



CRRI NEWSLETTER



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**Prof.M.P.Pandey
joins as Director,
CRRI**

PROF. M. P. Pandey, the renowned rice breeder, took over the charge of Director, Central Rice Research Institute, Cuttack on July 14, 2006. Born on September 08, 1946 in Pratapgarh district of Uttar Pradesh, Prof. Pandey has got more than 35 years of rich experience

in teaching and research. During his illustrious career, he has developed 20 High Yielding Varieties of different crops that include 13 HYVs of rice. To his credit, he has the unique distinction of evolving the first public bred rice hybrid in North India i.e. Pant Sankar Dhan-1, with a yield potential of 11.7 t/ha. Among his other contributions the rice cultivars like Pant Sankar Dhan-3, the latest hybrid rice, Pant Sugandh Dhan-15 and Pant Sugandh Dhan-17, the super aromatic rice with export grain quality have been highly acclaimed by the farming community all over India.

During his service period, Prof. Pandey has successfully undertaken several important assignments like National Coordinator/FAO consultant (Hybrid Rice Seed Production) in ICAR (2001-02), FAO Fellowship for On-job Training on Hybrid Rice Breeding at IRRI (1992), Visiting Scientist in INGER programme at IRRI, Phillipines (1987-89), IRRI/CABO Fellowship to work on System Analysis and Simulation in Rice Production at Wageningen, Netherlands (1986), SRO (Rice Breeding) GBPUA&T, Panchnagar (1983-91), DAAD



Prof. M.P. Pandey joins as 17th Director of CRRI.

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Post Doctoral Fellow FRG (1977-78) and Visiting Scientist, PR China, 2002.

Prof. Pandey accomplished many notable achievements like FAO/ICAR/UNDP Award, 1996; Sri Aurobindo Institute of Rural Development, AP Award, 1996, Rice Research Accomplishment Award by NDUAT, Faizabad and Government of Uttar Pradesh 2004; Member Research Board of AABI, USA 2004; Award for most outstanding research by GBPWA & T, 1984, 1986, 1997 and 2004; Dr. R.H. Richharia Award for Outstanding Rice Research (ICAR) 2004 and most recently the Rao Bahadur Dr. Ram Dhan Singh Award for Excellence in Rice Research 2005-06 by HAU, Hisar.

On a new venture as the 17th Director of CRRI, Cuttack Prof. Pandey in his address to the staff pledged to keep up the glory of the institute in the arena of rice research in national and international level with the active cooperation of one and all.

Group Meeting on Hybrid Rice held

IN a move to take forward the rice production scenario of eastern India lowland ecosystem, a group meeting on "*Developememnt of Rice Hybrids for Rainfed Shallow Regions of Orissa, Bihar and West Bengal*" was conducted on 5 August, 2006 at Central Rice Research Institute, Cuttack. The inaugural session of this meeting was chaired by Dr. S.N. Shukla, ADG (F&FC). At the outset, Dr. M.P. Pandey, Director, CRRI extended a warm welcome to the dignitaries and participants from different states *viz.* Orissa, Bihar, West Bengal, Chhattisgarh, Uttar Pradesh and Andhra Pradesh and spelt out the objectives of this group meeting. In this context, he outlined the basic researchable issues on hybrid rice under shallow, boro and coastal saline situations and listed out the thrust areas of research such as enhancement of degree of heterosis, incorporation of resistance genes to biotic and abiotic stresses, quality characteristics and refinement of seed production technologies including integrated nutrient and pest management. Dr. S.N. Shukla gave a brief account of the rice production scenario of the country and the importance of hybrid rice production technology in boosting the rice production particularly in the

Group meeting on Hybrid Rice in progress



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rainfed shallow regions of eastern Indian states. Dr. B. C. Viraktamath, Project Director, DRR, Hyderabad in his deliberation highlighted the current status of hybrid rice research, development and seed production in the country.

