Central Institute of Post Harvest Engineering & Technology Ludhiana

OUR SLOGAN: PRODUCE, PROCESS AND PROSPER

CIPHET E - Newsletter for May 2011
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Director's Column

Dear All

"Modern pack houses have lot of potential in state as well in the country for checking post harvest losses and maintaining quality of fruits and vegetables for export," A visit to Modern Pack House developed by the Punjab Mandi Board at Salem Tabri, Ludhiana was organized. The institute would be providing technical assistance for establishment and running of such modern facilities, if anyone desires.

To chalk out future roadmap, first meeting of advisory committee of the NBSFARA Project entitled 'Microencapsulation of bacteriocin for their controlled release' was held. The project is funded by the 'National Fund for Basic, Strategic and, Frontier Application Research in Agriculture,' (NBSFARA), an initiative of Indian Council of Agricultural Research (ICAR).

A 14-day training programme on 'NAIP National Training Course on Rapid and Nondestructive Evaluation of Food Quality and Safety Factors using Spectroscopy and Biosensing' was held at the Institute. Around 13 participants from across the country took part in the training programme.

The institute licensed the technologies namely extrusion based products for infants, Processing of tomatoes and processing of Soybean into milk and tofu to upcoming entrepreprenuers.

My hearty congratulations to the scientists of the Institute who have been awarded with various fellowships/recognition and awards during this month.

With best regards

R.T. Patil

Director

In this issue

Visit to Modern Pack Houses

"Modern pack houses have lot of potential in state as well in the country for checking post harvest losses and maintaining quality of fruits and vegetables for export," these remarks were made by Dr. R.T Patil, Director, CIPHET during the visit to Modern Pack House developed by the Punjab Mandi Board in Salem Tabri on April 4, 2011.

One and half year back Punjab Mandi Board has constructed the modern pack house at a cost of Rs 3.75 crore and now that facility has been leased out to a cooperative society. It has five cold storage units for fruits and vegetables with a capacity of 50 MT and six ripening rooms each with a capacity 10 MT. Besides, air-conditioned space for reconditioning and repacking, washing, waxing, grading lines for fruits and vegetables have also been established there.

Showing satisfaction over the establishment of modern pack house in Ludhiana, Dr Patil said that a segment of consumers was becoming highly health conscious. "They do not mind to pay little more for quality. These modern pack houses could help in saving post harvest losses and increasing shelf life of fruits and vegetables," he said, appreciating the establishment of modern pack just near to fruits and vegetables market and prospects of eight more such pack houses are coming up in the state.

Dr. Patil said that they would be providing technical assistance for establishment and running of these modern facilities, if anyone desire. Head Transfer of Technology Division Dr Deepak Raj Rai and Technical Officer O.P Moodan were also accompanying him.

Advisory Committee Meeting of NBSFARA Project

To chalk out future roadmap, first meeting of advisory committee of the NBSFARA Project entitled 'Microencapsulation of bacteriocin for their controlled release' was held on May 2, 2011 at the institute.

The project which could eventually prove useful for developing functional foods and preserving foods for longer time without quality deterioration is funded by the 'National Fund for Basic, Strategic and, Frontier Application Research in Agriculture,' (NBSFARA), an initiative of Indian Council of Agricultural Research (ICAR).

Speaking on the occasion, Dr A. Bandyopadhyay said that for this project they had invited concept notes from collaborative and multi-institutional research based on innovative ideas for solving advanced scientific and technological problems in agriculture through open competitive mode and CIPHET was selected because of its competence. He said that they would be very specific about deliverables of the project and eventual benefit to the agriculture.

CIPHET is a unique institute in the country engaged in multi-commodity and multi-disciplinary research in post harvest sector. The institute has state of art infrastructure and research facilities and this project would further help the institute to enhance its research capacity and meeting the expectation of the country. Dr K. Narsaiah, Principal Investigator of the Project, gave detailed presentation on objectives and outcomes of the project. He revealed that National Dairy Research Institute (NDRI) was a co-partner in this project. Dr .GP Aggarwal, Chairman of the Advisory committee, made his remarks based on observation of presentation and suggested measures for making the project more useful.

National Training on Nondestructive Evaluation of Food Quality and Safety

Like in Information Technology (IT), India can also become agriculture superpower in the world. These remarks were made on April 6, 2011 by Director CIPHET Dr R.T Patil, during the inaugural of 14-day training programme on 'NAIP National Training Course on Rapid and Nondestructive Evaluation of Food Quality and Safety Factors using Spectroscopy and Biosensing' at the Central Institute of Post Harvest Engineering and Technology (CIPHET).

