DRR

Directorate of Rice Research

NEWSLETTER

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From Director's Desk....

Greetings!

The *kharif* season started with a lull in the monsoon but soon the farm activities quickened with most of them completing plantings with some delay in the sowing timings. We have also received information on the fury of monsoon in the northern India and drought and delay in other parts of the country. DRR scientists visited the drought affected villages of Telangana and Andhra Pradesh to assess the drought situation and also suggested the contingency measures to the farmers. We also celebrated the ICAR foundation day on 16th July at our institute and we had a relook at the Basic and strategic research options in rice. Despite expected lower domestic production of rice in view of poor rains, overall sale of rice in the international market is expected to improve with the contribution of Basmati rice which continued to grow by 5-6 per cent this year.

DRR entered a transient phase with the superannuation of two former Directors within a short span of three months. However, with unique blend of experiences, wisdom and youthful energy, the institute is making all time efforts to take forward the earlier laurels to greater heights. In this endeavour many farmers' outreach programmes were initiated this *kharif* season viz., technology spread to tribal farmers through Tribal Sub Plan, DRR-CSIR programme on "Blight out" to tackle BLB through popularisation of Improved samba Mahsuri and popularisation of water saving technologies like direct seeding and AWD pipes.

This issue contains details of the various training programs organized by DRR catering to the basic needs of human resource development and also dissemination of knowledge. The framework for the Golden jubilee celebrations has been initiated and pace is set for taking up activities in framed and phased manner.

We are into the third issue of the 12th volume of DRR Newsletter and I request the rice fraternity to participate by giving their inputs for the DRR Newsletter and help in the dissemination of Rice NEWS far and wide.

(V.Ravindra Babu)

IN THIS ISSUE

General Article

Awareness Campaigns for tackling Parthenium menace

B. Sreedevi, B. Nirmala, Amtul Waris & L.V. Subba Rao

Directorate of Rice Research, Hyderabad

Technology dissemination through 'Awareness Campaigns' is very important in Agriculture. Weeds are relatively more problematic than insects and diseases. Weed menace is a biological constraint which affects quality and quantity of farmer's produce.

Congress weed, *Parthenium hysterophorus* (Syn. Carrot grass, Chandu chatak) (Family: Asteraceae) is an annual photo and thermo – insensitive plant, native of America. It was introduced in India in 1950's through Wheat Consignment and first noticed in Pune and spread all over the country in no time. The plant grows up to 90 cm height flowering and seed set throughout the growing period and 5000 to 100000 seeds are set per plant. It can germinate, grow, mature and set seed in as short as one month. It is also noxious weed and causes allergic dermatitis and allergic bronchitis in both humans and animals. In new and neglected areas, it spreads by leaps and bounds.

'Parthenium Awareness Campaigns' were organized by a team of DRR scientists in TSP areas. As part of the DRR-TSP activities in Nalgonda district, 'Parthenium Awareness Campaign' was organized in Acchammakunta tanda of Nalgonda district on 06/09/2014 and under TSP-NSP in Khammam and Rangareddy districts the campaigns were organized on 09/09/2014 and 12/09/2014, respectively. In order to create awareness about the harmful effects of Parthenium and control methods, the people in the thandas were sensitized on the harmful effects of this notorious weed through lectures and video shows. A Campaign was organised to demonstrate spraying of chemical on field bunds and surrounding areas to control parthenium. Live samples of *Cassia tora, Tephrosea purpurea,* Amaranthus, Tagetus spp with reported allelopathic effect on parthenium were shown to people. Exploitation of the biological control agent, mexican beetle *Zygogramma bicolorata* which is naturally infesting the parthenium in these areas was discussed and demonstrated. The farmers were also motivated prepare compost from the uprooted parthenium plants.