The group meeting was continued through presentations by scientists over three technical sessions *viz.* Session 1: Basic and Strategic Research, Session 2: Current Status of Hybrid Breeding Research and Session 3: Experiences on Hybrid Rice Seed Production.

The technical sessions were followed by discussions and presentation of the recommendations emerging from the deliberations of the group meeting. Later presiding over the valedictory session of this group meeting Dr. Gautam Kalloo, DDG (Crop Sc. & Hort.) felt the necessity to formulate a network programme on hybrid for studies on synchronization of flowering with staggered sowing/planting of the parental lines. He also emphasized the need for ensuring the purity of parental lines and the importance of maintenance breeding and suggested to minimize the cost of cultivation of hybrid rice by reducing the seed rate to 2 kg acre⁻¹ and combine the hybrid rice technology with SRI method of cultivation. Some useful recommendations and action plans emanated from the hybrid rice group meeting for further research.

Parthenium Awareness Week Celebrated

THE *Parthenium* awareness week (6-12 September, 2006) was celebrated at the institute on 12 September, 2006 to make the people aware about the menace of *Parthenium* in our daily life and the ways of management by involving active participation of common people. Scientists from CRRI, officials/scientists from the State Agricultural Department and OUAT, Bhubaneswar attended the meeting. Dr. Sanjoy Saha, Senior Scientist (Agronomy) delivered a talk on the "Menace of *Parthenium* in daily life and its management". Dr. P.C. Roul, Asst. Professor, OUAT also delivered a talk on "Management aspects of *Parthenium*". Bulletins on *Parthenium* management were distributed for awareness of the people. The meeting was presided over by Dr. M.P. Pandey, Director, CRRI.

Celebration of *Parthenium* awarness week at CRRI,



Annual review and planning meeting of Drought Breeding Network

THE Annual review and planning meeting of Drought breeding Net work was held at CRURRS Hazaribag during 2-4 August, 2006 under the chairmanship of Dr. Gary Atlin of IRRI, Phillipines, the Principal Investigator of the project; Scientists from UAS, Bangalore; JNKV, Jabalpur; IGAU, Raipur; NDUAT, Faizabad; CRRI, Cuttack & BAU, Ranchi attended the meeting.

Generation and evaluation of doubled haploids

IN order to exploit the anther culture technique in rice improvement programme, some of the fertile double haploids derived were evaluated under the All India Coordinated Rice Development Project trials. In the slender grain category, CRAC 2221- 43, a doubled haploid from WA-CMS based hybrid, PHB 71 has shown consistently good performance during three years of testing. It possesses good quality grain and yielded at par with IR 64. It had also shown good performance in the adaptive trial conducted in the Puri District of Orissa. Another doubled haploid, CRAC 2224 -1041 revealed great promise in early duration varietal trials under the transplanted condition.

DNA based method of quick diagnosis of rice Tungro virus

A method for quick detection of rice tungro bacilliform virus (RTBV), the circular double stranded DNA virus, was standardized using DNA markers (P12 and P24). Twenty six hybrid rices and the parental lines developed at this institute, with varying levels of resistance and susceptibility to RTBV, were inoculated with the virus by releasing two viruliferous green leaf-hoppers per seedling in the net house. Sap extraction was done from these materials 15 days after inoculation. Amplification of the genomes of the plant samples, using the primers for the two markers, showed a distinct band of 9.2kb. It was observed that hybrids CRHR 10, CRHR 12, CRHR 14, CRHR 24, CRHR 27, CRHR 29 and the parental lines CRMS 32 (A), CRMS 32 (B), IR 6289 (B) and CRL 20 expressed distinct bands signifying the presence of RTBV. It is established that tungro symptoms developed in these materials was due to the association of RTBV.

