ICAR Reporter

OCTOBER–DECEMBER 2009

http://www.icar.org.in

News in Brief

From the DG's Desk	**1**
Workshops, Meetings, Seminars, Symposia, Conferences	**3**
Tenth Biennial Group Meeting of AICRP on Tuber Crops	3
Fourth National Conference of KVKs	4
Food Processing for Rural Empowerment	4
Meeting of AICRP on Application of Plastics in Agriculture	5
International Linkages	**6**
International Co-operation to Increase Yield of Pulses especially in Dry Areas	6
Foreign Delegates at CIPHET	6
Delegation from Iowa State University at CIAE	7
Capacity Building	**7**
Bio-diesel Esterification Plant at Jhansi	7
Laboratory Building at CIPHET	8
Trainings	8
Celebrations/Farmers' Corner	**11**
IIVR Celebrates 17th Foundation Day	11
86th All India Farmers' Fair at Pantnagar	11
Success Story	**12**
Impact of Watershed Management on Ground Water Recharge in Garhkundar Watershed	12
Composite Fish Farming with Grass Carp	15
KVK Spectrum	**16**
Zonal Workshop of KVKs of Zone-I	16
Personnel	**18**
NAIP	**19**
Glimpse of ICAR Achievements 2009	**20**

From the DG's Desk

Dear Readers,

In few days from now the New Year 2010 will roll in. The year 2009 gave us several warning signals about the likely impact of the climate change on agriculture in days ahead. During the year we witnessed winter with spells of high temperatures, normal arrival of monsoon followed by drought like situation and floods before the withdrawal of monsoon. The erratic climate behaviour has added a new dimension to the challenges already existing before agriculture like feeding the ever-growing population from indigenous production, improving the average income of farmers and farm workers, reversing the trend of slowdown in growth rate of productivity, resource degradation, market shocks, human resources, retaining youth in agriculture etc. A holistic view of the scenario leaves no room for complacence or rather demands that our research efforts for technology generation and delivery be proactive and futuristic.

The Council during the 10th and 11th Plan has made an all-round effort with reasonable degree of success to reorient our research, frontline extension and education programmes, approach to implement them, forge new partnerships both at national and international level, with organizations in private and public sector, introduce Organization and Management reforms to improve the system's efficiency, to keep abreast with latest in the field of science, and more importantly to sharpen the system's response to emerging challenges. The *Perspective Plan, 2025* documents for all the institutes of the Council have been developed based on a critical SWOT analysis of the present and emerging agricultural scenario.

Among the structural reforms, 12 National Research Centres,

The research approach has been reoriented by linking research to address agricultural production to consumption system in continuum, sustainable livelihood security especially in the disadvantaged areas.

All India Coordinated Research Projects on Floriculture and Water Technology Centre for Eastern Region will now work in Directorate mode for basic, strategic and applied research for location, situation and system specific technology development. The Project Directorate on Biological Control has been restructured as National Bureau on Insects. The KVKs that were 273 in 2003 are now 569. The 8 Zonal co-ordinating Units have been upgraded to Project Directorates. The research approach has been reoriented by linking research to address agricultural production to consumption system in continuum, sustainable livelihood security especially in the disadvantaged areas.

The effects of climate change, being transboundary in nature, pose the biggest challenge for agricultural sustainability at global level. A network project on Impact, Adaptation and Vulnerability of Indian Agriculture to Climate Change was started in 10th Plan with 15 centres. The network has been strengthened further and the number of centres across the country increased to 23. A state of the art National Institute on Abiotic Stress Management has been initiated to deal specific issues of agriculture related to climate change. The genetic resources are expected to play a very crucial role in developing new varieties/ breeds with desired traits to improve quality of the produce and resilience of agriculture against climate changes, and to address the issues the Council has established a DNA Bank cutting across plant and animal kingdoms. The ICAR has embarked upon an ambitious multidisciplinary programme 'Bioprospecting of Genes and Allele Mining for Abiotic Stress Tolerance' in a network mode involving 35 institutions in NARS and universities focusing on important plants, micro-organisms and livestock adapted to extreme environments. It is well accepted that biotechnology would play pivotal role and transgenics could be highly rewarding. Hence concerted research efforts are on in 16 important crops.

Agricultural education has to evolve in tune with fast changing national and international scenario to develop competent and skilled human resources. The post-graduate (95 disciplines at master's and 80 disciplines at doctoral level) course curricula and syllabi of agriculture and allied sciences at the national level were restructured and put to implementation in the country in the academic session 2009. At undergraduate level in 12 faculty, the IV Deans Committee Report on reforms in agricultural education has also been implemented earlier. The Accreditation of 31 Agricultural Universities for assured quality of education is done. For skill development 219 Units have been established in 44 universities for Experiential Learning. To further enhance capabilities of Deemed Universities and Agricultural Universities, the ICAR has launched a programme to promote Niche Area of Excellence in these institutions. A new activity on overseas fellowships is put under the continuing HRD programme with a view to develop competent human resources that are trained in the best laboratories in the world (for Indian candidates) and expose overseas candidates to the best of the Indian Agricultural Universities for facilitating future cooperation with these countries.

The Council remained actively involved with other national agricultural research organizations of other countries as well as other international organizations such as the CGIAR. Bilateral and multilateral Memoranda of Understandings have been signed. Rice, wheat, maize, pulses and oilseeds crop in our country are at the centre stage of the international cooperation. Development of C^4 rice and varieties of wheat that are resistant to Ug 99 rust are important initiatives with international collaboration.

The future developments in agriculture are going to be technology led and therefore knowledge and resource intensive. The business as usual approach has to be shed off and innovative solutions are called for. Transgenics in agriculture, as I have often said, will be order of the day to meet the enhanced demands for quality food and also to provide shield against impact of climate change. Microbes will prove to be source of new genes, and catalyst for processing and product development. The application of information and communication technologies and a sensor-based decision support system, especially in knowledge empowerment of the farmers has to receive priority attention. The time is running out and we need to enhance the investments in agricultural research, education, extension and development, sooner than later. I am sure the timely investments will bear fruits and ensure that agriculture remains a robust sector of national economy.

My best wishes for Happy New Year 2010.

Mangala Rai
e mail: mrai.icar@nic.in

WORKSHOPS, MEETINGS, SEMINARS, SYMPOSIA, CONFERENCES

Tenth Biennial Group Meeting of AICRP on Tuber Crops

Bhubaneshwar, 11 October 2009. The All-India Co-ordinated Research Project on Tuber Crops organized the 10th Biennial Group Meeting at Orissa University of Agriculture and Technology, Bhubaneshwar.

Seventeen centres presented the progress reports. Four varieties were recommended for notification. The production and protection technologies were identified for adoption. New programmes were identified with an emphasis on production of quality planting material.

The AICRP on Tuber Crops was adjudged as "Outstanding AICRP for 2007", by the ICAR for its contribution in the cultivation of elephant foot yam, cassava, sweet potato and taro. One of the highly applauded achievements was elephant foot yam variety Gajendra which revolutionized the cultivation of elephant foot yam that making small and marginal farmers happier and with assured profit. Another achievement was identification of high β carotene (vitamin A) sweet potato cultivars which have the potential to mitigate vitamin A deficiency and malnutrition in the country. The participants appreciated the contribution of AICRP on Tuber Crops.

