



Central Institute of Post Harvest Engineering and Technology, Ludhiana

Our Slogan: Produce, Process and Prosper

CIPHET E – Newsletter for August, 2008
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Director's Column



Dear All,

The ultimate satisfaction to the scientist or for any institution is the acceptance of their technology by the end users. For transferring the technology to end users, CIPHET has initiated many programmes. The technology transfer comprises of licensing of the technology (non exclusive) to company for a specific period, licensing of the process for mass production of tools and machines, consultancy to the upcoming entrepreneurs to implement CIPHET process for manufacturing the food products/machines, as well as conducting the entrepreneurship development programmes on modern food processing technologies developed at CIPHET for building the confidence for its adoption. This month we had organized a transfer of technology day to pass on technologies formally to the entrepreneurs in the presence of Dr. BS Bisht the Vice Chancellor of GBPUA&T Pantnagar. On this occasion four technologies were released to the industry namely 1) Mustard extract based bio-insecticide technology to M/s Indco Hightech, 2) "Mustard dehulling plant" as well as 3) "Mustard pregrinder" to Cremica, M/s Bector's Specialty Foods Pvt. Ltd., and 4) Technology for making Anola products to M/s Choudhary Agro-Biotech for the license fee of total of Rs. 2.21 lakhs.

Another important occasion was the meeting called by honorable DDG (Horticulture). This meeting was very timely and very visionary. To manage the produce after harvest not only the protocols need to be developed for their proper handling but it is necessary that suitable, appropriate and techno-economically feasible equipment and machinery are required. The comparison of mechanization in food grains and horticulture suggests that mechanization in food grains is far ahead of horticultural mechanization. Since the land holding pattern of our country is very different from the western and developed countries, the processing units as well as equipment suitable there can not be directly used in India and hence development of indigenous knowledge and as well as suitable machines is very important for increasing the profitability of horticultural farmer. Realizing this gap the DDG (Horticulture), had called this interactive meeting. The status of technologies and machines developed by different ICAR institutes was reviewed and it was felt that to accelerate the work in post harvest management and value addition there is a need for frequent interaction between engineers and horticulture (PHT) scientists. So far we have concentrated mostly on engineering of cereals, pulses and oil seeds i.e. agricultural engineering but now the time has come when we need to concentrate on horticultural engineering.

This month's technology flash from CIPHET is on a novel process protocol for production of the most sought after food from Punjab, a ready to reconstitute **Sanrosn ka Saag**. The sarson ka saan can be reconstituted following the instructions given along the packet of the dried material. The technology is a process for production of sarson ka saag in dehydrated and powder form. This will open up an export as well as domestic market outside Punjab for ready to constitute **Sarson ka Saag** so that it can be preserved and consumed during any time of the year. CIPHET has submitted the process for provisional patent and technology is available for commercialization through licensing to willing entrepreneurs.

With best regards

R.T. Patil,
Director

CIPHET holds Technology Transfer Day

On 2nd August 2008, Technology Transfer Meet was organized at CIPHET Ludhiana. Representatives of various Agro- industries, agro processing entrepreneurs as well as local media attended the Meet. During the function, four technologies were released to the industry i.e. Mustard Extract based Bio-insecticide technology to M/s Indco Hightech, “Mustard dehulling Plant” as well as “Mustard pregrinder” to Cremica, M/s Bectors Specialty Foods Pvt. Ltd., and technology for making of Anola products to M/s Choudhary Agro-Biotech. Through transfer of these four technologies, the Institute earned revenue of Rs. 2.21 lakhs. The Chief Guest of the programme was Dr. B.S. Bisht the former ADG (HRD) and Hon. Vice Chancellor GB Pant University of Agriculture and Technology, Pantnagar. He lauded the contribution of CIPHET scientists in developing appropriate processing technologies and products which are needed to improve the profitability of Indian agriculture. On this occasion the winners of the ICAR team award namely Dr. S. K. Tyagi and Dr. Mridula Devi were also felicitated by the Chief Guest.



