



DRR



Directorate of Rice Research Newsletter

Vol. 8 No: 4

RICE IS LIFE

October - 2010

Activities

AICRIP News

Research Notes

Global Rice News

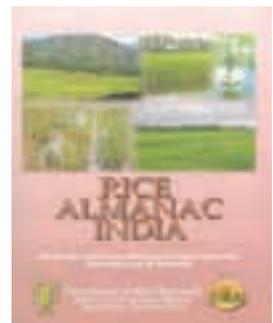
Rice Almanac India

Information on rice at a glance...

The rice related data in the Indian sub-continent is very much scattered and quite vast by any standard because of the varied agro-climatic conditions and the rice growing seasons, almost occupying the entire calendar year. DRR has taken a lead in compiling, synthesizing and adding value to the vast data spread over a period of six decades. This compilation will fulfill the information needs of many stakeholders. This compendium is yet another flagship publication of DRR and fulfilled the long felt need of all those who are interested in rice. The introductory part covers broad areas like countrywide scenario, climate, distribution of rice soils in different agro-climatic regions of the country, agro-ecological regions of India, significance of agriculture in general and rice in particular to Indian economy. Information on area, production and productivity of rice in comparison with other food crops in India, trends of rice production and productivity since 1950-51 to 2006-07, area coverage under high yielding varieties in different plan periods, global rice scenario in the last 50 years *vis-a-vis* comparison of area, production and productivity of India with top ten rice producing countries has been provided. This introductory chapter also includes information on problem soils, state-wise fertilizer consumption, farm infrastructural facilities (like power availability, tractors and other machineries). Details on AICRIP centres in India, rice varieties released over a period of time, status of hybrid rice, rice biotechnology and breeder seed production, districts producing quality seed all over the country has been provided. In addition, information on losses due to insect pests and diseases, status of rice milling in India, minimum support price for rice, state wise procurement of rice, rice exports from India, rice bran oil and major by-products and the indigenous knowledge related to rice cultivation are part of this useful compendium.

In next section, rice production status of all the states and union territories of India are presented through tables, charts, productivity maps and graphs. The broad areas under which the information is presented are general particulars of the state like formation, capital, population, total geographical area etc., Then the focus is on geography, climate, agro-ecological zones, soils, importance of agriculture in the state economy, rice area,

production and productivity, rice based cropping systems, other inputs used, major rice growing seasons, rice cultural practices, district wise area under rice, area, yield and percentage of rice area to the total cropped area in the state for the year 2006-07, varietal information, rice production constraints, varieties for special preparation and the rice research network in the state. The 20 appendices added in the Almanac provide wealth of information to the readers on different aspects of rice including major constraints in rice production in the Country. This Almanac will be very useful to the policy makers, administrators, teachers, students and all those concerned with rice research, development and trade. This useful publication has been compiled by Drs. N. Shobha Rani, GSV Prasad, ASR Prasad, B. Sailaja, P. Muthuraman, Shaik N Meera and BC Viraktamath and priced at ₹ 200 per copy.



Model Training course on System of Rice Intensification (SRI)

Developing confidence...

A training program on SRI sponsored by Directorate of Extension, New Delhi was organized during 4th to 11th August, 2010. Twenty five participants representing eleven states participated in the training program. The main aim of this training course was to



develop confidence among the trainees by equipping them with recent advances made in SRI for higher rice productivity with less input such as seed, fertilizers, water and other chemicals.

Hindi Saptaha

Connecting through language...

Hindi week was celebrated from 14th - 20th September, 2010 at DRR in accordance with the official language policy and rules and regulations of Government of India and for promoting use of Hindi in day to day work. Hindi week was inaugurated on 14th September, 2010 by Dr. J.S. Prasad, Principal Scientist & Head,



Crop Protection Section. During this week, various Hindi competitions were organized. These include Hindi Quiz (Shabd Prashnotharee), Antakshari, Abhinay ka sahee shabd pehchanana, Vastu ka naam batana and extempore speech (Tatakshan Bhashan). The valedictory function of Hindi week was organized on 29th September, 2010 under the Chairmanship of Project Director, Dr. B.C. Viraktamath. Professor M. Venkateshwar, English and Foreign Language University (EFLU), Hyderabad graced the occasion as Chief Guest. Winners of different competitions were awarded prizes and certificates. In addition, two books viz., i) Dhan Shabadaawalee (Rice Glossary) and ii) Rice Almanac India, were also released on this occasion. In his address, Prof. Venkateshwar lauded the efforts of the Directorate for encouraging use of Hindi language in scientific writings and congratulated the authors.

