



ICAR-CISH NEWS

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Number - 1

Meet on Secretary, DARE and Director General, ICAR

Dr. Trilochan Mohapatra, Director-cum-Vice Chancellor, ICAR-IARI, New Delhi has joined the post of Secretary, DARE and Director General, ICAR. Prior to becoming Director-cum-Vice Chancellor, ICAR-IARI, New Delhi, Dr. Mohapatra was the Director, ICAR-Central Rice Research Institute, Cuttack. He has worked in the sphere of molecular genetics and genomics and published over 145 research papers in journals of national and international repute. He has developed the first high-yielding Basmati rice variety resistant to bacterial blight disease.

Dr. Mohapatra has been instrumental in carrying out the physical mapping and sequencing of rice chromosome 11 and tomato chromosome 5, developing the first set of RFLP markers in mustard, 4045 unigene derived microsatellite markers in five cereal crops and 2267 new microsatellite markers in sugarcane, construction of the first genome map of Indian mustard and used this map to tag a major gene for resistance against white rust disease in this crop. He has designed the first SNA chip based on stress responsive genes and used it to map loci for salinity tolerance in rice through association mapping, integrated marker assisted foreground selection with map based background analysis to combine two genes for bacterial blight resistance from a non-Basmati source with quality characteristics of Pusa Basmati 1 in rice lines, one of which has been identified and released after multilocation testing as a new variety named Improved Pusa Basmati 1 besides contributing as the lead worker to the generation of 22,292 mutagenised lines of the upland rice variety Nagina 22 and identified mutants for a range of traits including drought tolerance.

He was awarded Young Scientist Award for the year 1994 by INSA, New Delhi. He has also received Prof. L.S.S. Kumar Memorial Award-1994 instituted by Indian National Science Academy, New Delhi, NAAS-Tata Young Scientist Award of NAAS, New Delhi for the Year 2000-2001, Dr. B.P. Pal Memorial Award of ICAR-



IARI, New Delhi for the year 2002, National Bioscience Award for Career Advancement of the DBT, Govt. of India for the year 2003-04, NASI-Reliance Industries Platinum Jubilee Award of the National Academy of Sciences India, Allahabad for Application Oriented Research for the year 2007, Special Recognition Award carrying a cash prize and citation by the Indian Council of Agricultural Research in the year 2009 for significant contribution to genetic improvement of Basmati rice. He was the member of Editorial Board, Journal of Plant Biochemistry and Biotechnology from 2002-2008. He was the Associate Editor, BMC Genetics from 2011, Journal of Genetics published by the Indian Academy of Sciences, Bangalore from 2012 to 2014. He has also been bestowed with 3rd Prasanna Kumar Dash Memorial Lecture Award of the Orissa Environmental Society, Bhubaneswar in 2013, Dr. Gopal Chandra Patnaik Memorial Lecture Award of the Bigyan Prachar Samiti, Cuttack, Odisha for the year 2013, Best Agricultural Scientist Award of Chalachitra Jagata, Odisha for the year 2013, Platinum Jubilee Lecture Award of 101st Indian Science Congress from 3-7 February, 2014 at University of Jammu, 1st Prof. S.N. Patnaik Memorial Lecture Award of Postgraduate Department of Botany, Utkal University, Bhubaneswar on 5 September 2014, Recognition Award of the National Academy of Agricultural Sciences for the biennium 2013-14 for significant contributions in Plant Improvement, Bioed Agri-Innovation Award 2015 of Bioed Research Institute of Agriculture and Technology, Allahabad, Lifetime Achievement Award of the Indian Genetics Congress at SRM University, Kattankulattur, Tamil Nadu on 4 March 2015. He was elected Fellow of the National Academy of Sciences India, Allahabad in the year 2005, Fellow of NAAS, New Delhi in the year 2006 and Fellow of INSA, New Delhi in the year 2013.

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From the Director's Desk

Subtropical horticulture is witnessing the problem of low productivity in the sphere of subtropical fruits and mango is one of the major crops which is reeling under declining productivity. Declining profitability, depleting water availability, smaller and non viable land holdings, emergence of newer pests and diseases as well as post harvest losses in view of the emerging scenario of weather dynamics have hurled more challenges towards researchers.

