



# ICAR-CIPHET

सीफेट समाचार

News



Produce

Process

Prosper

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## FROM THE DIRECTOR'S DESK



Welcome to the 1<sup>st</sup> issue of the quarterly newsletter of ICAR-CIPHET for the year 2016. There are a number of exciting happenings during the quarter which we want to share with you. During this quarter, ICAR-CIPHET has developed a semi-automatic type peeler for *kinnow* and sweet orange as well as process protocol for de-bittering of *kinnow* juice. I believe, these developments will further boost the *kinnow* processing in the country. Realizing the need of small scale fish retailers, a hand blender based hand tool for de-scaling of fish was also developed. Licensing and training on process technology for green chilli puree & powder was provided to one entrepreneur from Gujarat. Many programmes such as entrepreneurship development program (EDP) on "Aonla Processing and Value addition", training of UG and PG students as well as officers and farmers were also organized for human resource development in the area of post-harvest management. Thirty first Annual Workshop of AICRP on PHET was conducted at Tamil Nadu Agricultural University (TNAU) during this quarter. In our continuing efforts to create awareness, ICAR-CIPHET showcased and demonstrated its technologies in "Kisan Mela" at PAU, Ludhiana and "Krishi Unnati Mela" at IARI, New Delhi. To review and discuss the progress of research activities of the institute, Research Advisory Committee meeting was also held in the quarter. We had the pleasure of hosting visits of eminent dignitaries such as Chairman, ASRB; Additional Secretary, DARE; Deputy Director General (Agri. Engineering), ICAR, New Delhi and ADG (Process Engineering), ICAR, New Delhi during this quarter. Besides, international visitors like a group of scientists and students from University of Illinois, USA have also visited ICAR-CIPHET and discuss the post harvest issues.

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(R. K. Gupta)

ICAR-Central Institute of Post-Harvest Engineering & Technology, Ludhiana (Punjab)

## SECTORAL NEWS

### Startup India Sheme

Startup India is a leading initiative of the Government of India, intended to build a strong eco-system for nurturing innovation and Startups in the country. It is started with a mission of sustainable economic growth and to generate large scale employment opportunities in the country. Through this initiative the Government also aims to empower Startups to grow through innovation and design. The scheme was first announced by Hon'ble Prime Minister Shri Narendra Modi on August 15, 2015 and launched on January 16, 2016. It is focused on to restrict role of States in policy domain and to get rid of "license raj" and hindrances like in land permissions, foreign investment proposal, environmental clearances etc. Startup India campaign is based on an action plan for promoting bank financing for start-up ventures to boost entrepreneurship and encourage start-ups with jobs creation in the digital/ technology sector to a wide array of sectors including agriculture, manufacturing, social sector, healthcare, education, etc.

### Definition of Startup (only for the purpose of Government schemes)

Startup means an entity, incorporated or registered in India not prior to five years, with annual turnover not exceeding INR 25 crore in any preceding financial year, working towards innovation, development, deployment or commercialization of new products, processes or services driven by technology or intellectual property. Provided that such entity is not formed by splitting up, or reconstruction, of a business already in existence. Provided also that an entity shall cease to be a Startup if its turnover for the previous financial years has exceeded INR 25 crore or it has completed 5 years from the date of incorporation/ registration. Provided further that a Startup shall be eligible for tax benefits only after it has obtained certification from the Inter-Ministerial Board, setup for such purpose.

### The Action Plan is divided across the following areas:

- Simplification and Handholding
- Funding Support and Incentives
- Industry-Academia Partnership and Incubation

### Key points of the scheme include;

- Single Window Clearance even with the help of a mobile application
- 10,000 crore fund
- 80% reduction in patent registration fee
- Modified and more friendly Bankruptcy Code to ensure 90-day exit window
- Freedom from mystifying inspections for 3 years
- Freedom from Capital Gain Tax for 3 years
- Freedom from tax in profits for 3 years
- Eliminating red tape
- Self-certification compliance
- Innovation hub under "Atal Innovation Mission"
- Starting with 5 lakh schools to target 10 lakh children for innovation programme
- New schemes to provide IPR protection to start-ups and new firms and encourage entrepreneurship.

The Ministry of Human Resource Development and the Department of Science and Technology also have agreed to partner in an initiative to set up over 75 such startup support hubs in the National Institutes of Technology (NITs), the Indian Institutes of Information Technology (IIITs), the Indian Institutes of Science Education and Research (IISERs) and National Institutes of Pharmaceutical Education and Research (NIPERs).

