

# ICAR RCER NEWS

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## From the Director's Desk



In the last issue of the newsletter (Vol. IV, No.2), we discussed about the water resources and its potentials to increase the agricultural productivity in the eastern states. Besides water, livestock is another important resource in the region. On average, eastern region contributes 31.14% to total livestock population of India, i.e., 164.95 million. Likewise, the region share 27.2% to total poultry population of the country. Eastern states have 48.0% cattle population, followed by goat (31.2%) and buffalo (13.3%). However, 93% non-descript cattle population result into milk yield of 1.5-2.0 kg/day. Black Bengal goat supports the livelihood of marginal and landless farmers to a great extent. Animal husbandry sector contributes 10-33.7% of State Agricultural GDP in eastern region highest value in Bihar and lowest in Odisha, respectively.

In livestock sector, the research findings indicated that even small technological interventions like use mineral mixture/deworming/ balance feeding of

ration and vaccination could result into increase in milk yield by 15-20% in cattle. Similar interventions in goat have proved the body weight gain by 20-25%. These studies suggest that the region has tremendous potential to enhance milk, meat and egg production besides food crop production. While the productivity increase in food crops need adequate and timely supply of various critical inputs, in case of livestock sector, any of the low cost technological intervention mentioned above, could result into significant gain in milk, meat or egg production. The per capita availability so far is, however, very low in case of milk (49.0 ltr./yr), meat (1.70 kg/yr) and egg (26 nos./ yr) in the eastern region. Further, the synergetic role of livestock in the farming systems of eastern states is yet to be realized in order to increase the total factor productivity. Various integrated farming systems could be developed by integrating livestock, so as to improve upon the livelihood of landless including 162 million Below Poverty Line population of eastern region.

Green fodder requirement is one of the major issues, which need to be addressed particularly in irrigated ecosystem. Need of the hour is, therefore, to establish seed and seedling bank of quality forage crops, fodder trees, including shrubs in order to meet out the seed and planting material requirement of the stakeholders. The SAUs and ICAR institutions of eastern region shall develop the fodder gene bank for the purpose. Various options to increase the fodder, milk, meat, chicken and egg requirement in the region has been documented in the technical bulletin entitled "Agriculture in Eastern States: Opportunities and Challenges", published by the Institute. It could serve as a base document so as to develop a road map for livestock development in eastern states.

## RESEARCH HIGHLIGHTS

**Grafting of Tomato for Wilt Resistance: A Success**

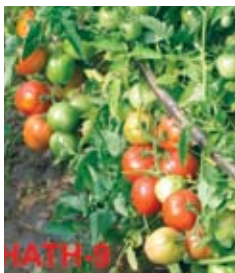
Tomato yield is highly seasonal due to high risks of prevalence of pests and diseases. Farmers seldom plant tomatoes during rainy season due to incidence of bacterial wilt (*Ralstonia solanacearum* Yubuchi). Rootstock replacement through tube grafting is considered as an effective method to control this disease immediately. Swarna Baibhav, a promising  $F_1$  hybrid of tomato, was grafted on bacterial wilt resistant rootstocks of brinjal viz., Swarna Shyamali, Swarna Pratibha, HAB-900, HAB-901 and tomato rootstock Swarna Lalima. Grafting was done and complete compatibility among rootstock and scion was recorded. The grafts were vigorous in growth and cropping season was one month longer than in conventional methods. Swarna Baibhav grafted on bacterial wilt resistant root stock of brinjal HAB-900 recorded maximum yield of 67.66 t/ha and higher number of fruits per plant (40) than the other root stocks. There was a significant loss in yield due to high mortality of non grafted Swarna Baibhav (23.71 t/ha). Highest percentage of survival of root stock against bacterial wilt is Swarna Pratibha (100%) followed by HAB-900 and HAB-901 (98.24%) was recorded.



Process and success of grafting

**New Vegetable Varieties for Tomato and Pointed Gourd Developed****Swarna Deepti: A promising tomato hybrid**

Swarna Deepti is promising hybrid of tomato having resistance to bacterial wilt and early blight disease. The plants are vigorous and determinate in growth habit (70-75 cm). The fruits become ready for first harvest after 60-65 days after transplanting. The fruits are round and born in clusters of 4-5. Fruit size is medium to large (120-130 g). It possesses good number of quality attributes viz., TSS 4.5-5.0 (° brix) and acidity 0.3-0.4 %. Average yield potential is 100-105 t/ha. It has been released by the Institute Variety Release Committee (IVRC) of ICAR Research Complex for Eastern Region, Patna for cultivation in Jharkhand, Bihar, Chhattisgarh, Odisha and West Bengal.

**Swarna Suruchi: A promising variety of pointed gourd**

Swarna Suruchi has been developed through clonal selection. The fruits are oval in shape having blunt end on both sides and light greenish in colour. It possesses good number of premium attributes viz., fruit weight (35-40 g), fruit length (8.5-9.0 cm), fruit breadth (3.0-3.5 cm), pulp weight (25-30 g), and vine length (2.5-3.0 m). Average yield potential is 25-30 t/ha. It has been released by the Institute Variety Release Committee (IVRC) of ICAR Research Complex for Eastern Region, Patna for cultivation in Jharkhand, Bihar, Chhattisgarh, Odisha and West Bengal.

