was noted to be alternate, marginal and brochidodromous, respectively. Nature of leaf base varied from acute to acuminate. Likewise, leaf margin found to be coarse or fine serrated. Fruit colour varied from white, green to red. Highest average fruit weight was recorded in Delhi Local followed by Gurgaon Local and CIAH-1 (Dr. Hare Krishna, Dr. Dhurendra Singh and Dr. R.S. Singh)

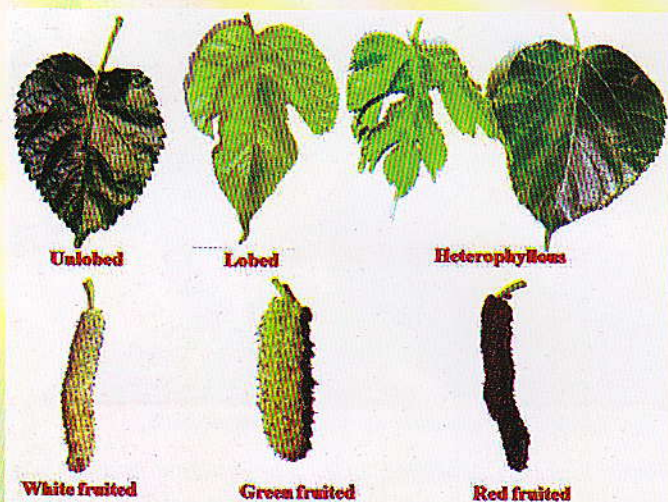


Fig. : Variations in leaf and fruit morphology of mulberry genotypes

Record of moth, *Anarsia triaenota* Meyrick, on khejri: The *khejri*, *Prosopis cineraria*, is also known as "Queen of the Desert" and a predominant constituent of the vegetation complex in the arid region of Rajasthan. The *Khejri* is an integral part of the life support systems of rural communities. This moth, *A. triaenota* (Gelechiidae: Lepidoptera), was recorded on *khejri* in the month of April to September, 2013 at experimental farm of ICAR-Central Institute for Arid Horticulture, Bikaner.



Fig. : Damage by *Anarsia triaenota* in *khejri* plant

This moth seems to be a new threat to arid ecosystem and caused severe problem during this year. The larvae damages new leaves and make the gallery inside the leaves of the *khejri* plant. Due to attack of this pest, the growth of *khejri* plant is suppressed and new leaves dry out. Larval and pupal development took place inside gallery of leaves. The incidence of moth was recorded from 14.67 % to 80.33 %. The incidence started from the month of April to end of September and highest intensity was recorded in the month of June to July.

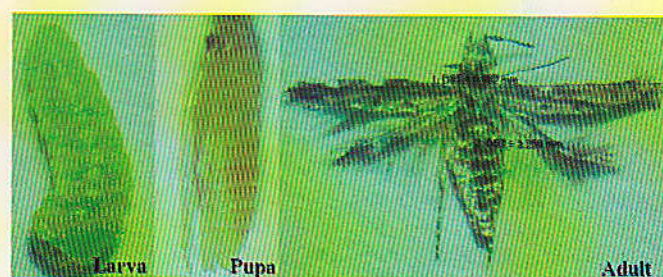


Fig. : Larva, Pupa and Adult of *Anarsia triaenota*

The adult body is brownish-black color. Labial palpus second segment covered with long or small scales; antenna filiform and length of antenna is 2.18 mm; metathoracic legs with hair like scales on hind tibia. The female was distinctly bigger than the male. The length and width with wing expand of adult body was 3.26 mm and 6.82 mm, respectively (Dr. S. M. Haldhar and Dr. V. Karuppaiah)

Bael as a host for citrus leaf minor, *Phyllocnistis citrella* Stainton : Incidence of citrus leaf miner, *Phyllocnistis citrella* Stainton (Lepidoptera: Gracillariidae) has been noticed on *bael*, *Aegel marmelos* Linn, which is one of the important Rutacea family fruit crop grown widely in arid, semi-arid and other subtropical regions of India. The incidence was observed during second fortnight of March at CIAH experimental farm. The minute caterpillar mines the leaves superficially on the epidermis of tender leaves especially at new sprout stage and infestation was about 2% of leaves. The damage of mining gives serpentine appearance and silvery look. Affected leaves also curled up from margin and turn to pale colour. (Dr. V. Karuppaiah, Dr. S. M Haldhar and Dr. R.S. Singh)



