



Vol 18 (1 & 2)

January 2020 – December 2020

From Director's Desk



Current issue of ICAR-CITH, Newsletter 2020 depicts different achievements in research developments, extension activities, trainings, publications etc organized by the Institute. During this period elite germplasm of temperate horticulture crops with specific traits was collected to further strengthen the existing gene bank. Under the varietal development program various hybrids developed in apple were rigorously screened for different traits viz, resistance to scab, fruit firmness, colour, storage capacity etc. Some of promising superior hybrids developed in apple were identified for further evaluation and release. Two hybrids were registered through ICAR-NBPGR and INGR number obtained. Technologies were developed in temperate fruits, nut crops and exotic vegetables. Two technologies were transferred through Aggroinnovate India Limited. Crossing programme for root stock development of apple rootstock(s) with specific reference to biotic and abiotic resistance/ tolerance was further strengthened. Various technologies and varieties of fruits were demonstrated on farmer's field with aim to uplift the socio-economic status of farmers under TSP and MGMG schemes. The institute is giving its significant efforts to provide awareness of

various technologies generated in temperate horticulture crops to farmers / allied departments / students / entrepreneurs / researchers for enhancing their productivity and quality. The institute organized programs for human resource development. ICAR-CITH is coordinating and regularly organizing training courses, field/crop days, on and off campus trainings, demonstrations, field visits, diagnostic and control measure discussions, supply of quality and elite planting material, publication in local language, giving radio talks, TV programmes, melas etc. I extend my best wishes to the scientists and staff members for their well deserved promotions during 2020.

I hope that the current issue of this ICAR-CITH, newsletter reflecting the research, training, extension, development and other activities of ICAR-CITH, Srinagar and its regional stations will enlighten the readers about ongoing activities, status, contribution and development of the institute. Feedback and suggestions for further improvement in the institute activities for upliftment of farming community engaged in temperate horticulture will always be acknowledged.

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RESEARCH HIGHLIGHTS

In temperate horticultural crops, considerable change in area and production has been noticed due to continuous support from research and development in the past. But still there is sufficient scope for its vertical and horizontal expansion which ultimately boosts the productivity of quality produce. ICAR- Central Institute of Temperate Horticulture, Srinagar (J&K) has focused on generation of technologies in different temperate horticultural crops by carrying out research on various aspects like improvement, production, protection & post harvest management since its inception. The generation of farmer's friendly technologies with low input cost and high returns is the need of the hour and Institute along with its Regional stations is continuously working on these lines. The number of technologies generated at ICAR-CITH is increasing year after year and their implementation at farmer's field is generating significant returns to growers of temperate region of the country. Presently farmers have adopted many technologies to boost the productivity of their farms. To cater the need of farmers associated with temperate horticultural crops, the research and extension work carried out during 2020 are briefly summarized below:

The Institute has added 60 new genotypes in its field gene bank and its number has reached to 2802 at main centre Srinagar, J&K while Regional Station Mukteshwar, Uttarakhand has added 218 germplasm lines of various fruit and vegetable crops.

In apple, four columnar apple varieties were evaluated and Sunlight showed maximum fruit weight (156g) and ascorbic acid (9.82%) in addition to its good antioxidant potential. The antioxidant potential of Moonlight is of considerable importance keeping in view its highest flavonols and flavonoids values. The least acidic and maximum TSS & firmness was observed in cultivar Redlane. In evaluation of commercially important apple varieties