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Varietal evaluation of organic aromatic rice

TWELVE aromatic rice varieties of early and medium duration (110-130 days) were evaluated under organic farming *vis-à-vis* the conventional farming practices by using agrochemicals in a replicated experiment using RCB design. The varieties included传统 like Tulsiphol, Pimpudibasa, Dhusara, Katrani, Kalajeera, Raskadam, Leelavati and Kalanamak, and improved ones *viz.* Govindabhog, Ketekijoha and two high yieldings *viz.* Pusa Basmati-1 and CRM 2007-1. In organic farming, plant nutrients were supplied through FYM @ 10 t/ha and Dhaincha (*Sesbania aculeata*) green manuring. The FYM contributed 72 kg N per ha and fertilizers @ 60, 40 and 40 kg N, P₂O₅ and K₂O per ha, respectively were applied. The grain yield of aromatic rice obtained in the experimental field varied from 1.56 t/ha (Raskadam) to 3.12 t/ha (Kalajeera) under organic farming and from 1.68 t/ha (Raskadam) to 2.81 t/ha (Leelabati) with use of agrochemicals. The varieties Kalajeera, Katrani, Govindabhog, Dhusara and Pusa Basmati-1 yielded more than 2.5 t/ha under organic farming. It was observed that grain yields of aromatic rice varieties were higher under organic farming practices as compared to the yields obtained by the use of chemical fertilizers.

Collection of rice germplasm from Sikkim

A total of 53 accessions of traditional rices were collected from Sikkim state through an exploration programme, which includes some aromatic rice accessions. Farmers of the state are now shifting to ginger and cardamom cultivation as cash crops. Most of the farmers in the state still continue growing the land races like Chhota Atte, Bada Atte, Champe, Lamo and Krishnabhog. Pusa Basmati and Taichung were the only two high yielding varieties found in different places.

Germplasm collection from coastal Konkan region of Maharashtra

AN exploration and collection programme was undertaken in Raigarh, Ratnagiri, Sindhidurg, Kolhapur, Satara, Pune and Nashik districts of Maharashtra , the third largest state in India on the basis of rice



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area coverage. There are three physiographical regions in the state: i) Konkan coastal, ii) Sahyadri or Western Ghats and iii) Maharashtra plateau. Out of the nine agro-climatic zones of the state, the Konkan region covers two zones *viz.* very high rainfall with lateritic soil and high rainfall with medium black soil. Rice occupies second place in the production next to jowar. In most areas, it was found that the farmers have adopted high yielding rice varieties and hybrid 'Sahyadri' developed by the SAU. In Raigarh, dominant rice varieties like Jaya and Rupali grown. But in Pen block of Raigarh, CRRI rice variety Ratna has got wider adoption. In Sindhidurg, the varieties like Jaya, Subarna, Walle and Sonam are very popular. Apart from these, IR-8 and IR-64 are also grown. Late duration varieties are grown in Satara district. The variety Indrayani (Ambemohar 157 x IR 8) is commonly grown in entire Pune district. Three local scented varieties *viz.* Ghansal from Kolhapur district, Sonam from Sindhidurg district (both short grains) and local long slender Basumati from Ratnagiri district were collected. Variety RP is grown under deep water condition in Ratnagiri. In total, fifty eight accessions of rice germplasm were collected and conserved in CRRI gene bank.

Rice germplasm collected from Orissa

An exploration and collection programme of traditional rice germplasm was taken up in the undivided districts of Dhekanal, Sambalpur, Kalahandi and parts of Koraput and Phulbani. A total of 151 germplasm accessions were collected and 54 of these were aromatic short grain types.

Breeding for nutritional enrichment of rice

An analysis of kernels of 60 aromatic varieties was done in AAS for iron and zinc to identify high Fe/Zn donors from amongst aromatic rices. Seventeen varieties with iron/zinc content >30 ppm were identified. It needs further testing to confirm presence of high Fe/Zn in the cultivars to use them as donors in the programme.