Center Profile

Rice Breeding & Genetics Research Centre (IARI), Aduthurai – A unique shuttle breeding center for rice

Rice Breeding and Genetics Research Centre (RBGRC) of Indian Agricultural Research Institute (IARI) is located inside the campus of Tamil Nadu Rice Research Institute under Tamil Nadu Agricultural University at Aduthurai. Located in the Cauvery delta zone of Thanjavur district, Tamil Nadu lying between 11°00' N and 79° 28'E at 19.5m above mean sea level, the Centre enjoys weather conditions that favor rice cultivation throughout the year. Established in 1968 by Dr. M. S. Swaminathan, then Director of IARI to facilitate accelerated rice breeding programme of the institute, the Centre offered a rapid generation advancement 'off-season' shuttle platform for the breeding materials developed at New Delhi. Besides, long-duration photosensitive rice varieties that do not flower at New Delhi conditions could be grown easily at Aduthurai. Although in the initial years, the Centre was functional as a breeding material shuttle system between IARI and Rice Research Station at Aduthurai, a permanent rice breeding center was established during 1981 under the Division of Genetics - a move that recognized the tangible role of shuttle breeding program in the years to come. The Centre is now equipped with laboratories for rice grain quality analysis and molecular breeding and works towards development of thermo-sensitive male sterility based rice hybrids and nutrient efficient rice varieties. It has a unique opportunity of being served by several eminent rice scientists of the country including two Padma Shree awardees, Dr EA Siddiq and Dr VP Singh.

Activities

The RBGRC is mainly engaged in the rice breeding programme of IARI targeting both Basmati and non-Basmati rice improvement and it maintains a collection of about 1500 rice germplasm for crop improvement activities. The Centre carries out all breeding activities except for the quality selection for exclusive Basmati traits which is done at New Delhi. Hybridizations to the tune of about 1050 crosses every year are made at RBGRC, which was otherwise not possible at New Delhi conditions. Several thousands of breeding lines spread across different generations have been handled over the years at this Centre leading to development of many varieties. Since establishment, the breeding materials shuttled between New Delhi and Aduthurai have gradually increased over the years, indicating active involvement of this Centre in the rice breeding programme of IARI. Besides varietal development, constant efforts on hybrid development are done here. Use of both cytoplasmic male sterility (CMS) and temperature sensitive genic male sterility (TGMS) systems are employed in these processes. Activities include making test evaluations of hybrid crosses, male sterile line development, maintenance breeding and grow-out tests.

Achievements

It is playing a catalytic role in the rice breeding programme of IARI, and the development of all the IARI rice varieties have been shuttle routed through it. Pusa rice varieties have shown exceptionally good adaptability and climate resilience throughout the rice grown regions of India. This is the reason for the wide spread adoption of IARI rice varieties by the farmers. Through this Centre, IARI has so far developed and released 28 rice varieties that include 9 Basmati, 7 aromatic, 12 non-aromatic rice varieties and one aromatic rice hybrid. The most significant among these are the world's first semi-dwarf basmati rice variety - Pusa Basmati 1, the world's first aromatic rice hybrid - Pusa RH 10, the first Indian rice variety improved through marker assisted selection - Improved Pusa Basmati 1, rice variety with world's longest cooked kernel - Pusa Basmati 1121 and the short duration basmati rice variety - Pusa Basmati 1509. Currently, the Centre is holding a cardinal position in the rice breeding at IARI, which has transformed Indian Basmati rice exports.

Research Articles

A new initiative to identify novel mutants from a mutazenized population of Samba Mahsuri

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A. Yugander, B. Suresh,G.S. Laha, A.P. PadmaKumari, R.M. Sundaram , L.V. Subba Rao,
R.V. Sonti*, M.R. Vishnupriya*,B. C. Viraktamath and M.S. Madhav
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Samba Mahsuri (BPT 5204) is a high-yielding, medium slender grain-type variety, highly popular in South and Eastern India. However, it is highly susceptible to many biotic stresses and exhibits incomplete panicle emergence under certain environmental conditions. The biotic constraints like ShB (Sheath blight) and YSB (Yellow stem borer) are very important, as host plant resistance cannot be exploited due to its unavailability in the rice gene pool. To obtain novel/new resistant/ tolerant sources to BB (Bacteria blight), ShB and YSB in the background of Samba Mahsuri, we are adopting the novel methodology of mutation breeding, under a research project funded by CSIR called "PLOMICS: Enhancing scope of marker assisted selection in Rice". The objective of this project is to devise strategies to increase the extent of variations in the gene pool of rice, identify the novel variants and tag the variation with molecular markers such that MAS methodologies which can be used effectively for improving traits like ShB, YSB and BB resistance. Creating mutations is the novel way of inducing genetic variability in the plant population, which gives researchers scope to identify novel variants.

Ten thousand and five hundred BPT-5204 grains were mutagenised with an alkylating chemical mutagen, EMS (Ethyl Methane Sulfonate) using 0.8% and 1.2% concentrations. The M_1 plants were protected from out-crossing and individual M_1 plants were harvested to obtain the M_2 seeds. Till date, out of 2500 lines that were evaluated against BB and ShBl, 221 plants against BB and 602 plants against ShBl exhibited resistant reaction (score < 5). Of the 3500 M_2 lines that were screened for against YSB (*Scirpophaga incertulas*) by supplementing the natural infestation by release of neonate larvae and egg masses 239 single plants were selected with nil damage. Further confirmation of resistance/tolerance of the selected plants is under progress.

Among the M_2 population, the plants with different phenotypes like dwarf, upper internodal elongation, strong culm, complete panicle emergence, different grain types and high grain number, long panicle and high yielding plants were observed, tagged and harvested individually. The seeds of these plants were forwarded as M_3 lines, for reconfirmation in *Rabi*-2014. We are aiming to characterize, tagging of the selected mutant plants which are resistant/ tolerant to BB, ShB and YSB as well as for other important traits and these lines will be used as unique donors for the corresponding traits they contribute. Simultaneously we advanced these 10500 M_2 mutant lines to M_3 in *Kharif*-2013 for maintenance and further characterization.

Fig.-1: : Represents Mutant lines (M_2) grown at in DRR farm at ICRISAT for screening

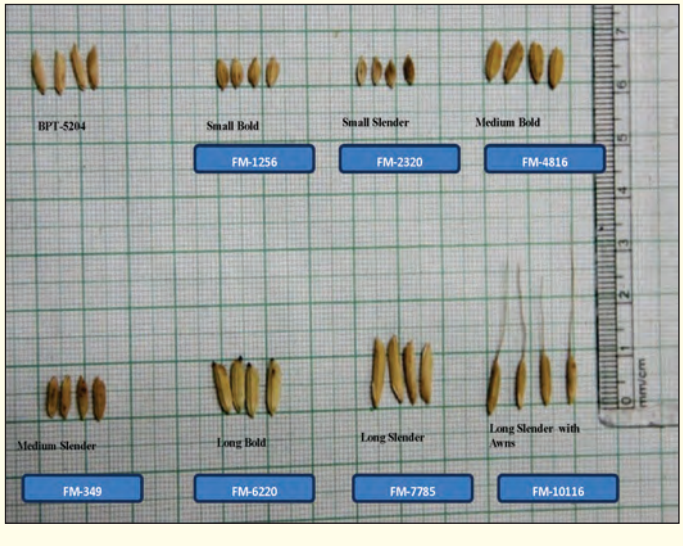

Fig.-2: : Different type of grains observed in mutant lines other than BPT 5204

North - east rice germplasm lines resistant to rice planthoppers

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Rice plant hoppers (PH) *viz.,* brown plant hopper (BPH), *Nilaparvata lugens* and white backed plant hopper (WBPH) *Sogatella furcifera* are the most important insect pests of rice in India. The nymphs and adults of these plant hoppers stay at the base of the rice plant and suck the sap from the vascular bundles. This results in the yellowing, drying and ultimately death of the rice plant. This damage is called hopper burn and in severe cases of infestation, the plants in the field die in circular patches and 100% yield loss occurs. In addition to direct damage, these plant hoppers transmit the viral diseases like grassy stunt, ragged stunt, Southern Rice Black Streak Dwarf Virus (SRBSDV). Host plant resistance is one of the important management options available to effectively control the plant hoppers. The necessity to identify suitable new donors resistant to PH from different sources of diverse origin is of utmost importance in order to combat the pest and develop resistant material. Two hundred and sixty seven rice germplasm lines collected from various unexplored parts of Manipur and Nagaland were mass screened for their reaction to BPH and WBPH in the DRR greenhouse under artificial infestation conditions through standard seed box screening test on 0-9 scale. Of the 267 germplasm lines screened, 3 lines were resistant and 8 were moderately resistant to BPH, while 1 was highly, 5 were resistant and 6 were moderately resistant to WBPH. Two germplasm lines namely Ratkara and Kushal were identified as resistant to both BPH and WBPH. The lines which are found resistant to the plant hoppers can serve as the new resistant donors and can be used in the breeding programme for plant hopper resistance. Identification of new resistance genes is one of the most reliable strategies by rotating varieties having different major genes conferring BPH resistance. Further investigations to ascertain novelty of resistant genes in the germplasm lines and mechanisms of resistance to plant hoppers are required in order to use them in breeding programmes.