for physicochemical traits and antioxidative properties, 9 cultivars viz Gala Redlum, Super Chief, Red Velox, Golden Delicious Reindeers, Golden Delicious Clone B, Elstar, Jonaprince, Pinnova, and Red Chief were evaluated. Highest fruit weight was recorded in Red Chief (205.5 g) followed by Super Chief (190.5 g). Based on fruit quality traits Gala Redlum, Red Chief, Super Chief and Red Velox are showing very good performance. The molecular diversity assessment of 29 *Malus baccata* accessions were also done using SSR markers which revealed presence of significant level of genetic diversity along the population. Major allele frequency ranged from 0.27 for SSR marker Hi22f12 to 0.95 for Hi02d05 with a mean of 0.55 and 12 SSR loci expressed individual frequencies of more than 0.75. In pear, 19 European/Asian cultivars of pear were evaluated and maximum fruit weight (225.17 g), fruit length (89.54 mm), and fruit diameter (72.36 mm) were recorded in cultivar Max Red Bartlett while minimum fruit weight (43.03 g), fruit diameter (39.76 mm) in Punjab Beauty and fruit length (48.32 mm) in cultivar Doyenne Burrah. Maximum pedicle length (52.72 mm) was recorded in Kashmiri Nakh and minimum (17.23) in Gent Drouard. In quince, 31 quince genotypes were evaluated and fruit weight ranged from 45.19 in CITH-Q-18 to 225.33 in CITH-Q-04. Maximum fruit length (76.31 mm) was recorded in CITH-Q-04 while minimum (42.01mm) in CITH-Q-27. Maximum fruit diameter (77.65 mm) was recorded in CITH-Q-04, while minimum fruit length (42.82 mm) in CITH-Q-26. In apricot, 64 genotypes were evaluated for fruit and yield traits in which highest yielding genotypes were CITH-Ap-2 (42.67 kg), CITH-Ap-1 (39.06 kg), Rival (32.20 kg) and Erani (29.64 kg). The TSS was highest (24.63 ° B) in CITH-Ap-35. In peach, twenty three genotypes were evaluated and maximum fruits weight (138.99g), fruit length (64.36mm), fruit width (63.55mm)

and fruit thickness (61.45mm) were recorded in cultivar Early Red June. Among four nectarine cultivars, maximum fruit weight (97.73g), fruit length (64.39 mm), fruit width (58.18mm) and fruit thickness (50.01 mm) were recorded in cultivar Fantasia. In plum, 23 cultivars (Japanese and European) were evaluated for various physicochemical and colour parameters. Maximum fruit weight (77.81g) & fruit diameter (50.89mm) were recorded in Frontier while maximum fruit length (56.62mm) was found in Grand Duke. In strawberry, 72 genotypes were evaluated for fruit traits. The fruit weight varied from 4g (Dilpasand) to 17.3 g (Cammarosa), fruit length from 12 mm (Osograndy) to 27.1 mm (Cammarosa), fruit diameter from 17.5 mm (VL-13) to 48.6 (Winter Don). The cultivar/genotypes EC 32602, Red Cross., Red Coat, Katrian Sweet, Jutogh Special, Dilpasand, Mechwary, Sea Scap, Gorilla, Cammarosa etc. produced maximum number of flowers and fruits. In evaluation of 18 cultivars of olive, maximum fruit weight (6.0g) and fruit width (20.5 mm) were recorded in cultivar Zaituna. Maximum average yield/ plant was recorded in cultivar Pendilino (22.21 kg). In almond, 10 cultivars and 21 Selections were compared for nut and kernel traits. Maximum nut weight (3.04 g) was recorded in cultivar Makhdoom while kernel weight was maximum (1.56g) in cultivar Shalimar. The kernel percentage was highest (57.31%) in Merced. In almond Selections, maximum nut weight was recorded in CITH-A-18 (4.05 g) while kernel weight (1.44g) and kernel recovery (47.21%) were highest in CITH-A-19 Maximum yield per plant was reported in Makhdoom among cultivars while in selections, it was maximum in CITH-A-9. In walnut, 261 genotypes were evaluated for various nut and kernel traits. Among these, 28 genotype produced nuts having weight less than 10g, 155 genotypes produced nuts between 10 to 15 g, 68 genotypes between 15 to 20 g, 9 genotypes between 20 to 25 g and one