Use of Vermi-compost as a source of N in rice

APPLICATION of nitrogen in rice through urea or different combinations of urea and vermi-compost significantly increased the grain and straw yields. The grain yield ranged from 4.64 t/ha in control as compared to 5.6 t/ha in the treatment receiving vermi-compost + urea (1:3). Vermi-compost alone or its com-

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Experiment on Vermi-compost application in rice crop.

bination with different amounts of urea providing 60 kg N/ha gave identical grain and straw yields after the second year of cropping. Maximum grain and straw yields were recorded when 25% of the total applied N was substituted with vermi-compost and the rest applied in three splits.

Tagging of rice root-knot nematode resistance gene using RILs

MICROSATELLITE DNA markers linked to root-knot nematode resistance gene was developed in the variety 'Ramakrishna' by using F8 recombinant inbred lines of the cross Annapurna (susceptible)/ Ramakrishna and selective genotyping. One hundred seventy two rice microsatellite specific primers, distributed at 10cm distance apart on ten chromosomes of rice were used to scan genomes of Annapurna and Ramakrishna to identify polymorphic loci between parents. Eighty three loci, amplified by 41 primers, were polymorphic between parents. Out of the 41 primers, 22 primers were used for bulk segregant analysis using DNAs of parents and pooled DNAs of each of 14 highly resistant and susceptible RILs. Two primers, RM 428 and RM 492, generated polymorphism between parents and bulked RILs DNAs. Linkage analysis on individual RILs for the two primers resulted in identi-

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fication of a 320bp microsatellite locus, RM 428320, on rice chromosome 1 linked to the root-knot nematode resistance gene in 'Ramakrishna' with recombination frequency of 16%.

DNA fingerprinting of medicinal rice

THIRTY rice micro satellite specific primers, at least two from each chromosome of rice were used for DNA profiling and evaluating the genetic diversity of 33 medicinal rice cultivars. Three cultivars, Vandana, Kalinga III and Swarna were used as checks. A total of 132 bands/alleles were amplified, all being polymorphic. The number of bands per primer ranged from two (RM 307, RM 440 and RM 432) to 11 (RM 203) with an average of 4.4 alleles per primer. All the primers revealed polymorphism between cultivars. Polymorphism information content (PIC) ranged between 0.526 (RM 307) to 0.945 (RM 470).

Cluster analysis based on UPGMA using TREECON software grouped all the 36 cultivars into five major groups. First group consists of 12 medicinal cultivars while second major group consist of 9 medicinal cultivars. Third and fourth groups consist of three cultivars each while the fifth group consists of 9 cultivars.

All the rice cultivars included in the study could be distinguished precisely from each other. A diagrammatic mode of presentation of DNA fingerprints of all the 36 rice cultivars could be developed based on all the alleles, amplified by micro satellite primers. This information will be very useful for future identification of rice varieties.

Screening of rice varieties against rice tungro disease (RTD)

A total of two hundred and nine entries including NSN-1 (109), Donor screening nursery (62) hybrids and parental lines of CRRI (38) were screened under simulated epiphytotic condition and promising entries were further tested in the net house by artificial inoculation technique. The hybrids CRHR 30 and CRHR 31 and the parental lines CRL 17 and CRL 19 were resistant to RTD (without any leaf yellowing and plant height reduction ranging from 1.4–11.4 %) with the score 1 and 3 in SES scale. Two

CRRI hybrids showing resistance to RTD.



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more hybrids *viz.*, CRHR-1 and CRHR-7 (Ajay) were moderately resistant to RTD with plant height reduction of 30% and 28% and score of 5 and 3, respectively.

Mechanism of submergence tolerance in Swarna–sub 1

A comparative study of the mechanism of submergence tolerance in Swarna (submergence susceptible) and Swarna-sub-1 (submergence tolerant) revealed that Swarna-sub 1 responds with far higher increase in alpha-amylase and alcohol dehydrogenase (ADH) activities in leaves and stem tissues both when 21 day-old plants are submerged compared to the Swarna. The two varieties did not show significant difference with respect of starch phosphorylase activity.

New generation micro-herbicides for broad-spectrum weed control in wet direct-sown summer rice

THE efficacy of some potent new generation micro-herbicides of sulfonylurea group *viz.*, Pyrazosulfuron ethyl at 20 and 25 g/ha, almix (metsulfuron methyl + chlorimuron ethyl) at 4 g/ha, triasulfuran at 6 and 9 g/ha and bensulfuron methyl at 50 and 60 g/ha was studied in conjunction with other traditional recommended herbicides *viz.*, pretilachlor + safener at 500 and 750 g/ha and butachlor + safener at 1000 g/ha for wide spectrum weed control in wet direct sown summer rice. The major weed flora found in the weedy plots during the crop growing season were *Echinochloa colona* (9.6%), *Cyperus difformis* (21.9%), *Fimbristylis miliacea* (19.2%), *Sphenochlea zeylanica* (23.3%), and *Ludwigia parviflora* (26.0%) at 30 days after sowing (DAS). There was more than 46% reduction in the grain yield of rice due to competition with weeds in weedy plots.

Bensulfuron methyl (60 g/ha) applied at 20 DAS was the most effective micro-herbicide in controlling weeds with an efficiency of 95% and maximizing rice grain yield (5.8 t/ha). It was at par with hand weeding twice at 20 and 40 DAS in terms of efficiency and grain yield. Micro-herbicides Pyrazosulfuron ethyl (25 g/ha) applied at 10 DAS, triasulfuran (9 g/ha) applied at 7 DAS and almix (metsulfuron methyl + chlorimuron ethyl) + 0.2 % surfactant (4 g/ha) applied at 20 DAS also showed good suppression of weeds with weed control efficiency (WCE) 93, 92 and 89%, respectively. Among the traditional recommended herbicides, pretilachlor + safener (750 g/ha) performed relatively better with WCE 85%.

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Storability of hybrid rice

STORABILITY of the hybrid rice has been tested under artificial conditions of infestation of *Angoumois* grain moth, *Sitotroga cerealella*. All the ten hybrid varieties were found to be highly susceptible to this pest as compared to susceptible, Ratna.

A new alternate host of rice panicle mite

FOR the first time, *Cyperus iria* (Cyperaceae) has been recorded as a new weed host of the rice panicle mite, *Steneotarsonemus spinki* Smiley. Adults and larvae of the mites were isolated from this plant, which is a common weed in lowland rice.

Bio-degradation of rice straw due to earthworms

DURING mass multiplication of earthworm, *Lampito mauritius* decomposed rice straw, it was observed that about 200 earthworms could convert about 10 kg of decomposed rice straw to usable compost in 5-6 months. Cow dung slurry and biomass moisture were critical for rapid conversion of the straw by the earthworms.

Testing of microbial pesticide

TWO *Metarthrism anisopliae* isolates (TF 19 and TF 32) of BPH were tested in the net house using 3.11 x (105 to 107) spores ml⁻¹ against 100 nymphs per plant. TF 19 was most effective and about 99% insects were killed within 7days, whereas, TB 32 could kill only about 67% insects.

Tagging of gall midge resistance gene and functional genomic status for BPH resistance

THE genomic DNA from 25 recombinant inbred lines of the cross TN 1 / ARC 5984 were isolated for tagging of gall midge resistant genes in ARC 5984. Four microsatellite markers closely linked to the gall midge resistant gene, Gm4 present in PTB 10 were identified. Under functional genomics for BPH resistance, phenotyping of 150 mutant (M2) lines of Salkathi was completed under artificial infestation conditions.