Institute has developed management practices for major pests and diseases of subtropical fruit crops. However, wilt in mango and guava and shoulder browning in mango are some of the new issues which confront subtropical horticulture. Incidence of foliar diseases such as mildew, blight, leaf spot and pests like hopper, fruit fly, etc. may get altered due to changing climatic conditions. The business of subtropical fruit is unorganized and less efficient as the losses in entire supply chain from production to consumption are as high as 18-25 per cent. The Institute is addressing the issue by linking the farmers, buyers through organization of stakeholder/buyer-seller meet. The Institute has also undertaken skill development amongst rural youth through value addition and nursery production technologies.

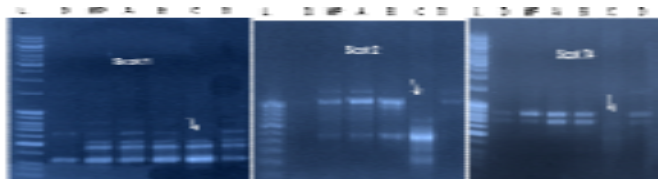
Capacity building of farmers, entrepreneurs and other stakeholders are being addressed through different platforms such as TSP, NEH and PFDC. Subtropical horticulture in eastern India requires boost in terms of capacity building and inputs. Institute is going to supply its fruit varieties of mango and guava among the tribal farmers of West Bengal through TSP. ICAR-CISH-RRS, Malda conducted three training programmes, besides organizing National Workshop and Mango Diversity Show in West Bengal. Institute is also imparting quality training to students of different Universities under Student Ready programme.



Research Highlights

Identifying mango plantlets (zygotic or nucellar) using SCoT

Twelve different SCoT markers were used to distinguish zygotic vs nucellar plant in the polyembryonic mango cultivar Bappakai while monoembryonic cultivar Dashehari was taken as zygotic control. Out of 12 SCoT primers used, SCoT-1, SCoT-2 and SCoT-74 were able to distinguish between zygotic and nucellar plants of Bappakai.



Mango plantlet identification using SCoT

(Israr Ahmad)

Bael - good source of vitamins and coumarins

Three vitamins (riboflavin, thiamine and niacin) and three coumarins (marmelosin, psoralen and aurapten) were estimated in three varieties (NB-5, NB-17 and Pant Shivani) and two selections (CISH B-1 and CISH B-2) of



bael at three stages of maturity [255, 285 and 315 days after fruit set (DAFS)] to identify the proper stage of harvesting of a variety for consumption with maximum nutritional quality. Pant Shivani, NB-17 and CISH B-1 were found

most nutritious varieties when harvested at full maturity stage (285 – 315 DAFS) as they possessed good amount of all the vitamins and coumarins at that stage.

(A.K. Bhattacharjee and D. Pandey)

Protected farming of cherry tomato for higher yield and extended harvesting

Indeterminate cherry tomatoes (*Solanum lycopersicum* var. *cerasiforme*) having small, round, cherry-sized fruits can be successfully grown under protected cultivation system, yielding potentially profitable crop. Other advantages to polyhouse production includes higher yield, improved fruit quality, less wastage, and reduced pesticide applications due to minimum disease and pest incidences. Cherry tomato cv. Red Beauty grown inside polyhouse hastened flowering, fruiting and maturity by about 20 days. Maximum lycopene (9.37 mg/100 g), TSS (5.93 °B) and acidity (0.42%) were recorded at red ripe stage. It is well established that lycopene is the most effective antioxidant present in tomato. The yield of cherry tomato ranged from 1.17-1.85 kg/plant with average weight of fruits 7.5-12.0 g. Thus, cherry tomatoes can be grown under polyhouses for longer duration of harvesting period and enhanced yield generating higher income to farmers.

