

# Reporter

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OCTOBER – DECEMBER 2010



## News in Brief

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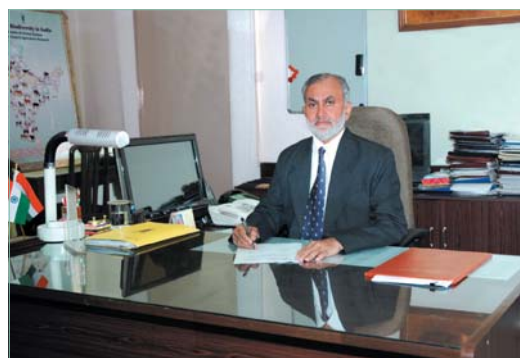
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## From the DG's Desk

Dear Readers,

Information Communication Technology (ICT) has facilitated the much needed community empowerment and development by meeting their information needs. ICT is also an important enabler in research activities to accomplish tasks faster, more efficiently and effectively. It holds as much potential for development of agriculture sector as for any other sector in India.

ICAR has initiated various ICT programmes for agriculture sector in the country. Major ICT initiatives are e-connectivity of 200 Krishi Vigyan Kendras spread across the country, Video-Conferencing



and IP Telephony for agricultural scientists, Agricultural Research Portal, Centralized and Secure Data Center, National Agricultural Bioinformatics Grid, Digital Repositories of Research Information, e-Learning courseware for UG/ PG programs in Agriculture, E-Publishing and Open Access of research journals, MIS for e-Governance.

The Consortium for e-Resources in Agriculture (CeRA) established at Indian Agricultural provides access to a collection of about 2,000 international journals in more than 120 libraries in National Agricultural Research System (NARS). Till October 2010, the number of visitors to CeRA website is more than 2 million and the total download of full text articles is more than 1.5 million. A high-end statistical package SAS would enable the researchers in NARS to undertake probing, in-depth, appropriate, intractable analysis of data generated in advanced research areas, and it would also facilitate data sharing over web and creation of analytics over the web useful for All India Co-ordinated Research Projects and other Network Projects of NARS.

More recent initiatives include m-Krishi - a mobile agro-advisory

system that allows farmers to send queries to agricultural experts in their local languages through a mobile and receive personalized advice or relevant information in the local language by Tata Consultancy Services Ltd. (2009). Under the NAIP of ICAR, Agropedia a multi-language agriculture knowledge repository of universal meta models and Indian localized content has been developed for a variety of users by IIT, Kanpur and ICRISAT. Under an ambitious project on “Establishment of National Agricultural Bioinformatics Grid (NABG)” supercomputing facilities for undertaking research in the field of Agricultural Bioinformatics are being developed. This national facility will provide computational framework to support biotechnological research in the country. Development of databases, data warehouse, software and tools, algorithms, genome browsers and high-end computational facilities through systematic and integrated approach in the field of agricultural bioinformatics is the first priority of the project.

**Under an ambitious project on “Establishment of National Agricultural Bioinformatics Grid (NABG)” supercomputing facilities for undertaking research in the field of Agricultural Bioinformatics are being developed. This national facility will provide computational framework to support biotechnological research in the country.**

Agribusiness sector requires adequate, reliable, timely information and analysis on various aspects of business, major national and international market, demand and supply pattern, scientific forecasting, crop and weather information and its impact on agribusiness sector. ICT initiatives in agriculture in India primarily include those by governments, non-government agencies as well as by private sector organizations and some international initiatives. Whereas some initiatives address the issue of accessibility to agricultural knowledge, others provide integrated services to the rural people. Some of earliest national level initiatives include AGMARKNET - an initiative to provide market price information across the agricultural markets in the country by NIC (2000), HP *iCommunity* by Hewlett Packard Ltd., aAqua - an online expert Question and Answer based community forum, developed by Media Labs Asia, IIT Mumbai, for delivering information to the grass roots of the Indian Community (2002), Kisan Call Center - to enable to access public information and services via mobile devices, Ministry of Agriculture, GOI (2004), e-Sagu - an ICT based cost-effective agricultural information dissemination system for expert agriculture knowledge to the farming community by IIT, Hyderabad (2004) and Kisan Soochna Kendra by IIT, Roorkee (2005). A wireless rural networking technology - nLogue was developed by Tenet Group of IIT, Chennai to connect

every village in a district using terrestrial wireless and provide village kiosks.

Some ICT based agribusiness initiatives include ITCs e-chaupal - information technology based platform used by farmers in India to sell their agricultural produce, look up weather information, and obtain expert crop advice (2000), Agriwatch.com - a portal for farmers, traders, processors of agricultural outputs, suppliers of agricultural inputs etc. by Indian Agribusiness Systems Pvt. Ltd. (2001), Drishtee.com - rural supply-chain and distribution network, iKisan.com - an agri portal for addressing the Information, Knowledge and Business requirements of various players in the agri arena, viz. Farmers,

Trade channel partners and Agri Input / Output companies by Nagaarjuna group of private companies. ICT driven methodologies have been developed for forecasting crop yield in advance of harvest using data on plant characters, weather and agricultural inputs. Using these

approaches, it is feasible to forecast yield about one to two months before harvest of crops at district agro-climatic zone and state levels. Methodologies have been developed for forewarning crop pests and diseases of major crops.

ICTs have been leveraged to confer the power or expert knowledge cutting across all the barriers to even the small farmers in the remotest parts of country in real time benefitting rural population of some districts. The knowledge could be even customized to strengthen or help the individual farmer in decision making regarding selection of crop, variety or applying need based agricultural practices or in choosing the right markets to sell the produce. There are various agricultural ICT initiatives, which follow different approaches to fulfill national objectives and these address different goals. There is need for greater synergy and importance of coherence needs to be promoted between the multiple initiatives. There is also a clear need to maximize value and impact on the national ICT initiatives in agriculture through cross fertilization of key experiences.



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# WORKSHOPS, MEETINGS, SEMINARS, SYMPOSIA, CONFERENCES

## Development of entrepreneurship among farmers – Fifth National conference on KVK

Udaipur, 22 December 2010. Her Excellency the President of India, Smt. Pratibha Devisingh Patil inaugurated the Fifth All-India Krishi Vigyan Kendra Conference-2010, jointly organized by the ICAR and Maharana Pratap Agricultural University, Udaipur with the theme, “Development of entrepreneurship among farmers” at Mohanlal Sukhadia University auditorium, Udaipur. While hailing Krishi Vigyan Kendra (KVK) as knowledge and resource centres of agriculture technology at the district level, Her Excellency the President of India called upon the KVK system to be a harbinger of the Second Green Revolution in the country. Efforts should be made to encourage each and every KVK to work actively in their respective areas and their genuine needs should also be looked into, to make them functionally effective. Her Excellency the President of India gave away Best KVK awards to KVK, Kannauj; KVK, Kanchipuram; and KVK, Kaddlur for making outstanding efforts for dissemination of precision farming and horticulture in the area. She also felicitated selected farmers of Uttar Pradesh, Punjab and Maharashtra for their innovations at farm level.

First database of 60,000 progressive farmers across the country and ‘Agritech Interventions - Harbingers of Prosperity 2010’ were released. Latter includes 101 inspiring technological interventions that can be emulated by farmers where similar micro-agro-ecosystems exist. The targeted 4% growth in agriculture could be achieved with the support of



interventions by Krishi Vigyan Kendras located across the country. Speakers reiterated the important role of agriculture in national economy and viewed agricultural technologies as a tool for enhancing its contribution in national GDP.

Earlier Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) introduced the theme of conference along with major highlights of the contributions of the Council in this direction. Besides seven technical sessions at the conference, an exhibition on entrepreneurship in agriculture was also organized depicting farm innovations. Programme coordinators of 589 Krishi Vigyan Kendras, Vice-Chancellors of State Agricultural Universities, officials of ICAR and Planning Commission, agricultural scientists and progressive farmers participated in the conference.





## MEETINGS OF ICAR REGIONAL COMMITTEES

### XXI Meeting of ICAR Regional Committee VII

Bhopal, 2 December 2010. The XXI meeting of ICAR Regional Committee VII was inaugurated by Dr Ramkrishna Kusmariya (Minister of Farmer Welfare and Agriculture Development, Government of Madhya Pradesh) at the Central Institute of Agricultural Engineering, Bhopal. He exhorted to reestablish the old practices of agriculture and disseminating the results on their research and importance to the farmers. He also touched upon land security, organic farming and food security. He opined that processing of soybean at village level, evolving an alternative to chemical fertilizer and resolving the unemployment at rural level are the priority areas, which should be addressed.



Dr S Ayyappan, Secretary (DARE) and Director General (ICAR) underlined the need for enhancing organic farming in Region VII and said that in the four states of the Region VII, the cultivated area is about 25% of the total area available for agriculture, whereas the agriculture production is just approximately 15% of the national output. He added that by controlling weed infestation, agricultural production can be enhanced by 15 to 30%.

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### XX Meeting of ICAR Regional Committee IV

Ranchi, 9 October 2010. A three-day meet of XX Meeting of the ICAR Regional Committee IV comprising states of Uttar Pradesh, Bihar and Jharkhand was held from 7 to 9 October 2010 at Birsa Agricultural University, Ranchi. His Excellency Governor-cum-Chancellor of Universities of Jharkhand, Shri M.O.H. Farook, illustrated that the agricultural education and research orientation should be for increasing production to raise farmers' income. He stressed the need to conserve and improve non-descript livestock with better



management practices to improve productivity by each State Agricultural Universities to meet greater demand of meat, milk and drought capacity of animals. Dr S Ayyappan (Secretary DARE and DG, ICAR) said that the agro-ecological and socio-economic conditions of the region are unique in terms of diversity in crops grown and resource endowments but only 35% of the net-cropped area is fully or partially irrigated in the region. So, our agricultural research and development including transfer of technology strategies should be focused on the priorities and needs of these three States.

During the technical session of the Regional Committee Meet deliberations were made on various key issues including the identification of research and developmental needs and formulation of strategies to solve issues related to agricultural research, education and extension of the region.

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### ICAR Regional Committee VI

Bikaner, 21 October 2010. 'Contribution of animal husbandry sector to the GDP of the Rajasthan is remarkable', said Shri Murari Lal Meena, State Minister of Technical Education (Agriculture), Government of Rajasthan, while inaugurating 2-day meeting of ICAR Regional Committee-VI at Swami Keshwanand Rajasthan Agricultural University. He said that all have to work together to conserve the indigenous livestock to protect their biodiversity in Rajasthan, to improve availability of fodder by facilitating cultivation of fodder crops and fodder trees, and to provide contingency plan of each districts in the State. Dr S Ayyappan (Secretary, DARE and Director General, ICAR) said that coastal areas of Gujarat and Daman Diu should be more utilized



for fisheries with collaboration of other states. He said that an Investors' meet will be organized which will help to promote the horticultural crops and added that there should be substantial increase in self-employment amongst rural youth by making the agriculture sector more remunerative.

Dr A K Singh (DDG, NRM, ICAR) suggested that organic farming could be more beneficial for farmers, and also said, cultivation of *Isabgol* and date palm are also better and profitable options.

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## Secondary agriculture must uplift rural economy

New Delhi, 13 December 2010. The objective of the brainstorming session on 'Post-harvest Technology and Value Addition', held at National Agricultural Science Complex (NASC) Complex, was to identify the key projects on which research needs are to be accelerated. Inaugurating the Session Dr S Ayyappan (Secretary, DARE and Director General ICAR) said that 52% workforce engaged in agriculture requires a booster dose for revamping its economy and this could happen only through post-harvest sector, which is nothing but secondary agriculture. Dr R.T. Patil (Director, CIPHET, Ludhiana) said that secondary agriculture is basically value addition to primary agriculture. "But this also involves the tertiary processing where by-products and crops residues or even the main crop is used for extraction of high value bio-active compounds", he added. The major points emerged during the session included acceleration of research on production of high ended secondary agriculture products; use of livestock processing waste and fish processing waste; use of natural fibres for bio-plastics and bio-composites; culled potato and tapioca for bio-plastics; extraction of pectin from peels of fruits; production of bio-ethanol; extraction of vitamins and dietary fibre from vegetable waste and use of spent material as animal feed. Experts appreciated the accelerated efforts of the ICAR to strengthen the post-harvest sector in the country. As a follow up an expert committee was set up to gather and screen the projects from different institutes and prepare a proposal for submission to planning commission.

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## XVIII Group Meeting of AICRP on Medicinal, Aromatic Plants and Betelvine

Rahuri, 11 November 2010. The XVIII Group Meeting of All India Co-ordinated Research Project on Medicinal, Aromatic Plants and Betelvine was organized at Mahatma Phule Krishi Vidyapeeth from

8 to 11 November 2010. Dr S.S. Mehetre ( Director of Research) expressed the need for development of high-yielding and disease-resistant varieties of medicinal, aromatic plants and betelvine. Dr S. Maiti (Project Co-ordinator, AICRP on MAP and Betelvine, Boriavi) presented the research report on varietal improvement, crop production and plant protection of medicinal, aromatic plants and betelvine of all All India Co-ordinated Research centers.

### Technology for recommendation

In *Isabgol*, three mutant lines, viz. DPO-1, DPO-4 (both developed at Directorate of Medicinal and Aromatic Plants Research, Anand) and Sel-10 (developed at Anand Agriculture University, Anand) were recommended for multi-location testing along with control. Integrated management of leaf blight and downy mildew was achieved with seed treatment followed by spray with Ridomil MZ 72WP (0.2%) after sowing. Foliar application of Trifloxystrobin 50 WF+ G (0.1%) and Karathane (0.1%) after sowing was effective against powdery mildew.

### Variety identified

'Vallabh-medha', a new high-yielding variety of *Centella asiatica* (developed by Directorate of Medicinal, Aromatic Plants and Betelvine, Boriavi) was identified. The mean fresh herbage yield of *Centella asiatica* was 123.31 q/ha and dry herbage yield was 21.13 q/ ha.

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## Brackishwater Aquafarmers' Meet, 2010

Kakdwipi, 22 November 2010. With the aim to popularize CIBA technologies and various government schemes for the brackishwater farmers, and to review the development trends in brackishwater aquaculture in West Bengal with particular reference to Sunderbans the Central Institute of Brackishwater Aquaculture, organized Brackishwater Aquafarmers' Meet 2010. The main aim was to exchange knowledge between farmers and scientific communities, state





and central government organizations and other stakeholders.

In the technical session, recent advancements in seed rearing of brackishwater finfishes, on farm feed preparation and commercialization of CIBA feed technology in West Bengal, health management in brackishwater aquaculture with particular reference to disease occurrence due to poor management in fish, shrimp, crab and freshwater fish farms, soil and water quality management and remediation in brackishwater aquafarms, application of information and communication technology in brackishwater aquaculture including the use of mobile phones, e-choupal and ICAR's initiative on dissemination of information through different ICT modules were discussed. The subject matters, such as organic shrimp farming as a means of alternate livelihood option for the fishers of Sunderbans, scope of diversification of brackishwater shrimp farming, like the banana shrimp *Fenneropenaeus merguensis* farming were discussed. Beekeeping boxes, under NAIP project "Strategies for sustainable management of degraded coastal soil and water for enhancing livelihood security of farming community", were distributed to the beneficiaries in the Meet.

#### Recommendations

- On farm demonstration of nursery rearing of fin fishes, crab fattening and zero-water exchange for black tiger shrimp farming
- On farm feed preparation with locally available feed ingredients for better feed conversion ratio.
- Establishing strong linkage among the West Bengal state fisheries department and other ICAR

institutes and the MPEDA for betterment of fishers and local community of Sundebans

- Development of awareness on antibiotic uses in aquaculture
- Marketing of the produces from Sunderban islands to mainland with minimum spoilage, and development of marketing chain for small fish farmers

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## Strategies for sustainable meat production

Izatnagar, 20 November 2010. A two-day National Symposium on "Strategies for sustainable meat production and processing for nutritional security and employment generation" along with fourth convention of Indian Meat Science Association was held from 19 to 20 November 2010 at Indian Veterinary Research Institute. Dr S.K. Garg, Director, College of Applied Education & Health Sciences, Meerut) emphasized that meat and meat products are one of the important sources of nutrients for human diet and is enriched with high valued proteins. Professor M.C. Sharma (Director, IVRI) informed that there is a remarkable increase in meat production from last few years, yet there are immense possibilities to further develop meat production in India. He added that meat processing and value to suit the emerging consumer demand could ensure more income to meat producers and livestock formers.

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## Vice-chancellors of Agricultural Universities meet to discuss XII Five-Year Plan

New Delhi, 4 October 2010. A meeting of Vice-chancellors of State, Deemed and Central Agricultural Universities from all over the country was inaugurated by Dr Montek Singh Ahluwalia, Deputy Chairman, Planning Commission, Government of India at NASC Complex. He urged agricultural research institutes to re-orient themselves in next XII Five-Year Plan amid the challenges of food security and climate change.



Referring to the gap in agricultural growth rate and land productivity of China and India, he emphasized more research based on these two issues as 4% agricultural growth will be needed for growing economy like India. It would require more investment in knowledge management, institutional support and diversification in agriculture. The government is also willing to fund such projects', he added, and suggested a new mechanism to fund research projects instead of funding universities.

Dr S Ayyappan (Secretary, DARE and Director General, ICAR) highlighted the role and contribution made by the ICAR institutes and agricultural universities in developing new technologies and seeds for Indian farmers. He hoped that Institutional support, better infrastructure and faculty development can help research institutes to emerge at international level.

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## Project Information and Management System of ICAR

New Delhi, November 2010. For sensitizing the stakeholders, Workshops- cum- Training on PIMS-ICAR for the Nodal Officers of ICAR Institutes (77) were organized at NAARM, Hyderabad; DWM, Bhubaneswar; and CIAE, Bhopal from October to November 2010. Live demonstration-cum-practical sessions on the data management module for Ongoing Projects Data Entry as per RPF-I and for Completed Projects Data Entry Process including the process for upload of digital copy (Scanned/PDF/Doc file) of RPF-III into PIMS-ICAR were presented. Reference guides for data management were prepared and made accessible on PIMS-ICAR site for the Nodal Officers/ Principal Investigators of the projects.

### Action points

- To create awareness, it was decided that the Nodal Officer must organize a seminar/organize workshop to sensitize the scientists/Principal Investigators of the research projects at their respective institutions for projects data entry and uploading of the on-going/completed research projects in light of RPF-I and RPF-III respectively.

- Directors of the concerned institutes are requested to provide technical manpower support, equipments and infrastructural facilities for data entry, updating, scanning and uploading of documents at the PME Cells.
- Efforts to accomplish the data entry task by 31 December 2010 and the progress of data entry may be reviewed by 10 December 2010.

### Outcome

As an outcome of the zonal workshops, the Nodal Officers were sensitized and trained to initiate the research projects data entry process. As per the data entry status available in PIMS-ICAR, so far 77 institutes have initiated project data entry process for more than 2,400 ongoing and 800 completed projects into PIMS-ICAR from their respective institutes. For completeness of project data entry as per RPF-I and quality of data in the database, the Nodal Officers were informed to do the needful by 31 December 2010.

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## Nutritional Interventions for Sustainable Dairy Production in Goa

Goa, 7 October 2010. The workshop, jointly organized with the collaboration of Association for Coastal Agricultural Research, Goa was inaugurated by Minister of Animal Husbandry and Veterinary Services, Government of Goa, Shri Ravi S. Naik, at ICAR Research Complex for Goa, Goa. The objective of the workshop was to discuss the current major nutritional challenges, come up with solution, and plan future agenda for achieving optimal milk production in Goa



among Scientists of ICAR, Veterinary Officers of the Department of Animal Husbandry and Veterinary Sciences and Goa Dairy and Progressive Dairy Farmers and Members of Farmers' Club at one platform. During the workshop, a *Souvenir and Concept Papers* containing 15 chapters and an Extension Brochure on *Feeds and Feeding Practices of Dairy Animals in Goa* were released.

### Recommendations

- The Regional Research Station, Indian Grassland and Fodder Research Institute, Dharwad was requested to provide seeds and planting materials of high-yielding nutritious fodder crop varieties suitable for Goa condition along with the package of practices for cultivation.
- The three organizations i.e. ICAR Goa, Department of Animal Husbandry and Veterinary Sciences, and Goa Dairy will develop facilities for distribution of the seeds and planting materials to the lead farmers, which will be taken up by the other farmers in a chain system.
- The natural *karad* grass of the state should be protected with the joint venture of the Department of Animal Husbandry and Veterinary Sciences and Forest Department.
- A Feed Quality Testing Laboratory may be set up in the Department for the quality control of the livestock and poultry feeds and feed ingredients. The ICAR Research Complex for Goa, Goa will extend technical support in providing training to the concerned officials for feed analysis.
- New technologies like by-pass fat and one day packed ration technology will be introduced and popularized by ICAR Goa with the collaboration of Goa Dairy and Department of Animal Husbandry and Veterinary Sciences.

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## KVK emphasized on Dissemination of Technology

Bhubaneswar, 29 October, 2010. The XVII Zonal Workshop, organized by Zonal Project Directorate, Zone-VII, was inaugurated by Chairman, Western Orissa Development Council of KVKs at Orissa University of Agriculture and Technology, Bhubaneswar from 25 to 29 October 2010. He said that the job of Krishi Vigyan Kendras SMS is a challenging aspect— should meet the reality of the situation; the technology selected should be within the financial capability of the farmers; recommendation to resource poor farmers should be less vulnerable to weather and other factors to avoid risk. Vice-Chancellor, OUAT expressed serious concern over stagnation of yield of many crops in the country. Farmers' Club, self-help group and farmers group are



to be formed to empower the farming community. *Kisan Mobile Advisory* and Web-based message transfer system are to be used extensively for technology transfer, he said. Prof. S.S.Nanda revealed the benefits of employment generation and income of small and marginal farmers through Integrated Farming System. The eight technical sessions in the workshop were on Climate change, Women in agriculture, Preparatory review of RCM VII, Review the progress of KVK 2010-11(April to September ) and Annual Action Plan 2011-12, etc. Few publications were also released.

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## All India State Animal Husbandry Directors' meet

Izatnagar, 24 November 2010. A one-day meeting of State Animal Husbandry Directors was held to discuss various issues related to providing expert advice on animal health and production, upgradation of infrastructure of hospitals, capacity building of diagnostic services of livestock and poultry, breeding of animals and poultry, customized skilled and need based training of veterinarians and strong linkages with animal husbandry departments.

Dr Sailo (Director, Animal Husbandry, Mizoram) opined that subsidy should be given on feed and fodders in line with the subsidy given to human society. He showed his concern for the supply of swine fever vaccine.

The Animal Husbandry Director of Uttar Pradesh, Dr Rudra Pratap opined that the veterinary Officers should under go upgradation of knowledge every after five years. He focused on meat hygiene, forensic laboratory, advanced course in radiology and disaster management and training on veterinary jurisprudence/ethics be given priority. Scientists/ veterinarians showed concern towards hospital infrastructure development and availability of veterinary vaccines and diagnostics. Scientists/ veterinarians opined to develop a network of information system and training area on biological based management.

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## Rabi crop prospects and its preparedness meet

Jaipur, 19 October, 2010. The Union Minister of Agriculture, Shri Sharad Pawar, inaugurated 2- day National Conference of Agriculture, Animal Husbandry and Food-Civil Supplies Ministers of various states and asked them to make efforts for achieving maximum production of *rabi* crops such as wheat, pulses and oilseeds. He added that a proper and effective planning should be made to achieve targets of agricultural production. It is also aiming substantial increase in pulses output to reduce import dependence. The good monsoon may fetch good foodgrains production. Increase in production level of pulses can be achieved if sowing area in middle and eastern parts of the country is broadened. The Central Government has made some amendment in crop insurance scheme to benefit small and marginal farmers. The Minister of Agriculture (State) Professor K. V. Thomas, said the circumstances are in favour now to boost agricultural production following good rains this season. Dr S Ayyappan (Secretary, DARE and DG, ICAR) explained the strategies for achieving target production of *rabi* crops such as wheat, pulses and oilseeds, and highlighted the other issues like use of fertilizers, awareness among farmers about seed replacement, to minimize the loss due to terminal heat at the time of harvest, etc. The fertilizers, *rabi* crops, electricity, improving the quality and quantity of agriculture and seeds were discussed during the conference .

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## Weather forecasting and agro-advisory services

New Delhi, 18 October, 2010. The Interface meeting on 'Weather forecasting and agro-advisory services', jointly organized by the Indian Council of Agricultural Research, Ministry of Earth Sciences, Indian Space Research Organization, and Department of Agriculture and Co-operation, was held at NASC Complex. Sri Shailesh Nayak (Secretary, Ministry of Earth Sciences) said that power of information can be useful in achieving the goals of food security. India can enhance agriculture productivity between 8 and 10% by providing weather forecasting at the stipulated time to the farmers. He suggested the various steps taken by the Ministry of Earth Sciences for information dissemination, and opined that the SMS facility for weather forecasting would be availed by the 1 million farmers by 2011AD. He urged that continuous improvement in SMS services and use of satellite observation is crucial for success.

Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) emphasized that all concerned departments should prepare a mechanism to fulfill aspirations of farmers. The ICAR, ISRO and Ministry of Earth Science should prepare a programme for welfare of farmers. Weather forecasting for June and July, and micro- level predictions with more accuracy is the need of hour.

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## Future approaches in agricultural extension

New Delhi, 1 November 2010. Professor K. V. Thomas, Minister of Agriculture (State) inaugurated a National Consultation Meet on 'Future Approaches in Agricultural Extension', and has called for a pluralistic approach in agricultural extension services in the country with an appropriate mix of public and private funding and delivery mechanism. He said, "The extension approaches need to be sized neutral and resource neutral with focus on cost reduction without yield reduction and also needs to concentrate

to enhance labour productivity with use of modern farm mechanization technologies. Formulation and implementation of policies that are time bound and transparent with promotion of accountability will greatly strengthen the extension system. Referring to overall growth rate of 10% he said that agriculture sector growth rate of 4.1% should be visualized for the country". The Member Planning Commission, Professor Abhijit Sen, lauded the role of Krishi Vigyan Kendra in agricultural development and emphasized on sharing of knowledge and ideas for effective dissemination of appropriate technologies. Noted agricultural scientist and Member of Parliament, Dr M. S. Swaminathan, elaborated the right to food security and expressed his deep concern over higher global hunger index of the country. He suggested that Krishi Vigyan Kendra may be transformed into agricultural industry centers to make the agriculture more profitable. Dr S Ayyappan, DG (ICAR) elaborated the objectives of the National Consultation Meet on 'Future approaches in agricultural extension'.

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## National Farm Innovators Meet 2010

Mysore, 12 November, 2010. The first ever 'National Farm Innovators Meet-2010', organized by the ICAR, was inaugurated by His Holiness Shri Shrivarathri Dehikendra Mahaswamiji at JSS Krishi Vigyan Kendra, Suttur, Mysore District, Karnataka. He expressed his happiness about the lead taken by the ICAR for giving the recognition to farmers. The ICAR may identify many more farm innovations from the farmers through its vast network of Krishi Vigyan Kendras across the country in future. Dr S Ayyappan (Secretary, DARE and Director General, ICAR) profusely thanked the Indian farmers for their talents and innovative ideas which have ultimately led to the significant progress of Indian Agriculture. He emphasized on three 'P's: Profits, Prestige and Partnership are needed for progressive agriculture. On this occasion farmers displayed their innovations in the exhibition. Around 200 farm innovators (innovative farmers) representing 25 states and 50



official dignitaries participated in the Meet. A publication 'Farm Innovators-2010' was also released on the occasion presenting 139 farm innovations from across the country. The crop improvement, crop production, crop diversification, crop protection, water management, farm machinery, livestock and fisheries management and post-harvest technology and value addition were the thematic areas of the meet.

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## President USA appreciated ICAR agricultural tools

Mumbai, 6 November 2010. Hon'ble President of United States of America, Mr Barack Obama, visited Agricultural EXPO, organized jointly by CII and USAID in Mumbai on the theme "Tools and implements for drudgery reduction of farm women workers." He took keen interest in the women friendly tools and



implements developed by ICAR institute for reducing the drudgery of farm-women in agricultural operations. Hon'ble President Obama himself operated some of the tools such as tubular hand maize sheller and groundnut decorticator, and felt that such devices would go a long way in facilitating farm women to carry out the agricultural operations more efficiently. Farm women workers constitute almost 50% of the agricultural work force in the developing world. "Therefore, availability of such drudgery reducing tools and implements in developing countries would greatly enhance the productivity of women farm workers", said Hon'ble President Obama.

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## Coconut diversity for prosperity

Kasaragod, 25 October 2010. To take stock of the present status of research and development on coconut, particularly diversity conservation and



utilization, and to formulate the strategies and the research priorities, Prof. K.V. Thomas, Minister of State of Agriculture inaugurated 4-day International Conference on 'Coconut Biodiversity for Prosperity' at Central Plantation Crops Research Institute. He also inaugurated the 'Agri Fair - 2010' at the venue. The link between coconut diversity and sustainable development, poverty alleviation was highlighted in the conference to ensure prosperity of coconut farming communities. Dr H.P. Singh (Deputy Director General, Horticulture) spoke on "Dynamics and Co-kinetics of Coconut Research and Development in India", and discussed in detail on the constraints hampering the coconut production, achievements of coconut research in India, strategies of coconut development, organic farming, future lines of research with more emphasis on bioinformatics, biotechnology, genomic assisted selection and mapping the resistant genes. He added that coconut wilt is a cause of concern across the globe, which has been proved to be caused due to *Phytoplasma* by the Indian scientists. He emphasized that in the interest of environment, there is need to have coconut plantation which could only be sustained, if its uses and health aspect is appropriately addressed. Evidences suggest that coconut, especially virgin coconut oil, tender water and many products have capacity to protect against various diseases.

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## New Plan Scheme on Climate Resilient Agriculture

Hyderabad. The ICAR initiated National initiative on climate resilient agriculture (NICRA). This scheme will focus on food crops and attempt to evolve drought and heat tolerant varieties of major *kharif* and *rabi* crops, management practices for mitigating the adverse impacts of extreme weather events like floods, heat-wave, cold-wave etc. The scheme also covers livestock and fisheries. It will be implemented for the remaining XI<sup>th</sup> Plan period and likely to continue in the XII<sup>th</sup> Plan. The outlay for XI Plan is ₹ 350 crores, out of which 200 crores has been sanctioned for the current year (2010-11). The scheme has three components: (i) strategic research



on adaptation and mitigation, (ii) demonstration of relevant technologies for climate resilient agriculture in 100 most vulnerable districts in the country through KVKs, and (iii) capacity building of scientists, extension functionaries and farmers.

The project will be implemented in a network mode with CRIDA, Hyderabad as the lead centre and several other leading ICAR institutes like IARI, NDRI, CRRI, IVRI, CMFRI, IIHR, CIAE and some other Institutes dealing with crops, natural resources, livestock and fisheries. The project also has a component of competitive grant open for other institutes, the guidelines for which will be notified soon. Considering the increasing vulnerability of Indian agriculture to climate change, this project is likely to help in identifying technologies and policy options that enhance resilience of Indian agriculture to climate change.

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## Physiological capacity building in livestock under changing climate scenario

Izatnagar, 13 November 2010. To mark the Silver jubilee celebration of "Society of Animal Physiologists of India" (SAPI), a three-day International conference on "Physiological capacity building in livestock under changing climate scenario" was held from 11-13 November, 2010 at Indian Veterinary Research Institute (IVRI), Izatnagar with a call by speakers to make efforts to combat challenges owing to climate changes.

Inaugurating the conference, Dr B. S. Bisht (Vice-Chancellor, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar) emphasized that in the event of climate change and global warming, effect of micro-climate around the animal is most important, which can be modified by providing suitable shelters in terms of roofing material, height of the shelters, ventilation, floor space, orientation etc. He also emphasized that more heat and cold tolerant genes are to be identified to tolerate adverse climate by the animals. Dr M.C. Sharma (Director, IVRI) expressed his concern about the global climate change as now it has become essential that physiological capacity of animal need to be assessed and newer techniques



and technologies applied to build this capacity. He also expressed his concern that the climate change is causing spread of zoonotic diseases which are transmitted from animals to humans and *vice-versa*. The climate change is causing new vector born diseases to emerge and re-emerge.

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## National Seminar on Gender and Biodiversity

Bhubaneswar, 29 December 2010. On the occasion of the International Year of Biodiversity a two-day National Seminar on Gender and biodiversity was organized by the Directorate of Research on Women in Agriculture, Bhubaneswar in collaboration with UNDP, National Biodiversity Authority, Chennai and Research Association for Gender in Agriculture, Bhubaneswar on 28 - 29 December 2010, to

- Discuss and understand the role of women in biodiversity in different agro-ecosystem and policies and rights relating to biodiversity conservation and management in India
- Share experiences and best practices in biodiversity conservation and management in gender perspective
- Sensitize of the stakeholders' about the importance of biodiversity conservation and management.



Dr Aurobindo Behera, IAS, Principal Secretary, Forest and Environment Department, Government of Orissa and Chairman, Orissa State Biodiversity Board, Bhubaneswar was the Chief Guest on the occasion. In his address he highlighted the important role played by women through ages in conservation of biodiversity and stressed upon developing linkages and collaborations between agencies to address the issues of biodiversity. Following recommendations emerged from the discussions:

- Document the loss of biodiversity in tribal and rural areas over years and undertake studies on how biodiversity loss has affected the livelihood of the communities
- Strengthen the linkages and collaboration between research and development agencies for understanding the issues of biodiversity in changing context



- Mobilize and sensitize people particularly women community for conservation and management
- Develop database on passport information on genetic resources provided by women to recognize the contribution of women in conserving biodiversity
- Collaborative research between National Bureaus under ICAR and other research institutions should be undertaken to understand and learn on context specific biodiversity issues, and to provide advocacy on the subject of biodiversity conservation and management
- Undertake Case studies on community initiatives in biodiversity conservation and their impact on community and environment
- Capitalize, evaluate and centrally disseminate Scattered knowledge to avoid confusion and conflict among stakeholders.

## KVK Interface 2010 on Pulses Technology Demonstration

Jabalpur, 16 December 2010. The Krishi Vigyan Kendra Interface 2010 on Pulses, organized at Zonal Directorate of Pulses VII under the chairmanship of Zonal Project Director, Zone VII, ICAR, Dr U. S. Gautam, who focused on the role of the Krishi Vigyan Kendra for enhancing the pulses production in Madhya Pradesh with proper collaboration with the State Department of Agriculture for wider scale diffusion and adoption. He asked KVK SMS for technological backstopping to the State Departments Personnel in the activities related to the pulse production, so that majority of the farmers could be aware with the benefits of the pulse production.

Dr. S.S. Tomar, Director, Research Services, JNKVV, Jabalpur, said that pulse production is highly susceptible to both biotic and abiotic stresses. Various known disease resistant varieties and its seed availability to the farmers can boost the production



level in the region. For better water availability in the root zone raised bed system could be adopted both for *kharif* and *rabi* pulses. Seed treatment should be insured for reducing the biotic stresses and reducing the production cost. Irrigation management through sprinkler irrigation, ridge and furrow method, timely and appropriate plant protection measures, quality as well as timely seed availability are key interventions required for coping up with these stresses. Crop cafeteria should be there in all KVK for showcasing the newly developed varieties and other planting materials for the visitors. Besides, technology park should be set in all the KVKs so that visiting farmers could have a glimpse of the latest technology of that area in even very short time visit.

### Action points

1. All Krishi Vigyan Kendras have to strictly adhere with the guidelines during implementation of the pulse demonstration.
2. There is need to monitor each step of the demonstrations and maintain the records so that a real time data could be generated on pulses.
3. Participants were given the suitable weedicides and other management practices for managing the weeds of the pulse crops.

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### Book Published

## Agritech Interventions – Harbingers of Prosperity 2010

The National Agricultural Research System (NARS) is playing a pivotal role in enabling food security by continuous generation of technologies in agriculture and allied sectors in the country. The Indian farming mostly characterized with diversified agro-ecologies, water scarcity, unpredicted rains due to vagaries of monsoon and high cost of technological inputs. Based on the changing scenario of agriculture year by year, it requires promotion of proper management of natural resources like soil, water and micro environment, besides wellbeing of all stakeholders involved in the food production and consumption chain. This is primarily possible by technological empowerment of farmers.

As part of such a strategy, the Indian Council of Agricultural Research (ICAR) is playing a crucial role in providing technologies generated by NARS after its assessment, refinement, demonstration in the micro farming situations, in addition to updating the knowledge and skill of farmers and extension personnel by taking up innovative approaches through its network of 589 Krishi Vigyan Kendras (KVKs), which act as knowledge and resource centers for empowering all the partners in the agricultural development process.



## Low poly tunnel cultivation of bottle gourd in off-season

Gajanda. Shri Suresh Prasad Choudhary, a farmer from the village Gajanda, P.O. Barapalasi, Block Jama, District Dumka, adopted a Project, under NAIP (Component-3) on “Developing sustainable farming system models for prioritized micro-watersheds in rainfed areas of Jharkhand”.

The crop (bottle-gourd cv. HABOG-6) was sown on 20 December 2009 in 200m<sup>2</sup> (5.0 decimal) area with a pit-to-pit distance of 0.5m (2 plants/pit) and the channel-to-channel distance of 3.0 m. The farmer could harvest the first produce by 13 March 2010 and the harvest continued up to 17 April 2010. The total yield was 663.5 kg which was sold @ ₹ 8/ kg in the nearby markets of Barapalasi, Jama and Dumka within 14 km from the village. So, the farmer could get a better gross income of ₹ 5,308/- in comparison to his earlier income of ₹ 2,654/- of main season crop. The total expenditure on additional inputs including seed, fertilizer, farmyard manure, polythene sheet and irrigation was ₹ 1,592/- and the net income was ₹ 3,716/-. Now, this farmer who was once unaware of this technology is highly motivated and convinced to grow off-season bottle gourd and other cucurbits in larger area under low poly-tunnel cover as this off-season cultivation of cucurbits proved highly remunerative to him. It fetched higher returns than traditionally grown bottle-gourd during summer and harvesting the produce from May to June when the market price becomes very cheap (₹ 4/ kg).

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## Mini Aqua Feed Mill Unit

New Perungulathur, Tamil Nadu. The second feed production unit from the Department of Biotechnology project fund was given to the progressive group of “Irular” community women SHGs and was inaugurated in the presence of Dr A.G. Ponniah (Director, CIBA). The feed production unit is now put to use by these Women of Self Help Groups and market linkages for the feed developed by them is being arranged through the Krishi Vigyan Kendra (TANUVAS), Kattupakkam.

The institute, with a Department of Biotechnology funded project on “Diversification of Livelihood among Women Self Help Groups through Coastal Aquaculture Technologies”, successfully transferred the small-scale aqua feed development technology with other women SHGs in Thonirevu village in

Tiruvallur district of Tamil Nadu and installed mini aqua-feed mill production unit, with which the women could be able to sustain the feed production and supply to nearby aqua farms. This group, consisting of 5 registered women SHGs, is a successful group and has received a bank loan of ₹ 200,000 under the Swarna Jayanthi Self Employment Scheme for this purpose. They have received 2 awards from the State Government of Tamil Nadu for being a progressive group. The State Government of Tamil Nadu has also recently sanctioned 4 acres of land to this group for fish farming.

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## Sustainable livelihood through Kadaknath production

Jhabua, Madhya Pradesh. An Indian high value poultry breed, *Kadaknath* (native to Jhabua) famous for its black colour, meat quality, texture, flavour and special medicinal value, is reared mainly by the *Bhil* and *Bhilala* (tribal community) in the districts Jhabua and Dhar in Madhya Pradesh. Due to its high market demand, the population of this bird is declining rapidly and it is under threat of extinction and genetic erosion. An attempt was therefore made for conservation and promotion of this high value Indian poultry race *Kadaknath*.

Ten tribal farmers were selected for this programme and 10-day-old one hundred poultry chicks were made available to each beneficiary. The farmers were advocated on technologies for scientific poultry production, balance feeding, health management and marketing. Now the beneficiaries have been trained in managing the production of *Kadaknath* in proper way. This new *Kadaknath* production technology has reduced the mortality rate from greater than 50% to 10-12% and thus enhanced the survival percentage. The bird is gaining the body weight in faster way and attaining saleable weight of 1.10 kg in 105 to 120 days. The producers are selling this body weight poultry @ ₹ 300 to 350/kg body weight. In this way, an individual beneficiary is getting the net income of ₹ 90 to 105 thousand /beneficiary/ year. There are also developing sustainability fund.

A number of tribal farmers are constructing the low cost poultry shades from their own resources and adopting the technology for rearing poultry birds. It is also helpful in reducing the job oriented migration as many of the farmers are now engaged in poultry farming.

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# Celebrations/Farmers Corner/Capacity Building

## Farmers/Entrepreneurs appreciated ICAR technologies at CII Agro-Tech, 2010

Chandigarh, 5 December 2010. Technologies like rotary maize sheller and banana comb cutter attracted visitors to the stall of Central Institute of Post -harvest Engineering and Technology during the ongoing CII Agro-Tech, 2010 at Chandigarh. National Institutes of the ICAR including CSWCR and TI, Dehra Dun and CIAE, Bhopal also displayed their technologies. Farmers/entrepreneurs were especially



interested to know about post-harvest technologies. CIPHET on the occasion also displayed mechanically operated pomegranate aril extractor (PME) and hand held PME. While hand held PME is useful for separating pomegranate at small scale, mechanically operated PME is useful for extracting arils at commercial scale. Any size and variety of pomegranate could be processed with extraction capacity of 90 to 94%. Mechanical damage to arils is reported as less as 3 to 4 % during processing.

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## Second North-East Agri-Expo, 2010 inaugurated

Dimapur, 19 December 2010. The Second North- East Agri-Expo, 2010 with the theme, 'Prosperity through Agriculture', hosted by the Government of Nagaland in partnership with the Federation of Indian Chambers of Commerce and Industries and with sponsorship from Ministry of DONER/NEC and Ministry of Agriculture, was inaugurated by Minister of Mines and DoNER, Government of India, Shri B K Handique. He said that introduction of two paddy varieties for Jhum areas, which would produce 2.2 tonne/ha of paddy when compared with less than 1 tonne



produced by the conventional varieties, will give double production. With objective to transform the agriculture and allied sectors into sustainable industries and agri-business in the north-east region the Agri-Expo, 2010 conducted various conferences and meets to create awareness among stakeholders. The Chief Minister of Nagaland, Shri Neiphiu Rio, said that technologies and advisories provided by the ICAR institutes are paving the way for prosperity of the farming community. The ICAR Research Complex for North- East Hill Regions, four National Research Centers on Pig, Mithun, Yak and Orchid, Regional centers of various ICAR Institutes located in the North- East Hill Regions actively participated and showcased technologies in five-day Agri-Expo, 2010 (15 to 19 December 2010). Besides the North-East states, neighboring countries such as Bangladesh, Bhutan and Nepal also participated in the expo.

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## Healthy animal, wealthy farmer- IVRI Kisan Mela

Izatnagar, 3 November 2010. A three-day Kisan Mela was held at Indian Veterinary Research Institute from 1 to 3 November 2010 under the theme of "Rog mukth pasudhan- Kushhal kisan". The Kisan Mela was inaugurated by Professor K.M.L.Pathak, DDG (Animal Science), ICAR, New Delhi, who stressed the need of transfer of technology and scientific researches to the needy farmers and livestock owners. Professor M.C. Sharma (Director, IVRI) called upon the farming community that they should take advantage of IVRI. During the Kisan Mela farmers and livestock owners participated in the Kisan Goshthi, and sought customized solutions to their specific problems pertaining to livestock and other agriculture allied areas. Various research and educational institutes; state development departments; national



and multi-national pharmaceutical companies; major manufactures of agricultural implements; livestock feed suppliers; *gramodyog* and small-scale industries; domestic, automobile & tractor agencies, etc. participated with their stalls and provided latest information on agricultural and veterinary products besides provided valuable services to the farmers.

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## Open Access Institutional Repository launched



Cochin, 26 November 2010. The Central Marine Fisheries Research Institute, in its journey towards establishing an Open access Institutional Digital Repository in the library, has uploaded about 7,000 scientific papers of their staff members published since 1953, which was launched as [eprints@cmfri](mailto:eprints@cmfri) on 26 November 2010 by the Secretary, DARE and Director General, ICAR, Dr S. Ayyappan. This has placed CMFRI as the first ICAR Institute to reach this stage. CMFRI also ranks first at national level and fifth at global level among the open access repositories on marine sciences.

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## Agricultural innovations leading to enhanced profitability and rural employment

New Delhi, 29 November 2010. "With unique partnership between public institutions, NGOs, farmers, private sectors and innovative approach a momentum has been developed to increase profitability, income generation and employment in agriculture", said Dr S. Ayyappan (Secretary, DARE and DG, ICAR). He was addressing a press conference called on the occasion of 8th Implementation Support Mission of World Bank on National Agricultural Innovation Project (NAIP). Dr S. Ayyappan cited some noteworthy success stories happening across the country, such as export of jasmine flowers from villages of Tamil Nadu to global market; development of value chain for conversion of banana fibers into fabric; and development of natural dyes and colours for textile industry.



Dr P.S. Sidhu, Task Team Leader, World Bank appreciated the role of NAIP in effectively teaming up with non-traditional partners such as IITs, IIM, private enterprises and other stakeholders to meet key objective of the project. He expressed his satisfaction and happiness on the progress of the NAIP so far and hoped that this partnership of World Bank with ICAR will lead Indian agriculture to next higher level.

Dr Bangali Baboo (National Director, NAIP) outlined the objectives and programmes of the mega-project. Being implemented for six year, NAIP is one of the largest national initiatives of the Indian Council Agricultural Research supported by World Bank, he added. More than 800 institutions across the country are participating in the project through partnerships at various levels. Four components of NAIP are addressing various issues related to sharing of agricultural knowledge for development, production to consumption systems, sustainable rural livelihood security and basic and strategic research in the frontier areas of agricultural sciences. In all 188 sub-projects are working towards the transformation of Indian Agriculture in network mode.

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## DRMR celebrated XVII Foundation Day

Bharatpur, 20 October 2010. Prof. S. K. Datta (DDG, Crop Science, ICAR, New Delhi) inaugurated XVII Foundation Day of Directorate of Rapeseed Mustard Research (DRMR) and suggested biotechnological approaches and development of transgenic plants especially for aphid tolerance, low phytate content and *Alternaria* blight as the need of the hour for increasing yield and sustainable production. He added that breeding efforts with respect to oil and meal quality are required to reduce the anti-nutritive components such as erucic acid in oil and glucosinolates in seed meal as well as enhancing oleic acid. Enhancing heterosis level is the main challenge to make the hybrid technology competitive and remunerative, opined Prof.S.K. Datta. He also released *Morphological descriptor of rapeseed-*

mustard varieties and Sidhartha: Sarson Sandesh at the occasion. Dr J. S. Chauhan (Director, DRMR) elaborated about the mandate, progress and achievements of the Directorate and its commitment to all the stakeholders in rapeseed-mustard research and development programme.

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## Technology Information Centre inaugurated



Bhopal, 3 December 2010,. The Technology Information Centre was inaugurated by Dr S. Ayyappan (Secretary DARE and DG, ICAR) at Central Institute of Agricultural Engineering, Bhopal. The Technology Information Centre functions as an Extension Counter of the Agricultural Technology Information Centre (ATIC) and provides technical information to the visitors and guide them as per need. Small tools and implements as well as various agro-produces shall also be sold from the counter. This will save time of visitors as well as help in information dissemination and technology transfer on improved agricultural machinery and technologies.

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## Biological control of the papaya mealybug

Bengaluru, 30 October 2010. The National Bureau of Agriculturally Important Insects (NBAII) organized a National Consultation on the classical biological control of the papaya mealy bug, *Para-coccus marginatus*. The papaya mealy bug is causing severe problems in Tamil Nadu, Kerala, Andhra Pradesh, Karnataka, Maharashtra and parts of Tripura. Apart from attacking papaya this mealy bug damages several other crops like pigeon pea, sunflower, tapioca, okra, tomato, brinjal, cocoa and mulberry as well as weeds like *Parthenium* and trees like teak, *Plumeria* and *Thespesia*.

The NBAII has launched a nationwide programme on classical biological control of the papaya mealybug

using natural enemies. Three species of exotic parasitoids namely *Acerophagous papayae*, *Anagyrus loecki* and *Pseudleptomastix mexicana* specific to papaya mealybug imported with the help of USDA-APHIS were mass produced and distributed to Krishi Vigyan Kendras, CIPM centres, entomologists of State Agricultural Universities of Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Maharashtra and Tripura as well as horticultural universities of Karnataka and Andhra Pradesh. The scientists of AICRP on biological control programme have also received the parasitoids. Intensive training has been imparted to 90 entomologists/subject matter specialists of these organizations on the mass production, field release and conservation of the parasitoids. The parasitoid *A.papayae* has now multiplied in enormous numbers and established well in the farmers fields in Tamil Nadu, Karnataka and Maharashtra. The parasitoids collected from these fields are now being distributed to fields of other farmers and the parasitoids are now spreading to nearby areas. Wherever the parasitoids are now seen, the papaya mealy bug attack is reduced significantly. It is anticipated that within next 6 to 12 months, the pest problem will be solved in a sustainable and eco-friendly manner on a long-term.

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## NRC Meat supports entrepreneur in quality pork production

Hyderabad, 3 October 2010. The National Research Centre on Meat, Hyderabad is helping entrepreneurs in establishing meat processing units. A firm presently housed about 500 exotic superior germplasm (large white Yorkshire, landrace and Duroc breed) and a small pork processing unit wished to establish modern pork and pork products processing unit. The enterprising farmer had a vision to create elite pig genetics for pig breeders and growers and committed to provide quality and wholesome pork products to consumer. The NRC on Meat made MoU with the firm to provide consultancy service covering technical advice and assistance relating to modernization of pig slaughter and pork processing plant. On 3 October, a team of Scientists and Director, Dr N.Kondaiah, visited the breeding unit of piggery and examined the premises for establishment of modern pig farm and processing plant.

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## Foundation Day celebrated

New Delhi, 10 December, 2010. The Directorate of Floriculture (DFR) celebrated its Foundation Day on 10 December 2010 at IARI, New Delhi. Dr Ramesh Kumar (Director, DFR) elaborated the role of Directorate of Floricultural Research in floriculture sector. Scientists opined that Contribution of

floriculture in farmers income is growing at much faster pace. Dr Umesh Srivastava, the Chief Guest, elaborated the growing demand of flowers in the country. An exhibition of beautiful and aromatic varieties was also arranged on the occasion.

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## World Food Day celebrated

New Delhi, 16 October 2010. World Food Day jointly organized by the DARE, ICAR and Indian Agricultural Research Institute on World Food Day was inaugurated by Dr V L Chopra (Ex-Member, Planning Commission) at National Agriculture Science Complex, New Delhi. He said 'Every two out of five Indian children are suffering from underweight problem. Under such conditions it is difficult to develop India as a powerful nation. To overcome this problem, coordinated efforts are needed to ensure food security in India. United and coordinated efforts at every level can eradicate hunger in the world', he added. While referring to the Article 21 and 47 of Indian constitution for ensuring food security, he motivated participants to do serious work at ground level.

Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) urged for second Green Revolution. 'It is a challenge for us to provide sustainable food security to 118 crore people of India. Climate change is posing a threat for more productivity. Maintaining bio-diversity is another challenge. The ICAR is willing to take up these challenges', he said, and highlighted the role of marketing in farming and suggested more public-private partnerships.

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## Annual Day of NASM celebrated

New Delhi, 9 November, 2010. 'Contributions of the Indian Agriculture are enormous and the museum is an important medium to convey its progress to the world. With more awareness and publicity, it will become a center of attraction for every section of the society', said Dr Panjab Singh, Advisor, Agriculture Plantation, ETA Star at Annual Day programme of National Agricultural Science Museum (NASM).



Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) motivated brilliant students to pursue agriculture sciences as their main subjects for career. Quiz competitions, interactive sessions, visits and other mass awareness activities have been taken up to popularize and publicize the museum. Winners of the Essay and Quiz competitions were awarded certificate and memento. Four mobile agricultural museums for Kolkata, Mumbai, Chennai and North-East region will be introduced soon for disseminating agricultural related knowledge, said Dr Ayyappan. For regular updating and adding new literature a virtual tour of NASM was also launched through ICAR website ([www.icar.org.in](http://www.icar.org.in)) on the occasion. A film on NASM and booklet *The Saga of Indian Agriculture* was also released.

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## First World Statistics Day organized

New Delhi, 20 October 2010. The United Nations Statistical Commission decided to celebrate 20 October, 2010 as World Statistics Day under general theme 'Celebrating the Many Achievements of Statistics: Service, Professionalism and Integrity' and United Nations General Assembly has resolved to designate October 20, 2010 as World Statistics Day. IASRI celebrated the First World Statistics Day on October 20, 2010. During these celebrations a Symposium on "Statistics in Agricultural Development" was organized.

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## 121<sup>st</sup> IVRI Foundation Day celebrated

Izatnagar, 9 December 2010. The Indian Veterinary Research Institute celebrated its 121<sup>st</sup> Foundation Day from 7 to 9 December 2010 with great enthusiasm and fervor. Professor M.C. Sharma (Director, IVRI) lauded the significant contribution of every segment of IVRI family in achieving national and international honour. On this occasion, a Foundation Day Lecture on "Transboundary animal diseases in South Asia: the Food and Agriculture Organization perspective" was delivered by Dr Leo Loth, Chief Technical Advisor of FAO, Emergency Centre for Transboundary Animal Diseases, India on 9 December 2010. He also highlighted some of the core activities and key programmes of the FAO in the field of capacity building in epidemiology through trainings.

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## Women in Agriculture Day observed

Gumla, 4 December 2010. Dr Krishna Srinath (Director, DRWA) inaugurated the Women in Agriculture Day, organized by DRWA jointly with the





Zonal Project Directorate, Zone-II, Kolkata, at the Directorate of Research on Women in Agriculture (Hqrs) and its theme was 'Empower women to defeat hunger'. Sh Ashok Bhagat, Chairman, KVK, Gumla, chaired the meeting.

The function was also held at Krishi Vigyan Kendra, Vikash Bharti, Gumla, Jharkhan. At Gumla an interaction was arranged with the farm-women in which about 700 farm-women involved in farming and related activities attended. An exhibition of value added products prepared by Self -Help Groups from locally available resources was also arranged in this connection. At the Directorate an interactive session and exposure visit was arranged for 25 farm-women.

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## Biodiversity Day, DRMR organized

Bharatpur, 23 November 2010. The Directorate of Rapeseed Mustard Research (DRMR) organized Biodiversity day to commemorate the International Biodiversity Year and to make people aware about the importance of biodiversity in meeting the future challenges of increasing demand for food, feed, fibres, timbers, etc. for healthy and sustainable development on earth.

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## Ganga Aquarium inaugurated

Lucknow, 19 November, 2010 The newly built 'Ganga Aquarium', one of the largest and finest aquariums of the country, was inaugurated by Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) at the National Bureau of Fish Genetic Resources. He opined that the recent addition of Ganga Aquarium is a beautiful state of art and one of the finest aquariums in the country. The aquarium will provide useful information to the people of the area on fish biodiversity and conservation aspects.

Dr J.K. Jena (Director, NBFGR) said that the Ganga Aquarium is inaugurated at the right time as 2010 has been proclaimed as 'International Year of

Biodiversity' by United Nations. The Aquarium has been constructed in the pollution free, picturesque lush green surroundings in a finely architecture circular building spreading over an area of 450 m<sup>2</sup> and has been opened for the public from 20 November 2010. The aquarium has been housed with 42 aquaria of capacity 800 to 1,600 litres and displaying both freshwater and marine fishes, including sea anemones and starfish. Around 100 live native and exotic fish species of ornamental, food, sport values and medicinal importance have been displayed in the aquaria that belong to the continents of Asia, Africa, South America and North America including Central America. The important ornamentals displayed are piranhas, paku, flower horn, alligator gar, sting ray, ghostfish, malawi cichlids, fire mouth, monodactyl, discus, oscars, red-tail catfish, several varieties of goldfishes, angels, tetras, silver dollar, albino severum, senegal, parrot fish, denisoni, flamingo barb, etc. besides several common ornamentals. The marine fauna has been displayed by lionfish, damsels, butterfly fishes,



doctor fish, marine angels, clown fishes, sea anemones and starfish. The fish fauna of river Ganga has been displayed by Indian major carps, catfishes, snakeheads, featherbacks, etc which are the main food fishes of the country. One of the most beautiful attractions of the aquarium is an ornately carved fountain graced by four human size fish mermaids located in the central part of the building.

Dr (Mrs) B. Meenakumari (Deputy Director General, Fisheries) stated that aquarium trade is a billion dollar industry globally and there is great a scope for Indian entrepreneurs to venture in this business.

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## PAU year-ender 2010: expansion, innovation and Advancement-hallmark of PAU

Ludhiana, 29 December 2010. The Punjab Agricultural University (PAU), in the year 2010, was agog with activities concerning academics, research, technology

transfer, international visitors and extra-curricular activities. Expansion, innovation and advancement were the hallmark of the year. Accreditation Board of the ICAR extended accreditation period of the University, endorsing achievements in teaching, research and extension education.

The budget estimates of PAU for the year 2010-11 amounting to 33160.16 lac is in operation. The significant achievement was the meeting of PAU Vice-Chancellor Dr Manjit Singh Kang with US President Barack Obama at St. Xavier's College, Mumbai. Dr Kang was invited at a round table discussion on 'Agriculture and Food Security' held in Mumbai. PAU would partner the US in a global food security plan. President Barack Obama was enthusiastic about India's involvement in food security agenda of US for African countries and spoke of the evergreen revolution under its "Feed the Future" programme for global food security. Dr Kang, in a discussion with Obama's adviser Rajeev Shah and US Agriculture Secretary Tom Vilsack, traced the development of

India that made the country self-sufficient on food front. He highlighted PAU's emphasis on research, on resource conservation technologies and human resource development in the cutting-edge technology areas through training faculty and students under collaborative agreements.

The Walter Sisulu University (WSU), South Africa, evinced keen interest to adopt PAU model for raising agricultural production and alleviating poverty through rural development. Dr Kang delivered the keynote address at the 6th WSU Annual Rural Development Conference, held in September.

Dr. Kang was decorated with the Amity Academic Excellence Award by the Amity University in recognition of his contributions, vision, innovation, competitiveness and sustenance during the international Business summit (INBUSH) - 2010. The University maintains Dr M.S.Swaminathan Heritage Tree Park wherein several Indian and foreign dignitaries, who visited PAU, planted tree saplings.

## Trainings and Winter Schools

- A three days residential farmers' training programme on **"Value Addition of Yak Products"** was organized from 25 to 27 November, 2010 at National Research Centre on Yak, Dirang, West Kameng District, Arunachal Pradesh with the financial help from National Bank for Agriculture and Rural Development.
- A one-day training-cum-awareness programme on **"Protection of Plant Varieties and Farmers' Rights Act-2001"** with special reference to paddy was organized on 11 October, 2010 at Central Rice Research Institute, Cuttack.
- To develop a trained human resource in Statistical Genomics, a training programme on **SAS Genetics/ JMP Genomics** was organized at IASRI, New Delhi from 4 to 8 October, 2010 under NAIP Consortium Strengthening Statistical Computing for NARS.
- The second training programme, conducted on **"Data analysis using Statistical Analysis System"** under NAIP, entitled "Strengthening Statistical Computing for National Agricultural Research System" was organized at Indian Veterinary Research Institute, Izatnagar from 22 to 27 November, 2010.
- An International training on **'In vitro and Cryopreservation Techniques for Conservation of Plant Genetic Resources'** was organized by National Bureau of Plant Genetic Resources, New Delhi, Bioversity International, South Asia Office and Asia Pacific Consortium on Agricultural Biotechnology New Delhi from 15 to 27 November, 2010.
- Two training programmes from 29 November to 1 December 2010, and from 6 to 8 December 2010 on **"Dairy pashoon main swasthya prabandhan, and nasl sudhaar evam aahar prabandhan"**, were organized at Joint Directorate of Extension Education, IVRI, Izatnagar.
- Five-day National training on **"Hygienic milk production and animal health management"** organized by Joint Directorate of Extension Education, IVRI, and sponsored by ATMA and Department of Animal Husbandry, Pouri Garhwal, Uttarakhand, was held at Indian Veterinary Research Institute, Izatnagar from 15 to 19 December, 2010.
- A three-week winter school on **"Basic techniques in solid phase peptide synthesis and applications of synthetic peptides in animal diseases diagnosis and research"** sponsored by ICAR, New Delhi was held from 22 September to 12 October, 2010 at Indian Veterinary Research Institute, Izatnagar.
- A three-week Winter school on **'Newer Concepts and Techniques in Molecular and Patho-anatomical Diagnosis of Farm Animals, Poultry, Wildlife and Laboratory Animal Diseases'**, sponsored by ICAR, New Delhi( held from 1 to 21 October, 2010 at Division of Pathology, Indian Veterinary Research Institute) was inaugurated by Dr Guru Bachan Lal, IPS, Inspector General of Police, Bareilly.
- A ten-day short course on **"Application of molecular pharmacology techniques in drug development"** sponsored by ICAR, New Delhi was held from 4 to 13 October, 2010 at Division of Pharmacology and Toxicology, Indian Veterinary Research Institute.

## Memorandum of Understanding

- A Memorandum of Understanding between the Indian Council of Agricultural Research, New Delhi and the Board of Trustee of the University of Illinois, Urbana-Champaign USA was initialed on 5 October, 2010.
- The quadripartite “Letter of Intent” for Joint Global Research Collaboration on “Food Security: Sustainable Crop Production Research for International Development” was signed on 11 November, 2010 among (i) Department of Biotechnology, Ministry of Science and Technology, Government of India; (ii) the Indian Council of Agricultural Research; (iii) Biotechnology and Biological Sciences Research Council, United Kingdom; and (iv) Department of International Development, United Kingdom.

## Protocol Activities

- Dr S. Sreenivasan, Director, CIRCOT, Mumbai and Dr. P.R. Bharambe, Head Division of Crop Production, CICR, Nagpur visited Benin for two weeks starting from 22 November, 2010 for preparation of a feasibility study on enhancing the production of cotton and also the post-harvest management and value addition to cotton in Benin.
- Dr Arvind Kumar, Deputy Director General (Education), ICAR(Hqtrs); Dr. H.S Gupta, Director, IARI, New Delhi; and Dr A.P Singh, Vice Chancellor, PDDUPCAS, Mathura visited Nepal from 12 to 21 November, 2010 (first visit) and 17 to 25 December, 2010 ( second visit) to help NARC to develop a technical proposal for the establishment of a deemed university under the Work Plan for 2009-2010.
- Dr V. Kumar, Senior Scientist, National Research Centre for Banana, Trichy provided his expertise on Horticulture to the Commonwealth of Dominica for 1 month commencing from 20 December 2010.

## Appointments

- Dr J. Jena joined Council as Director, National Bureau of Fish Genetic Resources, Lucknow on 6 October 2010.
- Dr T.K. Srinivasa Gopal joined Council as Director, Central Institute of Fish Technology Cochin on 6 October 2010.
- Dr Yudh Vir Singh joined Council as Zonal Project Director, Zone VI, Jodhpur on 20 October 2010
- Dr K. Vijayaraghavan joined Council as Joint Director (Extension), Indian Agricultural Research Institute, New Delhi on 21 October 2010.
- Dr K.C. Bansal joined Council as Director, National

Bureau of Plant Genetic Resources, New Delhi on 27 October 2010.

- Dr S.K. Kaushik joined Council as Joint Director, Central Potato Research Institute, CPRS, Modipuram on 27 October 2010.
- Dr Jagdish Chander Dagar joined Council as Assistant Director General( Agronomy and Agroforestry) at ICAR (Hqtrs) on 3 November 2010.
- Dr P.S. Minahas joined Council as Assistant Director General (Soil and Water Management) at ICAR (Hqtrs) on 1 December 2010.

## Retirements

- Dr S.D. Sharma (Principal Scientist, Education, ICAR, Hqtrs ) retired on 30 November 2010.
- Dr P. D. Sharma (Assistant Director General—Soil, ICAR, Hqtrs) retired on 30 November 2010.
- Dr N. T. Yaduraju (National Coordinator, National Agriculture Innovation Project, ICAR, Hqtrs ) retired voluntarily in the forenoon of 4 December 2010.
- Dr M. A. Khan (Director, ICAR Research Complex for Eastern Region, Patna ,Bihar) retired on 31 December 2010.
- Dr R. P Sharma ( Project Director, Project Directorate on Poultry, Hyderabad) retired on 31 December 2010.
- Dr V. D. Patil (Assistant Director General—Oilseed and Pulses, ICAR, Hqtrs ) retired on 31 December 2010.

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