Rice varieties showing multiple resistance/tolerance to diseases

EIGHT entries were observed to give multiple resistance/tolerance to diseases as detailed below:

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Sl.No.	Designation	Disease against which resistance/tolerance shown
1	CB 20035	RTD, Brown spot, Blast and Sheath blight
2	CR 874-24-2-2	Blast and Sheath blight
3	CRMAS 2232-60	RTD, Blast and Bacterial blight
4	CRMAS 2232-85	RTD, Blast, Sheath blight and Bacterial blight
5	VL 97-3678	RTD and Blast
6	CRL 1 (restorer line)	RTD and Sheath blight
7	CRL 19 (restorer line)	RTD and Sheath blight
8	CRMS 31 B (maintainer line)	RTD and Sheath blight

Rice hispa incidence at CRRI Farm

RICE hispa (*Dicladispa armigera*) started appearing in the CRRI farm from the first week of August, 2006. The initial damage symptoms on the plants were due to mining of the grubs into the leaves causing white patches. Adult beetles in large number were observed by 3rd week of August (80 to 100 per sweep) which scrapped the chlorophyll of the leaves causing white parallel stripes. The adult population reduced to 7 to 10 per sweep in first week of September but the damage by the grubs continued in the field. Insecticides monocrotophos (500 g a.i./ha), profenphos (250 g a.i./ha), chlothianidin (10 g a.i./ha), bifenthrin (50 g a.i./ha) and botanicals like neem oil (0.3%) and water pepper plant extract (5%) proved effective in controlling the hispa population.

Crop diversification options for better income in coastal saline ecosystem

ON-FARM studies conducted for two years revealed that watermelon, chilli, pumpkin and sunflower to be most promising crops under medium and high saline conditions. Lady's finger was suitable and the most remunerative under medium salinity condition. Sunflower and chilli gave consistently better yields across the locations and were preferred by the farmers due to their better prospects for local consumption and storage for longer duration. Introduction of these crops in the dry season in rice-fallows would greatly enhance land and water productivity, cropping intensity and farmers income in coastal saline ecosystem.

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Spread of CRRI varieties in different states of India

THE coverage of CRRI varieties in the states of Orissa and West Bengal were assessed. It was found that the CRRI varieties are grown to the extent of 5.47 lakh ha in Orissa. The prominent varieties with maximum area coverage during *Kharif* season are CR-1009, CR-1018, Pooja, Moti, Tapaswini, CR-1030, Kalinga-III and Padmini. The varieties with smaller area under cultivation are Durga, Sarala, CR-1014, Tulasi, Radhi, Annada, Lunishree, Heera and Sonamani.

In West Bengal, CRRI varieties were grown to the extent of 10.1 lakh ha during *Kharif* and 5.74 lakh ha during *Rabi/Summer* season. The important CRRI varieties covering maximum area during *Kharif* are Shatabdi, Khitish, CR-1009, CR-1018, Ratna, Annada, CR-1017, Tulasi, CR-1030, and Tapaswini. The important CRRI varieties for *Rabi/Summer* season are Shatabdi, Khitish, Ratna and Annada.

Probability of monsoon aberrations in North-eastern coastal plain of Orissa

THE 25 years (1980–2004) daily rainfall data of Balasore ($23^{\circ} 59'$ N latitude and $86^{\circ} 16'$ E longitude) located in the 'North-eastern Coastal Plain' agro-climatic zone of Orissa were critically examined for establishing the long term averages of monthly rainfall during the monsoon season and its temporal variability by deploying appropriate statistical techniques. The normal rainfall during monsoon season (June–October) at Balasore was 1315 mm. The monthly average rainfall increased from 281 mm in June to 317 mm in August which declined to 252 mm in September and 161 mm in October with a unimodal distribution pattern contributing 21.3, 23.1, 24.1, 19.2 and 12.3% during June to October, respectively. The variabilities in normal rainfall during crucial months of June (47%) and October (80%) were relatively higher than the remaining monsoon months.