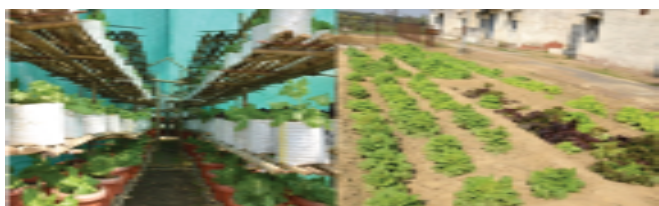


Cherry tomato grown under protected structure

(V.K. Singh)

New initiative in vertical cultivation

In order to produce maximum food with efficient input use efficiency on limited land resources by using the vertical space, Institute has initiated the work on vertical farming. Ten varieties of lettuce *viz.*, Bogambo, Lob Jolt, Grisma, Grand Rapid, Simpson, Lolorosa, Gentilena, Balmoral, Revolution Red and LS-2 were grown to find out their suitability for region and vertical farming system. The seeds were sown in mid November and transplanted in December in open as well as under vertical system. A general recommended cultural practices and plant protection measures were followed to produce the crop. The crop was harvested in the first week of March. The yield ranged from 315-911 q/ha. Variety Bogambo was the highest yielder (911 q/ha) under open conditions, whereas, variety Grisma was the best under vertical farming system. The average per plant yield was higher



Vertical (left) and conventional (right) farming of lettuce

(S.R. Singh)

under field conditions, however, yield per unite area was 2.5 times higher in vertical farming system.

Safe and low cost ripening method of mango fruit

A ripening formulation for mango ripening has been prepared at ICAR-CISH, Lucknow. This formulation is required to be sprayed on fruit surface which results into development of attractive yellow colour and uniform ripening with good firmness of fruit within four days of treatment. This is a simple method which requires less labour, time and energy compared to other conventional mango ripening methods. The cost of ripening is calculated as Rs. 1.30 to 4.00 for 10 kg mangoes.



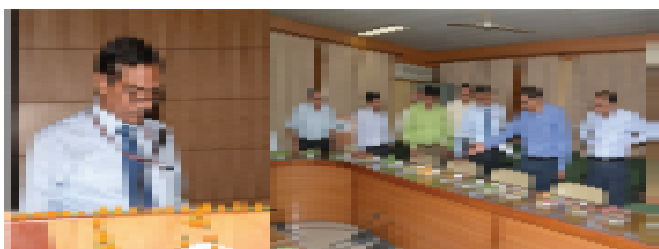
Safe ripening of mango

(Anil Kumar Verma and Pawan Singh Gurjar)

Events

Secretary, DARE and Director General, ICAR visits ICAR-CISH, Lucknow

Dr. Trilochan Mohapatra, Secretary, DARE and Director General, ICAR, New Delhi accompanied by D.D.G. (Horticulture Science), Dr. N. K. Krishna Kumar and D.D.G. (Fisheries Science), Dr. J. K. Jena visited ICAR-Central Institute for Subtropical Horticulture, Lucknow on June 8, 2016. In course of his visit, Dr. Mohapatra visited the Institute's nursery and praised the work being done in the sphere of quality planting material. He also visited the germplasm blocks of different fruits and displayed keen interest in seedless jamun. He planted the mango variety



Secretary, DARE and Director General, ICAR visiting CISH, Lucknow

Arunika in the Institute's premises. He tested some of the processed products of the Institute and appreciated them. He also interacted with the scientists, administrative and technical staff of the Institute and assured them of all possible support and guidance from the Council. He praised the Institute for its commanding research on various aspects of subtropical fruit crops.

Inauguration of Regional Research Station of the ICAR-CISH, Malda

The Regional Research Station of the ICAR-Central Institute for Subtropical Horticulture, Lucknow was inaugurated at Makdumpur, Malda, West Bengal on February 28, 2016. The auspicious work was done by Shri Krishnendu Narayan Chowdhury, Hon'ble Minister In-Charge, Department of FPI & Horticulture, Government of West Bengal. The inaugural function was presided over by Dr. N. K. Krishna Kumar, Deputy Director General (Horticulture Science), ICAR, New Delhi.

Speaking on the occasion, Shri Chowdhury underlined the need to disseminate the technologies in the field of horticulture particularly related to mango and litchi for the overall development of the farmers of the region. Addressing the august gathering, Dr. N. K. Krishna Kumar remarked that there is a trenchant need to form a team of mango experts from across the country to identify the problems and draw a roadmap for future research. He assured the distinguished persons that the Institute would establish an elite nursery over and above commencing the research on vegetables, floriculture and medicinal and aromatic plants, besides mango, guava and litchi.

