From the DG’s Desk

Dear Readers,

Our country is fortunately endowed with a wide range of agro-climatic conditions that support growth of an equally diverse range of plant and animal species. On account of this species richness, it is identified as one of the mega-centres of diversity. Globally, we are among the largest producers of wheat, rice, pulses, sugarcane, fresh fruits, vegetables, coconut, cotton, jute, milk, eggs and fish. A large amount of biomass is produced every year but the consumable portion forms only a fraction of the whole plant, animal or animal produce consequently, generation of waste is inevitable. Despite being referred to as ‘waste’ it is in fact a potential source of raw material for the production of economically valuable products. An estimate of agricultural by-products from all crops, livestock and fisheries sector indicates these to be about 700 million tonnes annually. It is estimated that only 25% of this by-product is presently utilized. The amount of organic matter thereby generated far exceeds the gross requirements. Clearly, these large quantities of agricultural by-products end up as wastes and due to lack of appropriate disposal system they
create problems of pollution, pose health hazards and other associated problems. Closer scrutiny of these huge quantities of ‘wastes’, however, suggests that no part of the food production system is a waste. A suitable value addition to match it with the requirements can convert this waste into wealth.

Several efforts have been made, many of them though not concerted, to add value to the by-products with very promising results. Cotton stock has been very efficiently used for the manufacture of particle boards; cotton gin waste has been processed to generate biogas as well as high quality manure. Residues from several crops have been utilized for gasification and the resulting fuels have been successfully used for running engines and other mechanical devices. Mustard seed coat has been found to be an excellent source of edible dye and rich in insect repellant compounds. High quality paper and stationaries have been developed from jute and cotton wastes. The banana stem, pineapple leaves and several other fibre crop residues have yielded textile grade fibres and high quality cellulose powder.

The fresh fruit peels are a source of essential oils that can be used in making cosmetics and toiletries and can also be used to supplement animal feed. The total monetary value of the agro-byproducts could be equal or even greater than the value of the main produce. Safflower petals have been utilized for natural dyes and herbal healthcare products.

Our country has large population of cattle, buffaloes, sheep, goats and camels and their approximate number is 490 million. In the livestock sector, the waste material comes from the dung, skins, horns, hides, bones, and blood and other body parts from the abattoirs, by-products of milk processing, etc. The agricultural wastes, particularly from livestock and fish industry, pose several environmental problems that could also impact local ecology. The amount of wastes and the composition of the waste materials are major problems. Therefore, proper management of these wastes and their subsequent disposal is essential.

The use of bone meal in fertilizer industry is already well-known. The wet dung production of cattle and buffaloes alone in our country is about 615 million tonnes. The dung alone provides Rs 5,700 crore worth of manure and Rs 4,000 crore worth of fuel. An analysis of urine has shown that nitrogen content of cattle, buffalo and sheep urine is 1.21, 0.62 and 1.47 per cent, respectively. The use of animal wastes in form of blood, bones, guts, etc. find use in the pharmaceutical and other industries.

The fish farming is another important sector that generates considerable quantities of waste. While harvesting the fishes and penaeid shrimps, the fishing fleet also catches considerable amount of bycatch that includes the non-targeted species and discarded catch that is thrown back into the sea. It has been estimated that annual bycatch in the world fisheries is about 29 million tonnes of which an estimated 27 million tonnes are discarded. A survey of the fish landings in our country also indicates that bycatch discards estimate is around 15 to 20 per cent of the total fish landings annually. All over the world bycatch, which is supposed to be the waste, is utilized for production of fishmeal and manure.

The second major waste material in the fisheries sector is from seafood processing. There are a number of by-products obtained from fish and shell-fish during the course of their processing. These by-products are commercially important materials finding application in several fields. More than 1 lakh tonnes of prawn and other crustacean shell wastes that are available annually from prawn processing centres in India can be converted into chitin and chitosan. Both these products have high export value due to their wide applications in medicine and pharmaceuticals. It is estimated that about Rs 400 crore can be raised annually as resource of income by using entire 1 lakh tonne of prawn shell waste.

The cuttle fish and squid processing industries also generate 30% as waste, which amounts to 30,000 tonnes/annum. The ICAR has already developed the technology for converting this waste into a protein-rich product useful for preparation of animal feed. Several entrepreneurs have come forward and shown keen interest to adopt this technology on a commercial scale. Likewise, another waste material is from surmi processing plants, which has high contents of calcium, phosphorus and protein and can be used as feed in poultry farm. ‘Isinglass’ a product prepared from fish airbladders with wide application in beverages like beer and wine industry has already been commercialized. Absorbable sutures prepared out of intestine of fresh catfish, has now become an important product with wide application in medical sciences.

These few examples clearly indicate that agricultural by-products could be converted into very useful products, and at times main products, adding to the income and reducing the negative impact on environment. In view of national concern to prevent infiltration of pollutants in the environment, low-priced substitutes for sources of energy, fertilizers, various other products and diversifying agro-industry are to be developed indigenously. The recycling and reuse of the ‘so called agricultural waste’ will surely reduce pressure on our natural resources, generate employment, enhance sources of income, and also increase returns to investments on research. The utilization of waste will create beneficial activities, which will directly mitigate environmental problems and related issues.

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Mangala Rai
76th Annual General Meeting of the ICAR Society

‘Hybrid Technology has a High Potential to Increase Productivity’
—Sharad Pawar

The ICAR scientists rose to the occasion and provided all the technological assistance to ensure speedy rehabilitation of agriculture in affected areas. The ICAR scientists rose to the occasion and provided all the technological assistance to ensure speedy rehabilitation of agriculture in affected areas.

The government has set the target of doubling food production by the end of 11th Five Year Plan. This is a great challenge and it will have to be achieved against depleting and degrading natural resource base. We have already reached the limits of utilizing the cultivable land in the country and the availability of good quality water for agriculture is declining. The issues of productivity enhancement along with minimizing production losses through risk management, processing, value addition, commercialization etc. must be linked and addressed in a holistic manner.

The agriculture minister said that hybrid technology has a high potential to increase productivity, resistance to biotic and abiotic stresses in a number of field and horticultural crops. Biotechnology is globally emerging as an effective tool for attaining new horizons in crop, animal and fish productivity, enhancing nutritional quality and shelflife.

Seed is the basic and essential input for agriculture and other inputs. Therefore, production of seed, planting material and germplasm is presently a constraint for enhancing productivity. Therefore, the production of these are to be increased both in terms of quantity and quality. The Council has recently formulated a major project to produce high quality seed and planting material.

Shri Pawar said that use efficiency of inputs like water, bio-energy, plant and animal residues, feeds and fodders, fertilizers and pesticides is very low and when resources and inputs are used inefficiently both cost of cultivation and threat for biosphere pollution increase and production decreases. The inefficient use of water also leads to inefficiency of all other resources/inputs.

The minister said that diversification of agriculture is a viable strategy to enhance income and employment. Horticulture in this direction would be the most relevant with about 150 million tonnes of horticultural produce, India is the second to China. The Government of India has launched National Horticulture Mission with an...
outlay of Rs 2,300 crore to double horticultural production by 2012.

Shri Pawar said it is time now that our SAUs reorient their course curricula and place more emphasis on new and emerging areas such as biotechnology, computer applications, GIS, IPRs, international treaties and conventions. The change in agricultural education should focus on inculcating entrepreneurship and professionalism in agriculture students. The Council has established a large network of Krishi Vigyan Kendras mainly for technology dissemination, refinement and frontline demonstration of technologies. The farmers are benefited from technology demonstrations, training and extension activities undertaken by the KVKs. We must address the issues of increasing unemployment, educated unemployment and massive underemployment in agriculture. Unless agriculture becomes economically rewarding, it will be highly difficult to attract or retain youth in farming.

Dr Mangala Rai, DG, ICAR welcomed the gathering and expressed gratitude to the President of the ICAR Society, Shri Sharad Pawar, esteemed members of the Society and eminent scientists for having made it convenient to attend this important meeting.

Presenting some of the salient features of the progress and achievements in agricultural research, education and extension and the initiatives taken by the Council towards enhancing agricultural productivity, sustainability and profitability during the year, Dr Rai said, the Council actively participated in rehabilitation process of Tsunami victims working hand-in-hand with other government departments.

The ICAR Director-General said that during the year a total of 4,021.38 tonnes of breeder seeds of oilseeds (1,811.57 tonnes), cereals (1,469.54 tonnes), pulses (674.58 tonnes), forages (38.57 tonnes) and fibre crops (27.12 tonnes) were produced. The Zero Till Technology spread to nearly 1.5 million ha has resulted in a net annual resource saving of about Rs 350 crore.

During the year, the Council was able to establish 128 KVKs raising their number to 451 by March 2005. The number of KVKs now stands at 485. The Council, through its institutes, had generated internal resources amounting to Rs 25.56 crore in 2003–04. Against a target of Rs 56.85 crore fixed for 2004–05 the Council has realized Rs 42.63 crore. A National Agricultural Science Museum was dedicated to the nation in 2004 by the Hon’ble President of India which depicts chronologically the saga of Indian agriculture from its origin and evolution, he said.

Focussing on agricultural education, Dr Mangala Rai said that the ICAR has provided financial support to the State Agricultural Universities, SAUs for development of undergraduate and postgraduate programmes to expand and improve quality and utility in agricultural education and training. It goes to the credit of the Council that the ATICs provided 736.3 tonnes of seeds of improved varieties, 0.79 million planting materials, 4.03 million packets of biofertilizers and biopesticides and 15,405 implements to farmers.

The ICAR chief said that the Council has filed 52 applications for patents of new technologies, and assigned 31 technologies to the National Research and Development Corporation for commercialization. The DARE and ICAR have been operating partnership and linkages at the national and international level through memoranda of understanding (MoUs/Work Plans), training courses, exchange visits etc. It is the continued endeavour of the ICAR and DARE to make agricultural research, education and extension more responsive to developmental needs of the nation, he said.
India and Food and Agriculture Organization (FAO) have decided to cooperate in the area of human resources development. This was agreed upon in a meeting between Mr Jacques Diouf, Director-General, FAO and Dr Mangala Rai, Director-General, ICAR in New Delhi.

Both sides will work closely in training and institution building in agricultural research and extension. DG, FAO was on a three-day visit to India.

Both sides identified Seed Programme as a thrust area for closer cooperation. DG, FAO appreciated the progress made by India in seed production technology and quality control and said that this could be an ideal model for African countries to follow.

Dr Rai assured to extend all possible help in this regard considering India’s expertise in the area. “Experience of India could be of great help in crop improvement programmes also”.

Identification and cooperation in alternative energy sources was another area on which both sides agreed to have closer interaction in terms of sharing of information. Mr Diouf highlighted the fact that this would be a priority area for FAO and it would be linked to this matter urgently.

Earlier, DG, FAO called on Shri Sharad Pawar, Union Minister of Agriculture, Food, Public Distribution and Consumer Affairs and discussed about the possibilities of cooperation in agriculture related areas. He visited National Research Centre for Plant Biotechnology and National Bureau of Plant Genetic Resources along with a visit to rice fields of IARI. He appreciated the exhibits put up at the National Agricultural Science Museum of ICAR and said this would prove to be a very useful medium to know about the history of Indian agriculture.

Food and Agriculture Organization (FAO) is the apex international organization in the field of food and agriculture. Its main aim is to promote welfare and freedom from want through improving levels of nutrition and the efficiency of food and agriculture including fishery and forestry production and distribution. India is a founder member of FAO and has been member of FAO Council.

FAO provides technical assistance to member nations through Technical Cooperation Projects under its Technical Cooperation Programme. On an average, FAO approves two TCP projects for India every year. During the year 2005, Department of Agricultural Research and Education (DARE) sent two agricultural experts on consultancy mission to other developing countries to help the rural economy there. DARE also nominated six agricultural experts for participation in the workshops/conferences organized by FAO.

One FAO-IAEA Project, namely ‘Studies on interaction of fibre degrading microbes and methanogenic bacteria in the rumen for reducing methanogenesis’ is in operation at the Indian Veterinary Research Institute (IVRI), Izatnagar since April 2004. Another project ‘Identification and Pyramadic genes for improving salt tolerance and seed yield in Indian mustard under salinity citrus’ is under pipeline for implementation at Central Soil Salinity Research Institute (CSSRI), Karnal for the current year.

‘Pro-active Partnership Mode in IPR Management Needs to be Adopted’

–Dr Mangala Rai

The 3-day National Conference on IPR and Management of Agricultural Research was held in New Delhi. Dr Mangala Rai, DG, ICAR, stressed the need to adopt a pro-active approach in IPR management in the country, particularly in the agricultural sector. While inaugurating the conference, Dr Rai said that instead of fighting the poaching efforts by others on our traditional knowledge, the time has come to set our house in order in terms of documenting our knowledge in a language which the whole world understands and bringing the same in a public domain. In order to capitalize the national collective strength, there...
is a need to work in a partnership mode through a network and consortium mode, he said. Two hundred delegates from various Government Departments, ICAR Institutes, State Agricultural Universities and Private Firms attended the conference, organized by ICAR and Indian Potato Association.

Dr Rai in his speech indicated that the country possesses the required institutional capabilities in terms of human resource in agricultural research as also in terms of laboratories and other facilities. These capabilities should be tuned to shifting focus of agricultural research, wherein mining, characterization and use/transfer of genes to particular crops/organisms for specific traits is going to be the order of the day. “In this regard, the role of innovating would be paramount but, at the same time, it would be further important to manage the intellectual property more effectively as well as maintain public interest and the interests of farmers”, he said.

DG, ICAR underlined the importance of protection of plant varieties in terms of the Indian agricultural scenario and said, “ICAR is committed to surf between reinforcing the domestic public good and harnessing the competitive market for Indian varieties abroad”. While referring to various legislations like the Protection of Plant Varieties and Farmers’ Rights Act, Biodiversity Act and Indian Patents Act, which have been put in place in recent years, he emphasized the importance of synergizing agricultural research, national IPR laws and regulatory mechanisms concerning agricultural subjects.

Drawing attention of the participants towards the present WTO regime, Dr Rai talked about the necessity in having a pragmatic and competitive approach in the process of decision making by way of reinforcing traditional technologies with agricultural biotechnologies.

Recognizing the importance of incentive system, Dr Rai said, “we will have to think of incentive and reward system for all those who excel in generating IPR with tangible benefits. System must be tuned to appreciate merits to encourage meritorious efforts”. He assured the delegates that ICAR would extend all support for increasing awareness and enhancing literacy for IPR and capacity building.

He asked ICAR institutions like NAARM and deemed universities as well as State Agricultural Universities to develop suitable IPR curricula for degrees and diplomas, centres of excellence, trainings and awareness programmes in relation to IPR, commercialization and linkages so that it would lead to enhanced national capabilities for addressing the concerns in these areas.

Dr Rai said that the knowledge in today’s world has come to be known as wealth and the indigenous traditional knowledge needs to be protected. He requested the delegates to come out with a roadmap and a strategy to indicate the kind of enabling environment and means of mechanism required to judiciously manage IPR portfolio.

In the conference, the issues of patent and sui generis IPR protection system in agriculture. IPR management strategies and approaches to get some clarity on the issues and problems related to management of IPR in agricultural research system were discussed. The participants would be deliberating on the topics of patenting in the Indian context, patenting and IPR portfolio management, technology transfer and public-private partnership, facilitated access to genetic resources and associated knowledge etc.

The Protection of Plant Varieties and Farmers’ Rights Act 2001 provides for protection of new varieties, extinct varieties, farmers’ varieties and essentially derived varieties. It covers all categories of plants except micro-organisms. The act proposes to recognize the contributions of farmers and traditional communities to the country and makes provisions for benefit...
sharing. The Biological Diversity Act 2002 aims at preserving, regulating and managing biological resources for sustainable use through the National Biological Authority, and approval for access to genetic resources.

During 1995–2004, a total of 415 patents were granted in India. Out of these, 250 patents were granted in biocides, pest repellents and plant growth regulators, while 165 patents were granted in plant reproduction, horticulture, forestry, animal husbandry, harvesting, soil working, agricultural machineries or implements, processing of harvesting produce, etc.

**Independence Day Celebrated**

The Krishi Vihar Residents Welfare Association celebrated Independence Day on 15 August 2005. Dr J S Samra, DDG (NRM) hoisted the National Flag. A large number of residents and children attended the function.

Dr Samra appreciated the efforts made by the Association in keeping the colony clean and for providing better living conditions.

Shri N P Singh, President of the Association, while welcoming the chief guest, said that though the association is trying its best to cater to the needs of the residents, still lot of work is pending due to non-cooperation of CPWD. He appealed to the authorities to look into their grievances.

**ICAR Awards Presentation Ceremony 2005 Held**

The annual ICAR Award Presentation, 2005 function was held at the NASC Complex, New Delhi on 16 July 2005.

Shri Sharad Pawar, Union Agriculture Minister, Dr Mangala Rai, Secretary, DARE and Director-General ICAR, Ms Shashi Misra, Secretary, ICAR, and Additional Secretary, DARE attended the function.

Congratulating the award winners who have excelled in their chosen fields, Shri Pawar said that it is a good thing that other institutions have also been awarded this time. In the recent years, we have been successful in achieving food security and the contributions made by the ICAR scientists is laudable.

If we have to double crop production, we have to grow drought-resistant crops. Not only that, we have to give priority for irrigation. We have made tremendous progress in milk, vegetables and fruits. In the production of rice and wheat we occupy second place in the world. In China, the agricultural production doubled. In Brazil, it is 6 times more than in India. They have achieved this by taking the basic material from us. We are deficient in the production of maize, soybean etc. The responsibility lies with the scientists to work hard to increase their production. We have to guide the farmers in the right direction. These awards are an incentive to the scientists and such scientists are encouraged to work hard to achieve the targets, the minister said.

Speaking on the occasion, Dr Mangala Rai, Director-General, ICAR said that the awards were instituted in 1956 and these are an integral part of work. All those scientists who are real workers, have been properly rewarded for their outstanding scientific contribution in agriculture.

During this year, 53 awards under 12 different categories have been given to honour 46 scientists, 4 farmers, a journalist, and a Coordinated Research Project. From next year, a few new awards for innovative farmers, scientists and research workers will be instituted.

The ICAR Director-General said that it is heartening to note that nearly one third of the awardees are women. He hoped that these awards will provide the much needed encouragement and incentive to them to achieve excellence in future research endeavours.
AWARDS

Sardar Patel Outstanding ICAR Institution Award, 2004
• ICAR Institutes: Central Institute for Research on Cotton Technology (CIRCOT), Mumbai

Chaudhary Devi Lal Outstanding All-India Co-ordinated Research Project Award, 2004
• Long-term Fertilizer Experiment (LTFE), Indian Institute of Soil Science, Bhopal

Jawaharlal Nehru Awards for Outstanding Post-graduate Agricultural Research, 2004
(i) Crop Improvement: • Dr Rupakula Aruna, Osmania University, Hyderabad
• Dr Geeta S. Pillai, University of Calicut, Calicut
(ii) Biotechnology: • Dr V.N. Kulkarni, UAS, Dharwad
• Dr Vijay Paul, NDRI, Karnal
(iii) Plant Protection: • Dr G Radhakrishnan, IARI, New Delhi
• Dr Ashutosh Pathak, GBPUA&T, Pantnagar
(iv) National Resource Management: • Dr Balram, Panigrahi, IIT, Kharagpur
• Dr Gopi Ramesh, ANGRAU, Hyderabad
(v) Horticulture: • Dr C Lekha Rani, KAU, Vellayani
• Dr T Damodaran, TNAU, Coimbatore

(vi) Engineering and Technology: • Dr Jaya Sundaram, IIT, Kharagpur
• Dr S K Jana, IIT, Kharagpur

(vii) Animal Sciences: • Dr A K Mohanty, AIIMS, New Delhi
• Dr S B Shivachandra, IVRI, Izatnagar
• Dr S K Bhanja, IVRI, Izatnagar

(viii) Fisheries: • Dr Saly N. Thomas, Cochin University of Science and Technology, Cochin

(ix) Social Sciences: • Dr N Anandaraja, TNAU, Coimbatore
• Dr Sunanda K. Itagi, UAS, Dharwad

Panjabrao Deshmukh Woman Agricultural Scientist Awards, 2004
• Dr M Sujatha, Directorate of Oilseeds Research (DOR), Hyderabad
  (i) Dr (Mrs) A A Sherikar, Mumbai Veterinary College, Mumbai
  (ii) Dr G Taru Sharma, IVRI, Izatnagar

Vasantrao Naik Award for Research Applications in Dryland Agriculture, 2004
• Dr Gouranga Kar (Team Leader)
• Dr Ravender Singh
• Dr H N Verma and

Award Winners

Dr S Srinivasan, Director, CIRCOT receiving the Sardar Patel Outstanding Institution Award from the Minister at the Awards Ceremony

Dr M Sujatha, DOR, Hyderabad receiving the Panjabrao Deshmukh Woman Agricultural Scientist Award 2004 from the Union Agriculture Minister.
### AWARDS

**Lal Bahadur Shastri Young Scientist Awards for the Biennium 2003–2004**

(i) **Crop Sciences (Crop Improvement and Protection)**:  
- Dr R C Bhattacharya, NRC Plant Biotechnology, Pusa, New Delhi  
- Dr P D Kamala Jayanti, IIHR, Hessaraghatta, Bangalore

(ii) **Soil Science, Agronomy and Agroforestry**:  
- Dr Dharam Vir Singh, CSWCR&TI, Dehradun  
- Dr U K Mandal, CRIDA, Hyderabad

(iii) **Horticulture**:  
- Dr Sanjeet Kumar, IIVR, Varanasi  
- Dr Subaharan, CPCRI, Kasaragod

(iv) **Engineering**: Nil

(v) **Animal Sciences**:  
- Dr T K Bhattacharya, IVRI, Izatnagar  
- Dr Bollini Sreedevi, College of Veterinary Science Tirupati, Andhra Pradesh

(vi) **Fisheries and Aquatic Life Sciences**: Nil

(vii) **Social Science and Home Sciences**:  
- Dr Anjani Kumar, NCAP, New Delhi

**Hari Om Ashram Trust Awards for the Biennium 2003–2004**

(i) **Crop Sciences**:  
- Dr A B Mandal, CARI, Port Blair

(ii) **Horticulture**:  
- Dr B P Singh, Dr S Roy and Dr P H Singh, CPRI, Shimla

(iii) **Natural Resource Management**:  
- Dr O S Tomar  
- Dr P S Minhas and  
- Dr J C Dagar, CSSRI, Karnal

(iv) **Animal Sciences**:  
- Dr K T Sampath  
- Dr M Chandra Shekhariah and  
- Dr (Mrs) A Thulas, NIANP, Bangalore


(i) **Crop Improvement and Crop Protection**:  
- Dr F U Zaman, Principal Scientist, Division of Genetics, IARI, New Delhi

(ii) **Natural Resource Management**:  
- Dr B N Johri, Department of Microbiology, GBPUA&T, Pantnagar

(iii) **Engineering and Technology**:  
- Dr P Dureja, Principal Scientist, Division of Agriculture Chemicals, IARI, New Delhi

(iv) **Horticulture**:  
- Dr R K Pathak, Director, CISH, Lucknow

(v) **Animal Sciences**:  
- Dr M C Sharma, Joint Director (Extension), Division of Medicine, IVRI, Izatnagar  
- Dr Usha Rani Mehra, Principal Scientist, Division of Animal Nutrition, IVRI, Izatnagar

(vi) **Fisheries and Aquatic Life Sciences**:  
- Dr Iddya Karunasagar, Professor and Head, Department of Microbiology, UAS, Mangalore

**Swami Sahajanand Saraswati Extension Scientist/Worker Awards for the Biennium 2003–04**

(i) **Crop Production**:  
- Dr R K Sohane, Training Organizer, Krishi Vigyan Kendra, Begusarai, Bihar

(ii) **Livestock Production**:  
- Dr S C Pramanik, Krishi Vigyan Kendra, CARI, Port Blair, Andaman and Nicobar Islands

(iii) **Natural Resource Management**:  
- Dr P Anithakumari, CICRI Management Regional Station, Kanyakumari, Kerala

**Jagjivan Ram Kisan Puruskar, 2004**

(i) Shri C H Bhadsavle, Malegaon, Distt Raigod, Maharashtra  
(ii) Shri Vinayak R Bari, Kankevadi, District Thane, Maharashtra  
(iii) Shri A K Sarkar, Samsapur, District Dirajpur, West Bengal

**N G Ranga Farmer Award for Diversified Agriculture, 2004**

- Shri Nand Kishore Jaisalmaria, Village Manaklao, District Jodhpur (Rajasthan)

**Chaudhary Charan Singh Award for Excellence in Journalism in Agricultural Research and Development, 2004**

- Shri Anil Bansal, Chief, Jansatta Bureau, Meerut City, Uttar Pradesh
Dr M P Yadav Receives Vigyan Gaurav Award

The Council of Science and Technology, Uttar Pradesh has recently conferred its highest award, i.e. Vigyan Gaurav Award on Dr Mahendra Pal Yadav, Director, Indian Veterinary Research Institute (IVRI), Izatnagar, Bareilly for his contributions in science and technology.

The award function was held at Lucknow on 9 June 2005.

Shri Mulayam Singh Yadav, Hon’ble Chief Minister of Uttar Pradesh gave away various awards instituted by the Uttar Pradesh Council of Science and Technology on the occasion.

Dr Kumudini Nautiyal Honoured

Dr Kumudini Nautiyal, Assistant Director (OL), Central Institute for Cotton Research, Nagpur has been honoured with Mahadevi Verma Samman by Vishva Sneh Samaj, Allahabad and Hindi Sahitya Academy, Prayag on the occasion of Sahitya Mela 2005 held at Allahabad.

Dr Nautiyal got the honour for her excellent contributions in the field of Hindi literature.

She is also recipient of ‘Munshi Premchand Puraskar’ by Maharashtra Rajya Hindi Sahitya Academy and honoured with Usha Devi Mitra Ornamentation by Varttika, a Sahityak Sanstha.

Gold Award to Website “aAqua”

An interactive portal named “aAqua” (almost all questions answered) operated jointly by IIT Powai and Krishi Vigyan Kendra, Baramati has won the prestigious gold award of Digital Empowerment Foundation for the year 2005.

This is an interactive agricultural questions and answers portal launched by IIT Powai to which Krishi Vigyan Kendra at Baramati is the agricultural technical service provider.

The award was given to this portal for the year 2005 by the Digital Empowerment Foundation of New Delhi. These awards are given for the best e-contents developed in India.

The foundation gives award in various categories. aAqua was nominated under the category of “e inclusion”. This website received gold award comprising a trophy and a certificate.

The portal aims at providing prompt and genuine information to farmers on problems and issues raised by them through internet. This is a free service available to farmers. The portal can be read in English as well as Marathi for farmers from Maharashtra. But there are farmers from other states of India who have been using the site too.

The site can be visited at www.projects.mlasia.iitb.ac.in/aquar.

CTRI KVK Bags Meritorious Invention Award

The KVK of CTRI, Rajahmundry has bagged the Prestigious Meritorious Invention Award 2005 of NRDC.

The team of inventors of this machine consisting of R Sudhakar, Dr V Venkatasubramanian and I Srinivas led by the Director, CTRI, Dr K Deo Singh received this award at the National Award function held in New Delhi on 11 May 2005 on the eve of Technology Day celebration.

This meritorious invention award falls under highly recommended category. A total of 13 inventions from all over the country received were for the year 2005.

Meritorious Invention Award to IVRI

Dr M C Sharma and his team receiving the award for developing area specific mineral mixture from Shri P Chidambaram, Hon’ble Union Finance Minister in New Delhi
**International Linkages**

**MoU Between ICAR and Brazil Signed**
- MoU was signed between ICAR and Brazilian Agricultural Research Corporation, Brazil on 6 July 2005.

**Iran Delegation Visits ICAR**
- His Excellency Dr Abdolmahdi Bakshandeh, Deputy Minister of Agriculture, Planning and Finance, Government of the Islamic Republic of Iran and accompanied delegation visited ICAR Headquarters and IARI, New Delhi on 12 August 2005.

**PM Signs MoU with Afghanistan**
- MoU between the Government of the Republic of India and the Government of the Republic of Afghanistan in the field of Agricultural Research and Education was signed during the visit of Prime Minister to Afghanistan during 28–29 August 2005.

**Delegations Abroad**
- Dr R K Sethi, Principal Scientist, Central Institute for Research on Buffaloes, Hisar was deputed to Brazil during 5–8 July 2005, as a member of the delegation led by Hon’ble Agriculture Minister.
- Dr P G Adsule, Director, National Research Centre for Grapes, Pune was deputed to All-Russia Scientific Research Institute of Brewery, Non-alcoholic and Wine-Making Industry, Moscow, during 20–27 July 2005, for study in the field of ‘Technologies in Sparkling Wine-making’ under ICAR-RAAS Work Plan for 2004–2005.
- Dr Ranbir Chhabra, Principal Scientist, Central Soil Salinity Research Institute, Karnal was deputed to All-Russia A N Kostyakov Scientific Research Institute of Hydrotechnique and Melioration, Moscow, Russia during 21–30 July 2005, for study in the field of ‘Bioremediation for saline and alkaline soil’ under ICAR-RAAS Work Plan for 2004–2005.
- Dr S Ayyappan, DDG (Fisheries) and Dr R K Mittal, Principal Scientist (TC), ICAR Headquarters, New Delhi were deputed to Myanmar for participation in ASEAN–India Consultation on Agriculture held at Mandalay, Myanmar on 27 July 2005.
- Dr K S Khokhar, ADG (PIM), ICAR, New Delhi was deputed to Argentina during 28–30 July 2005, as a member of the delegation led by Ministry of State (Agriculture).
- Dr M Madhu, Sr Scientist, Central Soil and Water Conservation Research and Training Institute, Research Centre, Udthagamandalam was deputed to Nepal during 7–16 August 2005, for study in the field of ‘Sloppy Land Management under ICAR-NARC Work Plan for 2003–2004’.
- Dr D G Dhandar, Director and Dr O P Awasthi, Senior Scientist (Hort.), Central Institute for Arid Horticulture, Bikaner were deputed to R R Shred-dar Uzbek Scientific and Research Institute of Horticulture, Viticulture and Wine-making, Uzbekistan during 11–17 August 2005, for study in the field of ‘Horticulture (Fruits) in arid region—Variety Study/Horticulture (Fruits) Management’ under Work Plan for 2004 extended up to 31 December 2005.

**Electronic Information Access in Rural Area**

No doubt, advancement of IT has drastically changed the manual access of information to digital access. This library of the SKN College of Agriculture (SKNCOA), Jobner, which is the oldest in Rajasthan (established in 1947), is now shifting towards digital access. It is basically located in rural area i.e. 45 km away from Jaipur.

It has inadequate infrastructure and power facilities. But in spite of these hardships all possible efforts have been made to take this library towards digital one. High speed internet access facility is now available on network PC being accessed through ERNET India (under NATP, ICAR, New Delhi). CDROM server facility is also available for database access of AGRIS/AGRICOLA/CABCD/FISHBASE 2005/PGRABST, etc on network PC.

Earlier due to lack of these facilities, the students, research scholars/scientists of this college used to collect agricultural information from IARI, New Delhi and other agricultural universities like PAU/HAU etc.

Further, electronic online access journals (1162e–Journals of J-Gate) have also been provided, video conferencing facility is available in the college along with audio visual access facility to UG students and teachers. CCTV camera has been added. Both laser and dotmatrix printers are working on network.

Many students, scientists, research scholars of other universities/colleges/institutes are using this library for information access. The email facility along with virtual access of information have now become a reality rather than a dream in rural area.
Steering Review Committee Meeting of the Mini Mission-I

Dr G Kalloo, DDG (Hort.) emphasized the basic objectives of the mission (i) to improve and enhance the planting material of vegetables, fruits, flowers and mushroom (ii) refinement of production and protection technologies and (iii) training of the farmers/agriculture officers/trainers.

Dr Mangala Rai, DG, ICAR in his opening remarks emphasized the need for right planting material for long-term benefits and reminded about the target of doubling the horticultural production in India from the current level of 150 million tonnes to 300 million tonnes by 2012. This target could be achieved through upgradation of the orchards and by providing new varieties and their planting materials in different horticultural crops. Dr Mangala Rai also emphasized the need to promote tissue culture to provide basic seed/planting material on large scale. He said that there are countries where 100% planting material in horticulture crops goes through tissue culture. In India also this could be done by building necessary infrastructure and toning up the development departments.

Dr S K Pandey, Director, CPRI, Shimla, Dr R C Upadhyay, Director, NRC on Orchids, Sikkim, Dr H S Gupta, Director, VPKAS, Almora and Dr A A Sofi, Director, CITH, Srinagar presented the progress report of Mini Mission-I for HP, Sikkim and NE States, Uttarakhand and J&K State, respectively, during the meeting. Besides taking stock of progress of ongoing projects, several new projects were approved.

Research Lab-cum-Administrative Building Inaugurated

A newly constructed research lab-cum-administrative building of Central Potato Research Institute was inaugurated at Shimla on 11 July 2005 by Dr Mangala Rai, DG, ICAR and Secretary, DARE.

The building has been recently constructed with all the modern infrastructure and the visiting dignitary gave a general appreciation to the construction design and the material used.

During inauguration, Dr G Kalloo, DDG (H&CS), Vice-Chancellors from six universities representing HP, Uttarakhand, J&K, Uttarakhand and NE States were present.

Dr Rai also visited the Institute Campus and Laboratories and Kufri-Fagu farms and appreciated the work going on. He emphasized that keeping in view the emerging IPR regime, efforts must be made to reduce the number of seed multiplication stages in the field and shift the focus to tissue culture based seed multiplication.
**National Research Centre for Weed Science**

**“Parthenium Awareness Week” Observed**

National Research Centre for Weed Science (NRCWS) organized “Parthenium Awareness Week” during 26 August to 1 September 2005 throughout the country to make people aware of the weed *Parthenium hysterophorus*, vernacularly called *Gajar Ghas*, *Congress Grass* or *Ghas*, *Safed topi*, *Chhatak Chandni* etc.

Dr Gogoi, Director, NRCWS requested all the AICRP on Weed Control Centres, ICAR institutes, SAUs and Krishi Vigyan Kendra to organize some activities during this week. To facilitate other organizations, this centre sent posters and other material developed especially for the purpose. This weed is known to cause many diseases in human beings and animals besides causing loss to crop productivity and biodiversity. Now *parthenium* has become a menace in every type of land including forest.

The main aim to organize this awareness week was to make people aware of the harmful effects of parthenium and the ways of its management. NRCWS made publicity on parthenium, its menace and the ways of its management through local and national TV channels, newspapers and All India Radio besides distributing about one lakh pamphlets in and around Jabalpur.

The *Parthenium* Awareness Week was inaugurated on 26 August by the chief guest Hon’ble R N Singh, Advocate General of Madhya Pradesh at NRCWS, Jabalpur. Dr Singh stressed on the need of people participation to eradicate this weed. Dr Singh appealed all the stakeholders to take part in this activity and applauded the efforts made by the NRCWS in this direction.

Dr R A Khan, Director Extension, JNKVV, Jabalpur chaired the function. He was of the opinion that great extension work is needed to make people aware of the harmful effects of this dreaded weed. On this occasion, books and CD on parthenium were also released.

On 27 August, a “Parthenium Awareness” programme was held at a village Narai Nala near Rani Durga Vati Samadhi Sthal. On this occasion, poster exhibition and live demonstrations on various management techniques were given. The Director, NRCWS gave boxes containing 500 Mexican beetle in each to 20 farmers to release this effective bioagent in their respective villages. A large number of farmers from nearby villages and school children attended this function.

The NRCWS also held a “Special Training on Management of *Parthenium hysterophorus*” during 29 August to 1 September 2005 to train the personnel from various Krishi Vigyan Kendras (KVKs), NGOs and progressive farmers. Dr G S Singh, Director, Mahatma Gandhi State Rural Development Institute, Jabalpur, inaugurated the function. In this training programme, trainees were given practical demonstration on various techniques of management including preparing compost from parthenium and to inspect and multiply Mexican beetle. At the end of training programme, a box containing Mexican beetle was also provided as a gift from NRCWS to enable the trainees to release the bioagent in their respective villages and towns.

**Central Institute of Fisheries Technology**

**CIFT to Give Consultancy for Food Products Certification Laboratory**

The Animal Husbandry Department (AHD), Government of Kerala, has entered into an agreement with the Central Institute of Fisheries Technology, Cochin for consultancy for setting up the Livestock and Food Products Inspection and Certification Laboratory at Maradu, Cochin. The agreement was signed for a fee of Rs 6 lakh.

