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NOTE

Evaluation of Rice Cultures Under Shallow Rainfed Lowland Situation

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Abstract

Among a set of lowland rice cultures, OR 1351-RGA-2-1-3, OR 1893-1, NDR 40053-2-1, OR 1898-2 and CR 661-236 gave grain yield more than 50 quintals per hectare. Whereas, with regard to specific traits, NDRSB 9730021 exhibited highest panicle length, Borjohingia showed highest grain fertility. These promising cultures/varieties are also equally important for their use in breeding program for genetic enhancement of productivity in lowland rice.

Key words : Rice cultures, Shallow rainfed lowland.

Compared to irrigated rice ecosystem, lowland rice farmers of semi-deep water situations are constrained with lack of suitable rice varieties with high yield (1, 2), resistance to stem borer and BLB vis-a-vis submergence tolerance. The submerged land can not be utilized for any other crop other than rice due to excess moisture condition and farmers continue to grow tall statured varieties like CR1014, BAM 6, T1242 and common land races which have poor *per se* yield performance. Therefore, an attempt was undertaken to evaluate a low land rice cultures for their suitability of cultivation in semi-deep situation of Orissa.

Thirty entries along with five checks were evaluated for yield and yield components following randomized block design with two replications. The trial was transplanted as 10 row plots of 5 m length with a spacing of 20 × 10 cm in rainfed lowland situation of RRTTSS, Motto under OUAT, Bhubaneswar. The trial was conducted with recommended package of practices. Data were analyzed following standard statistical methods (3).

The mean performance of different genotypes

Table 1. Promising low land cultures in rice.

	Designation	FD (days)	PHT (cm)	Panicle length (cm)	Panicle no.	Grain no./ panicle	Fertility (%)	Grain yield (kg/ha)
1	OR 1351-RGA-2-1-3	134	115.8	21.35	282	117.8	66.8	6420
2	OR 1893-1	135	119.7	19.20	195	165.0	63.1	5780
3	NDR 40053-2-1	137	109.1	18.60	258	68.1	53.4	5320
4	OR 1898-2	135	101.8	23.10	309	115.3	75.3	5110
5	CR 661-236	130	97.2	25.85	234	128.1	63.7	5100
6	Ramchandi	139	102.5	19.00	213	114.5	71.1	4850
7	CR 678-1878	134	131.3	21.65	294	106.8	55.4	4660
8	NDRSB 9730021	128	112.5	28.60	147	69.9	71.5	4560
9	Rambha	133	126.3	26.30	210	121.8	83.2	4510
10	CR 780-1937	132	121.1	22.20	324	43.6	44.9	4460
11	OR 1530-1	134	103.5	22.00	270	60.8	53.4	4460
12	OR 1358-RGA-4	134	123.6	24.40	279	97.0	64.7	4410
13	OR 877-ST-4-2	138	114.0	19.05	234	129.1	62.3	4380
14	Sabita	130	131.9	24.20	156	78.8	67.7	4330
15	CR 662-2211	134	114.0	26.15	252	87.8	65.4	4220
16	OR 1334-16	137	112.8	23.40	330	41.5	63.8	4183

Table 2. Promising cultures in relation to specific traits.

	Character	Range	Promising cultures
1	Panicle length (cm)	24.5—26.0	CR 661-236, CR 662-2211, CR 778-95, CR 780-1937, NDRSB 9730021, Purnendu
2	Panicle number/m^2	290—310	OR 1334-16, NDRSB 9730021, PSR 1209-2-3-2, RAU 1305-6-3-2-3, RAU 1326-29-2-5, Borjohingia
3	Grain number/panicle	150—175	OR 1530-1, OR 1351-RGA-2-1-3, OR 1893-1, Purnendu, Kanchan
4	Fertility percentage	82.0—87.5	CR 678-1878, CR 682-162, OR 1358-RGA-4, OR 1334-16, OR 1351-RGA-2-1-3, PSR 1209-2-3, RAU 1305-6-3-2-3, Rayda B, Borjohingia, OR 1206-25-1, Kanchan

with respect to various traits has been presented in Table 1. In general, majority of cultures were mid late to late in maturity duration, intermediate to tall in stature, possesses medium to long panicles, moderate to high panicle number, moderate grain number with improved fertility. As during the present investigation, major emphasis was laid on identification of promising cultures with high yield and adaptability under low land conditions, the *per se* performance provides a reliable information. OR 1351-RGA-2-1-3, OR 1893-1, NDR 40053-2-1, OR 1898-2 and CR 661-236 gave grain yield more than 50 quintals per hectare. However, sorting out of superior genotypes for specific traits has an immense value for their use in future breeding programmes for genetic yield enhancement in low land rice. This is presented in Table 2 for better comprehension.

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