EUROPEAN ACADEMIC RESEARCH
Vol. II, Issue 6/ September 2014

Impact Factor: 3.1 (UIF)
DRJI Value: 5.9 (B+)

ISSN 2286-4822
www.euacademic.org

IET 21285 – A Promising Very Early Rice Genotypes for Red and Lateritic Areas of West Bengal, India

G .K. MALLICK[1]
K. JANA
G. SARDAR
S. GHOSH
Rice Research Station, Nutanchati
Bankura, West Bengal
India

Abstract:

The aim of the present study was to screen promising very early rice genotypes for red and lateritic areas of West Bengal, India. A Fild experiment was conducted during kharif 2009 to assess the yield performance of 19 diverse very early rice genotypes along with two check rice variety Anjali and Vandana. Only one rice genotypes namely IET 21285 screened as a promising very early rice genotypes for red and lateritic areas of West Bengal, India. It given 16.66% more yield than that of best check variety Anjali.

Key words: Rice, very early, IET 21285, Anjali, Red and lateritic areas, Bankura.

Introduction:

Rice requires specific genotypes for specific regions/seasons. So proper selection of genotypes will be helpful for maximization of yield level of rice. Specific adaptability is the key for varietal success in ecologically handicapped regions. Several breeding

[1] Corresponding author: mallickgkgene@gmail.com

lines are being evaluated every year in different ecosystem through All India Co-ordinated Rice Improvement Programme (AICRIP) in India. Rice Research Station, Bankura, West Bengal, India is situated in red and lateritic areas of West Bengal. Drought prone areas of West Bengal like Districts of Purulia, Bankura, Paschim Midnapore and parts of Birbhum and Burdwan fall under this agroclimatic region. The main characteristics of this region is crop suffer drought stress at different developmental phage (Mukhrerji and Basu Ray Choudhuri, 1982). So emphasis should be given to identify promising drought tolerant varieties which can be able to give fairly to stable yield throught athrought screening of promising rice genotypes under natural condition.

Previously several early (Mallick. *et al*. 2012, Mallick. *et al*. 2013a, Mallick. *et al*. 2013b, Mallick. *et al*. 2013c, Mallick. *et al*. 2013d, Mallick and Kundu 2014a), Mid early (Mallick and Kundu 2014b) and late (Mallick. *et al*. 2013 and Mallick. *et al*. 2014) Rice genotypes has been screened for red and lateritic areas of West Bengal, India. So there is a need to develop or screen some high yielding very early rice genotypes for increasing the yield of that particular region. Anjali and Vandana are popular among the farmer's of that area. But they want to replace them.

The recent investigation was under taken to screen very early rice genotypes suitable for cultivation in up lands of red and lateritic areas of West Bengal, India.

Materials and Methods:

Twenty one very early rice genotypes including three checks viz, Anjali (National check) and Vandana (Regional check) were tested in this trials. Rice Research Station, Bankura, obtained all the test entries and checks from Directorate of Rice Research, Rajendranagar, Hyderabad, India, as a part of All India Co-ordinated trial IVT-VE (Initial Varietal Trial-Very

Early) for *kharif* 2009. The experiment was conducted at the farm of rice Research , Bankura, West Bengal, India, following the statistical design of RBD(Randomised Block Design) with three replications. Seed of test entries along with checks sown in well prepared dry seed bed on 19.05.2009 and 21 days old seedlings were transplanted on the well puddle field. Plot size was 9.0 sq.m. and plant to plant 15 c.m. and row to row 20 c.m. distance was maintained and applied fertilizer dose was N, P_2O_5, K_2O : 60, 30, 30 kg ha^1. Data on yield 50% flowering, plant height and panicles per sq.m. were taken following standard procedures. The weathers condition of crop growing season composition of the genotypes givesin Table-1 and Table-2 respectively.

Results and Discussion:

Between the two check varieties national check Anjali gave the highest yield (3000kg ha^{-1}) as compared to Vandana. So it was the best check variety in this trial. Among the nineteen test entries only three entries gave more yield (ranges from 2.76to 16.66%) then that of the best check variety Anjali. But the yield different was significant in case of only one genotypes namely IET 21285. It gave yield 3500 kg ha^{-1} which was 16.66% more than that of best check variety Anjali. It's 50% flowering was in 74days and was fitted in the very early group of rice. It is established that the chronologically drought affected areas of West Bengal, rice variety must be of early duration and should have drought tolerance for sustaining the periodical drought stress (De Dutta,1975, Chang and Vergara, 1975).

Table: 1. Meteorological data during the growing period of the crop (*kharif*-2009).

Month	Temperature (0_C)		Relative Humidity (%)		Rainfall (m.m.)	Rainey days (No. of days)
	Maximum	Minimum	Maximum	Minimum		
June	34.0	25.6	80.5	60.6	69.4	04

July	32.6	25.3	89.0	66.0	317.0	21
August	32.7	25.5	88.9	65.7	346.0	19
September	33.2	25.4	89.0	68.0	304.6	11
October	32.4	21.3	87.0	65.0	55.6	07
November	30.7	18.0	90.0	66.2	00.0	00

Table-2. Composition of rice genotypes tested under this experiment.

Sl. No.	IET No ./ Variety	Designation	Cross Combination
1	IET-21278	JDP13-1-RR419-7	Sneha / Busmoti 370
2	IET-21279	JDP39-1-RR411-36	Vandana / Moroberekan / Azueena
3	IET-21280	BAU 363-96	Ch-18/R96-633-1
4	IET-21281	BAU 389-02	Surajmukhi / IR-36
5	IET-21282	BAU 404-02	Vandana / IR1532 (P)
6	IET-21283	BAU 438-6-2	BD-103 / CH-18(P) 2
7	IET-21284	BAU 445-06	Vandana / IR 64
8	IET-21285	CR 2701	IR84882-B-CRA-120-46-1-3-1
9	IET-21286	CR 2704	IR839929-B-B-CRA-127-28-1-2-2
10	IET-21287	CR 2706	IR84895-B-CRA-171-32-1-2-1
11	IET-21288	RR 347-5	Sneha / RR 149-1129
12	IET-21289	CRR 383-3	N22/RR20-5
13	IET-21290	CRR 388-1-14-2	Azueena / Gourav
14	IET-21291	CRR 427-148-1-1-1	Vandana / WAB 56-50
15	IET-21292	CRR 430-2226-2-1-1-1	Brown gora / RR 354-1
16	IET-21293	CRR 452-65-1-1-1	Vandana / RR 222-1
17	IET-21294	CRR 459-50-3-1	RR 354-1 / IR 64
18	IET-21295	CRR 461-25-2-2-2	RR 354-1 / Vanaprabha
19	IET-21296	CRR 646-8-12-8	Vandana / Way Rarem
20	Anjali	National Check	
21	Vandana	Regional Check	

Table 3: Showing the yield and other characteristics of rice genotypes studied under this experiment as compared to check varieties.

Sl. No.	IET No . / Variety	Days to 50% flowering	Panicles / sq.m.	Plant height (c.m.)	Yield (kg ha-1)	%yield advantages over best check
1	IET-21278	82	185	110	1805	-39.83
2	IET-21279	82	149	116	1916	-36.13
3	IET-21280	76	248	104	3138	+4.60
4	IET-21281	78	251	114	2416	-19.46
5	IET-21282	80	215	90	2111	-29.65
6	IET-21283	85	231	111	1788	-40.40
7	IET-21284	76	142	115	2138	-28.73

