IIRR

ICAR-Indian Institute of Rice Research

NEWSLETTER

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Dr RM Sundaram, FNAAS, FNASI, FISGPB, FIUSSTR takes charge as Director, ICAR-IIRR

Dr Raman Meenakshi Sundaram, is an expert in the field of rice genetics, molecular breeding, genomics and genetic engineering. He holds a PhD degree from the University of Hyderabad (UoH), Hyderabad and two Post-Doctoral fellowships from Iowa State University and Cornell University, USA. He joined the erstwhile Directorate of Rice Research (DRR), presently ICAR-IIRR in December 1998 and is actively involved in R & D work on marker-assisted selection (MAS) in rice with special emphasis on biotic stress resistance and hybrid rice improvement. His most significant contribution is the development of a new variety called "Improved Samba Mahsuri" (RP Bio 226) through marker-assisted backcross breeding (MABB) having high Bacterial blight (BB) resistance and grain quality traits similar to the popular, high yielding, fine grain rice variety Samba Mahsuri. He is also associated in developing bacterial blight versions of other mega varieties. He has to his credit the development of functional markers for gall midge, blast resistance gene, WBPH resistance, etc. He has fine-mapped and developed candidate gene-specific markers for the major fertility restorer genes *Rf3* and *Rf4*, wide compatibility genes along with detection assays for hybrid testing. He is a fellow of prestigious national and international societies including the National Academy of Sciences and National Academy of Agricultural Sciences. He serves on the editorial boards of several peer-recognized journals. He is the recipient of esteemed awards like Hari Om Ashram Trust Award of ICAR for the Biennium 2011-12 and Lal Bahadur Shastri Outstanding Young Scientist Award of ICAR (2010), PN Behl Award of IARI for the Biennium 2012-13 for excellence in Crop Sciences and CSIR Award for S & T Innovations in Rural Development (CAIRD)-2013. His career has been exemplary with the development of techno-commercial products for different stakeholders. He has successfully completed ICAR, DBT, DST, IRRI funded projects during the course of time and trained nearly 30 students in their post-graduate research. He has to his credit more than 250 international and national publications. Dr RM Sundaram succeeds Dr V Ravindra Babu as regular director of ICAR-IIRR w.e.f. 28th April 2021.

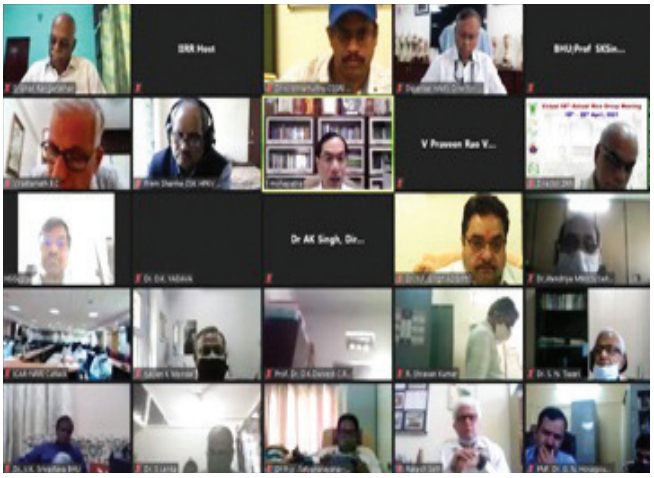
IN THIS ISSUE

56th Annual Rice Group Meeting (ARGM)

On the occasion of the 56th Annual Rice Research Group Meeting (ARGM), a series of virtual group meetings were held in the disciplines of Entomology, Pathology, Crop production and Crop Improvement from 8-15 April 2021 to discuss the results of the trials conducted during 2020-21. AICRIP Center-wise presentations were conducted during 16-17 April 2021. The inaugural session was held on 19th April 2021. Dr D Subrahmanyam, Director (A), ICAR-IIRR welcomed the dignitaries and delegates of AICRIP, QRT, RAC, IRRI and private seed industries. Dr DK Yadava, ADG (Seed) stressed the importance of the AICRIP system in India's rice research and record production and export of Basmati rice. He highlighted the importance of bio-fortification, marker-assisted selection and short-duration high-yielding rice varieties for food security. He emphasized the role of the private seed sector in hybrid rice research and development in the country along with AICRP. Dr D Subrahmanyam presented highlights of the AICRIP program of 2020. He highlighted the importance of review and planning of ongoing AICRIP activities for the development and dissemination of technologies. Dr YP Singh, ADG (FFC) appreciated all the AICRIP cooperators for the excellent conduct of the trials inspite of the COVID pandemic situation. Prof HS Gupta, Retd. Director, ICAR-IARI and Chairman QRT (ICAR-IIRR) cited that 391 varieties including 75 rice hybrids having the potential in boosting rice production under climate change conditions were released through AICRP during the last eight years.

Dr Trilochan Mohapatra, Honorable Secretary, DARE and DG, ICAR appreciated the efforts in carrying out the AICRIP work despite the pandemic situation. He expressed concerns about setting future targets by analyzing the rate of increase in yield and rate of genetic gain expected in the coming years based on the production-consumption ratio. He suggested that a benchmark yield level should be fixed for diverse trials for promotion along with additional criteria on disease/pest resistance for that area. He suggested that a production-oriented survey should collect information regarding rice consumption patterns and varietal composition in different states or regions.