MOU signed for commercialization of Hybrid seed

Reaching out to farmers...

DRRH-2 released for commercial cultivation in the states of Haryana, Uttaranchal, West Bengal and Tamilnadu. It matures in 115-116 days. It has yield advantage of 33% over the national check Annada, 22% over the local checks and 24% over the hybrid check Pant Sankar Dhan-1. It possesses long slender grains with a head rice recovery of >60%. It has intermediate amylose (25.5%) and soft gel consistency (70 mm). DRR signed an MOU with Bioseed Research India Private Limited, Hyderabad on 29th September, 2010 for seed production and commercialization of this hybrid.



AICRIP NEWS

'Rice Day' at AICRIP centre, Malan

Rice Wheat Research Centre at Malan organized 'Rice Day' on 29th September, 2010. Dr. S.K. Sharma, Vice Chancellor, Chaudhary Sarwan Kumar (CSK) Himachal Pradesh Krishi Viswavidyalaya, was the chief guest. Over 500 farmers participated in the celebrations. On this occasion, a booklet on "Insect-pests and diseases of rice in Himachal Pradesh" prepared by Dr. Ajai Shrivastava, Entomologist was released and distributed. Farmers were appraised of recent developments in rice research.



Asha (RP 2068-17-3-7) - a new variety for rainfed shallow lowlands of hill zone in Karnataka

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G.S. Varaprasad³ and Ramesh Bhat⁴

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IET 9926 (RP 2068-17-3-7) developed from Swarnadhan / Velluthacheera at Directorate of Rice Research was evaluated in AICRIP during 1985-1986. This entry tested at Ponnampet in 1985 was found blast resistant and ranked top in Blast Resistant Variety Trial. Further, IET 9926 was intensively tested from 1998 to 2008 in the farmers' field and in Frontline Demonstrations under large scale testing in Zone IX of Karnataka. It has recorded yield superiority of 17.74% and 10.46% over Intan and Hemavathi, which are predominantly grown in rainfed shallow lowlands of hill zone. With the flowering duration of 130-135 days it has medium tall plant stature (100-105 cm), non-lodging with very slow leaf senescence. It has short bold grains, good cooking



and eating qualities and is suitable for parboiling, puffing and flaking. It is also tolerant to brown planthopper and whorl maggot. It enjoys good consumer preference for puffing resulting in fetching of higher price over other varieties and thus gained acceptance by the farming community. This variety is a substitute for Intan in Zone IX of Karnataka. It was notified for release by CSC on CSN & RV during 2010.

Morphological Features	
Leaves	Broad purple wash, purple leaf sheath
Grain type	Medium Bold
Apiculus	Dark pink
Agronomic Characters	
Plant height (cm)	100 - 105
Resistance to lodging and shattering	Lodging tolerant and non shattering type
Panicle length (cm)	20 – 22
Days to 50 % flowering (days)	125-130
Maturity duration (days)	160- 165
Maturity group	Late
Leaf senescence	Very slow
Suitability to early or late sown conditions & intercropping situations	Suitable for early sown situation (June)
Quality of grains	
Kernal length	5.51
Kernal breadth	2.47
L/B ratio	2.23
Grain type	SB
Colour of the kernel	White
Volume expansion ratio	4.5
Water uptake (ml)	190
Chalkiness	VOC (Very Occasionally present)
Alkali spreading value	4
Amylose content	21.9
Gel consistency	63
Kernal length after cooking	9.6
Elongation ratio	1.74
Grain and straw yield	
Grain yield	5.5 – 6.0 t ha ⁻¹
Straw yield	6.5 – 9.5 t ha ⁻¹
Special features	Suitable for parboiling, puffing and flaking; Better market with higher price
Existing varieties	Intan, Hemavathi in Zone IX Karnataka
Yield superiority in field condition	17.74 % over Intan 10.46 % over Hemavathi
Suitability	Rainfed shallow low lands of Hill Zone. This variety will become a best substitute for Intan
Released for	Zone IX of Karnataka State

BPH resistance in introgression lines of Swarna / *Oryza nivara* and KMR3/*O. rufipogon*

V. Jhansi Lakshmi, B.P. Mallikarjuna Swamy, K. Kaladhar and N. Sarla

Directorate of Rice Research, Rajendranagar, Hyderabad- 500 030, A.P.