INSTITUTE NEWS

RESEARCH HIGHLIGHTS

Development of Semi-Automatic Peeler for *Kinnow* and Sweet Orange

A semi-automatic peeler was designed and developed for peeling of *Kinnow* and sweet orange. This peeler can be operated with a motor (0.5 hp, maximum speed of 1440 rpm) and gear assembly. The feeding of the fruit is manual. There is an arrangement for movement of blade according to the size of *kinnow*. Portion of the fruit which doesn't come in contact with peeling blade can be removed easily using the cutting knives assembly. There is a provision for adjustment according to the size of fruit for feeding and peeling. This semi-automatic peeler takes approximately 8-10 s for peeling of single *kinnow* fruit.

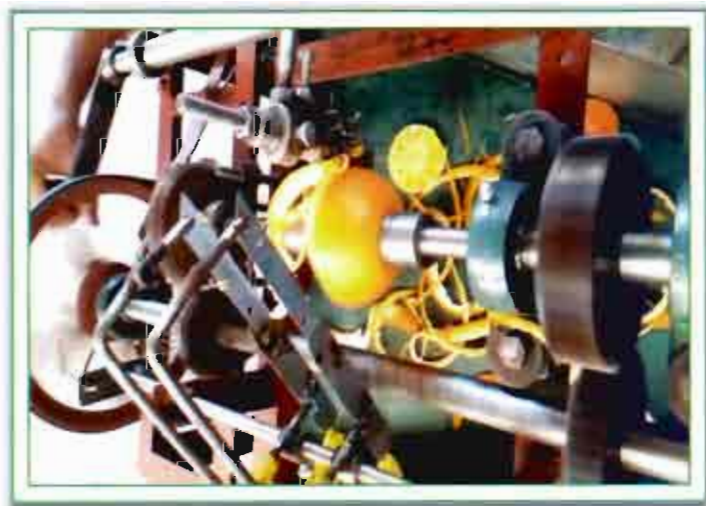


Fig1. Semi-Automatic Peeler for *Kinnow* and Sweet Orange

Process Protocol for de-bittering of *Kinnow* Juice

*Kinnow* mandarin (*Citrus reticulata*) is one of the major citrus fruit crops of India with an annual production of 0.5 MmT. It is mainly consumed as fresh in the form of juice. Bitterness (initial as well as delayed) is the major problem in its juice processing. Initial bitterness is caused by inherent naringin and limonin present in different fruit parts of *kinnow*. Delayed bitterness is caused by an enzyme (Limonate-D-ring lactone hydrolase/LDLH) mainly present in seeds, which catalyses the conversion of limonate (a non-bitter precursor) to bitter limonin in acidic condition. A process protocol has been developed for alienating/

minimizing bitterness causing compounds (limonin and naringin) to below its threshold levels in order to have de-bittered juice.

The final process protocol for de-bittering of *kinnow* juice involves following sequential steps: manual separation of peel (albedo+flavedo) and seed; juice extraction; initial heating at 90°C for 5 min; centrifugation; treatment with adsorbent/ activated charcoal for 2 h; re-addition of centrifuged pulp, pasteurization and packing (Fig. 2). The salient advantages of current intervention over the existing juice de-bittering protocols are presented in Table 1.

