



# Central Institute of Post-Harvest Engineering & Technology, Ludhiana

Our Slogan: Produce, Process and Prosper

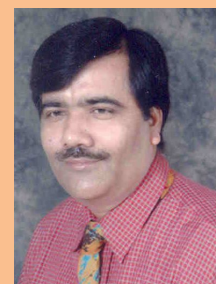


CIPHET E - Newsletter for November - December, 2013  
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## Director's Column

Dear esteemed readers,

First, I along with my all CIPHET Family wish all our food processing fraternity a **Very Happy, Healthy and Prosperous New Year 2014**. The CIPHET, Ludhiana has slowly entered in its **silver jubilee** year by celebrating its 24<sup>th</sup> birth anniversary on the 29<sup>th</sup> December 2013. In this occasion we have started series of foundation day lecture and the very first lecture was delivered by Dr. Nawab Ali, former DDG (Engg), who had started CIPHET, Ludhiana as first OSD. A **CIPHET wall calendar** exhibiting important 12 technologies was released on this occasion. Our Hindi technical magazine (*Krishi Prasankaarn Darpan*) has got its ISSN number and we are going to publish it as a research journal (in hindi) from its July 2014 issues. We are also organizing National Seminar during 28-29 January 2014 in Hindi, two certificate courses and many other events, infrastructural developments are being planned in Silver Jubilee year.



A new initiative to assess the **performance of Director by all CIPHET staff** has been informally introduced. A five points scale format having views on 10 attributes (availability of Director in office, guiding scientists and staff in research and official procedures, speeding up official formalities, procurements, significant improvements in punctuality, promoting interests and achievements of all staff, making congenial working environment leading the scientists and staff from the front etc.). It was volunteer and without signing/ writing the proforma. There was an overwhelming response from all categories of staff and it helped me to know what percentage of employ thinks what about the Director of the institute and which attributes need improvements.

Dear readers, successes and achievements of our scientists are habits as usual. Our two scientists, Dr. D. N. Yadav and Dr. D. M. Kadam received the **best poster paper awards** in International Food Convention (IFCON) – 2013 held at CFTRI, Mysore. I congratulate both of them. On technology front the makhana popping machine is proving as a block buster technology of CIPHET as per statements of users from Bihar, Indaur and Ambala based manufacturer, who has already sold seven machines and is booking several in advance for the next season. Sh. Tariq Anwar, Union Minister of state for Agriculture and Food Processing has also got installed one machine in Katihar, Bihar. In addition, the technology on pearl millet based extrudates and pasta was licensed to a Ludhiana based entrepreneur, while the technology for ginger and garlic processing was licensed to three entrepreneurs from Nahan, Distt, Solan (HP).

Numerous events during last two months were either organized or participated. Four demonstrations/training on makhana popping machine were organized in Bihar, BPD unit exhibited our technology in Pune, CIPHET also organized a visit cum interaction programme for 30 Punjab State Govt. officials. ARS prelim exam held, CIPHET celebrated its 24th foundation day anniversary on December 29, 2013 and seven scientists attended the IFCON-2013 at CFTRI, Mysore and presented their work.

CIPHET bid adieu to our one of the best technical officer Sh.O. P. Moondan, Technical officer on his retirement on 31<sup>st</sup> December, 2013.

With best regards,

S.N. Jha  
Director (Acting)

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### ***CIPHET Bids Adieu to Sh. O. P Moondan***



Central Institute of Post-Harvest Engineering and Technology (CIPHET) accorded a warm farewell to Sh. O P Moondan on his retirement from the ICAR services on 31<sup>st</sup> December 2013. Sh. Moondan joined the ICAR services in June 1975 and served for 38 years. He joined CIPHET in June 2007 upon transfer from CSSRI, Karnal. Acting Director CIPHET, Dr. S.N Jha appreciated the services of Sh. Moondan in building the institution especially the Transfer of

Technology division and wished him a healthy and prosperous life after retirement. President of Staff Recreational Club (SRC) & PC (PHT) Dr R.K Gupta congratulated Sh. Moondan on his superannuation. Staff members from scientific, administrative and technical streams of the institute shared their experiences on the occasion.