The lab is being set up to certify the livestock, marine and agricultural products meant for export. A large number of European countries are insisting on phyto—sanitary certificate from qualified veterinary experts for import of livestock and agricultural products. The proposed lab is an attempt to bring all the certifying agencies under one roof and will be the first ever lab of this kind in the state.

The proposed facility will have a biological testing laboratory, where food samples can be tested for biological pathogens, toxins and residues of antibiotics, and a chemical testing laboratory for testing food samples for pesticide and heavy metal residues.

As part of the consultancy between CIFT and AHD, the existing biological testing laboratory of the livestock/marine products inspection-cum-certification laboratory, Ernakulam will be upgraded to meet the requirements.

**Oral Cancer Screening at Chellanam Panchayat**

Central Institute of Fisheries Technology, Cochin jointly with Amritha Institute of Medical Sciences,
organized oral cancer screening camps at Chellanam Panchayat under the DST-funded research project ‘Action Research on Community Based Coastal Zone Management with Specific Involvement of Women’.

A formal function was held at Kandakadavu PHC on 29 July 2005 in the presence of Dr K Devadasan, Director, CIFT, and Dr Krishna Srinath, Principal Investigator of the project, CIFT, Dr M K Krishnan Nair, former Director, RCC, Trivandrum and the Head of Clinical Oncology, Dr Mono Abraham Kuriakose, Chairman, Head and Neck Institute, AIMS, Dr Subramania Iyer, Consultant, Plastic and Reconstructive Surgery, AIMS, Cochin and Panchayat ward members.

The camps were held on 15, 22 and 29 of July 2005 at CIFT-DST Project Centre, South Chellanam Primary Health Centre (PHC), Kanadakadavu PHC respectively. The local public was informed in advance about these camps.

A total of 492 persons attended the camp, out of which 221 were males, 195 females and 76 were children.

Mangrove Saplings Planted

Central Institute of Fisheries Technology, jointly with the Chellanam Grama Panchayat planted 1,000 saplings of mangrove in the coastal stretch of Chellanam from Kandakadavu to South Chellanam. The institute has been implementing various programmes related to coastal zone management with the community participation in the Chellanam coastal village as a part of DST sponsored research project on community-based coastal zone management. During participatory rural appraisal conducted on the theme of coastal resource management, the need for protecting the strategically, economically and socially important coastal zone from erosion and as a followup the institute initiated planting of mangroves at Chellanam.

After Tsunami, people have come to realize about the importance of mangroves as a bio-shield in the coastline. Sea walls have been constructed throughout the Kerala coast by the state government and in some stretches those constructed about 40 years back have lowered and scattered increasing the threat of erosion affecting the coastal habitat. Mangroves will act as a buffer to the sea wall and if taken care of by the community can help in protecting the sea walls and the biodiversity as well. This was reiterated by Dr K Devadasan, Director, CIFT in his remarks in the ceremony organized on the occasion.

The “Aayiram Kandal” (Thousand Mangrove) programme at Chellanam was inaugurated on 17 August, 2005 by Smt Kusumam John, President, Chellanam Grama Panchayat at Kandakadavu and saplings were planted in different wards under the leadership of the concerned ward members.

Shri Kallan Pokkoodan, the well-known environmentalist was also present on the occasion to guide the local people and to share his experiences.

Dr Krishna Srinath, Principal Investigator of the project explained the details of the programme.
Regional Centre, Guwahati on 10 July 2005, the day declared by the Government of India to commemorate the scientific achievement of Dr Hiralal Chowdhury in 1957.

Two hundred fish farmers and fishermen of various districts of Assam attended.

Dr Nazrul Islam, Hon‘ble Minister, Food and Civil Supplies and Fisheries, Government of Assam graced the occasion as chief guest.

Shri S Mewara, Commissioner and Secretary, Fisheries, Government of Assam, Shri L N Tamuli, Secretary, Fisheries, Government of Assam, Dr D Das, Dean, F.V.Sc., AAU, Assam, Shri T R Pagag, Director of Fisheries, Government of Assam were present as guests of honour. In the lively interaction session that followed, the farmers problems were discussed and solutions were given by scientists.

On this occasion, CIFRI conferred the Fish Farmer Award 2005 on five fish farmers of Assam.
1. Shri Tabul Koibatra, Kamrup,
2. Shri Dilip Das, Barpeta,
3. Shri Purna Kumar Das, Nagaon,
4. Shri Kameswar Das, Morigaon,
5. Shri Adyanath Biswas, Morigaon for their outstanding contribution to inland fisheries of the state.

Central Research Institute for Jute and Allied Fibres

Farmers’ Awareness Camp Organized

A “Farmers’ Awareness Camp” was organized by the Central Research Institute for Jute and Allied Fibres (CRIJAF), Barrackpore, Kolkata at the village site at Kamarkandu, Hooghly on 29 June 2005. The major objective of the programme was to stimulate awareness in view of transfer of improved jute production technologies from the research laboratories to the farmers’ field. With this objective in view, it was very essential to make the farmers familiar with the latest technologies and help them to solve their practical problems to enhance the production and productivity. More than 150 participants including progressive farmers of the locality, extension workers of State Departement of Agriculture from different jute growing areas, scientists and technologists attended the programme.

Dr H S Sen, Director, CRIJAF, Barrackpore, Kolkata, presided over the function, Mr Ranjit Mandal, Sabhapati, Singur Panchayat, Shri Prabhash Kumar Ghosh, Panchayat Pradan, Beraberi Shri Hardhan Bag, Panchayat Pradhan, Kamarkandu, Shri Arun Chaudhary, ADO Jute, Singur Block, Ramprasad Ghosh, ADO, Singur and Shri Anath N Das, SMS, Srirampur, Sub-division were present as special guests. They have highlighted the importance of such awareness camp to motivate the farmers for increasing the jute production.

Dr Sen in his inaugural address elaborated the activities of this institute and how to increase the profit from jute cultivation and assured about all cooperation for betterment of jute production and productivity of this area.

Inaguration function was followed by the technical session in which the scientists of CRIJAF described the latest jute production technologies. There was interaction session in which farmers and experts exchanged their views, knowledge, practical problems and remedies to overcome the problems for higher production of the crop. Farmers can get instant solution to their problems in agriculture from Kisan Call Centre (Telephone No. 1551).

Training Programme Organized

A three-day training programme on “Strengthening jute economy through appropriate technology transfer” was conducted at the Central Research Institute for Jute and Allied Fibres (CRIJAF), Barrackpore from 6–8 July 2005.

Dr H S Sen, Director, CRIJAF, Barrackpore, inaugurated the training programme. Shri A Banerjee, Deputy Director, Indian Jute Industries Research Association (IJIRA), Kolkata was present as a special guest in the programme.

twenty three trainees from IJIRA, participated in the programme. It was sponsored by the IJIRA, Kolkata, and the aim of this training programme was to educate the participants about improved jute production technologies and their appropriate transfer to the farmers. The programme was designed into six technical sessions, namely varieties of
jute and mesta, agronomy of jute, soil and nutrient, disease and pest control, retting and fibre quality and transfer of technology including field and laboratory visits. The participants were provided with the detailed literature of the respective lectures delivered under each technical session by scientists of this institute.

**Farmers’ Day Organized**

The Central Research Institute for Jute and Allied Fibres (CRIJAF), Barrackpore, Kolkata organized Farmers’ Day at Ramie Research Station, Sorbhog, Barpeta, Assam, on 7 June 2005.

The major objective of the programme was to encourage the farmers for ramie cultivation in north eastern part of India.

More than 100 participants including progressive farmers, extension workers, technical experts, officers of State Department of Agriculture of Assam and Nagaland and scientists of CRIJAF took part in the programme.

Dr H S Sen Director, CRIJAF presided over both technical and interactive sessions.

Shri S S Jamir, MLA, Nagaland Assembly, Government of Nagaland graced the occasion as chief guest. Shri J Pathak, Joint Director of Agriculture, Government of Assam and Shri N S Seema, Joint Director of Agriculture, Government of Nagaland also graced the occasion as guests of honour.

The distinguished speakers highlighted the importance of ramie as textile fibre.

The Chairman, Dr H S Sen praised the work done on ramie and appreciated the contribution made by the scientists of CRIJAF in the field of crop improvement, nutrient and pest management and the newly evolved degumming technology of decorticated ramie fibre.

He also stressed on value addition and cooperation for betterment of production and productivity of ramie in NE region.

**All India Coordinated Research Project on Vegetable Crops**

XXIIIrd Group Meeting Organized

The 23rd Annual Workshop of the All-India Coordinated Research Project on Vegetable Crops was held at Bidhan Chandra Krishi Viswavidyalaya, Kalyani (West Bengal).

Inaugurating the function, Shri Sailen Sarkar, Minister-in-Charge, Ministry of Food Processing Industry and Horticulture, Government of West Bengal expressed concern over the huge loss of fruits and vegetables due to lack of proper post-harvest management. There is an urgent need to focus on the cold chain, transport facility, handling and packing system.

The hon’ble minister invited the attention of the researchers to develop simple, practical and farm-friendly technologies feasible to the local conditions. He further expressed that both public and private sectors should undertake collaborative research to minimize the post-harvest losses and maintain the quality of the products par excellence.

