



CIAH NEWSLETTER

ICAR-CENTRAL INSTITUTE FOR ARID HORTICULTURE

Beechwal, Bikaner-334 006, Rajasthan

Vol. 18 No. 1

January - June , 2018

Organization of international Yoga Diwas and a seminar on 'Yoga for healthy and prosperous life' at the Institute on 21.06.2018.



Sh. Arjun Ram Meghwal, Hon'ble Union Minister of State for Water Resources, River Development & Ganga Rejuvenation and Parliamentary Affairs, GOI, the Chief Guest; Prof. B. R. Chippa, Hon'ble, VC, SKRAU, Bikaner, Special Guest of the seminar organized on the occasion of International Yoga Diwas and Prof. (Dr.) P.L. Saroj, Chairman of the seminar and Director, of the Institute.

Organization of "Regional Arid Horticultural Fair" at the Institute on 17.03.2018



Dr. Vishwanath Meghwal, MLA, Khajuwala and Sansdiya Sachiv, Govt. of Rajasthan Chief Guest; Sh. Narayan Chopra, Mayer, Bikaner city; Sh. Satya Prakash Achariya, BJP President, Bikaner city; Sh. Shahi Ram Dusad, BJP President (rural area), Bikaner district, Special Guests; Prof. (Dr.) P. L. Saroj, Director of the Institute and the Chairman of "Regional Arid Horticultural Fair" and Mrs. Saroj releasing technical folders for the benefits of farmers during the inaugural function of the fair.

From the Director's Desk



The horticultural development in hostile climatic conditions of the hot arid region is a challenging task. But the application of power of science and mind with dedicated efforts can make possible to sustain the horticultural development in such climatic conditions and can be created a new dimension of better living of the rural people of the regions. Therefore, there is urgent need to develop climatologically and area specific suitable technologies of horticulture and transfer the same to the farmers fields of the region. Obviously, the hot arid regions have several kinds of unique constraints and harsh climate which lead to deprivation of horticultural development in these regions. Thus, keeping the above facts in mind, ICAR-Central Institute for Arid Horticulture, Bikaner (Rajasthan) is working hard to develop the compatible technologies which can function in potential production of horticultural crops in existing hard climatic situations of the hot arid regions of the country. The institute is fully aware and dedicated to change the hot arid unproductive barren land of Thar desert into productive green belt and creating new economic zone of the country through horticultural crop production. The Institute developing not only promising arid horticultural technologies but also having good programmes for dissemination of proven technologies to farmers' fields. I am feeling immense pleasure by bringing out this newsletter to illustrate the major efforts made by the Institute for the arid horticultural development during last six months.

(P.L.Saroj)

Director

RESEARCH SPECTRUMS

Identification of thornless *bordi* (*Z. rotundifolia*) genotype:

A thornless *bordi* genotype was identified during the reported period of time. The normal and vigorous shoots did not have any thorns upon them, while spur type shoots bore few thorns. This genotype could potentially be utilized either as a source of thornlessness ber variety or as root stocks. (Dr. H. Krishna, Dr. D. Singh and Prof. (Dr.) P.L. Saroj).



Plant vigour as a function of phloem:xylem ratio in ber:

Leaf anatomical studies was carried out in selected ber genotypes, which showed that lower phloem:xylem ratio leads to high vigour in plants. Among the studied varieties, phloem:xylem ratio was found lowest in Tikadi variety of ber under field conditions and it was a vigorous growing variety. Therefore, the findings of anatomical studies corroborate the field observations. Further, proportion of non-conducting tissues were comparatively lower in Tikadi than other varieties. This endorsed the fact that higher vascular bundle area facilitates sustaining high plant vigour as in Tikadi. (Dr. H. Krishna and Prof. (Dr.) P.L. Saroj).



Food value studies for nutritional yield in arid vegetables:

The food value analysis of tender fruits of mateera (loiya), tender pods of cluster bean (guarphali) and mature fruits of kachri and snap melon (kakadia) was done at marketable stages. The water content (%) was found highest in mateera (96.3) followed by snap melon (94.65), kachri (89.32) and cluster bean (86.89) on fresh weight basis. The percent dry-matter content was found higher in cluster bean (13.11) followed by kachri (10.68), snap melon (5.35) and mateera (3.70). The carbohydrate content (%) was found higher in snap melon (69.56) followed by kachri (61.50), cluster bean (45.70) and mateera (35.71). The percent protein content was found highest in cluster bean (29.1) followed by mateera (12.15), snap melon (2.37) and kachri (1.9). The percent fat content was found



higher in mateera (18.25) followed by kachri (12.3), snap melon (1.85) and cluster bean (1.58). The maximum percent crude fibre was in mateera (25.4) followed by kachri (10.2), cluster bean (9.01) and snap melon (5.34). The maximum calcium content (%) was observed in mateera (5.8) followed by snap melon (3.44), cluster bean (1.3) and kachri (0.90). The percent phosphorus content found higher in cluster bean (0.57) followed by snap melon (0.38), mateera (0.15) and kachri (0.003). On dry weight basis of produce, the total ash content (%) was highest in kachri (10.8) followed by cluster bean (3.49), mateera (3.3) and snap melon (1.64).

(Dr. D. K. Samadia and Dinesh Kumar).

Low tunnel cultivation of Long melon for early and off-season production

Low tunnel technology for cultivation of long melon var. Thar Sheetal was developed under this technology, about 45-60 cm deep and 45-60 cm wide trenches were made at a distance of 2.0-2.5 m in east-west direction. Long melon var. 'Thar Sheetal' was sown on four different dates of sowing *i.e.* December 10, December 20, December 30, 2017 and January 10, 2018. Two types of covering material *i.e.* biodegradable plastic sheet (25 micron) and non-woven cloth (25 gsm) was used. In second week of February when outside temperature increased, the covering was completely removed from the plants because it was found that the temperature inside the tunnel was 8-10°C higher than the outside. Under different dates of sowing and covering material it took 7-12 days after sowing for 50% germination. It took 59.1-66.5 days for first harvest at marketable stage. On an average each plant produced 13-18 fruits per plant and their fruit weight ranged from 49.6-73.5 g under different dates of sowing and covering material. Sowing on second date of sowing *i.e.* on 20th December covered with plastic sheet was found the best in overall yield along with an advancement of 30 days as compared to normal season which fetched higher price in the market.

(Dr. A.K. Verma and Dr. B.R. Choudhary).



Field view of low tunnel cultivation of long melon

Effect of height and time of pruning on yield of phalsa:

In an experiment, there were 4 pruning heights taken (0, 20, 40 and 60 cm height from ground level) and 4 timings of pruning (30 November, 15 December, 30 December and 15 January) of pruning. The observations were recorded that



Treatment T4H1 (pruned at 0 cm height and on 15th January) sprouted first (15th day after pruning) while treatment T1H4 (pruned at 60 cm height and on 30 November) took maximum number of days (85 days) for sprouting. Treatment T1H4

(pruned at 60 cm height and on 30 November) taken maximum time (141 days) from pruning to fruit maturity while T4H4 (pruned at 60 cm height and on 15th Jan pruned) took minimum time (95 days). Average highest yield (4.89 kg/bush) was recorded in treatment T4H2 followed by (4.19 kg/bush) in T4H3 while lowest (2.17 kg/bush) in T1H4 (**Dr. Kamlesh Kumar, Dr. SM Haldhar and Dr. D Singh**).

Primary and Secondary hardening of tissue cultured plants of date palm 'cultivar Halawy and Khalas': Tissue cultured plants of date palm 'cultivar Halawy and Khalas' with well developed roots and leaves were taken out from rooting media, washed with double distilled autoclaved water and placed in culture room for primary hardening under $27 \pm 2^{\circ}\text{C}$ temperatures and 3000 lux light intensity. Different potting media and mixtures of vermiculite, perlite, cocopeat and sand in various ratios were used for the purpose. Polythene bags with 04 holes of 04 mm were utilized as covering material to increase the relative humidity around the plants and kept the plants for about 2 months under such conditions. After that plants subjected to $28 \pm 5^{\circ}\text{C}$ temperature, 70-80 % relative humidity and 8000-10000 lux light intensity for better survival of plants. Well survived 32 plants then transferred to green house for secondary hardening under environment regime of $30 \pm 2^{\circ}\text{C}$ temperature, 60-70 % relative humidity and 10000-15000 lux light intensity. (**Dr. Kamlesh Kumar, Dr. Ajay Kumar Verma and Dr. D. Singh**).