Reaction of North east germplasm lines to rice plant hoppers, BPH and WBPH

BPH			WBPH		
Germplasm Name	Damage Score	Reaction	Germplasm Name	Damage Score	Reaction
Bhobu Kangbu	1.1	R	Ratkhara	0.8	HR
Kangyouh	2.2	R	Kahangam	1.2	R
Phorel Utlou	2.4	R	Chakhao	1.6	R
Japanphou	3.3	MR	Chingtui Mah	2.1	R
Lephara	3.4	MR	Hasosil Mah	2.3	R
Kushal	3.6	MR	Sanayanbi	3	R
Ratkhara	4.2	MR	Tangsek Kangbu	3.2	MR
Tsungi	4.5	MR	Kushal	3.2	MR
Leikhamumei	4.5	MR	Kbalaispah	3.9	MR
SARS -2	4.7	MR	Remi	4.0	MR
Chingphou	7.9	MR	Khamti	4.2	MR
			Desek Youso	4.2	MR
PTB 33	1.4	R	MO1	1.7	R
TN1	9	S	TN1	9	S

R: Resistant, MR: Moderately Resistant, S: Susceptible

Weed Management in Aerobic Rice

B. Sreedevi, Directorate of Rice Research, Hyderabad

Weeds are one of the severest constraints to aerobic rice production system. The aerobic soil dry-tillage and alternate wetting &drying conditions are conducive to the germination and growth of weeds causing grain yield losses of 50-91%. Weeding must be done in the critical period so that they do not hinder crop growth. The trial was laid out at DRR Research farm. Aerobic rice is subject to much higher weed pressure with a broader weed spectrum than flood-irrigated rice. In tropics, average rice yield losses from weeds is 35%, while in direct seeded aerobic rice, yield penalty is as high as 50-91%. Chemical control, is the most effective, economic and practical way of weed management. In China, aerobic rice cultivation is completely dependent on herbicides. With this background, a study was conducted in *Kharif* 2012 and 2013. Mechanical weeding at 15, 35 and 55 DAS and different chemical herbicides viz.,(Pendimethalin (30EC) @1.0 kg a.i/ha (within3-4 DAS) + Bispyribac sodium (10%SC) @ 35 g a.i /ha (15-20DAS), Pendimethalin (30EC) @ 1.0 kg a.i /ha (within3-4 DAS)+ 2,4 D, Na-salt (80WP) @ 0.06 kg a.i /ha (20-25 DAS), Pendimethalin (30EC) @ 1.0 kg. a.i /ha (within3-4 DAS)+ Ethoxysulfuron (15WSG) @ 15 g a.i/ha (25-30 DAS), Pendimethalin (30EC) @ 1.0 kg a.i /ha (within3-4 DAS)+ (Chorimuron + Metsulfuronmethyl) (20 WP) @ 40 g. a.i/ha (25-30DAS), Butachlor (50 EC) @ 1.5 kg a.i /ha (3-4 DAS) + Bispyribac sodium (10% SC) @ 35 g a.i/ha (15-20 DAS), Butachlor (50 EC) @1.5 kg a.i/ha (3-4 DAS) + 2,4-D, Na-salt (80 WP) @ 0.06 kg a.i/ha (20-25 DAS), Butachlor (50 EC) @1.5 kg a.i /ha (3-4 DAS)+ Ethoxysulfuron (15 WSG) @ 15 g a.i/ha (25-30 DAS), Butachlor (50 EC) @ 1.5 kg a.i/ha (3-4 DAS) + (Chorimuron + Metsulfuronmethyl) (20 WP) @ 40 g a.i/ha (25-30 DAS) were tested against need based hand weeding and unweeded control) in Randomized Block Design with three replications.

The study identified mechanical weeding, sequential herbicide application as alternatives to manual weeding. Mechanical weeding using push weeder three times or sequential application of Pendimethalin @ 1 kg a.i./ha at 3-4 DAS fb Bispyribacsodium 35 g at 2-4 leaf stage of weeds or Chlorimuron + Metsulfuronmethyl 40 g at 25-30 DAS) are promising with higher Weed Control Efficiency and Weed Index in controlling the weed flora and helpful in realizing higher grain yields and in closer comparison to need based hand weeding.