Fig. : Leaf minor infested *bael* leaves

Technologies developed for bottle gourd cultivation under hot arid agro-climate: The concerted research efforts from 2006-2013 resulted into the development of channel and drip technology adopting production site management approach for bottle gourd cultivation in hot arid agro-climate. The technological interventions result into standardization of sowing time, season and techniques, and management practices under abiotic stress conditions and are recommended. The best sowing time for rainy and summer season crop is on-set of monsoon or July and first fortnight of February, respectively. To minimize the ill-effects of low and high temperature conditions and promotion of spring-summer crop, an innovative Tent-technology (modifications in low tunnel) is developed in which sowing is done in the first week of January only and resulted to the earliest harvesting from middle of March. In the developed and lay-out field, channels or deep furrows of 50 cm wide are prepared at 2.0 m distances as seed beds, which are of about 25 m in length on one-side of water supply line. Only channels were fertilized with FYM (50 q), vermin-compost (5 q), DAP (100 kg), SSP (100 kg), urea (50 kg), MOP (50 kg) and 10 kg methyl parathion (2 % dust) as basal dose/ha and mixed thoroughly as seed beds. About two kg/ha seed is sufficient, and prior to sowing it was soaked in water for 6 hours and also treated with fungicide. Two seeds are enough for each sowing point at 50 cm distance and sowing is done at inner down slope of channels or near to the drippers of lateral lines and 1 or 2 healthy plant is allowed to grow and thinning is done at 18-21 days. The crop was irrigated at 5-6 days interval by flood method only in the channels or at 2-3 days intervals for 1.5-2.0 hours under drip technology (laterals 14-16 mm and 4 lph in-line emitters) in sandy soils. Manual hoeing and weeding operations in the channels were done at 18-21, 30-35 and 45-50 days from sowing, and weeds between the channels (in vine spread area) were controlled by cultivating the area with power tiller. At this time also urea (50 kg/ha) is applied in 2-3 split doses, and similar time schedule was practiced and is recommended for spraying

of insecticides to control minor insects as early plant growth, flowering and fruit setting period. On pooled basis, an improvement in fruit yield in var. Thar Samridhi was recorded with drip technology (365 q/ha) and it was 25.5 % higher from channel technology (291q/ha) of crop cultivation with limited irrigation water. Similarly, improvement in seed yield was recorded with drip technology (19 q/ha) and it was 39.6 % higher from channel technology (14 q/ha) (**Dr. D. K. Samadia**)



Fig. : A view of production system of bottlegourd under channel and drip technology

Identification of *Fusarium acuminatum* Ellis & Everh causing *Fusarium* wilt in muskmelon (*Cucumis melo* L.) : *Fusarium* wilt caused by the fungus *Fusarium acuminatum* in muskmelon plants occurred at Vegetable Block of this Institute during summer season of 2014. The disease symptoms appeared at flowering stage of the crop. The leaves are accompanied by yellowing and marginal necrosis. The infection results in lesion formation on the collar region and infected areas appear brown and water soaked. Wilting starts suddenly following fungal infection. As a result of softening of the tissue, the plants shriveled, followed by rapid mortality of whole plant. The older plants wither and die during the growing season under conditions of sufficient high inoculum density or a susceptible host. A fungal growth of the pathogen develops on the surface of infected/dead muskmelon stems (pathogen *Fusarium acuminatum* with I.D. No. 9409.14 dated: 28-05-2014 identified from Division of Plant Pathology, IARI, New Delhi (**Dr. S. K. Maheshwari and Dr. B. R. Choudhary**))



Fig.: Muskmelon plants affected by *Fusarium* wilt

Management of watermelon/mateera diseases under hot arid conditions: The field experiment was conducted during summer season of 2014 for management of watermelon/mateera diseases at Pathology Block of this Institute. Eleven treatments such as 05 chemicals (copper oxychloride @ 0.25%, carbendazim @ 0.1%, mancozeb @ 0.25%, imidacloprid @ 0.05% and acephate

