



# Central Institute of Post Harvest Engineering & Technology Ludhiana

**OUR SLOGAN: PRODUCE, PROCESS AND PROSPER**

**CIPHET E – Newsletter for March, 2010  
Vol. 5 No. 3**

## Director's Column



Dear All

An Academic Week celebrated by NDRI was a unique initiative to recognize the best department among different academic groups and to have healthy competitive spirit maintained for betterment of institute. I had opportunity to listen to the presentations of the divisions of this great institution focused on innovation and significant achievements in education/teaching under Dairy Processing; Social Science & Management and Dairy Production Group.

The post harvest technologies need very different system of promotions and exhibition is one of them. CIPHET participated in PAU Kisan Mela 2010 organised by Punjab Agricultural University, Ludhiana and also organized exhibition at CIPHET of agricultural technologies under NAIP Sub-Project on mobilising support of mass media for sharing agro-Information. The exhibition at CIPHET housed stalls of Central Potato Research Institute (CPRI), Shimla, National Dairy Research Institute (NDRI), Karnal, Directorate of Wheat Research, Karnal, Directorate of Mushroom Research, Solan and Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana. Besides stalls of NGO's and entrepreneurs were also big attractions for the visitors.

This month under CIPHET initiative of training the jail inmates in the area of food processing, the process of production of Ready to Serve (RTS) beverages, guava bars and fruit jelly was demonstrated to the inmates by Dr Ramesh Kumar, Scientist, CIPHET. Prisoners took keen interest and asked questions related to economics and viability of setting up such units.

The agriculture can be attractive and sustainable only if it is practiced with farming system approach rather than cropping system research. However a very important component like agro processing at household as well as at village level is missing in this system. The importance of the food processing is being realized due to entry of multi national firms in this sector and also due to higher profit margin and growing middle class economy of the country. Dr. S.K. Nanda, Project coordinator, AICRP on Post Harvest Technology, participated in the Brain storming session-cum-Launching Workshop of Integrated Farming Systems (IFS) and emphasized need to include food processing in farming system approach.

Ginger is often applied topically to relieve headaches, toothaches, and to improve circulation to the limbs; as well as to address nausea and other conditions of the gastrointestinal tract. Fresh ginger is used to promote sweating and to disperse the exterior cold caused by external influences upon the body; like pathogenic wind cold that results in upper respiratory tract infections. Aiming the application of ginger in food industry, sweet ginger shreds and ginger shred based confectionery product have been developed which are modern substitute to traditional ALEPAK.

**With best regards**

**R.T. Patil  
Director**

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## **Academic Week at NDRI Karnal**

An Academic Week was celebrated at NDRI from 9th March and concluded in the presence of Dr. APJ Abdul Kalam on 13<sup>th</sup> March on the day of convocation. Director, CIPHET attended the event held on 9<sup>th</sup> March where the presentations were made by various divisions on their academic achievement and innovations in teaching. This was a unique imitative by NDRI to recognize the best department among different academic group to have healthy competitive spirit maintained for betterment of institute. The presentations were focused on innovation and significant achievements in education/teaching by different Head of Divisions. The 13 division/units of NDRI were divided into 3 groups namely:- 1) Dairy Processing Group; 2) Social Science & Management Group and 3) Dairy Production Group.

Dr. Patil chaired the session on Dairy Processing Group in which the presentations were made by Dairy Technology Division, Dairy Engineering Division, Dairy Chemistry Division, Dairy Microbiology and Southern Regional Station, Bangalore. The day long deliberations gave an overview of the achievement and activities of each division of NDRI. The session was highly informative.

## **Group Monitoring Workshop of DST**

Dr. R. K. Gupta, Head, Horticultural Crop Processing Division attended Group Monitoring Workshop of DST which was held at Water Institute, Karunya University, Coimbatore during March 10-12, 2010. During the meeting, Dr. Gupta presented the progress of DST sponsored project entitled "Development of process and equipments for value addition of small millets at rural level". During the presentation, technology evolved at CIPHET for dehulling and pearling of small millets which includes both the equipment/process for reducing the wastage and obtaining each ingredient of the millet namely hull, bran and endosperm separately was explained. The development of process and equipment for processing and value addition of small millets was very much appreciated by the experts and they were of the view that a composite unit consisting of dehulling and pearling section should be developed at CIPHET for its better adaptability and relatively low cost with the help of DST, New Delhi.