Influence of weed management treatments on weeds & rice

Treatment	Grain Yield (t/ha)	Weed dry weight (g/m^2)	Weed Index	Weed Control Efficiency
Pendimethalin fb 2,4 D,Na salt (20 –25 DAS)	4.86	37.89	12.12	65.33
Pendimethalin(3-4DAS)fb Bispyribacsodium	5.27	29.73	4.70	72.80
Pendimethalin 3-4 DAS + residue mulching @ 5 t/ha	4.34	38.5	21.52	64.78
Pendimethelin 3-4 DAS+ (Chorimuron + Metsulfuronmethyl) 25-30 DAS	4.75	32.86	14.10	69.94
Butachlor 3-4 DAS fb 2, 4-D, Na salt 20–25 DAS	4.58	47.93	17.18	56.15
Butachlor 3-4 DAS fb Bispyribacsodium 15-20 DAS	5.06	27.12	8.50	75.19
Butachlor 3-4 DAS +residue mulching @ 5 t/ha	4.11	48.21	25.68	55.89
Butachlor (3-4 DAS) + (Chorimuron + Metsulfuronmethyl) (25-30 DAS)	4.73	37.43	14.47	65.75
Mechanical weeding using push weeder at 15, 35 & 55 DAS	5.14	32.19	7.05	70.55
Need based hand weeding (3 times at 15, 35 and 55 DAS)	5.53	20.53	-	81.22
Un weeded	2.89	109.3	47.74	-
C.D. (0.05)	0.28	4.89	NA	
C.V (%)	11.35	10.64		

Soil Quality Testing Kit

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Soil testing is key to balanced fertilization and plant nutrition. Rapid soil testing kits are similar to the clinical testing and diagnosis in medicine. The rice soil quality kit developed by DRR is useful for carrying out soil testing in neutral to alkaline soils and will particularly address the problem of non availability of quality soil testing equipments or laboratories across districts and villages. Further aim of the kit is to simplify the soil chemical analysis for ready use by the less skilled personals in the rural areas. The kit provides rapid testing techniques for soil physical, chemical and biological parameters. Clearly defined and contrasting visual color matching system has been developed which sometimes distinguishes from ppm level in case of available ammonium status to as high as 50 kg/ha range in case of available potassium status testing. The basic principle of extraction and estimation has not been undermined and most of the soil available nutrient status estimation involves the principle of reagent systems and extraction procedures based on the respective extraction. Colorimetric test methods are used for most test factors. The Soil quality testing kit offers simplified methods for determination of available nutrients from soils and is rapid, fairly accurate chemical tests. With the present kit user can perform as many samples as he wishes for soil physical characteristics but for all soil chemical, fertility and biological tests about 30-40 samples can be performed. A farmer can generate his own soil health card also after analysing his sample. After exhaustion of the chemicals they can easily take it from Soil Science Section of DRR, Hyderabad. The most important feature of the kit is that even a farmer and a less skilled/educated person will be easily carrying out such testing.

The ease in operation and portability to far flung areas/villages coupled with the kit requiring no electricity/power to operate, will be immensely beneficial to the small, marginal, poor farmers and other resource poor stake holder of the region as it will bring soil health assessment to the plot or farmer level.

Trends in Economic Cost of Rice in India

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The Indian government procures rice with the broad objectives of ensuring Minimum Support Price (MSP) to the farmers and also to ensure availability of rice at an affordable price to weaker sections of the society. It also plays an important role in effective market intervention to keep the price under check. The price support is extended to paddy through Food Corporation of India (FCI) and state agencies. In the process of procurement of rice from farmers, FCI incurs Economic cost. The main components of Economic cost of rice include 'Acquisition cost' and 'Distribution cost'. Acquisition cost includes 'Pooled cost of grain' and 'Procurement incidentals'. Pooled cost of grain includes Minimum Support Price (MSP) and Bonuses. Procurement incidentals include statutory charges, labour and transport, storage and interest to state, administration charges of state governments and previous year's adjustments. It can be observed from Table No. 1 that there has been a sharp increase in economic cost incurred by FCI over the years. The economic cost of rice has increased from Rs. 1098 per quintal in 2001-02 to Rs. 2756 per quintal in 2014-15, an increase of 151 % during 2001-02 to 2014-15. Pooled cost of grain increased by two times, whereas procurement incidentals increased by seven times and distribution costs increased by about three times during 2001-02 to 2014-15. Procurement incidentals increased more than the distribution costs. An increase in economic costs will create a pressure on food subsidy bill. Hence, there is a need to evolve appropriate policies for procurement and distribution of food grains and creation of scientific storage facilities to reduce procurement incidentals and distribution costs which in turn results in reduction in economic costs.