During the occasion, Dr H P Singh, Deputy Director-General (Horticulture) formally launched four new centres of AICRP on banana, mushroom, onion and garlic, and medicinal and aromatic plants for Orissa University of Agriculture and Technology, Bhubaneshwar.

e mail: icarreporter@rediffmail.com

Conservation and susceptibility of coastal living resources of India

Cochin, 3 December 2009. The Society of Fisheries Technologists (India), Cochin organized a National seminar on "Conservation and susceptibility of coastal living resources of India" (Conserve Fish 2009) at Central Institute of Fisheries Technology from 1 to 3 December.

The present-day value-chain concept in fish trade focusses on—the species and product by working backwards to source from which fish are caught and forward to the consumer. The issues of eco-labeling and traceability of the products exported have further expedited the need for more efficient management of coastal resources. In the Technical Sessions of the National seminar topics discussed were: (i) Coastal fisheries resource management, (ii) Environment and fishery resources, (iii) Responsible fishing systems for susceptibility, (iv) Processing and quality assurance of aquatic foods, and (v) Market driven conservation in fisheries and livelihood issue.

e mail: cift@ciftmail.org

Fourth National Conference of Krishi Vigyan Kendras

Coimbatore, 8 November 2009. Shri Sharad Pawar, Union Minister of Agriculture inaugurated Fourth National Conference of Krishi Vigyan Kendras at Tamil Nadu Agricultural University, Chennai. He said that

Indian agriculture has registered a phenomenal growth during the last four decades. The production of major agricultural commodities such as foodgrains, vegetables, fruits, milk, eggs and fish has increased several folds. As a result, the per caput availability of important food items has increased despite increasing population. However, the share of agriculture in national GDP and in the employment has reduced from 51% and 72% to 18% and 52%, respectively, during 1951-2008. The ratio of agricultural land to agricultural population has shrunk to 0.3 ha/person in India as compared to over 11 ha/person in the developed countries. The resources are therefore getting marginalized and there is tremendous pressure on natural resources with diversion of agricultural land, water and labour towards industrial, urban and non- agricultural sectors. In this context, the KVKs have to work as resource and knowledge centre, and may play significant role in empowering farmers. And to make KVKs successful in this endeavour the State Agricultural Universities need to take up the role of technology provider to KVKs more seriously than ever before.

Chief Minister of Tamil Nadu, Dr Kalaignar M Karunanidhi, gave his Presidential address in which he said that there was opposition to introduction of machineries in agriculture in place of human-beings some 15 years back. But now, once the farmers have started using machineries in agriculture, there is demand for further introduction of machineries for improving the agricultural production.

Due to industrialization and urbanization, the cultivable area is slowly shrinking and hence new agricultural technologies are being advocated to the farmers to increase the agricultural productivity. To achieve productivity, farmers should be trained and encouraged by the Scientists of the Krishi Vigyan Kendras to adopt latest technologies. Apart from the above, Tamil Nadu is implementing Drip irrigation scheme, Precision Farming, Agricultural Mechanization for the benefit of farming community.

e mail: icarreporter@rediffmail.com

Communication skill improvement for students

Pantnagar, 7 December 2009. Fisheries Society of College of Fisheries Sciences organized a workshop for undergraduate students on soft skills for enhanced placement in job market. Inaugurating the workshop Dr U P Singh, Dean, College of Fisheries Sciences, told the participants that development of communication skills, leadership and pleasant etiquettes has become must in the present times of cut throat competition in the job market. He stressed the need to organize such workshops on regular basis with the help and collaboration of Department of Agricultural Communication.

The Director, Communication shared experiences of participants and highlighting areas expressed as most crucial. The art of presentation, value of non-verbal communication and art of influencing in group were discussed at length.

e mail: vc@gbpuat.ernet.in

Food processing for rural empowerment

Ludhiana, 2009. Two-day National Seminar in Hindi on 'Role of food processing in rural empowerment', was held at the Central Institute of Post-Harvest Engineering and Technology (CIPHET), PAU campus.

Sessions were on technologies on processing food/ meat, packaging, storage and transfer of technology to masses. The emphasis was given on developing technologies to help people in rural areas. The Director, CIPHET, said that difference in rural areas could only be made when scientists make equal efforts to develop industry in villages by transferring technologies. He said that more Entrepreneurship Development Programme (EDP) should be developed in rural areas. On the occasion, Mr Bachittar Singh, a farmer from village Deh Kalan in Sangrur district, shared his experience of successfully establishing soybean plant for producing various products.

e mail: icarreporter@rediffmail.com

Brackishwater Aqua-Farmers' Meet

Navsari, 3 October 2009. The Central Institute of Brackishwater Aquaculture in collaboration with the Navsari Agricultural University, Navsari, Gujarat, organized a 'Brackishwater aqua-farmers' meet at Danti-Umpharat farm of the University, in connection with the first harvesting of the tiger shrimp (*Penaeus monodon*) crop of the experimental and demonstration ponds of the farm, under the collaborative project of the CIBA and Navsari Agricultural University. The Vice-Chancellor, Dr H C Pathak, applauded the efforts made by the scientists of the CIBA and Navsari Agricultural University in developing brackishwater aquaculture in this part of Gujarat and expressed the strong support from NAU to CIBA for future collaborative programmes in the fisheries sector. Shri R C Patel, MLA, also addressed the farmers and requested the farmers to share their experiences, particularly the problems faced by them, with the scientists and take advantage of the facilities and research results being evolved from this joint collaborative project, in solving their problems in brackishwater aquaculture.

During the interactive technical session, the aqua-farmers discussed various issues and problems such as quality seed for stocking and advanced technologies to combat diseases in shrimp farming.

e mail: director@ciba.res.in

Meeting of AICRP on Application of Plastics in Agriculture

Udaipur, 17 November 2009. The IX Coordination Committee meeting of AICRP on Application of Plastics in Agriculture was organized at Collage of Technology and Engineering, MPUAT, Udaipur from 16 to 17 November 2009. Dr S.S. Chahal, Vice Chancellor, MPUAT expressed that plasticulture, especially polyhouses has to play a measure role in mitigating the effect of global warming and climate change on horticultural production. Role of plastics in animal husbandry and fishery is also an important aspect to be dealt in the project. He emphasised that all the centres have to prepare and keep ready RPF I, II and III for research audit.

Dr M.M. Pandey, Deputy Director General (Agricultural Engineering) inaugurated new centre at Udaipur and asked from Project Co-ordinators and research engineers to get their contributions and revisit the projects which are to be discussed in the meeting to ensure all the major objectives and thrust areas, as identified by the QRT, are properly taken care of. He added that linkages should be developed with other agencies working in the area and the AICRP may work for development of technologies. Dr S.S. Chahal, Vice-Chancellor, MPUAT expressed that the plastics have become very important input for the modern agriculture and contributed a lot in

improving the production and quality of most agricultural and horticultural crops. Many plastics techniques have been adopted in India, but modern techniques are still lagging behind as compared to other countries, *e.g.* China. He emphasised the use of plastics in water distribution system, packaging of seed, fertilizers and other agricultural inputs, micro-irrigation, greenhouses. We need to strengthen our science and technology on such issues. He also called upon the need of inclusion a course for plastics as a engineering material and its uses in agriculture which should be common to all the three branches of Agricultural Engineering.

e mail: icarreporter@rediffmail.com

International Linkages

International co-operation to increase yield of pulses especially in dry areas

New Delhi, 14 December 2009. The International Centre for Agricultural Research in the Dry Areas (ICARDA), based in Aleppo, Syria has recently established its South Asia Regional Programme in New Delhi, India to strengthen our collaborative research in the region. This newly established ICARDA Centre organized its first Regional Coordination Meeting for South Asia and China from 12 to 14 December 2009 at NASC Complex.