Different potting media and mixtures used for primary hardening of date palm tissue cultured plants

Evaluation of ber based cropping system through intercropping of cluster bean and mustard

The ber (*Zizyphus mauritiana* L.) based cropping system was evaluated by intercropping of cluster bean var. Thar Bhadavi and mustard var. RGN-298 to quantify potential of the system under hot arid climatic conditions. Observations on various growth and yield parameters revealed that there was marginal difference on the yield of intercrop due to different spacing. The cluster bean pods attained the harvestable maturity for vegetable purpose 59.36-65.46 days after sowing. On an average 95.84-176.83 g green pod yield per plant was obtained. Grain yield was recorded and from the whole interspacing area among the ber based cropping system, total 67.00 kg of grain (dry seed) yield was produced. Similarly, the intercropping of mustard revealed that different spacing had marginal difference on the yield of the intercrop. Though the crop was more vigorous in lesser spacing as compared to more spacing but that was not reflected in the total yield. The crop attained 50% flowering and harvestable maturity 67-72 and 116-123 days after sowing, respectively. Then the crop was harvested and from the total area of interspacing, total 252.00 kg of grain yield was obtained. Biomass production of the both the crops were left as such for ploughing there itself for improvement of soil condition. Thus,

ber based cropping system involving intercrop of cluster bean during Kharif and mustard during Rabi has good potential for high productivity, profitability and sustainability of farming under hot arid conditions.

(**Dr. A.K. Verma and Prof. (Dr.) P.L. Saroj**)



Cluster bean var. 'Thar bhadav'

Mustard var. 'RGN-298'

Evaluation/adaptive trials of vegetable varieties: During the reported period of time, adaptive trials were conducted to evaluate the identified varieties of longmelon (Thar Sheetal) and ridgegourd (Thar Karni) during summer season of 2018 at four locations. The locations comprised of KVK, Pali (Raj.); KVK, Fatehpur (Raj.), ATC, Jodhpur (Raj.); and KVK, Panchmahal (Gujarat). Thar Sheetal of longmelon produced maximum yield at KVK, Pali (178 q/ ha) followed by KVK, Panchmahal (175 q/ ha), ATC, Jodhpur (170.30 q/ ha) and KVK, Fatehpur (165 q/ ha). Thar Karni variety of ridgegourd gave yield of 145.60 q/ ha at KVK, Panchmahal, 140.50 q/ ha at ATC, Jodhpur and 135 q/ ha at KVK, Fatehpur. (**Dr. B. R. Choudhary and Dr. S. R. Meena**)

Development of novel Intron Length Polymorphism (ILP) markers in *Khejri*:

In order to develop novel Intron Length Polymorphism (ILP) markers in *Khejri* [*Prosopis cineraria* (L.) Druce], eight hundred fifty two Expressed Sequence Tags (ESTs) were retrieved from EST database of NCBI (<https://www.ncbi.nlm.nih.gov/nucest/Prosopis+cineraria>) and processed for reducing and removing of the redundancy and vector sequences. The non-redundant 660 ESTs were analyzed for functional annotation using Blast 2go software (<https://www.blast2go.com/>). Consequently, the majority of the ESTs (73%) showed their involvement in drought responsive activities. Further, the ESTs were analyzed in PIP database of dicot plants and as a result, twenty two potential ILP markers (designated as PcILPs) were identified in these sequences. The primer pairs of ILP markers were customly synthesized and screened on genomic DNA of *Khejri* for PCR fidelity. Out of 21 PcILP markers, fifteen markers were amplified with desired amplicon size in *Khejri*. The profiling of developed ILP markers will be the immediate target of future studies for genetic diversity assessment in *Khejri*. (**Dr. Chet Ram, Dr. Mukesh Kumar, Dr. Kamlesh Kumar and Dr. R. Bhargava**)

Identification of thorny genotype of brinjal "AHTB-1":

During the reported period of time, a thorny genotype of brinjal "AHTB-1" was identified to grow under the high temperature of the hot arid regions. It can tolerate high temperature and sets the fruit profusely. Besides, it having ability fairly to tolerate against pests including fruit and shoot borer which are dangerous pests of brinjal. No severe incidence of disease was observed under field condition as well. The plants of thorny brinjal AHTB-1 are semi-spreading in nature, medium in height and have thorns on

their leaf and fruit calyx. Fruits were 5.95 cm in length and 6.89 cm in width. Each plant bears about 5-10 fruits weighing 325-400 g each. On an average, the fruit yield was 3.2-4.1 kg per plant.

(Dr. P. P Singh and Dr. A. K. Verma).



Effect of rootstocks on growth and fruit yield of Fremont cultivar under arid climate

Mandarin cv. Fremont was grafted on four rootstocks viz. Rough lemon, Kharna Khata, Pectinefera and Troyer. It was observed that the Fremont bore fruits in cluster (2-4 fruits per cluster) on whole four rootstocks. Plant height was observed highest on Kharna Khata (14.18%) over the standard check (Rough Lemon). Further, among the rootstocks Pectinifera was the most dwarf that exhibited 57.84 and 38.23 per cent lower plant height over most vigorous Kharna Khata and Rough Lemon, respectively. Number of fruits was recorded maximum on Kharna Khata (213) followed by Rough Lemon (140) and Pectinifera (51); and least on Troyer (30)



(Sh. J. S. Gora, Dr. B. D. Sharma, Sh. Ramesh Kumar and Dr. R. K. Meena).

Evaluation of pomegranate germplasm under hot arid condition:

Sixty nine pomegranate germplasm were evaluated under hot arid condition of Bikaner, Rajasthan. Observations were recorded on plant height, canopy spread, stem diameter and number of stems. The maximum plant height (152.33 cm) and canopy spread (135.00 cm N-S and 132.33 cm E-W) was recorded in Jodhpur Red, while minimum plant height (80.33 cm) and canopy spread (73.67 cm N-S and 75.00 cm E-W) was observed in Bedana Suri. Stem diameter was recorded maximum (20.17 mm) in Jalore Seedless and minimum (8.25 mm) in Gul-e-Shah. Number of stems was ranged from maximum (6.00) in P-26 and minimum (2.00) in Kurvi.



(Dr. R. K. Meena and Sh. Ramesh Kumar).

Handling cum Storage box for ber fruits: A new handling cum storage boxes were designed for improving the consumer appeal and acceptability. The box (23 x 23 x 4 cm) was made using three ply corrugated fiber board (CFB) material laminated on outer side and was equipped with 1 per cent ventilation for proper

exchange of gases and diffusion of transpired water. Inside the box, a ridge-furrow type septal frame was designed for holding of the fruits in appropriate place. The top cover of the box contained a transparent window slit (10 x 8 cm) showcasing the freshly packed ber fruits. The designed box could hold 750-800 g of fresh ber fruits. Freshly harvested mature green ber fruits (Kaithli) were found to be successfully handled and stored for 4 days under ambient conditions. A labeling provision was made on one side of the box which gives the basic information viz. variety of ber, net weight, date of packing etc. The newly designed ber handling cum storage box was released during the Regional Arid Horticultural Fair held at ICAR-CIAH, Bikaner on 17th March 2018. (Dr. V. R. Reddy, S., H. Krishna and Prof. (Dr.) P. L. Saroj).