Welcoming the dignitaries, Dr. Shailendra Rajan, Director, talked about the conservation of mango and other fruit varieties at the farmers' fields through community efforts. He assured that the nursery programme would get the desired impetus for producing elite planting material. The function was also graced by Shri C.M. Bachawat, IAS, Additional Chief Secretary, Department of FPI and

Horticulture; Prof. Debasis Mazumdar, Vice Chancellor, Uttar Banga Krishi Vishwavidyalaya, Pundibari, Coochbehar; Dr. P. K. Pramanick, Director, Horticulture and Shri S. K. Dwivedi, District Magistrate and Collector, Malda. A temporary office cum laboratory building of ICAR-CISH Regional Research Station at Food Park, Malda was also inaugurated on February 28, 2016 by Dr. N. K. Krishna Kumar, D.D.G. (Hort. Science), ICAR in presence of Minister In-Charge, Department of FPI & Horticulture, Govt. of West Bengal and other dignitaries.

National Workshop-cum-Mango Diversity Show Organized

ICAR-CISH-RRS, Malda, West Bengal organized National Workshop on Sustainable Mango Production: Challenges under Changing Climate in Tropics and Subtropics and Mango Diversity Show during June 18-19, 2016. Swami Viswamayananda Ji (Secretary, Ramakrishna Mission Ashrama, Sargachi, Murshidabad) inaugurated the Workshop in presence of Dr. P. K. Chakrabarti, A.D.G. (Plant Protection), ICAR, New Delhi, Dr. R. K. Thakur (P.C., AICRP-Honey Bee & Pollinators) and Dr. S. Rajan, Director, ICAR-CISH, Lucknow and other dignitaries. Fifty mango



National Workshop cum Mango Diversity Show at RRS, Malda (WB)

researchers, 100 mango growers and other stakeholders were part of the programme from different parts of the country. A Mango Diversity Show was also organized which was inaugurated by Dr. P. K. Chakrabarti, A.D.G. (Plant Protection), ICAR, New Delhi in the presence of many distinguished dignitaries. Three hundred fifty varieties of mango were exhibited by mango growers, mango federation and other stakeholders from various parts of Eastern and Northern India.

Progressive Mango Growers Meet at Malda

ICAR-CISH, Lucknow organized a Progressive Mango Growers Meet at its Regional Research Station, Malda, West Bengal. on May 27, 2016 in association with Directorate of Agriculture (Fruits), Malda. The programme was inaugurated by Dr. S. Rajan, Director, ICAR-CISH, Lucknow. Sixty progressive mango growers and representatives from office of the Deputy Director of Agriculture (Fruits), Malda, Ratua Mango Growers Association, UBKV-RRSS, Manikchak and KVK, Malda were present during the meet. Dr. Rajan in his inaugural lecture briefed the growers regarding activities of CISH-RRS, Malda. Dr. Rahul Chakraborty, Deputy Director of Agriculture (Fruits), Malda also delivered a lecture on present status of mango industry at Malda.



Progressive Mango Growers Meet at Murshidabad

Progressive Mango Growers Meet was organized by the Institute at Berhampore, Murshidabad on May 28, 2016 in collaboration with Directorate of Agriculture (Fruits), Murshidabad (West Bengal). The programme was inaugurated by Swami Viswamayananda Ji Maharaj (Secretary, RMA, Sargachi, Murshidabad). Fifty Six progressive mango growers were present in the meet. Swami Viswamayanand Ji delivered inaugural lecture, whereas, keynote address was delivered by Dr. S. Rajan. An interaction session between progressive growers and scientists was organized to understand their problems in production and marketing of mango at Murshidabad district. Dr. Goutam Roy, Dy. Director of Agriculture (Fruits), Murshidabad deliberated on problems of production and marketing of mango at Murshidabad district. Dr. Dipak Nayak addressed the mango growers and briefed about the future plan of ICAR-CISH-RRS, Malda for conservation and documentation of local varieties of mango.



Training on Export Promotion of Mango at Bankura

Bankura has emerged as new mango belt in West Bengal. Around 300 mango orchards of Amrapali and Mallika have been established by Bankura District Administration involving 2000 tribal women for ensuring their livelihood. ICAR-CISH, Lucknow is trying to initiate export of mango from Bankura with support from APEDA-Kolkata. A team comprising of DGM, APEDA and scientists from ICAR-CISH, Lucknow and ICAR-CISH-RRS, Malda visited mango orchards at different blocks of Bankura to assess the quality of fresh mangoes. Subsequently, the Institute organized APEDA sponsored training programme on export promotion of mango on May 29, 2016 in collaboration with Bankura District Administration & Deputy Director of Agriculture (Fruits), Bankura. The programme was inaugurated by ADM (Development). Fifty five participants including mango growers, representatives of Panchayat, district administration were present in the training. It was decided to have a comprehensive project for supporting the established mango orchards for better livelihood opportunity of the Self Help Groups.