@ 0.06%), 04 bio-agents (*Aspergillus niger* @ 5%, *Pseudomonas fluorescens* CIAH-196 @ 5%, *Trichoderma* CIAH-240 @ 5% and *Trichoderma* Non-Resistant @ 5%) and 01 botanical (onion leaf extract) as well as control without any spray were taken for this study. Sowing of *mateera* variety 'Thar Manak' was done on 26th February, 2014 after seed treatment with imidacloprid @ 0.05%. Thereafter, one spray each of the above treatments was also given, separately, on the crop. All the treatments were found effective against the diseases. Imidacloprid (0.05%) was found the most effective treatment as seed treatment + one foliar spray against mosaic disease with minimum disease incidence (20.0%) in *mateera*. This is due to controlling of insect vector (aphid) population, which transmit the virus in the healthy plants and cause mosaic disease. Mancozeb (0.25%) was the best fungicide as foliar spray after seed treatment for reducing *Alternaria* blight as treated plants noted the lowest disease severity (9.50%) under hot arid conditions. (Dr. S. K. Maheshwari)

Evaluation of Date palm germplasm: Conservation and evaluation of sixty one genotypes of date palm was carried out under hot arid environment. Delayed flowering was observed in male in comparison to female palms during the year. The flowering and fruiting were observed in 32 cultivars/genotypes out of 61 genotypes, while rest of the plants are under vegetative growth stage. 10-15 days delay flowering duration was observed during 2014 and hence, pollination and fruit set was also delayed. Early maturity in last week of June was noted in cv. Halawy and Dhamas. Bunch formation varied in date palm germplasm. Data on fruit yield and quality characters are in progress (Dr. R. S. Singh)

Survey and collection of bael: A survey was conducted during April–May, 2014 to Alwar, Sariska area of Rajasthan to identify elite type of *bael*. In Sariska forest area, small fruit type *bael* is available; however, from Malakhara, Rajgarh, Alwar 12 fruit samples were collected. The variability in fruit shape, size, and number of fruits per tree and quality attributes were observed. Fruit weight was vary from 0.580 - 1.520 kg with round, flat and cylindrical shape (Dr. R. S. Singh and Dr. S. R. Meena)

Collection and refinement/standardization of traditional technologies: Some rural wisdom based traditional ideas/technologies to produce the value added products of arid horticultural fruits and vegetables like *kachri* pickle, *kachri hajmola*, *chutney* of fresh *kachri*, toffees and chocolates of *ber*, honey of mulberry, etc. were collected and the work of the refinement and standardization on the same was initiated.

Refinement and standardization of the *kachri* pickle making processes/technique: The work of refinement and standardization was initiated for the preparation of *kachri* pickle. Two procedures were followed to prepare the same.

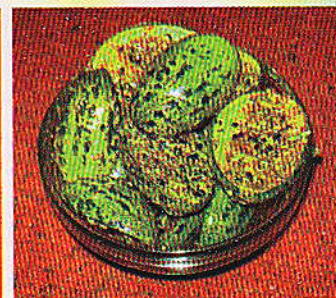
(a) Preparation of *kachri* pickle without peeling and with seeds: The mature and blemish-free fruits of *kachri* were selected, washed with clean water followed by drying for some time to remove the water from their surface. Thereafter, they were cut

into two halves. The seeds in the pieces of the *kachri* were left as such. After that the pieces of the *kachri* were left to dry for 24 hours under shade. After 24 hours, they were shallow fried with mustard oil for few moments and mixed with condiments and left for 12 hours at ambient temperature. Finally, prepared pickle was filled in a suitable glass jar and filled in with warmed and cooled mustard oil. Pickles were kept for a week under normal conditions. After a week, it was ready for consumption. Further refinement and standardization of work is anticipated.

(b) Preparation of for *kachri* pickle with peeling and without seeds: The procedure for preparation of *kachri* pickle with peeling and without seeds were similar to those stated above except the removal of peel and seeds following cutting *kachri* fruits into two halves.



(a) *Kachri* pickle with peeling and without seeds



(b) *Kachri* pickle without peeling and with seeds

The work on refinement/standardization of the process of purification of *kachri* juice for long time preservation and the process of preparing *chutney* of fresh *kachri* was also carried out during the reported period. (Dr. S. R. Meena)

2. At Godhra (Gujarat)

Khurani variety "CHESK-10": The selection of this variety was made based on the performance like flowering pattern, fruiting and fruit quality attributes. It is dwarf, starts flowering from the 4th year, regular bearer, ripens in the month of April and recorded 6.21g average fruit weight, 24.14 °Brix TSS. Fruit yield per plant was recorded to 11.20 kg during 8th year of orchard life under rainfed conditions of hot semi-arid ecosystem (Dr. Sanjay Singh)