## **CIPHET participated in PAU Kisan Mela 2010**



**CIPHET** participated in PAU Kisan Mela 2010 held on 18-19 March 2010 organised by Punjab Agricultural University, Ludhiana. The CIPHET stall attracted huge crowd of farmers and youth. The farmers in general and youth in particular were keen and very much interested in the CIPHET developed post harvest technologies and value added products. Dr. Nilesh Gaikwad, Sh. O.P.Mundan and Sh. Jaswinder singh explained the technologies to visitors.

**The working of hand tool to extract arils from pomegranate fruits is in progress.**

## **CIPHET organized Exhibition of Agricultural Technologies of the North Zone National Agricultural Research System**

CIPHET organized exhibition of agricultural technologies under NAIP Sub-Project on mobilising support of mass media for sharing agro-Information. The exhibition housed stalls of Central Potato Research Institute (CPRI), Shimla, National Dairy Research Institute (NDRI), Karnal, Directorate of Wheat Research, Karnal, Directorate of Mushroom Research, Solan and Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, and Central Institute of Post Harvest Engineering and Technology. Besides stalls of NGO's and entrepreneurs were also big attraction for the visitors. Zonal Director Dr A.M Narulla, inaugurated the exhibition and was the chief guest. Dr R.T Patil said that purpose of the organizing the exhibition was to give local farmer an opportunity to see what other agricultural universities and ICAR's institutes have developed. "Otherwise this kind of information is available in big exhibition like in Pragiti Maidan, New Delhi. But, very few farmers can go there." He added. Dr Patil said that farmers should adopt agro processing technologies to increase their income and assured all help from CIPHET and other ICAR institutes in the region. Dr S.K Nanda, Project Coordinator, said that farmers could be immensely benefited if processing was carried out in villages. Dr Deepak Raj Rai, Head of Transfer of Technology (ToT) Division explained about NAIP project and objective of organizing exhibition.



**Inauguration of Exhibition by Dr. Narulla, ZPD, Ludhiana**



**Stalls by various ICAR institutes and Universities in North Zone**

### **Training for Jail Inmates on Guava Processing**

CIPHET initiated unique agro processing training programme for prisoners under which training is imparted to jail inmates every month throughout the year. Inmates of Central Jail Ludhiana on 22<sup>nd</sup> March 2010 learned process of production of Ready to Serve (RTS) beverages, guava bars and fruit jelly. Dr Ramesh Kumar, Scientist CIPHET, told prisoners that units of RTS, guava bars and fruit jelly could be set up at very low cost and there was already lot of demand for these products. He explained complete process of production of RTS beverages including unit operations of washing, lye peeling, production of fine pulp, addition of sugar and citric acid, bottling and sterilization. Dr Kumar revealed that 200 ml of RTS beverage bottle cost less than Rs 2 and could be sold in market as high as Rs 10. He also explained process of guava bar production and fruit jelly. Prisoners took keen interest and asked questions related to economics and viability of setting up such units. Dr Nilesh Gaikwad, Scientist CIPHET, said that by setting units of RTS beverages and other process technologies developed by the institute, prisoners could lead respectful life after completion of their sentences. He said that RTS beverage unit could be set up with as less than as Rs 10,000 also. Assistant Jail Superintendent Iqbal Singh was also present on the occasion.

### **Brain storming session-cum-Launching Workshop of Integrated Farming Systems**

Dr. S.K. Nanda, Project Co-ordinator, AICRP on Post Harvest Technology, participated in the Brain storming session-cum-Launching Workshop of Integrated Farming Systems (IFS) Programme on 06.03.10 and Biennial Group Meeting of AICRP-IFS (06-07.03.10) held at Agricultural Research Station of Kerala Agricultural University,



Karamana, Trivandrum. The Chief Minister of Kerala state inaugurated the Workshop. The inaugural session was chaired by Dr. A. K. Singh, DDG (NRM), ICAR. The Directorate has been assigned with a new mandate related to “On-farm Agro-processing and Value addition techniques to enhance farm income and value of finished products”. Dr. Nanda interacted with Dr. B. Gangwar, Project Director (IFS) and other PIs regarding incorporation of post harvest technology and equipment readily available with CIPHET and AICRP on PHT within the integrated farming systems to be developed at the centres of AICRP-IFS.

