

# CISH NEWS

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## FROM THE DIRECTOR'S DESK



Indian subtropics is an abode to a wide range of fruits, vegetables, tuber crops, flowers, mushrooms, spices, medicinal and aromatic plants. Horticulture sector has the potential to provide enormous entrepreneurship and employment opportunities to unemployed youth in rural as well as in urban areas. Small and marginal farmers are the predominant beneficiaries with the horticulture technologies which accounts for majority of horticulture production and enables them to take up entrepreneurship. ICAR-CISH, Lucknow has helped scores of farmers, rural women and unemployed youth in capacity building in niche area of horticultural technologies. ASCI sponsored Gardener's training led to capacity building of large number of youth. MANAGE sponsored 15-days training programme on "Certified

Farm Advisor of Fruits" was attended by participants from 6 states of India. Model training course on entrepreneurship was enthusiastically availed by extension functionaries from different parts of the country. Three Horti-entrepreneurship seminars were organized which were in attendance by a large number of youth. Institute also developed entrepreneurship in mango based poultry farming, tissue culture, nursery and mushroom production. During the reporting period, institute worked closely with tribal farmers through Bhagidari, Jagriti empowerment of tribal rural women and through Tribal Nutri Smart Village. ICAR-CISH, Lucknow is a Student Ready Organization which has extended training to 313 students from four different institutions. Institute celebrated National Unity Day, Kisan Diwas, Vigilance Awareness Week, World Soil Day, 150<sup>th</sup> birth anniversary of Mahatma Gandhi and Swachahta Pakhwara.



(SHAIENDRA RAJAN)

## RESEARCH HIGHLIGHTS

### Promising accession of bael identified

Out of thirty six accessions maintained in field gene bank, one accession CISH-B-3 was identified the best. Fruits are yellowish green at maturity, elliptical in shape and 11.48 cm in length and 42.20 cm in circumference. Average fruit weight was recorded 1.41 kg with average fruit yield of 42.35 kg/tree at 10 year of age. Fruit is thin shelled with 2.14 mm thick rind; pulp is dark yellow colour with pleasant flavour and less mucilage content. On an average 81.50 number of seeds were recorded per fruit with average seed weight being 11.15 g. Fruit is also having good quality attributes *viz.* TSS content (38.10 °B),



acidity (0.41%), vitamin 'C' content (15.60 mg/100g pulp), total carotenoids (2.14 mg/100g pulp) and tannin (2.76%).

### Mango rejuvenation technology refined

Poor yield and quality production from old and unproductive mango orchards has been a major constraint. The rejuvenation technology developed by ICAR-CISH, Lucknow was given wide publicity by the institute and the central/state horticulture departments to create visible impact. No doubt the technology has done wonders where the trees were given proper care and maintenance after heading back during rejuvenation process. The impact analysis of rejuvenation indicated up to 50 to 60 per cent success at farmers' fields. Infestation of trunk borer and immediate set back of stopping the income by cutting whole tree were two major bottlenecks of the technology for further expansion and adoption by the various clientele groups. Keeping these constraints in

mind, different systems of cutting primary branches at various heights based on training and pruning principles were applied during January, 2016. Cuttings of primary branches over a period of 3 years in a successive manner were also attempted. Very good canopy development with healthy branches was obtained in case two branches were headed back every year. Simultaneously, the stem borer infestation was negligible. Varying fruit yield from 40 to 150 kg/tree was also obtained from the remaining branches during first 2 years.



### Success in guava production in North Eastern States

With increasing demand of guava in North Eastern states of India, planting of ICAR-CISH cultivars was undertaken during the year 2015 under NEH Plan for establishment of mother blocks of guava to cater the demand of planting materials for North Eastern states. As a strategic plan, selected farmers were trained exclusively on guava nursery raising, fruit production and processing. One of the enthusiastic farmers from Sadam, South Sikkim Mr. Deo Prasad Pradhan has established mother block of guava and raised more than 50000 seedlings for grafting. Member, Zilla Panchayat, Mrs.



Chandra Kala Dahal informed that the varieties of ICAR-CISH are very well fruiting and fruits are also of superior quality than the locally available guava. Mother block of 22,420 plants of different varieties of guava was established in Arunachal Pradesh during 2017-18 and ultimately more than one lakh plantation was done

at Naharlagun, Arunachal Pradesh by Agro Gramin United in consultation with ICAR-CISH. Director, ICAR-CISH observed great success during December 2018, in his recent visit. CISH-Lalit especially performed wonderfully with red colour development on epicarp of fruits.

