



**Central Institute of Post Harvest Engineering & Technology
Ludhiana
OUR SLOGAN: PRODUCE, PROCESS AND PROSPER**

**CIPHET E - Newsletter for July-August, 2013
Vol. 8, No. 7-8**

Director's Column

Dear All,

CIPHET is constantly thriving way for different value added and convenient foods for all sections of our society. Wheat is one of the major dietary components in northern region of India is one step towards that direction. Due to fast changing lifestyle and increase in working population, demand of easy to cook and convenience food is increasing tremendously. Quick cooking wheat dalia (grits) will have a good market potential if made available to the consumers. In view of this, CIPHET has developed a process for quick cooking wheat dalia.



CIPHET developed Cryogenic spice grinding system was licensed to M/s Spectra Cryogenic Systems Pvt. Ltd in Agro-Investors meet at NASC complex, New Delhi on July 19, 2013. The application of cryogenic technology for grinding of spices has been scientifically modified proved with less loss of volatile content and improved colour and grinding operation. This is first of its kind cryogenic grinder, fabricated in India with scientific design and having capacity to grind spices at large scale.

A Business Planning and Development (BPD) unit has been set up at CIPHET, Ludhiana to serve the budding entrepreneurs in setting up the Food/Agro-processing unit. This is by supporting entrepreneurs with agri/food technology, consultancy, networking with management experts and physical infrastructure. In this regard, BPD unit- CIPHET is going to organize a launch workshop on 13th September.

The AICRP on Application of Plastics in Agriculture head-quartering at CIPHET, Ludhiana campus received the ICAR's "Chaudhary Devi Lal outstanding AICRP Award" for 2012 on 16 July, 2013 at New Delhi.

A few senior scientists of different discipline have joined CIPHET in August after putting considerable efforts for the same. They were whole heartedly welcomed in CIPHET family.

With best regards,

**S.N. Jha
Director (Acting)**

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Institute Management Committee (IMC) Meeting



The Institute Management Committee (IMC) meeting was held on July 4, 2013 under the chairmanship of Dr. S.N. Jha, Director (Acting) at the Institute with the members comprising of Dr. K.K Singh, Assistant Director General (PE), Dr. P.G Patil, Dr. N. Prasad. During the visit, IMC members especially appreciated the newly developed technologies by the institute including Makhana popping machine, Cryogenic grinder and Bael pulper. Dr. S.N. Jha informed the members about

research and institution achievements during period of last one year. “The institute has made significant progress in terms of patents, revenue collection and improvement in administration,” he added.

CIPHET Witnessed ICAR Foundation Day Through Webcast



The Institute staff watched the entire event of 85th Foundation Day of Indian Council of Agriculture Research (ICAR) through the webcast held at the CIPHET, Ludhiana. The Hon'ble President of India, Shri Pranab Mukherjee, on the occasion of delivered keynote address today at National Agriculture Science Centre Complex, Pusa, New Delhi. To mark the event, Hon'ble President launched Kisan SMS Portal and presented ICAR national

awards. Dr. S. Ayyappan, Director General, ICAR in his welcome address briefed about the progress of ICAR and way forward. Union Minister for Agriculture Mr Sharad Pawar apprised the President about developments in area of agriculture. Union State Agriculture Ministers Mr Tariq Anwar and Mr Charan Das Mahant, Secretary Agriculture, Mr. Ashish Bahuguna and Secretary ICAR, Mr. Arvind R Kaushal also shared the dais. The programme was attended by Directors of ICAR institutes, Vice chancellors of State Agricultural Universities and other dignitaries.

AICRP on APA Got National Award

All India Coordinated Research Project (AICRP) on Application of Plastics in Agriculture, headquartered at CIPHET, Ludhiana, has been conferred prestigious Ch. Devi Lal Outstanding All India Coordinated Research Project Award 2012 by Indian Council of Agricultural Research (ICAR) recognizing its contribution made during the last five years. The award has been received by Dr. P. R. Bhatnagar, Project Coordinator from Sh.



Sharad Pawar, Hon'ble Minister of Agriculture, Government of India in Award Ceremony held at NASC, New Delhi on 16th July, 2013. Dr. S. N. Jha, Director (Acting) CIPHET congratulated Dr. Bhatnagar for this accomplishment. AICRP on APA has eleven centres located in different locations including Indo-gangetic plains in Punjab (Ludhiana and Abohar), mid hills of Himalayas (Srinagar, Palampur, Almora, Gangtok and Shillong), coastal regions (Junagadh and Bhubaneswar), eastern plateau (Ranchi) and Aravali hills (Udaipur). "Through development of location specific poly houses, shade houses, plastic mulching, low tunnels, plastic fish hatcheries and feeding devices project has made a significant impact in lives of small and marginal farmers," added Dr Bhatnagar.