Dr R.T Patil said that there is a huge market already existed for Indian agricultural products abroad, if we were able to provide them in fresh quality. "Non destructive methods, which are new emerging technologies, could be of immense use for establishing the quality of fruits and

vegetables," he said, adding that basic idea is to get status about quality of fruits and vegetables without cutting or damaging them.

Revealing that technology has already found its place in automobile and other industries, he said that technique like ultraviolet filming, radiography, biosensors could be used for knowing the state of the fruits and vegetables also. "Methods could be of quite use as quality of large number of fruits and vegetables could not be ascertained physically". Dr S.N Jha, Head Atmosphere Structures and Environmental Control Division, said that resource persons from international and national level would be delivering lectures to the participants. He also revealed about scope of the new emerging field of non-destructive methods. Around 13 participants from across the country took part in the training programme.

Students Visit CIPHET, Abohar

One day exposure visit on manufacturing of value added products from fruits for the students of Maya Devi Memorial Adarsh School Kerakhera, Abohar was organized at CIPHET, Abohar on 27th May, 2011. Around 40 students and other staff members participated in the programme. During the exposure visit hands on training was given to prepare value added products such as mixed fruit jam of apple, mango and papaya, lemon squash and lemon pickles to the students. Besides, the students with staff members also visited pilot plants and laboratories of Horticultural Crop Processing Division.

Awards/Recognition

Dr. R.K. Gupta, Head, Horticultural Crop Processing Division has been elected/awarded with the FELLOW of the Institution of Engineers (India).

Dr D.M Kadam, Senior Scientist has been awarded with BOYSCAST fellowship by the Department of Science and Technology, Government of India. The fellowship has been awarded for advanced research/undergoing specialized training in the area of micro-fabrication/micromachining and nanotechnology at Department of Agriculture and Biosystems Engineering, Iowa State University of Science and Technology, Ames, United States, for the period of twelve months. DST would be bearing all the expenses during this period.

Dr Anil Kumar Dixit, Senior Scientist has been conferred with Young Scientist Award 2010 by the Indian Society of Hill Agriculture (ISHA) on May 3, 2011 during the National Symposium on Technological Interventions for Sustainable Agriculture held at G.B Pant University of Agriculture and Technology, Uttrakhand, for his meritorious academic, research and career record in the category of social sciences.

Showcasing of Microencapsulated Pro-biotics Products at ICAR-CII Industry Meet

CIPHET developed Technologies of the microencapsulated pro-biotics products and meat cutter pulled heavy crowd on May 23, 2011 during the ICAR-CII Industry held at National Agriculture Science Center (NASC) complex, New Delhi.

The event was organized to provide interactive forum between Industry and Indian Council of Agriculture Research (ICAR) for making agriculture more sustainable and diversified. There was special focus on empowering food processing sector for value addition and reducing losses in agriculture.
On the occasion, Union Minister of Agriculture and Food Processing Industry Sharad Pawar showed keen interest in the technologies developed by the CIPHET while visiting the CIPHET stall at the exhibition organised on sidelines of the meet. "Recently, CIPHET has taken initiative in development of functional food products by using technology of microencapsulation, which could take product development to new level," revealed Transfer of Technology Division Scientist Dr Nilesh Gaikwad, who explained the utility of these technologies to the union agriculture minister.

Meat cutter was another attraction which could speed up processing of chopping/cutting of meat products and could be highly useful for large scale production of burger, patties, chicken nuggets etc. Besides this, CIPHET also showcased handheld pomegranate aril extractor, banana comb cutter and displayed various technological protocols for food products. Head Transfer of Technology Division Dr Deepak Raj Rai said that many visitors from Industry showed interest in CIPHET developed technologies.

Speaking on the occasion, Union Minister of Agriculture Sharad Pawar said food grain production touched figure of 235.8 millon tons as compared to 218.1 million tons of last year, which was all time high. He said that similar increase was also witnessed in pulses and oilseeds. Saying that eyeing on increasing processing of food up to 25 percent, he said that in next five year plan they would have special focus on building infrastructure in this area. While Director General of ICAR Dr S. Ayyapan listed out the various achievements of the ICAR, CII President Rakesh Bharti Mittal called for the need of formulation of a new body under leadership of ICAR for bringing world best practices to India. Top officials from agriculture ministry and industry were present on the occasion. The event was also marked by session on research and development and technology transfer.