**Solar Energy Application for Ground Water Pumping**

To test the feasibility of solar water pumping technology in lifting ground water for irrigation, a solar photovoltaic ground water pumping unit was established at experimental farm of the institute. In this configuration, a crystalline silicon solar array of 3060 W<sub>p</sub> of 18 modules (each of 170 W<sub>p</sub> and 14% efficiency) was used to operate a three phase 3 HP submersible pump using a variable frequency drive (VFD). A Maximum Power Point Tracker (MPPT) was used for maximizing the power gain. Finally, the output was connected to the pump put in a 4 inch bore well at 20 m below the ground level. The water level of the site was 11 m below the ground level; however the pump was put on increased depth to test the efficiency of ground water pumping from a larger depth and also to avoid the water level fluctuation impact on pump position. The solar arrays were fixed on manual tracking structures to receive maximum irradiance on the modules/array. It was found that, under solar global radiation of 6.5-5.5k Wh/m<sup>2</sup>/d, water output was 140000-130000 l/day. A storage tank of dimension 32'x16'x7.5' and equivalent capacity of 110000 litters was constructed to store water so as to meet out the irrigation requirement during low insolation. An additional of 2 HP DC centrifugal pump.



With solar array of size 1400WP was also installed to deliver water from storage tank to the fields pressured irrigation system viz drip or low pressure sprinklers as discharge was found to be 25,000-22,000 lph on a clear sunny day under solar global radiation of 6.5-5.5kWh/m<sup>2</sup>/day. The benefits of this solar water pumping model is that the tank serves as water reservoir to bridge the periods of low insolation or no insolation. With an initial investment of 7.0 lakh, approximately 1, 40,000 liters of water could be pumped per day, however if the depth of water is low, a larger volume of water can be pumped out. Considering the life span of the solar system of 20 years (however, manufacturers claim life span of the solar cell for 25-30 years) with 250 clear sunny days the average cost per liter of water pumping and delivering to the fields is worked out to be ₹ 0.01/l.

**New Record of Two Hymenopterous Parasitoids from Litchi Stink Bug, *Tessaratoma Javanica* (Thunberg)**

*Tessaratoma javanica* (Thunberg) is a somber insect-pest of litchi belonging to family Tessaratomidae of insect order Hemiptera and commonly known as litchi stink bug. It is relatively large sized bug characterized by the proportionately small head, short labium and large terna plate between the middle and hind coxae. The nymphs and adults of bug sucks the sap of the flowering and fruiting shoots, flowers and young fruits by stinging them with its mouth parts causing flowers and fruits to fall, the necrosis of young twigs, the blackening of fruit exocarp to drying of shoot tips. Practically, it was found to be very difficult to manage this insect by chemical insecticides. Since litchi is a cross pollinated crop, it needs insect pollinators for pollination and the population of litchi stink bug start rising with the emergence of inflorescence. Therefore, any insecticidal application for the

Adult female of *Anastatus bangalorensis*Adult female of *Anastatus acherotiae*



management of the pest affects population of the insect pollinator in the field as cross pollination is a basic event for better fruit production. With recent outbreak and non effectiveness of chemical pesticides for the management of litchi stink bug in Jharkhand (India), the investigation was carried out to explore the role of bio-control agents in management of litchistink bug. Four insect parasitoids were recorded. Among them three were from the family Eupelmidae and one from the family Encyrtidae of order Hymenoptera. The Eupelmids parasitoids (*Anastatus bangalorensis* and *Anastatus acherontia*) are new record from eggs of litchi stink bug, *T. javanica*. Against the overwhelming litchi stink bug of litchi crop, necessitate urgent studies on mass rearing and field release protocol for the newly recorded parasitoids so that effective management strategies could be designed.

### Nutritive Value of Vegetable Soybean

Eight cultivars of vegetable soybean viz. AGS-447, AGS-456, AGS-457, AGS-458, AGS-459, AGS-460, AGS-461 and Swarna vasundhara were evaluated for their nutritive value in the acidic soils of Jharkhand. Among the cultivars, AGS-458 was found best in terms of nutritive value like protein, phosphorus, potassium, sulphur, iron and zinc content in fresh edible portion. The cultivar AGS-458 has 11.28 g protein, 230 mg phosphorus, 680 mg potassium, 92 mg calcium, 97.7 mg magnesium, 92.3 mg sulphur, 5.23 mg iron, 1.71 mg zinc/100 g of edible portion. The calcium content was highest (161 mg/100 g) in the cultivar AGS 461 while magnesium content was highest (118 mg/100 g) in AGS 459. The average nutritive value of different cultivars was 9.82 g protein, 200 mg phosphorus, 610 mg potassium, 107.4 mg calcium, 84 mg magnesium, 81mg sulphur, 4.45 mg iron, 1.55 mg zinc/100 g of edible portion. The data indicate that the nutritive value of vegetable soybean is sufficient to supplement most of the daily requirement of nutrition for a human being and is within the reach of poor people.