### ***CIPHET Celebrated 24<sup>th</sup> Foundation day***

The 24<sup>th</sup> foundation day anniversary of CIPHET was celebrated at CIPHET, Ludhiana on 29.12.2013. Dr. Nawab Ali, Former OSD, CIPHET and DDG (Engg.), ICAR was the Chief Guest on the occasion. Dr. R.K. Gupta, PC (PHTS) welcomed the chief guest, Dr. S.N. Jha, Acting Director, CIPHET, scientific administrative, technical and supporting staff of the Institute addressed the gathering. In his address, Dr. Jha welcomed the chief guest and the CIPHET staff



and apprised the gathering about the achievements of the institute. Dr. Jha also thanked the former Directors for creating a strong base for the institute. He highlighted that CIPHET has developed large number of prototypes and technologies for post-harvest processing and value

addition of agricultural, horticultural and animal produce. These prototypes have helped in reducing drudgery, creating job opportunities, while developing novel products helped in attracting entrepreneurs to set up production units. Dr. Jha further informed that CIPHET scientists and staff have received various awards from different organizations/agencies during the year. Dr. Nawab Ali, the chief guest on the occasion outlined about the genesis of CIPHET. In his maiden foundation day lecture, Dr. Nawab Ali, highlighted about the importance of food, importance of food nutrition and food security. He said that though we have sufficient food, but due to low buying capacity, disparity and poor distribution system, food does not reach everybody. He emphasized that minimizing post-harvest losses, food wastage and educating people about the nutritional importance should be one of the major thrust areas of CIPHET. He also advised the CIPHET scientists to strive hard to develop post-harvest technologies for ensuring food security in the country and ensuring profitable returns to the farming community. On the occasion of the foundation day, awards were given to the scientists and other staff who have completed ten years of service at CIPHET and also to the best workers in scientific, technical, administration and supporting staff categories. Senior members of CIPHET family like Dr. P R Bhatnagar, Dr. P C Sharma and Dr. S K Nanda, were also present on the occasion.

### ***CIPHET Calendar Released***

On the occasion of the foundation day on 29.12.2013, CIPHET calendar was released by the Chief guest Dr. Nawab Ali. The calendar portrays the technologies and products developed by CIPHET along with the brief details of such technologies and the products.



### ***ICAR - ARS Preliminary Examination Conducted***

The ICAR-ARS All India preliminary examination was conducted on December 29, 2013 at BCM School, Ludhiana. More than 400 candidates from all major disciplines appeared in the examination. Dr. S.N. Jha, Acting Director, CIPHET was the nodal officer for this examination. Dr. D. N. Yadav discharged the duty of Centre In-charge for this examination.

### ***Conference attended and Scientists awarded***

Seven CIPHET scientists attended the international conference “IFCON-2013” held at CFTRI Campus, Mysore during December 18-21, 2013. Dr. D.N. Yadav and Dr. D. M. Kadam presented research poster entitled “Process development for removal of impurities from commercial groundnut cake and its utilization in extrudate snacks” and “Nano functionalized biodegradable corn zein protein biopolymer” respectively and bagged the “Best Poster/paper” award in different categories.

### ***Technologies Transferred***

- Technology of “Pearl millet based extrudates and composite pasta” developed under the NAIP project on ‘A value chain on composite dairy foods with enhanced health attributes’ was transferred to Mr. Siddharth Aggarwal, Ludhiana on 3.12.2013.





- CIPHET licensed and provided hands on training on ginger and garlic processing during Dec. 23-27, 2013. The training was attended by various members of ginger seed development cooperative society, Nahan, Distt. Sirmour, Himanchal Pradesh. Various value added products like dried ginger flakes, osmo-sweetened flakes, ginger powder and paste were prepared during the training. The technology was licensed to three entrepreneurs from Nahan (HP).