### **Consortium Advisory Committee Meeting of NAIP subproject on Mango**

A Consortium Advisory Committee (CAC) meeting under the chairmanship of Prof. Suresh Prasad, IIT Kharagpur for evaluating the progress of Mango Project of NAIP on “Development of Non-destructive Systems for Evaluation of Microbial and Physico-chemical Quality Parameters of Mango” was held on 15<sup>th</sup> March, 2010. Other members were Prof. E.S. Rajagopal, Indian School of Science, Bangalore; Prof. D.C. Joshi, AAU, Anand; Dr. S.K. Nanda, In-charge Director, CIPHET, Ludhiana. Dr. S.N. Jha, Consortium Principal Investigator and Head of AS&EC Division, CIPHET, Ludhiana welcomed the CAC members and presented the salient achievements of the mega project sponsored by the Indian Council of Agriculture Research, New Delhi. The consortium partners of the project presented the machine vision system using ultraviolet, visible and infrared imaging techniques for sorting based on size, color and external defects. CIAE, Bhopal centre presented that how X-ray, CT and MRI are effective to detect the internal defects in mango. Dr. Jha, CPI of the project explained the success of the developed maturity index for mango. Thus on the basis of quantification of maturity, sweetness etc of mango can be predicted for knowing appropriate harvesting time of mango. Near Infrared (NIR) models developed by CIPHET can predict the sweetness, sourness and maturity of mango without eating and performing any destructive tests. The CAC members lauded the achievements of the projects and said upon completion of the project an automatic sorting and grading system based on overall quality may be possible. Dr. Ramesh Kumar Scientist (SS) presented the vote of thanks to the participants.



**CAC meeting in progress at CIPHET.**

## Advisory Consultancy with CIPHET

ITMU has registered following three entrepreneurs as its members for Advisory and Consultancy :

1. Mr.Parmveer Singh Rai, # 104 G, BRS Nagar, Ludhiana.
2. Hardial Singh Dhaliwal, #5858 , Modern Housing Complex, Manimajra, Chandigarh.
3. Atul Sharda, B-121, Kitchlu Nagar, Ludhiana.

## Joining



Dr. Yogesh Kumar joined **Central Institute of Post-Harvest Engineering and Technology** on 10<sup>th</sup> March 2010 in Agriculture Structure & Environment Control Division. He did Bachelor of Veterinary Science & Animal Husbandry from College of Veterinary & Animal Science, RAU, Bikaner, Masters of Veterinary Science in 2007 from Central Avian Research Institute, IVRI, Izatnagar, Bareilly. The topic of his thesis during Master's degree was "Response of broiler chickens to different dietary levels and sources of Zinc". He got selected for Ph.D degree programme in 2007 at Central Avian Research Institute, IVRI, Izatnagar, Bareilly and was working on double yolk/internal ovulation problems in broiler breeder hens.



Dr. Tanbir Ahmad joined the institute on 15<sup>th</sup> March, 2010 as Scientist in Agricultural Structure & Environment Control Division. His discipline is Livestock Products Technology. He is an alumnus of Jawahar Navodaya Vidyalaya, Birauli, Samastipur. He got Bachelor of Veterinary Science (B.V.Sc.) degree from Madras Veterinary College, Chennai, Tamilnadu and did his Master degree (M.V.Sc.) from Bihar Veterinary College, Patna. The title of the research was "Effects of Low Temperature Storage of Goat Meat and its Physico- chemical Qualities for the Preparation of Goat Meat Balls". He served Venky's India Ltd. as Veterinary Officer for more than one year at Dehradun managing layer breeder birds and Krishi Vigyan Kendra (under R.A.U, Pusa, Samastipur), Aurangabad, Bihar as Subject Matter Specialist before joining the Agricultural Research Services.

## WALK-IN-INTERVIEW:

Applications are invited for one post of Senior Research Fellow under a DBT sponsored project on “Development of technologies for pelletization, delignification and saccharification of cellulosic biomass such as rice straw, cotton stalk, sweet sorghum, switchgrass, *Prosopis julifera* and *Lantana camara*” at Central Institute of Post-Harvest Engineering and Technology, Ludhiana (Punjab). The appointment will be purely temporary on contractual and co-terminus basis, following the prescribed procedure for a period of six months or till completion of the project. The appointment may be terminated at any time without notice or assigning any reason thereof.