He suggested the deployment of smart agricultural technologies, breeding for resource use efficiency, multiple resistance/tolerance and trials on nano-fertilizers, silicon spray, etc. He indicated that production and protection technologies can be released during the AICRIP meeting. Dr YP Singh thanked Hon'ble Director General for his in-depth analysis and discussion. Two technical sessions were organized to present the consolidated results of AICRIP trials conducted during 2020 and to finalize the technical program for 2021. A special session on the IRRI-ICAR collaborative program was held on 20th April 2021 followed by a presentation on 'Impressions and Recommendations of QRT by Dr HS Gupta. Subsequently, a plenary session was conducted to present the technical program of AICRIP trials planned for 2021. Vote of thanks was offered by Dr RM Kumar.



Expert Committee Meeting on Revisiting AICRIP Guidelines

The first meeting of the expert committee on revisiting some of the AICRIP guidelines for evaluation of entries was held in virtual mode on 28th April 2021 under the chairmanship of Dr JP Tandon, Former ADG (F&FC), ICAR, New Delhi. The members of the committee were Dr DK Yadava, ADG (Seeds), ICAR, New Delhi; Dr AK Singh, Director, ICAR-IARI, New Delhi; Dr Navtej Singh Bains, Director of Research, PAU, Ludhiana; Dr RM Sundaram, Director, ICAR-IIRR, Hyderabad; Dr AVSR Swamy, Principal Scientist, ICAR-IIRR, Hyderabad; Dr Jogi Naidu, Associate Director, RARS, ANGRAU, Maruteru, AP; Dr BC Viraktamath, Former Director, ICAR-IIRR, Hyderabad; Dr SR Das, Retd. Professor, OUAT, Bhubaneswar; Dr SK Pradhan, Principal Scientist, ICAR-NRRI, Cuttack and Dr AS Hariprasad, Principal Scientist, ICAR-IIRR, Hyderabad. Dr Jyothi Badri, Senior Scientist, ICAR-IIRR and Dr R Abdul Fiyaz, Scientist, ICAR-IIRR recorded the proceedings.

All India Coordinated Rice Improvement Programme (AICRIP) is an important network program with changing requirements and emerging market needs, some of the guidelines may require amendments. The members agreed that the existing guidelines framed under the chairmanship of Dr JP Tandon in 2016 are already addressing the issues. However, for certain issues of concern specific to rice crop, where the existing guidelines do not offer a viable solution, there should be a thorough discussion in the next meeting of the committee so that the necessary amendments can be made to the guidelines. An eleven-point agenda was formulated with existing practice and suggested modifications for further discussion in the next meeting.

Varietal Identification Committee Meeting

Varietal Identification Committee (VIC) Meeting on virtual mode was held on 8th June 2021 under the chairmanship of Dr TR Sharma, DDG (Crop Science), ICAR. There were a total of 38 proposals including 32 varietal entries and 5 hybrid entries. All the 38 proposals were critically examined for their overall, zonal and state yield performance over the years, reaction to biotic/abiotic stresses, performance in agronomic trials and quality features. The committee emphasized that if the proposal is for a single state per zone, such proposals may be submitted to individual SVRC for state release instead of submitting to VIC. However, if such single state per zone are contiguous in different zones, such proposals may be considered by VIC. A total of 26 entries including 23 varietal and 3 hybrid entries were identified and recommended for CVRC and two other hybrids for SVRC release during the meeting.

Registered Genetic Stocks of ICAR-IIRR

The XXXXIVth meeting of Plant Germplasm Registration Committee (PGRC) was held on 30th June 2021 on virtual mode at ICAR-NBPGR, New Delhi under the Chairmanship of Dr TR Sharma, DDG (CS), ICAR. Phougak, a germplasm accession of ICAR-IIRR (Dr Jyothi Badri) was recommended and approved for registration as genetic stock.

Phougak (D82) (21087; IC0 639794 INGR21093)-is registered as genetic stock with potential valuable features as 'tolerance to sheath blight, resistance to neck blast and resistance to leaf blast' by Plant Germplasm Registration Committee (PGRC) of Indian Council of Agricultural Research on 30th June 2021.

Salient features of the registered genetic stocks

North eastern landrace 'Phougak', a dual donor for sheath blight tolerance and neck blast resistance

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Sheath blight (ShB) is one of the major devastating diseases and responsible for 70% of yield losses and quality degradation. Landraces from north eastern part of the country along with wild introgression lines, tropical *japonica* accessions, mutants, elite cultivars totalling about 1500 were evaluated for sheath blight resistance in 2012 and the genotypes identified as resistant/moderately resistant were further tested both under glass house and field conditions in the subsequent years (2013 and 2014) and seasons (both *kharif* and *rabi*). Based on three years of testing under repeated artificial screening in field condition for the past six monsoon seasons *viz., kharif* 2012, *rabi* 2013, *kharif* 2013, *rabi* 2014 and *kharif* 2014, Phougak, a north eastern landrace with a unique characteristic of clustered panicle was found with consistent tolerance reaction against sheath blight disease (Fig. 1).

Table 1. Sheath blight disease reaction in donor screening nursery (DSN) of AICRIP during 2019 under artificial screening conditions

Entry	MND	GNV	LDN	IIRR	CTK	MSD	PTB	ADT	NDL	CHP	RPR	BNK	MNC	PTN	PNT	SI	TTB*
LSI	**7.7**	**7.5**	**7.0**	**6.9**	**6.8**	**6.8**	**6.8**	**6.4**	**5.7**	**5.5**	**5.3**	**4.8**	**4.6**	**4.5**	**4.4**		**3.6**
Phoghak	5	7	7	5	5	5	5	5	3	5	3	1	1	7	1	**4.3**	1
T(N)1	9	9	7	9	7	7	9	9	7	7	7	7	7	7	5	**7.5**	-
IR-50	9	5	7	9	5	7	7	7	7	5	9	7	5	4	5	**6.5**	-
Tetep	1	3	5	5	3	5	5	3	5	5	3	3	0	5	5	**3.7**	-

*Titabar with LSI <4.0 was not included in the calculation of DSI for sheath blight.

Table 2. Reaction against Leaf blast in donor screening nursery (DSN) of AICRIP during 2019 under artificial screening conditions

Entry	MND	LNV	NLR	KJT	GNV	NWG	IIRR	MLN	RNR	SI
LSI	**6.4**	**6.0**	**5.7**	**5.4**	**5.4**	**5.1**	**5.0**	**4.8**	**4.4**	
Phougak	2	5	6	4	2	6	3	3	3	3.78
Tetep	5	2	4	4	3	3	1	1	3	2.89
HR-12	9	9	6	7	9	8	9	7	9	8.11
TN-1	9	9	7	4	9	7	9	8	9	7.89
IR-64	8	9	5	4	7	5	3	8	7	6.22

Considering its promising performance against ShB over the seasons and years, Phougak was evaluated in donor screening nurseries (DSN) of AICRIP during 2019. Phougak showed a disease susceptibility index (*dsi*) of 1.0 at four locations viz., Bankura, Moncompu, Pantnagar and Titabar, a *dsi* of 3.0 at Raipur and 5.0 at remaining locations with an overall mean *dsi* of 4.3 for 9 locations where LSI >4.0 (Table 1).

Phougak was also found promising against leaf blast and neck blast in DSN of AICRIP 2019. It recorded a *dsi* of 1.0 at Rewa, 2.0 at 3 locations viz., Gangavati, Mandya, and Ranchi, a *dsi* of 3.0 at 4 locations viz., IIRR, Malan, Rajendranagar and Bankura and a *dsi* of 4.0-5.0 at remaining 6 locations. A mean *dsi* of 3.78 was shown by Phougak for 9 locations with LSI>4.0 under artificial inoculation conditions (Table 2). Natural field

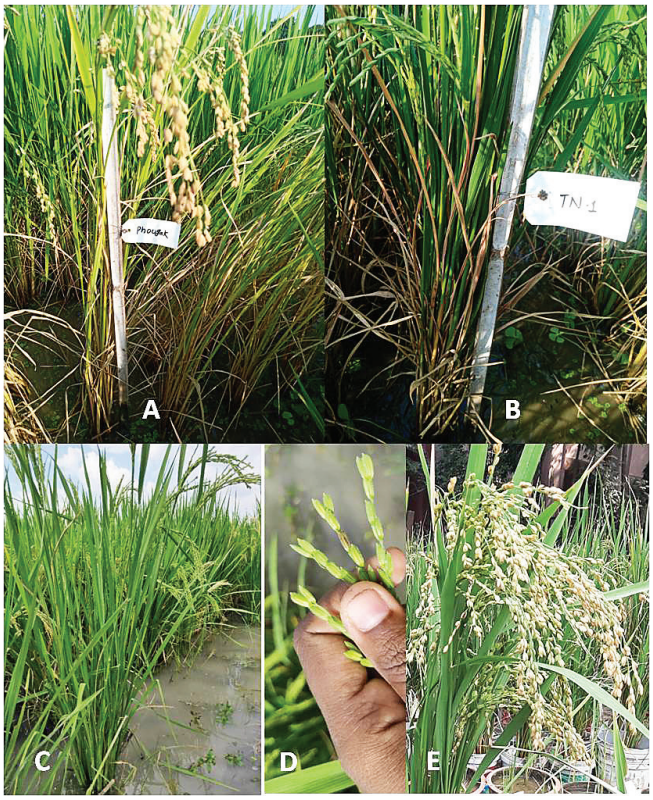

Fig 1A. Inoculated Phougak with least lesions, B. Inoculated TN1-highly susceptible, C. F_1 plant between BPT5204/Phougak, D. Panicle clustering in F_1 plant, E. Clustered panicle in Phougak

screening against leaf blast at 13 locations indicated *dsi* of 1.0 at Rewa, 2.0 at Jagitial, Gangavati and RNC, 3.0 at Almora, Umiam, Imphal and Pattambi, 4.0 at Upper Shillong, Ponnampet and Jagdalpur and 5.0 at Mugad and Hazaribhag with a mean *dsi* of 3.71 for 7 locations where LSI>4.0 (Table 3). Multi-location screening both under natural and artificial screening conditions indicated resistance to leaf blast. Screening of Phougak in UBN at ICAR-IIRR confirmed resistance to blast (Fig 2a).

Neck blast screening under natural conditions was taken up at 10 locations and Phougak scored a mean *dsi* of 3.3 for 4 locations with a LSI >5.4 and at individual locations, it recorded a *dsi* of 1.0 at Mandya, 2.0 at Umiam, 3.0 at Imphal and 5.0 at remaining 4 locations (Table 4).

Field and glasshouse screening in multiple years/ seasons and multi-location testing under AICRIP-DSN indicated tolerance to sheath blight and resistance to both leaf blast and neck blast in Phougak.

Fig 2A. Resistance to leaf blast under UBN-2020 in Phougak B. Grain

Table 3. Reaction against Leaf blast in donor screening nursery (DSN) of AICRIP during 2019 under natural field conditions

Entry	ALM	JGT	HZB	GGT	UMM	USG	PNP	SI
LSI	**6.4**	**5.5**	**5.4**	**5.3**	**4.9**	**4.6**	**4.0**	
Phougak	3	2	5	5	3	4	4	**3.71**
Tetep	3	8	1	5	2	5	3	3.85
HR-12	9	6	8	5	-	9	3	6.67
TN-1	9	5	7	5	-	4	3	5.5
IR-64	7	2	3	5	8	3	2	4.29

Table 4. Reaction against neck blast in donor screening nursery (DSN) of AICRIP during 2019 under natural field conditions

Entry	JGT	LNV	UMM	MND	SI
LSI	**6.0**	**5.7**	**5.7**	**5.4**	
Phougak	5	5	2	1	**3.3**
HR-12	7	9	-	9	**8.3**
IR-64	3	9	9	5	**6.5**
TN-1	5	9	-	7	**7.0**
Tetep	7	1	3	1	**3.0**

Research Highlights

Evaluation of heat tolerance potential in QTL introgressed rice restorers under AICRIP multi-location trials

Jaldhani V, Beulah P, Manasa Y, Nagaraju P, Sanjeeva Rao D, Neeraja CN, Sundaram RM, Suneetha Kota, Divya B, Mangrauthia SK, Revathi P, Gireesh C, Anantha MS, Sruthi K, Kemparaju KB, HariPrasad AS, Sheshu Madhav M, Akshay S Sakhare, Rao PR, Subrahmanyam D and Senguttuvel P*

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Recent estimates on climate change indicate that high-temperature episodes affect rice production and productivity worldwide. In this context, genetic improvement of hybrid rice for high-temperature tolerance was initiated at ICAR-IIRR, Hyderabad. QTLs for grain yield under high-temperature stress *i.e., qHTSF1.1*, *qHTSF4.1* and HT Score *QTL* from heat tolerant donor, Nagina 22 were introgressed into an elite restorer, KMR 3R through marker-assisted back cross-breeding (MABB) approach. Three promising BILs [RP 6338-9, RP 6338-24, and RP 6338-155] were identified with a combination of fertility restoration genes and heat tolerance QTLs (Table 1). These improved restorer lines were nominated to AICRIP Plant Physiology-High temperature stress multi-location evaluation trial, 2020-2021. The trial was conducted at five locations *viz.,* Hyderabad (IIRR), Pantnagar (PNR), Pattambi (PTB), Rewa and Titabar (TTB) in a split-plot design.

Table 1: Heat tolerance QTLs and fertility restoration (*Rf*) gene status in parents and BILs

	Rf3 (RM10313)	*Rf4* (RM6100)	qHTSF1.1 (RM431)	qHTSF4.1 (RM5757)	HT Score (RM3586)
KMR 3R	+	+	-	-	-
RP 6338-9	+	+	-	+	-
RP 6338-24	+	+	+	-	+
RP 6338-155	+	+	+	-	-
Nagina 22	-	+	+	+	+

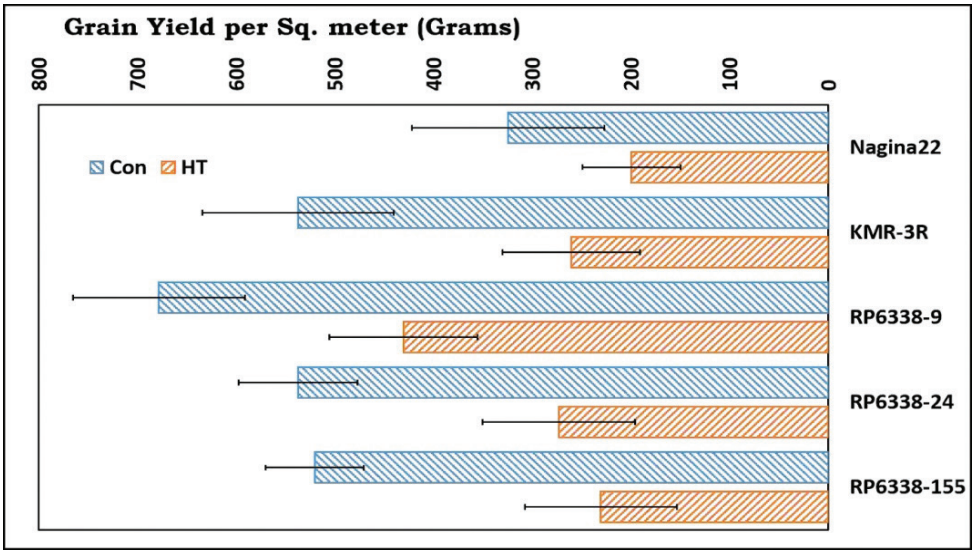

Fig 1. Grain Yield per Sq. meter (Grams) in parents and BILs under control and high-temperature stress (Each data point is a mean of five locations)

