ICAR Research Complex for Eastern Region, Patna
भारतीय कृषि अनुसंधान परिषद् का पूर्वी अनुसंधान परिसर, पटना

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Contents

Research Highlights

Heat Tolerant Wheat Genotypes Identified 2
Rice Variety for Aerobic Condition Released 2
Carbon Sequestration in Rice based Cropping Systems Analyzed 2
Crop Diversification with Summer Sorghum 2
Pulses and Oilseeds in Rice-fallows Evaluated 2
Sediment and Nutrient loss from Watershed Evaluated 2
Gangatiri – Time to Pay Attention on this Precious Cattle Germplasm 3
Sahiwal Cattle Introduced in Eastern Region 3
Fish Production under Buffalo-Magur Integration 3

Events Organized

Model Training Course on Integrated Farming System 3
Awareness Programme on PPV&FRA 3
Institute Foundation Day 4
Training on Ornamental Fish Culture and Management 4
Pashupalan Mela-cum-Kishan Gosthi 4
Kisan Mela-cum-Awareness Programme on 'Pradhan Mantri Phasal Bima Yojana' 5
Brainstorming Session on 'Agroforestry for Rehabilitation of Water Congested Ecologies for the Eastern Region' 5
Second Green Revolution Meet 5
Krishi Bagwani Exhibition-cum-Kishan Gosthi 5
Interface Meeting on Contingency Planning for Bihar-*Kharif* 2016 6
State Coordination Committee meeting of Second Green Revolution of Jharkhand 6
Review Meeting on Basic Slag Project 6
Visit of Union Minister of Micro, Small and Medium Enterprises 6
International Yoga Day Celebrated 7
Research Advisory Committee Meeting 7
Steering Committee Meeting of Second Green Revolution 7
Academia-Industry Interaction Meet for Eastern Region 7
Crop Manager - A Web based App Launched 8

Awards and Recognitions 8

Selection/Promotion/Transfer/Retirement 8

Compiled & Edited by

Dr. J.S. Mishra & Dr. (Ms.) Tshering L. Bhutia

ICAR Research Complex for Eastern Region
ICAR Parisar, P.O. Bihar Veterinary College,
Patna 800014, Bihar
Tel: 0612-2223962/ 2228882; Fax: 0612-2223956
Web: www.icarrcer.res.in

From the Director's Desk

The eastern region of the country holds promise for a second Green Revolution (GR), which can be accomplished through holistic management of land, water, crops, biomass, horticulture, livestock, fishery and human resources. The eastern region is unique for its suitability to the production of many agricultural commodities. The region has fertile soils and ample water resources, the two most important natural resources required for higher productivity. The majority of the areas in these states have a length of growing period of 240 days or more, which is adequate to support double cropping. Annual rainfall in the region varies from 1000 mm to 2500 mm. Average rainfall during last 14 years was more than 2000 mm in the Lower Gangetic Plains and 1000 mm to 1250 mm in the Middle Gangetic Plains, Plateau and Coastal regions. The eastern states accounts for 61 per cent of 153.66 BCM of total available ground water for future use. However, the ground water draft is much less than the ground water availability in most of the eastern states except Eastern UP. Therefore, there is considerable scope for ground water development in the region with due care of the high arsenic content in certain areas. Rice is the major crop in the eastern region. However, abiotic stress such as drought, flood, submergence and salinity is the major factor constraining the productivity of rice-based cropping systems. Of the total 11.6 million ha rice-fallow area in the country, 82% lies in the eastern states. This offers an unique opportunity for enhancing the productivity through crop intensification. There is a great potential of organic farming in tribal dominated areas of Jharkhand, Odisha and Chhattisgarh, where organic farming by default is practiced. This region can be made sustainable with its orientation towards export market. In view of these facts, there is a need to harness the potential of the eastern region with suitable interventions. However, taking advantage of this potential would require institutional support and investment in development of suitable technologies. The ministry of Agriculture and Farmers' Welfare, GOI, has already launched a mega programme through Indian Council of Agricultural Research (ICAR) for bringing second GR in Eastern India. The second GR cell has also been established at the ICAR-Research Complex for Eastern Region, Patna to coordinate the various research, developmental and policy issues of the eastern states in collaboration with respective state governments, SAUs, ICAR and CGIAR institutes, and other organizations.

Research Highlights

Heat Tolerant Wheat Genotypes Identified

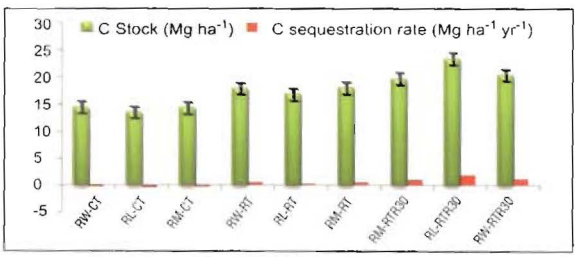
In the eastern Indo-Gangetic Plains, wheat sowing is normally delayed till late-December due to long duration rice in rice-wheat system. High temperature during grain filling is one of the major reasons for low productivity of wheat. In certain cases the yield losses exceeds to 40-50% with poor grain quality. Of the forty two wheat genotypes evaluated for heat stress tolerance, three genotypes *viz.*, NW1014 (4.43 t ha^{-1}), GW273 (4.13 t ha^{-1}) and HD3093 (3.79 t ha^{-1}) performed better when sown on 20th December, and HD2987 (3.65 t ha^{-1}) produced satisfactory grain yield even when sown as late as on 5th January.

Rice Variety for Aerobic Condition Released

The aerobic rice variety 'Swarna Shreya' (IET 24003) developed by the Institute has been identified by the Varietal Identification Committee (VIC) for release and notification for Chhattisgarh and Madhya Pradesh states. The average productivity of this variety is 4.0-4.5 t/ha, and it matures in 120-125 days. Quality wise 'Swarna Shreya' showed high hulling recovery (77.5%), milling (69.2%), head rice recovery (56.2%), intermediate amylose content (21.87%) and alkali spreading value (ASV=4.0). The variety has high GC (65.5 mm) with very occasionally chalky and long bold grain indicating good cooking quality.

Carbon Sequestration in Rice based Cropping Systems Analyzed

Three cropping systems *viz.*, rice-wheat (RW), rice-maize (RM) and rice-lentil (RL) under three tillage practices *viz.* conventional (CT), reduced (RT) and RT with 30% residue (RTR30) were evaluated. Results revealed that the carbon stock depletion in rice-lentil (RL), rice-wheat (RW) and rice-maize (RM) cropping systems was 0.53, 0.32 and 0.30 Mg ha^{-1} yr^{-1}, respectively after 4 years of conventional tillage. Carbon sequestration rate increased 1.92, 1.19 and 1.02 times in reduced tillage added with 30% of crop resides (RTR30) of lentil, wheat and maize, respectively. Rice-lentil cropping system under reduced tillage and residue incorporation proved to be the best from soil fertility point of view.



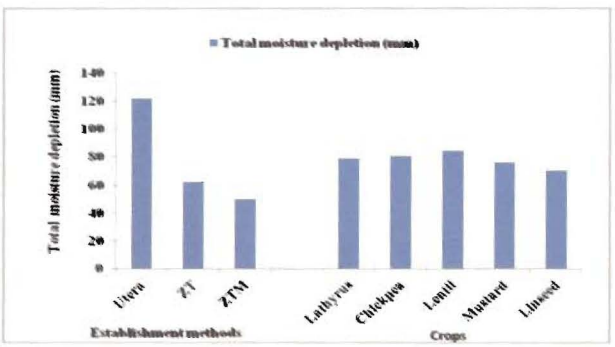
Crop Diversification with Summer Sorghum

Sorghum is an important crop that can be grown successfully in summer season in hot and dry environments. With the threat of climate change looming large on crop productivity, sorghum being a drought hardy crop will play an important role in food, feed and fodder security of the eastern region. Summer sorghum during the fallow period may be an alternative potential crop for non-traditional area of Eastern India. Results of an experiment conducted at ICAR-RCER, Patna during summer season 2015-16 revealed that the crop can be sown during second fortnight of February. Early to medium duration hybrids (CSH 13, CSH 14, CSH 16, CSH 25, CSH 30) and varieties (CSV 23, CSV 27 and SPV 462) with yield potential of 5.5-6.0 t/ha were found promising.

Dr. J.S. Sandhu, DDG (Crop Science) visiting the experimental site

Pulses and Oilseeds in Rice-fallows Evaluated

Five pulses and oilseeds *viz.* lathyrus (Ratna), chickpea (JG-14), lentil (HUL-57), linseed (T-397) and Indian mustard (Pusa Bold) were evaluated under different crop establishment methods in rice-fallows. Results revealed that *utera* system of crop establishment produced significantly higher rice equivalent yield (2029 kg/ha) followed by ZT with straw mulch @ 5 t/ha (1424 kg/ha) and ZT (1187 kg/ha). The *utera* system utilized the maximum soil moisture from the soil (121.46 mm) followed by ZT (62.03 mm) and ZT with straw mulch (49.8 mm).



Sediment and Nutrient loss from Watershed Evaluated

Hydrological response of two watersheds (Plandu and Keribanda) in Eastern Plateau and Hill Region was evaluated in terms of runoff, sediment and nutrient loss. Percentage of

rainfall that gets converted in to runoff was 23.2% and 24.8% in Plandu and Keribanda watersheds, respectively. During 2015, the sediment loss of 437.3 and 383.9 ton was observed in the Plandu and Keribanda watersheds, respectively. The nutrient (NPK) loss from Plandu and Keribanda watersheds was estimated at 14.2 and 21.2 tons during the monsoon season. The finding of study will aid in estimation of the soil, water and nutrient conservation potential of watershed having distinct land use patterns and on identification and recommendation of the necessary biotechnological and bioengineering measures for better management of soil and water resources.

Gangatiri – Time to Pay Attention on this Precious Cattle Germplasm

A study was conducted in Itarhi block of Buxar district to undertake phenotypic characterization of Gangatiri cattle. Gangatiri has also recently joined in one of the registered breeds of India. These cattle are distributed in Ghazipur and Balia districts of Uttar Pradesh; Buxar, Kaimur and Bhojpur districts of Bihar. The study revealed that Gangatiri cattle are medium-sized with white coat colour. The mean herd size of Gangatiri with the farmers ranged from 4 to 16. Milk production in these animals generally ranged from 2 to 6 litres in farmers' management. However, there were some cows which yielded up to 8 litres of milk per day. The age at first mating in the bulls was found to be 3 to 3½ years whereas the age at first calving in Gangatiri cows was reported to be 3½ to 4 years. Considering its significant performance in the breeding tract, it is essential to undertake development program with respect to Gangatiri cattle.

Sahiwal Cattle Introduced in Eastern Region

Sahiwal is rated as the best milch breed of Indian subcontinent. In order to promote the importance of Sahiwal breed, an attempt was made to procure and develop 10 Sahiwal cattle in its pure form from the breeding tract, Fatehpur district of Haryana to ICAR RCER, Patna. Most of the animals were brought in late pregnancy passing their peak milk yield. Even then, the peak yield recorded in Sahiwal cattle was 9.3 litre per day. Interesting finding was that the average birth weight of the calves was 20.23±0.05 kg. But, within a span of four months, these three calves attained a body weight of 47.46±0.15 kg, registering 226.92 gday, and the gain in four month period was more than their initial body weight. The result also indicated that the growth rate of Sahiwal calves was higher than the growth rate of crossbred calves (203 g/day) of similar age group.

Fish Production under Buffalo-Magur Integration

Successful culture of *Clarias batrachus* (Magur) was carried out in buffalo wallowing pond. The fishes were stocked @ 30000/ha with 75% survival rate. The average body weight of *Clarias batrachus* varied from 100-120 g with a highest body weight of 495 g and the total yield obtained was 2.5 t/ha without feeding for a culture period of 7 months.

Events Organized

Model Training Course on Integrated Farming System

A model training course on 'Integrated farming System' sponsored by the Ministry of Agriculture, GOI, New Delhi was organized by the institute at Patna from 2-9 February, 2016. Twenty five participants from various states attended the training. The objective of the training programme was to train the trainers in order to make the farmers aware of the advancement made in agricultural technologies, and to accelerate the extension of the farming system approach to the farmers' fields to improve their livelihood.

Awareness Programme on PPV&FRA

Workshop-cum-awareness programme on Protection of Plant Variety and Farmers Right Act (PPV&FRA) was organized by KVK, Ramgarh of ICAR Research Complex for Eastern Region, Patna on 7th & 18th March 2016 at Krishi Vigyan Kendra, Mandu, and Ramgarh, respectively. The programme was sponsored by the Protection of Plant Variety & Farmer's Right Authority, New Delhi. Dr. Subhas Singh, Joint Director of Agriculture, North Chotanagpur Region, Dr. A.K. Singh, Head, ICAR-RCER

Institute Foundation Day

The 16th foundation day of the institute was celebrated on 22nd February 2016. Honb'le Union Agriculture and Farmers' Welfare Minister, Shri Radha Mohan Singh graced the occasion as Chief Guest. The other dignitaries present were: Sri Sanjeev Chaurasia, MLA from Dihga Constituency, Dr. A. K. Sikka, DDG (NRM), Dr. Vishal Nath, Director, ICAR-NRC Litchi, Dr A. D. Pathak, Director, ICAR- IISR, Lucknow, Mr R. P. Singh, GB member, ICAR, scientists from SAUs and ICAR institutes. Around 1200 farmers from different eastern states attended the function. Progressive farmers from the eastern states, best workers of the institute and press and media personnel who have excelled in the fields were honoured by the Chief Guest. A book entitled *"Dutya Harit Kranti Ki Oar Rashtra Ke Badhte Kadam"* compiled by Dr B.P. Bhatt, Director of the institute was also released on the occasion. An exhibition was also arranged where different institutes of eastern region demonstrated the new technologies to the farmers. The farmers' hostel of the institute was also inaugurated by the Chief Guest on the occasion.

RC, Ranchi, Shri Umakant Dubey, Deputy Registrar PPV&FRA, Ranchi Branch, scientists and technical officer of ICAR-RCER RC Ranchi and KVK, Ramgarh attended the programme. Major emphasis was given on the importance of conservation of traditionally grown varieties, wild relatives and land races, benefits available to the farmers for conserving land races and procedure for nomination of farmers' variety. A total of 300 farmers, farm women and rural youths from different parts of the district participated and about 100 applications were received in different crops *viz.*, rice, brinjal, tomato, potato, cowpea, beans, chilli, cucurbits, jack fruit and mango during both the programmes.

Training on Ornamental Fish Culture and Management

To make the farmers, especially the farm women aware of the ornamental fish culture, its management, benefits and Government schemes and financial assistance, a five days training programme on Ornamental fish culture and management was organized by the institute at Patna from 27-31 March 2016. The programme was sponsored by NFDB, Hyderabad. The participants were made aware of the scope, challenges, breeding, rearing, diseases and management of ornamental fishes. Practical classes were carried out to involve them in aquarium construction, setting etc. Around 25 participants from the state attended the training. Certificates were also distributed to the participants after completion of the training programme.

Pashupalan Mela-cum-Kishan Gosthi

Pashupalan mela-cum-kishan gosthi was organized jointly by the ICAR Research Complex for Eastern Region, Patna, Indian Veterinary Research Institute, Bareilly and Krishi Vigyan Kendra, Piprakothi (Motihari) at Kotwa in East Champaran district of Bihar during 29- 30 March 2016. More than 8000 farmers participated in the programme. The programme was inaugurated by the Union Agriculture and Farmers' Welfare Minister, Shri Radha Mohan Singh as the Chief Guest. While addressing the farmers, he emphasized that livestock is the most important income generating enterprise in Indian agricultural economy and plays a multifaceted role in providing livelihood support of even landless farmers. He advised the farmers to adopt diversified farming as the fisheries, poultry, piggery and goat farming sectors provide good alternative options in social development. Value addition of products can significantly improve the income and

synthesize employment opportunities, he added. He also emphasized the importance of indigenous breeds of cattle, buffalo, sheep and goat and their superiority over exotic breeds in climate change scenarios. A animal health camp was also organized in which more than 500 livestock including cattle, buffalo, goat and horse were vaccinated and treated, and farmers were provided with advisory services. An animal show was also organized and the best animal of different categories was conferred award.

Kisan Mela-cum-Awareness Programme on 'Pradhan Mantri Phasal Bima Yojana'

Kisan mela-cum-Awareness Programme on "Pradhan Mantri Phasal Bima Yojana" was organized by Krishi Vigyan Kendra, Ramgarh in collaboration with ICAR-Agricultural Technology Application Research Institute, Kolkata at Mandu on 4th April, 2016. Sri Jayant Sinha, Hon'ble Minister of State for Finance, Govt. of India and Member of Parliament, Hazaribagh graced the occasion as Chief Guest. He highlighted the benefits of Pradhan Mantri Phasal Bima Yojana, under which the farmers have to pay a very low premium for insuring their crops *i.e.*, 2% for *Kharif* crops, 1.5% for *Rabi* crops and 5% for commercial and horticultural crops. He also distributed Soil Health Card to progressive farmers. *Kisan gosthi was* also organized on this occasion where the farmers interacted with the scientists and officials from Govt. of Jharkhand and NABARD, Ranchi. More than 600 farmers, representatives from NGOs from Ramgarh district of Jharkhand participated in the programme.

Brainstorming Session on 'Agroforestry for Rehabilitation of Water Congested Ecologies for the Eastern Region'

A brainstorming session on 'Agroforestry for Rehabilitation of Water-Congested Ecologies for the Eastern Region' was organized jointly by National Academy of Agricultural Sciences, New Delhi and ICAR- Research Complex for Eastern Region, Patna on 5th April 2016 at Patna. Dr. J.S. Samra, Ex-DDG (NRM), ICAR & CEO, NRAA was the Chairman of the session, Dr. P.L. Gautam, Vice Chancellor, Career Point University, H.P, was the Guest of Honour and Dr. Gurbachan Singh, Chairman, ASRB, New Delhi was the Chief Guest. The purpose of the session was to discuss about the water congested ecologies, wastelands and demand supply gap of fodders and fuel wood in different eastern states, integration of woody perennials and livestock for ensuring sustainability and doubling income of farmers of the region, inventorization of diverse water ecologies, studies on ET potential of suitable tree crops for biodrainage, establishment of seed and seedling bank of MPTs/shrubs suitable for shelter belt, boundary planting, wind break, diversification in aquatic crops and assessment of ecosystem services rendered by waterlogged ecologies etc. Around 65 delegates from various ICAR institutes eastern states, Department of Agriculture, Cooperation & Farmers' Welfare, GOI, World Agroforestry Research Centre, SAUs, and CIMMYT participated in the event.

Second Green Revolution Meet

The Second Green Revolution Meet was organized by the institute at Patna on 3rd May 2016. Shri Vijoy Prakash, IAS, APC, Govt. of Bihar graced the occasion as Chief Guest and Dr R.C. Srivastava, Vice Chancellor, RAU, Pusa and Dr. A.K. Singh, Vice Chancellor, BAU, Sabour were the Guests of Honour. The Chief Guest, in his remarks emphasized on tackling management issues for enhancing agriculture production in eastern India. He solicited the need for exploiting natural resources, introducing new technologies, proper management and imparting creativity and innovation. He strongly emphasized that the research should not only focus on cereals and other food crops, but it should also expand its base in animal and fish productivity. He stressed on the need for diversification during the second green revolution with more attention on newer foods, millets, small ruminants etc. Dr B.P. Bhatt, Director, ICAR RCER emphasized on the need for bringing about synergy among the different implementing agencies involved in agriculture development in eastern India. The meeting was attended by the Directors and scientists of the ICAR institutes, SAUs, CGIAR institutes and State Government Officials of the Eastern States.

