



Central Institute of Post Harvest Engineering and Technology, Ludhiana

Our Slogan: Produce, Process and Prosper

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



Dear All,

The profession of agricultural engineering is passing through a phase where it needs to meet the requirement of rapid developments in the biological sciences. The emerging technologies like rapid fermentation for production of enzymes, production of useful microorganisms and also for fuel alcohol, micro encapsulation of probiotic microorganisms, sterilization techniques for food like high pressure processing, RF and microwave heating, even the bio technology needs engineering input in equipment, instrumentation, environment control and computer models to conduct simulated studies of various biological processes. Similarly food science and technology is changing due to introduction of emerging technologies to develop novel foods, extract effectively the medicinal and nutraceutical components, and even develop and use genetically engineered micro organisms to increase the process efficiency manifolds. The time consuming fermentation process to get the soy sauce; aging to get wine, breeding the varieties to provide required composition of a food can be accelerated by engineering interventions like extrusion, accelerated fermentations to develop useful products with ease and speed. Since agricultural engineer has fairly good knowledge of biological sciences compared to any other engineer, the AE has better appreciation to the needs of biological materials while applying the engineering principles. The time has come that we meet these demands of fellow scientists either in food or agriculture and for this we need to expand our scope by changing our mandate to agricultural and biological engineering rather than traditional agricultural engineering. I am glad that this topic came for discussion during recently concluded ISAE convention and Prof. Gajendra Singh who has wide experience of agricultural education at national and international level very effectively put the examples of the department closures in US as they did not change with time to prove this point. This has started a thought process among all members and hopefully soon we can implement this change as has been done by American Society of Agricultural and Biological Engineers in 2005.

Another important event I was impressed by is Annual Scientists and Farmers Congress at Allahabad. The solo effort of BIOVED Research Centre is highly commendable where on ONE platform scientists as well as farmers are brought so that there is a free exchange of thoughts and information between the developer and end user. The R & D and extension work done by BIOVED in taking science to serve the needy is praise worthy. The love and affection of the farmers was quiet evident due to the help they had received from BIOVED for the successful demonstration of animal driven pump, a simple soil testing kit to develop soil testing clinic at the village level, use of bio coating to preserve the vegetables, development of lac farming and lac processing and value addition in production catchment. Such agencies provide confidence to researchers and CIPHET hopes to implement post harvest management and value addition projects with BIOVED so that farmers in the area are encouraged to take up cultivation of high value crops and get fullest economic returns being partners in their handling and processing.

WISHING YOU A VERY HAPPY HOLI

With best regards

R.T. Patil,
Director

Annual Convention of Indian Society of Agricultural Engineers

The XLII (42nd) ISAE Annual Convention & Symposium was held at CIAE, Bhopal during February 1-3, 2008. The inaugural session was held on February 1, 2008 at Silver Jubilee Conference Hall of CIAE, Bhopal. The Chief Guest was Dr. Mangla Rai, Secretary DARE & DG (ICAR) and Guest of Honour were Sh. Som Pal, Chairman, State Planning Commission, Madhya Pradesh and Prof. A.C. Pandya, Ex-Director, CIAE and Dr. Nawab Ali, DDG (Engg.) and President of ISAE presided over the function. Dr. Mangla Rai appreciated the topic chosen by ISAE for the symposium, which was “Crop Residues, Animal Wastes and by-product Utilization” and also appreciated the Role of Agricultural Engineers in development of agriculture. Both guest of honors were also appreciative about need to concentrate on by-product and bio mass for generating electricity, extraction of essential nutrients and thus increasing the profitability of the farmer. This was followed by theme session and industry session. The papers in the theme session of the symposium covered areas like use of animal waste for pet food, crop residues for energy generation and use cow dung and urine for developing various medicines. The technical session for all four disciplines namely -1) Farm Power & Machinery, 2) Soil and Water Conservation Engineering, 3) Processing Dairy & Food Engineering and 4) Energy in Agriculture were held concurrently. All the sessions were conducted as scheduled and good deliberation were held on each technical paper. The Process and Food Engineering discipline had also organized a poster presentation in which fourteen posters were presented and three were chosen for best poster award. Along with the technical discussion and industrial exhibition were also arranged in which industry from food processing, packaging, farm machinery, energy and irrigation had participated in good numbers.



Inaugural session of 42nd Annual Convention of Indian Society of Agricultural Engineers at Bhopal

On February 3, the Dean's committee meeting was held at 9.00 am in which the course curriculum, employment needs, experiential learning and other topics were discussed which was followed by a session on agricultural engineering education. In the discussion major issue was about broadening the scope Agricultural Engineering profession by changing the name to Agricultural and Biological Engineering. Professor Gajendra Singh, VC, Doon University narrated the experience of the universities in United States of America who did expand the scope in time had to close down the department. Majority were in favour of name change as it was in the interest of the profession and a trend followed everywhere in the world. In the session on education Dr. B.S. Bisht, ADG (HRD) informed that the employment opportunity for agricultural engineering graduates were in plenty, however it is necessary that meritorious student opt for agricultural engineering courses. Dr. Bisht presented SWOT analysis of agricultural engineering course and informed about various schemes of

ICAR to strengthen of agricultural engineering education and extension in the country. The convention ended with announcement of Awards by President (ISAE). The Punjab chapter of ISAE of which CIPHET is also a sub unit was adjudged as the best ISAE chapter award for 2007-2008. The next convention was announced to be held at BAU, Ranchi.