L to R Dr. Matthew Parsad, Head TOT, CIPHET, Chief Guest Dr. BS Bisht, VC, GBPUA&T, Director Dr. RT Patil and Dr. Dhingra, I/c ITMU, CIPHET



Chief Guest Dr. Bisht addressing the gathering



Technology developer employees and entrepreneurs with the chief guest



Press Conference after the programme

CIPHET conducts demonstrations in disadvantaged district Hoshiarpur in Punjab

Under the of funding FPARP of Ministry of Water Resources, Govt. of India, demonstrations were held on food processing in villages Changarwah and Kangmail in Hoshiarpur Distt (Punjab). About 150 farmers including farmwomen participated in the

demonstrations. Officials from Ground Water Board (M.W.R.), Chandigarh also visited above mentioned villages along with scientists of CIPHET and appreciated the work of CIPHET in taking the technology to the end users effectively.

CIPHET-UAS Agro Processing Cluster at Bangalore

To promote the agro businesses there is a need to have technology incubation centers where modern foods processing pilot plants are available to prospective entrepreneurs where they can get hands on training on using this facility on custom hire basis and test marketing their produce. CIPHET Ludhiana had initiated a joint effort with UAS Bangalore in this direction in the 10th plan and under that on the land provided by university such centre is coming up with financial and technical guidance from ICAR through CIPHET Ludhiana. The building for housing the millet processing as well as horticultural crops processing has come up to plinth level. This unit will be operated by the staff of UAS Bangalore especially by AICRP on PHT centre. Director CIPHET along with Estate Officer visited Bangalore on August 5th and had a meeting with Hon'ble Vice-Chancellor, UAS, Bangalore Dr P.G. Chengappa for discussing the progress of construction. This meeting with the Vice Chancellor was also attended by Dr Prabhakar Shetty, Director of Research., UAS Bangalore, Sh. Devaraj Estae Officer of University, Sh. M.V. Rao, E.E (Civil) CPWD and Dr B. Ranganna, Prof and Research Engineer of AICRP (PHT) center, Dr. R. T. Patil, Director and Dr. Dhingra, Estate Officer of CIPHET, Ludhiana. The group visited the site and inspected the progress of the work. The meeting was also held with Sh. J.S. Sandhu, Supdt. Engineer C.P.W.D, to discuss the progress of construction and expedite construction within the stipulated time frame.



Meeting with Dr. PG Chengappa VC, UAS, Bangalore, University officials and CPWD officials



The front view of the CIPHET-UAS cluster building

Rural Micro Enterprises by Gandhi Gram Trust, Dindigul, Tamil Nadu

The Department of Science & Technology, Government of India has a scheme to strengthen the centers of excellences so that they would enthuse many groups to come forward and devote themselves to the task of rural development. The Gandhigram Trust is one such fully integrated rural development center founded by Late Dr. Soundram and the small band of workers who were all trained in Gandhian Centers at Sewagram and Wardha. The agro-industrial activities of Gandhigram cover a wide spectrum of trades like hand-spinning, hand-weaving, dyeing, printing, manufacture of laundry and toilet soaps, extraction of oil, processing of pulses, manufacture of foot-wear and leather goods, preparation of matches, production of ayurvedic and

siddha medicines, curry powder, malt, herbal shampoo, TV assembly, carpentry and black smithy and rural workshop fabricating steel furniture, agriculture equipment, biogas drums etc. Gandhigram is also deeply involved in educating the rural population in the use of non-conventional energy systems like biogas, solar energy, improved chulahs, energy plantation etc.

Some of the present activities of trust are: 1). Natural Dyes Unit; 2) Food Processing Units-Parboiling of Rice, Power ghani, Pickles & Jam, Lijjat Pappad, Malt Unit & Masala Powder Unit; 3) Arecanut Leaf Plate Making Unit; 4) Soap & shampoo Unit 5) Waste Paper Recycling Unit; 6) Jute Bags/chappals-Sanitary Napkin Unit; 7) Artificial Limb Research Centre. 8) Ayurvedic & siddha Medicines Unit (Production/Laboratory); 9) Workshop Complex-Blow Room. The team consisting of Dr. V.C. Goyal, Director, DST, Dr. Rajeshwari Raina, Prof., Centre for Policy Research, New Delhi, Dr.P.Pushpangadan, Director General, Amity Institute for Herbal & Biotech Products Development, Kerala, Dr. A.V.R. Acharyulu, Professor, KIIT School of Rural Management, KIIT University, Bhubaneshwar and Dr. Patil, Director CIPHET evaluated the centre for consideration of core support. The future programmes & specific problems on which Gandhigram proposed to work with DST support are Standardization of herbal products with special reference to fungal elimination, Eco-friendly Garment making. Post harvesting technologies, Improvement of 16 spindle power operated and frame loom Charka for Development of Lokvastra and manufacturing technology for Sanitary Napkins & Diapers.