## ***Participation In Exhibitions***



Makhana popping machine developed by CIPHET, Ludhiana was launched on December 3, 2013 at a workshop organized at Research Centre for Makhana, Darbhanga. Dr. S.N. Jha, Acting Director CIPHET, Ludhiana was the Chief Guest for the workshop. The machine was demonstrated to more than 300 farmers, scientists, bank officials and dignitaries. Dr. Jha explained about the developmental phases and working of machine. Every person present in the workshop was amazed with the performance of Makhana popping machine. On 4-5 December 2013, performance of the

machine was demonstrated at Rahika block of Madhubani district and Keoti village of Darbhanga district, respectively. The machine was also demonstrated in a Farmer-scientist orientation programme cum Kisan mela organised by ICAR-RCER, Patna on 24-25 December 2013 in Katihar, Bihar. Sh. Tariq Anwar, Union Minister of State, Agriculture and Food Processing, inaugurated the programme. He praised the efforts of CIPHET in developing the Makhana popping machine. The machine was demonstrated to more than 200 farmers in the mela.

## ***Communal Harmony Campaign Observed***

CIPHET observed Communal Harmony Campaign and the Fund Raising Week during November 19 -25, 2013 and the Flag Day on November 25, 2013. This week is meant to spread the message of communal harmony and national integration to the people of the country. The campaign was organized at the Institute by the committee constituted for this purpose and this was coordinated by National Foundation for Communal Harmony, an autonomous organization under the Ministry of Home Affairs, Govt. of India.



## ***Director Visited Abohar Campus***

Dr S. N. Jha, Director (Acting), CIPHET, Ludhiana visited Abohar campus on 13.11.2013 and interacted with scientific, technical and administrative staff to review the progress of different activities being undertaken at the



campus. He also visited the experimental farm, APC unit, workshop and Lab. He appreciated the work being carried out by Abohar campus for developing various technologies and machinery for processing and value addition of horticultural crops and hoped to continue the tempo in future as well.

### ***Programs Attended***

- ❖ Dr. PC Sharma Head, HCP Division attended two days' workshop on State Consultation on Innovation organized by Govt of Jharkhand and centre for Innovation in Public Systems, Hyderabad on 21-12-2013 at Ranchi (Jharkhand). He delivered a talk on Horticulture Crop Processing- trends and Technologies on this occasion.
- ❖ Ms. Monika Sharma attended Winter School on Advances in Bio-processing System for Development of Functional Foods and Value Addition to By-products (3- 23 Dec, 2013) at CIAE, Bhopal.
- ❖ Dr. R. K. Vishwakarma, Senior Scientist participated and demonstrated the Makhana popping machine in Darbhanga and Katihar during 3-5 December 2013 and 24-25 December 2013, respectively.
- ❖ Dr. Tanbir Ahmad participated in the National Workshop on “Horizon of Bioinformatics in Animal and Veterinary Sciences” held from December 09-13, 2013 at Madras Veterinary College, Chennai.
- ❖ Ms. Deepika Goswami attended 05 days National training on ‘Project formulation, risk assessment, scientific report writing & presentation’ sponsored by NAIP during December 9-13, 2013 in the Division of Agricultural Engineering at IARI, New Delhi.

### ***Programs Organized***

- An Entrepreneurship Development Programme on Processing and utilization of Aonla fruits was conducted from Dec 16- 18 2013. In this Programme four entrepreneur from Fazilka, Abohar (Punjab) and Ahmedabad (Gujrat) participated and got hands on training on preparation of aonla murrabba, candy, mouth freshener, RTS, jelly and laddu in a scientific way. Dr. Ramesh Kumar Sr. Scientist and Shri Prithivi Raj Sr. technical officer conducted this EDP as co-ordinator and co co-ordinator respectively.