To discuss on-going and future collaborative research issues, develop interaction among participating countries and networking on common research agenda, etc. a meeting on enhancing food and nutritional security in South Asia and China was held at NASC Complex. Dr Mangala Rai (Secretary, DARE and DG, ICAR) said, "We plan to work with the Syria-based International Centre for Agricultural Research in Dry Areas to increase the crop yield of pulses especially in dry areas." He added 'we will make use of ICARDA's huge collection of germplasm of lentils (*masoor*), chickpea (gram) and grasspea (*kulthi*)."

Besides pulses, it will also focus on wheat, barley and livestocks too, he said, adding India will share the research knowledge with the ICARDA under the recently launched South Asia and China Programme.

It becomes all the more important in light of global warming where heat tolerant varieties with less water requirement are going to be our major requirement. The joint meeting of this nature was also focused on barley improvement for high-yielding malt; food and feed in various agro-ecologies; resource use efficiency and policy options for improving livelihood of rural communities of South Asia and China; and integrating crop-livestock system and rangeland management.

Dry areas of the developing world occupy some 30 million ha (about 19% of total global land area) and are home to one-third of the global population-over 1.7 billion people. About 16% of the world population lives in chronic poverty, particularly in the marginalized rainfed areas. The decline in soil fertility, changes in water-table depth rising salinity will further aggravate the poverty and livelihood in this region.

e mail: icarreporter@rediffmail.com

Foreign delegates exchange views with local women entrepreneurs at CIPHET

Ludhiana, 27 October 2009. An interactive meet was organized at the CIPHET between the delegates of United States of America based Women's Earth Alliance (WEA), an organization engaged in developing entrepreneurship and protecting environment, and local women entrepreneurs exchanged information and knowledge on women entrepreneurship. The women entrepreneurs trained by CIPHET and Punjab Agricultural University are in the manufacturing and sale of processed foods like squashes and fruit juices, jams, jellies, pickles, soya milk, honey etc., and making of chemical free detergents, soft toys, candles, herbal medicines etc. They exchanged their views with foreign delegation on difficulties and challenges faced by them. They also shared their experiences about how they are running business by forming self-help groups and individually. A large number of women from different parts of the world including India were working with WEA for enhancing the income of women for their empowerment through sustainable agricultural practices. The protection of natural resources and

environment was the biggest challenge in the world and women can do a lot in saving the environment and creating a better world. During direct interaction between foreign delegates, local women entrepreneurs asked for help in exporting products and management of domestic waste with technology available in foreign countries. They also told them about hardship faced in getting finance and maintaining coordination in self-help groups.

e mail: icarreporter@rediffmail.com

Memoranda of Understandings

- An MoU was signed on 5 October 2009 between the Indian Council of Agricultural Research, New Delhi, India and the Golden Valley Agricultural Trust, Lusaka, Zambia, for cooperation in agriculture.

- An MoU was signed on 3 November 2009 between the Indian Council of Agricultural Research, New Delhi, India and the University of Georgia, Athens, Georgia, USA for cooperation in agriculture.

Delegation from Iowa State University, USA visits CIAE, Bhopal

Bhopal, 5 November 2009. A 5-member delegation from Iowa State University, USA visited CIAE on November 5, 2009 to discuss various programmes and

areas of mutual interest and for identifying R&D projects which could be initiated in collaborative mode. The delegation expressed interest in soybean processing, bio fuel programme, soil bin testing and drainage initiatives.

Capacity Building

Location-specific livelihood interventions

Cochin, 23 October 2009. The field level activity of the project on 'Location specific livelihood interventions in fisheries sector for the empowerment of fisherwomen of Kerala', supported by Department of Science and Technology, Government of India and implemented at the Central Institute of Fisheries Technology, Cochin, was launched at Azheekkal, Kollam.

In the inaugural function Dr Femeena Hassan, Senior Scientist, CIFT briefed about the project along with a gist of interventions.

An awareness campaign on 'Quality assurance in seafood processing and preservation' followed the inaugural function with technical sessions pertaining to different aspects of seafood quality assurance. The lectures were also delivered on: (*i*) Safety and hygiene, (*ii*) Bivalve fishing, (*iii*) Seafood nutrition facts, and (*iv*) Prospects of value addition in seafoods for ensuring livelihoods of fisherwomen.

e mail: cift@ciftmail.com

Bio-diesel Esterification Plant inaugurated at Jhansi

Jhansi, 12 October 2009. Bio-diesel plant installed at the NRC for Agroforestery has a capacity to esterify 40 litres of oil yielding 36 litres bio-diesel per day. Similar plants can be installed at village or at self-help group level to meet the local requirements. This unit was installed at the Centre with a view to demonstrate oil esterification and using thus obtained bio-diesel to run pump set and tractor and ultimately motivate farmers in the region to cultivate *Jatropha* and *karanj*. *Jatropha* plantation is to be raised through *Jeevan Jyoti* project under National Rural Employment Guarantee Scheme (NREGS) in this area. Farmers of

the region are taking due interest in bio-diesel plant because their day-to-day agriculture activity and conveyance is dependent upon it. With the popularity of affordable bio-diesel plant, farmers will go for cultivation of such crops on large scale. However, its cultivation may require additional arable land, which is hard to be spared under present scenario, therefore, the National Research Centre for Agroforestry, Jhansi, is popularizing *jatropha* as bio-fence as well as its plantation on non-arable lands.

Dr A K Singh, Deputy Director-General (Natural Resource Management), ICAR, New Delhi, inaugurated Bio-diesel Esterification Plant at National Research Centre for Agroforestry, Jhansi on 12 October 2009.

e mail: krishivanili@nrcaf.ernet.in

Laboratory building inaugurated at CIPHET

Ludhiana, 30 October 2009. Dr Mangala Rai, Secretary, DARE and Director-General (ICAR) visited CIPHET, for inauguration of Laboratory Building and

said that share of Agriculture in GDP has reduced to less than 18% in the country and situation could only be improved through value addition by processed food.

e mail: icarreporter@rediffmail.com

Trainings

Training on Post-harvest processing and value addition to livestock produce was conducted at Ludhiana on 11 November 2009, under the ICAR sponsored winter school on "Recent Developments in Post-Harvest Processing and Value Addition to Livestock Produce".

DNA Barcoding of Fish and Marine Life: To bring genomics to biodiversity management for posterity and knowledge of molecular taxonomy and barcoding, a National Training on 'DNA Barcoding of Fish and Marine Life' was held at National Bureau of Fish

Genetic Resources, Lucknow from 3 to 12 December 2009.

e mail: nbfgr@sancharnet.in

Entrepreneurship Development in Aquaculture: To provide the technical content of entrepreneurial avenues, preparation of bankable projects covering the economic aspects and to develop their own business enterprise in coastal and brackishwater aquaculture sector, a national level training course on 'Entrepreneurship Development in Coastal Aquaculture' was held at the Central Institute of Brackishwater Aquaculture, Chennai from 26 to 31 October 2009.

e mail: director@ciba.res.in

Special Training on Mechanization for participants from NEH Region was conducted at CIAE, Bhopal from 29 October 2009. The objective of the training programme was to develop entrepreneurship on improved agricultural machinery for custom hiring, processing and value-addition for promotion of self-employment opportunities. Highlight of the training programme was improved hand tools, implements and equipment for processing and value-addition for promotion of hill agriculture, horticulture and processing.