genotypes more than 25g, respectively. Similarly, 40 genotypes produced nuts having kernel weight less than 5g, 177 genotypes between 5 to 8g, 35 genotypes between 8 to 10g and 9 genotypes have more than 10 g, respectively. In pistachio, five selections were evaluated and based on nut and kernel traits CITH-Pistachio - Selection -1, CITH-Pistachio - Selection -3 and CITH-Pistachio -Selection -4 seems to be promising. In hazelnut, seven cultivars were evaluated and nut weight ranged from 2.01g (Tonda Gentile delle Langhe) to 2.98 g (Tonda di Giffoni) while nut length (23.66 mm), nut width (19.61 mm) and nut thickness (17.93 mm) were recorded more in cultivar Ennis. Highest kernel weight (1.39g) and minimum shell thickness (1.22 mm) was recorded in Tonda di Giffoni. Similarly kernel recovery ranged from 37.21% (Tonda Romana) to 52.06 % in Fertil de Coutard. In pecan fruiting was observed in two seedlings and based on nut weight Selection 1 was found promising while for kernel recovery and shell thickness Selection 2 was found better. Evaluation work was also carried out at Mukteshwar on various fruit crops such as peach, plum, apple and kiwi fruit. In peach, eight cultivars were evaluated and the highest fruit weight (115.5 g), carotene content (785.5 mg/100 g) and total anti-oxidant activity (27.0 mMT/L) were reported in Golden Monarch, Red June and Arkansas , respectively. In plum, five genotypes were evaluated and highest fruit weight (63.3 g), carotene content (387.0 mg/100 g) & total anti-oxidant activity (34.1 mMT/L) were reported in Satsuma, Ramgarh Monarch, and Kalegi (CITH Mukteshwar), respectively. In apricot, total six genotypes were evaluated and based on the physico-chemical characteristics of fruits, the highest fruit weight (93.7 g), carotene content (1175.9 mg/100 g) and total anti-oxidant activity (28.60 mMT/L) were reported in Local (Chapta), Erani, and Local (Gola) as compared to other apricot genotypes,

respectively. In evaluation of four kiwifruit cultivars, most of the physico-chemical characteristics of fruits were found superior in Hayward and Allison as compared to other cultivars. In strawberry total eight cultivars were evaluated and based on the physico-chemical characteristics of fruits, the highest fruit weight (16.0 g) and TSS (7.3 °B) were reported in Gorella as compared to other genotypes.

In vegetable crops at Srinagar kale, root vegetables and exotic vegetables were maintained and evaluated under field conditions along with biochemical analysis of cabbage hybrid and exotic leafy vegetables. Based on performance, best genotypes in kale were CITH-KC-Sel-5 (20.50 t/ha), CITH-KC-11 20.35 t/ha), CITH-KC-08 17.85 t/ha), CITH-KC-26 16.28 t/ha), Hanz Haaq (16.13 t/ha) and Kawdari 15.63 t/ha); in radish Pusa Himani (385.00 g/root) and in turnip Sel-2 (423.33 g/root). In off-season cultivation of onion in Kashmir valley, 7 varieties planted in different dates from 1st July to 30th August and Punjab White performed best with respect to production of whole bulbs yielding highest number of whole bulbs compared to other varieties at all dates of planting except 1st July. The best date for planting was observed to be 15th July where highest number of whole bulbs was observed in most of the varieties.

At Regional station, Mukteshwar, evaluation was carried out in 5 genotypes in capsicum, 5 in parthenocarpic cucumber and 9 genotypes in cherry tomato. Among these, CITH-M-SP-Sel-5 & CITH-M-SP-Sel-2 in capsicum, JLG in cucumber and CITH-M-CT-1, CITH-M-CT-2 (Yellow) and CITH-M-CT-6 in cherry tomato were found promising.

In development of superior cultivars/hybrids in Ambri, two crosses (Ambri x Redlane & Ambri x *Malus floribunda*) were made to introgress traits like scab resistance and fruit colour to apple cultivar Ambri from columnar apple cultivar Redlane and

wild apple species *Malus floribunda*. About 4000 seedlings obtained from these crosses were raised and grafted on M-9 apple clonal rootstock for further evaluation. In addition evaluation of apple hybrids obtained from previous crosses was done to identify the superior hybrids with respect to traits like scab resistance, fruit quality, pollinizer ability etc. Six Institute developed hybrids (Priame, Ammol, Amrit, Pride, Golden Snow and Pritor) were evaluated for antioxidative and free radical scavenging potential. In characterization and diversity analysis of flowering related gene/ genes in almond, whole genome transcriptome analysis between early flowering (Shalimar, Waris and Nonpareil) and late flowering (Tardy Nonpareil, Ferragnese and Ferralise) almond cultivars has been done to identify the genes and pathways differentially expressed in either early flowering or late flowering genotypes. In breeding for development of superior varieties/hybrids in Solanaceous crops, 100, 60 and 40 genotypes of chilli, capsicum and brinjal were used for seed production while elite germplasm evaluation for yield and related traits was done only in promising genotypes selected for further evaluation in IET at national level.

During the year institute has supplied about 35392 plants of different temperate fruit crops besides the supply of about 14000 scion wood. In vegetables, 292.38 kg of seed was produced in vegetable crops for supply and sale to different stakeholders and consumers like kitchen gardeners, vegetable growers, research organization and used for research purpose. At Regional Station Mukteshwar, Moreover 27735 plants/seedlings of various horticultural crops as well as 1064.5 kg vegetable seeds were supplied to the farmers/government agencies/NGOs etc.