Presiding over the function, Professor G Kalloo, DDG (Hort. & CS) ICAR, New Delhi, invited the attention of the researchers towards the development of transgenic varieties of vegetables possessing enhanced nutritional and pharmaceutical attributes. He also emphasized the need to shift the focus to develop varieties tolerant to biotic and abiotic stresses in order to get the benefit by the small land holders and those cultivating marginal land under unfavourable climatic conditions. Appreciating the work done under AICRP on vegetables, he said that it is a well-knitted programme and giving prompt benefit to the farmers across the country.

The DDG also desired that the centre must take appropriate care for the quality experimentation and generate technology.

Dr Dipak Kumar Bagchi, Vice-Chancellor, BCKVV, Kalyani expressed the need of maintaining the genetic diversity of vegetable crops to address the problem of nutritional security and micronutrient malnutrition problem in the society. He felt that there is a great need to diversify agriculture by giving more impetus to the vegetable crops.

Dr Mathura Rai, Director, IIVR, Varanasi, welcomed the delegates and highlighted the achievements of the research work done under AICRP programme. He said that the AICRP has been playing a vital role in strengthening the research programme of vegetables resulting in a substantial increase in country’s vegetable production. He felt that there is an
urgent need to establish seed chain to multiply the seeds of newly identified varieties. Dr Rai also highlighted the importance of plant genetic resource management in crop improvement. He also desired that timely submission of the identified lines for release by Central Variety Release Committee.

In this group meeting, more than 300 scientists from different ICAR institutes and state agricultural universities as well as representatives of vegetable seed industries participated.

During the Workshop, two varieties/hybrids (10 varieties, 9 hybrids and 3 resistant varieties) of different vegetable crops were identified for release through Central Varietal Release Committee for cultivation in different agro-climatic zones of the country.

**Central Institute of Agricultural Engineering**

**CIAE Technologies Demonstrated in Sikkim**

Speedy development of the North-Eastern Hill Region (NEH) is a priority of the Government of India. Lack of agricultural mechanization is considered to be one of the bottlenecks in this regard. ICAR has been emphasizing on mechanization of agricultural and horticultural crops for this region.

As a step towards this goal, CIAE, in collaboration with Directorate of Food Security and Agriculture of Sikkim and ICAR Complex for NEH Region, Gangtok organized a two day interaction meeting-cum-demonstration of improved agricultural implements/processing equipment at Gangtok during 2–3 June 2005.

Dr S D Kulkarni, Director gave the welcome address. It was inaugurated by Shri Somnath Poudyal, Hon’ble Minister for Food Security, Agriculture, Horticulture and Cash Crop, Government of Sikkim, while Dr Nawab Ali, Deputy Director-General (Engg), ICAR presided over the session.

**Indian Lac Research Institute**

**Frontline Demonstration of Lac Cultivation**

Indian Lac Research Institute was successful in the transfer of the lac cultivation technology in remote village of Krutibali and Gajinazu of Kotagarh Block in Kandhmal district (Orissa), where about 11,000 *kusum S. oleosa* trees in 11 village Panchayats are available.

In order to initiate the work, a progressive farmer Shri J Mahto an ex-trainee of ILRI, now professionally involved in lac cultivation from Jhalda, offered to supply 40 g of broodlac (worth about Rs 4,000) from his surplus production free of cost. The broodlac was transported and inoculated on eight unpruned trees of *kusum* during February 2005, by the local villagers under expert supervision of Shri P Patamajhi, Technician of ILRI. The used-up broodlac sticks approximately worth half the price of broodlac was returned to the supplier. The ILRI contacted many NGOs working in the area to execute this work but was not successful.

A poor unemployed rural youth Mr Trackson volunteered to receive training at ILRI which was given free of cost. After completing one-week training, he involved himself to motivate and execute the work at local level as he speaks and understands Oriya language. Experts from ILRI also visited the area and monitored lac crop from time to time. The frontline demonstration has yielded very good results. On harvesting mature lac crop in July 2005, it has given a yield of 176 g broodlac, despite very high temperature during the summer (>48°C) in this area. One separate tree inoculated with 1 g of broodlac has yielded 16.5 g broodlac after adopting all pest management techniques. The quality of broodlac was also very good in terms of less incidence of predators and high fecundity of female lac insect. This produce (176 g broodlac) is worth Rs 21,120 at present price of Rs 120/g.

All the cultivation operations namely pruning of host trees, crop inoculation, removal of used-up broodlac sticks, watch and ward, insecticide spraying and harvesting etc. was carried out by a group of tribal villagers. To propagate lac further the 176 g broodlac has been inoculated of 150 trees of *Ziziphus mauritiana* located in another village, Colonysahi in Kotagarh block of the same district. The used-up broodlac sticks (costing half of broodlac cost) will be sold in market and money will be given to the villagers who participated and worked for this demonstration. During this period, publicity campaign for awareness regarding the benefits from lac was also conducted through film shows on CD in 20 villages of 11 village panchayats.

**FROM THE INSTITUTES**

Farmers engaged in pruning of lac host trees (*kusum*)
Dr N Sarangi, Director, CIFA inaugurated the training programme.

This is one of the training programmes among a series of programmes on various aspects of freshwater aquaculture which have been scheduled for 2005–06. The participants were from various fields, namely private entrepreneurs, academicians, students and staff from universities and private organizations.

This training programme aims at educating the participants about the latest developments in molecular and immunological techniques in fish health management.

Dr S K Sinha, Director, Agriculture, Shri S K Paul, Additional Director (Engg), Dr R C Upadhyaya, Director NRC (Orchid), Shri Bhim Dhungel, Hon’ble Chairman, Agriculture and Dr L S Srivastava, Joint Director, ICAR Complex for NEH region, Project Co-ordinators/Heads of Division from CIAE also participated in the programme.

CIAE product catalogue, leaflets and other extension literature were distributed among the farmers and delegates during the demonstrations. During the technical session, research gaps in mechanization of high agriculture were identified. In the interaction meeting with the visiting farmers, Dr S D Kulkarni, Director made a multimedia presentation on suitable tools, implements and equipment for hill region. During interaction, farmers showed keen interest to utilize these tools/implements for hill agriculture especially improved seed drills, weeding tools, cleaner grader, maize sheller and small thresher for wheat and rice.

Shri S K Sinha, Director, Agriculture, Shri S K Paul, Additional Director (Engg), Dr R C Upadhyaya, Director NRC (Orchid), Shri Bhim Dhungel, Hon’ble Chairman, Agriculture and Dr L S Srivastava, Joint Director, ICAR Complex for NEH region, Project Co-ordinators/Heads of Division from CIAE also participated in the programme.

Dr Mangal Prasad, Deputy Director, Kudremukh Iron Ore, Koramangala, Bangalore, inaugurated the workshop on 6 June 2005 and Dr G S Prakash, Director (Acting) IIHR, Bangalore presided over the function.

Twenty-eight staff members from technical category participated in the workshop. Each participant was given a Hindi Dictionary, an elementary grammar book and booklet on Official Language Policies, as study material. Speakers from Regional Implementation Office, and Central Hindi Sub-institute, were invited.

Shri Vishwanath Jha, Deputy Director, Regional Implementation Office, Kormangala, Bangalore was the chief guest on the concluding day.

Ms Shashi Prabha Razadan, Under Secretary, ICAR, New Delhi, presided over the function. Certificates were distributed to all the participants by the chief guest.

Various topics like Rajbhasha Niyam Eavam Adhiniyam, Hindi Prayog Ki Samasyayen, Takaniki Shabdavali, Prashasanik Shabdavali etc. were covered during the workshop. The participants were also given exercises to work on and to discuss in the class.

Shri Vishwanath Jha, Deputy Director, Regional Implementation Office, Kormangala, Bangalore was the chief guest on the concluding day.

Ms Shashi Prabha Razadan, Under Secretary, ICAR, New Delhi, presided over the function.

Certificates were distributed to all the participants by the chief guest.
Central Institute for Subtropical Horticulture observed its 21st Foundation Day on June 1, 2005. Dr R P Singh, Vice-Chancellor, Lucknow University releasing Udyan Rashmi on the occasion of Foundation Day.

University was the Chief Guest at the function. Speaking on the occasion, Dr Singh advocated development of technologies of Modified Atmosphere Packaging (MAP) for sustained prevention of losses in the post-harvest system. The use of appropriate biodegradable plastics would come handy to attain this goal. The students could undertake the course work at the university and research work at the institution while pursuing the post-graduate degrees. In this way, the institute and the university may strive for closer cooperation towards the overall goal of horticultural development in the country. Recognizing tremendous strides made in the recent past around the world in the field of biotechnology, a special lecture and discussion on the emerging scenario in the field was organized.

Professor U N Dwivedi, Professor and Head, Department of Biotechnology delivered a talk on “Importance of Agricultural Biotechnology in Food and Nutrition Security”.

College of Dairy Technology, Warud (Pusad) is only one college in Maharashtra offering B.Tech. four-year undergraduate (Dairy Technology) degree programme under the umbrella of Maharashtra Animal and Fishery Sciences University, Nagpur.

Ministry of Food Processing Industry, New Delhi has approved the proposal of the college for development of infrastructure facility for running degree programme. Under the financial assistance worth Rs 37 lakh, the college is going to establish Advanced Food Instrument Laboratory, equipped with all necessary equipment and instruments for undergraduate teaching and food testing.

Dr A T Sherikar, Vice-Chancellor, Maharashtra Animal and Fishery Sciences University laid the stone for the college.