Agricultural Scientists and Farmers’ Congress at Allahabad

The Indian Agricultural Scientists and Farmers’ Congress an annual event of Bioved Research & Communication Centre, Allahabad was held during February 15-16, 2008. This was 10th congress in a row in which about 200-250 peoples had participated. The representation of the scientists from all over the country showed the popularity of this event conducted by BIOVED a voluntary R&D organization for the benefit of farmers. This event also helped many research organizations to introduce their technologies to farmers along with exchange of information with scientific peers. Dr. Patil, Director, CIPHET delivered a keynote paper titled “**Post Harvest Management and Value Addition & role of CIPHET**”. This organization has got many activities wherein they demonstrate different agricultural technologies for adoption by farmers. They have very little activity in the area of Post Harvest Management and Value Addition. His presentation generated enough interest among the extension workers and farmers for post harvest activities. The BIOVED has decided to collaborate with CIPHET in increasing Post Harvest Management for Value Addition activities at their centre and villages. Dr. Patil also visited Allahabad Agricultural Institute-Deemed University, Allahabad (UP) and had meeting with Dr. Imtiyaz, Dean and Dr. Tufail Ahmad, Head, Dept. of Food Processing & Engineering and other faculties of College of Agricultural Engineering and discussed with them about the scope of mutual collaboration in the area of Post Harvest Management and Value Addition. He also saw different labs of the COAE. He also had meeting with Vice Chancellor and other faculty members of Collage of Engineering and Biotechnology. Dr. RK Gupta, Dr. Mridula Devi and Dr. Satyendra Kumar also attended this congress and presented their papers.



Director CIPHET with Dean Dr. Imtiyaz and faculty of COAE, AAI, Allahabad



Director CIPHET bring honored with fellowship by Dr. Seema Wahab, Advisor, DBT

Coordination committee meeting of AICRP on Application of Plastics in Agriculture

Coordination Committee Meeting (CCM) of AICRP on Application of Plastics in Agriculture (APA) was conducted at CIPHET, Abohar during 22-23 February 2008. The project leaders from all the nine centers participated in the meeting and finalized the technical programme for next two years. The chief guest of the program Dr. Pitam Chandra, ADG(PE), in his inaugural address highlighted the prospects of plasticultural techniques and cited many examples of enormous benefits from these technologies in the field of water conservation, surface covered cultivation and post harvest management. He urged the project leader to develop the technologies which can be replicated at the farmers field for higher productivity and profitability. Dr. R. T. Patil, Director and chairman of the inaugural session narrated the usefulness of man made plastics in agriculture and elaborated that plasticultural technologies can play impetus role in enhancing productivity, improving shelf life and quality of the produce. He exhorted cooperating centres to work with a clear mind to make plasticultural techniques relevant for the farming community. Dr. P. R. Bhatnagar, Project Coordinator (APA) urged the scientists to develop full package of plasticultural techniques and emphasis should be given to demonstrate the proven technologies at farmer's field. He urged the researchers to develop the technical programme in such way that some technologies can be come out of the project. Dr. S. K. Nanda, PC(PHTS) also asked the researchers that environmental issues should be well addressed while dissemination of the technologies and stakeholders should be made aware about the judicious use of plasticultural techniques. Dr. R. K. Gupta, Head (HCP) thanked all the participants coming from far away places to Abohar and elaborated the usefulness of plastics based technologies for end users as these technologies have successfully been practiced in many advanced countries for higher productivity and reducing post harvest losses. One technical bulletin was also released by chief guest and chairman during the inaugural session. All the project leaders presented their technical programme and after discussion the technical programme was finalized for each center. The participants were also exposed to field visit of progressive farmers who are making use of plasticultural technologies. Dr. Rajbir Singh, Project Leader of cooperating centre of APA presented formal vote of thanks to all the dignitaries and participants attended the meeting.



L to R Dr. RK Gupta, Head HCP, Dr. RT Patil, Director CIPHET, Dr. Pitam Chandra ADG (PE), DR. SK Nanda, PC (PHT) and Dr. PR Bhatnagar PC (APA) showing the released technical bulletin

Instrumental injury-cum-texture analysis facility established at CIPHET, Abohar

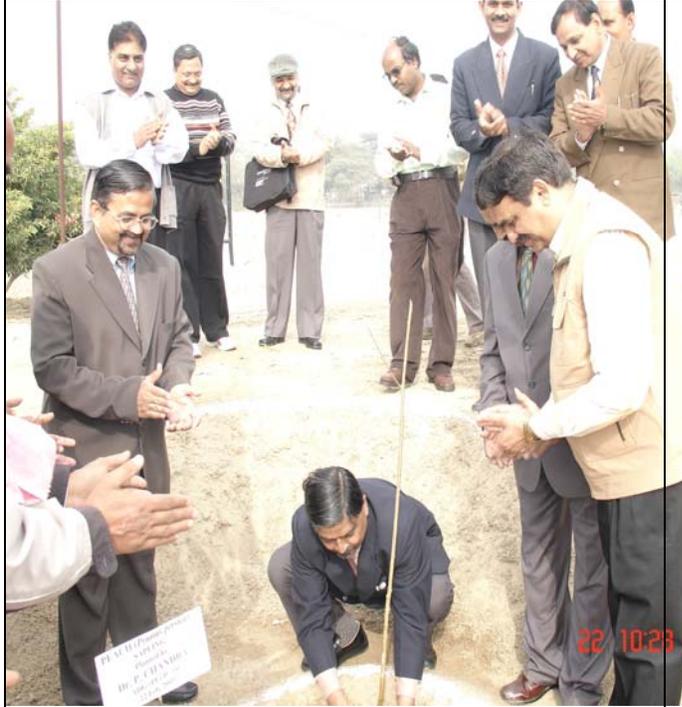
A facility for fruit and vegetable injury and texture analysis was set up at Abohar campus of CIPHET. This facility was inaugurated by Dr. Pritam Chandra, ADG (Process Engineering), Indian Council of Agricultural Research on 22nd February, 2008. Dr. R. T. Patil, Director of CIPHET was also present at the time of its inauguration. The TA-HDPlus Injury-cum-texture analyzer is of the capacity of 500 kg and able to determine the puncture force, extrusion energy and complete textural profile analysis of the fresh as well as of processed food materials. Without determining the mechanical properties such a fracture toughness, which is fundamental measurements independent of size and geometry, it is not possible to identify what other properties of the test piece of the food materials contribute to the assessment of texture or how to relate to the structure of the food. Dr. Pritam Chandra said at this occasion that the facility created is of great importance for the purpose of in-depth research on post harvest of fruits and vegetables. The other laboratory facilities available at Abohar campus were also shown to him.