The rain due to south-west monsoon normally starts on 23rd standard meteorological week (SMW) and ceases on 41st SMW. The coefficient of variability of mean weekly rainfall revealed that the period of 25th – 37th SMW was considered to be the stable rainfall period. The probabilities of both the normal onset and withdrawal of monsoon rain were same i.e., 48%. The probabilities of aberrations in seasonal amount of rainfall was 65% with higher proportion of below normal (39%) than its above normal rainfall (26%) during June to October. At 25% and 50% probabilities, the stable quantum of rainfall was observed during 23rd–41st and

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25th-37th SMW, respectively. The conditional probabilities of receiving 10, 15 and 20 mm mean weekly rainfall exceeded 75% from 23rd-37th, 24th-37th and 25th-36th SMW, respectively.

KVK activities

Training programme organised

Six training programmes were conducted on 'Organic farming', 'Rice production technology', 'Package and practices of hybrid rice cultivation', 'Intercropping method of rice/groundnut/green gram with pigeon pea', 'Insect and disease management of rice' and 'Integrated pest management of vegetable crops' during July and August, 2006 in six adopted villages of KVK viz, Satyabhamapur, Jhadeswarpur, Mahanga, Arada, Sighmapur and Berhampur. In total, 302 farmers were benefited by these training programmes.

Besides, one training programme was also conducted by KVK, Cuttack on 'Rural health and vitamin A deficiency' for in-service extension personnel. Fifty Anganwadi workers and supervisors under CDPO, Tangi participated in this programme.



Front line demonstrations conducted

FLDs on oilseed (Groundnut variety TMV-2) and Pulse crop (Arhar variety UPAS 120) were conducted in 5 ha each by 13 and 17 farmers respectively. Both the crops are in flowering stage. Prof. M.P. Pandey, Director, village

FLDs on high yielding rice varieties Pooja, Gayatri, Naveen, Varshadhan, Padmini, Ketekijoha, Sarala, Durga, Savitri, Geetanjali and Anjali were conducted by 150 farmers on 27.3 ha in KVK adopted villages.

FLD on 'Paddy straw mushroom' was conducted by 150 farm women in KVK adopted villages. The average yield was 2.00 kg per bed (6.25 sq.ft.)



KVK Training programme on 'IPM in Paddy' at Pallisahi, Mahanga.



Prof. M.P. Pandey, Director, CRRI visiting the FLD plots in village Bhairupur.

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RRI visiting the FLD plots in
airpur.

On farm testing

Tissue culture banana suckers of var. Patkapura, Champa, Grand - 9, Robusta and Bantala were given to 20 progressive farmers of KVK adopted villages – Arada, Sighmapur and Satyabhampur.

Integrated Nutrient management in Kharifrice has been conducted at two locations in Bhairpur and Jhadeswarpur village.

Awards conferred

DR. A. Ghosh, Senior Scientist (Agronomy), Crop Production Division has been conferred with IRRN Best Article Award, 2006 by IRRI, Philippines in Crop Management category for his contribution of a research article on 'Improved agro-management practices in deepwater rice'. The study reveals that improved variety and improved crop management are considered as the major contributors to enhance grain yield of deep water rice. From the study, it was observed that the relative contribution of improved variety to grain yield gave 59 per cent yield increase with improved crop management as compared to traditional practice of using local variety. On the other hand, the improved crop management increased the grain yield by 41 per cent with improved variety as compared to traditional crop management. Net income and cost - benefit ratio were found to be higher with improved production technology as compared with those with traditional management practices.

Seminars organized

DR. S.K. Mohanty, Principal Scientist and Incharge Head, Plant Pathology delivered a lecture on 'Negotiating strategies in work environment for scientists' on 11 July, 2006.

Symposium/Conferences/Workshops/ Trainings Attended

DR.P.K.Sinha attended a meeting on M. S. Swaminathan Foundation on 'Farmers livelihood' at Birsa Agricultural University, Ranchi on 13 July, 2006.