Interactive Meeting on Post Harvest Technology of Horticultural Crops

The progress of agriculture in the country is spectacular since its independence. The food grain production has increased by 4 times where as horticultural production has increased by 6 times. However the post harvest infrastructure and value addition activity to this precious produce has not increased with that pace and that has resulted in the huge losses to the tune of 10% in food grains and 25-40% in fruits and vegetables. To manage the produce after harvest not only the protocols need to be developed for their proper handling but it is necessary that suitable, appropriate and socio economically feasible equipment and machinery is also developed. The comparison of mechanization in food grain and horticulture suggests that mechanization in food grains is far ahead of horticultural mechanization. Since the land holding pattern of our country is very different from the western and developed countries, the processing units as well as equipment suitable there can not be directly used in India and hence development of indigenous knowledge and as well as suitable machines are required as it has been proved successful in case of food grains. Realizing this gap the DDG (Horticulture), Dr. HP Singh had called this meeting. The participants were all the directors of Horticultural institutes and Five engineering scientists namely ADG (PE), Director, CIPHET, Project Coordinator AICRP (PHT) from CIPHET, Dr. Ranganna, Professor and Research Engineer AICRP centre at UAS Bangalore and Dr. R. Vishwanathan,, Professor and Research Engineer AICRP centre at TNAU Coimbtore.



L to R: Dr. KP Gopalakrishna Rao, Head PHT, IIHR, Dr. Meenakshi Srinivas, Director, IIHR, Dr. HP Singh, DDG (Hort.), Dr. Pitam Chandra, ADG(PE) and Sh. Bijay Kumar, MD, NHB New Delhi

In the inaugural session Sh. Bijay Kumar, Managing Director, National Horticulture Board addressed the group and emphasized on need for revamping the post harvest technological research of horticultural crop. It was observed that for many crops the protocols for storage and short-term preservation have been developed using permitted chemicals along with dehydration and packaging technologies which are needed to be scaled by developing/adopting appropriate machinery for their commercialization. The progress in post harvest technology was very good from CPCRI, CTCRI and IIHR mainly due to close association of engineers, horticulture scientists and the scientist from other disciplines important for quality assessment and monitoring (biochemical and microbiology). In an inaugural session Sh. Bijay Kumar, MD, NHB cited the example of NHB and CIPHET collaboration for mass multiplication of Banana Comb Cutter and appealed for development of such simple technologies which can be adopted by farmers easily. Dr. H.P. Singh, DDG. (Hort.) gave the guidelines to all the scientists that pre harvest treatments should not be overlooked which are responsible for post harvest perishability of fruits and vegetables. He also emphasized that the responsibility to contain huge post harvest losses lies on post harvest technologist and engineers. The address by ADG (PE) stressed on effective use the resources of all disciplines like biochemistry, microbiology, pathology, engineers and horticulturist jointly in solving the problem of huge post harvest losses. The meeting was highly useful in brining out the technology developed by the ICAR institute and identifying the researchable issues to be taken up.

National Institute of Post Harvest Technology, Pune

The huge loss experienced by the country in fruits and vegetables can be contained if the activity on post harvest management and value addition are accelerated in each state. These activities need promotion through demonstration and hands on training on processing machines and high tech methodologies. Since India produces many agricultural commodities and some of them are very specific to the region, the specific process and equipment are also required to be developed locally. This need has been recognized by the Govt. of Maharashtra and they have setup National Institute of Post Harvest Technology at Pune under the control of Maharashtra State Marketing Federation. The NIPHT is a full fledged Post Harvest Technological Institute