Table No.1 Economic Cost of Rice (Rs./Qtl)

Year	Pooled cost of grain (A)	Procurement incidentals (B)	Acquisition costs C=(A+B)	Distribution cost D	Economic Cost C+D
2001-02	912	67	978	120	1098
2002-03	946.0	62	1007	158	1165
2003-04	991	31	1022	215	1236
2004-05	989	58	1047	257	1304
2005-06	1028	39	106732	272	1340
2006-07	908	194	1102	290	1391
2007-08	1037	215	1252	298	1550
2008-09	1233	227	1460	281	1741
2009-10	1347	289	1635	185	1820
2010-11	1447	313	1760	223	1983
2011-12	1512	350	1862	261	2123
2012-13	1634	384	2018	287	2305
2013-14	1805	465	2270	378	2649
2014-15	1935	475	2410	346	2756

Source: Food Corporation of India (FCI) 2014

Panorama of Institutional Activities

ICAR Foundation day celebrations

DRR celebrated "ICAR Foundation day" on July 16th, 2014. Dr.S.M.Virmani, Advisor, Indian Resources Information & Management Technologies Ltd. was the Chief Guest of the celebrations and he delivered a lecture on "Role of basic and strategic research in transforming Indian agriculture". Prof. E. A. Siddiq, Hon. Chair Professor, Institute of Biotechnology and Dr. B. C. Viraktamath, former Project Director, DRR, were the special guests. Dr.K. S. Varaprasad, Director, DOR and Dr R. Kalpana Sastry, Joint Director, NAARM also graced the function.

ADG (Seeds), ICAR visited

Dr J S Chauhan, ADG (Seeds), ICAR, New Delhi, visited our institute and Experimental farm on September 20, 2014 and interacted with the scientists about their research activities.

SRI training programme

A Model Training Course on "Innovative System of Rice Intensification" sponsored by the Directorate of Extension (DOE), New Delhi was organized during July 16-23, 2014. About 19 participants from 12 states attended this training programme. The main objective of this programme is to impart knowledge and skills about SRI techniques for enhancing rice production and to identify field problems associated with SRI method of cultivation. The participants also prepared the location–specific action plan for promotion and adoption of SRI in their respective states.

ICAR sponsored short training course on Soil Health Management

ICAR sponsored short course training programme on Soil Health Management Techniques in Rice and Rice based Cropping Systems was organized during August 19-28, 2014. Twenty five scientists from various SAUs/ICAR institutes, from 11 states of the country participated in the programme. The participants were trained with latest information and skills on soil quality dynamics and evolving suitable soil health management techniques, through lectures, practical classes followed by discussion, group/ panel discussions, field/laboratory visits and formulation of location specific action plans.

Training on rice seed production

Two off-campus training programs were conducted for TSP farmers of Kamepally mandal of Khammam district under Tribal Sub-Plan of Nation Seed Project (Seed) activities on September 09, 2014 and Maheshwaram Mandal of Rangareddy district under TSP-Mega Seed activities September12, 2014. The objective of the training program was to impart knowledge on seed production practices and improved rice production technologies to tribal farmers. A comprehensive blend of interactive lectures on various technical aspects of seed production and improved rice production technologies were planned under the able guidance of the Project Director (A) Dr. V.Ravindra Babu. The module on technical guidance for seed production prepared by the Nodal Officer, NSP, Seed, Dr.L.V.Subba Rao was elaborated upon to the farmers during these training programmes.

Hindi week celebrated

Directorate Hindi *saptah* celebrated during September 14-20, 2014. In the inaugural function, Dr. V Ravindra Babu, Project Director (A), called on all the scientists and staff of DRR to actively participate in all the functions and try to work and use more and more Hindi as far as possible. An *antakshri* competition was organized on the same day in which almost 40 staff members of DRR took active participation. Many more events like quiz, memory test were organized during the week, with active participation of staff members. Around 30 scientists and staff members were felicitated in the valedictory function and Dr. SR Yadav, Secretary, TOLIC, CRIDA was the chief guest of the function.