### Mango orchard based poultry farming

Profitability from mono cropping of mango is low in eastern Uttar Pradesh particularly for small and marginal farmers due to several factors. Availability of cash throughout the year from mango production is a

constraint. Integration of mango orchards with poultry can raise farm income and will ensure revenue throughout the year. ICAR-CISH, Lucknow developed mango orchard based poultry farming practice through participatory mode with mango and guava farmers. Cost effective night shelters were designed for mango orchards with locally available bamboo and wire mesh costing Rs. 5,000-10,000. A unique, cost effective feed technology was developed using grain waste, *in situ* produced *Azolla microphylla*, dried barseem leaves and fed on naturally available mango insects, grasses and grass seeds. Chicks of rural poultry strains were reared in batches of 250 to 300 for 4 to 6 cycles in a year by each farmer. Birds were gradually disposed off after achieving body weight of 1.5 kg and fresh batches were provided after 2 months of initial batch and the cycle continued. The birds derived their food as pupa, larvae, maggot and borers underneath the mango canopy as a result the technology reduced the mango pest population and requirement for pesticide sprays. Certain bird strains such as Kadaknath exhibited high flight and fed on mango hoppers and leaf webber insect situated on upper canopy. Each bird in mango orchard supplemented 45 kg manure in the form of droppings in its entire life cycle. Orchard having flock size of 500 birds gets around 225 quintal of poultry manure. Birds while scavenging pulverized the soil and ensured better aeration. Farmers achieved an attractive BC ratio of 4.64 in one acre orchard by integrating rural poultry.



### Cow pat pit demonstrated as potent bio-enhancer

Cow pat pit is a special biodynamic field preparation. Cow dung is fermented along with crushed egg shells and basalt/bentonite powder duly mixed and placed in pit size of 3×2×1.5 feet. Two sets of BD-502-507 preparations are incorporated for catalyzing the composting process. In a study, CPP showed highest per g bacterial load ( $1.67 \times 10^9$ ), *Pseudomonas* ( $6.8 \times 10^6$ ), phosphate solubilizing bacteria ( $8.4 \times 10^5$ ), *Rhizobium* ( $3.10 \times 10^9$ ), *Azospirillum* ( $2.24 \times 10^7$ ), *Azotobacter* ( $2.86 \times 10^6$ ) and fungi ( $8.3 \times 10^5$ ). It also contained the highest amount of *B. subtilis* ( $1.9 \times 10^6$ ) responsible for disease management.





### Bio-management of mango leaf Webber

Initially caterpillars feed on leaf surface by scrapping, later they make web of tender shoots and leaves together and feed within. Mechanical removal of leaf webs and two need based sprays commencing from last week of July with lambda-Cyhalothrin has been in practiced for management of this pest. In order to develop eco-friendly management practices for the pest effect of neem oil and entomopathogenic fungus (*Beuveria bassiana*) were evaluated through laboratory bioassays. Neem oil @ 3 ml of per litre of water along with sticker caused 100 per cent mortality of the third instar larvae within a day. *B. bassiana* ( $2 \times 10^8$  spores/ml) @ 5 g/litre caused mortality up to 80 per cent after the 5 days after the treatment. Since, both the treatments are compatible, can be applied together for long lasting management of leaf webber.



### Development of aonla based brahmi squash

Brahmi (*Bacopa monnieri* / *Centella asiatica*) is known for its high medicinal properties. The creeping herb has been widely used in Ayurvedic system since ages. Brahmi is enriched with many bio-chemical and antioxidant compounds having high degree of therapeutic values. It is a top grade memory booster and is also beneficial in hair fall problem, insomnia, Alzheimer's disease, stress reduction, etc. Aonla (*Emblica officinalis*), on the other hand, is rich in vitamin-C and phenolics with good antioxidant properties. A brahmi enriched aonla squash has been developed containing 87.7 mg/100 ml vitamin-C and 527.8 mg/100 ml phenolics. The product with good acceptable taste and pro-health properties may go well in the market.



## MAJOR EVENTS ORGANIZED

### Workshop on vegetable seed production

A Mission for Integrated Development of Horticulture (MIDH) sponsored programme on vegetable seed production was organized by ICAR-CISH, Lucknow at its Regional Research Station, Malda (W.B.) in collaboration with National Seed Corporation (NSC), West Bengal during July 27-28, 2018. Talking on this initiative, Director, ICAR-CISH, Dr. S. Rajan said that the state ranks first in vegetable production and there is a lot of vegetable seed consumption in the state of West Bengal. Quality seed production can increase the

production and it could also be taken up as a venture by the state farmers for increasing their income. ICAR-CISH RRS Malda is instrumental in promoting seed production through farmers by making breeders seed available to farmers. ICAR-CISH is establishing seed processing plant at Malda for the benefit of farmers. This collaborative programme will help in establishing strong seed chain from producers to marketing experts. The institute is providing breeder's seed of newly developed varieties for multiplication and strengthening the seed chain. Two hundred and fifty tribal farmers attended the workshop and participated in the discussions. NSC provided seed kits to each participant for cultivation in their field.



