



## News in Brief

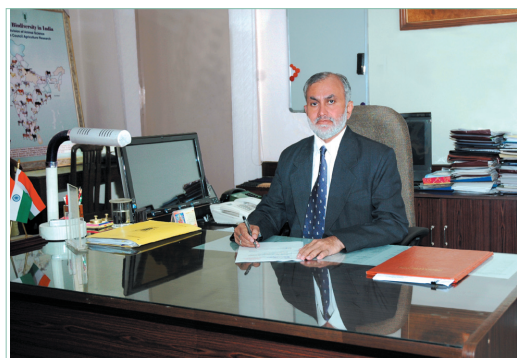
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## From the DG's Desk

Dear Readers,

Gender issues are receiving increasing attention in the context of higher and inclusive agricultural development. The challenge we are facing is two fold: identifying context specific gender issues in agriculture and addressing them on priority through appropriate socio-economic, technological, and knowledge and policy-based interventions.

During the past few years, a great awakening has taken place at the global level on gender issues, their consequences and the need for an urgent action. The Global Conference on 'Women in Agriculture', held in March 2012, organized by the ICAR in collaboration with other stakeholders clearly reflected the concerns of global community on the issue. The Global Conference with national and international participants, discussed several issues of immediate and long-term importance under broad thematic areas of empowerment, drudgery, food and nutrition, market linkage, access to assets and resources, climate change, research, education, extension and policy, and identified critical areas of intervention for empowerment of women and addressing gender issues. Further, the conference could spread the message across the globe that would sensitize institutions and governments into action.



In India, the role of women, gender issues and the need for creating opportunities for women were recognized long ago by the planners and policy makers, as a result of which successive plans witnessed a number of programmes and mechanisms to address problems of women. The gender subject was implanted within the National Agricultural Research System (NARS) as an area of research in latter part of Eighth Five-Year Plan with the establishment of Directorate of Research on Women in Agriculture, at Bhubaneswar. Now-a-days, institutionalization of gender in agricultural research has become both a necessity

and challenge. It is a necessity because there is pressure on research system to improve development effectiveness of research output including knowledge and technologies that should be targeted to a wider spectrum of clientele including women. It is a challenge because we need a shift in our approach to reorient agricultural research by incorporating and strengthening gender perspective both at the project and programme levels.

Till date research interventions in National Agricultural Research System (NARS) largely focused on management and augmentation of agricultural production through new knowledge and technologies. As things are unfolding, women would be playing even greater role in Indian agriculture. With increase in rural-urban migration leading to shift in male workers out of agriculture, development of the sector would largely depend on the attitude, interest, knowledge base and capacity of women to manage the changes in agriculture. This suggests that our research output should be acceptable to and suitable for women.

India presents enormous diversity in agro-ecological, climatic and socio-cultural and economic situations which have made agriculture complex. Varying set of factors influence the prospects of agricultural growth in different regions differentially. All these have made women's role and participation diverse across systems. Moreover, the pace of change in different agric-systems and regions varies. Such changes must be systematically studied and understood and linked to dynamics of gender participation in agriculture. This will be useful not only for technology development but also for technology targeting as well.

Time has come for all institutions in NARS to take a pro-active move to make gender an in-built component in their research and extension interventions, as it is important for us to assess and communicate as to how research interventions would impact women, their family and agriculture in terms of direct and indirect, and intended and unintended impacts. Thus an additional dimension, i.e. gender,

needs to be added to our research planning so that we can add value to our research and make research output contextually more appropriate.

To find solutions to multi-dimensional problems, multi-disciplinary team approach is very essential. It is pre-requisite as we have to look at cross-disciplinary perspectives of the interventions. Moreover, agriculture has interdependence with other sectors as well. Changes in agriculture and the households are interdependent. It is imperative that whatever intervention is planned for agriculture should be assessed in terms of its implications for household and its members, both men and women. Therefore, even when we are planning research along

commodity lines, there is ample scope to involve social scientists including home scientists, though in the very first instance it may not appear so logical.

Concerted efforts are therefore required to make the research and development (R&D) professionals gender sensitive and oriented to create an enabling environment for better appreciation and understanding the gender issues, and developing gender-encompassing R & D

strategies, approaches and institutional convergence to attain sectoral, human development and other economic goals.

In XII Five-Year Plan, the ICAR is contemplating to bring in institutional mechanisms to strengthen the gender component in agricultural research activities. Programmes would be worked out to demonstrate the utilities of gender research through partnerships with the ICAR institutions, Krishi Vigyan Kendras, and State Agricultural Universities. It is also an opportune time for the NARS institutions to look at the issue and initiate measures that can contribute to higher and gender-inclusive agricultural growth.



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### ICAR Partners

- Active collaboration with international agricultural research institutions including CG centres, CABI, FAO, NACA, APAARI, UN-CAPSA, APCAEM, ISTA, ISHS etc.
- MoU/Work Plans with over 30 countries for bilateral cooperation in agricultural research, training and study visits.
- ICAR offers quality and cost-effective agricultural education to international students at under-graduate and post-graduate levels. And need-based short-term training programmes in specialized areas are also offered. Special concessions for SAARC students.

# WORKSHOPS, MEETINGS, SEMINARS, CONFERENCES

## Agricultural Potential of Eastern States to be harnessed: XXI Meeting of ICAR Regional Committee

Patna, 21 September 2012. The Minister of Agriculture, Government of Bihar, Shri Narendra Singh, inaugurated the XXI Meeting of ICAR Regional Committee-IV, organized at ICAR Research Complex for Eastern Region, Patna. Shri Singh opined that there is lot of potential in Bihar and other eastern states for agricultural development which needs to be harnessed with concerted efforts of scientists and development departments. He exhorted the scientists and officials to pay maximum attention to the needs of the small farmers by improving the process of location specific technological interventions and initiatives for timely transfer of technology. The Minister for Animal Resources and Fisheries, Shri Giriraj Singh, highlighted the role of animals, poultry and fisheries in diversification of farming systems and augmenting the income of farmers and nutritional security in the form of high quality protein. He stressed that in Eastern states animal husbandry sector is lagging behind despite its very high potential which need urgent attention.

Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) emphasized on multi-faceted growth in agriculture sector and exhorted the participants to utilize the multiple platforms to identify areas of regional importance in agriculture and deliberate



over for setting priorities for the XII Five-Year Plan and develop road-map for agricultural development in Bihar, Jharkhand and Uttar Pradesh. Dr Mangala Rai (Advisor to Government of Bihar) elaborated the agricultural development priorities in the eastern region. He said that water management, soil conservation, seeds of high-yielding varieties, biotechnological interventions, food processing, marketing and trade are the areas to be paid maximum attention.

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## XIX Annual Group Meeting of AICRP on Rapeseed-Mustard for 2011-12

Ranchi, 5 August 2012. The Directorate of Rapeseed-Mustard Research, Bharatpur organized XIX<sup>th</sup> Annual Group Meeting of All India Coordinated Research Project on Rapeseed-Mustard from 3 to 5 August 2012 at Birsa Agricultural University, Kanke, Ranchi. Dr S. K. Datta, Deputy Director General (Crop Science, ICAR) suggested for exploring the possibility of mustard cultivation in rice fallows of Asom and other states and stressed for vigorous efforts on developing canola quality varieties and combating *Orobanche* problem. Dr K.D. Kokate, Deputy Director General (Agricultural Extension, ICAR) emphasized popularizing location-specific and short-duration varieties especially for late sown/drought-prone areas and suggested for contingency planning for low as well as

high rainfall areas. The scientists highlighted the rapeseed-mustard programme in Jharkhand and informed that unfavourable conditions of Jharkhand are the reasons for low productivity (635 kg/ha) of rapeseed-mustard. Besides, they said that efforts are needed to increase indents of latest varieties recommended for the state/area and stressed upon focused efforts on pre and hybrid breeding research for enhancing productivity.

Dr J.S. Chauhan (Director, DRMR, Bharatpur) presented the highlights of AICRP on Rapeseed-Mustard for 2011-12 including registration of three novel genetic stocks, BPR 349-9, DRMR WFM1 and MCA 1, promotion of 25 (22.9%) strains for advance



stage of testing. The Varietal Identification Committee under the Chairmanship of Professor S.K. Datta, (DDG, Crop Science, ICAR), considered 8 proposals of Indian mustard and identified 4 varieties, RH 0749, Divya 33, PBR 378, JMWR 08-3 and one hybrid 44S01 for release.

### Recommendations

- Intercropping of mustard + maize (1:1 or 1:2) at Bhubaneswar and Dholi; wheat + mustard (9:1) at Varanasi, Kanke and Nagpur and mixed cropping of wheat + mustard (90:10%) at Chatha proved more remunerative when compared with sole crops. However, sole wheat at Kanpur and Morena were more rewarding than intercropping.
- Seed treatment with *Azotobactor* + phosphate-solubilizing bacteria each 250 g in formulation/ha-seed along with 100% N, P resulted in 2.0 to

14.7% higher seed yield when compared with 100% N, P at Morena, Varanasi, Hisar, Kota, Shillongani, Jobner, Bhubaneswar, Khudwani, S K Nagar and Kanke.

- Soil application of  $ZnSO_4$  @15 kg/ha + borax @10 kg/ha + sulphur (S) as per recommendation combined with foliar application of Carbendazim (0.1%) + Mancozeb (0.2%) was found most effective in controlling AB, DM, PM and SR and improving the seed yield.
- The Front Line-Demonstrations (50%) allotted to the centres should be conducted with the varieties recommended for their respective zone. In component technology demonstrations, minimum 4 to 5 Front-Line Demonstrations must be conducted on one component by the centre.

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## Nutritional security and gender empowerment

Bhubaneswar, 8 September 2012. A meeting, chaired by Dr Krishna Srinath (Director, DRWA), was organized at the Directorate of Research on Women in Agriculture to get the perceptions of various



stakeholders in formulating the research agenda and priorities for the XII Five-Year Plan. Odisha has the advantage of the strong presence of a number of ICAR research institutes in various disciplines, State Agricultural Universities and agencies such as

National Horticulture Board, NABARD, etc. who are already contributing to bring Green Revolution in eastern India. The Directorate of Research on Women in Agriculture can help in this endeavour by forging partnership between stakeholders through collaborative programmes to address nutritional security and gender empowerment. Such a model developed in Odisha will be ideal for replication in other parts of the country.

### Suggestions

- Exploring the scope of developing Nutrition Park by incorporating women-friendly horticultural technologies.
- Emphasis on the integration of poultry, goaterly and fishery in the farming system for gender empowerment.
- Development of homestead integrated farming system for improved livelihood.
- Constraints in adoption of drudgery reducing tools by farm-women need to be re-examined.

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### Latest ICAR Publications

- *Fishing Craft and Gears of Asom*
- *Natural Resins and Gums : Ecological Approach for Economic Development of Disadvantaged Areas*
- *Post-harvest Management and Processing of Fruits and Vegetables*
- *Biology of Bruchidae – Structures, Development and Control*
- *Sheep Production*
- *Drip Irrigation*
- *मृदा सूक्ष्म विज्ञान*

## XXI<sup>st</sup> Institute Research Council Meet

Bharatpur, 25 August 2012. Dr J.S. Chauhan (Director of DRMR) chaired the 2-day XXI Institute Research Council (IRC) meeting at the Directorate of Rapeseed-Mustard Research (DRMR) held during 24-25 August 2012. Individual scientist presented progress of project work done during 2011-12 and the technical programme for 2012-13. Details of four new projects were also presented by the scientists which were approved after some modifications. The Chairman emphasized for better coordination among the scientists for achieving the best output in terms of product, technologies development or publications from the research work.

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## Interactive meeting on integrated development of Uttara Kannada

Karwar, 1 September 2012. Dr S. Ayyappan (Secretary DARE, and Director General, ICAR) focused on the developments in various agricultural sectors with special reference to Uttara Kannada during an interactive meeting of the National Consultation on Integrated Development of Uttara Kannada District. The major points that emerged for crop sciences were: high-yielding and disease-resistant seeds; development and popularization of simple and efficient farm tools for seeding, weeding, harvesting, chaffing, de-husking, etc.; field demonstration of



technology developed by research organizations and those practised by farmers; and equipping farmers to efficiently use technologies developed to get higher yield. Major issues in animal husbandry like decreased milk yield and poor growth and reproduction could be solved by increasing fodder assimilation and incorporating micro-nutrients in the feed. Major issues identified under fisheries sector were: Increasing production (a) *Capture fisheries* - installation of artificial reefs; (b) *Culture fisheries* - by deployment of cages and shellfish culture, improved feeds for cultivable fishes; (c) *Capacity building* (Train fishers for diversified fishing, culture

of fishes and shell fishes); and (d) *Value-addition* (better utilization of low value fishes/shell fishes and fish waste by different processing technologies). Dr Ayyappan assured full co-operation of the ICAR Research Institutes and Agricultural Universities in Karnataka and Goa for implementing the project.

### Recommendations

All proposals were accepted and a project 'Uthran' for the integrated agricultural development of Uttara Kannada was proposed. The Director, CMFRI will be the Convener, and Vice Chancellor, University of Agricultural Sciences, Dharwad, will be the coordinator for the project.

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## ICMR-ICAR joint committee for research on 'Food Safety'

New Delhi. A joint committee of the Indian Council of Medical Research and Indian Council of Agricultural Research (ICMR-ICAR) for research on 'Food Safety' was constituted under the Co-chairmanship of Secretary, Department of Health Research (DHR) and DG, ICMR, and Secretary, DARE and Director General, ICAR with the objective to address issues related to safety of using ripening and colouring agents, use of oxytocin and any other relevant issues in nutrition and food safety which emerge from time to time. This committee functions in a three-tier structure with the ICMR-ICAR joint committee on Food Safety being the first level and Technical Working Group (TWG) being the second level. Experts Groups were constituted to address specific issues and serve as the third tier.

The following Experts Groups are being constituted with the mandate to prepare status documents and identify researchable areas:

- Role of pathogens in food safety,
- Food additives and contaminants and food safety,
- Consumer safety of food.

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## National Seminar Goatery, 2012

Coimbatore, 5 August 2012. Dr D. Swaroop (Director, CIRG) inaugurated a 2-day National Seminar 'Goatery, 2012', organized by Royal Net International, Pollachi (Tamil Nadu) at Coimbatore on 4 August 2012. The aim was to discuss various issues pertaining to viable goat rearing. The scientists from the institute delivered expert lectures on breeding, feeding, housing and health management. The seminar provided important platform for different stakeholders from southern states to discuss various issues pertaining to scientific goat rearing and its benefits. The event was highly appreciated by



different stakeholders including prospective farmers who are interested in goat rearing, realizing the fact that the goat is the 'Future Animal' to provide livelihood and food security for millions of resource poor people in the country. Motivated by the presentation by commercial goat farmers and scientific and technical deliberations made by the experts, several farmers approached CIRG scientists to discuss the prospect of commercial goat farming and training imparted by the institute to make it viable. More than 500 progressive farmers, goat keepers and entrepreneurs attended the seminar.

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## Newer Initiatives for Dairy Development

Karnal, 1 July 2012. A seminar on 'Newer initiatives for Dairy Development', organized by the National Dairy Research Institute (NDRI), was held at Southern Regional Station of NDRI, Bengaluru. Dr N.V. Belavadi (Consultant, National Dairy Development Board, Dairy Services, New Delhi) delivered Zal R. Kothawala Memorial Lecture on 'National Dairy Plan: A recent initiative for Dairy Development'. Dr Belavadi delineated the striking features of National Dairy Plan and also underlined the growing relevance of new generation dairy co-operatives and producers companies. Technical sessions were on 'Food Safety and Standards Act, 2006', 'Human Resource Requirements for Dairy Industry' and 'Sub-clinical Mastitis: A Threat to Sustainable Milk Production'.

### Recommendations

- The awareness on the act 'Food Safety and Standard Act, 2006' and its implementation, development of logistics with regard to training

and development of human resources, infrastructure should be given priority.

- Need-based certificate courses of different durations be developed to cater to the HRD needs of the growing dairy industry.
- The incidence of sub-clinical mastitis should be surveyed and all attempts be made to prevent the loss to the dairy industry through the occurrence of sub-clinical and clinical mastitis.

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## Seminar on 'Right to Information Act'

Bharatpur, 18 August 2012. The Directorate of Rapeseed Mustard Research organized a seminar on 'Right to Information Act' and Shri M. L. Sharma (Information Commissioner, Central Information Commission) delivered key lecture on 'RTI Act, 2005: A tool to promote transparency and accountability of public authority'. He said that RTI Act, 2005 enables citizens to access information under the control of public authorities, in order to promote transparency and accountability in the working of every public office. Every department should publish all relevant facts while formulating important policies or announcing the decisions which affect public. There shall be no obligation to give information, disclosure of which would prejudicially affect the sovereignty and integrity of India.

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## Kisan Sangosthies

Karnal. A series of *Kisan Sangosthis* was organized by the NDRI in the villages of Karnal district under NABARD-assisted project entitled, 'Dairy Extension Education and Services at Farmer's Door through Mobile Extension Unit: An Action Research'. During these *Kisan Sangosthies* specialist team identified some problems: Mineral deficiency in lactating cattle and buffalo, Repeat breeding, Problem of mastitis, Tick problems, Unawareness of clean milk production, Low price of milk, and Lengthy process of getting loans and unawareness of loan schemes offered by State Government and Nationalized Banks etc. The teams were accompanied by veterinary doctors and bank functionaries, who provided solutions to these problems.

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## Forthcoming Conferences

- Third International Agronomy Congress; 26-30 November 2012 at New Delhi, India
- 5th Joint Australian and New Zealand Soil Science Conference; 2-7 December 2012 at Tasmania, Australia
- 2013 Annual Land Use Conference, Land Use for a Lifetime: Changing Demographics and Shifting Priorities; 7-8 March 2013 at Denver, Colorado, United States of America



# International Linkages

## Second Meeting of BRICS Ministers of Agriculture

New Delhi, 28 August 2012. Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) inaugurated a 2-day Second Meeting of Agricultural Experts Working group on 'Agro-Products and Food Security of BRICS Countries' on 27 August 2012. The BRICS countries label refers to a select group of five large, developing countries (Brazil, Russia, India, China and South Africa). At the Second Meeting of BRICS Ministers of Agriculture and Agrarian Development on 30 October 2011 in Chengdu | China, Action Plan 2012-2016 for Agricultural Cooperation of BRICS countries was approved, designating China to coordinate the creation of a basic agricultural information exchange system of BRICS countries.

### Proceedings

- India proposed to develop a basic framework for establishing a strategic co-operation alliance on agricultural science and technology among the BRICS countries. The framework would address the strengths of BRICS countries in terms of agricultural research, education and extension, the best practices and innovations. India would circulate the framework template in September 2012 and request BRICS countries to return the response by the end of September 2012, so that the final action plan can be placed before the next BRICS countries Agriculture Ministers' Meet.
- China presented a proposal on 'Basic Agriculture Information Exchange System'. They have proposed to develop this information system covering four kinds of commodities: **grain crops** covering rice, wheat, maize and soybean; **cash crops** covering sugarcane, garlic, tomato, apple and oranges; **animal products** covering beef, chicken, pork and milk; **aquatic products** covering tilapia and eels.
- Brazil proposed to hold seminar on 'Policies and experiences of the members in ensuring food security of the most vulnerable populations', 'Modernization of feeding systems for the most vulnerable population' and seminar on 'Sustainable Intensification of Agricultural Production and Productivity of Small Holder Farmers.' It was also agreed that seminars/conferences/workshops can be



conducted on the back to back of some other important international events. Two such regular events are the Agriculture Ministers' Meet of BRICS countries and the BRICS AEWG Meeting.

- South Africa proposed a workshop to develop clear project frameworks and detailed Work-Plan with BRICS member countries by the end of 2012 or in early 2013. South Africa also proposed the: Collaborate on projects for exchange of scientific information on inventories to jointly publish ways to improve on estimations (2013-2016); Development of BRICS climate change fund and how this will be utilized to enable research and development projects to develop technologies on mitigation and adaptation (2013); and training and scientific exchange programmes that increase knowledge and skills (2013 onwards).
- Russia offered to host 'Agri-business Forum Meet' in 2015 back to back with the Agriculture Ministers' Meeting of BRICS countries. Russia also suggested that in each of the countries some kind of agriculture trade and exhibitions are organized on regular basis. To promote the trade and investment in agricultural commodities the member countries can utilize this opportunity to visit such trade fairs in each other countries. Another suggestion from Russia was that an AGRIEXPO involving business partners in BRICS countries could be organized at the meeting of the BRICS Ministers of Agriculture and Agrarian Development.

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## Hybrid rice for sustaining food security

Hyderabad, 12 September 2012. With the aim to create a discussion platform that tackles the issue of increasing rice yields to adapt to the worlds' increasing demand for rice, a 3-day Sixth International Hybrid Rice Research Symposium was organized by the International Rice Research Institute, Manila, Philippines and the Directorate of

Rice Research, ICAR, Hyderabad, India on 10 September 2012. Shri K. Lakshmi Narayana (Minister of Agriculture, Government of Andhra Pradesh) inaugurated the Symposium and called upon the scientists, farmers and political leaders to come forward to meet the challenges in rice production and adopt latest techniques to enhance productivity.

He congratulated the ICAR for developing improved basmati and hybrid rice varieties.

Dr S. Ayyappan (Secretary, DARE and DG, ICAR) said that this Symposium would be the guiding force to draw the road-map for developing the hybrid rice technology further. He also elaborated upon capacity building programmes and new initiatives in the forthcoming XII Five-Year Plan with Farmer First' approach. Shri Ashish Bahuguna (Secretary, Ministry of Agriculture and Co-operation, Government of India) said that in spite of advantages of hybrid technology, we have to address many challenging issues related to food requirement of the country.

Dr Robert S. Zeigler (Director General, International Rice Research Institute, Manila, Philippines) expressed his concern regarding prevailing drought conditions in Asia and other parts of globe. He stressed upon the need to develop new varieties of hybrid rice which need lesser water for cultivation. Prof. Longping Yuan, known as father of hybrid rice (DG, China National Hybrid Rice Research and Development Centre) emphasized the significant role of hybrid rice in sustaining food security in the developing countries like China and India. An exhibition was also arranged to showcase latest developments in hybrid rice technology.

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## Success stories

### Groundnut becoming a viable second crop for small and marginal farmers

The sub-project 'Sustainable farming system to enhance and ensure livelihood security of poor in Purulia, Bankura and West Midnapore Districts of West Bengal' under National Agricultural Innovation Project (NAIP) initiated groundnut cultivation in Patashimul (a remote village of Jhargram Block of West Midnapore district) village in 2009. This programme mobilized farmers into small groups.



After lot of efforts 110 farmers showed interest in this and cultivated groundnut in 20 ha of land. The farmers were uncertain of the result since this was the first time they ventured to do so. As the season progressed, the rainfall became very scant to the extent that farmers were unable to transplant paddy on time. They started caring the second crop more intensely. When the paddy production in the area was less than 30% of annual average, the production of *kharif* groundnut was 1.3 tonnes/ha providing an additional income of ₹ 4,000/family. This innovation helped to build the trust among the farmers of the project area. They developed more intense relationship with the project, spontaneously willing

to adopt the technology and other support provided by NAIP through the local consortium partner. This was reflected in the *rabi* groundnut. Farmers got training and extensive support from NAIP in terms of quality seed, agronomic practices, use of gypsum and micronutrients that increased production to the tune of 600 kg/ha, providing an additional income of ₹ 3,000/family (holding size). In 15 villages of Lodhashuli cluster *kharif* groundnut was adopted by 1,706 farmers in 165.62 ha and *rabi* groundnut by 802 farmers in 90 ha. The production of 2.0 to 2.5 tonnes (for *kharif* groundnut) and 3.5 to 4.0 tonnes (for *rabi* groundnut) was significant increase over the baseline value of 1 to 1.5 tonnes/ha. With the aim of marketing of groundnut, a marketing outlet 'Aranyak' was established in Midnapore.

For enhanced income a detailed value chain analysis of groundnut at Purulia and West Midnapur districts of West Bengal was done. The existing chain was modified to replace the local seed suppliers, input providers and credit providers through formation of farmer groups. They said interventions increased productivity along with reducing the cost of production, finally resulting into increase in yield from 2,000 kg/ha to 4,000 kg/ha and income enhancement to ₹ 48,000 /ha from ₹ 20,000/ha. Over 800 farmers in 90 ha under *rabi* groundnut and more than 1,900 farmers in 185.04 ha under *kharif* groundnut have been benefitted by this intervention.

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### Duck rearing for livelihood for tribes

Bhatunia village of Keonjhar district, Odisha is adopted under NAIP sub-project entitled 'Sustainable livelihood improvement through aquaculture, horticulture and livestock development in Keonjhar,





Mayurbhanj and Sambalpur districts of Odisha'. More than 80% of the population is Scheduled Castes or Scheduled Tribes. Shri Sunakara Dehury is a below poverty-line (BPL) farmer of the area with 1.2 acres (0.486 ha) of agricultural land, 0.3 acre (0.121 ha) of seasonal pond besides a small dwelling mud-house of his own. The whole family depends on the single crop of rice produced from his agricultural land and some earning as daily labour. The maximum family income never goes beyond ₹ 25,000/annum. The Regional Centre, Central Avian Research Institute, Bhubaneswar as a consortia partner, motivated Shri Dehury to utilize his small unproductive pond for duck rearing. Brief on-farm training was given to him along with other beneficiaries regarding brooding of day-old ducklings, feeding and other management practices. Shri Dehury was given 35-day-old ducklings (Native cross variety), 10 kg of initial feed, one feeder and one drinker to initiate the unit during June 2011. The family members constructed a small house (3.60 m × 1.8 m) with bamboo and mud by the side of their own living house. During first 10 days the ducklings were offered soaked feed and sufficient clean drinking water twice daily. Rice-husk used as

litter material was changed twice during brooding period. Sometimes his wife offered soaked or boiled rice to the birds. On day 25, he allowed the ducklings to enter the pond. The ducks were kept in the pond during day and inside the house during night. By one month, 31 ducklings were found alive with an average body weight of  $411.65 \pm 26.33$  g. By the end of 3 months they were able to distinguish male (14) and female (17) ducks. On day 152 his little girl collected one egg from the duck house and gradually other female ducks started laying eggs. From sixth month onward they collected at least 9 eggs/day. As per the advice, Sri Dehury collected fish-scales from the nearest fish market regularly and offered to the birds. During laying period, liquid calcium (Ca) preparation was fed to the birds on alternate day (20 ml) along with the kitchen wastes. During peak of winter once the birds showed dullness for 2 to 3 days during which tetracyclin powder (3 g) mixed in water was drenched for 3 consecutive days and birds were found active and alright.

After eight months of laying it was found that total number of eggs collected was 2,642 out of which more than 2,100 eggs were sold in local market (@ ₹ 5 each). The total earning from duck rearing during this period was ₹ 14,400 including the sale of male birds. Shri Dehury's wife is a happy mother as she was able to feed eggs to her two kids regularly which was not possible without rearing ducks of her own. The money earned from duck keeping was utilized for thatching his house with cement tiles besides purchasing new dress for the family during Raja festival (a festival of Keonjhar). Similarly, 450 such farmers and 30 Self-help Groups (SHGs) of this sub-project of NAIP are rearing duck either in their own ponds or in community ponds since last one-and-half year which aids significantly to the livelihood of these farm families for a sustainable agriculture.

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## MoA/MoU

### MoA signed between IVRI and DUVASU, Mathura

Izatnagar, 31 August 2012. Dr A.P. Singh (Vice Chancellor of DUVASU, Mathura) and Dr Gaya Prasad (Acting Director, IVRI) signed a Memorandum of Agreement to share available infrastructure, facilities and expertise for academic and research activities. The Deen Dayal Upadhyay Veterinary and Animal Sciences University (DUVASU), Mathura also agrees to extend facilities for field trials for the products developed by the Indian Veterinary Research Institute (IVRI) through its networks in Uttar Pradesh. Emergence of any intellectual property issue/publications from the joint research shall be dealt by both the Institutions on equal sharing basis, as per guideline of the ICAR, New Delhi. The MoA shall remain valid initially for 5 years and shall be extendable further on mutual consent.

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### DRMR signed 4 MoUs with universities

Bharatpur. Under Tribal Sub-plan Project, Directorate of Rapeseed-Mustard Research signed 4 Memoranda of Understandings (MoUs) for 2012-13 with Central Agricultural University, Imphal (Manipur), Birsa Agricultural University, Kanke (Ranchi), Assam Agricultural University, Jorhat (Assam) and Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (Madhya Pradesh) to work with tribal farmers for augmenting rapeseed-mustard production. These MoUs developed for participatory varietal selection/demonstrations and capacity building of tribal farmers and farm-women, front line demonstrations/participatory varietal selection, organizing field days/*kisan diwas*, on and off-campus trainings, distribution of small farm implements, construction of water harvesting ponds, establishment of bee-hives, publication of extension literature, etc. It is proposed to cover an area of about 500-600 ha in the selected states with rapeseed-mustard.

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## KVK, CTRI participates in National convention

Rajahmundry, 4 September 2012. The Krishi Vigyan Kendra of the Central Tobacco Research Institute participated in the National Convention – the Next Frontier of Agri Business and Technology organized by



Confederation of Indian Industry during 3-4 September 2012 at Mahatma Mandir, Gandhinagar Gujarat. The CTRI exhibited a stall depicting the Bio-degradable eco-friendly cups and plates as best agriculture practice of CTRI-KVK. The Chief Minister of Gujarat Shri Narendra Modi presented a memento to the women entrepreneurs promoted by KVK on this occasion.

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## KVKs celebrate ICAR Foundation Day

- Alamsar, 16 July 2012. The Krishi Vigyan Kendra, Barmer (Rajasthan) celebrated 84<sup>th</sup> Foundation day of the Indian Council of Agricultural Research at village Alamsar of Chohtan *tehsil* that was attended by 140 farmers on 16 July 2012. Mr Padma Ram (MLA, Chohtan) presided the programme and addressed the gathering to update their knowledge on latest technology in agriculture and allied sectors to boost-up production with proper management of available resources. Programme Coordinator of KVK, Dr Pradeep Pagaria explained the role of ICAR in the field of agriculture as well as of Krishi Vigyan Kendra for upliftment of farming community in the district. Considering drought as major issue in Barmer district, he focused on 'Water Conservation for Sustainable Farming activities in the Arid Regions.' The latest technologies developed by the ICAR, Central Arid Zone Research Institute (CAZRI) and ARS, Mandor were explained to the farmers. Scientists also explained how to avoid the problem

of crust formation after seeding particularly in pearl millet-growing areas and highlighted the importance of quality seed.

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- Kheda, 16 July 2012. The Krishi Vigyan Kendra, Vidyapeeth, Kheda (Gujarat) celebrated 'ICAR Foundation Day' at its premise. Farmers, farm-women from nearby villages, officials of Integrated Watershed Development Project, extension workers, different stakeholders and representatives of various companies participated. Our scientists opined that many innovative technologies available that are very useful and might have a great impact on production and productivity. But due to lack of awareness among farming community who are ultimate users and which have developed by considering farmers need of the day. This programme provided the platform to the industries to come forward with newer technologies for the farming communities; as well as also to assess what is the real need of the farming community, so that they can adopt the technology in full swing. It was discussed that the extension programmes of Indian Council of Agricultural Research, New Delhi will be implemented involving all the stakeholders to resolve the location-specific problems by Krishi Vigyan Kendra, Kheda, Gujarat.

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## Empowerment of farm-women

Ujjain. KVK, Ujjain is constantly working for the upgrading the knowledge of farmers and farm-women not only in agricultural field but also in allied sector. Income generation activities are also one of the important mandatory works of KVKs. Keeping this in view KVK, Ujjain also works on this aspect by this organizing the vocational training programmes for farmers and farm-women. The main targeted group was youth. The efforts and impact of the training programme was positively achieved at village Dewrakhedi which was one of the adopted village of KVK, Ujjain.

The maximum people belong to 'Anjana' communities a leading community in rural area particularly in Malwa Region. The women from this community are also very active and energetic. An impact of the training programme was that interest was developed among them for formation of self-help group (SHG). Seeing their interest a special group meeting was organized under the guidance of KVK scientist and at last 20 farm-women were ready to form a SHG which was ultimately registered at Bank of India, Ujjain



(Branch-Chatri Chauk). After seeing interest of Smt Rekha (Std X) w/o Mr Sanjay Anjana, KVK-staff suggested various income generation activities, and she selected flour-mill because at village Dewrakhedi there was no commercial flour-mill and people always had to go to nearby mill at block level. She took a loan of ₹ 10,000 @ 5% from the SHG and she purchased commercial multipurpose flour-mill and started a small entrepreneur at domestic level in 2010. Smt Rekha Anjana herself operates the flour-mill and runs business as small-scale entrepreneur.

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## Kisan chaupal

Jichho. 25 July 2012. Dr K.D. Kokate (DDG, Agricultural Extension) visited Bihar Agricultural University, Bhagalpur and took part in a 'Kisan Chaupal', organized by Krishi Vigyan Kendra (KVK), Bhagalpur at village Jichho. He appreciated the innovative approach of *Kisan Chaupal* initiated by the University in reaching more number of farmers with information support and technological help. He suggested that KVK personnel should conduct *Kisan chaupal* in the remote villages regularly to help the farmers who take advantage of scientific agriculture, vegetable and fruit cultivation as well as value-addition. Dr Kokate addressed a gathering of nearly 300 farmers and farm-women on this occasion and urged them to take the benefit of KVK and university in improving their economic condition through agriculture. In interaction session with large number of farmers and farm-women, solution to the problems raised by the farmers and farm-women on crop cultivation, insect-pest incidence, mushroom cultivation, women empowerment, marketing and other areas were provided by the KVK scientists on the spot. A short film on improved agricultural practices was also shown to the farmers.

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## Integrated approach for water management

KVK, Chomu. Over the years due to frequent incidence of drought and over-exploitation of groundwater, the water level has been declining in many parts of Chou *tehsil*, Jaipur. Such situations are most alarming in Kaladera and its surrounding area, which are located in 10 km radius of Krishi Vigyan Kendra, Chomu. Considering its scarcity in future, the only alternative remain is to use this resource judiciously and most efficiently to sustain the availability of water forever. Drip-irrigation is the only effective tool serving the purpose, as this system considerably saves water and inputs, besides enhancing quality and yield of the produce. In this system water is applied to each plant directly to the root zone at optimum level continuously. Thus it



maintains optimum soil moisture for crop production but avoids waste by delivering small, precise amount of water on a frequent basis to the root zone of the plant. Considering the above situation, we conducted PRA of the adjoining 25 villages, and main issues are identified for adoption of drip irrigation: unawareness about drip irrigation, complex and costly technology, market uncertainty, lack of knowledge of plant-protection, and lack of availability of quality seed.

KVK, Chomu organized a training of farmers to motivate for drip irrigation system in vegetable crops. To overcome the financial problems for establishment of drip irrigation system, a private company of this area has agreed to provide assistance to farming community and joined the hands with KVK as Public-Private Partnership in promotion of new technology. The



assistance for installation of drip system is 70% from Government. The KVK is playing a pivotal role in effective implementation of the programme. To overcome problem of marketing of the produce, KVK joined hand with a private vegetable seed-producing company for contract farming. The KVK also played a middle-man role amongst the farmers and private vegetable seed-producing company. Finally it was decided that private vegetable seed-producing company would provide seed, mulching material and

Impact of programme	Outcome
• 65-70% water saving	: Cultivable area increase by 25 to 40%
• Labour and input saving	: Decrease in cost of production
• Quality produce	: More and assured income



regular supervision to farmers during crop season and will buy onion bulbs @₹ 10/kg of onion. In 2012 this programme resulted in assured market and income to the farmers after 3 years. Through the Public-Private Partnership initiated by KVK, Chomu, 513 farmers were benefited directly and helped in the horizontal spread of the technology in more than 4,500 ha area in the whole district. In future about 1,500 farmers would be benefited this way improving their economic condition, and also play a vital role for extension of water-saving technology through installation of drip irrigation system in the Jaipur.

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## Entrepreneurial opportunities in agriculture and allied sectors

Srinagar, Dr K.D. Kokate (Deputy Director General, Agricultural Extension, ICAR), the chief guest at the

two awareness programmes for the rural youth attached with *Nehru Yuva Kendra Sangthan*, advised rural youth to form community based Self-Help Groups and prepare bankable projects for such enterprises. He also remarked that enterprises will create rural youth employment which will ultimately work for social harmony.

More than 200 rural youths are attached with *Nehru Yuva Kendra Sangthan*. The rural youth were apprised about various entrepreneurial opportunities through agriculture and allied sectors like hybrid seed production of vegetable crops, nursery raising of vegetables and fruits, high value vegetable production, marketing and minimal processing, mushroom cultivation, poultry production, dairy farming etc. by resource persons from Central Institute of Temperate Horticulture, Srinagar; KVK, Srinagar; and KVK, Pulwama.

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## Celebrations/Awareness

### ICAR celebrates Foundation Day

New Delhi, 16 July 2012. Bharat Ratna Dr A.P.J. Abdul Kalam, fourteenth President of India inaugurated 84<sup>th</sup> Foundation Day of the ICAR. He said, "There is a need to carry out research on how the small and marginal farmers can come together through the intervention of Krishi Vigyan Kendras and form rural cooperatives in their areas so that integrated farming including agro-processing can be carried out which will lead to value-added products and enhance the revenue earning ability of bottom of the pyramid farmers". He suggested research missions for ICAR (2012 to 2030) for accelerating the growth and increase the productivity to achieve 10% growth rate in agriculture. Dr Kalam added that ICAR can develop a self-coordinating mechanism for achieving this goal as an organizational development mission. Union Minister of Agriculture and Food Processing Industries, Shri Sharad Pawar, appreciated contributions of the ICAR in ensuring food security of the country. He



hoped that the recognitions will inspire other colleagues to strive harder towards achieving excellence.

Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) presented a brief account of research and development preparedness of ICAR to face the



future challenges. He also pointed out the major paradigm shifts and novel approaches for the XII Five-Year Plan being prepared by the ICAR.

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### Parthenium Awareness Week

Jabalpur, 22 August 2012. A seven days nation-wide 'Parthenium Awareness Week' was started on 16 August 2012. It was organized by the Directorate of Weed Science Research by involving State Agricultural Universities, Krishi Vigyan Kendra (KVKs), ICAR

Institutes, All India Coordinated Research Project centres of Weed control etc. To facilitate the event, posters and extension material especially developed for this occasion were distributed to nearly 1,000 organizations throughout the country with an appeal to develop more such material in regional languages and distribute among stakeholders. The other Institutes also organized activities like awareness, lectures, photo exhibitions, farmer meetings and demonstrations on 'Parthenium management'.

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## Apricot Day-cum-Exhibition

Kargil, 27 August 2012. The Apricot Day-cum-Exhibition was organized by the Krishi Vigyan Kendra, Kargil. The Executive Councillor for Social Welfare and Rural Development, LAHDC Kargil, Mr Syed Kazim Sabere, the Chief Guest, said that Kargil is famous for apricot, and farmers should focus on its development as a globally accepted Brand, and also explore good markets for the sale of these products. More than 50 varieties have been identified and it is assumed that more than 150 varieties of apricot are available in Kargil which is the richest source of apricot in India. The farmers were informed how to do value-addition of apricot for enhancing profitability. In this exhibition, apricot farmers from all over Kargil district exhibited more than 50 varieties of apricot both in sweet kernel and bitter kernel variants. Krishi Vigyan Kendra, Kargil also exhibited its products which include scientifically sulphited Halman, osmotically dried for diabetic patients and value-added wild apricot, apricot bar, apricot cake. The exhibition also includes apricot jam, traditional apricot oil, apricot juice and apricot jelly.

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## CPCRI celebrates World Coconut Day

Kasaragod, 6 September 2012. Shri K. P. Mohanan (Minister for Agriculture, Kerala) inaugurated the valedictory function held at the Central Plantation Crops Research Institute (CPCRI). He hailed the contributions of CPCRI for the development of coconut sector through its research achievements. He also visited the Agro- Processing Complex at the Institute. The National level Essay Writing Competition for the undergraduate [B.Sc. (Agriculture)/B.Sc. (Horticulture)] students on the theme 'Inclusive growth and sustainable development of coconut sector in India', painting competition for school children, quiz competition for Vocation Higher Secondary (Agriculture) students, quiz competition for rural youth trained on coconut climbing using mechanical device, demonstration on safety device for coconut climbing device and interface programme

on coconut farming involving scientists, farmers and coconut climbers were organized as part of coconut day celebrations.

He gave away prizes to winners of various competitions and handed-over the safety devices to selected coconut climbers.

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## DMR organizes Mushroom Mela

Solan, 10 September 2012. On account of the XV year of declaration of Solan as Mushroom City of India, the Directorate of Mushroom Research (DMR) organized a Mushroom Mela that showcased the latest technologies developed by the Directorate for the direct benefit of mushroom growers. These included zero-energy low-cost tunnel for making compost, the DMR method of composting, improved varieties of oyster, button mushroom etc. Mushroom Mela provided an opportunity to the farmers and mushroom growers to seek 'on the spot' solutions to their mushroom-related problems. More than 25 government and private entrepreneurs, mushroom growers and NGOs exhibited their products and around 900 farmers from Himachal Pradesh, Punjab, Haryana, Delhi, Maharashtra, Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, Sikkim, Assam, Meghalaya, Odisha, Jammu and Kashmir, Kerala and Andhra Pradesh participated in the Mushroom Mela.

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## Awareness on Nutrition

- Delhi, 7 September 2012. With the objective to create awareness on nutrition, Krishi Vigyan Kendra, Ujwa, Delhi celebrated the National Nutrition Week from 1 September to 7 September 2012. The theme of this year's celebration is 'Nutrition Awareness: a key to healthy nation'. During the week, issues such as appropriate diet to be taken during adolescent, pregnancy, lactation, infancy and young children, and awareness to be created amongst the people were discussed. Lecture-cum-demonstration on low-cost nutritious food and health and weight management programme was the main highlight of the activities conducted during the week.

Inaugurating the first such programme at Ghumenheda village, Smt Shashi Sawani (Officer In Charge, CFNEU) focused on the rural youth on weight management and awareness about the importance of nutrition to villagers, specially the women. At village Kair, KVK personnel said to the gathering, "Kids should get all their nutrition from wholesome, balanced and natural diet available and acceptable locally instead of from nutrients embedded in chemically fortified food items. Critical cases, though, need medical support and

monitoring, especially if there is a presence of infections like malaria, tuberculosis and HIV". At village Shikarpur, KVK personnel addressed the gathering at village on establishment of kitchen garden in backyard. They said, "to make it more cost-effective for the poor, a kitchen garden is needed where they can have plants like coriander, chilli and mint among others".

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- Bud Bud, 7 September 2012. The Nutrition Day was celebrated at the Central Research Institute for Jute and Allied Fibres, Krishi Vigyan Kendra, Burdwan in its campus at Bud Bud during the National Nutrition Week, 1 to 7 September. The observance aims to raise awareness of the importance of healthy eating for optimal health in the community. It is an initiative to address different aspects of food, nutrition, health, hygiene, sanitation and the ill-effects of malnutrition, their consequences and means. Around 75 progressive farm-women and farmers from different parts of the Burdwan district took part in this programme. Dr F. H. Rahman (Programme Coordinator, KVK, Burdwan) stressed on the issue of nutrition, and said that nutrition is the focal point of health and well being and it is directly linked to human resource development and productivity, ultimately contributing to the national growth. He also mentioned that the factors contributing for under-nutrition are: household food insecurity, intra-household food distribution, imbalanced diet, inadequate preventative and curative health services, insufficient knowledge of proper care and infant feeding practice, and health hazards due to lack of nutrition awareness. Dr D. Dutta Roy (Associate Professor, Indian Statistical Institute, Kolkata) emphasized the psychological aspect of having good food and stressed upon the social aspect of farmers towards strengthening international and national solidarity in the struggle against hunger, malnutrition and poverty, and drew attention to achievements in food and agricultural development

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## CIBA celebrates ICAR-Industry Day

Chennai, 16 July 2012. The Central Institute of Brackishwater Aquaculture (CIBA) celebrated ICAR-Industry Day. Dr A. R. Thirunavukkarasu, Director (CIBA) remarked on development of Intellectual Property Rights (IPR) Regime in ICAR starting with *Johl's Committee Report* in 1985 and *ICAR Guidelines on I P Management* in 1995. A presentation on 'Intellectual Property Rights Regime in ICAR and CIBA' was made by Dr T. Ravisankar (Officer In Charge, Institute Technology Management Unit) in which Trade Related Intellectual Property Rights (TRIPs) and overall *Guidelines of ICAR on IPR Management* were

discussed in summary form. The experiences obtained along with lessons learnt in working with corporate sector, farmers and Self- Help Groups for technology transfer and joint technology development purposes were discussed in detail. A brainstorming session on 'CIBA technologies – retrospect and prospects' was also conducted.

In the session following points were discussed:

- Varied nature of the technologies developed involving different biological forms, which make it difficult to get patents under current IPR laws;
- Difficulties faced by scientists in convincing peers and managers about the worth of the technologies developed by them;
- Difficulties in identification of right private partner and inadequate infrastructural facilities of the Institute for technology scale up;
- The costing methods to be followed for pricing the technology which makes our technologies expensive for the budding entrepreneurs to pay;
- The need for development of a system for cross verification of claims on technologies and creation of proper technology repository at Institute level were also underlined.

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## CIFA observes National Fish Farmers Day

Bhubaneswar, 10 July 2012. The Central Institute of Freshwater Aquaculture observed National Fish Farmers Day to commemorate the discovery of induced breeding technology. On 10 July 1957, this feat was achieved that has led to revolution in fish seed industry, which in turn increased fish production in the country many-fold. Seventeen fish farmers from the different parts of the country were felicitated on the occasion. A compilation of success stories christened as "*Aquaculture Success Stories*" was released. The scientists appreciated the pioneering efforts of several Women Self-Help Groups from interior districts, i.e. Boudh and Keonjhar, for adopting scientific way of fish farming. They added that farmers all over the country look forward to this institute for technology, guidance and training. In an





interactive session, the scientists of the institute addressed the production related queries of the farmers. A total of 150 farmers and farm-women attended the celebrations.

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## ICAR Research Complex organizes World Zoonoses Day

Goa, 6 July 2012. The ICAR Research Complex for Goa celebrated the World Zoonoses Day and its theme was 'Towards a healthier life', to educate and create public awareness about the importance of zoonoses. Shri Laxmikant Parsekar (Minister of Health, Panchayat, and Rural Development, Government of Goa) spoke about the importance of zoonotic infections in our day-to-day life and called for collaboration from departments of Health, Animal Husbandry and Veterinary Services, Department of Agriculture, Science Colleges for creating awareness about the dreaded zoonotic infections. He assured his support to any of such programmes for the betterment of the people of Goa. The programme was organized as a part of awareness campaign about zoonotic and food-borne infections, funded by Department of Biotechnology, Government of India.

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## DRMR observes Agriculture Education Day

Bharatpur, 6 September 2012. Prof. S.N. Puri (Vice Chancellor, Central Agricultural University, Imphal, Manipur) inaugurated the Agriculture Education Day at the Directorate of Rapeseed-Mustard Research. He said that the quality of higher agriculture education should be improved to fulfil the requirements of the modern agriculture sector. The scope for agriculture graduate is coming in food processing, biotechnology, horticulture, seed, fertilizer, pesticide and financial sectors has increased.

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## CTCRI celebrates Foundation Day

Thiruvananthapuram, 10 July 2012. Shri K.P. Mohanan (Minister for Agriculture, Government of Kerala) inaugurated the Foundation Day of Central Tuber Crops Research Institute (CTCRI) and also launched the Biofumigant Plant at CTCRI. He offered all help to popularize the biopesticides among the farmers. The biopesticides christened *Nanma* (against mealy bugs), *Menma* (against borer pests) and the Biofumigant (against borer pests) were released on the Foundation Day. A technical bulletin, *Modified tuber starches* and the web-based mealy bug warning system were released. An Exhibition was also

organized on this occasion. 'Foundation Day Kit' containing planting materials of tuber crops and cassava tubers, were distributed to all those who attended the function.

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## IIPR celebrates Foundation Day

Kanpur, 5 September 2012. Prof. Sanjay Govind Dhande (Director, IIT, Kanpur), the Chief Guest at the celebration of the XX Foundation Day of Indian Institute of Pulses Research (IIPR), said that the production of crops has increased by five-fold since independence and suggested that the fertilizers should be used with constraints. He added that if the hybrid quality of seeds and appropriate production techniques are made available to the farmers, the production of the crops is likely to go up by 30%. Dr P.K. Ghosh (Director, Indian Grassland and Fodder Research Institute, Jhansi) expressed concern over the difficulties farmers are facing in getting the good quality seeds and advanced production techniques. As per Dr Ghosh if the farmers are made a part of the various research based programmes and the same research results are applied on their fields they will surely get good results.

Dr N. Nadarajan (Director, IIPR) highlighted the achievements of the Institute. The IIPR has also developed an online "PulsExpert" system for the benefit of farmers and agriculturalists to identify diseases in the pulse crops and their remedies. He said that a training and communication centre has been set up at the IIPR, for the benefit of farmers and extension workers.

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## Farmers' Fair-cum-Farm Innovation Day

Jodhpur, 12 September 2012. At the Central Arid Zone Research Institute (CAZRI), Dr A.K. Dahama (Vice Chancellor, SKRAU, Bikaner) the Chief Guest of 'Farmers' Fair-cum-Farm Innovation Day', suggested the farmers to come forward to work in participatory mode with the scientists for raising farm productivity and income. He also stressed upon the need of value-addition of the farm produce.

Guest of honour and *Zila Pramukh*, Jodhpur Shrimati Durga Devi Balai emphasized the need for horticulture crops especially Date Palm for higher farm income under arid conditions. Dr M.M. Roy (Director, CAZRI) appealed to the farmers for more closely working with the CAZRI and emphasized the need for high-value crops like cumin, *Isabgol*, medicinal plants and other traditional horticultural crops for getting higher income. More than 2,000 farmers including 650 women farmers from different

parts of Rajasthan participated in *Kisan Mela*. In the Agriculture Science Exhibition, organized on the occasion, 45 stalls on improved technologies and products were displayed by the ICAR institutes.

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## National Consultation on Mango

Bengaluru, 28 August 2012. Dr Amrik Singh Sidhu (Director, Indian Institute of Horticultural Research) chaired one-day meeting of 'National Consultation on Mango' organized by the Division of Fruit Crops, Indian Institute of Horticultural Research. During the deliberations, there were two sessions on 'Crop Improvement', and 'Crop Production and Protection'. There were six and three presentations, respectively, in each of the sessions.

## Recommendations

- Diversification of suitable varieties in different regions.
- Adoption of hi-tech horticultural interventions such as Ultra High Density Planting
- Integrated Nutrient Management, canopy management, fertigation and post-harvest technology
- Development of protocols for production of export quality fruits with climatic changes
- Management of pests and diseases in changing scenario of climate change
- Development of appropriate post-harvest technology for reducing post-harvest losses
- Appropriate market interventions.

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# Capacity Building

## CM, Punjab lays foundation stone of RRT Centre

Bhatoli, 27 July 2012. Mr Prakash Singh Badal (Chief Minister, Punjab) laid Foundation Stone of Regional Research and Training (RRT) Centre at the Bhatoli and said that livestock profession plays a major role in the economy of agrarian state like Punjab. Farmers should come forward to adopt these professions in a scientific way by adopting latest production and protection techniques. He hoped that with intervention of this centre, economic condition of farming community of this area will improve. He also visited blocks Dasuya, Hajipur and Talwara of the operational area of NAIP sub-project entitled, 'Sustainable livestock-based farming system for livelihood security in Hoshiarpur District of Punjab.'

Dr V K Taneja (Vice Chancellor, GADVASU) said that this centre will develop and disseminate the area-specific technologies related to livestock farming including water harvesting for fish farming and other related disciplines.

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## CSWRI launches 'Farmers First' programme

Bheepur, 5 September 2012. The Central Sheep and Wool Research Institute (CSWRI), Avikanagar launched the 'Farmers First' programme in the Bheepur village, Malpura Tehsil of Tonk district of Rajasthan. This project aims at enhancing the mutton production and wool yield in the adopted area, increase the socio-economic status of the rural poor and ultimately securing the livelihood security of poor farmers. This

project has been initiated with the involvement of 10 sheep farmers by providing them elite rams and other inputs. In these adopted sheep flocks most of the relevant technologies generated at the institute shall be exposed so that more farmers will come forward to join the programme.

There was focus on understanding the needs of the farmers with regards to sheep husbandry, to meet their demand through technologies developed at the institute such as genetically improved breeding rams, artificial insemination, nutritional and health inputs, and scientific recording of data such as pedigree and performance.

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## State-of-the art infrastructure facilities at CIFE

Mumbai, 6 July 2012. Shri Sharad Pawar (Union Minister of Agriculture and Food Processing Industries) inaugurated new state-of-the-art infrastructure facilities including Main Building (Phase II), International Guest House, Boys and Girls Hostel and Residential Complex at the Central Institute of



Fisheries Education, Mumbai. These new facilities have been developed to bring academic excellence through the promotion of cutting edge and innovate research and teaching, generate quality human resources and to attract foreign students from Asia and Africa. While appreciating the infrastructure and contribution of the institute, Shri Pawar announced for a new modern auditorium, aquarium and farmers' hostel for CIFE in the XII Five-Year Plan, so that CIFE becomes a truly world class organization.

Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) lauded the performance of the students and scientists and compared CIFE facilities at par with the best in the world. He stressed upon demand-driven research and Human Resource Development with a focus on Farmers' First and Students Ready.

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## Dairy Education at Farmers' Door

Karnal. The National Dairy Research Institute (NDRI) organized a Extension Programme entitled 'Dairy Education at Farmers' Door' to strengthen the effective dissemination of dairy production and processing technologies among farming community. Under this programme, a team of the NDRI scientists including subject matter specialists from production, processing and management group of the NDRI,

visited villages, viz. Khrijpur and Wazidpur, Karnal district.

The main issues emerged during the discussion:

- *Tick control problem*: Tick infestation was found a serious problem in this village. Tick control treatment was administered on the animals.
- *Anoestrus*: The scientists educated the farmers on recommended breeding and feeding practices to resolve this problem.
- *Low milk production during summer*: The scientists informed/educated the farmers to offer balanced nutrition to their animals, so that milk yield could be maintained as per animal potential.

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## Price forecast and productive intelligence for farmers

Rahuri, 23 July 2012. Dr T. A. More (Vice Chancellor, MPKV) inaugurated the Market Information Centre (a project under the Institute of Excellence). It has been established under the special grants of ₹ 100 crore in the Department of Agricultural Economics at Mahatma Phule Krishi Vidyapeeth, Rahuri. Dr More congratulated and expected that the Market Information Centre will provide the price forecast and productive intelligence to the needy farmers etc.

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## Trainings

- Mandi, 8 July, 2012. To create awareness among farmers on Protection of Plant Variety and Farmers' Right Act, 2001, one day awareness-cum-training programme was organized jointly by Krishi Vigyan Kendra, Mandi and Department of Plant Breeding and Genetics, CSKHPKV, Palampur in a remote area of Khanyol Bagra in Mandi district. About 300 farmers and farm-women participated in the programme.

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- Khurda, 12 July 2012. A four-day training on 'Capacity Building of Farm-Women on Processing and Value Addition of Horticultural crops' was organized from 9 to 12 July 2012 under the Network Project at Directorate of Research on Women in Agriculture (DRWA). Twenty farm-women from Khurda district of Odisha participated in the training programme.

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- A 14-day training programme on 'Forecast Modeling in Crops Using Weather and Geo-informatics' was organized under National Agricultural Innovation Project on 22 August 2012

at Indian Agricultural Statistics Research Institute, New Delhi.

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- A five-day training course on 'Better Management Practices (BMP) in Shrimp farming with special reference to West Bengal' was started on 27 August 2012 at Kakdwip Research Centre of the Central Institute of Brackishwater Aquaculture (CIBA), ICAR.

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- A 21-day training programme on 'Statistical Models for Forecasting in Agriculture' under Centre of Advanced Faculty Training was organized on 11 September 2012 at Indian Agricultural Statistics Research Institute, New Delhi.

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- The ICAR funded 21-day National training programme on 'Advances in Production Technology of Fruit Crops' was organized by the Director, Centre of Advanced Faculty Training, Department of Horticulture at MPKV, Rahuri, on 8 August 2012. Exposure visits to National Institutes, progressive



growers and fruit markets were also organized.  
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- Under the Capacity Development Programme, five-day trainers' training programme was organized on 11 September 2012 at DRWA, Bhubaneswar, Odisha.

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- A 21-day short course on 'Environmental pollution and livestock production' was organized on 11 September 2012 at Indian Veterinary Research Institute (IVRI), Izatnagar.

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## Visits

### His Excellency Governor of Maharashtra visits MPKV

Rahuri, 12 August 2012. His Excellency, the Governor of Maharashtra and Chancellor of the University, Shri K. Sankaranarayanan, visited Mahatma Phule Krishi Vidyapeeth. Hon'ble Governor reviewed the rainfall situation and guided on steps to mitigate the drought situation. He stressed the need for more research on fodder crops especially in stress condition. Dr T.A. More, Vice-Chancellor, presented the technologies developed by the university for overcoming water stress in crop growth. He briefed about the activities of the university.

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### Union Minister of Food Processing Industries (State) visits NIANP

Bengaluru, 9 July 2012. Dr Charan Das Mahant, Union Minister of State for Food Processing Industries, visited different laboratories at National Institute of Animal Nutrition and Production (NIANP). He discussed at length the on-going research work with the scientists and appreciated the research contribution and achievements of the scientists of NIANP. He showed his interest on the research initiatives on abiotic stress and climate change issues as well as feed resource management.

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### DG, ICAR visits CIFE centre

Rohtak, 5 September 2012. Dr S. Ayyappan (Secretary, DARE and Director General, ICAR) visited the Rohtak Centre of Central Institute of Fisheries Education (CIFE) to inaugurate the first harvesting of the pacific shrimp *Litopenaeus vannamei*. The culture of *Litopenaeus vannamei* in inland saline soils using

ground saline water at Baniyani Farm, Lahli, Rohtak, Haryana with a salinity of 13 to 15 ppt is the first attempt by the Institute in the country towards utilizing degraded land. The groundwater at the Baniyani farm is deficient in potassium (K) and was fortified with commercial fertilizer muriate of potash ( $K_2O$ ) to a level of 50 to 60% of natural sea water potassium and *Litopenaeus vannamei* was stocked @ 50 nos./m<sup>2</sup> (3.0 lakh/ha) on 21 May 2012 and grown to an average size of 23.5 g in 105 days. The first partial harvesting was carried out on day 105 and a



production of 5.0-5.5 tonnes/0.60 ha (8.3 to 9.0 tonnes/ha) is expected from this pioneering effort.

The Director General reviewed the programmes of the Centre and provided several new ideas including the culture of *Penaeus indicus*. The results of the present demonstration will boost the inland saline aquaculture and species diversification in degraded lands in a big way which in turn will provide self-employment and livelihood to rural men and women.

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### Sustainable animal diets— an FAO initiative

Bengaluru, 23 July 2012. Dr H. P. S. Makkar (Animal Production Officer) and Ms Carolyn Opio (Natural Resource Officer from Food and Agricultural Organization, Rome) visited National Institute of Animal Nutrition and Physiology, Bengaluru. Dr C. S. Prasad (Director, NIANP) gave an overview about the activities of the institute. Dr Makkar opined that the approach for the generation of the database on the enteric methane ( $CH_4$ ) emission from Indian livestock is sound and appreciated the progress of the work. Ms Carolyn in her presentation described the various aspects of life-cycle analysis of Indian cattle and small ruminants sector and discussed the prediction on Green House Gases (GHG) emission. Dr Makkar introduced a new concept on 'Sustainable Animal Diets—an FAO initiative' and impressed upon the steps taken by countries like Denmark and Switzerland in this direction. The FAO team sought for collaborative programme in the area of GHG emission, feeding practices and strategic supplementation.

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## Awards

### DARE receives Indira Gandhi Rajbhasha Puraskar



New Delhi, 14 September 2012. His Excellency President of India, Shri Pranab Mukherjee, conferred prestigious 'Indira Gandhi Rajbhasha Puraskar' for 2010-11 to Department of Agricultural Research and Education (DARE) for excellent work and commendable achievements in the field of implementation of the Official Language Policy of the Union. Dr S. Ayyappan (Secretary DARE, and Director General, ICAR) received the award on behalf of the organization. The DARE works under Ministry of Agriculture, Government of India through the Indian Council of Agricultural Research as an apex body to coordinate and implement Agricultural Research and Development programmes. The comprehensive and effective use of *Rajbhasha* Hindi has resulted in outreach of benefits of Agricultural Research to the large community of Hindi speaking farmers and other stakeholders. In the category of

*Rajiv Gandhi Gyan Vigyan Maulik Pustak Lekhan Puraskar*, a book, '*Vashvikaran aur Bhartiya Khadya Suraksha*' written by Director and scientists of Directorate of Water Management Research, Bhubaneswar, bagged first prize, and Central Marine Fisheries Research Institute, Kochi was awarded third prize in the "C" region for implementation of *Rajbhasha* Policy.

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### ICAR Awards 2011

The 'ICAR Awards 2011' were given away to 83 awardees under 16 different categories. These comprise three institutions, one AICRP, nine KVKs,



nine farmers, one journalist, four teachers and 56 scientists. Among 56 scientists there are five women scientists. Dignitaries released valuable knowledge and information products of the ICAR in both print and digital formats.

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## Personnel

### New Deputy Director General (Horticulture) joins ICAR (Hq)

Dr N.K. Krishna Kumar, 57, has joined Council as Deputy Director General (Hort.) on 9 August 2012. He obtained his Ph.D. from the United States of America in 1993. Dr Krishna Kumar got Post-Doctoral Fellow from UC Davis, California (2002-03). He has outstandingly contributed in horticultural crops, which have earned him East-West Center Award; Award of Merit, Gamma Sigma Delta, Pacific Branch and Indian Council of Agricultural Research Merit Fellowship.



### New Project Director joins DKMA

New Delhi, 4 September 2012. Dr Rameshwar Singh joined Council as Project Director, Directorate of Knowledge Management in Agriculture at ICAR (Headquarters). His significant contributions include development of sixteen new bacterial culture strains for making *dahi* and *misth dahi* by short set method for industrial use, which were transferred to National Dairy Development Board, Anand (2004). New bacterial cultures were also developed by him for Mozzarella cheese. He was instrumental on expanding and strengthening the National Collection of Dairy Cultures. Dr Singh was awarded with the FAO Fellowship to visit Utah State University, Logan, USA in 1998.

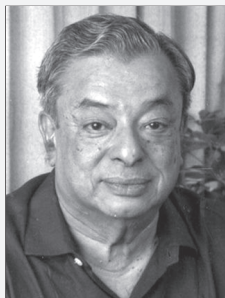




## Obituary

### Amulya Kurien passes away

Nadiad, 8 September 2012. Shri Verghese Kurien (90 years) passed away on 8 September 2012 at Nadiad, Gujarat. He was the founder of Anand Milk Union Limited (AMUL)—a dairy-food company and was widely acclaimed as Father of White Revolution in India. A key achievement at AMUL was the invention of milk powder processed from buffalos milk, as opposed to that made from cow-milk. Owing to 'Operation Flood Programme' India became the world's largest milk producer; in 2010-11, India's contribution was close to 17% of the global production. Hailed as the 'Milkman of India' and the 'Father of the White Revolution', Kurien won several awards including the 'Padma Shree' (1965), twice 'Padma Vibhushan' (1966,1999), 'Krusha Ratna Award' (1986) etc.



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## Protocol Visits

- Dr H.S. Gaur (Dean and Joint Director, Indian Agricultural Research Institute, New Delhi), Dr Umesh Srivastava (ADG, Hort II, ICAR Hq, New Delhi), and Dr Gaya Prasad (ADG, Animal Health, ICAR Hq, New Delhi) visited Afghanistan from 8 to 12 August 2012 for continuing discussion on setting up of the Agricultural University in Afghanistan.
- Dr R. P. Dua (ADG, Food and Fodder Crops, ICAR Hq, New Delhi), Dr N. S. Bains (In-charge and Senior Wheat Breeder, Punjab Agricultural University, Ludhiana), and five scientists of Directorate of Wheat Research, Karnal, namely Dr Indu Sharma (Project Director), Dr Ravish Chatrath (Principal Scientist, Plant Biotechnology), Dr S. C. Bharadwaj (Principal Scientist, Plant Pathology), Dr Rattan Tiwari (Principal Scientist, Plant Biotechnology), Dr Gyanendra Singh (Principal Scientist), Dr M. S. Saharan (Scientist, Plant Biotechnology), visited China to attend Bourlaug Global Rust Initiative (BGRI) Technical Workshop and the South Asia specific site meeting from 31 August to 4 September 2012.
- Dr R. K. Gupta (Principal Scientists, Central Institute of Post-harvest Engineering and Technology, Ludhiana) visited Bangkok, Thailand to participate in DST sponsored ASEAN-India Workshop/Technology Mission on Functional Food from 6 to 7 September 2012.
- Dr B. S. Prakash (ADG, Animal Nutrition and Physiology, ICAR Hq, New Delhi) visited Pakistan as a member of the Indian Delegation for participating in the Technical Level Working Group.

## Appointments

- Dr S. M. K. Naqvi joined Council as Director at CSWRI, Avikanagar on 8 August 2012 (Afternoon).
- Dr N. K. Krishna Kumar joined Council as Deputy Director General (Horticulture) at ICAR (Hq) New Delhi on 9 August 2012.
- Dr S. D. Roy joined Council as Director at CARI, Port Blair on 16 August 2012.
- Dr Probir Kumar Ghosh joined Council as Director, IGFRI, Jhansi (Uttar Pradesh) on 16 August 2012.
- Dr Arun Kumar Sharma joined Council as Director, NBAIM, Mau Nath Bhanjan, on 27 August 2012.
- Dr Balraj Singh joined Council as Director, NRC on Seed Spices, Ajmer on 1 September 2012.
- Dr P. L. Saroj, joined Council as Director at Directorate of Cashew Research, Puttur, Karnataka on 1 September 2012 (Afternoon).
- Dr Rameshwar Singh joined Council as Project Director, Directorate of Knowledge Management in Agriculture, ICAR (Hq), New Delhi on 4 September 2012.
- Dr O.P. Yadav joined Council as Project Director, Directoral of Maize Research, New Delhi on 7 September 2012.
- Dr A.K. Roy joined Council as Project Co-ordinator (Forage crops), IGFRI, Jhansi, Uttar Pradesh on 11 September 2012 (Afternoon).
- Dr W.S. Dhillon joined Council as Assistant Director General (Hort. I) on 13 September 2012.

## Superannuation

- Dr H. P. Singh, Deputy Director General (Horticulture) superannuated from Council on 31 July 2012.
- Dr R. Sai Kumar, Project Director, Directorate of Maize Research, New Delhi, superannuated on 31 August 2012.
- Dr K.K. Baruah, Director, NRC for Yak, Dirang superannuated on 31 August 2012.

## Editorial Board

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