### Management of Soilborne Phytopathogens Through Grain Based *Trichoderma* Formulation in Eastern Plateau and Hill Region

Bajara (*Pennisetum typhoides*) grain based formulation of *Trichoderma viride* was developed. It is fast growing, highly sporulative, strong competitive saprophytic ability and it can readily multiply on the organic rich substrates and have 4-6 month self life. It could be applied as a seed treatment @ 12-15 g/kg seed. It can also be applied in the soil by mixing 2-2.5 kg formulation on 100 kg decomposed cow dung compost/cow dung cake which were pre-moist. It is left for 24-36 hrs by covering moist Jute bag and thereafter applied in the root zone of the crop plants as a furrow application. The formulations have ability to inhibit wide range of soilborne phytopathogens viz., *Fusarium*, *Rhizoctonia* and *Sclerotium* which otherwise cause numerous diseases in vegetables. It has also the ability to solubilize insoluble phosphate.



### Soil Fertility Status of Makhana-Based-Cropping Systems

After harvesting of wheat and barseem, insignificant reduction in pH and EC of soil was observed. The major changes were observed in organic carbon and available phosphorus content of soil. The organic carbon content of soil recorded five to six folds higher due to cultivation of wheat and barseem in cropping sequence mode with the makhana as compared to control/uncultivated soil. Moreover, the organic carbon content in soil after harvesting of wheat was found slightly higher over the soils which were kept under berseem cropping. Likewise, the status of available phosphorus in soil also recorded approximately three fold increase with the wheat (31.5 kg/ha) and berseem (27.0 kg/ha) cropping sequence over the control plots (9.10 kg/ha). The cropping of wheat and berseem under makhana growing soils was also observed to be having appreciably higher content of available nitrogen and potassium compared to control.

### Enhancing Water Productivity Through Micro-Irrigation in Wheat

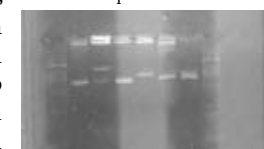
A field experiment was conducted in dry season of 2011 to 2012 to study the influence of three irrigation methods viz. Low Energy Water Application (LEWA), micro-sprinkler and surface irrigation (check basin) along with three wheat establishment methods viz., SWI, line sowing and farmers' practice of sowing were compared for enhancing water productivity (WP). The wheat growth parameters viz., ultimate root length, root volume, root dry wt, & LAI were significantly superior in case of LEWA & micro sprinkler under SWI. However, tillers/m<sup>2</sup> was significantly superior in case of LEWA under SWI over all other treatments. The weed density as well as weed dry weight were observed to be significantly lowest under micro sprinkler under SWI. All the wheat yield attributing characters viz., ear heads/m<sup>2</sup>, no. of filled grains/ear head, ear head length and ear head wt. remained significantly superior in case of LEWA and micro sprinkler under SWI. However, 1000 grain wt remained significantly superior in case of SWI over all other treatments. Significantly higher wheat grain and straw yield were observed in LEWA over micro sprinkler and check basin irrigation. In case of establishment methods, the SWI recorded significantly highest grain and straw yield over line sowing and farmers' practices of wheat sowing. The interaction between irrigation methods and establishment methods were statistically insignificant. The WP (5.570 kg/ m<sup>3</sup>) was significantly superior when irrigated with micro sprinkler under SWI. There was a mean saving of 57 and 37% water in micro sprinkler and LEWA respectively as compared to check basin irrigation.

### Evaluation of Drought Tolerance Rice (*Oryza sativa* L.) Lines

Drought stress is one of the major impediments to the rice yield particularly in eastern region of India. Improvement of drought stress tolerance of rice has been the major task of breeding programme. Under these circumstances, biotechnological tools offer a faster and efficient way to develop a mapping population for the respective stress. In this context, high yielding, medium duration and promising variety for irrigated lowland ecosystem but susceptible to drought stress i.e., IR64 has been crossed with drought donor line (IR55419-04) and developed F<sub>1</sub> & F<sub>2</sub> breeding population. Molecular profiling of parents and F<sub>1</sub> & F<sub>2</sub> generation breeding materials with 50 microsatellite (SSR) markers has been



Molecular profiling of Parents & F<sub>1</sub> SSR markers



Molecular profiling of Parents and F<sub>2</sub> generation with generation with SSR markers.

done for drought stress tolerance. 15 SSR markers has been as polymorphic markers and remaining as monomorphic. Molecular profiling  $F_2$  generation clearly indicate the variability among population.