Interface Meeting on Packaging of Mango

An interface meeting on Packaging of Mango was organized at ICAR-CISH-RRS, Malda on May 27, 2016. Sixty progressive mango growers, representatives from 15 packaging industries under Eastern India Corrugated Box Manufacturers Association, Malda Mango Merchant Chamber of Commerce, UBKV-RRSS, Manikchak and KVK, Malda participated in the meeting. Dr. S. Rajan, Director, ICAR-CISH, Lucknow delivered the key note address. Dr. Rahul Chakraborty, Deputy Director of Agriculture (Fruits), Malda spoke on packaging of mango and its importance. Technical details regarding packaging of mango was



described by the representatives of packaging industries who also showed hands on practices and uses of CFB boxes for packaging of mango to progressive mango growers.

Foundation Day Celebrated

Institute celebrated its 33rd foundation day on June 1, 2016 at its Rehmankhara Campus, Lucknow. Ms. Nivedita Shukla Verma, Principal Secretary, Horticulture and Food Processing, Government of Uttar Pradesh was the chief guest. On this occasion, Institute also organized Mango Stakeholders' Consultative Meeting on 'Safe Harvesting, Handling and Marketing for Maximizing Profit'. Institute felicitated many of its retired staff for their excellent contribution in shaping the Institute. Mango Stakeholders' Consultative Meeting helped in sensitizing mango farmers from 45 villages adopted under 'Mera Gaon Mera Gaurav' on good management practices linked to post harvest handling and management protocols. During the programme seeds of vegetables were distributed among the farmers.



Celebration of Foundation Day and felicitation of retired employees

Aam Mahotsav

Institute participated in *Aam Mahotsav-2016* organized by Government of Uttar Pradesh at Janeshwar Mishra Park, Gomtinagar, Lucknow on June 23, 2016 which was inaugurated by Chief Minister Sri Akhilesh Yadav. Institute displayed 300 mango varieties during



Mahotsav. Ambika, a hybrid mango variety developed by Institute adjudged as best fruit of the show. A community based organization (SCMD) developed by Institute

also participated and displayed diversity of non-traditional community mango varieties. Non-traditional mango varieties fetched very attractive price among the netizens.

Exhibition of Institute's Technologies

Institute's technologies were displayed in State Fruit, Flower & Vegetable Show organised by Directorate of Horticulture & Food Processing, Lucknow during February 27-28, 2016 at Rajbhawan, Lucknow. Shri Ram Naik, Hon'ble Governor, Uttar Pradesh, Principal Secretary



Horticulture and Food Processing, Uttar Pradesh and Shri, S.P. Joshi, Director, Horticulture along with 1000 farmers and other stakeholders' visited the exhibition stall of Institute. Planting material of fruit varieties released by Institute were also sold to growers.

Institute developed technologies were also exhibited during Agricultural Exhibition organized on the occasion of International Pulses Year-2016 on March 13, 2016 at Indian Institute of Pulses Research, Kanpur. Shri Radha Mohan Singh, Minister for Agriculture and Farmers Welfare, Government of India visited the exhibition stall of Institute. Dr Shailendra Rajan, Director ICAR-CISH, Lucknow appraised the technologies of the Institute developed for the benefits of the farmers.



The technologies developed by Institute were exhibited at ICAR-IISR, Lucknow on April 2, 2016. Hon'ble Home Minister, Shri Rajnath Singh launched *Pradhan Mantri Fasal Beema Yojana* at ICAR-IISR, Lucknow. ICAR-CISH, Lucknow also participated in the programme. Shri Rajnath Singh visited the stall of ICAR-CISH where he was appraised of the technologies.