established as trust in the year 1999. Under this institute so far only training and need based development in greenhouse cultivation of flowers has been attended to. Due to the efforts of this institute Talegaon near Pune has been developed as hub of clusters to produce flowers for export. The NIPHT has proved that developing such institute in each state is highly beneficial in increasing the micro enterprises and agro enterprise clusters in production catchments. However in this institute also there is a need of horticulturist engineers' for efficient handling, management and value addition of other fruits and vegetables. Since this institute wants to develop further on the model of CIPHET, Director Dr. Patil visited this institute on August 25, 2008. In the afternoon Director CIPHET visited the Maharashtra State Marketing Federation and had discussion with the officials; Sh. Suresh Pawar, GM of Maharashtra State Agricultural Marketing Board, Dr. BB Gunjal Advisor, Dr. DV Shukla, Additional Director, Agribusiness, MSAMB Pune, Dr. Sangita Ladha, Director, NIPHET, Dr. NJ Thakor, Professor, KKV Dapoli, representatives of various Fruits Growers associations and Sh. Amit Gadre, Chief Sub-Editor, AGROWON, Pune. He gave a presentation on how the technologies developed at CIPHET will be useful in meeting the goal of MSAMB of increasing the profitability of farmers of Maharashtra. Director CIPHET also had a meeting with Dr. Appasaheb Bhujbal, Ex. Director of Horticulture, MS; Former Director, MCAER, Pune and Dr. Prakash Kulkarni, Vice President, ISAH for need to develop appropriate post harvest infrastructure for preventing the losses and increasing the profitability of the farmers.



Meeting of Dr. RT Patil, Director, CIPHET with Director, NIPHT and its faculty.

Research Council Meeting of Mahatma Phule Agricultural University, Rahuri

Agricultural Research Council of Mahatma Phule Krishi Vidapeeth was held on August 26, 2008 at its central campus Rahuri to discuss the progress of research and identify researchable issues. They have five experts to advice the university on their research council. The experts are Dr. S.A. Patil, Director, IARI; Dr. KE Lawande, Director, NRC for Onion & Garlic, Pune; Dr. PG Adsule, Director, NRC for Grapes, Pune; Dr. B. Venkateswarlu, Director, CIRDA and Dr. Govind Garg, Director (R&D), Krishidhan Seeds Limited, Jalna (MS) and Director, CIPHET, Ludhiana for the area of post harvest technology. Dr. Patil attended this meeting and emphasized

the need for Human Resource Development in the area of agricultural engineering who can operate and maintain the agriculture and post harvest machines efficiently. He also suggested for multi fruit processing pilot plant so that farm produce of MPKV Rahuri can be converted into value added products. It will also serve as training and demonstrations on various unit operations to the students and incubation centre for upcoming entrepreneurs. In the afternoon Dr. Patil addressed the students of Dr. Annasaheb Shinde College of Agricultural Engineering, Rahuri and spoke on the role of Agricultural and Bio-resource Engineering in the growth of Indian agriculture.

**CIPHET’s Concept Note on Cryogenic Technology for Spice Grinding
Approved by NAIP**

The concept note entitled **Cryogenic technology for spice grinding: A novel approach** submitted by Dr. Krishna K. Singh, Head, FG & OP Division, CIPHET, Ludhiana to 3rd call of National Agricultural Innovation Project (NAIP) under the component-4 has been approved by competent authority for preparation of full proposal. It was discussed and presented during Stakeholders’ Workshop in The Area of Post –Harvest Technology, Value Addition And Engineering under The Component-4 of The National Agricultural Innovation Project (NAIP) at held at CIPHET, Ludhiana during 29-30 August, 2008.

EDP on Chili Processing Organized

An entrepreneurship development program (EDP) on “Manufacturing of Green Chili Powder and Puree” was organized during 18-24 August 2008 by Division of Transfer of Technology (TOT) at Central Institute of Post Harvest Engineering and Technology (CIPHET) Ludhiana. Dr. R.T. Patil, Director, CIPHET, inaugurated the programme. Sixteen progressive farmers, processors and merchants dealing in chili business from Maharashtra participated in the training program. The aim of EDP was to develop possible entrepreneurs for green chili processing. The training program included the lectures and practicals. The various unit operations in green chili processing were explained to the trainers. The hands on practice was given to each participant on different puree and powder making machines for processing green chili puree and powder. Dr. Mathew Prasad, Head, TOT guided the EDP by collecting the feedback and distributing the certificates. The EDP was co-ordinated by the team of scientist namely Dr. Dilip Jain, Dr. Mridula D., Dr. Ramesh Kumar, Dr. V.K. Bhargav.



Demonstration of Chili Processing



Faculty and participants of EDP on Chili processing

CIPHET Hosted NAIP Stakeholders Workshop

The CIPHET Ludhiana organized stakeholders' workshop for following eight innovative project proposals on Post –Harvest Technology & Value Addition and Engineering for National Agricultural Innovation Project (NAIP) under the component-4. Full innovative proposals from following selected concept notes were prepared by the lead partner PI, Co-PIs and Experts during August 29-30, 2008.