Field day on drum seeded rice

Rice Research Centre, Agricultural Research Institute, Rajendranagar, Hyderabad organized a field day on drum seeded rice under ICAR Front Line demonstrations at Agarmiyaguda village, Kandukuru Mandal, Ranga Reddy district on 16-9-2014, to demonstrate the usefulness of technology, its help in reducing the cost of cultivation, dependence on labour and around 100 farmers participated in the event. The field day was attended by Dr V. Ravindra Babu, Project Director (A), DRR (as chief guest); Dr Vishnuvardhan Reddy, ADR, Southern Telangana zone and scientists from ARI, DAATTC, Rajendranagar; State Agricultural Department officers. The farmers shared their experiences on the use of drum seeder and its effectiveness in saving the labour and consequent monitory savings. The technology also facilitated early crop harvesting at least by 10 days, when compared to conventional transplanting.

Winter School on New frontiers in rice breeding

An ICAR sponsored winter school on "New frontiers in rice breeding for improving yield, quality and stress tolerance for sustaining future production" was organized from September 10-30, 2014. The training programme was envisaged to impart knowledge on recent advances in rice improvement and broadly major areas covered are Rice Breeding Research: Current scenario and future prospects ; Evaluation and utilization of rice genetic resources and pre-breeding; Re-designing of rice plant for future food security; Recent advances in breeding for export quality and nutrition; Application of biotechnological tools for rice improvement; Breeding strategies to develop climate resilient varieties tolerant to biotic and abiotic stresses; Recent advances in heterosis breeding and Use of statistical tools in rice breeding. The winter school was attended by 27 participants from 14 states and one union territory. More than 60 theoretical lectures by 32 resource persons from DRR and 17 guest speakers from public and private sectors and about 18 practical (hands-on) exercises and exposure visits to seed production fields, R&D facilities of public and private seed companies including facilities at DRR and IRRI South Asia Hub were organized.

Training on MIS & FMS

To sensitize the staff about the implementation of MIS & FMS at the institute, modular training for working with different modules was organised, with the help of IBM team, to scientific, administrative and finance staff during August 1-2, 2014.

Staff Activities

Staff changes

Dr.V.Ravindra Babu, Principal Scientist & Head, Crop Improvement Section, has taken over as Project Director (A) of DRR w.e.f. 01.09.2014 and we wish him success in all his endeavours.

Visits Abroad

Dr. A.S. Hari Prasad, Principal Scientist, participated as an expert consultant in FAO & APSA organized special meeting on "Hybrid Rice Development in Asia: Assessment of Limitations and Potential" during July 2-3, 2014 at Bangkok, Thailand.

Dr. T. Ram, Principal Scientist & Dr. P. Revathi, Scientist participated in 'Integrated Breeding Multi Year Course (IB-MYC)' during 15-26 September, 2014 in Spain.

Awards/Recognitions

Dr A S Hari Prasad, Principal Scientist, upon successful completion, has been awarded the Post Graduate Diploma in Technology Management in Agriculture (PGD-TMA 2013), by the University of Hyderabad, in a function held at NAARM, Hyderabad on August 07, 2014.

Retirements

Dr.N. Shobha Rani, Head, Crop Improvement section and Project Director (A) retired from ICAR upon her superannuation on 30.8.2014. She made significant contributions in the field of Basmati rice research besides being an active ACRIP worker for many years. She has developed 15 rice varieties and also developed a novel fragrance marker and a PCR marker for kernel length.

Mr. P. Adisesha Rao, Technical Officer (T-5) retired from Council's service on attaining the age of superannuation on 31.07.2014. He rendered an excellent service to the DRR.

All the staff of DRR wishes them and their family members a happy retired life.

Interesting News on Rice

The genome sequence of African rice (*Oryza glaberrima*) and evidence for independent domestication has been reported Population genomics analyses of 20 *O. glaberrima* and 94 *Oryza barthii* accessions support the hypothesis that *O. glaberrima* was domesticated in a single region along the Niger river as opposed to noncentric domestication events across Africa. (For further details refer to: Muhua Wang et al., 2014 in *Nature Genetics* (2014), doi:10.1038/ng.3044.

Forthcoming Events

Farmers' day (*Rythu Sadassu*) on November 15, 2014 at DRR, Hyderabad

Institute Management Committee Meeting on November 21, 2014, at DRR, Hyderabad

BOOK POST

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