Central Institute of Post Harvest Engineering and Technology, Ludhiana
Our Slogan: Produce, Process and Prosper

CIPHET E – Newsletter for July, 2008
Vol. 3 No. 7

Director's Column

Dear All,

To achieve sustainable growth of the country at over 9%, the GDP from agriculture should be maintained at 4% and for that Indian farming community must also be empowered by providing knowledge resources on the changing trends using ICT. In this endeavour the role of agriculture section of **www.indg.in**, a new portal prepared under the guidance of Prof. M. S. Swaminathan and launched by Hon. President of India on July 4, 2008 is very important. It focuses on information on technologies and processes for sustainable use of resources, besides creating avenues for employment and supplementary income for the rural communities. The portal provides information pertaining to agricultural credit, crop insurance schemes, regional specific crop production technologies, dynamic information on market and weather, rural employment programmes, farm-based enterprises, national level schemes related to agriculture, trainings, and events, regional specific information related to animal husbandry and fisheries etc. Other important features of the portal are the discussion forum, which aims to bring the farming community, scientists, policy makers and extension workers onto a single platform and e-Learning course on Sustainable Agriculture (presently in the Telugu language).

Another important topic of concern is about health and nutrition of Indian population and simple and effective solution is the use of composite flour. The wheat flour though has an excellent protein yield but is limiting in the amino acid lysine and that can be included with the addition of millet flours and legume based flours. However efficient blending of flours is not that easy. It is easier to mix the grain and grind them together than blending the flours. In order to provide such low cost flour mixing solution which can be used by a small entrepreneur at their atta chakki, a flour mixing unit was developed at our institute and has been flashed in this issue of newsletter. The cost of this unit is only about Rs. 8000/- including motor and capacity is 200 kg/h.

The CIPHET has also been playing a key role in developing the post harvest management and value addition facilities in North Eastern states. One such facility has been established at ICAR Research Complex for NEH region Barapani. The processing equipment mainly ginger slicer, tray drier, hammer mill, sieve shaker, burr mill, juice extractor, pineapple peeler-cum-corer, pineapple slicer, heat sealing machine, weighing balance etc. were put into operation. CIPHET is also a consultant to NAIP project on 'Livelihood Improvement and Empowerment of Rural Poor through sustainable farming systems in the North East India' and hence this month a special training programme was organized for the CCPIs from Tripura (3), Arunachal Pradesh (1), Maghalaya(2), Mizoram(1) and Nagaland (1). Next training will be for RAs and thus CIPHET will help the Co-PI's of the project in establishing need based food processing facilities at the project sites.

Since we bring out our e-newsletter in the following month, this issue will come to you on the occasion of India's Independence Day and we the CIPHET family wishes you all a very happy **15th August, our Independence Day.**

With best regards

R.T. Patil,
Director

In this issue

Launching of India Development Gateway Portal

India Development Gateway Portal, www.indg.in was launched at Vigyan Bhawan, New Delhi on July 4, 2008. The portal was launched by Hon'ble President of India, Smt. Pratibha Devi Singh Patil. This portal was developed under the guidance of Prof. M.S. Swaminathan, Ex-DG, ICAR. Dr. R. T. Patil, Director CIPHET attended this launching function as one of the partners for providing post harvest related information.

This portal is aimed at empowering the rural India. This initiative will provide incredible information product and services suiting to need of rural community in local languages. At present portal is in six languages, which are Hindi, Marathi, Bengali, Tamil, Telugu and English. This initiative catalyzes the use of ICT for collaboration and knowledge sharing among development stakeholders representing Government, NGOs, community based organization, private and Academic, Research Institutions leading to development.

To meet the objectives of In DG, the following strategy has been planned, namely:

- Leverage the unique partnership structure of the Gateway to build strong credibility and brand equity.

- Deliver value added content and services through the identified verticals on the Gateway, through online and offline presence.
- Propagation of Government schemes through the Gateway.
- Use local languages to the extent possible for content delivery and services.
- Ensure strong pro-poor and pro-women orientation in all programmes.
- Build a framework for financial sustainability.

One of the important sectors in this portal is on agricultural and ICT seems to be altering the equations of knowledge sharing by the day in every sphere and agriculture is no exception. The Indian farming community must be empowered by providing knowledge resources on the changing trends in this field. Keeping this in mind, the Agriculture section of **www.indg.in** focuses on information on technologies and processes for sustainable use of resources, besides creating avenues for employment and supplementary income for the rural communities. The portal presently provides information pertaining to agricultural credit, crop insurance schemes, regional specific crop production technologies, dynamic information on market and weather, rural employment programmes, farm-based enterprises, national level schemes related to agriculture, trainings, and events, regional specific information related to animal husbandry and fisheries etc.

Users can also avail of information regarding issues related to farming through the discussion forum, which aims to bring the farming community, scientists, policy makers and extension workers onto a single platform. An e-Learning course on Sustainable Agriculture (presently in the Telugu language) is a special attraction of the portal.

Keeping the region-specific information needs in mind, In DG plans to focus more of community participation by way of sharing experiences in best practices, innovative technologies and so forth. Next on their agenda is to provide crop-specific and region-specific solutions by integrating the regional level Krishi Vigyan Kendra's (KVKs), extension officials and the private sector to deliver the products and services effectively. In DG also aims to better equip the first-level service providers in rural areas by various products and services like online courses and off-line informative CDs in various Indian languages.

CIPHET scientists attend PSC meeting at IINRG, Ranchi

The Project Screening Committee (PSC) meeting for agricultural engineering was held during 5-6th July, 2008 at Indian Institute of Natural Resins and Gums (IINRG), Ranchi under the chairmanship of Dr.Nawab Ali, D.D.G (Engg), ICAR New Delhi. Dr. R. T. Patil, Director, CIPHET, Dr. S.K. Nanda, Project Coordinator (AICRP on PHT) and Dr. PR Bhatnagar Project Coordinator (AICRP on APA) from CIPHET attended this meeting. Others who participated were Dr. Pitam Chandra, ADG(PE), Dr. S. K. Tandon, ADG(Engg.), Dr. M. M. Pandey, Director, CIAE, Bhopal, Dr. S. Sreenivasan, Director, CIRCOT, Mumbai, Dr. S. Bhattacharya, Director, NIRJAFT, Kolkata, Dr. Bengali Baboo, Director, IINRG, Ranchi, Dr. Surindera Singh, PC FIM, CIAE, Dr. S.K. Routray, PC (UAE) and Dr. L.P. Gite, PC(ESA). Dr. Nawab Ali, DDG (Engg.) welcomed the ADGs, Directors and PCs. He said that this meeting has been convened to review the final reports of the concluded adhoc projects and what is to be done further. There is a need to seriously take stock of work done under adhoc projects and identify the output and the

outcome. He also suggested that there is need to bring out a consolidated report by each PC on the significant achievements made under adhoc projects and suggest follow up actions.


PSC meeting of Engineering SMD at IINRG, Ranchi

Network Project at CIPHET on Livestock Feed Using Crop Residues and Processing Byproducts

The meeting of the networking project on 21st July 2008 The meeting to finalize the partners and programmes of each centre for network project was on "Livestock Feed using Crop residues and Processing by products" was held at ICAR, New Delhi on 21.07.08. The meeting was chaired by Dr. Nawab Ali, DDG (Engg.) and Co-chaired by Dr. Pitam Chandra, ADG (PE). Director CIPHET gave a brief introduction/background of the project and introduced networking centers. Dr. K.K. Singh, Head, FG&OP and Lead Centre PI presented status of livestock feed in India and technical programme of the project. The technical programme of each center was discussed in depth and modified as per suggestions received. The proposed network project has 10 centres excluding CIPHET. The centers proposed are NDRI Karnal, WBUA&FS Kolkata, CIRG Makhdoom, NIANP Bangalore, JAU Junagadh, ICAR Research complex for NEH Region Barapani, CARI Izatnagar, CIAE Bhopal, CSWRI, Avikanagar and CIFA Bhubaneshwar