### Evaluation and Screening of Wheat Cultivars Under Zero Tillage (ZT)

Thirty wheat genotypes were sown on 24th November 2011 through ZT machine. The plot size of each genotype was 30 m<sup>2</sup>. The normal common farming practices like seed rate, fertilizers, irrigation etc. were adopted. Early Vegetative Vigor (EVV), DFF, Plant height, Panicle length, number of tiller/m<sup>2</sup>, yield and other yield contributing traits of the different genotypes were regularly monitored and recorded. The climatic parameters like temperature, relative humidity and sunshine hours were also recorded. Though there were slight differences in the maturity days of the different varieties of the crop, but all varieties were harvested on 11th April 2012. CSW-12 (5.02 t/ ha), CSW-10 (4.92 t/ ha), CSW-1 (4.89 t/ ha), CSW-4 (4.5 t/ ha) performed better than check variety HD 2733 (4.23 t/ ha) and K-307 (3.31 t/ ha). The study indicates that varietal screening is need of the hour for Zero Tillage, particularly in eastern Indo-Gangetic Plains.



### Evaluation of Biopesticide and chemical pesticide against Gram Pod borer

On-Farm Trial was conducted at 6 locations to evaluate the efficacy of biopesticide and chemical pesticide to check the damage caused by pod borer to gram field. Results indicated that Indoxacarb 14.5 SC 1 ml/ l was found better by 21.74 per cent increase in yield (1.4 t/ ha) with net return of ₹ 25000/ ha. The cost of cultivation was ₹ 17000/ ha and BC ratio (2.47) was also higher over the conventional method of pod borer management.



## Transfer of Technology

### Training Programme on "Cottage Level Food Processing Entrepreneurship Development for Farmers"

A training programme on "Cottage level Food Processing Entrepreneurship development for Farmers" was organized at Research Centre Ranchi in collaboration with Indian Institute of Crop Processing Technology, Thanjavur (Tamil Nadu) on 24.2.2012. About 75 progressive farmers, entrepreneurs, representative of financial institutions and self help groups were participated in the training programme and gained knowledge on value addition, techniques for reduction in post harvest wastages, processing of agricultural crops, storage, quality control and safety. The programme was inaugurated by Dr. Prabhakar Singh, Director, Horticulture Mission, Jharkhand in presence of Dr. Shivendra Kumar, Head, Research Centre Ranchi. The resource persons were Dr. A. K. Thakur (RC, Ranchi), Dr. M. Lognathan (IICPT), Dr. I. Ansari (BAU) and Mrs. Kalpana Palit (Food Processor).



### Stakeholder Meeting on "Strategies for Agricultural Development in Eastern Region" Organized

National Academy of Agricultural Sciences (NAAS) in collaboration of ICAR-RCER, Patna organized a stakeholder meeting on "Strategies for agricultural development in eastern region" on 3rd March 2012 at ICAR-RCER, Patna. The meeting was initiated with the remarks of the Convener, Eastern Chapter (NAAS) and Director, ICAR-RCER, Patna Dr. B.P. Bhatt. The meeting was attended by the Chief Guest Dr. A.K. Singh, DDG (NRM) and Guest of Honour Prof. R.P. Singh, Chairman, QRT, Dr. Allaiddin Ahmed, Chairman, RAC and Dr. A.K. Singh, ZPD, Zone-II. The main theme of the meeting was to identify the researchable issue in Eastern region for XIIth Five Year Plan. Dr. Bhatt requested all the stakeholders to contribute their views on overall agricultural development so as to address them during XIIth Five Year Plan.



Dr. A.K. Singh, DDG (NRM), Chairman of the session initiated the remaining proceeding of the meeting and invited all the stakeholders to open discussion and also to identify the researchable issues. The discussion and suggestions were summed up and an action plan on the researchable issues/strategies for agricultural development has been identified as under:

- Development of integrated farming system models for different categories of farmers such as small, marginal and large, inhabiting in alluvial and plateau, rain fed upland & wetland agro ecosystems.
- Improving production potential of wetland ecosystems through suitable technological interventions.
- Quality seed production.
- Multiple uses of water so as to enhance the water productivity, etc.
- Organic farming particularly for horticultural crops such as vegetable and fruits.
- Adoption of Conservation Agriculture particularly in Bihar, Jharkhand and Eastern UP.
- Restoration of flood affected and drought prone areas.
- Small farm mechanization and development of small implements for small and marginal farmers.
- Livelihood support to the farmers through livestock production.
- Research need for extreme weather situation (climate resilience).
- Diversification in agriculture and aquaculture.
- Rehabilitation of degraded lands through horticulture and agroforestry interventions.
- Research on water management strategies for rain water harvesting, ground water and canal water management for different agro-ecosystems.
- Research on backyard poultry, mushroom cultivation, bee keeping and other allied activities.
- Input management for reducing cost of cultivation and making agriculture more profitable.
- Post harvest management through value chain & marketing strategies.
- Introduction of agriculture in new education system at secondary level in the schools so as to make new youth well acquainted to farming system approach.
- Inventory of existing farming system model needs to be



redefined and translated in farmers' field (Marry between ITK and newly developed technologies and develop a capsule for different categories of farmers).