Newly designed Ber Handling cum Storage box with Kaithli fruits

Development of Aonla-Ginger Mouth Freshener: During the reported period of time, a novel aonla mouth freshener using completely natural ingredients viz. aonla, beetroot, souf and sugar candy was prepared. However, being sweetend with sugar candy this couldn't be consumed by diabetic people depriving them from the benefits of aonla fruits. Hence, a new formulaton was developed using grated aonla shreds, ginger extract, rock salt and black pepper. The aonla fruits were shredded manually/mechanically. Fresh ginger was washed thoroughly, peeled, and blended into juice. Common salt (1 per cent) was sprinkled over the grated aonla and mixed thoroughly. Later ginger extract was added to the mixture and mixed thoroughly. The mixture was allowed to cure for about 24 hours where partial fermentation occurs imparting specific flavor to the product. Later black pepper powder was added to the residual mixture and dried in an air circulating tray drier at 60-65°C for 6-8 hours.

(Dr. V. R. Reddy, Dr. D. K. Sarolia and Dr. R. K. Meena).



Aonla-Ginger mouth freshener

Production system management in ber under hot arid ecosystem: Project (HORT CIAHSIL IXX13986) entitled "Production system management in ber under hot arid ecosystem" was initiated with the planting of 4 ber cv. Gola, Thai, Thar Sevika and Goma Kirti at different spacings (6x6 m,

6x3 m and 3x3 m) and systems of training (Y shaped, espalier and telephone) at Research farm block II of the Institute on 21st August 2017 with the objective of standardizing training system in ber cultivars and input requirement as well as insect-pest and disease dynamics at varying spacing in Thai ber.



(Prof. (Dr.) P. L. Saroj, Dr. K. Sarolia, Dr. B. D. Sharma and Dr. S. M. Haldhar)

Epidemiological studies of Fusarium wilt in muskmelon:

Seven muskmelon genotypes (Durgapura Madhu, MM-8, RM-50, Kashi Madhu, AHMM/BR-46, AHMM/BR-48 and AHMM/BR-52) were sown in the field on 26th February, 2018 during summer season at Pathology Block. Fusarium wilt was noted in muskmelon genotypes to varying extent depending on weather conditions and genotypes. During summer season, Fusarium wilt was first appeared in the field on 12th standard week of 2018 in different genotypes of muskmelon. Weekly observations were taken on per cent disease index (PDI) of wilt as well as meteorological data. Range of minimum PDI (2.78-6.43%) of Fusarium wilt was recorded at average maximum temperature (33.6°C), minimum temperature (16.4°C), av. maximum RH (58.6%) and minimum RH (23.1%), wind velocity (6.3 km/h), evaporation (6.6), BSSH (8.7 hours/day) and av. rainfall (0.0 mm) on 12th standard week of 2018 in different genotypes of muskmelon while maximum PDI (10.0-30.65%) was found at average maximum temperature (37.6°C), minimum temperature (21.5°C), av. maximum RH (44.3%) and minimum RH (18.7%), with wind velocity (6.5 km/h), evaporation (10.3), BSSH (9.0 hours sun shine per day) and rainfall (0.0 mm) on 16th standard week of 2018 in above muskmelon genotypes.

Identification of Promising Genotypes of Bael

CHESB-11: It was identified based on horticultural traits at CHES, Godhra, Gujarat. Average yield per plant was 84.10 kg in 8th year, fruit weight 1.48 kg, fruit size 14.10 cm x 15.20 cm, fruit girth 44.21 cm, shell thickness 0.14-0.15 cm, total number of seed 65- 75, seed weight 0.20g, total seed weight



17.58g, fibre weight 25.60 g, shell weight 200.20g, locules in cross section 14-17, TSS pulp 38.13^oB, TSS mucilage 49.80^oB, acidity (0.29%) and vitamin C 22.83 mg / 100 g pulp were recorded. It was highly suitable for sherbet; murabba and powder making. (Dr. A. K. Singh, Dr. Sanjay Singh, Prof. (Dr.) P. L. Saroj and Dr. R. S. Singh)

CHESB-16: CHESB-16 was also identified based on horticultural traits. Average yield per plant 74.20 kg in 8th year, fruit weight ranged between 0.9- 1.20 kg, fruit size 15.50 cm x 11.40 cm, fruit girth 42.20 cm, shell thickness 0.20 cm, total number of seed 98.14, seed weight 0.19g, total seed weight 19.51g, fibre weight 31.42 g, shell weight 185.20g, locules in cross section 14-16, TSS pulp 37.13^oB, TSS mucilage 48.75^oB, acidity (0.34%) and vitamin C 20.80 mg/100g pulp were recorded.



(Dr. A. K. Singh, Dr. Sanjay Singh, Prof. (Dr.) P. L. Saroj and Dr. R. S. Singh).

Selection and evaluation of promising genotype of tamarind.

CHEST-10 : Promising genotypes 'CHEST-10' of tamarind was evaluated. During the evaluation, the fruit yield was 80.20 kg per plant, 52.00 percent pulp and 70.50^o Brix TSS during ripening of the same were recorded. Peak period of ripening time was last week of March.

Manila tamarind- CHESM-4 : The Manila tamarind genotype 'CHESM-4' was selected on the basis of its flowering, fruiting and fruit quality attributes. It started flowering in 2nd year, peak period of flowering was noted in January-February with regular bearing. Its per fruit weight was 30.10 g with 75.10 percent pulp.

(Dr. Sanjay Singh and Prof. (Dr.) P. L. Saroj)

Farmers' programmes and extension activities

(a) At H.Q. Bikaner

Organization of "Regional Arid Horticultural Fair" at the Institute on 17.03.2018

A Regional Arid Horticultural Fair was organized at the ICAR-CIAH, Bikaner on 17.03.2018. Dr. Vishwnath Meghwal, MLA, Khajuwala and Sansadiya Sachiv, Govt. of Rajasthan was the Chief guest of inaugural function of the same. In this fair >



Dr. Vishwanath Meghwal, MLA, Khajuwala and Sansadiya Sachiv, Govt. of Rajasthan, Sh. Shahi Ram Dusad, BJP President, Bikaner district (rural area) and Prof. (Dr.) P. L. Saroj, Director of the Institute and the Chairman of the fair inaugurating the opening of the "Regional Arid Horticultural Fair" organized at ICAR- CIAH, Bikaner on 17.03.2018.

800 farmers, scientists, professionals, field workers, students and public representatives / dignitaries participated. During the fair 30 technological exhibitions (including both Govt. and Pvt. Organizations) were organized/ displayed for the benefits of the farmers/visitors. Scientist-farmers interaction meet and question-answers sangosthi were also organized to enrich the knowledge of the farmers/visitors about improved/innovative production system of horticulture, particularly in hot arid climatic conditions of the country. Crop competition programme was organized for the farmers and farmers who were awarded to motivate them to adopt the modern technologies on their fields/farms.

Other activities

During the reported period of time, 05 front line demonstrations, 05 farmers' training, 05 technological exhibitions and 03 field days were organized. More than 250 farmers were visited and interacted at the Institute, 31 farmers' field were visited, 34 research-extension-farmers-interface meetings were held at the Institute and at farmers' fields/FLDs sites, more than 100 farm women were educated and were exposed to modern arid horticultural crop production technologies, value addition techniques of arid fruits and vegetables during their visits, exhibitions and off campus interactions, etc. **(Dr. S. R. Meena, Dr. D. K. Samadia, Dr. D. K. Sarolia and Sh. R. C. Balai)**

Mera Gaon Mera Gaurav programmes : During the reported period of time, 14 visits, 47 online guidance, 38 on farm guidance, 38 method demonstrations, 02 field day and 02 farmers trainings were organized in adopted villages of the Institute viz., Khinchiya village, Sarahrupayat, Dholera, Bachchhasar and Kolasar village of the Bikaner district, Rajasthan under Mera Gaon Mera Gaurav programmes.

(b) At Regional Station (CHES), Godhara and Panchmahal, Gujarat.

During the period of January to June, 2018, KVK, Panchmahal conducted various activities viz. OFTs (06 Nos.), FLDs (06 Nos.), Training Programme (05), Animal Health Awareness Camp (01), Farmer Meeting (09), Field day (02), Kisan Mela (01), Exhibition (03), Radio Talk (06), TV Programme (03), Celebration of Special Day (02), Film Show on Improved Production Technology (05) and Live Telecast Programme of Honorable PM India to disseminate the suitable Agricultural Technologies for the farmers of Panchmahal district of Gujarat. Under these activities a total 7213 farmers and farm women participated and benefited. During a special training programme women group was trained to prepare the improved mango plants (Kesar, Rajapuri and Langra) through grafting method.