Dr S D Harne, Director of Instructions and Dean, Faculty of Veterinary Sciences MAFSU, Nagpur was also present during this occasion. Dr A B Kadu, Associate Dean and Principal Executor of the scheme explained about the development activities of the college. Under the MFPI scheme four entrepreneurship development programmes (EDP) and two refresher training programmes (RTP) are going to be organized. This facility will also be used for testing industrial food and agriculture samples through consultancy cell at the college.

DBS Konkan Krishi Vidyapeeth Fruit Exhibition Organized

Dr B S Konkan Krishi Vidyapeeth, Dapoli (MS) has organized a grand fruit exhibition on the occasion of 33rd anniversary of the university under the able guidance of Dr S S Magar, Vice-Chancellor.

In this exhibition, the quality fruits of mango—different varieties including Alphonso, Ratna, Kesar, Totapuri, Badami, Rajapuri, Goa Mankur, Pyari, Sindhu, Neelum and some local varieties like kokum, jackfruit, karonda, anola etc. were displayed by the farmers of the Konkan region and the farmers who displayed the best entries were awarded cash prizes and certificates. The prizes and certificates were also given to the fruit processors. The university scientist Dr S N Jadhav, Agronomist, was also felicitated by offering Mukund Ganesh Dandekar Award 2005 for outstanding research contribution in the field of agriculture. The well-known progressive farmer Shri Shekhar Govindraoji Nikam from Sawarde village from Ratnagiri district was also felicitated by awarding Abasaheb Kubal Award, 2005 for notable contribution in the field of horticultural research and extension education.

Dr Manikrao Salunkhe, Vice-Chancellor, Shivaji University, Kolhapur (MS), Dr K D Kokate, Director of Extension Education; Dr V B Mehta, Director of Instruction, Dr P R Shivpuje, Registrar; Shri Pradeep Nikam, Ex-Executive Council Member of the university were present at the function.
FROM THE INSTITUTES

Punjab Agricultural University

Group Meeting on Rodent Control Held

The XIIth Group Meeting of All India Network Project on Rodent Control was held at Punjab Agricultural University, Ludhiana from 20–22 July 2005.

The meeting was inaugurated by Dr A P S Mann, Dean, College of Agriculture and Post-graduate Studies, PAU, Ludhiana.

Dr T P Rajendran, Assistant Director General (PP) and Dr O P Dubey, Assistant Director General (O&P), Indian Council of Agricultural Research, New Delhi were the Guest of Honour.

In his address, Dr Aulakh, Vice-Chancellor, PAU, highlighted the problem of rodents in agriculture and appreciated the progress achieved by the project in the development of technologies for rodent management. Dr T P Rajendran, ADG (PP) presented the background of the project and outlined some important issues on the subject. Dr O P Dubey gave an overview of the project. Dr R S Tripathi, Project Coordinator (RC) presented the progress report of the project for the biennium. During the different technical sessions the work done by the different cooperating centers, self-funded centers, state agricultural departments, rodenticide manufacturers etc. were deliberated at length.

A brainstorming session on bamboo flowering vis-à-vis rodent problem in NEH was also held to discuss the present situation in the NEH in view of bamboo flowering and future plan of action to tackle any possible rodent outbreak. Future programmes to be taken up both multi-locational and location specific for the next biennium were formulated and the recommendations in regard to rodent management for the farmers of different agro-climatic zones were finalized.

It was decided that ‘Burrow Fumigator’ developed by Acharya NG Ranga Agricultural University, Maruteru center and neem leaf powder evaluated by PAU centre against rodents in storage should be evaluated at all the centres of AINP.

Two technical bulletins viz., Burrow Fumigator an eco-friendly device for rodent control, Rodent Management in Arid Zone, two Monographs (i) ‘Bandicota bengalensis’, and (ii) ‘Distribution of Rodents in Indian Agriculture’ and a CD on ‘Social behaviour of gerbils’ were released by Dr K S Aulakh, Vice-Chancellor, PAU, Ludhiana.

Special lectures on Rodent taxonomy (by Dr M S Pradhan, ZSI, Pune), Rodents and public health (by Dr S Biswas, NICD, Bangalore) and Extension of Rodent Management Technology in India (by Dr A M K Mohan Rao, NPPTI, Hyderabad) were also organized during the Group Meeting.

National Research Centre on Rapeseed–Mustard

Annual Group Meeting of AICRP on Rapeseed–Mustard Held

The Annual Group Meeting of AICRP on Rapeseed–Mustard, organized by NRCRM, Bharatpur was held at GBPUAT, Pantnagar during 11–13 August 2005. The meeting was inaugurated by the Chief Guest and Vice-Chancellor of the Central Agricultural University, Imphal, Dr S N Puri, and was presided over by the Vice-Chancellor of the host University, Dr P L Gautam. The Assistant Director General (Oilseeds and Pulses) of the Indian Council of Agricultural Research, Dr O P Dubey provided suggestions targeted at increasing rapeseed–mustard production. The Director of NRCRM, Dr Arvind Kumar presented the Annual Research Report of the AICRP-RM for 2004–05. The rapeseed–mustard scientists from all over the country discussed important points at length, viz., Breeder Seed Production (BSP), Transfer of Technology, Frontline Demonstrations (FLDs) and varietal identification while stressing on the importance of Alternaria blight management, mustard hybrid seed production, etc. Campaign by NRCRM led to receipt of indent for 85 q breeder seed production, etc. Campaign by NRCRM led to receipt of indent of 85 q breeder seed of 54 improved rapeseed–mustard varieties by the Ministry of Agriculture, Government of India, which could help the country towards self-sufficiency in edible oil production. The house was informed about the commendable progress made by NRCRM towards commercial hybrid seed production of mustard.

A new variety YRN–6, developed by one the AICRP-RM centres, Agricultural Research Station (Rajasthan Agricultural University), Navagao and suited for late sown conditions in Rajasthan, Punjab and Haryana was identified for release in this meeting.
NRCRM on Agro-Advisory Service Map

A project on agro-advisory service has been sanctioned by the National Centre on Medium Range Weather Forecasting (NCMRWF), DST, Government of India for operation at the NRCRM, Bharatpur with the objective of providing agro-advisory service to the farmers of the area, based on the medium-range weather forecast received from NCMRWF. Under the project, weather data is sent to NCMRWF on Tuesdays and Fridays by 9.30 AM, when medium-range weather forecast for the Bharatpur region is received in return there from by 1 PM. Based on the forecast received, agro-advice is prepared by a team of scientists of the NRCRM, which is disseminated amongst the farming community of the region through local daily newspapers, All India Radio (Akashvani), Agra, etc.

In its efforts for the sale of mustard seed, counselling for situation specific varietal selection and education to the farmers about improved package of practices named Beej Pakhwada was organized from 16 to 3 September 2005.

Training Programmes Conducted

The NRCRM Bharatpur organized five one-day training programmes on improved production and protection technology of mustard in August and September 2005 for Agriculture Supervisors, Assistant Agriculture Officers of Government of Rajasthan working in Bharatpur district of Rajasthan and progressive farmers of same district.

The training was imparted under Mustard Target 20 + Productivity Campaign launched by Department of Agriculture in Bharatpur district to raise the productivity of mustard crop from the present level of 1,378 kg/ha to more than 2,000 kg/ha in the district. Shri Praveen Gupta, District Collector, Bharatpur inaugurated the training. In all, 250 extension personnel of Department of Agriculture and Progressive farmers participated.

The main emphasis of the training programme was to provide comprehensive platform to the extension personnel and progressive farmers of the district.

The training mainly concentrated on improved agronomical practices, high yielding varieties, seed production, identification of insect-pest and diseases and their management and strategy for effective transfer of technology. The class room lectures were well supported by audio-visual aids and group discussion.

AICRP on Potato

25th Group Meeting Organized

25th Group Meeting of the All India Coordinated Research Project on Potato was organized at Maharana Pratap University of Agriculture and Technology, Udaipur during September 8–10, 2005.

AICRP (Potato) was instrumental in releasing 20 improved varieties and bringing out several recommendations for efficient potato production and protection in the country during the last 35 years, since its inception in 1970.

Presently, the AICRP–Potato operates with 21 centers located in distinct agro-eco regions of the country. Fourteen of these centers are located in State Agriculture Universities (SAUs), six at CPRI regional research stations and one voluntary center at Ranichauri in Uttranchal. Besides, there are two seed preparatory units located at Kufri for hills and Modipuram for the plains.

There are 7 breeders, 8 horticulturists, 10 agronomists, 10 pathologists and 2 entomologists positioned under the project at 14 SAU based centers.

The meeting was inaugurated by Dr S L Mehta, Vice-Chancellor, MPUA&T, Udaipur and attended by dignitaries from ICAR, CPRI, MPUA&T, AICRP delegates, farmers and representatives from potato based industries. In addition to 3 technical sessions on potato improvement, production and protection, there were two special sessions on ICAR ad-hoc projects and interface with farmers and industries.

Two improved potato hybrids viz. MP/97-583 for cultivation in Indo-Gangetic plains and suitable for chipping and another SM/91-1515 possessing resistance to late blight were recommended for commercial release.
ICAR participated in the following exhibitions during the quarter.

- ICAR along with IARI, Delhi and NDRI, Karnal participated in the Infra Educa 2005 exhibitions. The exhibition was organized at Jaipur (17–19 June 2005), New Delhi (24–26 June 2005) and Chandigarh (2–3 July 2005).

The SAUs and Deemed Universities were highlighted as a temple of education in the field of agricultural science among students and other visitors.