Institute's technologies were displayed and demonstrated during Farmers Gosthi & Exhibition organized on March 04, 2016 at RRS, ICAR-IISR at Motipur, Bihar. Shri Radha Mohan Singh, Minister for Agriculture

& Farmers Welfare, Government of India inaugurated the mela and visited the technology exhibition of the Institute along with Dr. T. Mohapatra, Secretary, DARE and Director General, ICAR.

Institute exhibited its technologies during Agri-Horti Expo-2016 organized by the Directorate of Horticulture & Food Processing, Lucknow during March 28-29, 2016 at Saifai, Etawah, U.P. Shri Ahkilesh Yadav, Chief Minister, Uttar Pradesh visited the ICAR-CISH exhibition stall and got acquainted with the technologies developed.

Institute participated in Krishi Unnati Mela-2016 organized during March 19-21, 2016 at ICAR-IARI, New Delhi. The Mela was inaugurated by Hon'ble Prime Minister Shri Narendra Modi. *Pradhanmantri Fasal Beema Yojana* was launched during the mela. Dr. T. Mohapatra, Secretary, DARE and Director General, ICAR also addressed the gathering during the occasion. ICAR-CISH technologies were displayed and approximately 15000 farmers from different parts of the country visited the exhibition stall and got information about the technologies. Institute also sponsored the exposure visit of 16 farmers from the Lucknow district during the Mela.

Training for Rural Women

Institute organized a one day training programme for rural women and school girls on mango processing for pulp and squash under 'Mera Gaon Mera Gaurav' programme on 20, 29 and 30 June, 2016. Eighty women participated during the programme.



Hindi Workshop

A Hindi Workshop was organized on February 6, 2016 under the Rajbhasha implementation policy. Dr. R. K. Pathak, former Director, ICAR-Central Institute for Subtropical Horticulture, Lucknow delivered a lecture on Organic Farming in Hindi to propagate the significance of the subject amongst the officers and the staff of the Institute. The Workshop was attended by more than 80 officers as well as subordinate staff of ICAR-CISH, Lucknow.

International Yoga Day

Institute organized the International Yoga Day at its Rehmankhara premises on June 21, 2016. All the scientists, officers and other employees attended the practical session.



International Yoga Day at Institute

On this occasion, Anulom-Vilom, Kapal Bhati, Bhastrika, Mandook Ashana, Hasyasan, etc. were practiced by the participants.

Swachha Bharat Mission

The Swachha Bharat Mission of the Government of India is being vigorously pursued by the Institute. The officers of the Institute not merely cleaned the Institute's premises periodically but they also took up cleanliness drive in the adjacent schools, panchayat bhawans and railway platforms. An awareness drive for cleanliness was also initiated among school children.



Cleanliness drive at railway platforms and swachhta awareness

Mera Gaon Mera Gaurav

A total of 45 villages of Malihabad and Kakori blocks of Lucknow district were adopted by 38 scientists of Institute under MGMG. Eighty farmers-scientists interaction meet were organized in all 45 adopted villages during the period. More than 2400 farmers participated during these interactions. A special training programme was organized for rural women on mango processing. Quality planting material was distributed among the farmers.



Distribution of planting material to farmers under MGMG

Survey on GI of Dashehari Mango

A team of ICAR-CISH, Lucknow facilitated the survey on awareness among Malihabad mango growers and exporters about Geographical Indicator status of Malihabad Dashehari Mango on June 16, 2016. Dr. Surya Rathore, ICAR-NAARM, Hyderabad with the help of scientists of the Institute conducted the survey.

Meetings

Dr. Neelima Garg, Director In-charge attended the Interactive Meeting of Vice-Chancellors and ICAR Directors followed by ICAR Directors' Conference held at NASC Complex, New Delhi during January 23-24, 2016.

The Meeting of the Task Force (11/2014) for validation of DUS test guidelines for Guava and Litchi was held on January 27, 2016 at ICAR-CISH, Lucknow under the Chairmanship of Dr. B.M.C. Reddy, Vice-Chancellor, Dr. Y.S.R. Horticulture University, Sangareddy, Andhra Pradesh.

Dr. A.K. Misra attended Regional Advisory Group meeting on February 19, 2016 at Conference Hall, NABARD, Lucknow.

Dr. Devendra Pandey participated in the XX Annual Meeting of AICRP on Arid Zone Fruit held during February 4-6, 2016 at Swami Keshwanand Agricultural University, Bikaner. He also acted as the Rapporteur in the session IV "Plant propagation, planting system and planting densities".