Position	No. of positions	Qualification	Date and venue of interview
Senior Research Fellow	One, CIPHET, Ludhiana	i) <b>Essential</b> : Master degree in Agricultural Engineering / Biochemical Engineering/ Food Engineering or any related field. <b>Desirable:</b> Experience in different aspects of biomass handling, logistics and conversion Working knowledge of Computer	<b>17.05.2010</b> <b>11:00 am</b> <b>at CIPHET,</b> <b>Ludhiana</b>

### Terms and Conditions:

1. Emoluments for SRF (Senior Research Fellow) Rs. 12000/- (consolidated) + HRA as per Government of India rules.
2. Age limit for SRF is 35 years for men and 40 years for women (relaxation in age in case of SC/ST/OBC as per Government norms).
3. The appointment will be purely on a temporary under contractual and conterminous basis, following the prescribed procedure till completion of project. The appointments may be terminated at any time without notice or assigning any reasons thereof.
4. No TA/DA will be paid for attending the interview.
5. The applicants must bring with them original documents at the time of interview and No objection certificate from the employer in case he/she is employed elsewhere.
6. Canvassing in any form will lead to cancellation of candidature.
7. The decision of Director, CIPHET would be final and binding in all aspects.

**Eligible candidates may send their application through mail/registered post on plain paper along with bio-data with attested passport size photograph affixed on it and copies of certificates if any, to Dr. Harinder Singh Oberoi, CIPHET, P.O. PAU, Ludhana-141004 (Pb.) and attend the WALK-IN-INTERVIEW as per above schedule at Central Institute of Post Harvest Engineering and Technology (CIPHET), Behind Radhaswami, Satsang, Hambran Road, PAU Campus, Ludhiana, Tel: 0161-2313126.**

E-mail: hari\_manu@yahoo.com, [vkbciphnet@gmail.com](mailto:vkbciphnet@gmail.com)

**Note: Kindly circulate among Departments/Students/Notice board please.**

**(Dr. Harinder Singh Oberoi)**  
**Principal Investigator**



## Technology of the Month

### *Ginger (Zingiber officinalis) for confectionery purpose*

Ginger is a member of the Zingiberaceae family. Botanically, **ginger** appears as a creeping perennial on a rhizome, which spreads underground. Although native to Southeast Asia, **Ginger** is now cultivated throughout the world; including the United States, India, China, West Indies, Mexico, Africa, Fiji, and Australia. Ginger has historically been used in Traditional Chinese Medicine and Ayurvedic Medicine - the traditional system of medicine in India. In India, it is often applied topically to relieve headaches, toothaches, and to improve circulation to the limbs; as well as to address nausea and other conditions of the gastrointestinal tract. Fresh ginger is used to promote sweating and to disperse the exterior cold caused by external influences upon the body; like pathogenic wind cold that results in upper respiratory tract infections. Aiming the application of ginger in food industry, sweet ginger shreds and ginger shred based confectionery product have been developed. The sweet ginger shreds can be used as mouth fresheners whereas ginger shred based candy may have potential as novel product in confectionery industry. The good quality Osmo-dried ginger shreds were obtained by dipping fresh shreds in 60°B sugar syrup followed by drying to around 10% moisture content. Further, ginger shreds based candy was prepared using different levels of ingredients namely ginger shreds, sugar, jaggery, honey, liquid glucose. The ginger shreds based candy containing 40% ginger shreds was found most acceptable in sensory evaluation. These two innovative products have potential in Food Industry.

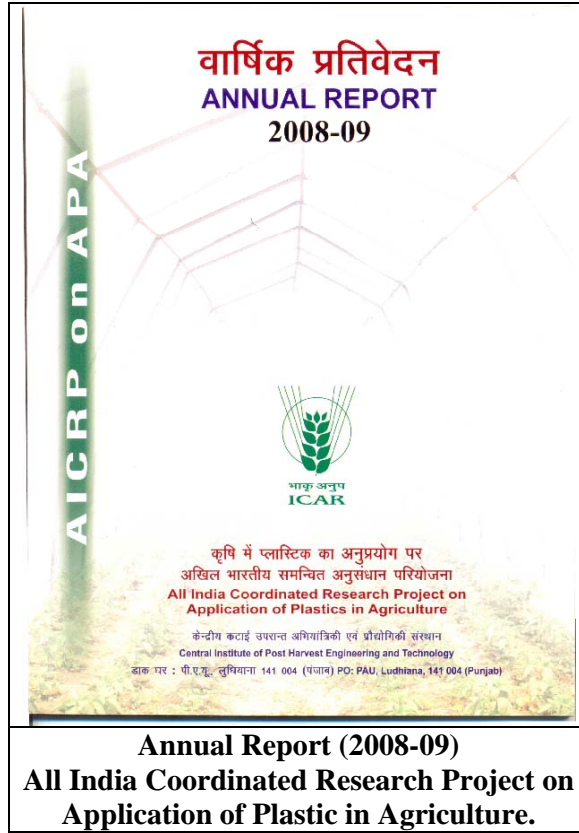


**Sweet ginger shreds**



**Ginger shred based candy**

## Publication of the month



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