### Workshop on poultry in mango orchard

ICAR-CISH, Lucknow organized one day workshop on integration of rural poultry in mango orchard ecosystem on August 09, 2018. Director, ICAR-CISH, Lucknow informed that in order to enhance livelihood base of farmers, we demonstrated rural poultry under mango orchard. Within a year, this module has become so popular that it spread to more than four villages in Malihabad. Due to active role played by media in spreading this technology, now this module is being adopted in other orchard ecosystems. Dr. R.B. Rai, renowned poultry expert and Ex-Director ICAR-CARI, Port Blair, A&N Islands interacted with farmers and exhorted that *Azolla* must be integrated in mango orchard as poultry feed.

### Awareness programme on Scientific Bee Keeping

Two days awareness programme on Scientific Bee Keeping was jointly organized by ICAR-CISH RRS, Malda, W.B. & AICRP Honey Bees and Pollination during August 13-14, 2018 at Malda and Sargachi, Murshidabad, respectively. The programmes were inaugurated in the gracious presence of eminent scientists such as Dr. P.K. Chakraborty (ADG PP & B, ICAR, New Delhi), Dr. S. Rajan (Director, ICAR-CISH, Lucknow), Swami Viswamayananda Ji (Chairman, Dhanyaganga KVK, Sargachi) and Dr. Kumaranag (AICRP HB & P, New Delhi). Three hundred fifty bee keepers from Malda district on August 13, 2018 and 300 participants from Murshidabad district on August 14, 2018 were trained on latest bee keeping technologies.





### Horti-Entrepreneurship Workshop

Horti-Entrepreneurship Workshop on nursery, protected cultivation, value addition, organic farming and tissue culture was organized at ICAR-CISH, Lucknow on August 18, 2018. A total of 68 participants (graduate to Ph.D.) and 7 well educated farmers representing 16 districts of 4 states (Bihar, Jammu & Kashmir, Rajasthan and Uttar Pradesh) participated in the workshop. A special session dedicated to entrepreneurship in nurseries of fruit, ornamental and vegetable crops was organized. Value addition attracts youth for establishing small scale industry or household level production of value added products. Business



opportunities in processing of fruits and vegetable crops and scope of small scale pickle industry in U.P. were discussed. Protected cultivation of high value fruit and vegetable crops, entrepreneurship in organic farming and mushroom production were the important issues for discussion. With increasing demands of tissue culture banana plants, entrepreneurship in tissue culture and secondary hardening has attracted many graduates to earn money within few months. Dr. Maneesh Mishra, Principal Scientist coordinated the program as organizing secretary.

### Workshop on Bio-waste management

ICAR-CISH organized a workshop on horticulture waste management which was attended by scientists of ICAR-CISH and ICAR-NBFG, Lucknow on September 20, 2018 with an objective to brainstorm on different ways by which the horticulture produce residue from mandis, households, farmers' fields and processing factories can be converted into value-added products. Dr. Neelima Garg, Head, Division of Post Harvest Management delivered a talk on 'Horticultural waste management by microbial interventions'. She emphasized that these wastes were very rich in organic constituents like cellulose, starch, pectin, vitamins, minerals, etc. and posed serious health hazards due to high biological oxygen demand (BOD) and led to environmental pollution. Dr. Ram Awadh Ram, Principal Scientist also delivered a talk on 'Viable solutions to crop and municipal solid waste management in India' on this occasion.



### Workshop on Nutrismart Tribal Village

ICAR-CISH-RRS, Malda organized a workshop on "Nutrismart Tribal Village" in collaboration with Shree Shree Gyanananda Saraswati Ashrama, Chatna, Bankura, West Bengal on October 13, 2018. The main aim of this workshop was to promote the concept of nutrismart tribal village and encourage the local people to grow the improved fruit varieties of ICAR-CISH (Mango- Ambika and Arunika) and vegetable varieties of other institutes to fulfill the desired demand of resource poor villages. More than 210 farmers attended the programme. The arrangement of the programme was made by Secretary, Dolpur Shree Gyanananda Saraswati Ashrama. Dignitaries like Mr. Subhasis Batabyal (Vice Chairperson, Bankura Zilla Parishad), Deputy Director of Agriculture (Admn.), Bankura, Project Director (ATMA), BLRDO, Chatna had also been present on this occasion and graced the workshop by sharing their experiences.





## Workshop on Strawberry production in subtropics - challenges and strategies

ICAR-CISH, Lucknow organized a workshop on "Strawberry Production in Subtropics - Challenges and Strategies" on October 29, 2018. A total of 16 farmers participated in this workshop. The main aim of this workshop was to promote the production of strawberry in subtropics area by mitigating the difficulties and training the local farmers for cultivation of strawberry. The programme was coordinated by Dr. Ashok Kumar, Principal Scientist.



