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**COMPARATIVE PERFORMANCE OF TWO RICE VARIETIES (IR.8 & PTB-9)
WITH VARYING LEVELS OF SEED RATE AND NITROGEN
UNDER SEMI-DRY CONDITIONS**

The different conditions under which rice is grown in Kerala are dry, semi dry and wet. During the first crop season (Kharif) 80% of rice area is under semi dry conditions. Considering the low average yield of semi dry paddy crop attempts are being made to assess the suitability of new high yielding varieties under semi dry conditions. Since information regarding seed rate and manurial requirements of these varieties under semi-dry conditions are quite inadequate an experiment was conducted at the Agricultural College farm, Vellayani, Kerala to study the adaptability and performance of IR.8 as a semi dry crop in comparison with ptb -9 and to determine the nitrogen and seed rate requirements of this variety under semi dry conditions.

The experiment was laid out in the Sandy clay loam soil containing 0.102% total nitrogen, 0.0022% available P_2O_5 and 0.0013% available K_2O with a pH of 5.7 during the first crop (Kharif) of 1968 under semi dry conditions. The treatments were two varieties (IR.8 and ptb-9), three levels of nitrogen (40, 60 and 80 kg N/ha) and three levels of seed rate (40, 60 and 80kg/ha). The experiment was laid out in confounded design and replicated four times. Varieties were allotted to sub plots to get more precision and combination of levels of seed rate and nitrogen were allotted to whole plots. Phosphorus and potash were applied uniformly to all plots according to the recommendations.

The data on the yield of grain corresponding to various treatments are given in Table-1. It is seen that IR.8 performed well under semi dry conditions and thus proved its superiority over ptb-9. IR.8 being a medium duration variety has shown its higher efficiency under semi dry conditions also. Regarding the effect of nitrogen it is seen that IR.8 had progressively responded upto 80 kg N/ha, although this increase was not significant. The absence of significant response to nitrogen noticed in the present study might be attributed to the unfavourable weather conditions prevailed during the early phase of this crop.

In IR.8, 80kg level of seed rate has given significantly superior yield than 40 and 60 kg levels. But in the case of ptb.9, the result was somewhat different wherein, beyond 60 kg level the yield of grain showed a decline. This is quite natural that the highest seeded plots of ptb-9 have recorded the tallest plants and thus obviously would have decreased the yield in two ways, by mutual shading, as well as competition for the limited supply of moisture. This is characteristic of tall indica varieties.

Table 1
Mean yield of grain per hectare

	IR.8				Ptb-9			
	40 kg N/ha	60 kg N/ha	80 kg N/ha	Mean	40 kg N/ha	60 kg N/ha	80 kg N/ha	Mean
40 kg seed/ha	3063.6	3616.3	3666.3	3448.7	2866.4	3299.7	3533.0	3233.0
60 kg seed/ha	3639.7	3656.3	3759.6	3685.2	3932.9	3733.0	3333.0	3666.3
SO kg seed/ha	3926.3	3729.6	4133.0	3929.6	3516.3	3716.3	3350.0	3527.4
Mean	3543.2	3667.4	3853.0	3687.8	3438.6	3583.0	3405.2	3474.9

C. D. (0.05) between levels of nitrogen within each variety —429.903
 C. D. (0.05) between levels of seed rate within each variety —429.903
 C. D. (0.05) between combinations of seed rate and nitrogen within each variety —608.058

The results of present study revealed that the combination of 80 kg nitrogen and 80 kg seed rate per hectare has recorded the maximum yield in IR8 whereas 40 kg nitrogen and 60 kg seed rate per hectare have given the highest yield in ptb -9.

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സംഗ്രഹം

വെള്ളായണി കാർഷികകോളേജിൽ പൊടിവിതയിൽ നടത്തിയ ഒരു പരീക്ഷണത്തിൽ IR 8 fflcngjTcD' ഹെക്ടറൊന്നിന് 80 കിലോഗ്രാം നൈട്രജനും 80 കിലോഗ്രാം നെൽവിത്തും ