

Central Institute of Post Harvest Engineering and Technology,

Ludhiana

Our Slogan: Produce, Process and Prosper



CIPHET E – Newsletter for April, 2008

Vol. 3 No. 4

Director's Column



Dear All,

The loss to the agricultural produce to the tune of 56000 crores annually is a cause of concern for India. The losses are mostly to the perishable and semi perishable high value commodities like fruits and vegetables which are also nutritionally very rich as they are the source of many phyto-chemicals. This loss also makes unavailable valuable food to about 20% population who lives below poverty line as the cost of these crops are rise mainly due to loss factor. The losses are due to non availability of adequate infrastructure for its pre-cooling, packaging, storage and also due to inefficient machinery as well as low level of processing.

Now this concern has been experienced globally especially in developing countries. Hence the first global conference on agro-industries jointly organized by FAO, the United Nations Industrial Development Organization (UNIDO) and the International Fund for Agricultural Development (IFAD), in close collaboration with the government of India, was held in New Delhi from 8-11 April 2008 to promote the importance of agro-industries for economic development and poverty reduction.

The rapid globalization, market liberalization, and urbanization have created new opportunities; however, they have also created challenges and increased risks due to inefficient agro-industries. The value addition by processing one tonne of agricultural products in developing countries is only US\$40 compared to on average, US\$180 in developed countries.

Increasing the market opportunities particularly for small-scale producers in rural areas, by improving their production, processing and marketing capabilities, was one of the main issue of the conference. The importance of post harvest management and value addition in production catchments for rural employment is being felt all over the world hence this conference was addressed by honorable Prime Minister of India, Dr. Manmohan Singh, together with Jacques Diouf, Director General of FAO, Kandeh K. Yumkella, Director General of UNIDO and Lennart Bage, President of IFAD on April 10, 2008.

The month of April was of review and introspection for CIPHET as five yearly Quinquennial review was being conducted for CIPHET and both its AICRPs namely Post Harvest Technology and Application of Plastics in Agriculture by eminent scientists and experts in the field. We were also fortunate that Sh. AK Upadhyay, Additional Secretary DARE and Secretary ICAR visited our institute, listened to our problems and encouraged and motivated us for the R&D and its effective transfer to end users.

With best regards

**R.T. Patil,
Director**

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Global Agro Industries Forum 2008

This international forum has been formed to develop competitive agro-industries is crucial in member countries for creating employment and income opportunities and for enhancing the demand for farm products. The agro-industry development has the potential to provide employment for the rural poor in off-farm activities such as handling, packaging, processing, transporting, and marketing of food and agricultural produce. However there are also risks and trade-offs in agro-industrial development often affecting the most vulnerable countries and people. This forum is therefore important to formulate sound policies and strategies for fostering agro-industries in the member countries. Director CIPHET, Dr. RT Patil and Project Coordinator, Dr. Nanda attended this Global Agro Industries Forum at New Delhi during April 8-11, 2008. This forum was jointly organized by FAO, UNIDO, IFAD and Govt. of India. From the Govt of India, Ministry of Food Processing Industries and Ministry of Agriculture were involved. The ICAR under DARE was given major responsibility for organizing this event.

First day, i.e. 9th April, 2008 had the following events:

1. “Innovation on agro-industries” organized in collaboration with the Confederation of India Industry for worldwide Industry presentations from GAIF delegates.
2. Plenary Addresses by Colin Dennis, Director General, Campden and Chorleywood Food Research Association and Bill Vorley, Head, Sustainable Markets Group of IED.
3. Forum was inaugurated by Mr. Sharad Pawar, Union Minister of Agriculture of India. Mr. Jacques Diouf, Director-General of FAO; Mr. Kandeh K. Yumkella, Director- General of UNIDO; Mr. Lennart Bage, President of IFAD.

The GAIF had 12 competitiveness round table discussion held concurrently on 10th of April, 2008 as given below:

1. Competitiveness Round Table 1- Understanding Markets: Market Research and Intelligence.
2. Competitiveness Round Table 2- Meeting Consumer Requirements Quality, Safety, Emerging Concerns.

3. Competitiveness Round Table 3- Improving Productivity: Technology Acquisition and Utilization.
4. Competitiveness Round Table 4- Strengthening Business Linkages: Value Chain Development.
5. Competitiveness Round Table 5- Differentiating Products: Branding and Certification.
6. Competitiveness Round Table 6- Attracting Investment: Agro Industries and Agro-Enterprise Finance.
7. Competitiveness Round Table 7- Staying competitive: Innovation, Product Development, Adaptation.
8. Competitiveness Round Table 8- Improving Efficiency: Agro-Industries Operations Management.
9. Competitiveness Round Table 9- Organizing Smallholders: Producer Organizations and Cooperatives.
10. Competitiveness Round Table 10- Establishing Clusters: agro-industrial clusters and food parks.
11. Competitiveness Round Table 11- Reducing Costs: Infrastructure Development.
12. Competitiveness Round Table 12- Human Resources Development.

This was followed by address by honorable Prime Minister at the same venue.

On 11th April, there were regional workshops of 5 regions of the world, i.e. Africa, Asia and the Pacific, Eastern Europe and Central Asia, Latin America and the Caribbean and Near East. Director, CIPHET attended to the workshop related to Asia and the Pacific regions and participated in the deliberations and suggested the following:

1. Since, the stress of GIAF was developing Agro Industries in the production catchments, the infrastructure should be provided by the governments for as installation of cold storage, IQF and refrigerated transport on priority to contain the losses.
2. Since, the vegetable market and mobile vegetable vendors are the major player in the distribution of perishable food items like fruits and vegetables, they should be given excess to the cold chain equipment on per tonne basis. This will involve modernization of *subzi mandi* by providing the facilities of refrigerated/cold storages which can be used by the vendors for short term storage for fruits and vegetables on subsidized rates.
3. So far we have been talking about production agriculture. There are many international R&D institutes devoted to production and productivity aspects like IRRI, ICRISAT, CIMYT etc. but there is not a single international institute who can facilitate R&D and exchange of information on the Post Harvest Management and Value Addition among the different countries, hence there is a need to establish on such institute to reduce the losses due to lack of technical backup in developing countries.

The meeting was concluded in the plenary session with reports of deliberations from all regional workshops followed by closing session address by representative from FAO, UNIDO and IFAD. The valedictory address was given by Shri.Subodh Kant Sahay, Minister of State (Independent Charge); Ministry of Food Processing Industries, India.



L toR Drs KP Sudheer, J. T. Sharif, B. Ranganna, RT Patil and SK Nanda

QRT Meeting at CIPHET Ludhiana

The Second Meeting of Quinquennial Review Team (QRT) of the Institute was organized during April 07-08, 2008 at CIPHET, Ludhiana to review the work done by CIPHET for the period of 2002-2007. All the PIs presented the progress reports of their ongoing as well as completed projects during the review period. Each project was reviewed critically and QRT members were briefed about the status of technology generated from the project. An industry visit was also organized and QRT members were taken to Mrs. Bector's Food Specialties Ltd., Phillaur, Jalandhar to which Institute had transferred two technologies namely mustard flour and mustard sauce. Institute also provided consultancy to design and develop a pilot plant for production of mustard flour. QRT members had discussion with the General Manager and Managing Director of the company. At the end of two days review meeting, Chairman and members were of the opinion that institute has been doing well as visible from the publications institute scientist have brought out during the reported period and technologies generated for commercial exploitation. The QRT members were of the view that that accelerated efforts be made for commercialization so that the end-users are aware of their benefits and contribution of the institute is duly utilized and recognized.



L to R: Dr. Bhattacharya, Dr. RT Patil, Dr. Suresh Prasad, Chairman, QRT CIPHET, Dr. Mohanty and Dr. Vijaya Khadar



A QRT meeting in progress at CIPHET Ludhiana

Quinquennial Review Team visits CIPHET Abohar

The members of the QRT for CIPHET had their 3rd meeting at CIPHET, Abohar campus during April 29-30, 2008. The activities started with inaugurating the new orchard plantation of pomegranate and Aonla plant in front of Guest House in about 4 acres under drip irrigation system by the Chairman, QRT followed by a formal meeting in a seminar hall. The ongoing as well as completed projects of Horticultural crops processing division were reviewed in this meeting. In the afternoon, the team visited Punjab Agro Juice Plant, an orchard of progressive farmer Mr. Hayer and an entrepreneur Mr. Rishi Rai, who was motivated by CIPHET to take up soya-milk enterprise.

On 30th the committee continued with the meeting in the seminar hall and on completion of presentations, the committee visited the laboratories, institute farm and saw the water storage facility for irrigation studies, water purification plant, vermin-compost unit and low cost poly houses as well as orchards where various experiments are being performed. The committee also saw the pilot plant for kinnow processing at CIPHET Abohar and workshop where the recently designed pomegranate aril extracting machine was being fabricated. The committee also visited farmers' field at Variyam Khedda, Farmers Fresh Processing Plant at Mauzkhadh and Bedi Farm at Fazilka. Team had discussion about their technology and the technical help provided by CIPHET particularly pomegranate plantation in Bedi Farm at Fazilka. The members also visited grading and packing plants of Sh. Surender Jhakkhar, Chairman, IFFCO and an orchard of Pomegranate at Ferozepur. All these farmers and entrepreneurs received technical advice from CIPHET from time to time.