Dr. M. Variar attended the meeting on 'Task force from increasing rice production in Jharkhand' conducted by Govt. of Jharkhand at Nepal House, Ranchi on 7 August, 2006. He also attended the workshop on 'Differential system for blast resistance of stable rice production environment' at IRRI, Phillipines during 28-30 August, 2006 and presented a paper on 'Pathogenic variation in *M. grisea* and breeding for blast resistance in India'.

Dr.S.K.Rautaray attended one day awareness workshop on NAIP organized by Assam Agricultural University, Jorhat, Assam on 2 September, 2006.

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Je t'explique que je suis une personne normale et que je n'ai rien de spécial à dire. Je suis juste une personne qui a eu une expérience unique et je veux partager cela avec les autres.

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Dr.Rupankar Bhagawati attended the training programme on 'Advanced techniques in plant disease diagnosis and management' at Centre of Advanced Studies in Plant Pathology Division, IARI New Delhi from 5-25 September, 2006.

Dr. T.K. Adhya delivered the IXth Prof. A.K. Chandra Memorial lecture, 2006 entitled “Harnessing microbes for environmental pristinity” at the Department of Botany, University, Calcutta, West Bengal on 8 September, 2006. He also attended the Executive Council meeting of the National Academy of Agricultural Sciences, New Delhi on 16 September, 2006.

Dr. Sanjoy Saha attended the Annual *rabi/summer* groundnut researchers group meeting at National Research Centre for Groundnut (NRCG), Junagadh, Gujarat during 18-20 September, 2006.

Dr.R.K.Singh participated in the National Conference at IGAU, Raipur on 21 September, 2006 and presented a paper on 'Water harvesting and rural employment: Examples in Hazaribagh, Jharkhand'.

Drs. M.P. Pandey, R.N. Dash, O.N. Singh, Amal Ghosh and P. Samal attended a Planning cum Inception meeting of the ADB funded project on 'Developing and Disseminating water-saving rice technologies in South Asia' and Workshop on 'Soil and root health issues in water saving rice systems' at IRRI, Philippines from 25-27 September, 2006.

Shri D. S. Meena, Technical Officer (T-6) attended a refresher course on 'Research management' at Directorate of Human Resource Management, CCSHAU, Hisar from 28 September to 18 October, 2006.

Visitors

A total of 365 visitors comprising 238 farmers and farm women, 34 Agricultural Extension Officers, 86 Students and 7 entrepreneurs visited the institute during the period. They were taken around various experimental plots, demonstrations, implement workshops, net houses and Display Hall of the institute.

Dr. T. Ram, Senior Scientist Plant breeding and Dr. S.P. Singh, Principal Scientist, Agronomy, DRR Hyderabad visited CRURRS, Hazaribag on 14 September, 2006 on monitoring tour to see the DRR trial. Scientists from BAU, Ranchi also accompanied with them.

Appointments

DR. G. N. Mishra joined as Principal Scientist (Agronomy) and took over the charge of Officer -

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Exercitii

in-charge CRURRS, Hazaribag on 6 September, 2006 after completion of his deputation from the post of Additional Commissioner, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India.

Retirements

Dr. M. Nagaraju, Principal Scientist, Crop improvement Division superannuated on 31 July, 2006. The staff of the institute wish him a happy and peaceful retired life.



Farewell to Dr M. Nagaraju on his superannuation.

Necrology

SHRI Hadibandhu Lenka, T-4 and Smt. Saraswati Behera, SS Gr.II expired on 8 July 2006 and 2 August 2006, respectively. On their sad and untimely demise, the staff of CRRI paid tribute to the departed souls.

Obituaries

Dr. B. E. XEME[®] VEVU VEVEEXE Eo, 10EB =ZEBEXE JE, EEME ENKEE Eo 31 VEELE<ç 2006 Eda oEEEXE ERÉ ½B* OEEEXE Eo Eo E\$EE[®] EEEAxEB Eo JEØ B EAEKIE EAE EEEEXE ENE VEOEXE Eo EB Eo EXEEO*

Obituary

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