## Workshop on Waste to Wealth

A workshop on "Waste to Wealth" was organized December 22, 2018 on particularly to educate and motivate staff member of ICAR-CISH for minimizing solid waste from households. In this activity three lectures were delivered in which messages of minimizing food and urban waste by around 75 per cent and role of agriculture waste management in climate change was emphasized. Utilizing domestic solid waste for compost preparation and container gardening in terrace would also ensure chemical free vegetable availability in urban localities. Institute staff could become torch bearers in this activity by becoming role models.

## Krishi Samriddhi Mela

Ramkrishna Mission Ashrama, Sargachi, Murshidabad and Dhanyaganga Krishi Vigyan Kendra, Sargachi with the help of ICAR-CISH RRS, Malda and Agriculture Department, Govt. of West Bengal jointly organized a National Workshop on Krishi Samriddhi Mela-cum-Integrated Farming System at Ramkrishna Mission Ashrama, Sargachi during December 28-31, 2018. Dr. Ashish Banerjee, Hon'ble Minister of Agriculture, Govt. of West Bengal inaugurated the workshop as chief guest in the presence of Dr. A.K. Singh, DDG (Agril. Extension), ICAR, New Delhi as special guest. Besides, Dr. P.K. Chakraborty, ADG (PP&B), ICAR, New Delhi, Dr. S. Rajan, Director, ICAR-CISH, Lucknow, Dr. S.S. Singh, Director, ICAR-ATARI, Kolkata and Sh. Musharaf Hussain, Chairman, Murshidabad Zilla Parishad were also present in the workshop. Thousands of farmers have participated in the mela and visited more than 60 stalls posted by various ICAR institutes, SAUs, KVKs, NGOs and self-help groups. On this occasion many experts from different parts of the country delivered lectures on

integrated farming system and shared their experience with farmers and other stakeholders. Dr. Sujan Biswas, Senior Scientist and Chief, Dhanyaganga KVK, Sargachi, W.B. and Dr. Dipak Nayak, Scientist and In-charge, ICAR-CISH RRS, Malda, W.B. coordinated the programme.

## CALIBRATIONS

## 150<sup>th</sup> birth anniversary celebration of Mahatma Gandhi

The scientists, technical officers and other staff of ICAR-CISH, Lucknow celebrated 150<sup>th</sup> birth anniversary of Mahatma Gandhi on October 2, 2018 with great enthusiasm. Fifty students from Rajkiya Junior High School, Kanar participated in this function along with their teachers. Sh. Kailash, SSS and his musical group sang Ramdhun and favourite bhajans of Mahatma Gandhi during the programme. Students of Rajkiya Junior High School recited their self-written poems and songs on Mahatma Gandhi. Dr. S.K. Shukla, Principal Scientist discussed various facets of Gandhiji and presented his self-written poem. After that, Dr. Neelima Garg, Head, PHM and Chairperson, Institute's Swachhta Committee has shown a film on various swachhta related activities done by institute staffs. Dr. S. Rajan, deliberated on philosophies of Gandhiji towards life - truth, non-violence, self-discipline, cleanliness, positivity etc. and urged the staffs to inculcate cleanliness in their lives. Dr. P.K. Shukla made arrangements and also coordinated the programme.



## Rice Day Celebration

Rice day was organized on October 10, 2018 at Shyamdanga village of Habibpur block, Malda under Tribal Sub-Plan programme by ICAR-CISH Regional Research Station, Malda (W.B). The programme was organized to showcase the production potential of newly introduced short duration rice variety (Sahabhagi) being grown for seed production at field (4 acres) of one of our progressive growers. This short duration rice variety has tremendous potential in Habibpur block, where most of the rice fields are rainfed and upland type. Farmers were in huge crisis during this year due to long dry spell and Swarna paddy (long duration dominated variety) was affected severely. Farmers were excited by



seeing the performance of Sahabghi paddy and ready to accept the technology in coming season. The programme was attended by more than 300 tribal farmers, majority were tribal women from the 30 adopted tribal villages. The programme was coordinated and implemented by Dr. Dipak Nayak Scientist & In-charge, ICAR-CISH RRS, Malda.



### Vigilance Awareness Week

The employees of ICAR-CISH, Lucknow organized Vigilance Awareness Week from October 29, 2018 to November 03, 2018. On this occasion, oath was taken by staff of the institute on 29 October, 2018. Shri Dharendra Kumar, Retired COA of CSIR-CIMAP delivered a lecture on vigilance on November 11, 2018.



### National Unity Day Celebration

National Unity Day was celebrated on October 31, 2018 at ICAR-CISH, Lucknow on the occasion of birth anniversary of Ex. Home Minister, Sardar Vallabh Bhai Patel. The staff of the institute took oath on national unity. During the oath taking ceremony, they pledged that they would try their best to spread national integrity. Staff took part in national unity run inside the institute. On this occasion, contributions of Sardar Vallabh Bhai Patel was appreciated wholeheartedly by Director of the institute.