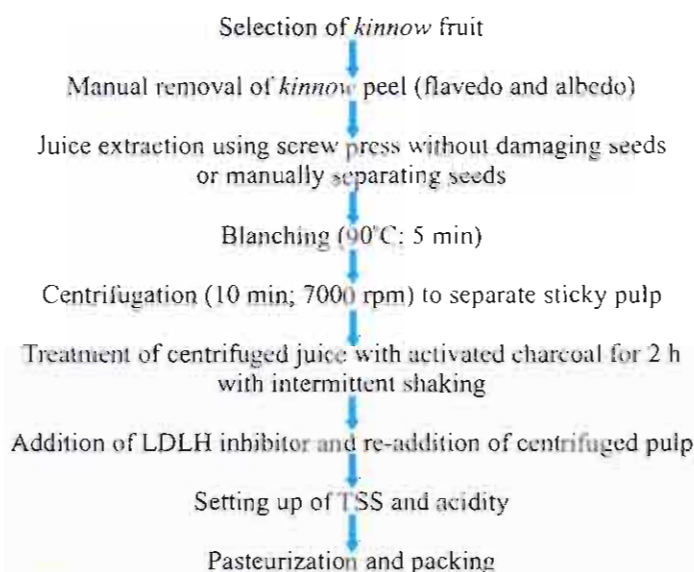


Fig. 2: Process flow chart for production of de-bittered *kinnow* juice

Table 1: Comparison of juice de-bittering process with existing technology

Existing technology	New Process
First crushing everything including bittering factors and then separating by using resins	Manual separation of major bitterness producing components at initial step
Machinery for de-bittering <i>kinnow</i> juice using resins (like polystyrene divinyl benzene, indion NPA1 etc.) is costly	Adsorbents and inhibitors used in this intervention are extremely cheap
Costly instrumental set up is an essential requirement	Plant can be run with bare minimum requirement



Fig. 3: Glimpse of various processes in operation

**Hand held fish de-scaler**

A hand-blender based fish de-scaler (Fig. 4) was developed for household use. The scaler rotor is made of polypropylene with 12 rows of nickel teeth. It can descale 20 rohu fishes (0.5 kg weight) per min.



Fig 4: Hand held fish de-scaler

**PAPERS PUBLISHED/PRESENTED**

- Kumar S, Kumar R and Nambi VE (2016). Effect of pectin methyl esterase and Ca<sup>2+</sup> ion treatment on antioxidant capacity, shelf life and quality of minimally

processed pomegranate arils. Journal of Environmental Biology, 37(2): 193-199.

- Manju Bala, B Madhu, Tyagi SK and Gupta RK (2016). Optimization of supercritical CO<sub>2</sub> extraction of safflower seed oil using response surface methodology. Asian Journal of Chemistry, 28(7)1579-1583.
- Manju Bala, Surya Tushir, Tyagi SK and Gupta RK (2015). Antinutrients in oilseed brassica: uses and potential applications. Animal Nutrition and Feed Technology, 15:295-310.
- Mridula D, Gupta RK, Bhadwal Sheetal, Khaira Harjot and Tyagi SK (2016). Optimization of food materials for development of nutritious pasta utilizing groundnut meal and beetroot. Journal of Food Science and Technology, DOI: 10.1007/s13197-015-2067-x.
- Narwal RK, Bhushan B, Pal A and Malhotra S (2016). Optimization of upstream process parameters for enhanced production of thermostable milk clotting enzyme from *Bacillus subtilis* MTCC 10422. Journal of Food Process Engineering. DOI:10.1111/jfpe.12356.
- Nath P, Kale SJ, Chauhan OP and Gupta RK (2016). High pressure processing induced changes in bioactive compounds, antioxidant activity, microbial safety and color attributes of coriander paste. Agricultural Research, pp1-11. DOI: 10.1007/s40003-015-0200-8.
- Singh J, Nangare DD, Meena VS, Bhushan B, Bhatnagar PR and Sabir N (2015). Growth, quality and pest infestation in tomato under protected cultivation in semi-arid region of Punjab. Indian Journal of Horticulture, 72(4): 518-522.
- Anuradha Kumari, Deep N Yadav, Sangita Bansal, Arvind K Jaiswal and SK Nanda (2016). Effect of Processing Parameters on the Recovery of Protein from Soybean Meal in Abstract e-book of International Conference on Food Value Chain: Innovations and Challenges (FVC-2016)" held at NIFTEM, Kundli, Sonipat from March 17-18, 2016. pp. 130.
- Deep N Yadav, presented a research paper "Development of protein fortified mango based ready-to-serve beverage in Abstract e-book of International Conference on Food Value Chain: Innovations and Challenges (FVC-2016)" held at NIFTEM, Kundli, Sonipat from March 17-18, 2016. pp. 51.
- Dr Manju Bala, presented a research paper entitled "Effect of different protein sources on textural and

sensory properties of gluten free quality protein maize based muffins” in 10<sup>th</sup> Chandigarh Science Congress (CHASCON-2016), held at Panjab University, Chandigarh during February 29- March 2, 2016.