Chironji variety "CHESC-7": The selection of this variety was made based on the performance like flowering pattern, fruiting and fruit quality attributes. It is dwarf, starts flowering from the 4th year, regular bearer, ripens in the month of April and recorded 1.15g average fruit weight, 57.56 % pulp and 23.90 °Brix TSS. Fruit yield per plant was recorded 13.20 kg during 9th year of orchard life under rainfed conditions of hot semi-arid ecosystem (Dr. Sanjay Singh)



EXTENSION PROGRAMMES/ACTIVITIES

1. Bikaner

Visit and interaction/ meetings at the Institute: During the reported period more than 400 farmers, students and agricultural supervisors, professionals, lecturers, teachers, scientists/

trainees, etc. were visited to the Institute's farm/experimental blocks and had interaction /meetings with them to acquaint/expose them with latest arid horticultural technologies as developed by the Institute.

Visit to farmers' fields and interaction/meetings with them:

More than 10 of farmer's fields were visited and they were provided with technical guidance / assistance to overcome their problems related to arid horticultural crop production.

Research- extension-farmers-interface meetings: During the reported period, there were held 15 Research-Extension-Farmers-interface meeting with 15 groups of farmers during their exposure visit at the Institute, farmer's field visits, during survey work and at the site of front line demonstrations, exhibitions and during the other programmes. Moreover, the work on organization of Farmer's Interest Groups / Commodity Interest Groups/ Self-Help Groups were also initiated at the different sites/ locations/ villages of Bikaner district (Rajasthan), where front line demonstrations of improved varieties of arid fruits/ vegetables crops and their agro-techniques were conducted.

Front line demonstrations/ adaptive trials: During the reported period, three frontline demonstrations of each improved varieties of vegetable crop viz., - AHS-82 (snap melon), AHK-119 (Kachri), were conducted on farmers fields (at Chak No. 493 RDL, Sarehkunjiya dated-15.03.14; Chak No. 05 KHM, Khinchiya, dated : 20.03.2014) of Bikaner district of Rajasthan. In addition, 10 method demonstrations about improved agro-techniques of arid fruits and vegetable production were given before visiting farmers/ extension functionaries or during farmer's field visits/ interaction.



Fig. : The scientists of the Institute demonstrating the technologies of sowing improved variety of kachri under drip irrigation system on farmers' field

Farmer's trainings : During the reported period, two farmer's training programmes (on / off campus) were conducted on farmers fields (at Chak No. 493 RDL, Sarehkunjiya dated-15.03.14; Chak No. 05 KHM, Khinchiya, dated : 20.03.2014) of Bikaner districts of Rajasthan.

Organization of Technological Exhibitions : During the reported period, 02 exhibitions of improved technologies of

arid horticulture were organized during the farmer's fairs at Nagpur and Ajmer. It is worthy to mention here that we organized an exhibiton of improved technologies of the Institute in India's "Western Zone Agricultural Science Fair" organized at NRCSS, Ajmer during 04 – 07 February, 2014 and our exhibition stall was **ranked Third** among all stalls organized by Government Deptt./ organizations.



Fig. : The scientists of the Institute interacting with the farmers during training programme on farmer's fields

Providing technical literature: About 200 copies of technical folders and bulletins (technical literature) were provided to the farmers /extension workers/ NGOS, during their visit, farmer's fair, exhibitions, meetings etc.

Mobile advisory service/ ICT based/ e-extension based activities: During the reported time, various farmers were answered & guided using mobile service, online telephonic conversation to solve their existing problems related to horticultural crop production. Some advance farmers were rendered technical guidance through e- mails. Besides, other activities included Institute's film show on computer system/ TV for client's knowledge, production of online (Institute's website) technological news through six monthly news letter, providing CD/DVD of the Institute's film and other programmes to needy clients, etc.

Empowerment of farm women: During the reported period, > 50 farm women visited to the Institute and had research- extension-farmers-interface meetings with them. They were exposed to modern arid horticultural crop production technologies, value addition techniques of arid fruits and vegetables during their visits, exhibitions, off campus interactions, etc. They were taught about the techniques, which may be helpful in reducing the drudgery in crop production and post harvest management. They were motivated to participate in main stream of arid horticultural developmental programmes. **(Dr. S. R. Meena, Dr. R. S. Singh, Dr. D. K. Samadia and Dr. D. Singh)**

2. At Godhra (Gujarat)

KVK Programmes and activities : During the reported period, Krishi Vigyan Kendra, Panchmahal (Godhra), Gujarat working under CIAH, Bikaner conducted 10 On Farm Trials (OFT), 14

Front Line Demonstrations (FLD) with 221 method demonstrations on various crops. The KVK conducted 49 training programs also on Agricultural and allied fields through which altogether, 2450 farmers benefited, out of them 2024 were male and 426 were female beneficiaries.