CIPHET QRT Report Submitted to Council

The QRT report of CIPHET for the period 2002-2007 was submitted by Chairman Dr. Suresh Prasad to Dr. Nawab Ali DDG (Engg.), ICAR, New Delhi on 15.07.2008. Director CIPHET Dr. Patil, Dr K.L. Radhakrishnan, Member QRT, Dr. Pitam Chandra, ADG (PE) and Dr. RK Goyal, Secreatry, QRT were also present on this occasion. The Chairman briefed the salient points of QRT report to DDG (Engg.). DDG (Engg) appreciated the efforts put in by the QRT team and thanked them for the assignment completed within the time.

L to R Dr. Chandra, ADG (PE), Dr. Goyal, PS and Secretary, QRT, Dr. Nawab Ali, DDG (Engg.), Dr. Radhakrishnan, Member QRT and Dr. Suresh Prasad, Chairman QRT CIPHET.

CIPHET Helps NEH for Developing Processing Centre and Training of NEH Officials in Post Harvest Technology

The CIPHET has established a processing facility at ICAR Research Complex for NEH region Barapani. Dr. D. Dhingra, Sr. Scientist, CIPHET Ludhiana visited Barapani and the processing equipment mainly ginger slicer, tray drier, hammer mill, sieve shaker, burr mill, juice extractor, pineapple peeler-cum-corer, pineapple slicer, heat sealing machine, weighing balance etc. were put into operation. CIPHET is also consultant to NAIP project on 'Livelihood Improvement and Empowerment of Rural Poor through sustainable farming systems in the North East India'. In this regard eight participants who are associated in the project visited CIPHET during 24-26 July 2008 for training. They were from Tripura (3), Arunachal Pradesh (One), Maghalaya(2), Mizoram(one) and Nagaland (one). The participants were provided information on processing of fruits and vegetables into various value-added products, such as dehydrated products, RTS beverages, jam, jelly, squesh etc. the related equipment was also demonstrated. The F.P.O. specifications, equipment required for cottage scale unit were also discussed. The processing of food grains and spices was also explained and the working of machines such as cleaner, grader, destoner, burr mill, hammer mill, dal mill was demonstrated. CIPHET will help the Co-PI's of the project in establishing need based processing facilities at the project sites. The consulting scientist from CIPHET Dr. D. Dhingra will be coordinating the activities and helping the centers to get the programme implemented.

Participants from North East for training under NAIP on 'Livelihood Improvement and Empowerment of Rural Poor through sustainable farming systems in the North East India'

CIPHET provides the prototypes of basket centrifuge to ICAR Complex for NEH Barapani for processing of vegetables

As part of the prototype multiplication and testing activity two units of basket centrifuge were fabricated in CIPHET workshop for Division of Horticulture, ICAR research complex for NEH region, Umiam, Meghalaya. 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 cost of the unit is Rs. 15000.00 excluding packaging and forwarding charges.

	
CIPHET basket centrifuge for minimal processing of vegetables for Barapani	Units ready to dispatch after testing L to R Dr. OD Wanjari, Head AS&EC, DR. Deepak Raj Rai, Sr. Scientist and Dr. RT Patil, Director CIPHET

One day Exposure on Food Processing for NITCON Trainees

On 4th July, CPHET Abohar imparted one day exposure on Food Processing for the EDP trainees from NITCON, Chandigarh. About 20 young Entrepreneurs participating in Technology based EDP (Exclusively for Science and Technology persons) organized by NITCON have shown keen inertest 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, Horticulture Crop Processing Division.