CIPHET contributes to seminar on pomegranate production and marketing in Karnataka

The area under pomegranate is expanding day by day and its annual production in the country is about 6 lakh tones per year. Maharashtra and Karnataka stand first and second respectively in the production of pomegranate. Dr. D.B.Singh, Sr. Scientist (Horticulture) Participated in Seminar on “*Prospects of Quality Pomegranate Production and Marketing in Karnataka*” and presented paper on “*Post Harvest Technology Management in Pomegranate*” on 27th Feb. 2008, organized by UAS, Dharwad at Dharwad, Kanataka.

Foundation of new orchard of peach, plum and pear at CIPHET, Abohar

Plan for establishing a new orchard for peach, pear and plum has been initiated at CIPHET campus, Abohar and consequently Dr. Pitam Chandra, ADG (PE) and Dr. R. T. Patil, Director, CIPHET planted new saplings of ‘Shan-e- Punjab’ variety of peach. The new orchard will be establishment in about 6 acres and will provide demonstration on growing these diversified horticultural crops to the farmers in the vicinity and will provide quality raw material for experiments on processing and value addition.



Planting of peach by Dr. Pitam Chandra,
ADG (PE), ICAR, New Delhi



Planting of peach by Dr. R.T. Patil, Director,
CIPHET, Ludhiana/Abohar

Monthly Hindi Workshop at CIPHET Ludhiana

कार्यवृत्त

कटाई उपरान्त अभियांत्रिकी एवं प्रौद्योगिकी विषयों से संबंधित शब्दावली निर्माण करने के उद्देश्य से एक बैठक डॉ. आर. टी. पाटिल की अध्यक्षता में संस्थान के समिति कक्ष में सम्पन्न हुई। बैठक में वैज्ञानिक तथा तकनीकी शब्दावली आयोग के पूर्व अध्यक्ष डॉ. हरीश कुमार को विशेष रूप से आमंत्रित किया गया। बैठक में वैज्ञानिक विद्वानों, एवं इनके अतिरिक्त सीफेट के सभी प्रशासनिक एवं तकनीकी अधिकारी एवं कर्मचारी उपस्थित थे। दिसम्बर, 2007 में संसदीय राजभाषा समिति जिसने इस संस्थान की हिन्दी कार्यन्वयन प्रणाली को देखा और सुझाया कि इस संस्थान में अभी भी हिन्दी के कार्य को अधिक तेजी से करने की गुंजाईस है। समिति की इस सिफारिश को ध्यान में रखकर यह निर्णय लिया गया कि संस्थान शीघ्र ही कटाई उपरान्त अभियांत्रिकी एवं प्रौद्योगिकी से जुड़े समस्त विषयों की हिन्दी भाषा में शब्दावली तैयार करेगा क्योंकि जब तक इन विषयों की शब्दावलियां तैयार नहीं हो जाती तब तक संस्थान के वैज्ञानिकों तथा अधिकारियों एवं कर्मचारियों के लिए हिन्दी में अधिक दक्षता के साथ कार्य करना संभव न होगा अतः संस्थान शीघ्र ही इस दिशा में कारगर कदम उठाए। परिणामस्वरूप निर्णय लिया गया कि वैज्ञानिक तथा तकनीकी शब्दावली आयोग के पूर्व अध्यक्ष डॉ. हरीश कुमार की सलाह से इस कार्य को शीघ्र आरम्भ किया जाए। उपरोक्त सदस्यों ने एक मत होकर के निम्नलिखित निर्णय लिए :-



Dr. Harish Kumar, Former Chairman, Commission for Scientific and Technical Terminology, Ministry of Human resource Development, Government of India being felicitated by Director, CIPHET during Hindi Workshop

1. संस्थान का प्रत्येक वैज्ञानिक अपने-अपने विषयों से जुड़े तकनीकी शब्दों की सूचियां तैयार करेगा और यह सूचियां संस्थान के अध्यक्ष को सौंप दी जाएंगी। अध्यक्ष यह सूचियां डॉ हरीश कुमार को सौंपेगा और डॉ हरीश कुमार इनके पर्याय नियत करेंगे।
2. डॉ हरीश कुमार अपने निजी स्रोत से भी संदर्भाधीन विषयों (सस्य विज्ञान, पुष्प विज्ञान, सब्जी विज्ञान, फल विज्ञान, मात्स्ययिकी, पशुधन उत्पाद, पादप रोग विज्ञान, वाणिकी विज्ञान, आर्थिक वनोस्पति विज्ञान, प्रशासन आदि) की पहचान करेंगे और उनके पर्याय निर्धारित कर उन्हें सूची बद्ध कर उन्हें निदेशक महोदय को भेजेंगे।
3. पर्यायों को अंतिम रूप प्रदान करने के लिए विशेषज्ञों की अध्यक्ष महोदय की सुविधानुसार बैठक बुलाई जाएगी।
4. संस्थान डॉ हरीश कुमार को आवश्यक पाठ्य सामग्री, स्टेशनरी उपलब्ध करवाएगा।