- Dr Manju Bala, presented a research paper entitled “Effect of casein with and without hydrocolloid on rheological and chapati making properties of quality protein maize and maize flour dough” in the International Conference on “Food Value Chain: Innovations and Challenges” held at NIFTEM, Kundli, Sonapat during March 17-18, 2016.
- Dr Mridula D, presented a research paper entitled “Development of nutritious expanded snack food with spinach” in 50<sup>th</sup> Annual Convention of ISAE and Symposium on Agricultural Engineering in Nation Building: Contributions and Challenges during January 19-21, 2016, at Orissa University of Agriculture & Technology, Bhubaneswar, Odisha.
- Dr Mridula D, presented a research paper entitled “Protein and minerals rich pasta with spinach ” in 50<sup>th</sup> Annual Convention of ISAE and Symposium on Agricultural Engineering in Nation Building: Contributions and Challenges during January 19-21, 2016, at Orissa University of Agriculture & Technology, Bhubaneswar, Odisha.
- Dr Mukund Narayan, presented a research paper on “Effect of Plastics mulching in crop yield and water use efficiency” in 18<sup>th</sup> Indian Agricultural Scientist and Farmers Congress on “Prospects of skill development in Agriculture and Rural Development-A step towards Make in India” at Biovid Krishi Prodyogiki Gram Moharab, Sringeripur, Allahabad during February 20-21, 2016.
- Dr Sangita Bansal, presented a research paper entitled “Assessment of acid, bile tolerance and antibiotic resistance of lactic acid bacteria isolated from fermented foods” in National Conference on “Plant Science Research: Looking beyond 21<sup>st</sup> Century for Environment and Agriculture Revolution” during February 5-7, 2016 at University of Delhi, Delhi.
- Dr Sangita Bansal, presented a research paper entitled “Validation of SCAR markers based method in detection of Safflower adulteration in Saffron” in International Conference on Food Value Chain: Innovations and Challenges (FVC-2016)” held at NIFTEM, Kundli, Sonapat during March 17 - 18, 2016.
- Er Dhritiman Saha, presented a research paper entitled “Capacitance based non-destructive testing of endpoint setting of yoghurt” in 50<sup>th</sup> Annual Convention of ISAE and Symposium on Agricultural Engineering in Nation Building: Contributions and Challenges during January 19-21, 2016, at Orissa University of Agriculture & Technology, Bhubaneswar, Odisha.
- Kumar R, Kumar S and Sharma PC (2016). “Effect of microwave blanching on browning inhibition and quality traits of processed pear”. Presented in International Symposium on Sustainable Horticulture organized by Mizoram University from 14-16 March, 2016.
- Kumar S, Kumar R and Sharma PC (2016). “Extraction of high value compounds from horticultural waste”. Presented in International conference on “Natural Resource Management- Ecological Perspectives” held at Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu, J&K during February 18-20, 2016 (pp. 706).
- Leena Kumari (2016). Using RFID technology for ethylene sensing during storage of climacteric fruits. Paper presented in International conference on Food Value Chain: Innovations and Challenges held at NIFTEM, Kundli, during March 17-18, 2016.
- Narsaiah K and Gunvantsinh Rathod (2016). Encapsulation of fish oil for its odour masking. Paper presented in 50<sup>th</sup> ISAE convention and International Symposium held at CAET, OUAT, Bhubaneswar during January 19-21, 2016.
- Priyanka Prasad, Sangita Bansal and RK Gupta (2016). Regulatory framework for Health Foods: Indian Scenario” in Proceedings of 4<sup>th</sup> International Conference on Advancements in Engineering and Technology (ICAET 2016) held at Bhai Gurudas Institute of Engineering & Technology, Sangrur (Punjab), ISBN no. 978-81-924893-1-5. pp. 1630.
- Sujata Thakur, Sangita Bansal, Manisha Mangal, Anupam K Mangal and Sanjiv Kumar (2016). “DNA barcode psbA-trnH in detection of Safflower adulteration in Saffron” in Proceedings of 4<sup>th</sup> International Conference on Advancements in Engineering and Technology (ICAET 2016) held at

Bhai Gurudas Institute of Engineering & Technology, Sangrur (Punjab) w.e.f. March 18-19, 2016, ISBN no. 978-81-924893-1-5. pp. 1630.

- Tyagi SK, Surya Tushir and Manju Bala (2016). Effective and stable Eco-friendly plant based Biopesticide; presented in 50<sup>th</sup> Annual Convention of ISAE and Symposium on Agricultural Engineering in Nation Building: Contributions and Challenges, January 19-21, 2016, at Orissa University of Agriculture & Technology, Bhubaneswar, Odisha.