- 1) Cryogenic technology for spice grinding: A novel approach (Dr. Krishna K. Singh, CIPHET, Ludhiana)
- 2) Design and development of innovative mechanical devices for the management of pests of agriculture importance (Dr. Surender K. Singh, NCIPM, New Delhi)
- 3) Research into precision farming technologies using GIS, GPS and Electronic control systems for enhancing input application efficiency in production agriculture (Dr. Anurag K. Dubey, CIAE, Bhopal).
- 4) Development of novel value added shrimp products through high pressure processing (Dr. P. S. Rao, IIT, Kharagpur).
- 5) Understanding mechanism of production of nutraceuticals from milk and Indian herbs, their interaction and delivery in model food systems aimed at developing functional dairy foods (Dr. R. R. B. Singh, NDRI, Karnal).
- 6) Novel biotechnological processes for production of high value products like enzymes, bioethanol, organic acids and specialty chemicals from agricultural residues (Dr Bhupinder Chada, GNDU, Amritsar) and CIPHET Ludhiana as consortium partner.
- 7) Strategic super imposition of indigenous technology knowledge on modern food processing systems for preservation and value addition of ethnic foods for export markets (Dr. K. Sduresh Kumar, IICPT, Thanjavur).
- 8) Development of a comprehensive approach for detection and mitigation of dairy pathogens and adulterants using chemical biology and forward chemical genetics (Dr. Naveen K. Navani, IIT, Roorkee)

Dr. K. K. Singh, Head FG & OP Division and coordinator of the workshop welcomed all the experts and delegates attending the workshop. The inaugural session was chaired by Dr R T Patil, Director, CIPHET, Ludhiana and Dr M M Pandey, Director, CIAE, Bhopal was the Chief Guest along with Dr. A. Bandyopadhyay, National Coordinator (Componebt-4, NAIP). Dr. Bandyopadhyay presented a brief overview and purpose of the stakeholders' workshop. Dr R T Patil, Director, CIPHET, Ludhiana addressed the PI's and Co-PI's of the various NAIP projects and talked about importance of the NAIP in strengthening the facilities and accelerating pace of research in the area of post harvest management, value addition and engineering. Dr. Dattatreya M. Kadam proposed vote of thanks. The experts who attended the workshop were Dr. M M Pandey, Dr. N P S Sirohi, Dr. Manoj Kulshrestha, Dr R. Visvanathan, Prof. B. C. Sarkar and Dr (Ms). Bindu J. apart from scientists from CIPHET and PAU. About 50 scientists of different leading institutions of country like ICAR Institutes, IIT's, IICPT, GNDU, PAU, IMT, TNAU, NBRI, UAS, NIHWF, SLIET, SLIET, GBPUA&T, BUAFS, etc. participated in the stakeholders' workshop. The workshop was concluded with remarks of experts and vote of thanks by Dr. A. Bandyopadhyay, National Coordinator (Componebt-4, NAIP).



NAIP stakeholders meeting in progress

CAC workshop for NAIP project

The Second CAC meeting of NAIP sub-project on “Development of Non-destructive Systems for Evaluation of Microbial and Physico-chemical Quality Parameters of Mango” under component-4 was held under the chairmanship of **Dr. Suresh Prasad, Emeritus Professor, IIT Kharagpur**. Following members and participants were present in the meeting.

- (i) Prof. E. S. Rajagopal, Professor Emeritus, IISc, Bangalore, Expert member
- (ii) Dr. D. C. Joshi, Prof and Dean (Agril. Engg), AAU, Anand, Expert member
- (iii) Dr. A. Bandyopadhyay, National Coordinator, NAIP component-4, member
- (iv) Dr. R. T Patil, Director, CIPHET, Ludhiana, member
- (v) Dr. Nachiket Kotiwaliwale, CCPI, CIAE, Bhopal, invitee
- (vi) Dr. Abhijeet Kar, CCPI, IARI, New Delhi, invitee
- (vii) K. Narsiah, CCPI at Lead Centre, invitee
- (viii) Dr. Raman Suri, CCPI, IMTECH, Chandigarh, invitee
- (ix) Dr. Ramesh Kumar, Co-PI at lead Centre, invitee
- (x) Dr. S. N. Jha, CPI, CIPHET, Ludhiana, member secretary

The CAC expressed its satisfaction over progress report of all the centers. Dr. A. Bandyopadhyay, NC component-4 informed the house that project is going in right direction. He had a special appreciation for lead centre for their tangible achievements, speed and timeliness of work.