High-temperature stress was imposed by enclosing the breeding lines grown at normal field conditions with a poly cover tent just before the anthesis stage. An increase in the temperature (4°– 5°C) over the ambient conditions was noticed inside the poly cover tent (Table 2). Among the three BILs, RP 6338-9 and RP 6338-24 showed grain yield superiority over the parents under ambient and high-temperature conditions. RP 6338-9 has 26% and 65% yield advantage over KMR 3R; 109% and 116% yield advantage over Nagina 22 at control and heat tolerance conditions respectively. In addition, RP 6338-9 showed only 36% grain yield reduction, which is comparatively less than that of Nagina 22, while the recurrent parent exhibited 51% yield reduction under high-temperature stress (Fig 1). The stability variance and stability rating of RP 6338-9 also designates the relative heat tolerance of this line. RP 6338-24 noted 65% (control) and 37% (HT) yield advantage over Nagina 22. Based on the high mean rank and lower SEm for heat-tolerant indices, RP 6338-24 could be identified as relatively heat tolerant. The coefficient of non-photochemical quenching (qN) is a significant fluorescence trait and an increase in this trait values were observed in RP 6338-9 (15.8%) and RP 6338-24 (0.7%) suggesting tolerance to high-temperature stress (Table 3). On the other hand, a significant reduction was observed in RP 6338-155 suggesting susceptibility to heat stress. In conclusion, RP 6338-9 with *Rf3, Rf4* and *qHTSF4.1* is a potential restorer which can be registered as heat-tolerant genetic stock and exploited further in heterosis breeding.

Table 2: The mean maximum and minimum temperature in ambient and high temperature stress conditions across the locations

S. No.	Location	Mean Max Temp (°C)		Mean Min Temp (°C)	
		Control	HT	Control	HT
1	Hyderabad (IIRR)	33.5	42	20.8	22.3
2	Pantnagar (PNR)	30.8	38.8	11.1	12.4
3	Pattambi (PTB)	-	-	-	-
4	REWA	31.1	36.9	19.1	20.4
5	Titabar (TTB)	31.4	36.1	22.1	23.9

HT - High temperature indicates > 5 °C than control (ambient temperature)

Table 3. Chlorophyll fluorescence traits status in parents and BILs under control and high-temperature stress

	ETR		qP		qN		Fv/Fm	
	Con	HT	Con	HT	Con	HT	Con	HT
KMR-3R	22.27 ± 0.3	23.17 ± 2.1	0.51 ± 0.021	0.53 ± 0.06	0.32 ± 0.03	0.34 ± 0.04	0.83 ± 0.02	0.79 ± 0.004
RP6338-9	28.03 ± 3.5	25.37 ± 1.5	0.63 ± 0.081	0.54 ± 0.05	0.27 ± 0.01	0.32 ± 0.06	0.81 ± 0.01	0.80 ± 0.006
RP6338-24	27.80 ± 0.9	26.10 ± 1.4	0.62 ± 0.003	0.57 ± 0.02	0.30 ± 0.03	0.30 ± 0.03	0.82 ± 0.01	0.80 ± 0.004
RP6338-155	25.83 ± 0.9	18.43 ± 0.9	0.59 ± 0.026	0.37 ± 0.02	0.36 ± 0.02	0.21 ± 0.04	0.83 ± 0.05	0.82 ± 0.005
Nagina22	22.23 ± 1.1	24.50 ± 2.0	0.56 ± 0.027	0.59 ± 0.01	0.41 ± 0.05	0.36 ± 0.03	0.81 ± 0.08	0.78 ± 0.012

Characterization of hydrogel for water and nutrient holding capacity

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Water is indispensable resource for the sustenance of all life. With the ever increasing pressure of human population, there has been a severe stress on water resources. It is obligatory to develop management strategies for efficient use of water on sustainable basis especially in rice which consumes approximately 4,000 to 5,000 liters of water to produce one kg grain. The use of soil conditioners like super absorbent polymer (hydrogel) has a great potential to exploit the existing water in soil for crop usage. Hydrogel is a water retaining, cross-linked hydrophilic, biodegradable amorphous polymer, which can absorb and retain water at least 400 times of its original weight and make at least 95 per cent of stored water available for crop absorption. The polymer has capability to store extra water in soil that enables crops to utilize the water over an extended period of time. As a part of research study, synthetic hydrogel (Pusa hydrogel) has been studied for its water holding capacity in different types of water and nutrient holding capacity in different soils.

Water holding property of hydrogel in different types of water: Water holding capacity of hydrogel was tested by using different types of water *viz.,* distilled water (pH – 7.69, EC- 0.15), mineral Water (pH – 7.67, EC- 0.52) and tap water (pH – 7.41, EC- 1.29). The water absorption capacity was more with distilled water followed by mineral water and tap water. The maximum absorption of water was found to be 255 g/g with distilled water, 180 g/g with mineral water and 128 g/g with tap water. The water holding capacity decreases with increased salinity level in water (Fig 1).