### POPULAR ARTICLES

- अरविन्द जायसवाल, किरण लता एवं दीप नारायण यादव (2016) खाद्य पदार्थों का त्रिविम मुद्रण एक नई औद्योगिक क्रांति; रक्षा खाद्य विज्ञान पत्रिका, अंक 24, 70-73.
- दीप नारायण यादव, अनुराधा कुमारी, अजय पाल, अरविन्द जायसवाल एवं अनिला कुमार (2016) तिल का औषधीय एवं औद्योगिक उपयोग, रक्षा खाद्य विज्ञान पत्रिका, अंक 24, 46-52.
- किरण लता, अरविन्द जायसवाल एवं राजन शर्मा (2016) खाद्य पदार्थों में दूषणों के परीक्षण की पाश्चर्य प्रवाह पद्धति (लेटरअल फ्लो), रक्षा खाद्य विज्ञान पत्रिका, अंक 24, 26-29.

### CONSULTANCY/ LICENSING OF TECHNOLOGY

- Licensing and training on the technology for process of making green chilli puree & powder was provided to M/s Organic World, Ranchhod Krupa, Dharmaj, Gujarat during March 3-5, 2016.

### PROGRAMMES ORGANIZED

- All India Coordinated Research Project on Post-Harvest Engineering and Technology (AICRP on PHET) organized 31<sup>st</sup> Annual Workshop at Department of Food and Agricultural Process Engineering, Agricultural Engineering College and Research Institute of Tamil Nadu Agricultural University (TNAU) during January 4-6, 2016. The workshop was chaired by Dr K Alagusundaram, DDG (Engg), ICAR and graced by Dr S N Jha, ADG (PE), Dr R K Gupta, Director, ICAR-CIPHET Ludhiana, Dr C Divakar Durairaj, Dean, Agricultural Engineering & Research Institute, TNAU and Dr M Maheswaran, Director of Research, Dr S Ganapathy, Professor and Head, TNAU and experts of post-harvest sector. About more than 95 scientists

participated in this workshop. Dr K Ramasamy, Vice-Chancellor, TNAU, Coimbatore was the Chief Guest. He enlightened the gathering by expressing the need to exploit steel manufactured from Salem for food processing machinery. In furtherance, he listed the benefits of coconut in reducing heart diseases. He further appreciated the recent developments in non-thermal processing methods for tender coconut water. Dr K Alagusundaram, DDG (Engg), emphasized on the consortium and value chain mode of research rather than the conventional way of research which will facilitate the delivery of benefits to farmers immediately. To initiate the consortium for grain storage, value chain on turmeric was started at different centers in last year. He further stressed on team work among the willful scientists to bring out the fruitful research. Dr S N Jha, ADG (PE) and PC (AICRP on PHET) presented the progress and achievements of AICRP on PHET made during last one year. AICRP on PHET centers have developed post-harvest tools, 25 nos. of equipment, 33 process protocol/products and 04 pilot plants. Besides, transferred 09 technologies, published 02 success stories, 35 patents filed/granted, established 22 APCs, received 05 awards and published 74 papers in referred journals during last one year. Three publications i.e., "Four Decade of AICRP on PHET", "Assessment of Quantitative Harvest and Post-Harvest Losses of Major Crops and Commodities in India" and "Study on Determining Storage Loss/Gain of Wheat Procured under URS" prepared by AICRP on



PHET were also released in the workshop. About 150 research projects (on- going and new proposals) were discussed.

- कार्यालयों में व्यावहारिक हिन्दी और राजभाषा हिन्दी की उपयोगिता पर हिन्दी कार्यशाला का आयोजन 19 मार्च 2016 को किया गया। भारतीय जीवन बीमा निगम, लुधियाना में कार्यरत प्रशासनिक अधिकारी (राजभाषा) श्री अखिलेश चन्द्र मुख्ज वक्ता थे।

### Research Advisory Committee Meeting

- RAC meeting of the institute was held during March 20-21, 2016 under the chairmanship of Dr BS Bisht, former Vice Chancellor, G B Pant University of Agriculture & Technology, and Director, Birla Institute of Applied Sciences, Bhimtal. RAC chairman along with members Dr B Ranganna, Prof Susanta Kumar Das, Dr Pitam Chandra, Dr Ashok Kumar, Dr Sanjod Kumar Mendiratta and Dr S N Jha, ADG(PE) also visited Sections/Divisions/Labs, Pilot Plants of the institute.