### World Soil Day Celebration

ICAR-CISH, Lucknow organized World Soil Day on December 5, 2018 with the farmers of Farmer First project. Dr. Neelima Garg, In-Charge Director, ICAR-CISH, Lucknow delivered the talk on role of microbes for improving soil health. Dr. Ram Awadh Ram, Principal Scientist deliberated on role of organic input for sustainable health of soil. Soil health cards were distributed to farmers of Mohammad Nagar Talukedari village. ICAR-CISH RRS, Malda also organized World Soil Day.



### Swachhta Fortnight Celebration

Various activities were carried out during December 16-30, 2018 to celebrate swachhta fortnight. Swachhta Banners at Guest House and Main gate of the institute were displayed and swachhta pledge was taken.



### Kisan Diwas Celebration

On the occasion of 119<sup>th</sup> Birth Anniversary of former Prime Minister Ch. Charan Singh Kisan Diwas was celebrated at ICAR-CISH, Lucknow on December 23, 2018. Dr. S. Rajan, Director of the institute inspired the invited farmers from four villages of Malihabad block to form self-help groups for their livelihood development. He also highlighted the change in mind of villagers from





Mohammad Nagar Talukedari towards open defecation by taking advantage of government funded cleanliness facilities (e.g. toilet). Dr. V.K. Singh and Dr. S.K. Shukla, Principal Scientists deliberated about the importance of nutri-gardens and preparation of organic manure and vermi compost at rural level for income generation. Some of the invited farmers were also honored for their meaningful contribution in farming and cleanliness drive by the Director through distribution of certificates. This programme was coordinated by Dr. Maneesh Mishra.

## HUMAN RESOURCE DEVELOPMENT

### Farmers training and awareness programme

Training program on drip irrigation, plastic mulching and importance of protected cultivation in horticulture crops was organized at KVK, Agra on August 02, 2018 by PFDC, ICAR-CISH, Lucknow. Nearly 55 farmers excluding staff of KVK, state horticulture department, senior faculty of horticulture department of RBS College, Agra participated in the event. Dr. V.K. Singh, Principal Scientist & PI, PFDC enumerated the technologies developed by PFDC, ICAR-CISH especially on drip irrigation and plastic application techniques in the crops. Literature related to these topics were distributed and lectures on background of drip irrigation, advantage of drip irrigation, its working, laying out of drip line & lateral care and management, maintenance of the system, fertigation filter, etc. were projected in films. A survey and awareness programme was also conducted at Hathras district of Uttar Pradesh on August 08, 2018 to assess the status and performance of high density guava plantation by interacting with the farmers. It was observed that with the help of ITC high density plantation of guava was spread in an area of 250-300 acre in this district alone.



### MP Horticulture Officers Trained

Five days training program on production, protection and postharvest technology of mango and guava was organized for the Horticulture officers of Madhya Pradesh on August 6-10, 2018 at ICAR-CISH, Lucknow. The training was organized on various technologies of



mango and guava production. Interaction with Horticulture officers indicated that farmers are interested in high density planting of fruits particularly guava because of its suitability for intensive cultivation. The trainees were explained about the ultra high density technology developed for guava and the precautions to be observed while using this technique.

### Field Experience Training (FET) for ARS probationers

Six ARS probationers from ICAR-National Academy of Agricultural Research Management, Hyderabad underwent FET at ICAR-CISH, Lucknow from 21<sup>st</sup> August to 10<sup>th</sup> September, 2018. These scientists undertook FET at Nabipanah village of Malihabad under the mentorship of Dr. R.A. Ram and Dr. Maneesh Mishra, Principal Scientists and developed social, agro-ecological, mobility and time line of the village. They did constraint analysis of village. They made presentations of their findings at village and Institute level.



### Model Training Course for Entrepreneurship Development

ICAR-CISH, Lucknow organized a Model Training Course on "Entrepreneurship Development through Market Driven Production and Processing of Horticultural Crops" during September 10-17, 2018. The training was sponsored by Ministry of Agriculture & Farmer's Welfare, Government of India. District Horticulture Officers / Rural Development Officers /





extension personnel from seven different states *viz.* Uttar Pradesh, Uttarakhand, Bihar, Chattisgarh, Odisha, Rajasthan and Madhya Pradesh participated in the training program. They were trained on entrepreneurial ecosystem, start-ups, nursery, floriculture based enterprises, orchard based poultry farming, market driven production of exotic fruits in subtropics *viz.* strawberry and pepino, processing of fruits and vegetables, herbal cosmetics, essential oil extraction, hydroponics cultivation of vegetables, mushroom production, organic farming, inspection and certification of organic produce, FSSAI registration, protected cultivation, bio-fertilizer production, packaging, branding, food safety laws, dry flower technology, etc. Lecture session experts were drawn from ICAR, CSIR, IIT, SAU and Corporate Sector. The officers also interacted with progressive farmers and new entrepreneurs who have made their name in horticulture. Dr. Maneesh Mishra was Course Director of the programme.