CIPHET Celebrated Independence Day

CIPHET celebrated 67th Independence Day on 15th August. Dr. S.N. Jha, Director (Acting), CIPHET hoisted the National Flag and addressed the staff on the occasion. He stressed upon the importance of post-harvest management in our country and the role of CIPHET in meeting the challenges for developing viable technologies for processing industries. He exhorted the staffs to work honestly and sincerely to take this institute to



newer height. He enumerated the past one year achievements of this institute where he received Rafi Ahmed Kidwai award and AICRP on Application of Plastics in Agriculture got the "Chaudhery Devi Lal outstanding AICRP Award". A cultural programme was organised on this occasion by the children of CIPHET staff, and some track and field events were also organised and prizes were distributed to winners and children.

Director, CPHET Visited Abohar Campus

Dr. S. N. Jha, Director (Acting), CIPHET, Ludhiana visited Abohar campus of CIPHET on 06.08.13 and interacted with scientific, technical and administrative staff on



Visit to farm and APC Unit at CIPHET, Abohar

their work performance and problems faced by the staff. He also visited the experimental farm, APC unit, workshop and laboratories. He appreciated the work carried out by Abohar campus for developing various technologies and machinery for processing and value addition of horticultural crops and hoped that the tempo continued in future as well.

Conference/ Training Attended

- Dr. S.K. Devatkal Senior Scientist and Dr. Pranita Jaiswal, Senior Scientist attended a capacity building programme (refresher course) at National Academy of Agricultural Research Management (NAARM), Hyderabad during 14.7.13 to 28.7.13 organized for Senior/Principal scientists recruited through lateral entry other than ARS of ICAR.
- Dr. R. K. Vishwakarma, Senior Scientist attended one day workshop on “Repeat study on assessment of post harvest losses of major horticultural crops, animal and fishery products in India” held at NASC complex, ICAR, New Delhi on August 29, 2013.
- Scientists from CIPHET, Abohar provided demonstrated lab equipment and APC machinery to 30 Agricultural Development Officers from HAMETI, Jind, Haryana on July 31, 2013.
- Dr. P C Sharma, Head, HCP, Abohar attended HP State level ICAR- Regional Committee No 1 meeting at Dr. Y.S. Parmar University of Horticultural and Forestry, Nauni (Solan) on August 13, 2013 .
- Dr Sunil Kumar, Sr. Scientist was awarded with best paper award in technical session “Quality Assurance” for the oral presentation entitled “*Storage stability of pomegranate arils using enzymes and divalent ions*” at National Seminar on “New vistas in food processing with quality assurance for augmenting rural prosperity” organized by Dept. of PFE, CTAE, MPUAT, Udaipur during June 21-22, 2013.

Licensing of Design of Cryogenic Spice Grinding System



Exchange of MoU between CIPHET and M/s Spectra Cryogenic Systems Pvt. Ltd. in Agro Investors meet at NASC complex on July 19, 2013. CIPHET developed Cryogenic spice grinding system was commercialized to M/s Spectra Cryogenic Systems Pvt. Ltd in Agro-Investors meet at NASC complex, New Delhi on July 19, 2013. The application of cryogenic technology for grinding of spices has been scientifically proved to be a suitable technique with less loss of volatile content and improved colour and grinding operation. During conventional grinding, flavours and medicinal attributes are reduced to large extent due to rise in temperature during the grinding process. CIPHET has designed and developed a low cost cryogenic grinder using liquid nitrogen or liquid carbon dioxide that provides the refrigeration needed to pre-cool the leaves and seeds and maintain the desired low temperature by

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absorbing the heat generated during the grinding operation. This is first of its kind cryogenic grinder, developed in India with scientific design and having capacity to grind spices at large scale. Its capacity is 30 to 50 kg/h depending on type of spice. The high quality ground product would have domestic as well as international market.