- Human resource development through training and demonstration.
- Linkages between researchers, development agencies and farmers for adoption of technologies.
- Research and development consortium networks need to be developed so as to address the researchable issues in Eastern states.

### Stakeholders' Meeting on Animal Husbandry Practices in Bihar

One day meeting with veterinary officers of Bihar was organized on 12th April 2012 at ICAR-RCER, Patna in collaboration with IVRI, Izatnagar to discuss different issues on animal husbandry and to apprise the officers about different technologies developed by the IVRI and ICAR-RCER. About 40 Veterinary Officers from different blocks attended the meeting. Shortage of green fodder, under-nutrition of livestock and lack of kits for rapid disease diagnosis emerged as the major issues for livestock development. Among diseases, management of Degnala, Trypanosomiasis, FMD and Mastitis was discussed.



### Organized Brain Storming Session on "Water Use Potential of Flood-Affected and Drought-Prone Areas of Eastern India"

Brain storming session on "Water use potential of flood-affected and drought-prone areas of Eastern India" was organized at ICAR Research Complex for Eastern Region, Patna. The event was jointly organized by NAAS, New Delhi and ICAR RCER, Patna on 14th May, 2012, was aimed at formulating policies that will benefit the farmers and usher in second green revolution. Convener of the Brainstorming Session and Director of the institute Dr. B.P. Bhatt welcomed the delegates and presented a policy back ground paper. The workshop was attended by several dignitaries including Prof. R.B. Singh, and Prof. Anwar Alam, from National Academy of Agricultural Sciences, New Delhi, Dr. S.A.H. Abidi, Ex-member, ASRB, Dr. Peter Kenmore, FAO Representative and Dr. P.N. Jha, and Dr G. Trivedi (Ex Vice Chancellors, RAU, Pusa), Dr Allauddin Ahmed, and many renowned scientist from different parts of eastern India. President NAAS, Dr. R.B. Singh stressed that water management, its storage, quality and floods need to be addressed sincerely besides conservation of large water ecologies of the region. On this occasion three publications of ICAR RCER were also released.



### Farmers' Innovation Day

A workshop on Agricultural Development in Bihar was organized on 15th May 2012 at ICAR Research Complex for Eastern Region, Patna on the occasion of Farmer's Innovation day. Dr.B.P.Bhatt, Director of ICAR Complex while welcoming the guests said that, the workshop and Farmer's



Innovation Day were part of the learning process, so the grass root level innovations by the farmers can not only be documented but their scientific basis can be established for others to follow. The event was inaugurated by Dr. Mangla Rai, Agricultural Advisor to the Hon'ble Chief Minister, Bihar. Several innovative farmers from the state were invited to share their experiences on how to develop agricultural sector in Bihar. The workshop was attended by several dignitaries including Prof. R.B. Singh and Prof. Anwar Alam, from National Academy of Agricultural Sciences, New Delhi, Dr. S.A.H. Abidi, Ex-member, ASRB, Dr.R. K. Mittal, Vice Chancellor, Rajendra Agricultural University, Pusa, Dr. V. P. Singh, Director Research, RAU, Dr. G. Trivedi, and Dr. P. N. Jha, both Ex Vice Chancellors, RAU, Dr. Allauddin Ahmed, and several innovative farmers.

### Meeting with Vigilance Officers of ICAR Institutes in Eastern Region

A meeting with the vigilance officer of ICAR institutes in eastern region was held at ICAR Research Complex for Eastern Region, Patna on 3rd June 2012. Different issues and vigilance related problems were discussed by the Director (Vigilance), ICAR, New Delhi.



### SAS sensitization Workshop under "Strengthening Statistical Computing for NARS" (NAIP component-I) organized

A three days SAS sensitization workshop was organized during 27-29 June 2012. Twenty scientists from different divisions of the institute participated in workshop. The sensitization workshop was organized under the project entitled "Strengthening Statistical Computing for NARS" (NAIP Component-I).



### Capacity Building of Farmers/ Officers

- Two Kishan Salahkar bimonthly training programmes were organized at KVK, Buxar from 20 Jan to 19 March 2012 and 30 March to 30 May 2012 where 30 extension functionaries participated in each training programme.
- Ministry of Water Resources sponsored two training programmes on "Scaling up of water productivity in agriculture for livelihoods through teaching-cum-demonstration training of trainers and farmers" were organized for the farmers during 15-21 Feb. & 24-30 March, 2012 at Research Centre for Makhana, Darbhanga where 50 farmers for each training participated.
- Orientation training programme on Agri-business Management (ABM) was organized for students of BAU, Ranchi on horticulture especially vegetables and fruit crops, their potential in food and nutritional security, management and marketing issues, profitability and farmers response in terms for difficulties in post harvest handling and marketing during 17-18 Feb, 2012.
- IFAD/IRRI sponsored one day training programme on "Rice mat nursery" on 6th June, 2012 was organized at ICAR-RCER, Patna where 25 farmers and SMS from KVKs participated.
- A total of eight training programmes on the following topics were organized at Research Centre, Ranchi where 177 farmers participated:
  - i. Improved production technique in vegetable cultivation
  - ii. Processing and value addition of fruits and vegetables
  - iii. High density orcharding in fruit crops