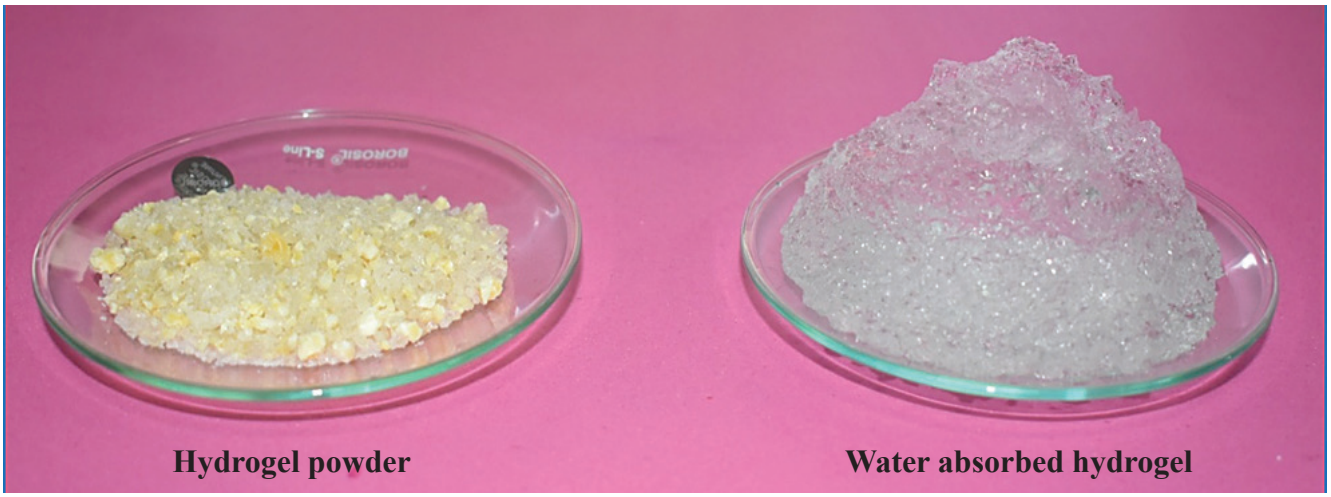


Fig 1. Images of hydrogel in different forms

Micronutrient retention capacity of hydrogel: Micro nutrient (Fe, Zn) retention capacity of hydrogel was tested in different soils. Red and black soils were treated with two different concentrations of hydrogel (0.25 g and 0.50 g) and solutions of iron (5 ppm and 10 ppm) and zinc (2.5 ppm and 5 ppm) were added. The amount of micronutrients absorbed in different soils was measured by atomic absorption spectrophotometer. Red soils absorbed more nutrient solution in presence of hydrogel compared to black soils. More nutrient absorption was recorded with higher nutrient concentration. Irrespective of the nutrient and its concentration, soils treated with tap water recorded higher values compared to distilled water. Regarding water absorption, for both the nutrients (Fe and Zn), with increasing doses of hydrogel water absorption has been increased (Fig 2 & Fig 3).