A Review Meeting was organized for CRP-AB at ICAR-CISH, Rehmankhera, Lucknow on March 17, 2016.

Human Resource Development

Twenty one days training programme for ARS probationers, comprising six scientists of various disciplines from ICAR-NAARM, Hyderabad was organized for Field Experience Training (FET) at ICAR-CISH, Lucknow during February 07-29, 2016.



FET of ARS Probationers at Meethenagar, Lucknow

Dr. S. K. Shukla participated in Competency Development Programme at NAARM, Hyderabad during February 10-12, 2016.

Dr. Gundappa received training on "Statistical Advances for Technological Enhancement in Agricultural Research" at ICAR-Indian Agricultural Statistics Research Institute, New Delhi from January 19 to February 8, 2016.

A two days training programme cum exposure visit of agripreneurs of Agri-Clinics and Agri-Business Training Institute, Gomtinagar, Lucknow was organized during 29-30 January and 18-19 March, 2016 at ICAR-CISH, Lucknow. More than 160 agripreneurs were trained during the programme.

Four-day training programme on Organic Farming in Horticultural Crops was organized from March 29 to April 02, 2016 at the Institute. Seven farmers sponsored by Department of Horticulture, Meghalaya participated in the programme.

Miscellaneous

Participation in Seminar/Symposium/Meeting

Dr. Barsati Lal and Subhash Chandra attended and presented the research paper in the International Seminar on Indigenous Technologies for Sustainable Agriculture and Better Tomorrow organized by Samagra Vikas Welfare Society & Amulya Sanchaya Producer Company Ltd., Lucknow in collaboration with CSIR-NBRI at CSIR-NBRI, Lucknow during January 09-10, 2016.

Dr. S.K. Shukla delivered a lecture on Fruit-based Integrated Cropping System for Enhanced Profitability and Nutritional Security at National Symposium on

Transforming Indian Agriculture towards Food and Nutritional Security at ICAR-IGFRI, Jhansi during February 20-21, 2016.

Dr. P.K. Shukla attended Brainstorming on Integrated Pest Management in Major Crops organized at NASC, New Delhi during February 16-17, 2016.

Drs. A.K. Misra, P.K. Shukla, Gundappa and Tarun Adak participated in 6th International Conference of Indian Phytopathological Society on Plant Pathogens and People Challenges in Plant Pathology to benefit Humankind held at NASC, New Delhi during February 23-27, 2016.

Drs. S. Rajan, Ajay Verma, A.K. Bhattacharjee, P.K. Shukla, Gundappa and Er. A.K. Verma participated in Stakeholders Meeting-cum-Agri Horti Technology Show during February 28, 2016 at ICAR-CISH-RRS, Malda (West Bengal).

Dr. A.K. Bhattacharjee attended IEC International Conference on Natural Resource Management Ecological Perspectives held at SKUAST, Jammu during February 18-20, 2016.

Dr. Maneesh Mishra participated in Workshop on Dossier Preparation for Genetically Engineered (GE) Plants organized by Ministry of Environment, Forest and Climate Change held on February 25, 2016 at New Delhi.

Dr. S. Rajan participated in the Launch Workshop on International year of Pulses at IIPR, Kanpur on March 13, 2016.

Drs. S. Rajan, V.K. Singh, Ram Kumar, P.K. Shukla, Balaji Rajkumar and Gundappa participated in AICRP Fruits Group Workers Meeting held at Punjab Agricultural University, Ludhiana during March 3-6, 2016.

Drs. Neelima Garg, Bharati Killadi and Mrs. J. Lenka attended International Symposium on Sustainable Horticulture organized by Department of Horticulture, Aromatic & Medicinal Plants, Mizoram University, Aizawl, Mizoram during March 14-16, 2016.

Dr. Gundappa participated in Annual Group meet of AICRP on Biological Control of Crop Pests at Andhra University, Visakhapatnam during May 17-18, 2016.

Dr. Gundappa participated in National meet on Understanding Tephritids in toto : Taxonomy, Ecology, Quarantine and Management held at ICAR-IIHR, Bangalore on May 27, 2016.