Other extension activities: Field Days (02 Nos.), Farmer Scientist interaction (02 Nos.), Kisan Goshthi (03 No.), Exhibition (01 Nos.), Film Shows (20 Nos.), farmers visit to KVK (45), SGH meeting (02 No.), farmers meeting (04 No.), night camp (01), exposure visit (01 No.), review meeting (02), scientist's visit to farmers field (80), Advisory Services (140), Animal Health Camp (02), diagnostic visit (45), Lectures in Training Programme (189), radio talk (06) etc.

Celebration of days/ programmes

• **Celebration of the foundation of the Institute:** The foundation of the Institute was celebrated on 01.04.2014 in the Institute.

Visit of VIPs/ Higher Dignitaries at the Institute

- S.D. Shikhamany, Former Vice Chancellor, Dr. Y.S.R. Horticultural University, Hyderabad, A.P. (India) visited the Institute on 02.04.2014
- Dr. J.S. Chauhan, ADG (Seed), ICAR, Krishi Bhawan, New Delhi- 110001 visited the Institute on 04.04.2014
- Justice Mohammad Rafiq, Rajasthan High Court, Jaipur visited the Institute on 19.04.2014
- Sh. M.S. Kala, IAS, Director, Watershed Development & Social Conservation, Jaipur visited the Institute on 25.06.2014

Important Meetings held

National Review Meeting cum consultation meet: National Review Meeting-cum-consultation meet on date palm sponsored by the Council was held on 21st June 2014 at Date palm Research Station, Mundra, Gujarat under the chairmanship of Dr. N.K. Krishna Kumar, Deputy Director General (Horticulture Science), ICAR and presided over by Dr. R.M. Chauhan, Vice-Chancellor of SDAU, S.K. Nagar, Gujarat. It was attended by



Fig. : Dr. N.K. Krishna Kumar, Deputy Director General (Horti.), ICAR, Chairing the National Review Meeting-cum- consultation meet

farmers, NGO's, Private companies involved in production of tissue culture date palm, researchers from ICAR institutes (CIAH, Bikaner; CAZRI, Jodhpur; CPCRI, Kasaragod) and SAU's (SDAU, S.K. Nagar and AAU, Anand). During the meeting, Dr. J.R. Faleiro, Food and Agriculture Organization (FAO) consultant at Riyadh (SA) was invited for special lecture. Dr Faleiro presented the global scenario of date palm production and its potential in Indian subcontinent. He emphasized that date palm will be future crop as date has higher energy (3000 cal/kg) with better minerals and pharmacological values. It was indicated that 60 per cent of the processed dates are produced in the Middle East and North Africa. It was highlighted that in India, date palm plantations are scattered with seed progenies. Therefore, it was emphasized that for optimum and quality production of date palm, uniform date palm plantation with better agronomic management of orchard is the need of the hour. The management of red palm weevil incidence in date palm and its management were also discussed. The major recommendations forwarded from the meeting were that India needs early maturing varieties (preferably 10th June) with tolerance to drought. Clonal fidelity test should be conducted on the tissue culture raised date palm material, so that farmers get quality and true to type plants. Keeping in view the demands of farmers, it was also highlighted that characters like sweet taste, earliness and colour of fruit should be taken into consideration to identify an elite type. The issue of pesticide residue was also addressed and in this pursuit it was recommended that pesticide residue analysis laboratory needs to be established in the SDA University, S. K. Nagar, Gujarat for exporting dates. It was also recommended that post harvest management techniques needs to be standardized for better storage and transportation. A date exhibition was also organized, which was inaugurated by Hon'ble DDG (Horti. Sci.). A total of 75 elite clones from 14 villages covering 5 talukas were exhibited of which 46 were red categories 22 yellow and 7 mixed types.

Dr. S.K.Sharma, Director, Dr. R. Bhargava, I/c Head, division of crop improvement & Principal Scientist (Plant Physiology), Dr. R.S. Singh, Principal Scientist (Horticulture), Dr. D. Singh, Principal Scientist (Plant Biotechnology) and Dr. P.N. Sivalingam, Scientist (Plant Biotechnology) participated from CIAH, Bikaner.