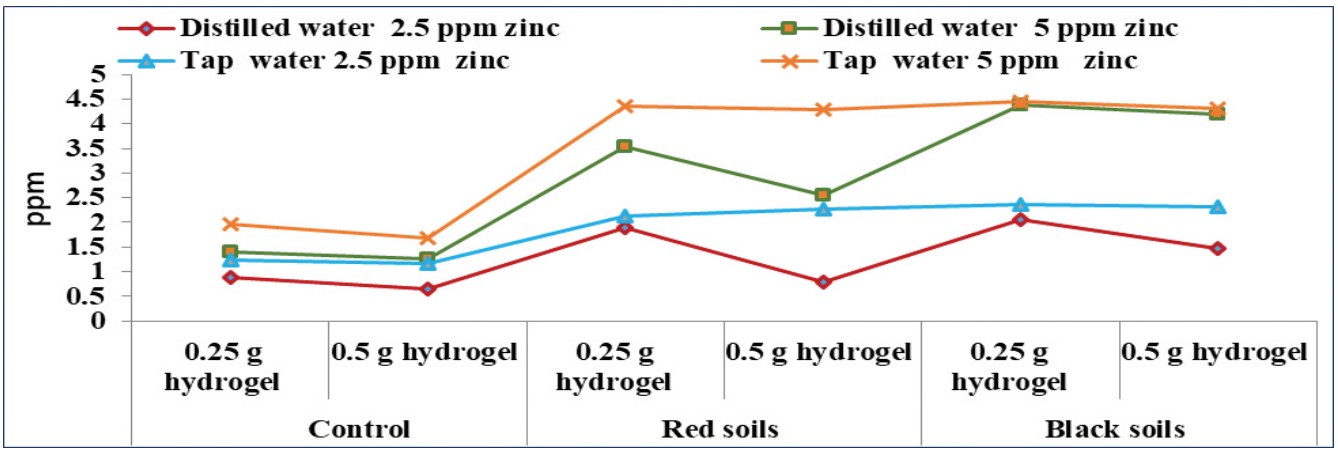


Fig 2. Zinc absorption capacity (ppm) of hydrogel in different soils

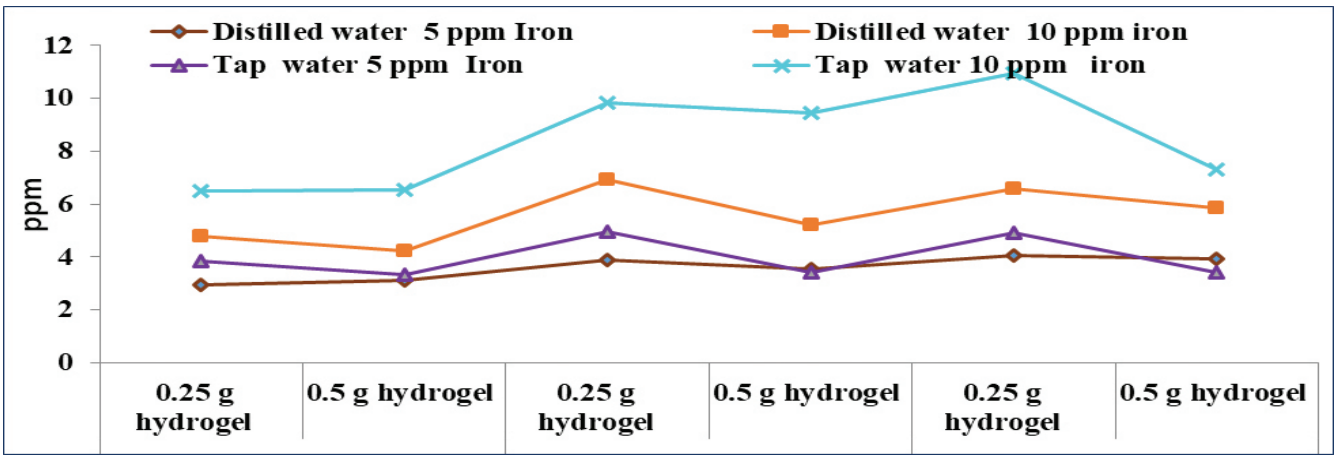
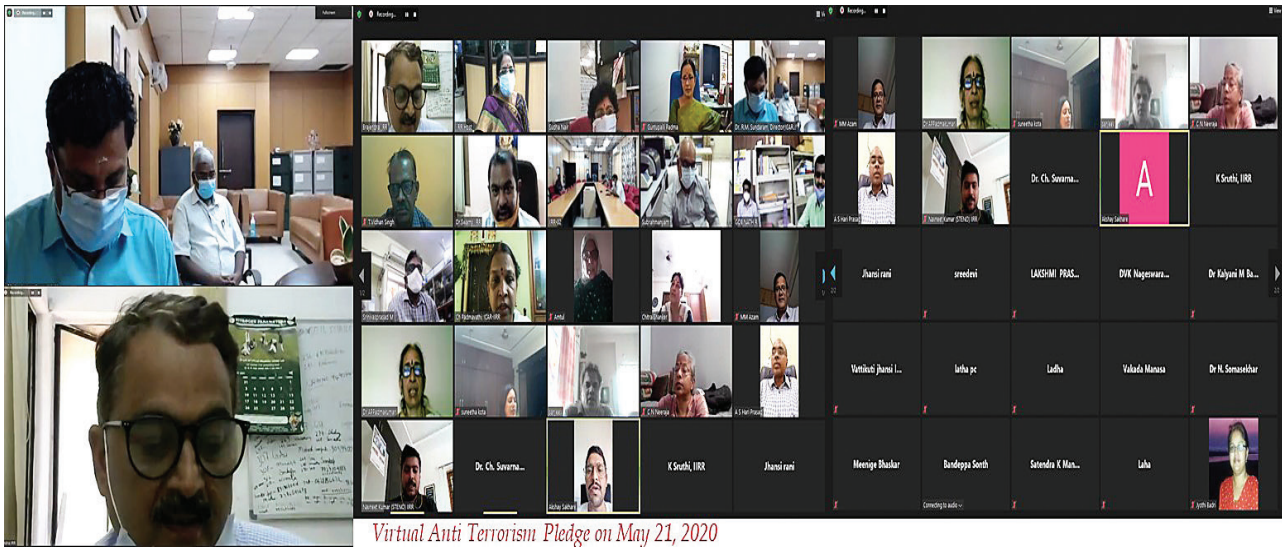


Fig 3. Iron absorption capacity (ppm) of hydrogel in different soils

Events/meetings conducted at ICAR-IIRR

Virtual Anti-Terrorism pledge was taken by the staff of ICAR-IIRR on 21st May 2021



Virtual Anti Terrorism Pledge on May 21, 2020

7th International Day of Yoga

ICAR-IIRR organized a virtual gathering to celebrate the 7th International Day of Yoga on 21st June 2021. More than 65 participants including the permanent staff, AICRIP scientists, and research scholars of the institute attended the event. Dr R M Kumar, PS, Agronomy welcomed the participants. Dr R M Sundaram, Director, ICAR-IIRR briefly enlightened the different types of *Yogasanas* and their benefits in our life in the present context. This was followed by a demonstration of several simple Yoga techniques (Sukshma Vyayam) helpful for relieving physical and mental strain and stress by Yoga trainer, Ms Deepti Mantri, Founder, Yogashala, Hyderabad.