At regional station CHES, Godhra, Gujarat, 12 on/off campus farmer's training were conducted at the Station or in collaboration of the other institutions.

Organization/ Celebration of days / weeks.

Organization of international Yoga Diwas and a seminar on 'Yoga for healthy and prosperous life'.

During the reported period of time, an International Yoga Divas

programme was organized in collaboration with Dvendra Yog Shansthan, Bikaner on 21-06-2018 at Govt. Polytechnique collage of Bikaner. On this occasion, one day seminar on "Yoga for healthy and prosperous life" was also organized jointly by ICAR-Central Institute for Arid Horticulture, Bikaner and Devendra Yoga Sansthan, Bhinnasar (Bikaner) at ICAR-CIAH campus, Bikaner. Sri Arjun Ram Meghwal, Hon'ble State Minister of Water Resources, River Development Ganga Rejuvenation and Parliamentary Affairs, Govt of India, was the Chief Guest and Prof. B.R. Chhipa, Hon'ble vice-chancellor, SKRAU Bikaner, Dr. Jayprakash Rajpurohit and Shri Kanhaiyalal Sethiya were the Hon'ble guests of the seminar. Approximately 350 members including staff of all ICAR sister organizations situated in Bikaner along with staff members of SKRAU Bikaner, students from Devendra Yoga Sansthan, Bhinnasar (Bikaner), staff from Indian Post, Directorate of Defence Estate and Banks like SBI, BOB, Cannara and approximately 50 progressive farmers attended the above seminar. Prof. (Dr.) P. L. Saroj, Chaiman of the seminar and Director, ICAR-CIAH Bikaner welcomed the guests and emphasized that the regular Yoga and balanced diet play crucial role in healthy and prosperous long life. Yoga practices should be the regular feature of our daily life. Dr. Jayprakash Rajpurohit delivered a lecture on "Yoga for healthy and Prosperous life" and he talked on principles, types and importance of Yoga in healthy and prosperous life.



Sh. Arjun Ram Meghwal, Hon'ble Union Minister of State for Water Resources River Development & Ganga Rejuvenation and Parliamentary Affairs, GOI and Chief Guest addressing during the seminar organized on the occasion of International Yoga Diwas, at ICAR- CIAH, Bikaner on 21.06.2018

Swachchh Bharat Abhiyan (Campaign)

During the reported period of time, the *Swachchh Bharat Abhiyan* (Campaign) was carried out in the Institute from time to time and all the employee/staff of the Institute contributed a lot in cleaning the Institute's premises.



Employees of the Institute engaging in Swachchha Bharat Abhiyan at campus.

Visit of VIPs/Dignitaries at the Institute

- Sh. A. K. Dubey, DRM, Bikaner visited the Institute on 01.01.2018
- Sh. Kanaiya Kumar, Deputy Secretary, ICAR HQ, New Delhi visited the Institute on 27.01.2018
- Dr. Vishwanath Meghwal, MLA, Khajuwala and Sansdiya Sachiv, Govt. of Rajasthan visited the Institute on 17.03.2018.
- Sh. Narayan Chopzt, Bikaner Dihat visited the Institute on 17.03.2018.
- Sh. R. P. Singh, GB Member of ICAR, New Delhi visited the Institute on 24.03.2018.
- Dr. H P Singh, Chairman of QRT of the Institute (ICAR-CIAH, Bikaner) and Former DDG (Horticultural Science), ICAR, New Delhi visited the Institute on 5-6th April 2018
- Dr. Mathura Rai, Member of QRT of the Institute (ICAR-CIAH, Bikaner) and Former Director, IIVR Varanasi (UP) visited the Institute on 5-6th April 2018
- Dr. A. S Sandhu, Member of QRT of the Institute (ICAR-CIAH, Bikaner and Ex-Director Extension Education & Head, Department of Horticulture, PAU, Ludhiana (Punjab) visited the Institute on 5-6th April 2018.
- Dr. S Kumar, Member of QRT of the Institute (ICAR-CIAH, Bikaner and Ex-Head & Principal Scientist (Plant Pathology) Ranchi (Jharkhand) visited the Institute on 5-6th April 2018
- Dr. N. Kumar, Member of QRT of the Institute (ICAR-CIAH, Bikaner and Ex-Dean, College of Horticulture, TNAU Coimbatore visited the Institute on 5-6th April 2018
- Dr. A. K. Mehta, Member of QRT of the Institute (ICAR-CIAH, Bikaner and Former ADG (AE), ICAR, New Delhi visited the Institute on 5-6th April 2018
- Sri Arjun Ram Meghwal, Hon'ble State Minister of Water Resources, River Development Ganga Rejuvenation and Parliamentary Affairs, Govt. of India visited the Institute on 21.06.2018.
- Prof. B.R. Chhipa, Hon'ble Vice-Chancellor, SKRAU Bikaner visited the Institute on 21.06.2018.
- Dr. Jayprakash Rajpurohit and Shri Kanhaiyalal Sethiya Devendra Yoga Sansthan, Bhinnasar (Bikaner), visited the Institute on 21.06.2018.

Important Meetings held

Final QRT meeting

The QRT meeting was held under the Chairmanship of Dr. H. P. Singh, Former Deputy Director General (Horticultural Science) at the Institute the Institute on 5-6th April 2018. During the meeting, Dr. Mathura Rai, Dr. A. S Sandhu, Dr. S Kumar, Dr. N. Kumar, and Dr. A. K. Mehta as members of the QRT Meeting and Prof. (Dr.) P. L. Saroj, Director, ICAR-CIAH, Bikaner and Dr. B. D. Sharma, Member Secretary of the QRT were present during the meeting. The QRT visited Research Farm of the Institute and appreciated the research and developmental work progress of the Institute. The Chairman emphasized on canopy management in ber and pomegranate to optimum light interception and enhancing the productivity and dissemination of the technologies to the farmer's fields. He also suggested that in date

palm, assessment of somaclonal variation needs to be taken up in tissue culture plants. QRT strongly recommended that one Farmer Hostel cum Training Centre may be given by ICAR to ICAR-CIAH, Bikaner for conduct the training programme and at least one KVK in the State of Rajasthan may be attached with the ICAR-CIAH, Bikaner for quick dissemination of technologies related to arid horticulture. One Regional Research Station of the ICAR-CIAH, Bikaner should be created in the Kuchchh region of Gujarat State. QRT strongly recommended that one post of FAO and one post of AFAO are urgently required for HQ and CHES, Godhra, respectively and Council should take the immediate action to create and fill the above posts. The sanctioned posts in previous plans may be created to run the various activities of the Institute.



The QRT Chairman, Dr. H. P. Singh, Former Deputy Director General (Horticultural Science) discussing with members of QRT and Prof. (Dr.) P. L. Saroj, Director of the Institute about futuristic research and developmental programmes of the Institute.

22nd Annual Research Workers Group Meeting of ICAR-All India Coordinated Research Project on Arid Zone Fruits

22nd Annual Research Workers Group Meeting of ICAR-All India Coordinated Research Project on Arid Zone Fruits was held during 16th to 18th February, 2018 at Horticultural Research Station (Dr. YSRHU), Anantapuramu (AP). The scientists of all eighteen centers attended the meeting and presented their achievements made during 2017 and also finalized the technical programme for the next year (2018) of ongoing as well as new experiments. Dr. Anand Kumar Singh, DDG (Horticultural Science), ICAR, New Delhi stated in his remarks of the plenary session of the meeting that the AICRP system contributed lot in the progress of the horticultural scenario in the country which should be transferred to the Grower Associations to translate in the farmers field and our efforts should be concentrated on production of quality planting material and quality production which may leads to doubling the farmers income. Dr. W. S. Dhillon, ADG, (Horticulture Science), ICAR, New Delhi said that the productivity of fruit can be enhanced through use of authentic disease free quality planting material along with water and canopy management of the arid fruit crops. Prof. (Dr.) P. L. Saroj, PC, AICRP on AZF and Director, ICAR- CIAH, Bikaner presented the progress report of the achievement made during the last one year in the AICRP on AZF. A technical bulleting of Tamarind prepared by HRS, Anantapuram was also released by the dignitaries.