Genome and metagenome analysis in research and diagnosis: An ICAR sponsored Winter School on "Genome and metagenome analysis in research and diagnosis", was organised by the Division of Biochemistry, Indian Veterinary Research Institute,Izatnagar from 11 November 2009. The Chief Guest of the occasion, Dr R M Acharya, former Deputy Director General (AS), ICAR, emphasized that the ever-growing biotechnological tools in the field of genomics and proteomics made it possible to device high thoroughput technologies for disease diagnosis and development of prophylactics.

Prof. M C Sharma, Director and Vice-Chancellor, IVRI opined that livestock population is under constant threat from various diseases, which results in significant loss of production. Timely and specific detection of pathogens is also one of the important factors to control the spread of diseases. He further added that advances in molecular biology have paved the way for development of better prophylactics and immunodiagnostics.

Training programme on *Pashu prabandhan evam nasal sudhaar*, sponsored by State Agricultural Management Institute, was held between 3 and 7 November 2009. It was attended by 30 inservice personnel including Dy. Directors of Animal Husbandry. Agricultural Research and Soil Water Conservation, Chief Veterinary Officers and livestock extension officers from different districts of Uttar Pradesh.

Serological and PCR based diagnosis of economically important infectious diseases of domestic animals, a 3-week short term training course on Serological and PCR based diagnosis of economically important infectious diseases of domestic animals, sponsored by Department of Biotechnology, Ministry of Science and Technology, Government of India, New Delhi, was held at Indian Veterinary Research Institute, from 10 to 30 November 2009. The short course was organized by the Centre for Animal Disease Research and Diagnosis (CADRAD), and attended by 14 participants including scientists, associated professors and lecturers from different corners of the country.

Delivering the presidential address, Prof. M C Sharma, Director and Vice-Chancellor, IVRI emphasized that number of infectious diseases, viz. foot-and-mouth disease (FMD), haemorrahagic septicaemia (HS), classical swine fever (CSF), sheep pox, goat pox, bluetongue (BT) etc. are causing huge economic losses by way of morbidity and mortality.

e mail: dirivri@ivri.up.nic.in

Foreign training on processing and value-addition: A training programme on "Equipment and Technology for Processing and Value-addition to Agricultural Products at Small-Scale/Rural Level" was organized

for Afro-Asian Rural Development Organization (AARDO) participants from 16 to 27 November 2009 at CIAE, Bhopal. There were six participants from Republic of China (Taiwan), Jordan, Mauritius, Kenya, Nigeria and Sudan.

Winter School on Bio fuels: Sustainable Alternate to Fossil Fuels was organized at CIAE, Bhopal, during 10-13 November 2009. During the winter school, the participants learnt various techniques/process/ methods of biofuel development and utilization through expert lectures, live demonstrations of renewable energy gadgets followed by the hand on training/practical.

ICAR Reporter wishes all its readers

Happy New Year 2010

Invitation for Summer/Winter Schools and short courses for 2010-11

As an HRD initiative, the Council supports the organization of Summer/Winter schools and Short Courses in different disciplines of agriculture and allied sciences in Agricultural Universities (AUs) and ICAR Institutes. The main objective of Summer/Winter Schools and Short Courses is to provide an in-service opportunity to teachers, research workers and specialists working in AUs and ICAR Institutes to update their knowledge and skills to keep abreast with the latest developments in the specialized/emerging areas of agricultural and allied sciences. These Summer/Winter Schools and Short Courses also cover specialized new techniques, research methodology and teaching methods and materials.

- Organic farming
- Precision farming
- Transgenic development in crop plants
- Genomics
- Molecular breeding and marker assisted selection
- Gene transfer and therapy
- Crop modeling for better management
- Seed production including hybrid seed production, processing and marketing
- Bio-informatics
- Bio-fuels
- Nano-technology in agriculture
- Increasing photosynthetic efficiency
- Natural edible colours and flavours
- Resource conservation technologies
- Climate change–mitigation and adaptation including carbon sequestration
- Micro-irrigation
- Integrated nutrient management
- Enhancing water productivity and water resource management
- Assessing soil-plant-atmosphere system for increasing water, soil and nutrient use efficiency
- Forest and natural resource management
- Integrated farming for high hills and related mechanization
- Greenhouse technology/protected cultivation
- Integrated pest and disease management
- Micro-propagation techniques
- Seed plant health management in vegetatively propagated materials
- Plant architectural engineering and management
- Off-season production of fruits, vegetables and flowers
- Protected cultivation for enhanced profitability
- Bio-management of orchard soil health
- Hi-tech horticulture
- Processing of milk and milk products/dairy byproducts
- Value addition of livestock products and quality control
- Feed analytical techniques
- Bio-prospecting
- Renewable energy sources
- Post-harvest technology, quality control and value addition
- Farm waste utilization and residue management
- Designer foods and feeds
- Food quality standards
- Farm machinery and power-policy
- Use of CAD and CAM for designing of agricultural machinery
- Secondary agriculture
- Aquaculture engineering
- Fish product quality standards and certification
- Fish biotechnology
- Fish diagnositics
- Multiple breeding of carps
- Ornamental fish culture
- Cage culture–Inland/Marine
- Fish feeds
- Marine fish stock assessment
- Mariculture
- Barcoding in fishes
- Entrepreneurship development and management
- Techniques in policy planning, monitoring, modeling, analysis and impact assessment
- Extension strategies for combating current agrarian crisis
- Participatory extension research and management
- RS and GIS application to water resources
- Ultra-sonography and digital imaging
- IPR management
- WTA, GATS and IPR
- Use of ICT in agriculture
- Decision support systems in agricultural research
- Experiential learning
- Developing efficacious human resource/Learning Resources/objects
- Agri-business and market intelligence
- Technology forecasting and visioning
- Innovations in educational technology
- Apparel manufacturing and designing
- Interior decoration and space designing
- Gender mainstreaming and gender budgeting
- Drudgery reduction technologies useful for farm women and farm workers

Celebrations/Farmers' Corner

IIVR Celebrates 17th Foundation Day

Varanasi, 16 October 2009. The Indian Institute of Vegetable Research celebrated its 17th Foundation day. On this occasion Dr Mangala Rai (Secretary, DARE and Director-General, ICAR) chaired the function. About 500 farmers from Uttar Pradesh, Bihar, Jharkhand and Uttarakhand attended the function. Dr Rai appreciated the efforts of the institute in the development of high-yielding vegetable varieties and hybrids. He focused on minimizing the productivity gap by ensuring quick, regular and quality delivery of improved technologies. He said that in India the agriculture is at high risk on account of frequent spells of abiotic stresses. The situation therefore warrants technological interventions of advanced nature and highly competent human resource to counter the impact of abiotic stresses in agriculture. The research in the country to manage biotic stresses in agriculture also has to be addressed through novel scientific approach.

Dr H P Singh, Deputy Director-General (Horticulture) also expressed his views on this occassion equity and environment in Indian perspective. He said that even by 10% increase in water-use efficiency, the vegetable productivity can be increased several folds.

e mail: director@iivr.org.in

XVII Foundation Day of NBFGR

Lucknow, 12 December 2009. NBFGR celebrated its XVII Foundation Day in which Director, Dr W.S. Lakra highlighted the role of NBFGR in conservation of fish species through the development of molecular markers, new initiatives of DNA Barcoding, state fish, registration, quarantine and disease diagnostics etc. The achievements and role of NBFGR in providing a new dimension to fish conservation research was appreciated by Dr N K Tyagi, Member, ASRB. He opined that the fish has an important role to play in increasing the productivity from water and to fulfil the requirement of low cost animal protein. By 2020 the demand of fish will increase to 11.86 million tonnes whereas the current fish production of this country is around 6.5 million tonnes, as informed by Dr M Vijay Gupta. He highlighted some of the issues that need priority attention by R&D Institutions and policy makers such as development of modern mariculture and brackishwater aquaculture practices, use of biological tools for genetic enhancement, development of low-cost feeds, fish seed certification, species diversification and use of non-conventional aquaculture resources, safe guarding interest of small farmers and formation of policies to support the fisheries.

e mail: cift@ciftmail.org

86th All India Farmers' Fair at Pantnagar

Pantnagar, 9 October 2009. Addressing the inaugural 4-day session of 86th All-India Farmers' Fair and Agro-Industrial Exhibition organized by Directorate of Extension Education of the University, Dr J C Bhatt, Director, Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora, emphasized the need to evolve new crop varieties integrating traits that induce nutritive value in the grain; this will help meet the problem of malnutrition to a larger extent.

Uttarakhand is like a natural laboratory of all types of agro-climatic conditions, he added and emphasized the need to follow appropriate agricultural practices using optimum natural resources for the agricultural development in the state.

Dr B S Bisht, Vice-Chancellor of the University and chairman of the inaugural session, explained the significant role of this fair in the transfer of agricultural technology to farmers located in Uttarakhand, Uttar Pradesh, Bihar, Rajasthan, Punjab, Haryana in India and neighbouring country Nepal. Agricultural growth rate of Uttarakhand is more than 5%, for which the state government, the farmers, and agricultural scientists must be congratulated. More than 500 companies and firms from public and private sectors exhibited their products in this *Kisan Mela*. Low-cost precision agricultural implements were the main attraction.

e mail: vc@gbpuat.ernet.in

Success Story

Promotion of lac cultivation in tribal areas of Gujarat

Gujarat presents diverse climatic conditions with a major part exhibiting low rainfall (<700 mm per annum), while districts down to Tapti river show rainfall of more than 2,000 mm. Salinity poses challenge in the coastal regions. Lac cultivation could be an attractive means of income, especially in challenged areas. In the past, lac production was an important activity of the tribes inhabiting in districts Vadodara, Dahod, Godhra, Banaskanta and Sabarkanta. Even with the availability of vast lac host bio-resource in the aforesaid districts, the total output of lac in Gujarat is limited to only 15-20 tonnes per year.

Ber + *Semialata* mixed plantation at Basan Research Centre, Gandhinagar

Identification of a new lac host, *Prosopis juliflora*, available in abundance throughout the state is a very significant finding under this initiative. Very good lac crop yield (yield ratio of output/ input with up to 21) was demonstrated on this host. The production technologies for this host for winter *kusmi* lac was demonstrated at Bhavnagar, Junagadh, Rajkot, Bhachau (*Kuchchh*) and Basan. A package of practices was also developed for winter *kusmi* lac crop on this host. *F. semialata* was successfully demonstrated as suitable host, for providing the summer *kusmi* broodlac, under irrigated condition (output/input yield ratio ~10).

A demonstration of winter lac production was also given in the farmers' field (Tajpur, Banaskantha) on 1,000 big trees of *ber* (*Gola)*. The 2 000 kg *kusmi* broodlac brought from Ranchi, Jharkhand and Bankhedi, Madhya Pradesh was inoculated @ 2 kg/ tree in July 2008. A total 220 q broodlac was harvested. Since, there is no market of broodlac, 70 q of sticklac worth Rs 4.9 lakh was prepared from the harvested crop. Two small scale processing units (100 kg/day) were installed at Forest Research Centres at Basan and Piplej for demonstration of conversion of sticklac to seedlac.

Based on the success of this project, a new project has been sanctioned by the Gujarat Forest Research Institute with a budget allocation of about Rs 1.742 million for establishment of two *kusmi* broodlac farms with farmer-participatory approach for promotion of lac cultivation in traditional and non-traditional areas of Gujarat.

Winter *kusmi* lac on *Prosopis juliflora* at Thalsar, Bhavnagar

e mail: iinrg@ilri.ernet.in

Impact of Watershed Management on Ground Water Recharge in Garhkundar Watershed

The Garhkundar Watershed is located in Tikamgarh, Madhya Pradesh in an area of 850 ha, one of the most disadvantaged districts identified by the Planning Commission of India. The watershed comprises 3 village panchayats (partially) and supports 895 human and 2,648 animal population. About 72% farmers are marginal land holders and majority belongs to OBC (50%), SC (28%) and ST (22%).

During 2009, rains delayed up to August causing panic in the region. There was 612 mm rainfall by the end of September in Garhkundar Watershed. Average rainfall of the area is around 971 mm. Due to scanty rainfall, either crop sowing could not be done or

sown crops could not be saved in surrounding villages. Even water-table in wells did not rise. This triggered out migration from the area. Severe crisis was noticed even for drinking water, in areas surrounding Garhkundar Watershed. Whereas, in Garhkundar Watershed, all wells were full to their brim. All checkdams were full to their maximum storage capacity and main outlet was spilling. It was observed that more than 95% wells in Karguan, Tarichar Khurd and Khiria villages were dry. Average depth of these wells was 15 to 20 m. Even wet wells had hardly 1.0 m water column, which could be pumped within a hour or so using 5 HP motor. The situation in Garhkundar Watershed was totally different. In this watershed, 98% wells were wet and the 2% dry wells were located at the farthest end from watercourse in the upper reaches. Farmers encouraged by water availability in the watershed readily adopted agroforestry interventions, viz. fruit-based agri-horticulture, silvipasture, horti-pasture and plantation of multipurpose tree species. Crop demonstrations in the watershed resulted in increased cropping intensity (21%), crop diversity and productivity. Fodder and milk production has appreciably gone up. The impact of groundwater recharge is clearly reflected in migration pattern

Recharge in wells of Garhkundar Watershed

from the village. Rural population in the age group of 15 and 45 who out-migrated during summers to earn additional income, came back during cropping season. No women folk and children migrated from the watershed, during crop season. Out of four SHGs constituted in the watershed, 2 are doing extremely well and have generated wealth of more than Rs 35,000 in a span of 3 years. This is being used for inter personal loaning to meet their day-to-day requirements.

Dr A K Singh, Deputy Director-General (NRM), ICAR visited at the project site and discussed similar model in the region. He urged farmers to follow Garhkundar model of development to overcome drinking water shortage. He opined that similar work may be done in whole of the region under MNREGS for which there is no dearth of money.

e mail: icarreporter@rediffmail.com

A new dimension of camel rearing

Rapid urbanization and shift to mechanization has eroded the utility of camel as a draught animal. The depletion of traditional grazing areas has rendered camel-rearing practically uneconomical. With returns coming only from the sale of animals at the time of livestock fairs, camel-keeping is under threat of becoming unsustainable with the *Raika* community. Hence there is a need to come out with viable solution to create additional avenues to augment the farmer's income from camel. Since camel meat is presently unacceptable, camel dairying seems to be an alternate option.

Acceptability of camel milk

In India, at the International Pushkar mela, camel milk, tea and coffee made from it attracted a good number of domestic and foreign tourists. Though they do not advertise the fact that they are using camel milk. The taste of camel milk is neutral, and if mixed with other milk there is no way of determining a difference.