CAC meeting in progress for the project on Non-destructive Systems for Evaluation of Microbial and Physico-chemical Quality Parameters of Mango

CIPHET gets Funding from NHB for Mass Multiplication of Banana-Comb Cutter

The project proposal entitled “Multiplication, Field Demonstration and Distribution of “CIPHET Banana-Comb / Hand Cutter” submitted to National Horticulture Board, Gurgaon by Dr. Kadam and Dr. Dhingra was approved by NHB for funding of Rs 7.25 lakh for production of about 4000 pieces of CIPHET Banana-comb cutter, field demonstration, distribution, promotion and sale of the tool to the beneficiaries. Using banana-comb/hand cutter developed by CIPHET to separate banana hands/combs from main banana bunch will save about 6 - 8% of post-harvest losses during separation/cutting of bananas.

Bhumipujan for a pilot plant building at CIPHET Ludhiana

CIPHET had earlier established a modern chili processing plant which includes the operations like cleaning, drying, pulverizing and packaging. This plant will be shifted to a new building which is proposed to be constructed on CIPHET Campus. The Bhoomi Pujan for construction of Chilli Processing Plant as well as Agro-processing cluster building to house pilot plants for grain and horticultural processing was carried out on 08.08.2008 by Dr. R.T. Patil, Director CIPHET. Sh. K.S. Sandhu, Executive Engineer, CPWD, Sh. Tej Ram, A.O, Sh. Vijay Kumar, AF &AO, Dr. D. Dhingra, Senior Scientist & Estate Officer, Sh. R.S. Gill, Sh. O. P. Moondan, Technical Officers, Estate Section and other officers and staff of CIPHET and CPWD were also present on the occasion.



Creating Awareness among the Youth for Post Harvest Technology

About 60 students of 9th and 10th from Kendriya Vidyalaya visited CIPHET Abohar on 19th August 2008. They were shown various laboratories and pilot plant. Students have shown keen interest in various processes and equipments during visit. They were also told the importance of food processing particularly value addition of fruits and vegetables.



Students being demonstrated food kinnow waxing and grading machines at CIPHET Abohar

Prospective Entrepreneurs and Technical Teachers Exposed To Food Processing Activities at CIPHET Abohar

On 25th August, CPHET Abohar imparted one day exposure on Food Processing for the EDP trainees from NITCON, Chandigarh. About 25 young Entrepreneurs participating in Technology based EDP (Exclusively for Science and Technology persons) being organized by NITCON at Muktsar shown keen interest in various aspects of processing and value addition of pomegranate, aonla, guava and grapes. Technology developed and various pilot plant facilities were shown to trainees by Dr. R. K. Gupta, Head, Horticultural Crop Processing Division. Other development of Institute was also explained to up-coming entrepreneurs with the help of CIPHET show-case by Dr. Gupta.



Entrepreneurs seeing the demonstration on product development by Dr. Jangra at CIPHET Abohar

Similarly about 25 faculty members of GTB Khalasa Institute of Engineering and Technology, Chhapiawali (Malout) who were participating in the Faculty Development Programme organized by NITCON visited CIPHET, Abohar on 26th August 2008. Most of the teachers were of the view that food processing may be included as an elective subject in degree as well as diploma courses in engineering and technology stream for benefit of the students.



Faculty members of GTB College being explained about various packaging techniques at CIPHET Abohar by Dr. Gupta, Head, HCP

सीफेट में स्वतंत्रता दिवस समारोह

कर्मचारी मनोरंजन क्लब के तत्वाधान में संस्थान में 81वें स्वतंत्रता दिवस समारोह मनाया गया। निदेशक, सीफेट, लुधियाना ने ध्वजारोहण किया। राष्ट्रगान के उपरान्त अपने उद्बोधन में निदेशक ने संस्थान की गत वर्ष की उपलब्धियों का विवरण दिया। उन्होंने सीफेट के मविष्य के कार्यक्रमों के बारे में अवगत कराया एवं संस्थान की उन्नति की कामना की। इसके उपरान्त बच्चों की खेलकूद प्रतियोगिताएं आयोजित की गयीं।