- An exposure visit cum interaction programme for 30 Punjab State Govt. officials was organized at CIPHET, Ludhiana. The officials were apprised about CIPHET activities, technologies and trainings under a workshop on “Capacity building for WDC members under IWMP” organized by PAMETI, PAU Ludhiana on December 12, 2013.
- Dr. Armaan U. Muzaddadi attended Research & Extension Specialists Workshop for Fruits, Mushroom, Agro-forestry, along with Post-Harvest Management, Farm Power & Machinery, Food Technology & Agri-Economics, on December 19-20, 2013. The workshop was sponsored by National Horticulture Mission and organized by Directorate of Extension Education, Punjab Agricultural University, Ludhiana.
- Five radio talks under All India Radio, Jalandhar's program ‘Do Dooni Chaar’ were organized and aired. The topics were turmeric processing; better method of fish

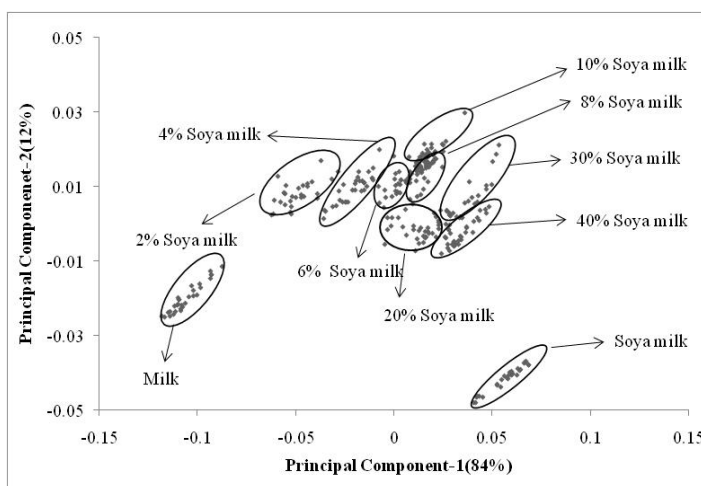
processing; Pork processing; Agro processing and related health hazards and Fisheries potential in Punjab- the present and the future’.

- Dr. Sunil Kumar gave demonstration of enzyme technology for extension of shelf life of pomegranate aril to an entrepreneur, Mr. Om Prakash, Distt. Jind, Haryana on 27/11/2013

## **Potential Technology of CIPHET**

### *Rapid detection analysis of soymilk in cow-buffalo milk by ATR/FTIR spectroscopy*

Milk has been considered as complete food for growing children, teens, pregnant, nursing mothers, geriatrics and patients. However, some unscrupulous milk suppliers mix alternative milk-like products from vegetable sources (soymilk) in milk to bridge the gap between supply and availability and gain economic benefit. This study investigates the potential use of attenuated total reflectance (ATR) spectroscopy in the mid-infrared range for determining soymilk



(SM) adulteration in pure milk (PM). Pure milk (PM) samples adulterated with known concentration of soymilk (2-40%) were evaluated in wave number range of 500-4000  $\text{cm}^{-1}$  at four temperatures viz. 15, 20, 25 and 30  $^{\circ}\text{C}$  respectively. Analysis of spectra revealed three distinct zones (1680-1631  $\text{cm}^{-1}$ , 1637-1613  $\text{cm}^{-1}$  and 1089-1058  $\text{cm}^{-1}$ ) with clear differences in the absorbance values of milk supplemented with different levels of soymilk. Principal component analysis (PCA) showed clear clustering of samples based on level of adulteration, at 5% significance level as shown in the Figure. Soft independent modelling of class analogy (SIMCA) corresponding to above mentioned regions revealed that soymilk (SM) adulteration in pure milk (PM) could be traced even at lower concentrations with classification efficiency of 93%. Thus FTIR spectroscopy has excellent potential for use in dairy industry as a rapid method of detection and quantification of non-dairy ingredients in milk.

**Published by:** Dr. S. N. Jha, Director (Acting), CIPHET, Ludhiana  
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