### Celebration of National Science Day

- ICAR-CIPHET celebrated National Science Day on

February 26, 2016. On this occasion, Director, ICAR-CIPHET addressed the students of Pratap Public School, Ludhiana and created the awareness about the importance of Science in our daily life. Besides, he also explained and showcased the different activities of ICAR-CIPHET to the students.

### Celebration of Republic Day

- 67<sup>th</sup> Republic day was celebrated at both the campuses of ICAR-CIPHET i.e. Ludhiana and Abohar with great patriotism. All the CIPHET staff, their family members participated on this occasion. Dr R K Gupta, Director ICAR-CIPHET hoisted the National Flag at Ludhiana campus while at Abohar campus, Dr D M Kadam, I/c Head, HCP, Abohar hoisted the National Flag. Various cultural, literary and sports events were also organized by staff recreation club.

### Entrepreneurship Development Program (EDP)

- An Entrepreneurship Development Program (EDP) on "Aonla Processing and Value addition" was organized



EDP on 'Aonla processing and value addition' at ICAR-CIPHET, Abohar

from February 29 to March 2, 2016 at HCP Division, ICAR-CIPHET Abohar. Dr Vijay Singh Meena was Coordinator and Dr Manoj Kumar Mahawar was Co-Coordinator. Four farmers/entrepreneurs from Rajasthan and Punjab were participated in this EDP training. Hands-on training was given to the participants for the production of various products from *Aonla* such as *Aonla* Juice, RTS, Squash, *Murabba*, Pickle, Candy, Mouth freshener, Shreds etc..

## TRAININGS

- Under “*Mera Gaon Mera Gaurav*” scheme one day training programme on preparation of peanut milk and paneer was organized by Dr SK Nanda (Team Leader), Dr Pranita Jaiswal, Dr RK Vishwakarma and Dr Swati Sethi for farmers of *Bagga Kalan* village on February 19, 2016 at ICAR-CIPHET, Ludhiana.



- Five months training programme starting from January 01, 2016, is being organized for one M.Sc. (Food Technology) student from Gautam Buddha University, Greater Noida, Uttar Pradesh at ICAR-CIPHET, Ludhiana.
- One month training programme was organized for 4 B. Tech (Agril. Engg) students from Department of Agricultural Engineering & Technology, School of Engineering & Technology, Nagaland University, Dimapur at ICAR-CIPHET, Ludhiana during January 05, 2016 to February 05, 2016.
- One day training programme on technology of groundnut milk and paneer was organized for 40 farmers from different district of Punjab on January 15, 2016.
- Three months training programme is being organized for three M.Sc. (Food Technology) students from Centre of Food Technology, Institute of Professional Studies, University of Allahabad, Allahabad (Uttar Pradesh) during January 15 to April 14, 2016.
- Five days officers training programme on “Post-Harvest Technology for Major Crops and Livestock Produce” during February 08-12, 2016 for 16 Agricultural Officers from Odisha state.
- Four months training programme is being organized for 4 B.Tech (Agril. Engg.) students from College of Agricultural Engineering & Technology (AAU), Godhra, Gujarat w.e.f. February 05 to May 31, 2016.
- Two month training programme is being organized for 4





B.Tech (Agril. Engg.) students from College of Agricultural Engineering, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Adhartal, Jabalpur (MP) during March 01 - April 30, 2016.

- Five days training programme on “Post-Harvest Management” was organized for 16 farmers from different parts of Haryana during March 07-11, 2016.
- Training cum exposure visit of Maharashtra state farmers was organized during February 03-04, 2016. This training programme was sponsored by Centre for Agriculture and Rural Development (CARD), New Delhi.

Scientist attended 50<sup>th</sup> ISAE convention and International Symposium held at CAET, OUAT, Bhubaneswar during January 19-21, 2016.

- Dr Sunil Kumar Sr. Scientist delivered a guest lecture on “Management and utilization of fruit processing waste” in national seminar on “Emerging trends in biological and agricultural sciences” held at DAV College, Abohar, Punjab on January 22, 2016.
- Dr RK Gupta Director, ICAR-CIPHET attended meeting of Vice-Chancellors and Directors Conference during January 22-25, 2016 at NASC, Complex, New Delhi.