5. उपरोक्त सदस्यों ने एक मत होकर सिफारिश की कि शब्दावली निर्माण का यह कार्य जिस समिति की देखरेख में होगा उसे शब्दावली सलाहकार समिति के नाम से पुकारा जाएगा और उसका स्वरूप यह होगा :-

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|----|--|---|---------------------------------------|
| 1. | डॉ. आर. टी. पाटिल, निदेशक | — | अध्यक्ष |
| 2. | डॉ. हरीश कुमार, पूर्व अध्यक्ष | — | सलाहकार एवं सदस्य |
| | | | तकनीकी एवं प्रौद्योगिकी शब्दावली आयोग |
| 3. | डॉ. एस. के. नन्दा, परियोजना समन्वयक | — | सदस्य |
| 4. | डॉ. पी. आर. भट्टनागर, परियोजना समन्वयक | — | सदस्य |
| 5. | डॉ. आर. के. गुप्ता, प्रभागाध्यक्ष | — | सदस्य |
| 6. | डॉ. के. के. सिंह, प्रभागाध्यक्ष | — | सदस्य |
| 6. | डॉ. मैथ्यू प्रसाद, प्रभागाध्यक्ष | — | सदस्य |
| 7. | डॉ. ओ. डी. वन्जारी, प्रभागाध्यक्ष | — | सदस्य |
| 8. | डॉ. के. नरसईया | — | संयोजक |

इसके अतिरिक्त शब्दावली निर्माण समिति होगी। 1000 शब्द निर्माण सहयोग करने वाले वैज्ञानिक तथा तकनीकी अधिकारी इस समिति के सदस्य होंगे। शब्दावली निर्माण के कार्य को सुचारू रूप प्रदान करने के लिए और उसकी अद्यतन स्थिति पर विचार करने के लिए समयानुसार बैठक का आयोजन किया जाएगा। राष्ट्रीय महत्व के इस कार्य में डॉ. हरीश कुमार के इस योगदान के ऐवज़ में यह संस्थान उन्हें उचित राशी मानदेय के रूप में देने का विचार करेगा। बैठक सघन्यवाद समाप्त हुई।

Entrepreneurship Development Programme (EDP) on Vermicompost Technology

Vermicompost (also called worm compost, vermicast, worm castings, worm humus or worm manure) is an organic manure (bio-fertilizer) produced as the vermicast by earth worm feeding on biological waste material; plant residues. Vermicompost is a nutrient-rich, natural fertilizer and soil conditioner. The process of producing vermicompost is called vermicomposting. The earthworm species (or composting worms) most often used are Red Wigglers (*Eisenia foetida*) or Red Earthworms (*Lumbricus rubellus*). This compost is an odorless, clean, organic material containing adequate quantities of N, P, K and several micronutrients essential for plant growth. Vermicompost is a preferred nutrient source for organic farming. It is eco-friendly, non-toxic, consumes low energy input for composting and is a recycled biological product.

Entrepreneurship Development Programme on “Vermicompost Technology” was conducted at CIPHET, Abohar from 4-10 February 2008. Dr. Rajbir Singh Senior Scientist was the Coordinator and Dr. R.K. Gupta, Head, Horticultural Crop Processing Division was Co-coordinator for this programme. A physically challenged young man Sh. Kamjit Singh from Ludhiana attended the programme. He was exposed to different methods of compost preparation, methods of vermiculture and different ways of vermicompost preparation. He was also trained to develop small vermicompost unit with earning of Rs. 7000/- per month which can be strengthened further. He was also exposed to different vermicompost units successfully run by young entrepreneurs for exposure and getting useful feedback from the entrepreneurs. He was also interacted with the officials form

banks for financial help to start the business and made aware about the subsidy offered by the government agencies for starting entrepreneurship for self-employment.

Mechanization of cultivation of horticultural crops

The horticulture scenario of the country is rapidly changing. The production and productivity of horticultural crops have increased manifold. Production of fruits and vegetables has tripled in the last 50 years. The productivity has gone up by three times in banana and by 2.5 times in potato. Today horticultural crops cover about 25 per cent of total agricultural exports of the country. The corporate sector is also showing greater interest in horticulture. However horticultural crops require continued attention of the farmers and hence mechanization in horticulture is essential for timeliness of operations, avoid damage to the quality of fruits and vegetable due to improper handling and transport. Keeping in view the importance of this topic a short course on “Mechanization of cultivation of horticultural crops” organized by Indian Institute of Horticultural Research, Hessarghatta, Bangalore during 18-27 February, 2008. Dr. A. K. Thakur, Sr. Scientist (AS&PE) participated in this course. The training was aimed to bring the thinking about the importance and utility of mechanization of horticultural crops cultivation. The course imparted the knowledge of machineries developed nationally and internationally for the horticultural crop cultivation including harvesting and handling. During the training programme, various aspects covered were– Importance and economics of horticultural mechanization, seedbed and nursery raising equipments, seed and fertilizer drilling planting machineries, irrigation systems suitable for horticultural/plantation crops, plant protection and mulching equipments, fruit-vegetable harvesting tools and machines, fruit-vegetable grading and packaging machinery, post harvest management of fruits and vegetables and construction of green/poly house. The complete set of nursery management tools and machineries, fruit harvesting tools, raw mango peeler and Slicer for pickle industries, garlic bulb breaker and clove peeler etc. were shown to the participants.