For enhancing the multiplication rate in clonal rootstocks of apple, different trails were conducted on different rootstocks in different media using cuttings and

rootstocks. Air layering was also tried for vertical expansion. In multiplication of rootstocks through cutting, 30 cm cutting size along with the treatments Coco peat+Vermiculite @ 75:25 and Cocopeat 100% are the best for raising the cutting under greenhouse conditions, but the problem with treatment Coco peat+Vermiculite @ 75:25) is that requirement of water is more in comparison to Cocopeat. In propagation of clonal rootstocks of apple through cutting under greenhouse in soilless beds, more than 90% of rootstocks produced were suitable for grafting having a well-developed root system and clipper size above (6.0 mm). Among the total cuttings, more than 50% of cuttings have got the calliper size of above (5 mm) during the month of August-September, so budding has also been done for about 25% of plants with a success percent of above 90 percent.

To develop almond based intercropping system involving saffron, erect, semi erect and spreading type of varieties and sole crop were tried. The highest saffron yield was recorded under sole saffron crop ((2.488kg/ha) followed by erect almond varieties (2.123kg/ha), semi erect (1.876 kg/ha) and spreading (1.884 kg/ha) type of almond varieties. The highest almond was recorded in spreading type (18.06 q/h) followed by semi erect (9.62 q/h) and erect (8.21 q/h). The highest almond-saffron equivalent yield (3.686 kg/ha) was recorded in spreading type followed by erect type (2.944 kg/ha) and semierect type (2.848 kg/ha).

For evaluation of integrated nutrient management of vegetables as intercrop in apple orchard, the technology were demonstrated among farmer under MGMG scheme at Sunkiya village during 2020 with the aim to promote crop diversification for sustainable production and to utilize better space as well as natural resources per unit area without eroding soil health for enhancing production per unit area.

For elucidating the diversity, species spectrum and screening of apple germplasm against *Alternaria spp* infecting apple (*Malus domestica* Borkh), a survey for alternaria leaf blotch of apple disease in Kashmir valley was conducted and maximum ALB incidence and intensity of 87.12 and 62.5 percent, respectively was observed in Red Delicious cultivar followed by King Roat with 80.0 and 41.2 percent. While minimum disease incidence and intensity of 9.2 and 5.1 percent, respectively was observed in Red Fuji. Symptomatology and morphological studies of pathogen was also carried out and the fungus exhibited olive green to brown colony color with circular concentric mycelium with or without fluffy growth. The conidia morphology, which are large and dark brown, multi-celled, catenate or single, ovoid or obclavate, often beaked, brown, with transverse and longitudinal septa. In diagnosis and prognosis of apple viral diseases - spatial and temporal variation in virus infection in apple germplasm (varieties and rootstocks) were screened for three viruses using DAS-ELISA. Among the 203 varieties screened, only two varieties were found positive for ApMV, and none of the rootstocks were found infected with ApMV. Most of the varieties were found infected with both ASPV and ASGV. In evaluation of rootstocks for sensitivity towards mosaic disease, 8 rootstocks were evaluated for their effect on mosaic disease of apple cv. Golden Delicious. The mosaic or mosaic/necrotic symptoms were observed on six root stocks, viz, MM106, MM111, M26, M27, M9 and Pajam-1. No symptoms were observed on two root stocks i.e., M9-T337 and M9- T339. The development of symptoms on different rootstocks also varied from 70-80 days after grafting (DAG). The symptoms on two rootstocks viz., MM106 and MM111 were recorded 70 DAG. In other rootstocks the symptoms were observed after 80 DAG. The results showed that Malling Merton

(MM) series shows symptoms earlier as compared to Malling series of rootstocks. The generated technologies for value added products of quince candy, loquat, strawberry and fig were refined for up-scaling of product to demonstrations and exhibitions.