इस दिन स्टाफ वेलफेयर फंड की तरफ से सीफेट के मेधावी बच्चों को जिन्होंने दसवीं कक्षा के बोर्ड परीक्षा में 2007 एवं 2008 में 70% से अधिक अंक प्राप्त किये थे पुरस्कृत किया गया। सन् 2007 के चार मेधावी बच्चों को डा० आर टी. पाटिल, निदेशक, सीफेट ने पुरस्कृत किया एवं सन् 2008 के चार मेधावी बच्चों को डा० एस. के. नन्दा, परियोजना समन्वयक (पी. एच. टी.) एवं क्लब के अध्यक्ष ने पुरस्कृत किया।

इसके उपरान्त क्लब ने सांस्कृतिक कार्यक्रम का आयोजन किया। इसमें क्लब के सदस्यों, उनके परिवारजनों एवं बच्चों ने मनमोहक सांस्कृतिक कार्यक्रम प्रस्तुत किये। इस कार्यक्रम को निदेशक, सीफेट, क्लब के अध्यक्ष एवं अन्य सदस्यों ने बहुत सराहा।

कार्यक्रम के अन्त में खेलकूद प्रतियोगिताओं के विजेताओं एवं उपविजेताओं को डा० आर टी. पाटिल, निदेशक, सीफेट, लुधियाना एवं मिसेज पाटिल ने पुरस्कार वितरण किया।



Flag Hoisting on Independence day



Meritorious students of employees (Standing)

honored on the occasion of Independence day	
	
Ladies sports event on Independence day	Distribution of prizes to the winners by Director, CIPHET

संस्थान में हिन्दी की मासिक कार्याशाला एवं संगोष्ठी

हिन्दी की मासिक कार्यशाला एवं संगोष्ठी के अंतर्गत दिनांक 28.08.2008 को संस्थान के सभा कक्ष में श्री विजय कुमार, सहायक वित्त एवं लेखा अधिकारी द्वारा “केन्द्रीय सिविल सेवार्ये (पेंशन) नियम 1972” विषय पर प्रस्तुतीकरण किया गया, जिसमें संस्थान के निदेशक, परियोजना समन्वयक, प्रभागाध्यक्ष, प्रभारी अनुभाग, प्रशासनिक, तकनीकी एवं सहायक अधिकारी व कर्मचारी सभी उपस्थित थे।

Winter School at CIPHET

CIPHET is organizing a Winter School on “**Designer and functional foods through extrusion cooking technology**” for 21 days during November 29 – December 19, 2008. The aim of the school is to upgrade the skills of research scientists/teacher/extension specialist in the recent research techniques and knowledge in the field of extrusion cooking which includes Emerging trends in applications of extrusion cooking technology for food and feed, Functional properties of raw materials, Textural attribute studies for expanded extrudates, Textural attribute studies for porridge from extrudates, Colour measurements of extrudates, Extrusion Applications – Food, Extrusion Applications – Feed and Pet food, Toasting and coating of Snacks and Cereals, Extrusion control systems, Extrusion processing for fruit based extruded products, Role of rheology in extrusion, Single screw extruders vs. twin screw extruders. It will also provide an opportunity for the scientists to interact and exchange, experience to make research and education more relevant to the current needs. The participants will also be exposed to single and twin screw extruders. The course Director is Dr. R.K. Goyal, Principal Scientist, FG&OP Division.

The course content of winter school in brief is as follows:

1. Extrusion processing – An overview
2. Emerging trends in applications of extrusion cooking technology for food and feed.
3. Function properties of raw materials.
4. Textural attributes studies for expanded extrudates .
5. Textural attributes studies for porridge from extrudates.
6. Colour measurements of extrudates.
7. Extrusion Technology.
 - Ingredient Functionality

- Preconditioning of Foodstuffs.
8. Drying Theory
 - Hands-on session on Pilot-Scale Extruders
 9. Extrusion Applications – Food & Feed
 - Extrusion Applications – Feed and Pet food
 - Toasting and coating of Snacks and Cereals
 - Extrusion control systems
 10. Extrusion of technology for fruit based extruded products.
 11. Role of rheology in extrusion
 12. Single screw extruders vs twin screw extruders.

Post Harvest Prototype Multiplication Activity

As part of the prototype multiplication and testing activity three units of CIPHET rotary maize sheller have been fabricated in CIPHET workshop. These units will be provided to willing entrepreneurs and end users and also to Directorate of Maize Research for use on their farm. This is an effort in the direction to motivate agricultural machinery manufacturers to fabricate low cost processing machines for decentralized processing in production catchments. The capacity of the unit is 130 kg/h. The cost of the unit is Rs. 4000.00 excluding packaging and forwarding charges.