IRC Meeting: Held IRC meeting at the Institute from 09.04.14 to 10.04.14. During this meeting achievements of the different projects were presented and the R & D plans/ programmes for the financial year 2014-15 were decided.

Visits/ meeting attended by the Director of the Institute

(a) Dr. S. K. Sharma, Director of the Institute visited the following AICRP centres during the reported period

- Jadhavwari on 18.01.2013.
- Anantapur on 27th February, 2014.
- Jobner on 25th March, 2014.
- Jobner on 06.05.2014.

(b) Dr. S. K. Sharma, Director of the Institute monitored the work progress/ attended/ participated in the following meetings during the reported period

- Monitored the progress of Date Palm Tissue Culture Project at AAU, Anand and visited CHES and KVK, Godhra, Gujarat to monitor the progress during 08-11th January, 2014.
- Attended review meeting at NRCG, Pune on 17.01.2014 regarding ICAR-Bioversity international work Plan 2012-2016 under Chairmanship of Hon'ble DDG (Hort.), ICAR, New Delhi.
- Attended the Directors Conference at Baramati and Pune (Maharashtra) on 19-20 January, 2014.
- Participate in the RAC, IIVR, Varanasi as Member on 22—23 January, 2014
- Visited and monitor progress of AICRP on AZF Anantapur centre on 27th February, 2014.
- Attended DUS Review Meeting at UAS Dharwad w.e.f. 28th February to 1st March, 2014.
- Attended the first meeting of the Task Force for validation of DUS test guidelines for Watermelon and Muskmelon on 12th March, 2014 at New Delhi.
- Visited and monitor the progress of AICRP on Arid Zone Fruits centre Bawal on 13th March, 2014.
- Participated in the interaction meeting of Vice-Chancellors of State Agricultural Universities and ICAR Directors at New Delhi during 27.04.2014 to 29.04.2014
- Participated in the meeting in ICAR, New Delhi on 27.04.2014 to 29.04.2014.
- Attended Research Council Meeting at SKNAU, Jobner on 06.05.2014.
- Attended meeting of Task Force, PPV&FRA at New Delhi on 08.05.2014
- Visited SDAU, S.K. Nagar, Dantiwada (Gujarat) and to discuss with Hon'ble Vice Chancellor on 12.05.2014 regarding the arrangement of Annual Review Meeting cum Consultation Meet on Date Palm to be held at Date Palm Research Station, Mundra (Gujarat) on 21st June, 2014
- Attend DAC-ICAR Interface Meeting at NAAS Complex under the Chairmanship of Joint Secretary and Mission Director on 16.05.2014.
- Participated in the Review Meeting of National Advisory Board on Management of Genetic Resource on 30th May, 2014 and to monitor the experiments being conduct under AICRP on AZF at IIHR, Bengaluru centre.
- Attended Foundation Day Lecture of the National Academy of Agricultural Sciences on 5th June, 2014 at NASC Complex, Pusa, New Delhi.
- Participated in the NAIP Workshop on Impact of Capacity Building Programmes on 6-7 June, 2014 at NASC Complex, Pusa, New Delhi.
- Participated in the Annual Review Meeting cum Consultation Meet on Date Palm at Mundra (Gujarat) on 21st June, 2014.

- Participated in Brain Storming Session on "Take it to Farmers-The Farmers' Rights through Awareness" at NAAS, NASC, New Delhi on 24th June, 2014.

- Participated in the XXXII group meeting of AICRP (VC) and act as Co-Chairman in the Technical Session "Seed Production" at Raipur from 25-27 June, 2014.



PERSONALIA

Awards/Prizes/ Recognitions

- Dr. B.R. Choudhary was awarded with Young Scientist Associate Award 2014 in the field of Vegetable Science by Bioved Research Institute of Agriculture & Technology, Allahabad (UP) on the occasion of 16th Indian Agricultural Scientists & Farmers' Congress on Nanotechnological Approaches for Sustainable Agriculture & Rural Development on 22-23 February, 2014 held at Integral University, Lucknow (UP).
- Dr. Hare Krishna served as the reviewers of international journals '*Journal of Food Processing and Preservation*' and '*Journal of Food Biochemistry*'.
- Shravan Manbhar Haldhar served as a rapporteur in international conference on "*International Conference on horticulture for nutrition, livelihood & environmental security in hills: opportunity and challenges*" of technical session-IV (Plant health management) organized by UBKV (Hill campus), Kalimpong during 22-24, May, 2014.