PC (PHT) attended convention at Bangkok, Thailand

A High-Level Multi Stakeholder Consultation on “Food Losses and Food Waste in Asia and Pacific Region” was convened by the FAO during 27-28 August 2013 at Bangkok, Thailand. The convention started with an opening statement by H.E. Yukol Limlamthong, Deputy Prime Minister and Minister for Agriculture and Cooperatives, Thailand, followed by the



Welcome Address by Mr. Hiroyuki Konuma, Assistant Director General and Regional Representative of FAO in Thailand and Keynote Speech by Professor M.S. Swaminathan on reducing post-harvest losses for food security.

In this meeting, Country Experiences and Perspectives on Post-harvest Loss and Food Waste were shared by the representatives participating from 20 countries in the Asia and Pacific Region (viz. Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, India, Indonesia, Japan, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Timor-Leste, and Vietnam). Dr. S.K. Nanda, Project Coordinator, AICRP on Post Harvest Technology, CIPHET, Ludhiana represented India in this convention and presented the Assessment of Post Harvest Losses in India under Country Experience: India. The work was highly appreciated by the delegates including Prof M.S. Swaminathan.

Project Coordinator (PHT) visited CCS HAU, Hisar

Dr. S.K. Nanda, PC (PHT) along with Dr. R. K. Vishwakarma and Anil Kumar Dixit visited CCS HAU Hisar Centre from July 31, 2013 to August 1, 2013 to monitor the progress of MoFPI and FCI projects and AICRP on PHT work. They had a meeting with Hon'ble Vice-Chancellor, CCS HAU Hisar. The meeting was also attended by Dean, College of Agricultural Engineering, Director Research, HOD, Processing and Food Engineering and Research Engineers. Dr. K.S. Khokhar, VC, CCSHAU Hisar assured PC (PHT) to provide full support and cooperation in administrative matters. Further, the modalities with respect to appointment of Field Investigators in FCI and MOFPI projects and collection and compilation of data were finalized in a separate meeting with HOD and staff of AICRP on PHT. On the request of Prof. Krishan Jangra, license manufacturer of Continuous Carrot Washer, Dr. S. K. Nanda, PC (PHT) inaugurated the workshop 'M/S Jangra Engg Works' at village Bhabalpur, Hisar, Haryana. He also interacted with farmers who are using carrot washer to get feedback on the performance of the machine.



CIPHET-BPD attended Potato Farmer's Meet

A meeting of potato farmers was organized by Canara Bank on 30th of Aug at Jalandhar to bring different stakeholders such as Farmers, entrepreneurs, research and development organizations, faculty and financial organizations (Bank) at a single platform to understand



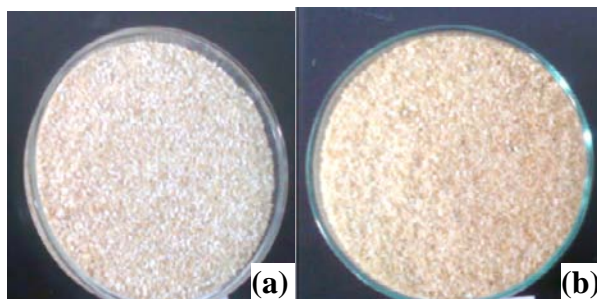
the need of each other. Meeting was attended by about 70-80 progressive potato farmers from the region and also persons from National Horticulture Mission, KVK- Noormahal, CIPHET Ludhiana, Canara Bank. Mr. Ajay Agrawal, Business Manager-BPD, CIPHET, Ludhiana was one of the speakers during this meeting. He emphasized on CIPHET developed technologies including storage structure for potato and animal feed from potato waste. CIPHET developed technologies like pomegranate aril extractor, Banana-comb cutter, Maize degermer,

Processing of Chilli, Garlic, Ginger, onion in to flakes and powder, Tomato puree, Cryogenic spice grinding system, Groundnut Grader etc also featured during the discussion.

Technology of The Month

Quick Cooking Wheat Dalia

Wheat (*Triticum aestivum*) is one of the major dietary components in northern region of India and also a staple food for large segment of world population. Whole wheat is a rich source of functional ingredients such as fibre, phytochemicals, minerals, essential amino acids. Sprouting is reported to be associated with improvement in the nutritive value of seeds, enhancing bioavailability of trace elements, reduction of anti-nutritional factors, increasing protein digestibility and improving sensory properties. Due to fast changing lifestyle and increasing the number of working population, demand of easy to cook and convenience food is increasing tremendously. Quick cooking wheat dalia (grits) may be one such product that will have a good market potential if made available to the consumers. In view of this, CIPHET has developed a technology for development of quick cooking wheat dalia.