Prototypes of CIPHET rotary maize sheller

Technology of the Month

Process of Ready to Constitute Mustard *Saag*

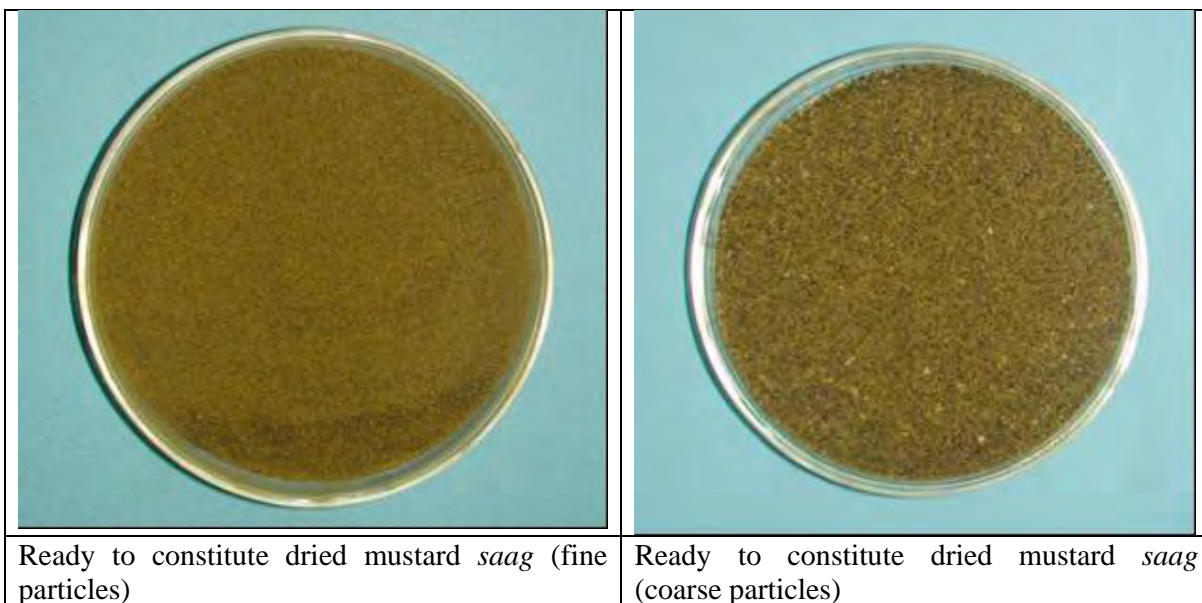
Saag is primarily mustard and spinach leaves based curry dish eaten in India and Pakistan with bread such as roti (wheat bread or maize flour roti) or naan. *Saag* is made from mustard, spinach leaves, and/or other greens, along with added spices and sometimes-other ingredients. The preparation of *saag* involves washing, cutting and cooking of leaves. After cooking the whole mass is pulped to get a smooth curry. Wheat or maize flour is added to improve the taste and texture of the gravy. The preparation of *saag* is time consuming and involves lot of labour for washing and cutting of leaves and the cooking time is also long.

When rehydrated, the ready to constitute *mustard saag powder* developed and disclosed as patent yields *saag* with the taste and odor of the freshly prepared *saag*. The reduction in volume of mustard *saag* powder is more than 90 % and the product has enhanced storability.

Though ready to eat canned mustard *saag* is available in the market, it is not available in the form of dried cake or powder.

The major ingredient of the ready to constitute *mustard saag* is mustard leaves. The other ingredients include spinach, fenugreek and other greens. The green leaves are washed, drained and cut. The cut leaves are taken in the known proportion. The mixture of cut leaves and spices is cooked and then mashed to get smooth curry. The curry is then processed through various steps involving crushing, cooking, pulping, addition of edible flour, cold extrusion, drying, size reduction and packaging to attain mustard *saag* powder. The taste and colour of the *saag* powder was observed to be acceptable on reconstitution. The product in dry powder form is presented in Figure. The dried ingredients (powder) on mixing with lukewarm / hot water yield the inherent taste and odor of staple ingredients.

The process developed and described in the present invention is unique and yields a ready to constitute product. The developed product will make available *saag* through out the year along with saving in time in cooking. The product offers great scope for export to the developed countries for Indian immigrant population. The technology is ready for transfer and commercialization.



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