- ICAR along with IARI (Delhi), NDRI (Karnal) and CIFE, Rohtak and CIPHET, Ludhiana participated in International Food, Drinks and Hospitality Exhibition from 2–5 August 2005 at Pragati Maidan.

The value added products of institutes were displayed and also kept for sale. The achievements of Indo-Israel Project of IARI was displayed. The live samples of IARI and NDRI were main attraction in the exhibition.

- Agri Intex 2005, one of the biggest agricultural fairs of south India, was held during 11–16 August, 2005 at Codissia Trade Fair Complex, Coimbatore.

  ICAR and its institutes participated in a big way. The visitors showed keen interest and appreciated the ICAR exhibition.

  CPCRI, Kasaragod bagged 1st prize for the best display in the exhibition. Following ICAR institutes participated in the Agri Intex Exhibition: SBI (Coimbatore), CIBA (Chennai), CSCR&TI (Regional Station, Udagamandalam), IARI (Regional Station, Wellington), IIHR (Bangalore), CPCRI (Kasaragod), CTCRI (Thiruvananthapuram), CRRI (Cuttack), PDBC (Bangalore), CPRS (Ooty), NBSS&LUP (Ooty), CMFRI (Kochi), CIFT (Kochi), ISR (Calicut).

The objective of the fair was to educate farmers on latest trends in agriculture as well as the scope of food processing industry, dairy, post harvest technology, etc.

- NRC on Banana Stall was awarded 1st prize for Best Institutional display in the Banana Festival held at Pragati Maidan, Delhi from 4 to 6 August 2005. The value added products of banana and other new varieties, technologies, etc. were displayed in the stall.

- NIRJAFT, CRJIAF, CIFE, Kolkata Centre, NBSS&LUP and CRRI, Cuttack participated in 9th National Expo and displayed the achievements and new technologies. The exhibition was organized at Bidhan Nagar, Kolkata from 2 to 11, November 2005.

Dr Narendra K Tyagi

Born on 12 January 1947 in village Ismilepur (Bijnore), Uttar Pradesh, Dr Tyagi was educated at Beelna (Moradabad) 1951–1955, Inter College, Hasanpur (Moradabad) 1955–60, GIC (Amroha) 1960–62, GBPUAT (Pantnagar), 1963–67 and IIT (Kharagpur) 1967–69.

Dr Tyagi began his career as Assistant Professor in 1970 at PAU, Ludhiana and moved to OUAT, Bhubaneswar the same year where he continued till April 1975. After a brief stint at the University of Roorkee, he joined CSSRI (ICAR) as Agricultural Engineer (S2) in 1975 and rose through the ranks to reach the position of Principal Scientist in 1986 and that of Director in 1994. He was Sr. Fulbright Fellow and Visiting Professor at Utah State University during 1990 and Sub Project Coordinator of UNDP-FAO supported ‘Centre of Excellence in Irrigation Management’ at CSSRI, during 1987–92. He has been the Mission Leader of National Agricultural Technology Project (NATP) on Waste Water Use. He joined as Member, ASRB, in June 2005.

Dr Tyagi’s main research interest has been integrated water resources planning and management with focus on hydro-salinity modelling, water quality management and water management systems planning. The research conducted by him has enhanced the understanding of surface water-groundwater interactions leading to conceptual framework of water management in arid regions having saline environment.

Dr Tyagi, a fellow of the Indian...
Society of Agricultural Engineers and the National Academy of Agricultural Sciences, was bestowed with Jawahar Lal Nehru Award (1984) for his outstanding postgraduate research, Rafi Ahmad Kidwai Memorial Prize for his work on water resource planning in saline environment (1996), Vasanth Rao Naik Award for technology development for rainfed farming (1999). The National Academy of Agricultural Sciences also recognized his outstanding contribution to science and technology of water resources management.

As member of the Special Group constituted by the Ministry of Water Resources (1996–2001), Dr Tyagi was actively associated with Irrigation Command Area Development, which is the national programme for rehabilitation of irrigation systems covering 140 projects over an area of 20 million hectares.

### Appointments

The following appointments have been made in the Council during July to September 2005.

- Dr P Kumar as OSD, NRC on Pomegranate, Sholapur.
- Dr P S Naik as Project Coordinator (Potato Improvement), CPRI, Shimla w.e.f. 1.7.2005.
- Dr A K Mehta, Zonal Coordinator-I, PAU, Ludhiana w.e.f. 1.7.2005.
- Dr W S Lakra as Director, NBPG, Lucknow w.e.f. 15.7.2005.
- Dr R K Lakra as Project Coordinator (Honeybee), AICRP on Honeybee Research and Training, CPRI, Shimla w.e.f. 16.7.2005.
- Dr R L Srivastava as Project Coordinator (Linseed), CSAUART, Kanpur w.e.f. 16.7.2005.
- Dr Ashok Kumar Singh, ZC-IV, CSAUAT, Kanpur w.e.f. 25.7.2005.
- Dr B S Dhillon has been relieved from his duties as Director, NBPG, New Delhi w.e.f. 26.7.2005 and subsequently has been repatriated to his parent Department viz. PAU, Ludhiana.
- Dr J L Karihaloo has been given the acting charge of Director, NBPG, New Delhi w.e.f. 26.7.2005.
- Dr M K Mandape, ZC-VI, CAZRI, Jodhpur w.e.f. 26.7.2005.
- Dr B B Singh as Project Coordinator (MULLARP), IIPR, Kanpur w.e.f. 3.8.2005.
- Dr O K Sinha as Project Coordinator (Sugarcane), IISR, Lucknow w.e.f. 3.8.2005.
- Dr M S Palaniwadi as Project Coordinator (Tuber Crops), CTCRI, Thiruvananthapuram w.e.f. 4.8.2005.
- Dr B S Hansra as Joint Director (Extn.), IARI, New Delhi w.e.f. 5.8.2005.
- Dr G G S N Rao as Project Coordinator (Agro-Meteorology), CRIDA, Hyderabad w.e.f. 5.8.2005.
- Dr Om Prakash as Project Coordinator (Subtropical Fruits), CISH, Lucknow w.e.f. 9.8.2005.
- Dr Ajay Kumar Singh, ZC-II, NBSS&LUP Regional Centre, Kolkata, w.e.f. 10.8.2005.
- Dr S V Subbian was given charge of Acting Project Director, DWR, Hyderabad w.e.f. 11.8.2005.
- Dr D K Rautaray as Project Coordinator (Palms), CPCRI, Kasaragod w.e.f. 12.8.2005.
- Dr B Mishra as Project Director, DWR, Karnal w.e.f. 12.8.2005.
- Dr Muneshwar Singh as Project Coordinator (LTFE), IISS, Bhopal w.e.f. 18.8.2005.
- Dr S K Rautaray as Project Coordinator (UAE), CIAE, Bhopal w.e.f. 18.8.2005.
- Ms Sushama Nath has joined as Acting Project Director (Extn.), IARI, New Delhi w.e.f. 1.9.2005.
- Dr B M C Reddy as Director, CISH, Lucknow w.e.f. 1.9.2005.

### New Governing Body Member

Shri Mahboob Zohaed, Member of Parliament (Lok Sabha) joined ICAR as Governing Body Member.

### Retirements

The following officials of the Council retired on 31.8.2005.

- Ms Shashi Misra, Additional Secretary (DARE) and Secretary (ICAR).
- Shri Sukh Pal, Secretary, ASRB.
- Shri A S Aggarwal, Under Secretary.
- Shri Suresh Prasad, Section Officer.
- Shri Surinder Kumar Arya, Senior Sales Assistant.
- Smt Madhumita Biswas, UDC.

### Visits Abroad

- Dr R C Agarwal, Senior Scientist, NBPG, New Delhi was deputed to attend a Workshop on In situ Conservation and a Training Course of GLS in the FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. Exp. by FAO from 29.8.2005 to 2.9.2005.
- Dr Abraham Varghese, Principal Scientist, IIHR, Bangalore was deputed to participate in the 2nd International Symposium on Biological Control of Arthropods at Pavos, Switzerland from 12–16 September 2005.
- Dr I D Garg, Head, Plant Protection, CPRI, Shimla was deputed to Scotland, UK as a member of Expert Working Group of FAO-Exp by European Plant Protection Organization (EPPO) from 12–16 September 2005.
- Dr N Sarangi, Director, CIFA, Bhubaneshwar was deputed to participate in the 8th Technical Advisory Committee Meeting of NACA and the FAO/NACA Regional Workshop to synthesize the NASCO and develop a prospective analysis of the future Aquaculture Development in Asia in Iran from 27 September to 3 October 2005.

Shri Mahboob Zohaed, Member of Parliament (Lok Sabha) joined ICAR as Governing Body Member.
FAO Director-General Visits
National Agricultural Science Museum

Mr Jacques Diouf, Director-General, FAO keenly looking at the exhibits of Beginning of Pottery in India at the National Agricultural Science Museum, New Delhi

Mr Jacques Diouf, Director-General, FAO looking at the photographs of the former Indian Agriculture Minister and President of ICAR

The FAO Director-General visiting the hall of Institutes of Veterinary Science. Dr S Ayyappan, DDG (Fisheries) has also accompanied the dignitary

Dr Mangala Rai, Director-General, ICAR enjoying a joke with the FAO Director-General

(PHOTOS: Gurnam Singh)