- Three months training programme was organized for 5 B. Tech (Food Technology) students from KK Wagh College of Food Technology, Nashik (Maharashtra) at HCP Division during January 01- March 31, 2016.

### PROGRAMMES PARTICIPATED

- Dr Rahul K Anurag, Scientist and Ms. Surya Tushir, Scientist, ICAR-CIPHET attended Review meeting of Food Testing Laboratory, ICAR-CIPHET, Ludhiana at Lecture Hall, NASC Complex, New Delhi on January 18, 2016.
- Dr RK Gupta, Director, ICAR-CIPHET attended 50<sup>th</sup> IASE Convention at OUAT, Bhubaneswar held on January 19-21, 2016 and presented invited paper in the theme session of the convention.
- Dr SK Nanda, Head FG&OP and Dr K Narsaiah, Pr.
- Dr VS Meena delivered a guest lecture on “Technologies for accelerating horticultural production under changing environment” in National seminar on “Emerging trends in biological and agricultural sciences” at D.A.V. College Abohar (Punjab) on January 22, 2016.
- Dr RK Gupta Director, ICAR-CIPHET attended interface meeting with DRDO and CSIR on February 10-11, 2016 at ICAR, Krishi Bhawan, New Delhi.
- Dr RK Gupta Director, ICAR-CIPHET participated in 29<sup>th</sup> National Convention of Agricultural Engineers (NCAE) held at Anand during February 20-21, 2016.
- Sh Rajesh Kumar, Sh Hardeep Singh and Sh Rajiv Sharma participated in Citrus show exhibition at PAU Seed farm, Abohar on February 10, 2016.

- Dr RK Gupta Director, ICAR-CIPHET participated in DST GOI sponsored training programme on "Science, Governance & Management" at Administrative Staff College of India (ASCI), Hyderabad during February 29-March 4, 2016.
- Dr RK Gupta Director, ICAR-CIPHET participated in Annual Progress Review Meeting of CRPs (HF+SA) during March 9-11, 2016 at ICAR-CIAE, Bhopal.
- Dr Ramesh Kumar (Sr. Scientist) attended and delivered oral presentation at International Symposium on Sustainable Horticulture organized by Mizoram University from March 14-16, 2016.
- Dr RK Gupta Director, ICAR-CIPHET participated in National Workshop with the theme of "Organic Farming/Natural Farming and Cow-based Economy" at Pingalwada Trust, Amritsar during March 15-17, 2016.
- Dr RK Gupta Director, ICAR-CIPHET attended 276<sup>th</sup> meeting of Board of Management of PAU, Ludhiana at Chandigarh on March 28, 2016.
- Dr Dattatreya M Kadam, attended Annual Review Meeting of CRP on Health Foods and secondary Agriculture at CIAE, Bhopal.



**EXHIBITIONS**

- Showcased and demonstrated ICAR-CIPHET developed technologies in *Kisan Mela* at PAU, Ludhiana during March 18-19, 2016 and in *Krishi Unnati Mela-2016* at IARI, PUSA during March 19-21, 2016.



Ludhiana on January 13, 2016 under study abroad program under the collaborative project "Reduction of post-harvest loss for small holder farmers".

- Sh Chhabilendra Raul, Additional Secretary, Department of Agricultural Research and Education Ministry of Agriculture and Farmers Welfare visited ICAR-CIPHET Ludhiana on January 16, 2016. During



**VISITS**

- Five faculties along with 15 foreign students from University of Illinois, USA visited ICAR-CIPHET,

his visit he interacted with scientists and also visited divisional laboratories and facilities of the institute.

- Dr K Alagusundaram, Deputy Director General (Agri. Engineering), ICAR, New Delhi visited ICAR-CIPHET, Ludhiana on January 28, 2016. During his visit, he launched the ICAR-CIPHET upgraded Website.



- Prof. Matthew Prasad Hon'ble Vice-Chancellor, V.C.S.G. Uttarakhand University of Horticulture and Forestry, Bharsar, Garhwal visited ICAR-CIPHET Ludhiana on February 08, 2016. He inaugurated "Capacity Building Training cum Exposure visit on Post-Harvest Technology for Major crops & Livestock Produce" for Agricultural Officers, Odisha and he also visited sections/ divisions/ lab facilities of the institute.