Krishi Bagwani Exhibition-cum-Kishan Gosthi

Krishi Bagwani Exhibition-cum-Kisan Goshthi was organized jointly by ICAR Research Complex for Eastern Region, Patna, Hindustan, Kishan Unnati Manch and National Horticulture Board, New Delhi at ICAR-RCER, Patna during 28-30 May, 2016. Shri Radha Mohan Singh, Union Minister of Agriculture and Farmers' Welfare inaugurated the event. In his address, he urged the farmers to diversify the existing farming practices with due importance

to livestock, fisheries and allied activities of agriculture. Hon'ble Minister advised the women farmers to make self-help groups to diversify production systems. He also appreciated the efforts of Hindustan Group for organizing the programmes, especially in the field of micro-irrigation, floriculture, mushroom cultivation, duckery, etc. for farmers' benefit. Fifteen ICAR institutes, SAUs and NGOs depicted their exhibits/technologies in exhibition stalls and more than 300 farmers participated in the programme.

Interface Meeting on Contingency Planning for Bihar-*Kharif* 2016

An interface meeting on Contingency planning for Bihar - *Kharif* 2016 was organized jointly by Central Research Institute for Dryland Agriculture (ICAR-CRIDA), Hyderabad and ICAR-Research Complex for Eastern Region, Patna at Patna on 30th May, 2016. The meeting was attended by the scientists of ICAR institutes, KVKs, SAUs and CGIAR institutes of Bihar. Dr. Ch. Srinivasa Rao, Director, CRIDA, Hyderabad said that the district based contingency plans have been prepared for 614 districts in the country including 38 districts of Bihar and emphasized that the implementation of the intervention for the contingency planning should be situation specific. Dr. Rao also emphasized that there is a need to create awareness among the farmers and line departments about preparedness to overcome drought or drought like situations.

State Coordination Committee meeting of Second Green Revolution of Jharkhand

A state coordination committee meeting of Second Green Revolution was organized at Nepal House, Ranchi on 7th June, 2016 under the Chairmanship of Dr. Nitin Madan Kulkarni, Secretary, Department of Agriculture, Animal Husbandry and Sugarcane Development, Govt. of Jharkhand. The meeting was also attended by Dr. Jatashankar Choudhury, Director, Agriculture, Govt. of Jharkhand,

Dr. Rajiv Kumar, Director, Animal Husbandry and Fisheries, Govt. of Jharkhand, Dr. Manoj Kumar, Director, Horticulture, Govt. of Jharkhand, Dr. R.P. Singh Ratan, Director, Extension Education, BAU, Ranchi, Dr. D.K. Singh Dron, Director, Research, BAU, Ranchi, Dr. K.K. Sharma, Director, ICAR-IINRG, Dr. A.K. Singh, Head, ICAR RCER, RC, Ranchi, Dr. Nirmal Kumar, Principal Scientist, IIAB and other delegates from state government. Issues related to research, policy and development of the state were discussed thoroughly.

Review Meeting on Basic Slag Project

A meeting on basic slag project was held on 8th June, 2016 at ICAR RCER, Research Centre, Ranchi to review the progress and future course of action of the research project on "Participatory evaluation of basic slag" being undertaken by the institute. The meeting was Chaired by Sri Jatashankar Choudhary, Director, Agriculture, Govt. of Jharkhand and attended by Director and scientists of ICAR RCER, Dr. J.K. Saha, Head, Environmental Science, IISS, Bhopal, Dr. Arvind Kumar, Assistant Professor, BAU, Ranchi and Mr. Sandeep Kumar, representative from Tata Steel.

Visit of Union Minister of Micro, Small and Medium Enterprises

Hon'ble Union Minister of State of Micro, Small and Medium Enterprises Sri Giriraj Singh visited ICAR Research Complex for Eastern Region, Patna on 14th June, 2016. He

visited the experimental farm and interacted with the scientists. Hon'ble Minister urged the scientists to work for the farmers and to disseminate the developed technologies to the farmers' fields. He also advised to cultivate drumstick (*Moringa oleifera*) and use it as fodder for cattle, goat and poultry to reduce the feed cost. Scientists of the institute, entrepreneurs and representatives from NABARD, Coconut Development Board, Punjab National Bank, State Fishery Department and 50 progressive farmers of Bihar participated in the interaction session.