### **Training programme for Professional Excellence in Certified Farm Advisor of Fruits**

The 15-day training programme on "Certified Farm Advisor of Fruits" was organised by ICAR-CISH, Lucknow on October 3, 2018. This training programme has been funded by National Institute of Agricultural Extension Management (MANAGE), Hyderabad. In this programme, trainees from different states of India including Maharashtra, Himachal Pradesh, Jharkhand, Uttar Pradesh, Tamil Nadu and Mizoram participated. Under this training, intensive knowledge was provided to the trainees and the latest techniques related to the selected crops were taught. After completing training, the trainees were allocated for technical guidance of the concerned research institute for a period of one year to face regional level challenges. Apart from this, a certificate of "Certified Farm Advisory Expert" will be given by MANAGE and their name will be listed on the website as a Certified Farm Advisory Specialist.



### **Training programme on Organic Farming in Horticulture Crops**

The 4-day training programme on "Organic farming in horticulture crops" was organized by ICAR-CISH, Lucknow from October 03 to 06, 2018. Officers of Central Public Works Department attended the training. In this programme, 30 trainees, from different states of India



including Maharashtra, Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Karnataka, Telangana, Andhra Pradesh, Tripura, Chandigarh and Delhi participated.

### **Training on value addition in horticulture**

The 4-day refresher training programme on "Opportunities of value addition in horticulture" was organized by ICAR-CISH at R.B. Road campus, Lucknow from October 22-25, 2018. This training programme was funded by National Institute of Agricultural Extension Management (MANAGE), Hyderabad. In this programme, trainees come from different states of India.



### **Model Training Course**

A model training course on "Food and Nutritional Security of Farm Women through Horticulture Based Interventions" was organized during November 13-20, 2018 at ICAR-CISH, Lucknow with support from Directorate of Extension, Ministry of Agriculture, Cooperation and Farmers' Welfare, New Delhi. This MTC facilitated upgrading of knowledge and improving skills of state government officials and extension workers including District Agriculture and Horticulture officers from different parts of the country and extension workers from KVKs/ICAR institutes and SAUs. The course curriculum covered broad thematic areas like cultivation of horticulture crops with high remuneration under resource poor situations, possibilities of involvement of farm women in nursery industry, small scale processing, ways to improve food and nutritional security using newer varieties and hybrids, dietary diversification, establishing nutri-gardens with limited resources, mushroom cultivation, etc. Dr. Anju Bajpai Principal Scientist was Course Director of MTC.



### Training on organic farming

Twenty six officers of Deendayal Upadhyaya State Institute for Rural Development, Bakshi ka Talab, Lucknow visited the institute campus and experimental field of ICAR-CISH on November 15, 2018. Dr. R.A. Ram, Principal Scientist gave a brief introduction on the research and development activities of the Institute followed by training on organic farming.

### Capacity building of women farmers on post harvest management

Eighty eight women farmers and extension functionaries came from State Institute of Management in Agriculture, Rehmankhera, Lucknow and visited the campus and food processing laboratory of ICAR-CISH on November 22 and 29, 2018. Dr. P.S. Gurjar, Scientist and Er. D. K. Shukla, CTO imparted hands on training on various post harvest related technologies developed by the institute to the women farmers/officials.



### Training of ATM/BTM

Forty Eight ATM/BTM and Deputy Project Director came from State Institute of Management in Agriculture, Rehmankhera, Lucknow and visited the institute campus and experimental field of ICAR-CISH on November 28, 2018. Institute staff briefed on the research and development activities of the institute followed by lecture on farm practice, fertilizer application and insect pest management in mango.

### Jagriti empowerment of rural women

The ICAR-CISH RRS, Malda organized a two days (December 1-2, 2018) workshop on JAGRITI "Empowerment of Tribal Women" with financial support from Tribal Sub Plan programme. The main objective of this workshop was to sensitize and motivate the tribal villagers to adopt new technologies for doubling their income and also empowering tribal women in different



agriculture and allied sectors to improve their socio-economic status. The programme was inaugurated by Swami Viswamayananda Ji (RMA, Sargachi) along with Dr. S. Rajan (Director, ICAR-CISH, Lucknow). Dr. Dipak Nayak (Scientist and In-charge, ICAR-CISH RRS, Malda) coordinated the programme. Other dignitaries like Dr. R.K. Pal (Ex. Director, ICAR-NRCP, Solapur), Mr. S.K. Sen (Ex. Bank Manager), Mr. Pinto (Social Worker) were also present on this occasion.

### Skill development on container gardening and high density planting

Twenty four farmers along with two agriculture officers of Department of Horticulture, Bilaspur, Himachal Pradesh attended two days training cum exposure visit on December 3, 2018 at ICAR-CISH. The farmers visited the experimental fields and different laboratories and also interact with scientists to gain the information of different technologies developed by institute. Trainees were appraised on container gardening, high density planting of mango and guava. Dr. K.K. Srivastava, Pr. Scientist deliberated on container gardening and high density planting of guava & mango.