Drs. S. Rajan, Neelima Garg, V.K. Singh, Anju Bajpai, A.K. Bhattacharjee, P.K. Shukla, Gundappa, Er. A.K. Verma, Dr. Balaji Rajkumar M., Mr. Muralidhara B.M., Ms. Veena G.L. and Sh. Arvind Kumar participated in National Workshop on Sustainable Mango Production: Challenges under Changing Climate in Tropics and Subtropics and Mango Diversity Show held at ICAR-CISH-RRS, Malda, West Bengal during June 18-19, 2016.

Lectures delivered

Dr. Balaji Rajkumar delivered a lecture on "Identification of insect pests and their management in green house condition" during district level stakeholder meet-cum-technology show, held on January 17, 2016 at Barabanki, organized by State Department of Horticulture, Uttar Pradesh.

Dr. Neelima Garg delivered a lecture on Food processing and preservation at SIMA, Rehmankhera, Lucknow during January 21-22 & 28-29 and February 11-12, 2016.

Drs. Ram Awadh Ram, Ghanshyam Pandey, Devendra Pandey and S.K. Shukla delivered lectures in training programme entitled MTC on propagation techniques for production of quality planting material organized at NDUAT, Kumarganj, Faizabad during February 8-15, 2016.

Drs. Neelima Garg and Ram Kumar delivered lectures on February 3, 2016 at SIMA, Rehmankhera, Lucknow during the training programme.

Dr. Neelima Garg delivered a lecture on Value addition in fruits and vegetables for agri-products development on March 19, 2016 at ICAR-NBFGR, Lucknow.

Drs. S. Rajan, V.K. Singh, S.K. Shukla, P.K. Shukla and Gundappa delivered lectures in State Level Gosthi on Quality mango production and marketing during March 17-18, 2016 at HETC, Malihabad.

Peer Recognition

Dr. Shailendra Rajan acted as the Chairman of Session 1 on Genetic Improvement at 3rd Group Discussion of AICRP on Fruits held at Punjab Agricultural University, Ludhiana during March 3-6, 2016.

Dr. Shailendra Rajan participated and deliberated in the Brainstorming on Digitally Linked Smart Fruit Farms for Higher Productivity and Profits at ICAR-IARI, New Delhi on March 07, 2016.

Dr. A.K. Misra served as the Chairman, Core Committee, R.P. Singh Memorial Session, J.F. Dastur Lecture Award as well as Chairman, Hindi Publication Committee of the 6th International Conference on Plant Pathogens and People held during February 23 to 27, 2016.

Dr. Barsati Lal acted as the Co-chairman in the Session II in the International Seminar on Indigenous Technologies for Sustainable Agriculture and Better Tomorrow held at CSIR-NBRI, Lucknow during January 09 -10, 2016.

Awards

Smt. Rekha Chaurasia was awarded Gold medal in

carom (women) in ICAR-Inter Institutional Sports Tournament 2016 (North Zone) held at ICAR-NDRI, Karnal during April 16-19, 2016.

Dr. Balaji Rajkumar was awarded Ph.D degree in Entomology on 30.01.2016 during 54th convocation organized by PG School, ICAR-IARI, New Delhi.

Student Ready Programme

A total number of eight students from Integral University and Amity University were provided training in cutting edge technologies. Four students were trained in the sphere of microbial quality assurance and waste utilization through fermentation for one month whereas, the remaining four in DNA finger printing and recombinant DNA technology.

Personalia

Joining

Shri Brijendra Kumar Pushkar, Technical Officer (T-5) joined the Institute w.e.f. 29.01.2016 after being transferred from ICAR-CITH, Srinagar.

Shri Mahendra Kumar Verma, Senior Clerk joined the Institute w.e.f. 01.04.2016 after being transferred from ICAR-NRC Mithun, Jharnapani, Nagaland.

Retirement

Dr. Ajay Verma, Principal Scientist (Agril. Economics) superannuated from the Council's service w.e.f. 31.03.2016.

Shri Ram Kumar, SSS, superannuated from the Council's service w.e.f. 31.03.2016.

Shri Kamala Prasad Yadav, Administrative Officer superannuated from the Council's service w.e.f. 30.06.2016.

Obituary

Dr. Ramesh Chandra, Ex-Head, Division of Crop Improvement & Biotechnology expired on March 2016.

Shri Mohammad Salim, Skilled Support Staff expired on 13.03.2016.

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