The concept is consistent with the historic belief that natural substances like camel milk play an important role in prevention and treatment of diseases. Currently, Bikaner house at Delhi is accepting camel milk which is supplied from Bikaner regularly.

Marketing strategies

In view of rapidly increasing importance of camel milk as a source of income for certain segments of rural population its propagation should be effectively taken up. Camel rearing for milk should be provided incentives in the form of price of milk and subsidy for fodder.

Till the domestic demand increases to a level sufficient to ensure profitability, surplus camel milk can be hygienically packaged and exported to countries where camel milk is a staple diet. The government dairies should be encouraged to accept

camel milk. The major hurdles may be anticipated in following ways and need to be overcome:

- Reversing the prevailing taboos against the sale of camel milk.
- Creating and increasing consumer acceptance towards camel milk.
- Addressing the logistical difficulties of working with migratory camel herds.

e mail: nrccamel@nic.in

Successful pig farmer

The initiatives of IVRI changed the fate of Ramswaroop Singh Chaydhary, a farmer of Dopahriya village, Kanman, block Damkhoda, Bareilly (Uttar Pradesh), who is now one of the most respected and well off farmers/livestock owners in this village. His urge to earn more so that he could provide a better life and education to his children lead him to search for alternative avenues for generating higher income.

With the thought of earning more he once visited the *Kisan Mela* at Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, from where he got awareness about the potential of livestock as a source of income generation. He realized that the profit was highest in pig rearing among all livestock enterprises. He was determined to open a pig farm and was ready to face all odds for this. He took a training on scientific pig rearing from IVRI and constructed a pig farm on his farm land on an area of 3,500 sq. ft (70 ft × 50 ft). With the technical help of IVRI he procured pigs of Large White Yorkshire breed (an exotic breed of pigs) from a government breeding farm Kashipur, and for this purpose he took loan from State Bank of India.

These pigs attain an average weight of 100 kg within 7-9 months of age and can be sold for edible flesh, but he decided to open a pig breeding farm and started with 12 sows and 2 boars. The gestation period of these pigs is 114 days and this breed can give 2 to 3 batches of piglets per year. Further the average litter size is very high ranging from 8 to 12 piglets per farrowing. Within 1 year he got a total of 288 piglets out of which 5 died. The rest he sold off @Rs 1,300-1,600 per piglet and earned a total of appoximately Rs 1 lakh in the first year itself.

When his income rose, standard of living improved and he was called by a number of organizations to tell his success story, and villagers who earlier shunned him not only started talking to him but also made him their opinion leader. He became the most respected person in the village and his two sons also started helping their father in running the pig breeding farm. He also expanded his pig farm and increased the total stock size. He has 25 sows, 2 boars and 20 piglets at present. He sells the piglets of 45-60 days of age @ Rs 1,500 to Rs 1,800 per piglet and adult sows approximately @ Rs 10,000 and Rs 12,000 per adult boar with a body weight of 1.5 to 2 quintals. He regularly vaccinates his pigs against swine fever, provides dewormer thrice in a year and ectoparasiticidal spray twice a year. He prepares feed by mixing low grade ingredients, which is not utilized by human beings and also cheap but suitable for pigs. He has contact with the local *haat* (market) from where he purchases the vegetables and fruits not worth for human consumption for his pigs. His monthly recurring expenditure on the farm is Rs 10,000.00 and his yearly earnings is approximately Rs 3 lakh. He said that his profession gives a cost benefit ratio of 1:2. His farm has motivated a number of youths in nearby districts Badaun, Rampur, Pilibhit, Moradabad etc. to take up commercial pig rearing for which they purchase piglets from Shri Chaudhary's farm. He has received many awards for his success from Prasar Bharati, All India Radio and IVRI. His success was broadcast through Akashwani and Doordarshan and the photographs of his animals and farm are depicted in many books written for the pig farmers and professionals.

The intervention of IVRI and its support in the form of consultancy regarding scientific pig management and timely health care led to the successful Modern Piggery farm of Shri Ramswaroop Singh Chaudhary.

e mail: dirivri@ivri.up.nic.in

Fodder production from dual-purpose wheat during winter under irrigated condition

Livestock is an integral part of hill farming. Cow, sheep, goat, buffalo and yak are the important livestock of hilly regions. Due to the peculiar geographical conditions and agro-ecological nature of such regions, food as well as fodder/feed security at local level is of utmost importance, particularly during winter months. Though quite a good number of fodder trees are available in these areas, they get severely affected by low temperature and frost during winters. Cultivated fodder also has very limited scope, as only 10% of the area is irrigated where vegetables and cereal crops get preference over fodder crops. Therefore, possibility of

cultivation of fodder crops is negligible in hilly areas. Under such conditions, crop varieties offering both fodder and grains will be a viable solution. Wheat varieties serving the dual-purpose have been developed which provide green fodder at early stages of growth (particularly during winter months) and subsequently also provide grains. Farmers can cut the early vegetative crop for fodder and later, the crop grows to produce grains for food.

Sowing time	:	September last week to second fortnight of October
Seed rate	:	100-120 kg/ha
Fertilizer	:	120: 60: 40 (N: P_2O_5: K_2O) kg/ha. Additional 20 kg/ha N after cut of green forage
Cutting time for green fodder	:	70 to 90 days after sowing
Conditions	:	Irrigated conditions
Varieties	:	VL 616 and VL 829
Advantage	:	4-6 tonnes/ha fodder production can be obtained during winter months without significant reduction in grain yield (4.0-4.5 tonnes/ha)

Composite fish farming with grass carp

Shri Periaswamy is a farmer of Indranagar village of Manglutan Panchayat of South Andaman having 2 hactares of land. In 2006, he had constructed a pond (0.08 ha) with the financial support of Department of Agriculture, A and N Administration for utilizing the water for agricultural and allied activities. He purchased some fish fingerlings from Department of Fisheries and reared them. After a year he could not harvest the fish due to poor body weight because of low fertility and high stocking of fishes. He had attended the training programme which helped him a lot in gaining confidence.

The KVK and Fishery Science Division team visited his pond and found that the fertility of the pond was very poor, as the pond was newly constructed and no organic manure was used by the farmer due to lack of knowledge. As per the advice of the experts, he applied lime and cowdung as per the recommended dose. After testing the water quality, he was issued 150 fingerlings including 20 grass carps from Division of Fisheries of the institute. He provided feed with GNC and rice bran 1:1 ratio @ 3% of the body weight of the fish.

Sufficient amount of local grass and banana leaf was also provided daily for the grass carp. The KVK-CARI team took the harvested fishes and sold @ Rs 100/ kg, by which he earned Rs 12,900 from the sale of 129 kg fish and received Rs 5,400 from 18 grass carp fishes. After seeing his interest and dedication, the Division of Fisheries of the Institute selected him as a best fish farmer and awarded him during Kisan Mela organized in February 2009.

e mail: icarreporter@rediffmail.com

KVK Spectrum

Agricultural Technology Week

Ranga Reddy, 5 October 2009. The 'Agricultural Technology Week' was organized by the Krishi Vigyan Kendra, Ranga Reddy district, Central Research Institute for Dryland Agriculture between 1 and 5 October 2009. Field Demonstrations and group discussions were held on (i) Dryland agriculture, (ii) Women empowerment and employment generation activities, (iii) Contingency crop planning for drought

situations/rain deficient years, (iv) Animal husbandry and Veterinary aspects, and (v) Farm implements and watersheds. The celebrations of women empowerment and employment generation activities were carried out on Mahatama Gandhi's carried out birthday on October 2nd.