एग्मी एक्सपो-2008 लखनऊ में सीफेट के क्रियाकलापो की प्रदर्शनी

एग्मी एक्सपो-2008 लखनऊ मेला भारतीय गन्ना अनुसंधान संस्थान परिसर में लगाया गया। जिसके अर्न्तगत हमने केन्द्रीय कटाई उपरान्त प्रौद्योगिकी संस्थान लुधियाना की ओर अपनी स्टाल लगाई जिसमे हमने अपने संस्थान की गतिविधियो से सम्बन्धित सभी चार्ट, प्रोजेक्ट प्रोफाइलस, बेकरी प्रोडक्ट की किताबे, एग्मो प्रोसेसिंग उद्यमतिता, प्रोसेसिंग ग्वार, कोल्ड स्टोरेज स्ट्रक्चर तथा टमाटर में पोस्ट हार्वेस्ट लोसस को कम करना, आदि की पुस्तको का प्रदर्शन किया तथा सीफेट के वैज्ञानिको द्वारा निर्मित अमरूद की बर्फी, अमरूद की टोफी, बेर की टोफी, आंवला की टोफी, अनार की जैली, आदि का प्रदर्शन किया। मेले का उद्घाटन माननीय यूनियन मनिस्टर फोर स्टेट फूड प्रोसेसिंग एण्ड एग्मीकल्चर श्री सुवोध कान्त सहाय जी ने किया। माननीय मन्त्री जी ने मेले में सभी प्रदर्शनियो को देखा।

सीफेट प्रदर्शनी के पास जब मन्त्री जी आये तो हमने मन्त्री जी का स्वागत किया तथा सीफेट संस्थान के उद्देश्य, संस्थान के प्रभाग, तथा सीफेट की क्रियाकलाप के विषय में जानकारी दी। मन्त्री जी संस्थान के द्वारा तैयार की गयी अमरूद की बर्फी व टाफी एवं अनार की जैली को अपने हाथों में लेकर बड़ी सराहना की तथा मन्त्री जी ने कहा इट इज वैरी एडप्टीव एण्ड वैरी गुड। इस शब्द को सुन कर हमें बहुत हर्ष हुआ तथा अपने संस्थान की ओर से हमें गर्व हुआ। मेले में प्रथम दिन लगभग 2000 किसानों ने हमारी प्रदर्शनी को देखा। हमने किसानों को अपनी प्रदर्शनी में बार-बार बैठा कर क्लास की तरह से सीफेट की क्रियाकलाप के विषय में जानकारी दी। मेले में बिहार, राजस्थान, उड़ीसा, गुजरात, उत्तरप्रदेश के किसान अधिक मात्रा में थे। जो बहुत रुचि पूर्वक जानकारी प्राप्त कर रहे थे। मेले का समापन भी हेमराज सिंह प्रिंसीपल सेक्रेटरी एग्रीकल्चर उत्तरप्रदेश ने किया।

	
<p>Hon Union Minister of State for Food Processing at CIPHET stall and appreciating value added products</p>	<p>CIPHET Technical Officer, Mr. M P Singh explaining the CIPHET technologies to willing farmers</p>

नगर राजभाषा कार्यान्वयन समिति की बैठक

दिनांक 28.02.2008 को नगर राजभाषा कार्यान्वयन समिति लुधियाना की 53वीं बैठक का आयोजन कर्मचारी भविष्य निधि संगठन, क्षेत्रीय कार्यालय लुधियाना में श्री आर. के राय, आयकर आयुक्त लुधियाना की अध्यक्षता में किया गया। इस बैठक के सीफेट की और से श्री जे. एस.पाल, सहा. प्रशा. अधि. ने भाग लिया। अपने अध्यक्षिय भाषण में श्री आर. के राय ने बताया कि नराकास लुधियाना को राजभाषा विभाग गृह मंत्रालय द्वारा वर्ष 2005-2006 के लिए प्रथम पुरस्कार, फिर नई दिल्ली सिरीफोर्ट आडेटोरियम में दिनांक 14.09.2007 को वर्ष 2005.2006 के लिये ही “ख” क्षेत्र के लिए प्रथम पुरस्कार के तौर पर माननीय गृह मंत्री श्री शिव राज पाटिल द्वारा इन्दिरा गांधी शीलड प्रदान की तथा 13-14 दिसम्बर को वर्ष 2006-2007 के लिए हरिद्वार में आयोजित किये गये समारोह में नराकास लुधियाना को द्वितीय एवं मुख्य आयकर आयुक्त लुधियाना को भी द्वितीय पुरस्कारों से समानित किया गया। ये सब उपलब्धियां हमारे आपसी सहयोग के परिणाम-स्वरूप ही संभव हो पाई हैं।

नराकास लुधियाना में स्थित सभी कार्यालयों में टीम भावना के लिए उन्होंने धन्यवाद किया और संहर्ष ही राजभाषा रश्मि के नौवां अंक का अनावरण किया व राजभाषा रश्मि पत्रिका के सम्पादन कार्य से जुड़े सभी अधिकारियों को बधाई दी। वर्ष 2007-2008 के लिए आयोजित भिन्न भिन्न प्रतियोगिताओं के विजेताओं को पुरस्कारों से सम्मानित किया गया। अन्त में नराकास के सदस्य सचिव श्री प्रमोद कुमार शर्मा ने अपने धन्यवाद भाषण में बैठक में उपस्थित सभी सदस्यों का धन्यवाद करते हुए बताया कि इस वर्ष दिसम्बर 2007 में लुधियाना स्थित सीफेट, बी.एस.एन.एल तथा भारतीय खाद्य निगम कार्यालयों का संसदीय राजभाषा समिति द्वारा निरीक्षण किया गया और इन कार्यालयों के राजभाषा के प्रयोग की स्थिति की समीक्षा की गई। नराकास समिति, लुधियाना के सभी सदस्य कार्यालयों से अनुरोध किया कि वे अपने कार्यालयों में राजभाषा के प्रचार, प्रसार में और भी अधिक गतिशीलता लाए ताकि संसदीय राजभाषा समिति के समक्ष हमारी छवि और भी स्वच्छ हो सके।