### Training on nursery management

Fifty farmers from State Institute of Management in Agriculture, Rehmankhera, Lucknow visited ICAR-CISH on December 8, 2018. Dr A.K. Singh, Principal Scientist explained them in detail regarding nursery management of fruit crops.



### Training program on Scientific Bee Keeping

The ICAR-CISH RRS, Malda organized one day training cum production on "Scientific Bee Keeping" on December 12, 2018 under Tribal Sub-Plan programme with aim to empower tribal youth and women for production of quality honey and efficient pollination. The programme was inaugurated by the chief guest Dr. Robert Spooner Hart, Professor, Western Sydney University, Australia.





Dr. Dipak Nayak, Scientist and In-charge, ICAR-CISH RRS, Malda, coordinated the programme.

### Bhagidari under TSP

ICAR-CISH RRS, Malda (W.B.) has inaugurated the new component "Bhagidari" on December 21, 2018 under Tribal Sub-Plan programme as an initiative for promotion of micro-irrigation through community approaches by forming water user groups. Bhagidari has been conceptualized by observing severe water scarce situation and limited water sources at adopted tribal villages of Habibpur block, Malda. Under this component, five water user groups have been formed and memorandum has been signed between tribal water user groups and ICAR-CISH to provide sprinkler and rain gun-sprinkler facilities by using common water sources for irrigating their crop fields of 5 ha area at a time to have better yield and quality of crops.



### Capacity building of gardener's trainees

Thirty five gardener trainees from State Institute of Management in Agriculture, Rehmankhara, Lucknow visited the institute campus and experimental field on December 24, 2018. Dr. S. Rajan, Director appraised them about various technologies developed by the institute. Trainees also attended lecture on various issues by the scientific staff of the institute.



### Training under UP state rural livelihood mission

Under the Uttar Pradesh State Rural Livelihood Mission, a training programme on "Nursery management of horticultural crops" was organized by ICAR-CISH, Lucknow from December 27 to 29, 2018. A total of 114 women belonging to self-help group of nursery work in



block Malihabad and Mall participated. Intensive training was provided by the scientists regarding care and maintenance of fruit trees, water and nutrients management, disease and pest management, processing and value addition of fruits to the trainees. Moreover, trainees were also exposed to nursery and experimental field. Dr. S.R. Singh, Principal Scientist coordinated the aforesaid training programme.

### Training for Mukhyamantri Khet Teerth Yojana

Under Mukhyamantri Khet Teerth Yojna, 39 farmers along with 2 agriculture officers from Narsinghpur, Madhya Pradesh were trained on protected cultivation of high value vegetables and high density planting of guava on December 28, 2018. PFDC staff gave training on drip irrigation, polythene mulching, high density planting, rejuvenation and latest production technique of mango and guava to the farmers.



### MoU SIGNED WITH CBO

With changing agricultural scenario in the country, Community Based Organizations (CBO), FPOs, SHGs are now looking forward to National Institutions for technical support. Awadh Aam Utpadak Evam Bagwani Samiti which is headquartered at Nabipanah, Malihabad, Lucknow signed Memorandum of Understanding with ICAR-CISH, Lucknow primarily for management of pests and diseases of mango and guava, mango orchard





based poultry farming and post harvest management of horticultural crops. Society has about 270 registered members. The Institute technologies will easily reach to stakeholders through the CBO. Sri Upendra Kumar Singh, Secretary, AAUEBS, Nabipanaah said that more than 20 mango growers followed GAP under Farmer FIRST project and later Mandi Parishad helped in transporting their mangoes to Hyderabad market where they fetched Rs.60 per kg, almost twice the rate of Lucknow. He hoped that such alliance will help a larger farming community of Malihabad.

## MEETINGS

The 28<sup>th</sup> meeting of Institute Management Committee was held on August 10, 2018 at institute under the chairmanship of Dr. S. Rajan, Director. Dr. B.P. Ram, Chief, Horticulturist, Govt. of U.P.; Dr. Neelima Garg, Head PHM; Dr. G. Pandey, Head, Crop Production and Sri R.N. Malik, SAO, CISH, Lucknow were present. Director & Chairman, IMC in his address appraised the members about achievements of institute during 2017-18. Dr. P.K. Shukla, Senior Scientist and Incharge Head, Crop Protection Division presented the activities and achievements of Division. Sri R.N. Mallik, SAO and member secretary presented the agenda item of IMC which was discussed during the meeting.

Dr. S. Rajan attended National Workshop on Vertical Farming on 18<sup>th</sup> October, 2018 at NASC Complex, New Delhi and presented a paper on the scope of vertical farming in fruits and vegetables.