Trainees at Kinnow Processing Pilot Plant

Demonstration of Shrink Wrapping of fruits

B.Tech. Engineers Training at Abohar

A group of 14 students from Dr. Ulhas Patil College of Agricultural Engineering and Technology, Jalgaon have attended summer practical training from 4th July to 2nd August, 2008 at CIHPET, Abohar

B Tech trainees working on shrink wrapping of mangos

Institute Management Committee meeting

A meeting of newly constituted IMC was held on 11.07.2008 under the Chairmanship of Director, CIPHET, at Ludhiana. The members of the IMC were Dr. Pitam Chandra, ADG(PE), ICAR, New Delhi, Dr. Partap Singh, Dean, CCSHAU, Hissar, Sh. Harinder Singh Lakhmirwala,Sh. Feroze N. Masani, Nasik (M.S.), Dr. (Smt.) Sangita Ladha, Director, NIPHT, Pune (M.S.),Dr. Shyamal Banik, Principal Scientist, NIRJAFT, Kolkata, Dr. R.K. Goyal, Principal Scientist, CIPHET, Ludhiana, Sh. Tej Ram, Administrative Officer, The special invitees were Dr. S. K. Nanda, PC (PHT), CIPHET, Ludhiana, Dr. R. K. Gupta, Head, HCP, CIPHET, Abohar, Dr. K. K. Singh, Head, FG&OP, CIPHET, Ludhiana, Dr. P. R. Bhatnagar, PC(APA), CIPHET, Ludhiana, Dr. Matthew Prasad, Head, TOT, CIPHET, Ludhiana, Sh. Vijay Kumar, AF&AO, CIPHET, Ludhiana. At the outset, the Chairman, IMC and Director, CIPHET, Ludhiana gave the presentation on the progress of activities being carried out at CIPHET, Ludhiana and Abohar. Sh. Tej Ram, A.O and Member Secretary, IMC briefed the action taken report on the recommendations/ decisions of the earlier IMC meeting. The new Agenda items were discussed which included renovation of museum-cum- conference hall for Transfer of Technology, Establishment of EDP Centre at Abohar, constitution of Grievance Cell etc.

IMC Meeting in progress

L to R Dr. Sangita Ladha, Dr. Pitam Chandra, Dr. RT Patil, DR. Suresh Prasad and Mr. Harinder Singh

B Tech Engineers Training at CIPHET Ludhiana

Institute organizes summer training programmes for B-tech students of various Universities and Institutes .The trainees are allowed to work on the research projects of the Institute under the guidance of Supervisor Scientists. At the end of the training, the students are asked to write training Project Report under the guidance of Supervisor Scientists. Technology Transfer Division of the Institute coordinated the students training programme. During July 2008, 34 students of various Universities/ Institutes have taken summer training at the Institute.

B Tech Engineering Trainees at CIPHET Ludhiana

Training of NAIP Research Associates on "Techniques for Mango Sampling for Non-Destructive Estimation"

Training on "Techniques for Mango Sampling" under NAIP sub-project was held on 15th July, 2008 at CIPHET, Ludhiana. Representatives from all the consortium partner institutes, IARI, New Delhi; CIAE, Bhopal and IMTECH, Chandigarh participated in the training programme. The programme started with an interactive session between Dr. S.K. Nanda, Project Coordinator; Dr. S.N. Jha, Consortium Principal Investigator, NAIP sub-project and the RAs and SRFs in which they introduced themselves and discussed about the status of the project. After that the field and laboratory training for sample handling techniques was imparted to the participants. They were exposed to the basics for sample collection and all the precautions that should be taken during sample collection. They were also shown the method to sterilize the zip pouches in laminar flow cabinet and the method of sample picking and placing in zip pouches. Prior to picking it is necessary to disinfect hands with alcohol and then cut the stem keeping some length of stem and if the sap flows out then in that case the method of desapping be followed. The fruit was kept in zip pouches without making any hand contact and keeping the pouch near the fruit on tree and then zip locked. The samples were transferred to the laboratory where the method to swab the fruit in laminar flow cabinet for biochemical analysis was taught. Lastly, training was imparted for storage of fruits in corrugated boxes for proper transportation of fruits under refrigerated conditions using refrigerated gel packs.