Patent awareness workshop at CIPHET

A one day patent awareness workshop was held at CIPHET, Ludhiana on 07.02.2008 in the chairmanship of Director, CIPHET, Ludhiana and the Guest of honour was Dr. S. Maurya, ADG (IPR), ICAR. Dr. S.N. Jha, In-charge ITMU, welcomed the chief guest, special guests, delegates and other participants from the neighboring Institutes and SAUs. Thereafter Dr. Patil elaborated the need to patenting and registering the information for protecting the intellectual property right (IPR). Dr. S. Mauria, ADG (IPR) clarified the doubts in implementation of ICAR guide-lines for protecting IPR in NARS system. Dr. S.K. Nanda, PC (PHT) and Chairman Institute Technology Management Committee (ITMC) shared the knowledge of patenting and elaborated different terminology being used on national and international patent.



Lto R Dr SN Jha, Sr. Scientist, CIPHET, Dr. SK Nanda, PC (PHT), DR. RT Patil, Director, CIPHET and Dr. S. Mauria, ADG (IPR)

For capacity building in Intellectual property Protection CIPHET scientist Dr D M Kadam was deputed to attend a Project on capacity building for Intellectual property Protection and Technology Licensing in agriculture under Indo-US agricultural Knowledge Initiative during February 11-13, 2008 at HAU Hisar

Texture analysis and Viscosity measurement of food products

The CIPHET scientists, Dr. S. Balasubramanian, Dr. D.M Kadam, Dr. Ramesh Kumar and Er. R. K. Vishwakarma, participated in the seminar on ‘Texture analysis and Viscosity measurement of food and agricultural products’ jointly organized by Scientific Digital Systems, New Delhi and Punjab Biotechnology Incubator, Chandigarh on 28.02.2008 at Chandigarh. Expert, Ms. Bronwyn Elliot from NEWPORT SCIENTIFIC, Australia delivered a lecture on Rapid Visco Analyser (importance, applications etc) and supported with a demo on *RVA-Techmaster*. This was followed by lecture-cum demo on Texture analyzer (TA-XT2i) by the expert Mr. Terry Deadman from STABLE MICROSYSTEMS, UK. The scientists had a very good interaction with the experts regarding these important food engineering instruments. They also, visited Punjab Biotechnology Incubator, Mohali and had interactions Dr. S.S. Marwaha, CEO (PBI) and their research group.

Conference on recent advances in bioengineering

A National conference on prospectus and challenges in food processing as part of CONFERENCES ON RECENT ADVANCES IN BIOENGINEERING (comprising one International conference on bioprocess engineering, and four national viz., (1) National conference on plant-made pharmaceutical and industrial protein, (2) National conference on plant made proteomics, (3) National conference on prospectus and challenges in food processing and (4) National conference on improving health care using sophisticated medical equipment) was held between 07-09, February, 2008 at SRM University, Chennai. Dr. S. Balasubramanian, Scientist (SS), FG&OP Division, attended this conference and presented a research paper entitled “Extrusion cooking characteristics of selected cereals-legumes blends to produce RTEBCs” by S. Balasubramanian, Kuldeep kumar, K.K. Singh and R.T. Patil.

In this paper extrusion processing was used to formulate Ready-To-Eat Breakfast Cereals (RTEBCs) from selected dehulled legumes (black gram green gram, lentil and peas) blended with cereals (rice wheat and maize) using collet food extruder keeping constant feed rate (25 kg/h) and feed moisture (14% wb) at different legumes incorporation levels. The expansion ratio (ER), sectional expansion index (SEI), bulk density (BD), true solid density (TSD) of extrudates were found to be in the range of 4.0 to 3.3, and 16.0 to 10.0; 0.79 to 0.45, and 1.39 to 0.76. The textural properties of extrudates were evaluated (Texture Analyzer, TA-HDi). Colour parameters of the extrudate powders were measured Hunter colorimeter (NR-3000; 10⁰/D65). L-value of extrudates made of rice and wheat higher (80.63 to 74.51) in comparison to that of maize (74.81). a-value of rice and wheat were lower (1.82 and 2.51) than maize (7.88), and also b-value of extrudates made of rice, wheat shows lesser values (11.66 and 13.55) rather maize (31.73). Water solubility indexes (WSI), water absorption index (WAI) and water absorption capacity (WAC) of extrudates were found to be in the range of 235.2 to 726.0%, 206.0 to 769.2, and 1.06 to 6.69%, respectively. Rheological properties of porridge made from extrudate powder were evaluated using Rapid Visco Analyser. The peak viscosity value was higher for maize (772 cp), followed by wheat and rice (542 and 476 cp). Sensory evaluation (9 point hedonic scale) mean scores for the extrudates showed the mostly liking range (6 to 8) for all products. An incorporation level (up to 15%) of dehulled legumes fetched good scores except black gram addition, because of its inherent characterizes. Thus, this study shows a promising feature for the production of low cost legumes incorporated (protein enriched) RTEBCs using collet type extruder.