Dr. W. S. Dhillon, ADG, (Horticulture Science), ICAR, New Delhi, Prof. (Dr.) P. L. Saroj, PC, AICRP on AZF and Director, ICAR- CIAH, Bikaner and other dignitaries releasing a technical bulletin on Tamarind prepared by HRS, Anantapuram on the occasion of 22nd Annual Research Workers Group Meeting of ICAR-All India Coordinated Research Project on Arid Zone Fruits held during 16th to 18th February, 2018.

- Hindi meeting was on 22.03.2018
- IMC meeting was held on 24.03.2018
- IJSC meeting was held on 27.04.2018
- IMTC meeting was held on 27.04.2018
- Hindi workshop was held on 19.06.2018

Visits/meeting attended by the Director of the Institute.

(a) Prof. (Dr.) P. L Saroj, Director of the Institute, attended/participated in the following meetings/ workshops/ conferences during January - June, 2018.

- Director of the Institute chaired the SAC meeting of KVK, Panchmahal, Godhra, Gujarat during 10– 12 January, 2018.
- Director visited and attended Foundation Day celebration function of ICAR-NRCSS, Tabiji, Ajmer as the Chief Guest during 19– 20 January, 2018.
- Director visited and inaugurated the 'ber and arid fruit day' celebration function as the Chief Guest at ICAR- CAZRI, Jodhpur during 22–23 January, 2018.
- Director participated in Directors' conference held in Delhi during 07.03.2018 to 09. 01.2018
- Director participated in 'Date palm tissue culture project' meeting held at ICAR- CAZRI, Jodhpur during 04 – 05 May, 2018.
- Director participated in 36th AICRP (Vegetable Crops) Group Meeting held at Jaipur during 18 – 19 May, 2018.
- Director participated in National Conference held at Pusa, Samastipur, Bihar during 27 – 30 May, 2018.

(b) Prof. (Dr.) P. L. Saroj, Director of the Institute visited the following AICRP centres/other places during January - June, 2018.

- Director visited the AICRP-AZF Centre Bawal, Haryana, on 04–05 February, 2018.
- Director visited the AICRP-AZF Centre, Anantapur (AP) during 14– 19, February, 2018.
- Director visited the AICRP-AZF Centre, Jabalpur (MP)

during 24–25 April, 2018.

- Director visited the AICRP-AZF Centre, Kumarganj, Fezabad, on 13.06.2018.

Popularization and commercialization of technologies : Success and impact.

Impact of adoption of improved varieties of cucurbits in hot arid climatic conditions:

ICAR-Central Institute for Arid Horticulture, Bikaner recently developed and released two unique varieties of kachri and snapmelon viz., "AHK- 119" and AHS-82, respectively. These varieties became very popular in short span of time. The area and production of these varieties increased very fast in hot arid regions of India. An extensive study was planned to assess the impact of adoption of these improved varieties. The study revealed that the area and production of AHK-119 increased tremendously at large scale during 2007 to 2017. The area under the improved variety (AHK-119) was 2057 ha and production was 18.30 thousand tons in 2007 which increased to 6093 ha and 54.22 thousand tones in the year of 2017, respectively. The gross return from improved variety (AHK-119) of kachri alone was Rs. 28.19 crores in 2007 which increased to Rs. 83.51 crores in 2017 with the net return of Rs. 20.74 crores in 2007 to Rs.61.45 crores in 2017 in entire hot arid region of India. In case of the impact of adoption of improved variety (AHS-82) of snapmelon, it was found that the area under this variety (AHS-82) was only 969 ha and production was 14.34 thousand tons in 2007 which increased to 3562 ha and 52.72 thousand tons, respectively in the year of 2017. The gross return from AHS-82 alone was Rs. 11.76 crores in 2007 which increased to Rs. 43.23 crores in 2017 with net return of Rs. 8.50 crores in 2007 to Rs. 31.26 crores in 2017 in entire hot arid region of India. (Dr. S. R. Meena, Dr. M. K. Jatav and Prof. (Dr.) P. L. Saroj).



Kachri var. AHK-119



Snapmelon var. AHS- 82

Published by : Prof. (Dr.) P. L. Saroj, Director ICAR-CIAH, Bikaner -334006, Rajasthan

Editors : Dr. S. R. Meena : Sh. P. P. Pareek

Photography : Sh. S. Patil
Setting Designing : Er. B. R. Khatri



शुष्क बागवानी समाचार

भाकृअनुप-केन्द्रीय शुष्क बागवानी संस्थान
बीछवाल, बीकानेर - 334 006, (राजस्थान)

अंक-18 क्रमांक-1

जनवरी-जून, 2018

संस्थान में दिनांक 21 जून 2018 को अंतर्राष्ट्रीय योग दिवस और "स्वस्थ एवं प्रसन्न जीवन के लिए योग" विषयक संगोष्ठी का आयोजन किया गया।



योग दिवस पर आयोजित संगोष्ठी में मंचासीन मुख्य अतिथि श्री अर्जुन राम मेघवाल, माननीय केन्द्रीय जल संसाधन, नदी विकास और गंगा पुनरोत्थान तथा संसदीय मामलात राज्य मंत्री, प्रो. बी. आर. छीपा, माननीय कुलपति, एसकेआरएयु, बीकानेर तथा योग दिवस के आयोजन के अध्यक्ष व संस्थान के निदेशक प्रो. (डॉ.) पी. एल. सरोज।

संस्थान में दिनांक 17 मार्च 2018 को "क्षेत्रीय शुष्क बागवानी मेला" का आयोजन



क्षेत्रीय शुष्क बागवानी मेले के उद्घाटन के दौरान तकनीकी पत्रक का विमोचन करते हुए मुख्य अतिथि डॉ. विश्वनाथ मेघवाल, विधायक खाजुवाला तथा संसदीय सचिव, राजस्थान सरकार, विशिष्ट अतिथि श्री नारायण चौपड़ा, महापोर, बीकानेर, श्री सत्य प्रकाश आचार्य, बीकानेर शहर भाजपा अध्यक्ष, श्री सही राम दुसाद, देहात भाजपा अध्यक्ष तथा संस्थान के निदेशक व मेला आयोजन के अध्यक्ष प्रो. (डॉ.) पी. एल. सरोज व श्रीमती नीलम सरोज।

निदेशक की कलम से....



देश के गर्म शुष्क क्षेत्र की प्रतिकूल जलवायविक स्थिति में बागवानी विकास एक चुनौती पूर्ण कार्य है, लेकिन विज्ञान और व्यक्तिगत शक्ति के समर्पित प्रयासों के साथ गर्म शुष्क क्षेत्रों की कठिन शुष्क परिस्थितियों में भी बागवानी विकास को बनाए रखना संभव हो सकता है। ऐसे क्षेत्रों के ग्रामीण लोगों की बेहतर आजीविका के लिए एक नया आयाम स्थापित किया जा सकता है। अतः, जलवायु अनुकूल और क्षेत्र विशेष उपयुक्त बागवानी की प्रौद्योगिकियों को विकसित करने और उनको किसानों के खेतों में स्थानांतरित करने की आवश्यकता है। ऐसे क्षेत्रों में बागवानी विकास के पथ में गर्म शुष्क क्षेत्रों की कठोर जलवायु और कई अनूठी बाधाएं बड़ी चुनौतियों के रूप में खड़ी हैं। इस प्रकार, उपरोक्त तथ्यों को ध्यान में रखते हुए ही, केन्द्रीय शुष्क बागवानी संस्थान, बीकानेर (राजस्थान) गर्म शुष्क क्षेत्रों की कठिन जलवायु स्थितियों में बागवानी विकास के लिए अनुकूल प्रौद्योगिकियों को विकसित करने के लिए कड़ी मेहनत कर रहा है। संस्थान 'थार रेगिस्तान' की गर्म शुष्क अनुत्पादक बंजर भूमि को हरित क्षेत्र में बदलने और बागवानी फसल उत्पादन के माध्यम से देश में नया आर्थिक क्षेत्र को बनाने के लिए समर्पित और पूरी तरह से जागरूक है। संस्थान न केवल बागवानी की अभिनव प्रौद्योगिकियों को विकसित करता है, बल्कि मानव संसाधन विकास और उन्नत तकनीकियों को किसानों तक पहुंचाने के लिए भी बेहतर ढंग से कार्यक्रम आयोजित करता है। पिछले छह महीनों के दौरान संस्थान द्वारा शुष्क बागवानी विकास के लिए किए गए प्रमुख प्रयासों को इस समाचार-पत्रक के माध्यम से दर्शाते करते हुए मुझे अपार प्रसन्नता हो रही है।