Probation clearance and confirmation

Administrative staff

- Sh. P. V. Solanki, Assistant, PB-2/Rs. 9300-34800 with GP Rs.4200/- got clearance his probation w.e.f. 02.03.2013.
- Sh. Kuldeep Pandey, Assistant PB-2/Rs. 9300-34800 with GP Rs.4200/- got clearance his probation w.e.f. 07.01.2012

New entrants/ joining

- Dr. Pinaki Acharya, Sr. Scientist (Vegetable Science) joined the Institute on 17.01.2014.
- Sh. Jagan Singh Gora, Scientist (Fruit Science) joined the Institute on 11.04.2014.

Joining on transfer

- Sh. K. V. Parmar, Technical officer, transferred from CHES, Godhra, Gujarat to CIAH H.Q., Bikaner on 10.06.2014.
- Sh. C. S. Chamar, Sr. Technical Assistant, transferred from CHES, Godhra, Gujarat to CIAH H.Q., Bikaner on 10.06.2014.

Relieving on promotion/transfer

- Dr. Raja Shankar, Scientist, CHES, Godhra, Gujarat relieved on promotion to the post of Sr. scientist at CPRI, Shimla on 24.05.2014.
- Sh. R. D. Rasthwa, Technical Officer (Lab) relieved on transfer from CIAH, H.Q., Bikaner to CHES, Godhra, Gujarat on 18.06.2014

- Sh. K. K. Vankar, Technical Officer (Field) relieved on transfer from CIAH, H.Q., Bikaner to CHES, Godhra, Gujarat on 18.06.2014

Superannuation

- Sh. H. K. Joshi, Scientist has been relieved from CHES, Godhra, Gujarat on 31.05.2014 due to his superannuation

STEPS IN POPULARIZATION & COMMERCIALIZATION OF TECHNOLOGY: SUCCESS AND FEED BACKS

Production and commercial potentiality of improved variety of *Kachri* "AHK-119": A success story

A farmer, Sh. Mukesh Kumar Pareek S/o Sh. Satyanarayan Pareek, Village-Khinchiya (05 KHM), Tehsil- Bikaner, District- Bikaner, Rajasthan, grew *kachri* variety- AHK- 119 on his field



on 25 June, 2014. He sowed the seeds of the variety in the month of June (early *kharif* sowing) under drip irrigation system in anticipation that fruiting in the crop will be early during the *kharif* season, which could help fetching better price in the market. He got an average Rs. 24 / kg. of *kachri* fruits as against the was only Rs. 09 / kg for summer season crop. He succeeded in getting net income of Rs. 2, 20,000 by growing the improved variety of *kachri* (AHK-119) on his field as early *kharif* crop under drip irrigation system.

An interview was held with Sh. Mukesh Pareek and he responded that AHK – 119 variety of *kachri* released by ICAR-

Central Institute for Arid Horticulture, Bikaner, Rajasthan is a wonderful variety. It is a unique and first of its kind of *kachri* variety, which can be grown twice in a year by managing time and farm resources properly. It gives high production and highly suitable in hot arid climatic conditions. He further explained that the scientists of ICAR-Central Institute of Arid Horticulture, Bikaner, conducted front line demonstration of this variety in his field during the year 2013-14, wherein the performance and production of this variety was impressive; besides, being remunerative. Therefore, he planned to grow the same variety early in the *kharif* season of the year 2014-15. Under the technical guidance of ICAR-Central Institute of Arid Horticulture, Bikaner, he grew this variety on his field.

He further elaborated that the fruits of variety AHK -119 are unique in shape, size, taste, colour and quite attractive in appearance. Therefore, the majority of the consumers prefer to purchase it. It is highly suitable for preparing vegetable, *chutney*, dry powder, pickle, and mixing with other vegetables for acidulous taste.

Sh. Mukesh Kumar Pareek is an innovative farmer and has very novel ideas and take windfall profits of the improved technologies. He produced not only the fruits of the improved variety of *kachri* "AHK-119" but also began producing the seeds to earn money. During summer season, 2014-15, he multiplied/ produced 11.00 kg seeds of the above improved variety under the guidance of the scientists of this Institute and sold the same among his fellow farmers comfortably @ Rs. 2000/- per kg. (Dr. S. R. Meena)

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