Third QRT Meeting April 29-30, 2008 at CIPHET, Abohar



Chairman of QRT Dr. S. Prasad planting pomegranate tree in newly developed orchard



Visit of QRT to display room at CIPHET Abohar



Dr. S. Prasad, inaugurating Pouch Filling cum Tablet making unit at CIPHET, Abohar



QRT member Dr. Mrs. Khadar inspecting the tomato crop in low cost green house at CIPHET Abohar



QRT visiting Farmers Fresh Processing Plant at Mauzkhadh (Abohar)

Interactive Workshop on “Administrative and Financial Matters related to ICAR institutes”

An interactive workshop on “Administrative and Financial Matters” was held at ZCU-I, Ludhiana on 17-18 April, 2008 in which Directors, AOs and FAOs of 24 ICAR Institutes were the participants. From CIPHET, Ludhiana, Dr. R.T. Patil, Director, Sh. Tej Ram, AO and Sh. Vijay Kumar, AF&AO were the participants. While addressing the house, Sh. A.K. Upadhyay, Secretary, ICAR discussed with the participants the various issues i.e., Court cases, RTI Act etc. Sh. Ram Avtar, Chief Vigilance Officer, ICAR has given a presentation on vigilance matters and he has also given reply of some queries from the Institutes. Sh. Sanjay Gupta, Dy. Secretary (Admn.), ICAR has given a presentation on Right to Information Act and also he has given a lecture on reimbursement of medical claim and discussed the various aspects of medical claims. Sh. Radhey Shyam, Dy. Director (Finance) delivered a lecture on finance matters of the ICAR Institutes and sort out some queries of the participants. After every presentation stated above, the Additional Secretary DARE & Secretary, ICAR concluded with his valuable remarks and advised the participants with his tips for smooth and efficient working of whole ICAR system.

Sh. A.K. Upadhyay, Additional Secretary DARE & Secretary, ICAR visits CIPHET, Ludhiana

Sh. A.K. Upadhyay, Additional Secretary DARE & Secretary, ICAR visited CIPHET, Ludhiana on 17.04.2008. During his visit, he planted an Alstonia plant near the Administrative Block. Dr. R.T.Patil, Director gave a presentation to the Secretary, ICAR on the activities and R&D work being done at CIPHET, Ludhiana & Abohar. While addressing to the staff, the Secretary, ICAR stated that more attention should be given to transfer the technologies developed at CIPHET to upcoming entrepreneurs, so that they can take advantage by applying it post harvest management and value addition in production catchments which ultimately will result in better returns to the farmers. On the situation of shortage of staff at CIPHET, the Secretary stated that a proposal should be moved to the Finance Section for revival of posts with complete justification under intimation to him, so that efforts could be done to revive some posts for CIPHET.



A tree plantation at CIPHET by Sh. A.K. Upadhyay, Additional Secretary DARE & Secretary, ICAR visited CIPHET, Ludhiana on 17.04.2008.



Sh. A.K. Upadhyay, Additional Secretary DARE & Secretary, ICAR visiting the labs and pilot plant facilities at CIPHET, Ludhiana



Sh. A.K. Upadhyay, Additional Secretary DARE & Secretary, ICAR addressing the CIPHET staff

Quinquennial Review of All India Coordinated Project on Application of Plastics in Agriculture

The third meeting of the QRT, AICRP on APA was organized at Birsa Agricultural University, Ranchi and Central Institute of Freshwater Aquaculture, Bhubneswar during 10-11 April 2008. Dr. Pramod Rai presented the objectives and progress under the project. Dr. RK Singh, Senior Scientist and research engineer of APA at ICAR complex for NEH region, Barapani presented greenhouse concept for terrace farming for crop cultivation as well as fish farming. Greenhouse performed well to protect crop from insect and paste and high rain and wind prevailing weather condition of NEH region. The QRT members visited the Krishi Gram Vikash Kendra in Rukka village situated near Ranchi. It is an NGO own by Sh. BK Jhawar. Mr.Pathak, Agricultural Specialist working with NGO was available to explain the activities. They have established TVM (Total Valley Management) *Gurukul* concept.

On 11 April 2008, QRT visited the Horticulture and Agro-forestry Research Program (HARP) at NamKum to see the rainwater harvesting and concept of farming for plateau area. The live demonstration in farm on multiple uses of harvested rainwater with fish, cereal, pulse,

and horticultural crop production using gravity fed drip irrigation was demonstrated. A new concept of micro-tube layout for adult litchi plantation was also observed in the Plandu farm.

On 12 April 2008 QRT visited to CIFA, Bhubneswar and seen the various fish species (Indian and exotic) suitable for profitable farming in the region. The Bhubneswar centre has developed the FRP hatchery of various sizes. They have distributed 42 hatcheries to various fish production agencies. Center is working on the auto feeder for fish. Center is also working on live fish silo of various capacities, greenhouse fish pond and MAP for fish.