(a) Quick cooking wheat *dalia* (b) Conventional wheat *dalia*

In order to develop quick cooking wheat dalia, sprouting was carried out following standardized parameters followed by drying and milling. Yield of dalia (particle size 1.41 to 2mm) from such wheat was about 74% with cooking time of about 3.5 min having good protein digestibility. Protein, fat, ash, crude fibre, calories, iron and calcium content in this dalia sample were 10.32%, 1.33%, 1.48%, 3.33%, 359kcal, 1.18 and 44.67mg/100g, respectively. The sensory acceptability was similar to traditionally processed conventional wheat dalia, which also stored well for 90 days at room temperature. In view of lesser cooking time, quick cooking wheat dalia may be prepared from sprouted wheat.

Forthcoming Events

Training on Microencapsulation

A paid training on Micro Encapsulation Methods for Food and Biotechnological Applications will be conducted by Dr. K.Narsaiah, Senior Scientist (AS&PE) in AS&EC Division from 20-22 November 2013 with an intake capacity of 15 candidates. The training will include methods of microencapsulation (twin fluid nozzle encapsulation, membrane emulsification, sonicator, high pressure homogenizer) with hands-on experience for optimization of microencapsulation using the developed microencapsulator and comparison with other methods. The detail for the training is available on the Institute website.

BPD Launch Workshop

A Business Planning and Development (BPD) unit has been set up at CIPHET, Ludhiana to serve the budding entrepreneurs in setting up the Food/Agro-processing unit. This could be achieved by supporting entrepreneurs with agri/food technology, consultancy, networking with management experts and physical infrastructure. The incubator maximizes success by minimizing risk by offering the best opportunity. BPD is an initiative of ICAR in partnership with NAIP under World Bank funded scheme. BPD-CIPHET unit is going to organize a launch workshop meeting on 13th September, 2013 at CIPHET, Ludhiana. This will help in bringing entrepreneurs/Farmers/Scientist/Industrialists on a single platform. Further details can be obtained from Director, CIPHET, Ludhiana or Dr. D M Kadam, Senior Scientist and PI BPD, CIPHET.

Media Conference Organized

Dr. P. R. Bhatnagar, Project Coordinator, Application of Plastics in Agriculture, AICRP organized media conference on “Application of Plastics in Agricultural” on 24 July, 2013 at CIPHET, Ludhiana. In this occasion 5 News paper and 3 TV personals were present.



Consultancy Provided

Technical Consultancy for “pasta production” was provided to Mr. Paramveer Singh Rai N. P. Fresh Foods Pvt. Ltd. V.P.O Hambran, Ludhiana Punjab (India) on July 11, 2013 at his factory site.

New Joining/ Transfer/ Retirement

- Dr. Sandeep Mann, Senior Scientist (AS&PE) joined CIPHET, Ludhiana on August 17, 2013. He has earlier worked as Associate Professor in Sher-e-Kashmir University for Agricultural Sciences and Technology and has teaching experience of about 12 years in the field of food and process engineering.



- Dr. Armaan Ullah Muzaddadi joined as Senior Scientist (Fish Processing Technology) in CIPHET, Ludhiana on 22nd August, 2013. He was earlier working as Assistant Professor (Sr. Scale) in Dept. of Fish Processing Technology, College of Fisheries (Central Agricultural University), Lembucherra, Agartala, Tripura and he has teaching, research & extension experience of about 12 years in the field of Fish



Harvest and Post Harvest Technology, Fishery Microbiology & Quality Control.

- Dr. Manju Bala, Senior Scientist (Biochemistry PB-4) joined CIPHET, Ludhiana on August 12, 2013. Earlier she was working at Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan as Senior Scientist (PB-3).



- Er. Prasoon Verma transferred from CIPHET, Ludhiana to Indian Institute of Sugarcane Research (IISR), Lucknow.
- Dr. M.R Manikantan, Sr. Scientist joined Central Plantation Crops Research Institute (CPCRI), Kasaragod as Sr. Scientist (PB-4).
- Dr. Nilesh Gaikwad was transferred from CIPHET, Ludhiana to National Research Centre on Pomegranate (NRCP), Solapur.
- Mr. M. P. Singh, Technical Officer (T-6) retired on 31st August, 2013 after serving ICAR for 33 years. He joined the Indian Institute of Sugarcane Research, Lucknow (ICAR) as T-1 on 07/10/1980 and was transferred to CIPHET in 1993.

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