During the year 2020, due to COVID 19 pandemic, restrictions and lockdown, few events and extension activities could be conducted. Among the events, 4th QRT Meeting, 16th IRC meeting, nursery accreditation, Farmers Day/ *Kisan Diwas*, National Unity Day/ *Rashtriya Ekta Diwas*, Vigilance Awareness Week, Hindi Week, Celebration of two year long commemoration of 150th Birth Anniversary of Mahatama Gandhi Ji and Swachhata Abhiyaan, Constitution Day, Swachh Bharat Mission Abhiyan and a meeting regarding exploring possibilities of Horticulture in Ladakh were organized during the year. For the speedy transfer of various technologies, ICAR-CITH, Srinagar and its Regional Stations are continuously using various extension means for popularization of technologies. The ICAR- CITH, Srinagar has organized one 10 days, one three days, and three one days training programme (off campus and on campus) for officers from Deptt. of Forest, Uttarakhand. During the year, 5 students visit/ training, one three days training was organized for the progressive orchardist of Ladakh. Nine one day trainings/ visits were organized for the farmers from different districts of Jammu & Kashmir. At ICAR-CITH, Regional Station Mukteshwar, 2 programme of one day duration were organized for officers, one student and one farmer's visits, besides organizing 23 training programmes/ awareness/ demonstration programmes / lectures etc were organized. The staff of the Institute has delivered 19 radio/ TV talks on different aspects for the benefit of farming community of the temperate region. The programmes were also carried out under TSP and MGMG programmes.

During the COVID-19 Lockdown period also several advisories were issued to farmers of temperate region time upon time via social media and print media for various crop production and protection aspects

MEETINGS AND EVENTS

4th QRT Meeting

The 4th Quinquennial Review Meeting of ICAR-CITH, Srinagar was held on 19th December, 2020 under the Chairmanship of Dr V S Thakur, Former Vice Chancellor, Dr YSP UH&F Solan. The other members of the QRT were Dr S N Pandey, Dr R K Jain, Dr S K Dash, Dr P Kalia and Dr J I Mir (Member Secretary). Dr D B Singh, Director and Scientists of Institute participated in the meeting. The Action taken report of previous QRT and progress made during five years was also presented before the committee.

16th IRC Meeting

The 16th Institute Research Council Meeting was held on 10th July, 2020 under the chairmanship of Dr D B Singh, Director ICAR-CITH Srinagar. All the scientists participated in the meeting by following proper social distancing keeping in view the COVID-19 pandemic. Project wise presentations were made by different PI's and results/outcomes along with the activities to be taken up in next year were discussed in detail.



Discussion during 16th IRC meeting

Nursery Accreditation

Nursery accreditation committee constituted by NHB having expert member visited ICAR- CITH, Srinagar on 13th October, 2020 for renewal of accreditation/ ranking of the fruit nursery of the Institute.

All details needed as per their format were provided and shown to the committee. The committee was highly satisfied with all components of nursery and Institute got highest ranking viz Three Star.

Farmers Day/ Kisan Diwas

ICAR-CITH, Srinagar organized Farmers Day on 23rd December, 2020. In this programme about 40 progressive farmers from district Pulwama and Ganderbal participated. The programme was inaugurated by Dr D B Singh, Director and in his address, he highlighted the contribution and role of farmers for making our country self sufficient in fruit production. Other scientists also shared their views regarding the role of farmers for the development of the country. The farmers also shared the views regarding research needs for their farms.

National Unity Day/ Rashtriya Ekta Diwas

ICAR- CITH, Srinagar celebrated National Unity Day/ Rashtriya Ekta Diwas on 31st October, 2020. The staff of the Institute took pledge for their dedication to preserve the unity, integrity and security of Nation. After the Pledge, discussion was held on the work done for integration of Nation by Saradar Balhbhai Patel. Director, ICAR-CITH, Srinagar urged the staff to work for integration and development of the Nation. National Unity Day/ *Rashtriya Ekta Diwas* was also celebrated at Regional Station, Mukteshwar (Uttarakhand).

Vigilance Awareness Week

ICAR- Central Institute of Temperate Horticulture, Srinagar observed Vigilance Awareness Week from 27th Oct., to 2nd Nov., 2020. The theme of the Vigilance Week was Satark Bharat, Samriddh Bharat (Vigilant India, Prosperous India). The various programmes were organized to make the staff aware of various practices and measures to fight against the corruption. A Pledge ceremony was held in which all staff

took pledge. The posters were displayed in different areas of campus for creation of awareness for making vigilant and prosperous India. Besides this, the poster prepared by the contractual staff were also displayed which highlighted the ways of corruption and its consequences on society and country. Keeping in view, the pandemic of COVID 19, some staff who were directed to work from home took pledge at home. Pledge and awareness programmes were also organized at Regional Station, Mukteshwar (Uttarakhand).