Quinquennial Review of All India Coordinated Project on Post Harvest Technology

The QRT of AICRP on Post Harvest Technology consisting of Prof. Satish Bal, Chairman, Dr. R.K.Jain, Dr. U.S. Shivhare, Dr. A.M. Paturkar and Sh. Pawan Agrawal members conducted its meeting at G.K.V.K. Bangalore on April 21-22, 2008. Work done by the centers located at VPKAS Almora, RARS Anakapalle, PHTC Bapatla, GKVK Bangalore, TANUVAS Chennai, TNAU Coimbatore, CPCRI Kasargod, COAE Raichur, KAU Taranur and CTCRI Trivandrum was reviewed during the meeting. The QRT also visited the Bangalore centre and interacted with the research engineers and staff of the scheme.

CIPHET Scientist on deputation to United States on DBT fellowship

Dr. Harinder Singh Oberoi, Scientist (SS) – Microbiology of this institute has been awarded the long term overseas associateship by the Department of Biotechnology, Ministry of Science and Technology, Government of India for a period of one year. Dr. H.S. Scientist (SS) has been deputed for availing this award (long-term), 2006-07 at Kansas State University, USA for 12 months w.e.f 16.04.2008. He would be working in the area of cellulosic ethanol production with scientists from KSU. His main work would focus on developing cost effective technologies for production of enzymes and ethanol using lignocellulosic material. Incidentally, University of Arkansas has been awarded the project on Ethanol production from crop residues by USDA under Indo-US Agricultural Knowledge Initiative with CIPHET as a lead partner from the Indian side in this project. This collaborative project focuses on developing commercial feasible technologies for pelletization and delignification, hydrolysis through enzymatic saccharification, fermentation, strain improvement and use of by-products obtained during the pretreatment for industrial applications

Promotions-Congratulations

Sr. No.	Name and Designation	Grade/Scale of promotion	Date of promotion
1.	Dr. (Mrs.) Mridula Devi, Scientist (SS) (F&N)	Sr. Scientist/ Rs. 12000-420-18300	26.05.2007
2.	Dr. S. Balasubramanian, Scientist (SS) (AS&PE)	Sr. Scientist/ Rs. 12000-420-18300	30-10-2007
3.	Dr. D.M. Kadam, Scientist (AS&PE)	Scientist (SS)/ Rs. 10000-325-15200	10.07.2007

Technology of the month

Cultivation of summer squash with low plastic tunnel: A success story

This technology was transferred to Mr. Sanjeev Ahuja of Village Khuban Teh. Abohar (Dist. Ferozepur), a progressive farmer. Mr. Ahuja was very interested to use low tunnel technology for production of off-season vegetables for sale in market as early vegetables so that he can fetch higher prices in the market. He consulted with scientists at CIPHET, Abohar and discussed the technology of off-season production of vegetables. During last season, he used this technology in one acre for growing summer squash (F₁ hybrid, Chandrika). He prepared nursery of summer squash and transplanted in field in mid December, 2006 under plastic low tunnels in about one acre. The crop was ready to harvest in the 2nd week of February, consequently he harvested 1st picking but unfortunately the crop was damaged severely by hailstorm on 13.02.2007 which damaged the crop but the crop was saved from the hailstorm as the impact of hail was reduced due to the plastics and then the crop recovered the shock and fruiting started after two weeks and he earned the profit with a cost benefit ration of 1: 2.62. The damage of storm has reduced the yield by 30% but even than he got handsome profit out of this venture (40,000 rupees/acre). Now, Sh. Sanjeev Kumar is very happy as his new experiment was quite profitable and he is planning to replicate this experiment on a larger area and with some new crops also. He is highly appreciative of the guidance from CIPHET scientists for his success with low cost plastic technology for off-season vegetable production.

The detail of his experiment and date wise operation and economics of summer squash:

Name of crop	Summer squash
Name of variety	F1 hybrid of Chandrika
Date of nursery sowing	10.11.2006
Date of transplanting	15.12.2006
Date of use of plastic tunnel	16.12.2006
Removal of tunnels	15.02.2007
Date of 1st Harvesting	08.02.2007
Date of last harvesting	20.05.2007
Total yield of crop	80 q/acre
Total cost of cultivation including plastic tunnels	25,000.00
Gross returns (Sale price @ Rs8.2/kg)	65500.00
Net returns/income	40,500.00
Cost: benefit ration	1:2.62

The crop was severely damaged by hail storm on 13.02.2007



CIPHET scientist Dr. Rajbir Singh and technical staff in the entrepreneur's field



The view of farmer's field of Sh. Sanjeev Ahuja who has grown summer squash with the use of low plastic tunnels

Publications of the month



CIPHET Report 2006-07

AICRP Report 2005-06

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