Technologies Transferred

- **Technology of Soymilk, Paneer and Curd**

The scarcity in milk supply in developing countries has led to efforts towards the development of alternative milk like products from groundnut or soybean. Groundnut and soybean are two major raw material used for preparation of imitation milks. Both have a potential role to play in combating malnutrition, the present low level in their consumption, especially in the developing countries, should be increased. Preparation of peanut and soybean extract (milk like product) and its utilization in the development of dairy analogues such as flavored beverage,

curd, yoghurt, Lassi and paneer may be one such area of utilization. This technology has been licensed to following entrepreneurs.

- S. Manmohan Singh S/o S. Darshan Singh, H.No:2674, St. No 1, New Janta Nagar Ludhiana.
- Sh. Karamjeet Singh S/o Sh. Mewa Singh, Vill: Bhardala, Teh: Samrala, P.O- Manki, Distt: Ludhiana.

- **Technology of Extrusion Based Products for Infants**

"Every new food should have unique selling feature and traditional foods produced with modern technologies could offer competitive edge over food items introduced by MNCs," these remarks were made by CIPHET Director Dr R.T Patil, while licensing the technology of extrusion based products of millets and barley especially tailor made for infants and children. Listing out nutritional value as high on priority of consumers, Dr Patil, said that parents are highly concerned about their children in regard to the choice of food. "Extrusion products made from barley and millets could offer better and healthy alternative to infant foods children due to higher and better mineral content." Saying that awareness regarding children food was there before arrival of MNC's, he said that in Maharashtra mothers used to make chapatis from jawars (millets) and used to remove internal soft part of chapatis for consumption of small children. He advocated that traditional foods should be developed to make it again a part of children diet. Ms. Veenu Sood, who got the technology, said that she was already selling various Indian and imported products for children and mothers. "We thought to introduce additional range of products in food segment also. CIPHET developed food products from barley and millet could prove to be better alternative," she opined. Dr Balasubramaniam, Senior Scientist, who has developed this technology, said that they had especially developed extrusion food products for children of age group from three months to one and half year old. He said that these were highly nutritious and easy to digest.

- **Training and Licensing of Tomato Processing**

Tomato is one of the most important vegetables grown on a commercial scale in India as well as in other parts of the world. Tomatoes are warm season plants. As the fruit matures, the inner matrix of the locules softens into a gelatinous mass or locular jelly and sugar tend to increase and acids decrease. Other components of fruit quality, such as color, total solids, pH, solids to acid ratio, viscosity, vitamins and flavor change with the relative maturity of the fruit. Tomatoes are widely used for culinary purposes. Its use is very common in almost all the vegetable curries. Tomato Puree is used as a direct replacement of raw tomatoes in all forms of cooking. It is also used in the production of tomato juice, ketchup, sauces, soups, curries, chutneys, pickles etc. CIPHET, Ludhiana has developed appropriate processing methods and equipment for preparation of tomato puree and powder. This technology has been licensed to following entrepreneurs in last month.

- Mr. Jaiteshwar Singh S/o Sh. Satinderpal Singh 12-A Raj Guru Nagar, Ludhiana

- Mr. Ushir Santosh Murlidhar S/o Sh. Ushir Murlidhar Kandogi, At Post Vinchur, Taluka: Niphad, Dist Nashik, Maharashtra
- Mr. Shaikh Ashfaque Ismail S/o Sh. Ismail J. Shaikh, At Post Vinchur, Taluka: Niphad, Dist Nashik, Maharashtra.

New Joining

Dr Satish Kumar Sharma joined CIPHET as Sr. Scientist. He got his M.Sc. and Ph.D. in Postharvest Technology, from Dr YS Parmar University of Horticulture and Forestry, Nauni, Solan. He has about 13 years of experience of research and more than 7 years of experience in teaching and extension. He has handled 7 projects funded by national, international and private organizations. He has published 3 books and more than 50 publications including 28 research papers published in journals of national and international repute. He has been awarded with Kejeriwal Award (2002), Dr J. S. Pruthi Award (2005) and Young Scientist Award (2010).