Pledge during Vigilance Awareness Week

Hindi Week

Hindi Week was celebrated at ICAR-CITH, Srinagar from 14th September to 21st September, 2020. The celebration commenced with inaugural function on 14th September, 2020 in which long discussion was held on importance and usages of Hindi by various members. During the week, different activities like essay writing, translation, extempore, poster making and antakshari competitions were held to celebrate the *Hindi Saptah*. The staff members participated with fervour in the programmes organized from 15th September, 2020 to 21st September following Covid-19 guidelines while conducting all events. The celebrations ended with prize distribution and conclusion ceremony on 21st September, 2020. Hindi week was also observed at ICAR-RS, Mukteshwar from 14th September to 20th September, 2020. The

inauguration of Hindi week was done on 14th September in which all staff member participated. Three competition namely essay writing, ex tempore competition and debate competition were organized on different days in which permanent and contractual staff of station participated.

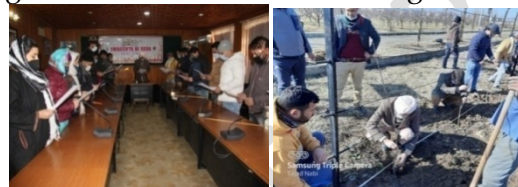
Celebration of two year long commemoration of 150th Birth Anniversary of Mahatama Gandhi Ji and Swachhata Abhiyaan

Swachhata week was organized at ICAR-CITH, Srinagar and its Regional Station Mukteshwar w.e.f. 25th September to 2nd October, 2020. During this week, various programmes on cleanliness were planned and organized. At ICAR-CITH Srinagar, a plantation drive was initiated by planting of olive plant by Dr D B Singh Director, ICAR-CITH, Srinagar on 25th September, 2020. On 26 September the cleaning in front of office was done by the staff. All the garbage including plastic was collected from various places from campus periphery. On 27th September, cleaning drives were carried out by the staff at their homes and *mohallas*. On 28th September, keeping in view the Covid-19 pandemic, spraying was done in office building. On 29th September, field waste was collected and put for its management through composting. On 30th September sanitization was done in all buildings in the premises of campus and cleaning drive was done in office chambers by the staff. On 1st October, a poster show was organized in which the work of Mahatama Gandhi Ji was highlighted. On 2nd October, 2020, on line meeting of staff was organized and Swachhata Pledge was taken by the staff.

Swachh Bharat Mission

A 16 days programme of “**Swachhta Pakhwada**” from “16th to 31st December 2020” was organized at ICAR-CITH, Srinagar. As per the programme staff members of the institute participated in the programme actively by following the SOPs of MOH, Govt of India regarding Covid. The staff took the Swachhta pledge, the oath

was administered by the worthy Director ICAR-CITH, Srinagar. The programs included day-wise activities which comprised the plantation drive, sanitation drives, waste disposal, and other off-campus activities. Kisan Diwas was also celebrated on 23rd December 2020 involving progressive farmers to create general awareness on farmer rights.



Pledge and other activities carried out under Swachh Bharat Mission 2020

Swachh Bharat Mission Abhiyan, R.S. Mukteshwar

In Swachh Bharat Mission Abhiyan (*Swachhta Hi Seva*) was celebrated from 16th December to 31st December, 2020 was organized at ICAR-CITH, RS, Mukteshwar. Day to day cleaning of the station premises was done during all the working days in which roads, channels, temple, water bodies as well as office, chambers, laboratories, farm office, surrounding the residential quarters of the premises were cleaned and collected garbage, plastic, etc. Besides, awareness was created on Swachhta, harmful effect of plastic and single use plastic, garbage, and dirtiness.

EXTENSION AND HRD

The Institute has tried to disseminate various technologies by organizing number of programs for human resource development. For the quick adoption of technologies, ICAR-CITH is continuously organizing vocational trainings, model training courses, crop days, on campus and off campus trainings as well as demonstrations, kisan ghoshtis, farm visits, diagnostic visits, supply of quality planting material, publication in local languages, participation in farmer fairs, radio talk, TV shows and display of exhibits on various

occasions/ farmers fair etc. The details of various programmes organized by ICAR-CITH during 2020 are presented under various heads.

Ten days training programme on vegetative propagation in walnut

A ten days training programme on vegetative propagation in walnut for staff of forest department of Uttarakhand was organized by ICAR-CITH, Srinagar *w.e.f.* 18th to 27th February, 2020. Nine gardeners from Deptt of Forest Uttarakhand attended the training programme.