Training of NAIP research associates

Extrusion Processing for Feed (Focus on the Indian Market)

The most common form of animal/poultry/aquatic feed is in the form of mash. In mash the various ingredients are ground and missed. The cost of producing such feed is low. But no cooking or compaction takes place in mash. The ingredients remain in their raw form. In pelletisation feed for livestock is prepared by passing the hydrated mixture through a die. Partial cooking takes place and the feed is in compacted form and on consumption by animals all the ingredients enter the body system. With advancement in technology, extrusion of the hydrated feed (during pre-conditioning) is passed through the extruder in which cooking of the ingredients is done. Also the feed is in compact form and no separation of ingredients take place during feeding. In case of fish floating fish feed can also be prepared by manipulation of the bulk density of the final product. Extrusion technology though expensive provides opportunity to prepare food and feed in various forms. His technology is useful in utilizing the crop residues as well as process industry byproducts.

Dr. D. Dhingra, Sr. Scientist attended a short course on Extrusion Processing for feed (Focus on the Indian Market) during July 17-19 at Vijaywada, Andhra Pradesh. This three day short course was offered by American Soybeans Association in India and Kansas State University, USA. The topics such as ingredient functionality, Extrusion Hardware, Extrusion trouble shooting, Drying theory, Extrusion in Indian Aquaculture, Aquatic feed in India, Advances in pet food and Aquatic Feed Processing & specialty pet treats and co-extruded products were covered in detail by faculty from Kansas State University, Wenger Mfg. Co. & ASA. On third day a field visit to M/s UNO Feeds, Bhimavaram and fish feeding sites was organized. The professionals from M/s Amrit Foods, M/s Mars India, Veteare and ICAR/SAU attended the training programme.

Visit of Farmers Association to CIPHET

The Technology Transfer Division of the Institute organizes visits of progressive farmers to the Institute from time to time. On 30th July 2008, a visit of progressive farmers belonging to **"Farm's Produce Promotion Society**", of Hoshiarpur district was organized. Eighteen progressive farmers including Agro entrepreneurs visited CIPHET and interacted with the scientists. Demonstrations of food processing machines and pilot plants were also organized during the day. Farmers and entrepreneurs showed keen interest in CIPHET technologies.

Farmers showed special interest in utilizing Pilot Plant facilities of the Institute under Custom Hiring Programme.

Progressive farmers from Hoshiarpur district visiting CIPHET and Dal mill complex

CIPHET Scientists Bag ICAR Team Award

The ICAR Award for Team Research for the Biennium 2005-2006 was bagged by CIPHET scientists for the research on processing technology for mustard seed. The team consisted of Dr. Sanjeev Kumar Tyagi, Dr. Mridula Devi and Dr. V.R. Bhagwat. They had developed a new method of separating seed hull with separation of bettering compound (allylisothiocynate). The defatted dehulled bland-taste mustard flour obtained by this process has around 47.8 % protein content. This flour was used to make bakery products, biscuits, cake and noodles, and was found acceptable in terms of taste, flavour and textural properties. Mustard sauce has also been prepared using this blend-taste mustard flour and found having edge in terms of colour, flavour and taste. These technologies have been licensed for five years too a big food company with popular brand name, and Rs 6.45 lakh revenue was generated by the products of mustard seed like hull and allylisothiocynate (both in aliphatic and aromatic form) was separated and tried separately for food grains as environment friendly pest management. Four patents were filed, two technologies were transferred, and three prototypes were designed and fabricated.

Dr. Tyagi receiving the award in New Delhi

L to R: Dr. Bhagwat, DR. Mrudula Devi and Dr. Tyagi

Scientists of CIPHET receiving and displaying the award

संस्थान में हिन्दी की मासिक कार्याशाला एवं संगोष्ठी

हिन्दी की मासिक कार्यशाला एवं संगोष्ठी के अंतर्गत दिनांक 27.07.2008 को संस्थान के सभा कक्ष में श्री तेज राम, प्रशासनिक अधिकारी, द्वारा " सूचना अधिकार अधिनियम 2005" विषय पर प्रस्तुतीकरण किया गया, जिसमें संस्थान के निदेशक, परियोजना समन्वयक, प्रभागाध्यक्ष, प्रभारी अनुभाग, प्रशासनिक, तकनीकी एवं सहायक अधिकारी व कर्मचारी सभी उपस्थित थे।