Canadian Delegation visits CIPHET, Ludhiana

A delegation from University of Saskatchewan and Saskatchewan Pulse Growers', Canada visited Central Institute of Post Harvest Engineering & Technology, Ludhiana during February 18-20, 2008 to have acquaintance with the institute and to seek mutual collaboration in the area of pulse processing specially, utilization of green lentil. Dr. R.T. Patil, Director, CIPHET welcomed the members of the delegation and presented about research activities and facilities of the institute. Dr. Lope Tabil, Associate Professor, University of Saskatchewan delivered a talk on research and teaching activities of the Biosystems Engineering Dept., University of Saskatchewan. Mr. Garth Patterson, Executive Director, Saskatchewan Pulse Growers' presented production and processing of pulses and potential areas of funding and collaboration specially, on utilization of green lentil. Dr. K. K. Singh, Head, Food Grains & Oilseeds Processing Division, CIPHET, Ludhiana presented a research activities of the division in the area of pulse processing and a project proposal on green lentil utilization for mutual collaboration and potential funding from Saskatchewan Pulse Growers', Canada. Dr. R.K. Goyal, I/C RCMU, CIPHET, Ludhiana presented vote of thanks at the end of the meeting. The delegation also visited various laboratories and facilities of the institute and discussed with scientists of the Food Grains & Oilseeds Processing Division.



L to R Mr. GV Shankar, Coordinator, University of Saskatchewan; Mr. Murray Purcell, Director, SPG; Dr. Lope Tabil, Jr., Prof and Graduate Chair, Dept of agricultural and Bioresource Engineering, University of Saskatchewan, Canada; Dr. RT Patil, Director, CIPHET; Mr. Garth Patterson, Executive Director, SPG and Barbara Podhorodeski, Director, SPG, Canada



Visiting Canadian delegation to CIPHET Ludhiana

Job opportunities at CIPHET – Abohar

Name of the post	Qualification
Programme Officer, Pay: @ Rs. 10,000-500-11000 pm (fixed)	Essential: M. Tech. (Agril. Processing)/ M. Tech. (Food Engg. And Technology) Desirable: Working Knowledge of computer
Project Assistant Rs. 8000-500-9000 pm (Fixed)	Essential: B. Tech. in Agril. Engg./B.Tech. (Food Engg. And Technology)/ M. Sc. (Food Technology)/Master Degree in Chemistry/ Bio-Chemistry/ M.Sc. in Bio-Sciences with specialization in Chemistry / Bio-chemistry. Desirable: Working Knowledge of Computer

Project duration: 2½ Years

Name of the project: Development of process and equipments for value addition of small millets at rural level. Sponsored by: DST, New Delhi.

The project will commence from 1st April 2008 at CIPHET, Abohar. The Walk-in Interview will be held at CIPHET, Ludhiana on 26th March 2008 at 2.30 PM. The interested candidates may send their bio-data through post or through E-mail (ram_k_gupta1959@yahoo.co.in) to Dr. R.K. Gupta, Head, Horticultural Crops Processing Division, CIPHET, Malout Hanumangarh Bye Pass, Abohar – 152116 (Pb.) latest by 20th April 2008.

Awards and honours

<p>Dr. S. Balasubramanian bagged has received best/first prize award and Cash award of Rs. 1500/-for his oral presentation in National conference on prospectus and challenges in food processing as part of CONFERENCES ON RECENT ADVANCES IN BIOENGINEERING. His paper was “Extrusion cooking characteristics of selected cereals-legumes blends to produce RTEBCs”</p>	
<p>Dr. R.T. Patil, Director, CIPHET Ludhiana was honored with BIOVED honorary fellowship 2008 of Bioved Research Society, Allahabad, for his outstanding contribution in the area of Bio Process Engineering.</p>	
<p>Dr. R.K. Gupta, Head, Horticultural Crop Processing Division has received <i>Distinguished Service Award 2008</i>. Award is conferred by the executive committee of Bioved Research Society, Allahabad, for his outstanding contribution in the area of Post Harvest Engineering and Technology.</p>	
<p>Dr. Mridula Devi, Scientist (SS) of Food and Nutrition, has received ‘<i>Young Scientist Award 2008</i>. Award is conferred by the executive committee of Bioved Research Society, Allahabad in the 10th Indian Agricultural Scientists and Farmers’ Congress, 16-17th February 2008 at Allahabad, for her outstanding contribution in the field of bengal gram <i>sattu</i> making technology.</p>	
<p>Dr. Satyendra Kumar, Scientist (SS) of Soil and Water Conservation engineering, has received “Young Scientist Associate Award 2008. Award is conferred by the executive committee of Bioved Research Society, Allahabad, for his outstanding contribution in the field of Water management.</p>	