पी.एल.सरोज

(पी.एल.सरोज)
निदेशक

अनुसंधान ज्योति

कांटों रहित बोरडी (जिजिफस रोटण्डीफोलिआ) जननप्रकार का चयन :

इस अवधि के दौरान एक कांटे रहित बोरडी जननप्रकार को चिह्नित किया गया था। सामान्य और ओजस टहनियों में उनके ऊपर कोई कांटा नहीं था, जबकि स्कंध के आस-पास टहनियों में कुछ कांटों थे। इस जननप्रकार को कांटेरहित बेर किस्म के स्रोत अथवा मूलवृत्त के रूप में उपयोग किया जा सकता है (डॉ. हरे कृष्ण, डॉ. डी. सिंह और प्रो. (डॉ.) पी. एल. सरोज)।



बेर में फलोएम:जाइलेम अनुपात का अध्ययन : कुछ चयनित बेर जननप्रकारों में पत्तियों की संरचना पर अध्ययन किया गया था, जिसमें पाया कि फलोएम और जाइलेम का कम अनुपात पौधों की औज शक्ति को इंगित करता है। अध्ययन की गई किस्मों में से खेत की स्थिति में फलोएम और जाइलेम का अनुपात सबसे कम टिकड़ी किस्म में दर्ज किया गया जो सबसे ओजस्वी बढ़वार वाली किस्म थी। इसके अलावा, असंचालित ऊतकों का अनुपात अन्य किस्मों की तुलना में टिकड़ी में तुलनात्मक रूप से कम था। यह इस बात की पुष्टि करता है कि उच्च संवहनी बंध टिकड़ी किस्म के पौधों में उच्च औज को बनाए रखने में मदद करता है। (डॉ. हरे कृष्ण और प्रो. (डॉ.) पी. एल. सरोज)।



बेर की टिकड़ी किस्म की पत्ती का अनुप्रस्त काट

अगेती एवं ऋतुपूर्व उत्पादन लेने के लिए ककड़ी की लो-टनल खेती :

बुवाई की तिथि और आवरण सामग्री को मानकीकृत करने के लिए अनुमोदित कार्यक्रम के अनुसार ककड़ी की "थार शीतल" की लो-टनल खेती तकनीक का एक प्रयोग किया गया था। पूर्व-पश्चिम दिशा में 2.0-2.5 मीटर की दूरी पर लगभग 45-60 सेमी गहरी और 45-60 सेमी चौड़ी एक खाई बनायी गयी। ककड़ी की "थार शीतल" किस्म की चार अलग-अलग तिथियों यानी 10 दिसंबर, 20 दिसंबर, 30 दिसंबर, 2017 और 10 जनवरी, 2018 को बुवाई की गयी। दो प्रकार की आवरण सामग्री यानी जैवअपचेय प्लास्टिक शीट (25 माइक्रोन) और बुने हुए कपड़े (25 जीएसएम) का प्रयोग किया गया था। फरवरी के दूसरे सप्ताह में जब बाहरी तापमान में वृद्धि हुई, तो आवरण को पौधों से पूरी तरह हटा दिया गया, क्योंकि सुरंग के अंदर का तापमान बाहरी से 8-10° सेल्सियस अधिक था। बुवाई और कवर सामग्री की विभिन्न तिथियों के अंतर्गत बुवाई के बाद 50 प्रतिशत अंकुरण में 7-12 दिन लग गए। पहले नर और मादा फूल आने में क्रमशः 43.6 से लेकर 49.5 तक और 48.7 से लेकर 55.7 दिन लगे थे, जबकि बाजार योग्य पहली फसल आने में बुवाई के बाद कुल 59.1 से 66.5 दिन लगे। बाजार योग्य कच्चे फल तुड़ाई के समय हल्के हरे रंग के थे और कड़वे नहीं थे। विभिन्न बुवाई तिथियों और आवरण सामग्री के अंतर्गत प्रति पौधा औसतन 13-18 फल लगे जिनका

वजन 49.6 ग्राम से लेकर 73.5 ग्राम था। दूसरी बुवाई तिथि यानी 20 दिसंबर को प्लास्टिक शीट के साथ आवरणित किया गया प्रयोग, सामान्य मौसम की तुलना में 30 दिनों पूर्व के साथ समग्र उपज में सबसे अच्छा पाया गया, जिसने बाजार में अधिक मूल्य प्राप्त किया।

(डॉ. ए. के. वर्मा और डॉ. बी. आर. चौधरी)



ककड़ी की लो-टनल खेती का दृश्य

सब्जी किस्मों का मूल्यांकन/अनुकूली परीक्षण : वर्ष 2018 के गर्मियों के मौसम के दौरान चार स्थानों पर ककड़ी (थार शीतल) और तोरई (थार करणी) की किस्मों के मूल्यांकन /अनुकूली परीक्षण आयोजित किए गए। परीक्षण स्थानों में कृविके, पाली (राज.), कृविके, फतेहपुर (राज.), कृतसं, जोधपुर (राज.) और कृविके, पंचमहल (गुजरात) सम्मिलित थे। ककड़ी की थार शीतल किस्म में कृविके, पाली में सर्वाधिक उपज (178 किंवा/हेक्टेयर) दर्ज की गयी। इसके बाद के क्रम में कृविके, पंचमहल (175 किंवा/हेक्टेयर), कृतसं, जोधपुर (170.30 किंवा/हेक्टेयर) और कृविके, फतेहपुर (165 किंवा/हेक्टेयर) का स्थान रहा। इसीप्रकार तोरई की थार करणी किस्म ने कृविके, पंचमहल, में 145.60, कृतसं, जोधपुर में 140.50 और कृविके, फतेहपुर में 135 किंवा/हेक्टेयर की कुल उपज दी (डॉ. बालू राम चौधरी और डॉ. एस.आर.मीना)।

बेर फलों के प्रचालन सह भण्डारण के लिए डिब्बे : उपभोक्ताओं के मध्य आकर्षण और स्वीकार्यता में सुधार के लिए एक नया प्रचालन सह भण्डारण डिब्बा बनाया गया। डिब्बे (23 x 23 x 4 सेमी) को गत्ते का और अंदर नालीदार फाइबर बोर्ड (सीएफबी) के तीन खांचे बनाए गए थे, यह बाहर से लेमिनेशन किया हुआ और हवा तथा नमी के



बेर फलों के प्रचालन और भण्डार के लिए बनाया गया नया डिब्बा

समुचित प्रसारण के लिए 1 प्रतिशत हवादार बनाया गया था। डिब्बे के अंदर, बेर फल रखने के लिए उचित खांचे बनाये गये हैं। डिब्बे के ढक्कन के मध्य में एक पारदर्शी छोटा खांचा (10 x 8 सेमी) रखा गया था, जिसमें से भण्डारित फलों को देखा जा सकता था। डिब्बों में 750-800 ग्राम ताजा बेर फल रखे जा सकते थे। इस डिब्बे में ताजा परिपक्व हरे बेर फलों (कैथली किस्म) को कक्ष तापमान में 4 दिनों के लिए सफलतापूर्वक संभाला और भण्डारित किया गया था। डिब्बे के बाहरी ओर बेर किस्म का नाम, कुल वजन, पैकिंग की दिनांक, इत्यादि जानकारी की एक पर्ची लगाई गई थी। इस नए डिब्बे को संस्थान में दिनांक 17 मार्च 2018 को आयोजित क्षेत्रीय शुष्क बागवानी मेला के दौरान जारी किया गया था (डॉ. विजय राकेश रेड्डी, डॉ. हरे कृष्ण और प्रो. (डॉ.) पी. एल. सरोज)।