Promotion/ Transfer

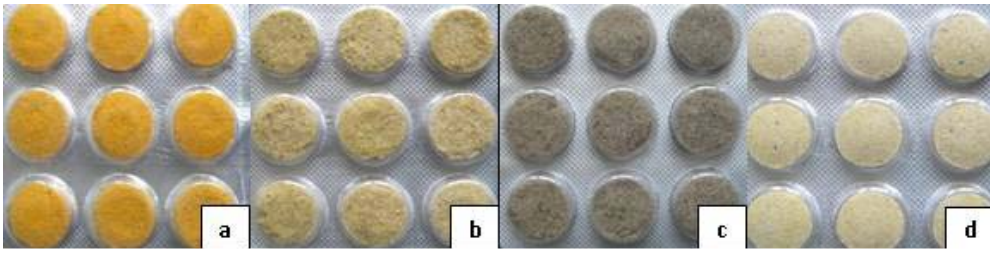
- Sh. Ganpat Ram has been promoted from T-2 to T-3 w.e.f. 29-08-2010.
- Smt. D.B. Chadda been promoted from T-3 to T-4 w.e.f. 09-09-2010.
- Dr. H.S. Oberoi has joined as a Principal Scientist (Microbiology) w.e.f. 25-05-2011

Technology of The Month

Spice and Herb Tablets

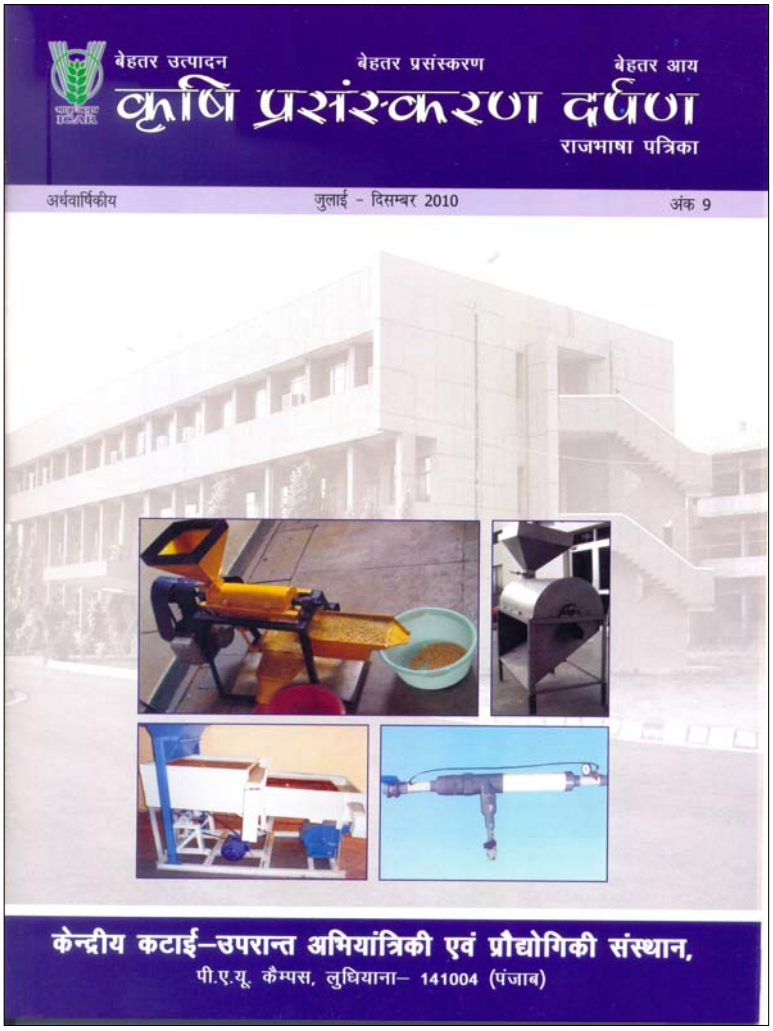
Spice and herbs tablets are the new trends in food processing world as they are easy to handle and use. Working on this prospective study, we formulated and developed spice tablets made from cryogenically ground spice samples with different spices and combinations using the tablet making machine. Four spices i.e. coriander, fenugreek, turmeric and black pepper were selected for tablet formation. Different spice tablets were prepared in combination with trace amount of starch/gum acacia, salt etc., with cryo-ground spice powders. The formulation perfections are in progress. Spice tablet were packed (blister) for safe handling and usage.

Tablet Making Machine



Formulated spice tablets (a) Turmeric (b) Coriander (c) Black pepper (d) Fenugreek

Publication of the Month



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