International Yoga Day Celebrated

The institute organized YOGA day on 21st June, 2016 at ICAR RCER, Patna. Shri R. S. Gandhi and his team from Art of Living, Patna was the mentor of the programme. Director, Scientists, Technical staff of the institute and Central Industrial Security Force (CISF), Patna Airport also participated in the programme.

Research Advisory Committee Meeting

XIVth Research Advisory Committee Meeting of the Institute was held during 22-23 June, 2016 at ICAR RCER, Patna under the Chairmanship of Dr. A. N. Mukhopadhyay, Ex-Vice Chancellor, AAU, Jorhat and members Dr. Ashwani Kumar, Ex-Director of Indian Institute of Water Management, Bhubaneswar, Prof (Dr.) Dipak De, Professor and Head, Dept. of Extension Education, Institute of Agri. Sci., BHU, Varanasi, Dr. Gopal Nath Tiwari, Professor, Centre of Energy Studies, I.I.T, New Delhi and Dr. Shivendra Kumar, Ex- Head, ICAR RCER Research Centre, Ranchi. All the Scientists of ICAR RCER, Patna, Research Centre, Ranchi, Research Centre, Makhana, KVK Buxar and KVK, Ramgarh participated in the meeting and presented the achievements of their respective divisions, centers and projects. The RAC also visited the experimental farms and laboratories of the institute and made valuable suggestions for improvement.

Steering Committee Meeting of Second Green Revolution

A Steering Committee Meeting of Second Green Revolution was held at ICAR Research Complex for Eastern Region, Patna on 27th June, 2016. Shri Radha Mohan Singh, Hon'ble Minister of Agriculture & Farmers' Welfare, Govt. of India inaugurated the programme as the Chief Guest. Dr. J.S. Sandhu, DDG, Crop Science, ICAR chaired the session. At the outset the Chief Guest inaugurated the Second Green Revolution Cell at the institute. In his inaugural address, he stated that the coordination and convergence between different agricultural activities, being implemented in different Eastern states will expedite the overall agricultural development in the region. The Chief Guest urged the scientists to initiate the work on the impact of climate change and to develop and popularize climate smart technologies since it could badly affect the food production system in Eastern Gangetic Plains. There is also need to rehabilitate the waterlogged areas through integrated farming system approach, he added. Chief Guest further suggested that the co-ordination committees shall also be constituted at district level so as to have the better linkages and coordination for implementation of various programmes of government of India.

Dr. J.S. Sandhu in his opening remarks also discussed that to bring second green revolution, we should give importance to all the enterprises of agriculture, including horticulture, fisheries, livestock, poultry etc. in a holistic manner. However, these interventions should be region and area specific. Other dignitaries present were Vice Chancellors of OUAT, Bhubaneswar, RAU, Pusa and BCKV, Kalyani, West Bengal, Directors of various ICAR institutes of eastern region, Governing Body member of ICAR, CGIAR, CIMMYT and IRRI representatives, Bayers Crop Science member, Principal Secretary, Govt. of Bihar, State Govt. Officials, Scientists and Farmer representative of Eastern region.

Academia-Industry Interaction Meet for Eastern Region

An Academia-Industry Interaction Meet for Eastern Region was organized at ICAR Research Complex for Eastern Region, Patna on 28th June, 2016 in collaboration with CIAE, Bhopal. The meet was inaugurated by Shri Radha Mohan Singh, Hon'ble Union Minister of Agriculture & Farmers' Welfare. Hon'ble Minister in his inaugural address appealed to researchers, extension workers and industry to

accelerate efforts for development and application of cost effective farm tools and implements in Eastern States. He emphasized on application of solar energy technology in irrigation and household. Hon'ble Minister also inaugurated Farm Machinery Resource Centre (FMRC) at ICAR RCER, Patna. Shri Vijoy Prakash, APC, Govt. of Bihar in his remarks appealed to the manufactures to provide satisfactory after sales service of agricultural machinery in rural areas. Other dignitaries present were Dr. K.K. Singh, Director, CIAE, Bhopal, Dr. V.N. Kale, Addl. Commissioner, DOAC, New Delhi, Dr. B.P. Bhatt, Director, ICAR RCER, Patna and around 90 participants from Bihar, Jharkhand, Odisha, West Bengal and Manufactures from M/S Mahindra and Mahindra, M/S V.S.T. Tillers and Tractors Limited, M/S Maa Shyama Agro Industries M/S Lemken India Agro Equipment Pvt. Ltd., and National Agro Industries including scientists participated in the meet.

Crop Manager - A Web based App Launched

Hon'ble Union Minister of Agriculture & Farmers' Welfare, Govt. of India, Shri Radha Mohan Singh launched Crop Manager for Rice Based System (CMRS) - A web based app for better Crop and Nutrient Management for Bihar farmers, on 28th June, 2016 at ICAR Research Complex for Eastern Region, Patna. Hon'ble Minister congratulated the scientists of different institutes involved in the development of this app and also expressed his happiness that it is equipped to provide recommendations to both irrigated and rainfed ecosystem. He also stated that the app could be linked with Soil Health scheme for bringing access to new technologies to rural India. Guest of Honour, Shri Vijoy Prakash, APC, Govt. of Bihar, released the Crop Manager Brochure to mark the launch of CMRS for Bihar farmers and also assured to provide all help in dissemination of the app throughout the state. CMRS was adapted, evaluated, and verified in Bihar through collaboration of IRRI with the ICAR Research Complex for Eastern Region, Patna; Bihar Agricultural University, Sabour, Rajendra Agricultural University, Pusa, International donors Bill and Melinda Gates Foundation, Catholic Relief Services (CRS), and other CGIAR centers of India.

Awards and Recognitions

Dr. S.K. Dwivedi, Scientist (Plant Physiology) received **Young Scientist Award** by Society for Upliftment of Rural Youth (SURE) during National Conference on Rural Livelihood Security through Innovative Agri-entrepreneurship held at CPRS, Patna during 12-13 March 2016.

Dr. J.S. Mishra, Head, Division of Crop Research received **Editorial Excellence Award** by the Indian Journal of Agricultural Research, Karnal.

Dr. P.K. Ray, Scientist (Veterinary Pathology) has been conferred **Ph. D Degree** on 21st April, 2016 from IVRI, Deemed University, Izatnagar, Bareilly.

Institute's Hindi magazine '**Akshay Kheti**' was awarded first prize of '**Ganesh Shankar Vidyarthi Hindi Patrika Purskar**' for 2014-15.

Selection/Promotion/Transfer/Retirement

Our new colleague

Sh. Surendra Kr. Ahirwal joined as a Scientist (Fisheries) at ICAR RCER, Patna w.e.f. 11.04.2016.

Promotions

Sh. Amrendra Kumar promoted to T-4 w.e.f. 13.01.2016
Sh. B.P. Mishra promoted to T-6 w.e.f. 12.02.2016
Sh. Shashi Kumar Azad promoted to T-4 w.e.f. 16.02.2016
Sh. Sagu Kachhap promoted to T-1 w.e.f. 09.03.2016
Sh.Manoj Kumar Singh promoted to T-1 w.e.f.09.03.2016
Sh. Subhash Kumar promoted to T-1 w.e.f. 09.03.2016
Sh. Sunil Kumar promoted to T-1 w.e.f. 09.03.2016
Dr. Moanaro promoted to T-4 w.e.f. 30.03.2016
Sh. Anil Kumar promoted to UDC w.e.f. 07.05.2016
Sh. R.S. Paswan promoted to AAO w.e.f. 10.05.2016
Sh. Lakshmi Prasad promoted to UDC w.e.f. 26.05.2016
Sh. Chandrakant Mahto promoted to UDC w.e.f 26.05.2016
Sh. Ganga Ram promoted to T-6 w.e.f. 10.06.2016

Transfers

Dr. Mukesh Kumar Meena, Scientist transferred to ICAR CAZRI, Jodhpur w.e.f. 08.01.2016

Dr. U.R. Sangle, Sr. Scientist transferred to NRC on Pomegranate, Solapur w.e.f. 29.02.2016

Dr. Rajesh Kumar Meena, Scientist transferred to NDRI, Karnal w.e.f. 18.03.2016

Retirement

Sh. V.K. Tiwari, Technical Officer (T-5) retired from service on superannuation on 30.06.2016.

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