Technology of the month

Mechanical device for detection of insects in stored grains

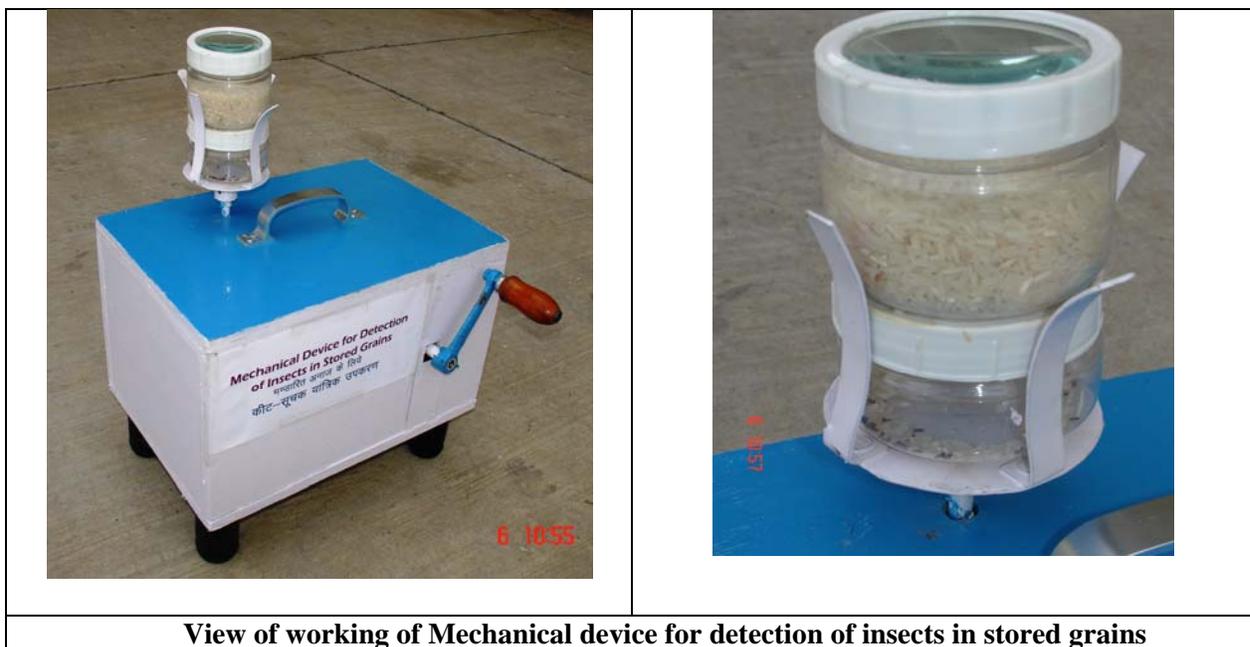
Food grains (cereals, legumes and oilseeds) storage is an essential component in the chain of post harvest management. Grains stored for food and seed purposes suffer with insect infestation that cause considerable quality and quantity loss and lower the crop values. The carry over infestation from the field may lead to a serious damage to grains during storage. Grain stored for consumption, seed and trade purpose needs to regular monitoring for the type and level of infestation in view to prevent the damage. Detection and removal of internal insects from grain kernels are important control measures for longer and safe storage, better seed quality and food safety.

The CIPHET has developed a mechanical device for detection of insects in stored grains. The device is capable of instant detection, and a fair quantification, of insect infestation in stored food grains. The device facilitate the detection of the presence or absence of live or dead insects in stored grain and it also allows to visualize the egg infestation in the grain sample; that further provide a fair quantification of insect infestation level. This is a mechanical device, simple in design and fabrication, portable and in-expensive that provides a unique movement to the grain sample. As a result of the unique movement of clock-wise and anticlock-wise, the hiding insects frightened, scared, wander and then screened out from the grain sample. The device can be suitably used to detect variety of different insects such as: grain borer, rice weevil, red flour beetle, rusty grain beetle, and saw-tooth grain beetle in different types of cereals, pulses and oilseeds and similar commodity that become infested during storage. This device is also capable to detect the carry over infestation from the field harvest. The mechanical device consists of two separate units: a set of insect detecting boxes and another is a mechanical system to provide the desirable motion to the set of insect detecting boxes. The insect detecting boxes has four major parts; upper container for grain samples, magnifying glass at the top lid, circular sieves of different sizes and insect collecting chamber at the bottom.

The desirable motion provided by mechanical unit is the clockwise and anticlockwise semi-circular motion to the detecting boxes. The peculiar and eccentric motion facilitates to agitate the grain samples. This particular motion and churning/agitating of grains samples create frightening experience to the hidden insects that are further trapped in insect collecting box. If there is any dead insect present in the sample, this will also sieve-out and collected in the insect collecting box. The enclosed insect collecting box does not allow the insects to even fly out. Since the grain sample box & insect collecting box both are made of transparent HDPE material; one can easily see from outside the type and number of insects in order to further make an assessment of the infestation level. The device is tested for the stored chickpea grains and detected adults of *Callosobruchus* sp. However, immature and internal feeder could not be detected. Further it was tested for green gram, black gram, rice and wheat to detect insect pest like *Sitophilis oryae*, *Rhizopertha dominica* and *Tribolium castaneun*. The device is also suitably detects insects in flours by changing the size of the disk sieve.

It is even more useful as sampling device in detecting storage pest at regular interval for Central Ware Housing Corporation (CWC), Food Corporation of India (FCI) and other private grain storage; research institutions involves in scientific storage of food grains like IGMRI, SAU, Agricultural

Department of the State Governments etc. The device has been patented by CIPHET recently and is ready for commercial manufacture through licensing.



**View of working of Mechanical device for detection of insects in stored grains
Contributed by Dr. A. K. Thakur, Sr. Scientist (AS&PE), CIPHET, Abohar**

Publications of the month

<p>Technical bulletin no. CIPHET/Pub/02/2007</p> <p>POST-HARVEST HANDLING AND PACKAGING OF OKRA</p>  <p>Deepak Raj Rai S. N. Jha O. D. Wanjari</p> 	<p>Microirrigation in Conjunction with Service Reservoir in Canal Command</p>  <p>Satyendra Kumar, Rajbir Singh, P.R. Bhatnagar, R. K. Gupta and D.D. Nangare</p>  <p>All India Coordinated Research Project on Application of Plastics in Agriculture (APA) Central Institute of Post Harvest Engineering and Technology Abohar-152116 (Punjab)</p>
Bulletin on Post Harvest Handling	Bulletin on micro irrigation

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