## Front Line Demonstration

### Demonstration of Pheromone Trap for the Management of Gram Pod Borer *Helicoverpa Armigera*



Sixty pheromone traps were installed under NICRA Project in Kukurha village, Buxar covering 3 ha area, benefitting 8 farmers. Similarly, under FPARP project, 40 pheromone traps, however, installed in Bijhaura village, Buxar covering 2 ha area and benefitting 4 farmers. These traps were loaded with Helilure, an attractant of adult male *Helicoverpa*. Demonstration reflected that its installation is very much effective and economical just before flowering and crop can be saved by monitoring of adult moth, estimation of their population, mating disruption and mass collection and killing. The per cent increase in yield and B:C ratio was 11.60 and 2.0 in Kukurha village and the same was 9.93 and 2.07 in Bijhaura village, respectively.

### Foundation Day of the Institute Celebrated

Foundation Day of the institute was celebrated on 22nd February 2012 where past and present Directors of the institute attended. The Founder Director of the institute Dr S. R. Singh appraised the scientists and staff of the institute about the genesis of the institute and its vast role in livelihood development of poor people of the region. Dr R.K. Batta, Dr M.A. Khan also showed their happiness about the progress of the institute. Dr B. P. Bhatt, present Director of the institute briefed about the future planning of the institute and its prime role in dissemination of technologies for bringing 2nd Green Revolution in the region.



### Foundation Stone for Administrative Building and Farmers' Hostel of KVK, Buxar Laid

Foundation stone of Administrative Building and Farmers' Hostel of KVK, Buxar was laid by Dr A. K. Singh, DDG (NRM) on 4th March 2012 in the presence of Dr. B. P. Bhatt, Director, ICAR-RCER, Patna and Dr A. K. Singh, Zonal Project Director, Zone II, Kolkata. About 560 farmers including local leaders, press & media attended the programme.



### ICAR Zonal Sports Meet for Eastern Zone 2012 Organized

ICAR Zonal Sports Tournament for Eastern Zone organized



by ICAR Research Complex for Eastern region, Patna during 19-22 March 2012. The tournament was inaugurated by Prof. Sukhada Pandey, Hon'ble Minister for Sports, Art, Culture and Youth Affairs, Govt. of Bihar. Sri A. C. Verma, ADG (Bihar Military

Police) also graced the occasion. Dr B.P. Bhatt, Director of the host institute, in his welcome address, said that sports make a bond of fraternity amongst members of ICAR family beside participating in competitive sports events. About 500 sports persons from 17 institutes including 3 research institutes from Nagpur and Jhansi participated as special invitee. During 4 days event, various sport events like football, basketball, volley ball, badminton, kabadi, carom, table tennis, chess and field and track events were played. Sri Abhyanand, DGP (Police), Govt. of Bihar concluded the sports as Chief Guest. Mr Pradeep Parida and Mrs Savita Sahoo of CRRI, Cuttack was awarded for the Best Athlete among men and female contingents, respectively. Champion Trophy was awarded to CRRI, Cuttack. The vote of thanks for successful events was proposed by Dr D. K. Kaushal, Organizing Secretary.

### Institute Management Committee Meeting

Institute Management Committee(IMC) has been conducted on 30.06.2012 under the leadership of Dr B.P. Bhatt, Director, Director-Chairman IMC. Dr Manoj Kumar, Head CPRS ICER RCER, Patna; Sri S.K.Singh, Farmers Representative; Sri Pushpanayak, CAO, ICAR RCER, Patna; Sri U.K. Saxena, FAO, ICAR RCER, Patna; Dr A Bhattacharya, Principal Scientist, IINRG, Ranchi and Dr S. Kumar, Head, ICAR RCER Research Centre, Ranchi, members of IMC attended the meeting.

### Institute Joint Staff Council meeting

IJSC meeting was held on 30.6.2012 under the leadership of Dr B.P.Bhatt, Director, Chairman IJSC. Dr Md. Idris, Dr A. Dey, Dr S.K.Barari, Sri Pushpanayak, CAO, ICAR RCER, Patna; Sri U.K. Saxena, FAO, ICAR RCER, Patna from the official side and Sri P.K.Singh, Secretary IJSC; Sri A.S. Mahapatra, Member CJSC; Sri Anil Kumar, Sri Markandey Mishra, Sri Paskal Lakra and Mrs Meera Kachhap from staff side attended the meeting.

### Infrastructure development

- Poultry hatchery room and Feed and fodder store have been constructed.
- One goat shed has been constructed.