गर्म शुष्क पारिस्थितिकी में बेर में उत्पादन प्रणाली प्रबंधन : दिनांक 21 अगस्त 2017 को अनुसंधान फार्म ब्लॉक 11 में "गर्म शुष्क पारिस्थितिकी के अंतर्गत बेर में उत्पादन प्रणाली प्रबंधन" (हॉर्ट सीआईएचएसआईएल IXX 13986) नामक परियोजना के तहत बेर की गोला, थाई, थार सेविका और गोमा कीर्ति किस्मों के 408 पौधों को विभिन्न अंतराल (6x6 मीटर, 6x3 मीटर और 3x3 मीटर) और कटाई-छंटाई प्रणाली (वाई आकार, लताकुंज और टेलीफोन) में कटाई-छंटाई प्रणाली को मानकीकृत करने और अन्य आवश्यकताओं के साथ-साथ कीट-पतंगों और रोग गतिशीलता के उद्देश्य हेतु रोपण कर आरंभ किया गया (प्रो. (डॉ.) पी. एल. सरोज, डॉ. डी. के. सरोलिया, डॉ. बी. डी. शर्मा और डॉ. एस. एम. हलधर)।



बेर में वाई आकार, लताकुंज और टेलीफोन प्रकार की कटाई-छंटाई प्रणाली

किसानों के लिए कार्यक्रम और विस्तार गतिविधियां संस्थान में दिनांक 17 मार्च 2018 को "क्षेत्रीय शुष्क बागवानी मेला" का आयोजन

संस्थान में दिनांक 17.03.2018 को एक दिवसीय क्षेत्रीय शुष्क बागवानी मेला का आयोजन किया गया। मेले का उद्घाटन राजस्थान विधानसभा के संसदीय सचिव और खानुवाला क्षेत्र के विधायक डॉ. विश्वनाथ मेघवाल ने किया। इस मेले में 800 से अधिक किसानों, वैज्ञानिकों, व्यवसायिकों, खेती श्रमिकों, विद्यार्थियों और लोक सेवकों/गणमान्य व्यक्तियों ने भाग लिया। मेले के दौरान किसानों को नव तकनीकों से परिचय कराने के उद्देश्य से 30 तकनीकी प्रदर्शन स्टॉल (सरकारी व निजी क्षेत्र) लगाए गए थे। किसानों की समस्याओं के समाधान एवं उन्हें नई तकनीकों के प्रयोग संबंधित जानकारी देने के लिए वैज्ञानिक-किसान आपसी संवाद और प्रश्नोत्तरी गोष्ठी का भी आयोजन किया गया था। किसानों को नव तकनीकियों को अपनाने के लिए प्रेरित करने के उद्देश्य से मेले के दौरान किसानों की फसलों पर आधारित एक प्रतियोगिता का आयोजन भी किया गया था। इस प्रतियोगिता में प्रतिभागी किसानों को पुरस्कार देकर प्रोत्साहित भी किया गया था।



दिनांक 17 मार्च, 2018 के दौरान आयोजित क्षेत्रीय शुष्क बागवानी मेला का उद्घाटन करते हुए राजस्थान विधान सभा के संसदीय सचिव एवं खानुवाला क्षेत्र के विधायक डॉ. विश्वनाथ मेघवाल, श्री सही राम दुसाद, देहात, भाजपा अध्यक्ष, बीकानेर संस्थान के निदेशक एवं मेले आयोजन के अध्यक्ष प्रो. (डॉ.) पी. एल. सरोज एवं श्रीमती नीलम सरोज।

दिवस/सप्ताह का आयोजन / मनाना

अंतर्राष्ट्रीय योग दिवस और 'स्वस्थ एवं समृद्ध जीवन के लिए योग' विषयक संगोष्ठी का आयोजन

इस अवधि के दौरान देवेन्द्र योग संस्थान, बीकानेर के संयुक्त तत्वावधान में दिनांक 21 जून, 2018 को स्थानीय पॉलीटेक्निक महाविद्यालय प्रांगण में अंतर्राष्ट्रीय योग दिवस का आयोजन किया गया। इसी दिन अपरान्ह में "स्वस्थ और समृद्ध जीवन के लिए योग" विषय पर भाकृअनुप-केशुबासं व देवेन्द्र योग संस्थान, बीकानेर के द्वारा संयुक्त रूप एक संगोष्ठी का आयोजन संस्थान के प्रेक्षागृह में किया गया। संगोष्ठी में केन्द्रीय जल संसाधन, नदी विकास, गंगा पुनरोद्धार और संसदीय मामला राज्यमंत्री माननीय अर्जुनराम मेघवाल मुख्य अतिथि थे। इस अवसर पर प्रो. बी. आर. छीपा, माननीय कुलपति, एसकेआरएयू, बीकानेर, डॉ. जयप्रकाश राजपुरोहित और श्री कन्हैयालाल सेठिया विशिष्ट अतिथि थे। इस अवसर पर संस्थान के अधिकारी व कर्मचारियों के साथ देवेन्द्र योग संस्थान के विद्यार्थी, बीकानेर स्थित डाक विभाग, रक्षा सम्पदा विभाग, भारतीय स्टेट बैंक, बड़ोदा बैंक, केनरा बैंक सहित 350 से अधिक व्यक्तियों ने भाग लिया जिनमें 50 से अधिक प्रगतिशील किसान भी थे। संगोष्ठी आयोजन के अध्यक्ष एवं संस्थान के निदेशक प्रो. (डॉ.) पी. एल. सरोज ने आगन्तुकों का स्वागत करते हुए स्वस्थ शरीर के लिए नियमित योग करने पर जोर दिया। "स्वस्थ एवं समृद्ध जीवन के लिए योग" विषय पर अपने व्याख्यान में डॉ. राजपुरोहित ने योग के सिद्धान्तों, विविध प्रकारों एवं जीवन में योग के महत्व पर प्रकाश डाला। अपने अध्यक्षीय उद्बोधन में माननीय राज्यमंत्री श्री मेघवाल ने जीवन में योग की उपयोगिता और उसकी शक्तियों पर जोर दिया। प्रो. छीपा ने "कर्मयोग और "वसुदेवकुटम्बकम्" के बीच सह-संबंध पर प्रकाश डाला।



श्री अर्जुनराम मेघवाल, माननीय केन्द्रीय जल संसाधन, नदी विकास एवं गंगा पुनरोद्धार और संसदीय मामला राज्यमंत्री एक दिवसीय योग संगोष्ठी में अध्यक्षीय उद्बोधन देते हुए। मंचासीन प्रो. बी. आर. छीपा तथा संस्थान के निदेशक प्रो. (डॉ.) पी. एल. सरोज एवं उपस्थित अतिथि।

● स्वच्छ भारत अभियान

इस अवधि के दौरान संस्थान में समय-समय पर स्वच्छ भारत अभियान के अंतर्गत संस्थान परिसर को सभी कार्मिकों के सहयोग से स्वच्छ किया गया।



स्वच्छ भारत अभियान के अंतर्गत संस्थान परिसर की साफ-सफाई करते हुए संस्थान के अधिकारी/कर्मचारी।