- Dr Gurbachan Singh, Hon'ble Chairman ASRB, New Delhi visited ICAR-CIPHET Ludhiana on February 27, 2016. During his stay he interacted with scientists and visited ASRB Online Examination Centre, section/ division/ lab facilities of the institute.



- Dr SN Jha, ADG (PE), ICAR, New Delhi visited ICAR-CIPHET, Ludhiana on January 11, 2016, February 22, 2016 and March 22-23, 2016 during his visits he interacted with Director, PCs, HoDs, Scientists, Officers and staff.

**Showcased and demonstrated ICAR-CIPHET developed technologies to following students and farmers visitors during the period; which include:**

- 14 students from College of Horticulture & Forestry, Central Agricultural University, Pasighat, Arunachal Pradesh on January 05, 2016.
- Mr Mohemmed Deen along with two other persons from Ladakh Environment and Health Organization-LEHO, G H Road, Skara Juk, Leh, Ladakh on January 13, 2016
- Showcased and demonstrated technology for groundnut milk and paneer to two entrepreneurs' from Ludhiana on January 14, 2016.
- 45 farmers from Peisangan under Rajasthan Agricultural Competition Programme (RACP) on February 09, 2016.
- 39 students from College of Horticulture, S D Agricultural University, Sardarkrushinagar, Gujarat on February 22, 2016.
- 19 students (M.Sc. Food Technology) from University of Kashmir on March 7, 2016.
- 40 Farmers from Ajmer, Rajasthan on March 16, 2016.
- 29 Farmers from Alwar, Rajasthan on March 17, 2016
- Three farmers from Abohar visited AICRP on PET, CIPHET Abohar centre and learnt about mushroom cultivation in arid regions.
- A farmer from Tarn-Tarann, Punjab visited AICRP on PET, CIPHET Abohar centre and learnt about Earth Tube Heat Exchanger
- 38 farmers from Jhalawar district of Rajasthan visited ICAR-CIPHET, Abohar campus on March 2, 2016 to

know about the latest trends in post-harvest technology and grading, waxing, packaging as well as value addition in *kinnow* and other fruits.

- Dr SK Nanda, I/c PC, AICRP on PET, Ludhiana visited AICRP on PET centre Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli along with Dr Mukund Narayan, during February 12-18, 2016.

**LINKAGES DEVELOPED**

**Radio talk on Agri-Business Incubation (ABI): Anola Processing**

- Mr Gurvinder Singh Sandhu and his team from AIR Jalandhar visited ICAR-CIPHET, Abohar incubation facility and recorded a radio talk on Agri-Business Incubation (ABI): *Anola* processing with Dr Dattatreya M Kadam, I/c Head HCP at ICAR-CIPHET, Abohar on February 09, 2016 and interacted with incubates.



- Dr Ramesh Kumar, Er Sakham Kale and Er Kirti Jalgaonkar delivered a radio talk on 'Guava processing'; 'Mushroom cultivation in hot and arid

region' and 'Covered cultivation of vegetables'; 'Processing of red chillies', respectively under '*Do Duni Chaar*' programme of AIR Jalandhar.

**AWARDS**

- Dr Pranita Jaiswal received Distinguished Service Certificate Award for the year 2015 by ISAE.
- Dr Sunil Kumar Sr. Scientist awarded with the best oral presentation award under "Integrated Nutrient Management" theme at International conference on "Natural Resource Management- Ecological Perspectives" held at Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu, J&K during February 18-20, 2016..

**JOINING/ADDITIONAL CHARGE**

- Er Bibwe Bhushan Ratnakar, Scientist (Agricultural Process Engineering) and Mr Dukare Ajinath Shridhar, Scientist (Agricultural Microbiology) joined HCP Division, ICAR-CIPHET Abohar on February 17, 2016.
- Dr Dattatreya M Kadam, Principal Scientist, AS&EC Division ICAR-CIPHET, Ludhiana has taken additional charge of Head, Division of Horticulture Crop Processing (HCP), Abohar and In-charge, ICAR-CIPHET, Abohar campus from January 25, 2016.

**PROMOTIONS**

1. Dr Yogesh Kumar, Dr Tanbir and Dr Rahul K. Anurag Scientist promoted to Scientist (Sr. Scale)
2. Dr Sangita Bansal and Dr Sunil K Saini, Senior Scientist (RGP-8000/-) promoted to Senior Scientist (RGP-9000/-).

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