## VIP/ Distinguished Visitors

Sl. No.	Visitors Name & Address	Centre visited	Date
1.	Prof R.K. Pathak, Ex Director, CISH Lucknow	Research Centre, Ranchi	10/01/2012
2.	Dr Stephen Haefele, IRRAS Project Coordinator, IRRI	ICAR-RCER, Patna	15/01/2012
3.	Dr U. S. Singh, STRASA Project Coordinator, South East Asia	ICAR-RCER, Patna	15/01/2012
4.	Sri Chamra Linda, MLA Bisunpur, Jharkhand	Research Centre, Ranchi	04/02/2012
5.	Sri S. K. Ghosh, NABARD, Jharkhand	Research Centre, Ranchi	10/02/2012
6.	J.P. Mittal, Ex National Coordinator, Member QRT (Renewable Energy Sources in Agriculture)	Research Centre, Ranchi	13/02/2012
7.	Dr Harpal Singh, Ex Head, Agril. Engg. & Energy, CAZRI, Jodhpur	Research Centre, Ranchi	13/02/2012
8.	Dr P. L. Singh, Sr. Scientist, CIAE, Bhopal and Secretary, QRT, AICRIP on RES	Research Centre, Ranchi	13/02/2012
9.	Dr. Elizabeth Humphreys, Sr. Scientist, IFAD Project Coordinator, IRRI	ICAR-RCER, Patna	19/02/2012
7.	Dr. Vinod Tiwari, PI, Crop Improvement, Directorate of Wheat Research, Karnal	ICAR-RCER, Patna	22/2/2012
10.	Dr A.K. Mishra, Project Coordinator AICRIP (STF), CISH, Lucknow	Research Centre, Ranchi	01/03/2012
11.	Dr A.K.Singh, DDG (NRM), ICAR	ICAR-RCER, Patna	03/03/2012
12.	Sri S.N. Verma, Chairman, JSEB	Research Centre, Ranchi	21/03/2012
13.	Dean Thompson, US Consulate, Kolkata	Research Centre, Ranchi	16/04/2012
14.	Dr C. D. Mayee, Ex Chairman ASRB and Team QRT Soybean	Research Centre, Ranchi	19/04/2012
15.	Prof. Ramesh Chand, Director, NCAP, New Delhi	ICAR-RCER, Patna	23/04/2012
16.	Dr A.N.Sharma, Director, Institute of Human Development, New Delhi	ICAR-RCER, Patna	23/04/2012
17.	Dr B.N.Singh, Director of Research, BAU, Sabour	ICAR-RCER, Patna	23/04/2012
18.	Dr Diwakar Nayak, Director of Research, OUAT, Bhubneswar	ICAR-RCER, Patna	23/04/2012
19.	Dr Aswani Kumar, Director, DWR, Bhubneswar	ICAR-RCER, Patna	23/04/2012

20.	Dr. B. Gangwar, Project Director of Farming Systems Research	ICAR-RCER, Patna	14/05/2012
21.	Prof. R.B.Singh, President NAAS, New Delhi	ICAR-RCER, Patna	14/05/2012
22.	Prof. Anwar Alam, Member NAAS, New Delhi	ICAR-RCER, Patna	14/05/2012
23.	Dr S.A.H.Abidi, Member, NAAS, New Delhi	ICAR-RCER, Patna	14/05/2012
24.	Dr Mangla Rai, Agricultural Advisor to the Hon'ble CM of Bihar	ICAR-RCER, Patna	15/05/2012
25.	Dr Andrew MvDonald, Head, CIMMYT, India	ICAR-RCER, Patna	02/06/2012
26.	Dr P. K. Joshi, Director, IFPRI, South Asia	ICAR-RCER, Patna	02/06/2012
27.	Dr R.K.Malik, CSISA, Bihar	ICAR-RCER, Patna	02/06/2012
28.	Dr A. K. Chaudhury, U.B.K.V., Cooch Bihar, West Bengal	ICAR-RCER, Patna	02/06/2012

## Linkages and Collaborations Including Externally Funded Projects

Agencies	Field of collaboration
CIMMYT, IRRI & Bill and Melinda Gates Foundation	Cereal System Initiative for South Asia (CSISA) and Resource Conservation Technologies (RCTs)
DRRI, Hyderabad	Submergence and drought stress tolerance in rice
CRRI, Cuttack	Submergence and drought stress tolerance in rice
IARI, New Delhi	Impact, adaptation and vulnerability of Indian agriculture to climate change-ICAR network project
OUAT, Bhubaneswar	Modeling the performance of a few major cropping systems in Eastern India in the light of projected climate change- NAIP Component 4
NABARD	Development of ultra-high density orcharding under Jharkhand conditions Standardization of fertigation patterns for selected vegetables and training on Improved Technologies in Agriculture
Min. Water Resources, Govt. of India	Demonstration of technology: Rainwater harvesting for establishment of fruit orchard: Doba and micro irrigation system (FPARP-Phase-II)
BAU, Ranchi	Livelihood support under NAIP
IVRI, Izatnagar	Livestock disease diagnosis and Network Project on Feed Resources
NRC, Pig	Network Project on Feed Resources
CIRB, Hisar	Network Project on Buffalo
NAARM, Hyderabad	High value crops in economically backward region
ACIAR	Watershed Hydrology