Brown planthopper (BPH), *Nilaparvata lugens* is the most devastating insect pest of rice in India. Both the nymphs and adults of this hopper, suck the sap from the phloem resulting in drying up of the rice plant. In BPH endemic areas, 100% yield loss was reported in Swarna variety during the years of severe pest outbreaks. Three hundred and twenty introgression lines (BC₂F₆) from the crosses Swarna/*O. nivara* IRGC 81848 (S), Swarna/*O. nivara* IRGC 81832 (K) and KMR3/*O. rufipogon* were screened for BPH resistance. The lines were screened in the greenhouse by following standard seed box test on 0-9 scale for three seasons with seeds collected from resistant lines screened in subsequent generations. In the repeated screening in the greenhouse, six introgression lines from Swarna/*O. nivara* were found to be resistant to BPH.

Reaction of introgression lines against BPH at seedling stage

Introgression line	Damage score	Reaction
212 (S)	1.0	R
215 (S)	1.9	R
221 (S)	1.2	R
224 (S)	1.0	R
228 (S)	1.2	R
230 (S)	1.8	R
Swarna	9.0	S
KMR3	8.0	S
PTB33	1.2	R
TN1	9.0	S

R: Resistant S: Susceptible

Swarna/*Oryza nivara* and KMR3/*O. rufipogon* introgression lines tolerant to drought and salinity

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High yielding introgression lines (BC₂F₆) from the crosses Swarna/*O. nivara* IRGC 81848 (S), Swarna/*O. nivara* IRGC 81832 (K) and KMR3/*O. rufipogon* were screened for tolerance to drought and salinity stress. Salinity stress was evaluated under hydroponics and pots, while the drought evaluation was done under direct seeded field conditions at Directorate of Rice Research and in transplanted rainfed conditions at Ramchandrapuram at vegetative and reproductive stages during 2008-2009 and 2009-10 during wet and dry seasons, respectively. Thirty high yielding introgression lines each from

Swarna and KMR3 along with checks (Vandana and N-22) and other germplasm accessions were screened for drought tolerance under field conditions. Plant height, tiller number, SPAD and drought tolerance scores were observed under drought stress conditions at vegetative and reproductive stages. On overall basis, Swarna/*O. nivara* ILs, 3(K), 166(S), 231(K), 3-1(K), 75(S), and KMR3/*O. rufipogon* ILs 13-7, 198, 12-8, 377-1, 377-4 and 501 were found drought tolerant under transplanted condition. Likewise, Swarna/*O. nivara* ILs 3(K), 3-1(K), 166(S), 149(K), 231(K), 66(S), 75(S) and KMR3/*O. rufipogon* ILs 13-7, 50, 50-13 were found drought tolerant under direct seeded conditions.

The ILs tested for drought tolerance were also evaluated for salinity tolerance at germination and seedling stages at various NaCl concentrations (50, 100, 150 and 200mM). Germination percent, root length, shoot length, dry weight, scoring, chlorophyll and proline content were measured in salt stress and non stress conditions. The Swarna ILs 166(S), 248(S), 75(S), and KMR3 ILs 467, 463, 381 and 458 showed 90% germination under salt stress conditions up to 150mM NaCl. The roots of 50-13, 478, 40, 46 and 231(K) were longer than roots of control under 200mM NaCl conditions. The ability for longer root growth under stress is a good indicator of salt tolerance. Under high salinity condition chlorophyll content of 3-1(K), 75(S), 50-13, 381, 463 and 478 showed less degradation as compared to other ILs. These results showed that Swarna/*O. nivara* ILs 166(S), 75(S), 3-1(K) and KMR3/*O. rufipogon* ILs 467, 478, 463, 458, and 50-13 are salt tolerant and can grow under high salinity conditions. In addition, IL458 was unique for its ability to withstand submergence at germination and early seedling stage. The identified drought and salt tolerant elite ILs have been entered in National Saline Alkaline Screening Nursery trial.

Occurrence of Seedling Blight disease, *Sclerotium rolfsii* (sacc.) in paddy mat nursery

Prasanna Kumar, M.K., Sidde Gowda, D.K., Rajanna, M.P., Ramachandra, C and Mahadevu, P.

AICRP (Rice), Zonal Agricultural Research Station, VC-Farm, Mandya - 571405.

Mat or dapog method nursery is essential requirement for mechanical transplanting of paddy which is gaining popularity among farmers due to scarcity of labourers during peak planting period. In the mat nursery, seedlings are raised on a plastic sheet, in a layer of soil FYM mix. It requires less land for nursery (25 sq.mt./acre) and inputs such as fertilizer and water compared to conventional nursery thereby reducing nursery costs up to 50%. Though dry or wet nursery can be raised by this method, dry method is most preferred in Karnataka. In this method nursery can be raised either sowing seeds directly without soaking or pre-germinated seeds. The direct sowing of seeds favours the opportunistic fungal pathogens that grow fast in dry condition and at high temperature.

The seedling blight disease was first observed in the dry nursery bed sown for mechanical transplantation at Zonal Agricultural Research Station, District Agriculture Training Center, VC Farm, Mandya and in farmers field during *kharif* 2010. The disease caused about 50-55% seedling mortality in nurseries. The

seedling beds were affected in irregular patches showing slow growth. Diseased seedlings expressed pale green leaves, dark brown at the base of stem resulting in rotting often to death of the seedling which later dried (Fig.1A). Fluffy white mycelium and small, round, tan sclerotia were present on the soil surface and at the base of affected seedlings up to one cm of the stem from the base (Fig.1B). Blighting was more severe during June-July following warm, cloudy, humid conditions with intermittent rain and high temperature ranging from 30-32°C on the seedlings raised in the mat dry nursery beds which were provided with high quantity of locally available organic manures viz. cowdung, vermicompost etc. The affected seedlings with sclerotia were collected for isolation of pathogen. The sclerotial bodies plated on Potato Dextrose Agar (PDA) showed white mycelia growth after four days with many narrow mycelial strands in the aerial mycelium (Fig. 2A). Sclerotia developed on the colony surface

were nearly spherical measuring 1-2 mm across. Based on morphological characters the fungus was identified as *Sclerotium rolfsii* (Sacc.). Pathogenicity of the fungus was proved on variety Thanu sown in plastic pot with soil-FYM mixture (Fig. 2B). The seedlings after 14 days expressed the symptoms. In an experiment the nursery maintained with optimum moisture level and drenching with mancozeb @ 2 g/liter of water did not show any sign of seedling blight symptoms. However, the study will be continued for further confirmation. The present preliminary studies indicate that the disease may become more serious in mat nursery. Hence, to minimise the disease under dapog (mat) method sown in dry condition it is necessary to maintain saturation level (moisture) after germination and drenching with mancozeb @ 2 g/liter of water five days after sowing for the effective management of the disease in dapog nursery.



Fig.1 (A) Seedling blight in mat nursery



Fig.1 (B) Mycelia and sclerotial bodies on the seedlings



Fig.2 (A) *Sclerotium rolfsii* on PDA medium



Fig.2 (B) Artificial inoculation of the pathogen to paddy (variety Thanu)

INSTITUTIONAL ACTIVITIES

Participation in seminars / workshops / Conferences

- Dr. B.C. Viraktamath, Project Director participated in the workshop on “Bringing green revolution to Eastern India” during 9th - 10th July, 2010. He also participated in ICAR Directors Conference at NASC, New Delhi during 15th - 16th July, 2010.
- Dr. L.V. Subba Rao, Principal Scientist (Breeding) participated in the regional workshop of FAO project on “Establishment of National Information on Sharing Mechanism (NISM) and the Implementation and Monitoring of the Global Plan of Action (GPA) for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (PGRFA)” organized by NBPGR, Hyderabad at NAARM, Hyderabad on 9th July, 2010. He also participated in Annual Review Meeting on ICAR Seed Project (Megaseed) Seed Production in Agricultural Crops held at NASC, New Delhi during 19th - 20th July, 2010.
- Dr. R. Mahender Kumar, Principal Scientist (Agronomy) participated in the “National Seminar on System of Rice Intensification (SRI)” at Sarisa, 24 Paragans (S), West Bengal organized by Natural Resource Management Centre, Kolkata during 11th- 12th July, 2010. He also attended review meeting on SRI cultivation in the chambers of Special Chief Secretary (Agril), Hyderabad on 13th July, 2010.

- Drs. J.S. Bentur, N. Sarla, S.M. Balachandran and C.N. Neeraja participated in Consultation meeting on biotechnology research in ICAR held at New Delhi during 26th - 27th July, 2010.
- Dr. A.S. Hariprasad, Principal Scientist (Hybrid Rice) and Dr. R.M. Sundaram, Senior Scientist (Biotechnology) attended ICAR-Industry Meet 2010 at NASC, New Delhi during 28th - 29th July, 2010.
- Dr. J.S. Bentur, Principal Scientist & Head, Technical Cell attended Inter-Institutional Collaboration Group Meeting of Head of Organizations at NIPHM, Hyderabad on 30th July, 2010.
- Dr. B.C. Viraktamath, Project Director attended a meeting on Hybrid Rice under the chairmanship of DG, ICAR at Krishi Bhawan, New Delhi on 2nd August, 2010.
- Dr. B.C. Viraktamath, Project Director attended a meeting of Researchers of rice under the chairmanship of DG, ICAR at Krishi Bhawan, New Delhi. DDG (Research), IRRI, Philippines also participated in the meeting on 6th August, 2010.
- Dr. B.C. Viraktamath, Project Director attended a meeting of the Task Force for Promotion of Hybrid Rice at DAC, Krishi Bhawan, New Delhi on 11th August, 2010.
- Drs. N. Sarla, Principal Scientist (Biotechnology), S.R. Voleti, Principal Scientist (Physiology) and S.N. Meera, Senior Scientist (Extension) participated in the National Workshop on "Impact of Climate Change on Rural Livelihoods and Poverty Alleviation" at NIRD, Hyderabad during 11th-13th August, 2010.
- Dr. J.S. Bentur, Principal Scientist & Head, PMTC and Dr. R.M. Sundram, Senior Scientist, participated in the ACIP meeting of the DBT network projects at IARI, New Delhi on 20th -21st August, 2010.
- Dr. B.C. Viraktamath, Project Director attended 'Review Committee on Genetic Manipulation (RCGM)' meeting at DBT, New Delhi on 25th August, 2010.
- Dr. J.S. Bentur, Principal Scientist (Entomology) presented the review of progress of research during the first year of the DBT Network Project on Functional Genomics of Rice - Phase II before the Special Taskforce of DBT at New Delhi on 25th August, 2010.
- Dr. B. Sreedevi, Senior Scientist (Agronomy) participated in 49th All India wheat, Barley Research Workers Meet at PAU Ludhiana during 27-30th August, 2010.
- Dr. J.S. Prasad, Principal Scientist & Head, Crop Protection participated in a Workshop on "Approved Uses of Pesticides in Agriculture" at NASC, New Delhi organized by DA&C, MOA, GOI on 30th August, 2010.
- Dr. B.C. Viraktamath, Project Director participated in the 3rd meeting of the Task Force on Hybrid Rice under the Chairmanship of Additional Secretary (AB), DAC at Krishi Bhawan, New Delhi on 3rd September, 2010.
- Dr. B.C. Viraktamath, Project Director attended RAC meeting of CRRRI at Cuttack during 6th -7th September, 2010 and a meeting on Hybrid Rice at OUAT, Bhubaneswar on 8th September, 2010
- Dr. R. Mahender Kumar, Principal Scientist (Agronomy) and Dr. Ch. Padmavathi, Senior Scientist (Entomology) attended Workshop on PME Support for Research and Development Projects in Agriculture at NIRD, Hyderabad during 6th -10th September, 2010.
- Dr. G. Katti, Principal Scientist (Entomology) participated in a meeting of the Chief Editors of Professional Societies organized by National Academy of Agricultural Sciences (NAAS) at New Delhi on 14th September, 2010.
- Dr. B.C. Viraktamath, Project Director attended XX meeting of ICAR Regional Committee-II at Port Blair, Andaman & Nicobar Islands during 14th - 16th September, 2010.
- Dr. B.C. Viraktamath, Project Director monitored aerobic rice trials at UAS, Bangalore on 18th September, 2010 and AICRIP trials at ZARS, Mandya and ARS, Ponnampet, Karnataka during 20th -21st September, 2010.

Trainings attended

- Dr. S. Ravichandran, Senior Scientist (Statistics) attended a Training Program on "SAS" Data Analysis" at NAARM, Hyderabad during 27th June 2nd August, 2010.
- Dr. D. Ladhakshmi, Scientist (Pathology) attended a Short-term training program on "Molecular biology techniques in microbiology" at CFTRI, Mysore during 2nd - 8th August, 2010.
- Dr. Suneetha Kota, Scientist (Breeding) and Dr. Ladhakshmi, Scientist (Pathology) attended a training on "Communication and Presentation Skills for Scientists" at Xavier Institute of Management, Bhubaneswar during 23rd 28th August, 2010.
- Dr. P. Senguttavel, Scientist (Hybrid Rice) attended a training program on "Communication and Presentation Skills for Scientists" at Xavier Institute of Management, Bhubaneswar during 6th -11th September, 2010.
- Dr. G. Padmavathi, Principal Scientist (Breeding), Dr. A.P. Padma Kumari, Sr. Scientist (Entomology), Dr. B. Sreedevi, Sr. Scientist (Agronomy), Dr. Vandana Rai, Sr. Scientist (Biotechnology), Dr. Kemparaju, Scientist (Hybrid Rice), Dr. P.C. Latha, Scientist (Soil Science) attended training program on 'SAS' at NAARM, Hyderabad during 15th 21st September, 2010.
- Dr. Satendra Kumar Mangrauthia, Scientist (Pathology) attended an advanced level training course on "Viral Genomics and Transgenic Development" at Centre for Advanced Faculty Training, Division of Plant Pathology, IARI, New Delhi during 8th -28th September, 2010.

Personalia

Appointments/Retirements/Promotions/Transfers

- Mr. A. Premkumar, PA & JAO (officiating) was relieved from DRR on selection as JAO, DOR, Hyderabad on 13th July, 2010.
- Dr. A.S. Hariprasad, Senior Scientist was selected to the post of Principal Scientist in Genetics on 11th August, 2010.
- Dr. G. Padmavathi, Senior Scientist was selected to the post of Principal Scientist in Plant Breeding on 11th August, 2010.
- Mr. M. Sampath Kumar joined as Scientist in Entomology section on 17th September, 2010.

Awards and Recognition

- Dr. N.G. Hanamaratti, Senior Scientist (Plant Breeding), Agricultural Research Station, Mugad received Jawaharlal Nehru Award for Ph.D thesis on "Identification of QTLs for physiological and productivity traits under drought stress and stability analysis in upland rice". Dr. Hanamaratti identified stable QTLs for photosynthetic rate, transpiration rate and leaf area under drought stress in rice.
- Dr. Satendra Kumar Mangrauthia, Scientist (Biochemistry) Directorate of Rice Research, Hyderabad, received Jawaharlal Nehru Award for Ph.D thesis entitled "Characterization of viral suppressors of RNA silencing and their regulatory role in plant gene expression". He studied the structural and functional genomics of three different viral proteins involved in suppression of RNAi and their regulatory role in inter-viral synergy. These RNAi suppressor protein genes were sequenced and characterized from three agriculturally important viruses; *Papaya ringspot virus*, *Cucumber mosaic virus* and *Papaya leafcurl virus*.



- Dr. Vandna Rai, Senior Scientist, Biotechnology, DRR has been selected for 2010 *Norman E. Borlaug International Agricultural Science and Technology Fellowship Program* of the U.S. Department of Agriculture. The fellowship is for eight weeks during 2010 - 2011. USDA has decided that Drs. Paul (Mike) Hasegawa and David Salt, Purdue University will be the mentors for her proposed work on molecular biology of salt tolerance.

- DRR staff won medals in TT (Men & Women) and Kabaddi in ICAR inter-institutional sports competitions held during 20th to 25th August, 2010 on the occasion of NAARM Foundation Day (1st September, 2010).