Biofertilizers and bio-pesticides, viz. *Pseudomonas*, *Trichoderma viridae*, *Azospirillum*, PSB, *Azotobacter*, *Rhizobium* and *Achaea janata* (Granular virus for semi-looper), and farm implements exhibited and sold also. A stall for sales of homemade products were put by KVK trained Self Help Groups (SHS) from Tallapalli and Thimmareddyguda village (Rangareddy district). Eighteen publications in Telugu were put on display and sales. Exhibits depicting dryland technologies developed by the CRIDA and activities of KVK Rangareddy district were displayed. Farmers from Rangareddy, Mahaboobnagar, Medak, Nizambad, Nalgonda districts participated.

e mail:director@crida.ernet.in

Training-cum-Zonal Workshop of KVKs of Zone-I

Jammu, 17 November 2009. A 3-day Training-cum-Zonal Workshop of Krishi Vigyan Kendras (KVKs) of Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana and Delhi jointly organized by Zonal Project Directorate (Zone -I), Indian Council of Agricultural Research (ICAR), Punjab Agricultural University Campus, Ludhiana and Directorate of Extension Education, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-J) was held at Jammu from 15 to 17 November 2009. The objectives of the workshop were to review the progress of KVKs for October 2008 to September 2009 and to finalize the annual action plan of these KVKs for the year 2010.

Dr K D Kokate, DDG (Agricultural Extension) emphasized that the vocational programmes mainly agriculture polytechniques would go in long way to improve the capacity building of the farmers, especially the farmwomen. The emphasis on more and more information networking through bulletins/ calendars of farm operations were highlighted, and all the KVKs were directed to organize the technological weeks through live demonstration of developed technologies, which would act as an eye opener for the farmers for adoption. The need for development of the models on integrated farming system at various KVK farms was also highlighted. He further discussed the challenges of quality seed production and asked the KVKs that more efforts must be laid on this basic input of crop production by pushing a vibrant seed replacement policy with the quality exotic seeds / planting materials. Government of India has a lot of expectations from the KVKs. Number of KVKs has increased from 273 in IX plan to 569 in XI plan to face the challenges of extension system. He appreciated the role played by KVKs in mitigating the ill effects of drought in 2009. However, he further emphasized that there was need to improve the viability and relevance of each KVK and thematic-area-wise their linkage. Despite several Front-Line Demonstrations and On-Farm Trials, the reflection of outputs is not there in the production of pulses. There is the need to formulate the district wise vision document for next 10 years. The old KVKs should prepare their output, outcome and impact documents. The infrastructure given to each KVK should not be kept underutilized. KVK should prioritize the crops of the district with suitable technologies for getting higher income of the district. Individual KVK should have the excellence in particular field of specialization.

Dr B Mishra, Vice Chancellor, SKUAST-J emphasized the concern on the food production scenario of the country in view of ever increasing population. He made a remark that during this *kharif* season the

country has witnessed a drought and thus alarmed the elite gathering regarding the planning of making the paddy seed available in the next season. He also emphasized that seed is a vital input and various programmes with respect to increased quality and availability at the farmers door step must be ensured.

A total of ten technical sessions were held during this three days workshop. Seven technical sessions were devoted to review the progress of KVKs from October 2008 to September 2009.

email: icarreporter@rediffmail.com

KVK interventions in drought mitigation

During *kharif* 2009, the monsoon was erratic and deficient by 28% for the country as a whole. The ICAR took the initiative by establishing weather advisory services and its updating on daily basis. Consequently, with the backstopping from Zonal Project Directorates of the Council and Directors of Extension Education of SAUs, KVK have provided weather advisory services through electronic and print media, organization of technology demonstrations and trainings, technology weeks, camps, etc. Introduction of alternate crops/varieties was the major interventions. Demonstrations on sesame, soybean, groundnut, pigeonpea, blackgram, greengram, cowpea and *rajmash* were mainly conducted. In cereals, demonstrations on short

duration paddy, maize, *jowar* and *bajra* were laid out. Cotton, French bean, niger, sweet orange, cashew and tapioca related technological demonstrations were also conducted out by the KVK. An area of 36,675 ha with the participation of 56,719 farmers was brought under demonstrations on resource conservation technologies in states facing drought.

XVI Zonal Workshop on KVKs

Bilaspur, 24 November 2009. In the inaugural speech Dr K D Kokate, DDG (Agricultural Extension) emphasized on the improvement in the analysis of the On-Farm Testing of the technologies conducted

by the KVKs so that KVKs could serve as Knowledge and Resource Centre at the district level. Further he appealed for proper documentation of the villages and situation for the FLDs conducted by the KVKs so that factors contributing or affecting the yield and income could be found out properly. He appreciated the technology week organized by the KVKs under Zone VII.

email: zunit@rediffmail.com

Former trainees of KVKs exchange notes

Ujjain. To encourage the farmers for the adoption of new technologies related to agriculture, former-trainee meet programme was organized by the KVK, Ujjain on the field of Shri Mahesh Sharma, a farmer of village Bichhadod, Block-Ghatia. About 60 farmers of Kalukheda village activiely participated in this programme along with the members of Self-Help Group “Azad”, which is technically guided by KVK.

Former-trainees of the KVK, Ujjain, actively participated in this programme, decided to adopt the technologies given to them by KVK, and spread these technologies not only in their own village but also in nearby areas. The outline of the next programme was also decided.

Last year, Frontline Demonstrations on, wheat variety

HI-1531 and gram variety JG-412 taken on farmers' fields of villages Bichdod, Malikhedi and Gadroli showed better performance, which prompted the farmers to adopt these varieties, and they are using these varieties this year also. The farmers are also taking good production of potato variety Chipsona-1 under the technical guidance of the scientists of KVK. The farmers of the area are also benefitted by the demonstration of new soybean variety JS 95-60, and this variety has spread over large area in this region. The farmers of the area are also taking the advantage of the techniques regarding INM, IPM and variety replacement provided by this centre. The farmers were informed about the adoption of all technologies and their advantages and disadvantages. A Senior Agricultural Development Officer explained farmers about the subsidy and the documents required for subsidy in construction of pond, vermi-compost and bio-gas plant. A film on "Importance of Rotavator" prepared by the centre was also shown. The farmers who have adopted the technologies, provided by KVK, Ujjain, and got benefitted, shared their experiences with other farmers and emphasized on adopting these technologies by others also.

e mail: icarreporter@rediffmail.com

Personnel

Mr Rajiv Mehrishi (born in 1955) did postgraduation in History and MBA (University of Strathclyde, Glasgow, UK). He joined the Indian Administrative Service in 1978. He has worked in the Central Government at senior levels in the President's Secretariat, Ministry of Petroleum & Natural Gas, Ministry of Law, Justice and Company Affairs and Cabinet Secretariat, before joining Ministry of Agriculture. He worked in the State Government of Rajasthan in various capacities in the field as City Magistrate and Collector and in several regulatory and development departments of the State Government, including as Principal Secretary (Agriculture), and as Principal Secretary (Finance).

Appointments

- Dr K.K Baruah, joined as Director, NRC on Yak, Dirang on 29 October 2009.
- Dr Arvind Kumar, joined as Deputy Director-General (Education), ICAR on 30 November 2009.
- Dr A.P. Sharma, joined as Director, Central Inland Fisheries Research Institute, Barrackpore on 30 November 2009.