## Participation of scientists in Seminar/Symposia/ Training/Conference/Workshop

Name of scientists	Seminar/Symposia/ Training	Date	Place
Dr. S. Maurya	99th "Indian Science Congress"	2-7 Jan., 2012	KIT University, Bhubaneswar
Dr. A.K. Singh	AICRP (VC) Group Meeting	13-16 Jan., 2012	GBPUA&T Pantnagar
Dr. Jaipal Singh Choudhary	Workshop cum Brainstorming on "Livelihood Security, Vulnerability Assessment and Simulation of Pest dynamics in Climate Change Scenarios"	16-19 Jan., 2012	IARI, New Delhi,
Dr. Abhay Kumar	National Conference on "Demonstrated options for improved livelihood in disadvantaged areas of India"	20-21 Jan., 2012	IGKV, Raipur
Dr. Jaipal Singh Choudhary	International Conference on "Climate Change, Sustainable Agriculture & Public Leadership"	7-9 Feb., 2012	ICAR, New Delhi
Dr. A.K. Thakur	46th Annual Convention of ISAE and International Symposium on "Grain storage."	27-29 Feb., 2012	GB Pant University of Agriculture and Technology, Pantnagar.
Dr. Abhay Kumar	Annual Review Workshop of NAIP Comp.3 Projects	15-16 March 2012	B.C.K.V., Kalyani
Dr. Bikash Das	National Symposium on 'Plant Biology and its Role in Sustainable Energy Production'	17-18 March, 2012	GGU, Bilaspur, Chhatisgarh
Dr. S.K. Naik and Dr. Sanjeev Kumar	Conference on "Livelihood and environmental security through resource conservation in eastern region of India (LESRC-2012)"	5-7 April, 2012	OUAT, Bhubaneswar
Dr. S. S. Singh, Dr. Md. Idris, Dr. U. R. Sangle and Dr. Santosh Kumar	47th "Annual Rice Research Group Workshop"	6-9 April, 2012	Directorate of Rice Research, Hyderabad
Dr. Santosh Kumar	"Review and planning workshop for India and Nepal (STRASA Phase 2)"	11-13 April, 2012	CSSRI, Karnal
Dr. Santosh Kumar	Workshop on "Agropedia"	7 May, 2012.	ICAR-RCER, Patna

## Consultancy, Patents and Commercialization of Technology

Extant plant varieties registration was done under PPV & FR Authority, New Delhi for the following varieties in brinjal (7) and tomato (4):

### Brinjal

- Swarna Mani
- Swarna Pratibha
- Swarna Shyamli
- Swarna Shakti (F1)
- Swarna Ajay (F1)
- Swarna Shree
- Swarna Shobha

### Tomato

- Swarn Baibhav (F1)
- Swarna Naveen
- Swarna lalima
- Swarna sampada (F1)

## Selection/Promotions/Transfer/Retirement of Staff

### Selection

1. Sri Surendra Kumar Yadav, joined as Skilled Supporting Staff at KVK Buxar w.e.f. 13.01.2012.
2. Dr. Mandhata Singh, joined as Subject Matter Specialist (Agronomy) at KVK Buxar w.e.f. 27.04.2012.

### Promotion

- Shri Umesh Singh, Assistant has been promoted to the post of Assistant Administrative Officer w.e.f. 13.4.2012 (FN).
- Dr. R. Elanchezhian, Senior Scientist, Plant Physiology has been transferred on promotion as principal scientist to IISC, Bhopal.

### Transfer/Resignation

Smt. Punam Tiwari, SMS (Home Science) resigned on 6th April 2012 and joined as Regional Home Economist at Directorate of Exten. Ministry of agriculture and cooperation, Govt of India, Pusa campus, New Delhi-12.

### Retirement

- Shri Fulgence Toppo, A.A.O. Superannuated on 29.2.2012.
- Shri Bhैया Oraon, Skilled Supporting Staff superannuated on 31.3.2012.
- Shri Kanhu Oraon, Skilled Supporting Staff superannuated on 30.6.2012.

### Death

- Late Ganga Kumar Singh, Skilled Supporting Staff died on 28.1.2012.
- Late Sukheir Oroan, Skilled Supporting Staff died on 25.3.2012.
- Dr. Chunchun Kumar, Senior Scientist, Soil Science died on 23.4.2012.
- Late (Smt) Etwari Saur, Skilled Supporting Staff died on 21.5.2012.

### Editorial Committee

Dr. A. Dey • Dr. A. Abdul Haris • Dr. Joydeep Mukherjee  
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ICAR Research Complex for Eastern Region  
ICAR Parisar, B.V. College P.O., Patna 800014, Bihar  
Tel: 0612-2223962/ 2228882; Fax: 0612-2223956  
Email: drpbhatt.icar@yahoo.com Web: www.icarres.in

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