Dr. S. Rajan attended a Brain Storming programme on "Innovations and Entrepreneurship for Rural Prosperity: Doubling Farmers Income by 2022" at ICAR-IARI, New Delhi on 3<sup>rd</sup> November, 2018

Dr. S. Rajan attended 26<sup>th</sup> Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Horticultural Crops at Krishi Bhavan, New Delhi under the Chairmanship of Dr. A.K. Singh, Deputy Director General (Crop Science), ICAR, New Delhi during 4-5 November, 2018.

Dr. S. Rajan attended Cluster Meeting on NHB Gurugram, Haryana and discussed the proposed scheme on 14<sup>th</sup> December, 2018.

## AWARD

- Dr. P.K. Shukla received **Recognition Award** for outstanding contribution in the field of Plant Pathology by Doctor's Krishi Evam Bagwani Vikas Sanstha during International Conference on Sustainable Organic Agri-Horti Systems held at Lucknow from November 28-30, 2018.
- Dr. Gundappa received **Young Scientist Award** for his contribution in management of insect pests of Mango by Doctor's Krishi Evam Bagwani Vikas Sanstha during International Conference on Sustainable Organic Agri-Horti Systems held at Lucknow from November 28-30, 2018.
- Dr. Tahseen Fatima received **Young Scientist Award** for her Ph.D. research work by Doctor's Krishi Evam Bagwani Vikas Sanstha during International Conference on Sustainable Organic Agri-Horti Systems held at Lucknow from November 28-30, 2018.
- Dr. A.K. Trivedi was awarded **Scientist of the Year Award 2018** for outstanding contribution in the field of Plant Physiology by Society for Science & Nature during International Seminar on Recent Trends and Experimental Approaches in Science Technology, Nature & Management held at Jodhpur from December 23-24, 2018.

## STUDENT READY PROGRAMME

Eighty students from the Institute of Bio-sciences and Technology, Shri Ramswaroop Memorial University, Lucknow visited ICAR-CISH on September 22, 2018 to attend a course on sustainable agriculture in compliance with the University Grants Commission (UGC) guidelines. The students benefitted with various institutional facilities such as gene bank, poly-house, drip irrigation, mulching, training, vegetables processing and value-added products related to fruit and vegetables crops.



Sixteen students along with teachers of Bhalchandra Institute of Education and Management, Dubagaa, Lucknow visited the experimental fields and various laboratories of ICAR-CISH on October 31, 2018 and



interacted with scientists regarding technologies developed by institute.



Two hundred and eleven students of (B.Sc. Ag.) along with teachers from Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj (Allahabad) visited the different laboratories and experimental fields of ICAR-CISH on November 11, 16 and December 7, 2018. Dr. V.K. Singh and Dr. Naresh Babu, Principal Scientists interacted with students and gave the information on different technologies developed by the institute



Six trainees of Regional Food Research and Analysis Centre (RFRAC), Lucknow visited microbiology, instrumentation and food processing laboratories of ICAR-CISH on December 22, 2018. Dr. A.K. Bhattacharjee, Principal Scientist informed the trainees about various technologies developed by PHM Division of the institute



## Personalia

### JOINING

#### Scientist

1. Dr. Govind Kumar, Scientist (Agril. Microbiology) joined the institute on 06.10.2018 after completion of training at ICAR-NAARM, Hyderabad.
2. Dr. Nidhi Kumari, Scientist (Plant Pathology) joined the institute on 09.10.2018 after completion of training at ICAR-NAARM, Hyderabad.

#### Technical

1. Mohd. Riyaz joined the institute on 25.10.2018 as Technical Assistant.
2. Sh. Hemant Kumar Pandey joined the institute on 20.11.2018 as Technician.
3. Sh. Alok Shukla joined the institute on 24.11.2018 as Technician.
4. Sh. Arvind Kumar Singh joined the institute on 27.11.2018 as Technician.
5. Smt. Monika Singh joined the institute on 01.12.2018 as Technician.
6. Sh. Satyendra Singh joined the institute on 01.12.2018 as Technician.

#### Administrative

1. Ms. Shreya Srivastava has been appointed as Junior Clerk on 22.11.2018.
2. Sh. Surendra has been appointed as Junior Clerk on 17.12.2018.

### RETIREMENT

#### Technical

1. Sh. Ganga Sharan, Technical Officer retired from the institute on 31.10.2018.

#### Skilled Support Staff

1. Sh. Roop Chand, SSS retired from the institute on 31.08.2018.
2. Sh. Ram Kumar, SSS retired from the institute on 30.11.2018.
3. Sh. Sripal, SSS retired from the institute on 31.12.2018.

### OBITURY

#### Administrative

1. Sh. Amit Singh, Junior Clerk took his last breath on 19.10.2018. CISH family deeply mourns his demise.

#### Skilled Support Staff

1. Sh. Ram Ashrey, SSS took his last breath on 17.11.2018. CISH family deeply mourns his demise.



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### Compilation & Editing

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