Hands on training for walnut propagation under poly-house conditions

One day off campus training programmes organized in Uttarakhand

For promotion of walnut cultivation in Uttarakhand, three one day training programmes were organized at Magara, Sony and Silalekh on 5th, 8th and 9th February, 2020 in collaboration with UFRMP, Dehradun in which 44, 32 and 68 officers from Department of Forest and some progressive farmers participated



Demonstration on grafting during training

Training on Packaging, handling and transportation of grafted plants

A three days training programme was organized for the staff of UFRMP,

Dehradun who visited ICAR-CITH, Srinagar from 3rd to 5th December, 2020 for lifting the planting material of walnut. The staffs was apprised for various aspects like uprooting, packaging, tagging, transportation and care to be taken during transportation of grafted walnut plants for their better survival in the field.

Training programme/ Farm visit organized for Farmers of Ladakh

A three-day training programme was organized for the farmers of Ladakh (UT) from 1st to 3rd December 2020 on canopy management in temperate fruits. In this programme, 4 farmers from district Kargil participated and provided awareness on different training and pruning practices adopted for different temperate fruit crops especially apple, pear, apricot, peach, plum, and cherry. The participants were provided with practical demonstrations on these aspects as well. The concept of high density and the role of rootstocks in temperate fruits were also discussed in detail with the trainees by various scientists

Training programme on walnut propagation

ICAR-CITH, Regional Station, Mukteshwar organized a one-day training programme on walnut propagation technique for quality planting material production in which 41 participants from the department of Forest, department of Horticulture and progressive farmers participated. The participants were apprised in detail about the importance of walnut cultivation and vegetative propagation for boosting the quality production of walnut. Participants were apprised practically regarding various propagation aspects like raising of rootstock, scion wood selection, propagation methods & time as well as the aftercare of plants in the nursery.

Diagnostic visits, publications and Radio/ TV programmes

Besides organizing training programmes / awareness / demonstration programmes, farmers' visits, students visit were

organized. The staff of the Institute has delivered 19 radio / TV talks on different aspects for the benefit of farming community of the temperate region. The scientists of ICAR-CITH, Srinagar published 16 research papers, 2 review articles, 2 books, 2 book chapter, 1 popular article and 4 extension bulletin/ folders for the benefit of students, researchers, extension functionaries and farmers. In addition to various appreciations, the scientists of ICAR- CITH, Srinagar received 5 awards during the year.

Tribal Sub Plan Scheme

ICAR-Central Institute of Temperate Horticulture, Srinagar organized one day workshop on “Plant Variety Protection and Farmer’s Right Act” on 22nd February, 2020 at District Poonch of Jammu & Kashmir. The workshop was organized in collaboration with KVK, Poonch for identification, protection, registration and promotion of farmer’s varieties in temperate fruits and nuts.



Workshop on PPV & FRA under TSP

One day training programme on high density plantation and canopy management was organized at Rajouri on 20th February, 2020 under TSP scheme. During the event planting material of apple, apricot, cherry, pear etc was also distributed among 50 tribal farmers of Rajouri district. Demonstration of ten walnut varieties (CITH-W-1, CITH-W-2, CITH-W-3, CITH-W-4, CITH-W-5, CITH-W-6, CITH-W-7, CITH-W-8, CITH-W-9 & CITH-W-10) was

laid on farmer’s field at Poonch. Four tribal farmers of Poonch were identified for laying down the demonstrations in walnut varieties on 21st February, 2020. On the same date planting material of apple, apricot, pear and cherry were distributed among forty tribal farmers of district Poonch under TSP scheme. Training and awareness about planting, orchard management and canopy management was provided to 40 tribal farmers on 21st February, 2020.



Demonstration of walnut varieties under TSP

Mera Gaon Mera Gaurav Programme

For implementation of Mera Gaon Mera Gaurav programme planting material of apple, apricot, almond, cherry, plum and pear were distributed among 100 beneficiaries at Hatigam village of district Anantnag, Jammu & Kashmir on 9th March, 2020. The village Sunkiya was adopted under Mera Gaon Mera Gaurav by the Mukteshwar center in 2015-16. Geographically it is situated at 1750 meter above mean sea level (29° North latitude and 79° East longitudes) in Dhari tehsil of Nainital district. The village is predominating in Horticulture based farming system. Hence, Horticulture based Integrated Farming System Model was developed at the 2 farmers fields, one in Sunkiya and another in Sunkiya Naveen villages in association with ICAR-IVRI, Mukteshwar, ICAR-DCFR, Bhimtal, ICAR-VPKAS, Almora and ICAR-IISWC, Dehradun.