8	IET-21285	74	178	113	3500	+16.66
9	IET-21286	75	264	83	3083	+2.76
10	IET-21287	80	165	108	1916	-36.13
11	IET-21288	75	199	85	2250	-25.00
12	IET-21289	80	220	125	1777	-40.76
13	IET-21290	67	132	87	1222	-59.26
14	IET-21291	64	238	96	1611	-46.30
15	IET-21292	84	290	126	2038	-32.06
16	IET-21293	70	208	112	2777	-7.43
17	IET-21294	85	182	105	1611	-46.30
18	IET-21295	72	152	109	1083	-63.90
19	IET-21296	83	198	107	1611	-46.30
20	Anjali (NC)	74	218	88	3000	---
21	Vandana (RC)	73	290	105	2600	-13.33
	EX. MEAN				2161	---
	CD (0.05)				333	---
	CV %				7.4	---

Conclusion:

It is concluded from the experiment that IET 21285 will be a alternative of Anjali in up lands of red and lateritic zones of West Bengal, India.

Acknowledgement:
The authors are grateful to Mr. S. R. Parra, Joint Director of Agriculture (Research), Dr. P. Bhattacharyya, Director of Agriculture, Govt. of West Bengal and Dr. N. Shova Rani Principal Scientist and Head (Dept. of Crop Improvement) DRR, Hyderabad, India for their valuable guidance and encouragement during the period of this investigation.

REFERENCES:

Chang, T. T., and Vergara, BS (1975). Varietal diversity and morpho-agronomic characteristics of upland rice, In: research in upland rice . IRRI. Los Banos, Philippines pp 72-79.

De Dutta S.K.(1975). Up land rice around the world, IRRI, Los Banos, Philippines, pp. 2-11.

Mallick, G.K. , Jana, K., Ghosh, S., Sardar, G., and Bhadra, K.K. , Morpho-agronomic characteristics of a newly released rice variety BNKR-1(Dhiren) – *Sci. Res. Rept*., 2013c . 3(2), 223-228.

Mallick, G.K. , Jana, K., Ghosh, S. and Sardar, G. Screening of three promising rice genotypes for rainfed shallow low lands of red and lateritic areas of West Bengal, India. *J. Appl. & Nat. Sci.* 2014, 6(1), 258-261.

Mallick, G.K. , Mandal, M., Jana, K., Ghosh, A. and Biswas, A. Puspa – A new rice variety alternative to annada, released for upland areas of West Bengal, India. *Eco. Env. & Cons.* ,2013d. 19(4), 1127-1129.

Mallick, G.K. , Mandal, M., . Ghosh, S. , Jana, K., and Mandal, R. Yield Performance of a promising rice culture IET 17509 in in red and lateritic areas of West Bengal. *International Journal of Advanced Research.* 2013b. 1(9), 182-185.

Mallick, G.K. ,Kundu, C., Ghosh, S. and Sinha, A.K. Evaluation of some international rice genotypes in red and lateritic areas of West Bengal. *International Journal of Current Research.* 2013c. 5(11), 3360-3363.

Mallick, G.K. and Kundu, C. Screening of early rice genotypes for red and lateritic areas of West Bengal. *Research in Plant Biology*. 2014a. 4(2), 27-30.

Mallick, G.K. and Kundu, C. Screening of mid- early rice genotypes for red and lateritic areas of West Bengal, India. *J. Recent Adv. Agr.* 2014b. 2(4), 208-212.

Mallick, G.K., Jana, K., Sardar, G., Ghosh, S., Mandal, R. , and Bhadra, K.K. , Morpho-agronomic characteristics of a newly released rice variety 'Puspa' *Environ. Ecol.* 2013a . 31(2B), 890-893.

Mallick, G.K., Jana, K., Sardar, G. and Biswas, A. Performance of IET 17509 in farmer's field of upland situation of West Bengal. *Environ. Ecol.* 2012, 30, 1599-1600.

Mukherji, D.K. and Basu Ray Chaudhuri, N.C. 1982 Problems for rice in drought –prone areas in West Bengal and characteristics of drought tolerant varieties. Rice in West Bengal vol – iii . Directorate of agriculture. Govt. of West Bengal Writer's Buildings , Calcutta-700 001. India.