National Seminar on Amorphophallus

Dr. S. K. Nanda, Project Coordinator (AICRP on PHT) participated in the National Seminar on "Amorphophallus: Innovative Technologies" organized under the joint auspicious of ICAR, RAU, CTCRI and ISRC at Bihar Veterinary College, RAU, Patna during 19-20 July 2008. The Seminar was inaugurated by His Excellency Sri. R. L. Bhatia the Governor and Chancellor at Bihar Veterinary College, RAU, Patna. The session was also attended by Dr. N. L. Mourya, Vice Chancellor (RAU), Dr. B. C. Choudhary, Director of Research (RAU), Dr. H. P. Singh, DDG (Horticulture) and Dr. M. s. Palaniswamy, Project Co-coordinator (AICRP on Tuber Crops).Dr. Nanda presented an invited lecture titled "Processing and Utilization of Amorphophallus" highlighting the nutraceutical values of amorphophallus.

Technology of the Month

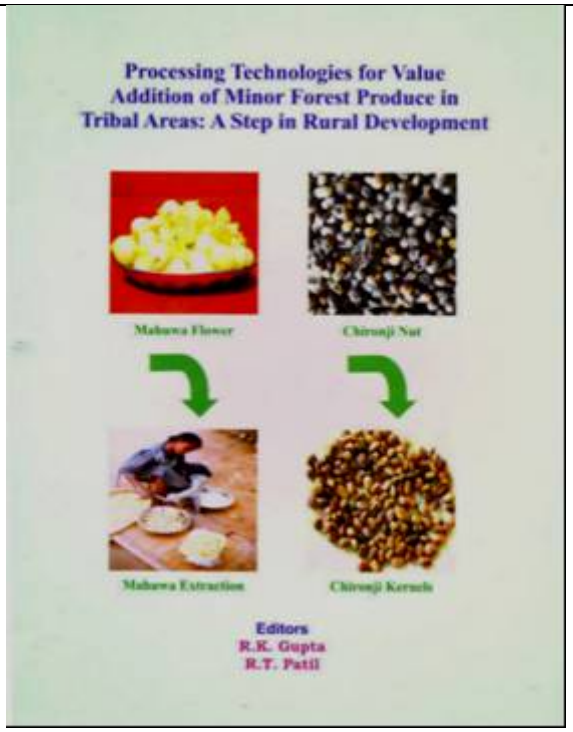
Low Cost Flour Mixing Unit

Awareness about health and nutrition is increasing day by day. Now consumers want to see the nutritional facts of the food products at the time of purchase of food products and demand of nutritious and fortified food products is also increasing very fast. Wheat flour has an excellent protein yield with the exception of the amino acid lysine which can be included with the addition of legume based flour. Hence fortified wheat flour is now being promoted by some of the public-private agencies because this may be one of the simple, convenient and cost effective way of improving the health of population. For preparing high protein and high fiber flour, it is possible to grind the different grains to get the desired quality of flour. But for fortifying the flour with micronutrients, vitamins and minerals are need to be mixed in the flour after grinding. This type of flour can be prepared by using flour mixing unit, developed for the purpose. For large scale production, blenders are available in the market but they are costlier and difficult to afford by a small entrepreneur of a small local chakki. In order to provide low cost flour mixing solution which can be used by a small entrepreneur at their atta chakki, a flour mixing unit was developed at CIPHET Ludhiana. The cost of this developed unit is approximately Rs. 8000/- including motor. The main parts of this flour mixing unit are made up of stainless steel. For making fortified flour, this unit has two hoppers; one is of bigger size and another is small one, which is very good for mixing the premix in main flour. The premix may be flour containing vitamins and

minerals or defatted soy flour or any powdered material that is to be mixed in the main batch of flour. The mixing capacity of developed Flour Mixer is about 200 kg/h. The unique design of the flights of the conveying–cum-mixing screw the mixing efficiency was found to be 99.9 % (ratio of flour color index as per Oliver et al., 1992 (ratio of L-b of mixture flour to L-b of ideal mix)

Low cost flour mixer developed at CIPHET for production of composite flours and micro nutrient enriched flours

Publications of the month



Processing Technologies for Minor Forest Produce

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