AWARDS AND RECOGNITIONS

- Dr D B Singh, Director Received Dr Gautam Kallo Award for Excellence in Horticulture Research for the year 2018 during Indian Horticulture Summit organized by Society for Horticulture Research and Development (SHRD held at Chitrakoot (M P) from 14 to 16th February, 2020 .
- Sh. Sajad Un Nabi Naingroo(Scientist) received Best Oral Presentation award for paper presentation on Morpho-molecular characterization of *Diplodia* spp. associated with apple canker disease during IPSCONF 2020 held at ICAR-IARI, New Delhi from 16 to 20th January, 2020.
- Dr J I Mir received recognition for esteemed contribution, dedicated and tireless efforts during 21 days National Innovative Training Programme on “Recent technologies of agribusiness management and agri entrepreneurship” jointly organized by RVSKVVG, MP and NADCL, Baramulla from 8th to 28th October, 2020.
- Dr J I Mir received recognition for highly esteemed contribution, sincere efforts and unending support in implementing and conducting 21 days advanced national training programme on “Recent scientific interventions and practices of sugarcane breeding, production, protection and utilization for doubling farmers income” jointly organized by ICAR-SBI, Coimbatore and NADCL, Baramulla from 1st to 21st December, 2020.
- Dr Arun Kishor received Young Scientist Award in the 11th International Conference on “Agriculture Horticulture and Plant Sciences India organized by The

Society of Tropical Agriculture, New Delhi from 19th to 20th December, 2020 at STA Office, New Delhi,

- Dr Sovan Debnath received best poster presentation award for the paper entitled "Is zinc and iron good cousin in cereals bred over decades since the Green Revolution in India?" presented in the National Webinar on “Agrochemicals for up keeping environment” organized by the Society for Fertilizers and Environment in collaboration with Bidhan Chandra Krishi Viswavidyalaya on 27th August, 2020.

TRANSFERS/PROMOTIONS

Transfers

- Dr. Raj Narayan, Principal Scientist (Vegetable Science) transferred from ICAR-CITH, Regional Station Mukteshwar to ICAR-ATARI, Jodhpur (Rajasthan) on 11th September, 2020 (A/N).
- Dr. Kishan Lal Kumawat, Scientist (Fruit Science) transferred from ICAR-CITH, Srinagar to ICAR-CIAH, Bikaner (Rajasthan) on 14th August, 2020(A/N)).

Promotions

- Dr. Wasim Hassan Raja Scientist (Fruit Science) promoted under CAS in Research Level-10 to 11 (Scientist to Scientist- Sr. Scale) w.e.f. 1st January, 2019
- Shri Fayaz Ahmad Dar, AF&AO, ICAR-CITH, Srinagar promoted to FAO, ICAR-CITH, Srinagar (Level- 8 to Level 10) w.e.f. 6th March, 2020
- Smt. Mubeena, Sr.Technician (T-2) promoted to Technical Assistant (T-3) Level- 4 to 5 w.e.f. 20th August, 2020

New Joining

- Shri Madhu G S joined as Scientist (Plant Pathology) ICAR-CITH, Srinagar on 6th April, 2020

Probation Clearance

- Dr. Shoaib Nissar Kirmani, Senior Technical Officer(T-6) cleared his probation period w.e.f. 13.04.2017(F/N)

Modified Assured Career Progression Scheme (MACP)

- Shri Diwan Chandra, Assistant is placed from Pay Matrix Level 6 to Pay Matrix Level 7 from 30th October, 2020 under MACP

- Shri Showkat Ahmad Mir, Assistant is placed from Pay Matrix Level 6 to Pay Matrix Level 7 from 1st November, 2020
- Shri Tariq Ahmad Mir, Jr. Stenographer is placed from Pay Matrix Level 4 to Pay Matrix Level 5 from 27th August, 2020
- Shri Pushpendra Kumar, LDC is placed from Pay Matrix Level 2 to Pay Matrix Level 3 from 13th September, 2020

CITH-Newsletter 2020 (Published on September 2021)

Published by:

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