Retirements

- Dr S.P. Tiwari, Deputy Director-General (Education) retired on 30 November 2009.
- Dr K.K. Vas, Director, Central Inland Fisheries Research Institute, Barrackpore, retired on 30 November 2009.

Delegation abroad

- Dr Mangala Rai, Secretary, DARE and Director-General, ICAR visited Australia to participate in PAC meeting of Australia Centre for Agricultural Research (ACIAR) on 16 November, 2009, and ACIAR commission meeting on 17 November, 2009 at Canberra, Australia.
- Dr B.P Kurunndhakar, Head, WRRS, Mahabaleshwar visited Ethiopia from 5 November to 12 November, 2009 to carry out crop monitoring and data compilation.
- Dr S.C Bhardwaj, Principal Scientist, DWR, Flowerdale, Shimla visited Ethiopia from 5 November to 12 November, 2009 to carry out crop monitoring and data compilation.
- Dr Vinod Tiwari, Principal Scientist, DWR, Karnal visited Ethiopia from 5 November to 12 November, 2009 to carry out crop monitoring and data compilation.
- Dr H.P Singh, DDG (Hort.), ICAR, New Delhi visited UK from 29 November to 6 December, 2009 to initiate a dialogue designated to lead a joint research agenda related to food security.
- Dr. S.K Datta DDG (CS), ICAR, New Delhi visited UK from 29 November to 6 December, 2009 to initiate a dialogue designated to lead a joint research agenda related to food security.

Obituary

Dr M.K. Mandape, Acting Zonal Project Director, Zonal Project Directorate, Zone-VI, Central Arid Zone Research Institute Campus, Jodhpur passed away on 7 December 2009.

NAIP

Galore in media meet

Hyderabad, 6 October 2009. A Media Meet under the aegis of the NAIP Sub-Project "Mobilising Mass Media Support for Sharing Agro-Information" was organized at the National Academy of Agricultural Research Management (NAARM) for exchanging information about the ICAR technologies to the end-users through mass media.

Dr P K Joshi, Director, NAARM met the press conference and the directors/scientists of ICAR institutes located in Hyderabad. The institutes highlighted the successful adoption of their innovative technologies by end-users showing impact in fields. Dr V Ranga Rao, Director, Annadata, ETV was the Guest of Honour on the occasion. Highlighting the various achievements and agricultural technologies of the NAARM, Joint Director Dr N H Rao informed that NAARM has been recognized as the Centre of Excellence in the area of capacity building by many international agencies. He said that the NAARM has expertise in intellectual property management and HR development in ICTs and has also pioneered development in e-learning in NARS.

Scientists from the participating centres/institutes expressed that institutes have been providing scientific and technical assistance to farmers for enhancing production in the farms. Elucidation through case studies demonstrated the successful adoption of technologies at farms. A farmer from Amarachinta village, Shri Mareddy Krishna Reddy was able to raise his income considerably from the same mango orchard by adopting the scientist techniques on improving mango cultivation and simultaneously using the same field for growing fodder for sheep. Another story was of the successful adoption of mechanization of castor cultivation to reduce cost.

e mail: icarreporter@rediffmail.com

Sensitization Workshop of E-PKSAR

New Delhi, 14 November, 2009. Directorate of Information and Publications of Agriculture, ICAR, organized a Sensitization Workshop of E-PKSAR project under NAIP in which several ICAR – funded societies participated. The National Director (NAIP)

said that NAIP has high expectations from this project. The progress of the project E-PKSAR and benefits of e-publishing were discussed by the Project Director of this Directorate.

The topics discussed during Technical Session included e-governance of ICAR periodicals, Success stories in agriculture, Business aspects of on-line periodicals, Electronic Repositories and Archives, Copyright issues in Open Access, and Experiences of CSIR with Open Access. The topic of Panel discussion was "Open Access Policy". During open forum the issues related to on-line periodicals were discussed. Some societies came forward and said that they will discuss about joining DIPA Portal with their Governing Bodies.

This workshop was inaugurated by Dr Gajendra singh (Former Deputy Director-General, Agricultural Engineering) and presided over by Dr M M Pandey (DDG, Agricultural Engineering and National Director, NAIP). Dr N.T. Yaduraju (National Co-ordinator, NAIP) also shared his vast research experience.

e mail: icarreporter@rediffmail.com

Glimpse of ICAR Achievements 2009

- To contain crop loss due to droughts and floods, developed new varieties of rice capable of withstanding drought (Sahbhagi Dhan) and water submergence (Swarna-Sub 1). The latter can survive for 14 days under water.
- To ward off threat to wheat production from the globally spreading menace of wheat stem rust, Ug99, resistant varieties (DBW 17, PBW 550, Lok 1, and Turja) identified.
- Overall, 147 new and better varieties of major crops developed for cultivation under different agro-climatic conditions.
- In potato, dry matter-rich variety Kufri Frysona developed for making French Fries.
- To promote use of better seeds, produced and distributed 10,140 tonnes of breeder seeds and over 25 lakh planting materials.
- Zinc solubilizing bacterial bio-fertilizer developed to alleviate zinc deficiency in soils.
- Cloned and surviving buffalo calf, GARIMA, produced for faster multiplication of selected highly productive animals.
- For Bird Flu diagnosis, High Security Animal Disease Laboratory, Bhopal, conferred OIE-international recognition.
- For year-round rearing of Indian carp (fish), technique developed for off-season spawning.
- For culturing seabass, open sea cage farming technology developed.
- International Award-winning device designed to reduce by-catch and juvenile fish trapping in trawl nets.
- International fellowship scheme initiated for Doctoral programme in India and abroad.
- Introduced revised curricula and syllabi for 95 disciplines in Master's and 80 disciplines in Doctoral programmes.
- Introduced 368 e-courses for degree programmes; created repository of 3,852 e-theses; and provided online access to 1,088 research journals in 126 libraries.
- To strengthen scientific human resource, 764 vacant scientific positions filled by completing appointment process.
- Tractor-mounted cumin planter developed to save 30% seed.
- For pomegranate, motorized aril extractor developed with 94% separation efficiency and 500 kg/hour capacity.
- For commercial-scale groundnut milk production, processing technology and equipment developed having 250 litre per day capacity.
- Assessed and refined 2,337 improved farm technologies through 26,028 on-farm trials to ascertain their suitability to specific locations, for enhancing productivity and profitability.
- 15 lakh farmers, rural youth and extension workers trained for skill development through 56,000 training programmes.
- Greater awareness about protection of intellectual property resulted in filing of 93 IPR applications.
- To promote production-to-consumption chains for maximizing farmers' profits, 51 models developed for different agricultural commodities.
- Introduced 36 models of technological innovation-based sustainable rural livelihood initiatives in 102 of 150 most disadvantaged districts, benefitting 50,000 farm families.
- For wider dissemination of agricultural information, The *Handbook of Agriculture* updated and partnership built with national knowledge network for high speed internet connectivity.

Published by Dr T P Trivedi, Project Director (DIPA), Indian Council of Agricultural Research, Krishi Anusandhan Bhavan I, Pusa, New Delhi 110 012, Lasertypeset by Xpedite Computer Systems, D-20, 2nd Floor, Ranjit Nagar Commercial Complex, New Delhi 110 008 and printed at Royal Offset Printers, A-89/1, Naraina Industrial Area, Phase I, New Delhi 110 028.

Editing: **Mrs Aruna T. Kumar, Dr Sudhir Pradhan** • ***Production:*** **V.K. Bharti and K B Gupta**