Distinguished Visitors

- Dr. Bangali Baboo, National Director, NAIP, New Delhi visited DRR and reviewed on-going NAIP projects on 8th July, 2010.
- Dr. Nandan Kumar along with 32 Scientists from ICAR headquarters, IARI, IASRI, DSR visited DRR on 16th July, 2010.
- Dr. S. Somasundaram, Professor & Head, Department of Social Sciences, Killikulam, Tamilnadu visited DRR on 3rd August, 2010.
- ARS probationers (44) of 90th batch of FOCARS from NAARM, Hyderabad visited DRR on 5th August, 2010.
- Dr. K. Rajendran from Department of Biotechnology, Periyar Manianmani University, Vallam, Tamilnadu visited DRR on 13th August, 2010.
- Dr. V. Markandiya and 24 IPM - Rice trainees from NIPHM visited DRR on 13th August, 2010.
- Dr. T. Takabe from Meijo University, Nagaya, Japan delivered a seminar on "Metabolic engineering of osmo-protectant glycine betane in plant" on 9th September, 2010.
- Dr. E. Kolailedevi from CPMB, TNAU, Coimbatore visited DRR on 13th September 2010.
- Dr. V. Balasubramani from Department of Plant Molecular Biology and Biotechnology, CPMB, TNAU, Coimbatore visited DRR on 14th September 2010.
- Dr. R.S. Prasad and a group of 39 scientists from Krishi Bhawan, ICAR headquarters and institutes visited on 20th September 2010.
- B.Sc (Ag.) students from Agricultural Colleges of Coimbatore and Killikulam, TNAU visited DRR in September 2010.

GLOBAL RICE NEWS

"Miracle rice" finding proves we can never stop rice breeding

In a study conducted by Dr. Shaobing Peng, a crop physiologist from the International Rice Research Institute (IRRI), Philippines and his group, it was established that environmental changes such as hotter nights, modifications in soil properties from maintaining the soil under flooded conditions and air pollution are all possible contributing factors for a 15% drop in the yield of "miracle rice"? Also known as IR8, since the 1960s when it was first released and lauded for its superior yields that helped avert famine across Asia at that time. IR8 used to produce 9.5 to 10.5 tons per hectare, significantly more than other varieties in the 1960s when average global rice yields were around only 2 tons per hectare. But, when grown today, IR8 can yield only around 7 tons per hectare. To rule out the genetic changes which might have occurred in IR 8 during last five decades Dr. Peng and his team grew rice from original IR8 seeds preserved in the International Rice Genebank and compared it to rice grown from

IR8 seeds continuously grown and harvested over the last few decades and got the same yield from both the seeds.

Although, IR8 still performs very well but a 15% yield drop is significant, therefore, concerted breeding efforts to negate the adverse effects of climate change on the performance of varieties need to be pursued more vigorously as coping with these may be far more important today for resource-poor rice farmers across Asia and Africa. Despite their limited progress in increasing yields, maintenance breeding efforts have had significant success in improving grain quality and maintaining rice yields despite substantial increases in diseases, insect pests. Therefore, maintenance breeding needs continuous support to help farmers to cope with erratic climate changes around the globe and if not given attention, poor farmers will become poorer as they already have few means to cope with their changing environment.

Source: <http://irri.org/news-events/media-releases/current-releases/miracle-rice-finding-proves-we-can-never-stop-rice-breeding>

FORTHCOMING EVENTS

- DRR Industry Meet on 23rd October, 2010.
- Farmer's Day at DRR, Rajendranagar on 24th October, 2010.
- Training course on Hybrid Rice Production Technology - 26th October to 2nd November, 2010.
- Training course on Integrated Rice Crop Management - 8th to 12th November, 2010.
- Refresher Course in Rice Pathology - 15th to 20th November, 2010.
- Training course on Application of Molecular tools for Rice Improvement - 23rd to 30th November, 2010.

DIRECTOR'S MESSAGE



I am pleased to present the fourth issue of eighth volume of the DRR newsletter. Last quarter was wet with active southwestern monsoon season and the country received two per cent excess rains. Though some parts of India have been hit by floods in recent weeks, no significant damage to crops was reported. I hope that the monsoon will recede without affecting the *khari* rice harvest and the surplus rainfall will ensure good yield during coming *rabi* season also. I take this opportunity to invite rice researchers to contribute research notes and new developments at their centres for publishing in forthcoming issues.

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