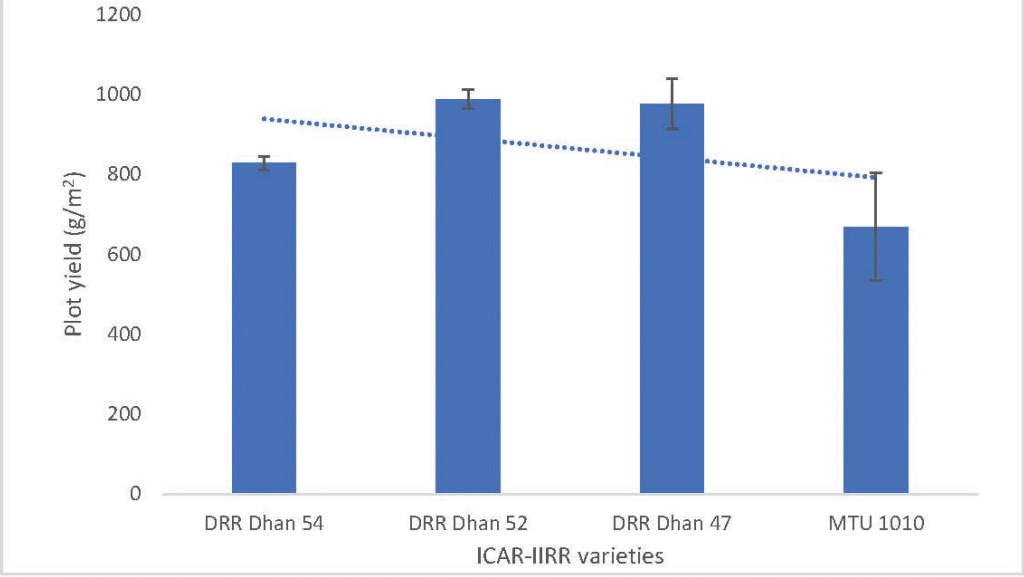
Seminars Organized

- Dr Satendra Kumar Mangrauthia, Senior Scientist (Biochemistry), presented deputation seminar on 31st May 2021 on the training under Borlaug International Agricultural Science and Technology Fellowship Award sponsored by USDA at Lousiana State University, USA from 13th December 2019 to 8th March 2020.
- Dr Anantha MS, Senior Scientist (Plant Breeding) delivered deputation seminar on “Understanding the implementation of genomic selection in a modern breeding set-up using available genotypic and phenotypic datasets and analyses of pipeline in IRRI” on 31st May 2021. He had attended three months training programme on above topic at IRRI South Asia Hub, ICRISAT Campus, Hyderabad from 28th October 2020 to 27th January 2021. He also presented brief information on Haplotype breeding and its utilization in crop improvement.
- A webinar on ‘*Rice cultivation with drip irrigation and fertigation’* by Dr P Soman, Vice-president and Chief Agronomist, Jain Irrigation System Ltd. was organized as part of the *Azadi ka Amrit Mahotsav* -75th years of Celebration of Independence, jointly by ICAR-IIRR and Society for Advancement of Rice Research (SARR) on 24th June 2021.
- Dr Suneetha Kota presented her post-doctoral research work on "Improving Rice to Salinity and Drought Tolerance through conventional, molecular and genomic approaches" 31st May 2021 by IRRI-UK Collaborative Newton project” carried out at IRRI, Philippines.
- On 31st May 2021, Dr CN Neeraja and Dr Kalyani M Barbadikar presented their training highlights and experiences gained by attending the virtual workshop on Genome-Wide Association Studies (GWAS) organized by the University of Aberdeen under the UKRI-GCRF SANH project during 7-11th June 2021.

Field demonstration of newly released IIRR varieties

The performance of four newly released IIRR varieties *viz.,* (1) DRR Dhan 47, (2) DRR Dhan 52, (3) DRR Dhan 54 and (4) DRR Dhan 48 was demonstrated by Dr Jyothi Badri in farmer's field at Aroor village in Valigonda Mandal in Yadadri Buvanagiri district of Telangana during *rabi* 2021. DRR Dhan 52, a heat tolerant cultivar with LS grain type, 115-120 days maturity duration and an average yield of 6.5 t/ha and DRR Dhan 54, an aerobic cultivar also suitable for early transplanted ecology are being preferred by farmers in Telangana in place of MTU 1010. Subsequently DRR Dhan 52 was spread to adjacent villages from farmer to farmer, DRR Dhan 54 was taken up by farmers across Telangana, Andhra Pradesh and Bihar and DRR Dhan 47 in Kerala. DRR Dhan 48 in the fine grain sector with high zinc content was preferred by farmers in place of Samba Mahsuri.

Variety	Yield (kg/ha)	Yield Advantage (%) over LC
DRR Dhan 54	6116	19.2
DRR Dhan 52	7291	32.22
DRR Dhan 47	7217	31.52
MTU 1010 (local check-LC)	**4942**	



- Dr B Nirmala, PI-SCSP in collaboration with Dr Ramanaidu Ekalavya Foundation- Krishi Vigyan Kendra (KVK Medak) conducted seed distribution program of biofortified rice variety, DRR Dhan 48 to seventy-five SC farmers of Medak district. Similarly, 50 bags of DRR Dhan 48 were supplied to SC farmers of Wanaparthy district through YFA KVK, Pebbair and 25 bags of DRR Dhan 48 were provided to farmers of Yadadri Bhongir on 19th May 2021.

- Dr Jyothi Badri and Dr B Nirmala coordinated seed distribution of DRR Dhan 48 to the farmers of Manchal, Rangareddy district and Aroor village, Valigonda Mandal of Yadadri Bhongir on 22nd May 2021 under the SC-SP project. Dr Jyothi Badri explained the importance of growing biofortified varieties to alleviate malnutrition and described the unique features of DRR Dhan 48 to the farmers. Ms Anjani, AO, Ms Prasanna AEO, Smt Jayamma, Sarpanch participated in the seed distribution program at Aroor village.

- Dr B Nirmala facilitated the seed distribution of ICAR-IIRR released variety, DRR Dhan 42, DRR Dhan 48 and improved samba Mahsuri (ISM) (20 bags each) to farmers of Nagarkurnool district on 19th June 2021. Around sixty farmers were trained for good agricultural practices.

Staff News

New appointments

Dr RM Sundaram, Principal Scientist, ICAR-IIRR has been appointed as Director, ICAR-IIRR Hyderabad *w.e.f.* 27th April 2021

Retirements

Shri B Satish, Senior Administration Officer retired from the councils' service on attaining the age of superannuation on 30th April 2021

Demise

Mr G Satyanarayana, Upper Division Clerk expired on 28th Apr 2021, due to Covid 19. He had rendered sincere services to the institute. The institute has indeed lost a dynamic and efficient worker with his demise.

Editorial Committee: Drs. Nageswara Rao DVK, Amtul Waris, Senguttuvel P, Jyothi Badri, Kalyani M Barbadikar, Bandeppa S, Arti Singh and Basavaraj K

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