आयोजित महत्वपूर्ण बैठकें

पंचवर्षीय समीक्षा दल की निर्णायक बैठक

डॉ. एच.पी.सिंह, पूर्व उप महानिदेशक (बागवानी विज्ञान), भाकृअनुप, नई दिल्ली की अध्यक्षता में पंचवर्षीय समीक्षा दल की निर्णायक बैठक का आयोजन दिनांक 5-6 अप्रैल, 2018 के दौरान किया गया। इस बैठक में डॉ. मथुरा राय, डॉ. ए.एस.संधू, डॉ. एस. कुमार, डॉ. एन. कुमार, डॉ. ए. के. मेहता सदस्य और डॉ. बी. डी. शर्मा, सदस्य सचिव तथा प्रो. (डॉ.) पी. एल. सरोज, निदेशक, केशुबासं विशेष आमंत्रित सदस्य थे। समीक्षा दल ने संस्थान के प्रायोगिक प्रक्षेत्र का भ्रमण किया और यहां चल रहे अनुसंधान कार्यों को देखकर प्रसन्नता व्यक्त की। दल के अध्यक्ष ने बेर व अनार में आवश्यक प्रकाश की उपलब्धता के लिए छत्रक प्रबन्धन की आवश्यकता पर जोर दिया। उन्होंने खजूर के ऊतक संवर्धन पौधों में सोमाक्लोनल विविधता को देखने पर जोर दिया। उन्होंने संस्थान के लिए किसान छात्रावास सह प्रशिक्षण केन्द्र बनाने की अनुसंधान करते हुए संस्थान के लिए इसकी आवश्यकता बताई। इसके साथ ही गुजरात के कच्छ क्षेत्र में एक क्षेत्रीय केन्द्र तथा मुख्यालय पर वित्त एवं लेखा अधिकारी और उप केन्द्र पर सहायक वित्त एवं लेखा अधिकारी के पद सृजित करने की आवश्यकता पर जोर दिया।



पंचवर्षीय समीक्षा दल की बैठक के दौरान चर्चा करते हुए समीक्षा दल अध्यक्ष डॉ. एच. पी. सिंह, संस्थान के निदेशक प्रो. (डॉ.) पी. एल. सरोज एवं समीक्षा दल के माननीय सदस्यगण।

अखिल भारतीय शुष्क क्षेत्रीय फल समन्वित अनुसंधान परियोजना की 22वीं वार्षिक वैज्ञानिक समूह बैठक का आयोजन

अखिल भारतीय शुष्क क्षेत्रीय समन्वित अनुसंधान परियोजना के वैज्ञानिक समूह की 22वीं बैठक का आयोजन दिनांक 16-18 फरवरी, 2018 के दौरान बागवानी अनुसंधान केन्द्र (डॉ.वाइएसआरएचयू), अनंतपुरमु-आंध्रप्रदेश में किया गया। परियोजना के सभी अटारह केन्द्रों के वैज्ञानिकों ने इस बैठक में भाग लिया और वर्ष 2017 के दौरान किए गए अनुसंधान कार्यों की समीक्षा एवं वर्ष 2018 के लिए अनुसंधान कार्यों की रूपरेखा बनायी। बैठक के समापन सत्र की अध्यक्षता करते हुए उप महानिदेशक (बागवानी विज्ञान), भाकृअनुप, नई दिल्ली ने कहा कि देश के बागवानी विकास में इस परियोजना का अभूतपूर्व योगदान रहा है। उन्होंने इस बात पर जोर दिया कि इस बैठक से निकली तकनीकी अनुसंधानों को मूर्तरूप देने के लिए उन्हें किसानों के खेतों पर पहुंचाना चाहिए। उन्होंने किसानों की आय को दोगुना करते में गुणवत्तायुक्त उत्पादन के लिए गुणवत्तायुक्त पौध सामग्री तैयार करने की आवश्यकता जताई। इस अवसर पर डॉ. वसाखा सिंह ढिल्लों, सहायक महानिदेशक (बागवानी विज्ञान) और परियोजना के समन्वयक और संस्थान के निदेशक प्रो. (डॉ.) पी. एल. सरोज ने भी सम्बोधित किया। इस अवसर पर बागवानी अनुसंधान केन्द्र, अनंतपुरमु द्वारा प्रकाशित इमली पर एक तकनीकी पुस्तिका का भी विमोचन किया गया।

राजभाषा गतिविधियां

हिन्दी कार्यशाला आयोजन : इस अवधि के दौरान प्रथम तिमाही की कार्यशाला का आयोजन दिनांक 27 मार्च, 2018 को किया गया। इसमें "वर्तनी शुद्धता और हिंदी" विषय पर व्याख्यान दिया गया। दूसरी तिमाही की कार्यशाला का आयोजन दिनांक 19 जून, 2018 को किया गया। इसमें कार्यालय प्रबंध, नेतृत्व और अभिप्रेरणा विषय पर व्याख्यान दिया गया।

राजभाषा कार्यान्वयन समिति की बैठक : इस अवधि के दौरान संस्थान राजभाषा कार्यान्वयन समिति की तिमाही के आधार पर आयोजित की जाने वाली बैठकें में इस छःमाही की पहली बैठक का आयोजन दिनांक 22 मार्च, 2018 को तथा दूसरी बैठक का आयोजन दिनांक 19 जून 2018 को किया गया।

प्रौद्योगिकियों को लोकप्रिय एवं व्यावसायिक बनाने की ओर बढ़ते कदम: सफलताएं एवं प्रतिक्रियाएं :

गर्म शुष्क जलवायविक स्थिति में कद्दुवर्गीय किस्मों को अपनाने पर प्रभाव मापन: भाकृअनुप-केशुबासं, बीकानेर के द्वारा काचरी एवं फूटकाकड़ी की क्रमशः एएचके-119 और एएचएस-82 नामक दो विलक्षण गुणों से भरपूर किस्में विकसित कर उन्हें जारी किया गया है। इस क्षेत्र में यह किस्में अल्प समय में ही किसानों में लोकप्रिय हो गईं और दिनों दिन इनकी काश्त के क्षेत्र में वृद्धि होती गयी। किसानों द्वारा इन किस्मों को अपनाने एवं इनके प्रभाव को देखने हेतु संस्थान ने एक अध्ययन किया। अध्ययन में पाया गया कि भारत के सम्पूर्ण शुष्क गर्म क्षेत्र में वर्ष 2007 में जहां एएचके-119 काचरी का बुवाई क्षेत्र 2057 हेक्टेयर और उत्पादन 18.30 हजार टन था, वह वर्ष 2017 में बढ़कर क्रमशः 6093 हेक्टेयर और 54.22 हजार टन हो गया। काचरी किस्म से सकल आय जो वर्ष 2007 रु. 28.19 करोड़ थी, वह वर्ष 2017 में बढ़कर रु. 83.51 करोड़ और शुद्ध आय वर्ष 2007 जहां रु. 20.74 करोड़ थी वह 2017 में बढ़कर रु. 61.45 करोड़ हो गयी। इसी प्रकार, इस क्षेत्र में फूटकाकड़ी की एएचएस-82 किस्म के अध्ययन में पाया गया कि वर्ष 2007 में जहां इसका बुवाई क्षेत्र 969 हेक्टेयर और उत्पादन 14.34 हजार टन था, वह वर्ष 2017 में बढ़कर क्रमशः 3562 हेक्टेयर और 52.72 हजार टन हो गया। फूटकाकड़ी किस्म से सकल आय जो वर्ष 2007 रु. 11.76 करोड़ थी, वह वर्ष 2017 में बढ़कर रु. 43.23 करोड़ और शुद्ध आय वर्ष 2007 जहां रु. 8.50 करोड़ थी वह 2017 में बढ़कर रु. 31.26 करोड़ हो गयी (डॉ. एस.आर.मीना, डॉ. एम. के. जाटव और प्रो. (डॉ.) पी. एल. सरोज)।



काचरी किस्म : एएचके-119



फूटकाकड़ी किस्म : एएचएस-82

प्रकाशक	: प्रो. (डॉ.) पी. एल. सरोज, निदेशक, भाकृअनुप-केन्द्रीय शुष्क बागवानी संस्थान, बीकानेर (राजस्थान)
संकलन एवं सम्पादन	: डॉ. शिवराम मीना : : श्री प्रेम प्रकाश पारीक
शब्द-सज्जा	: श्री भोजराज खत्री
छायाचित्रण	: श्री संजय पाटिल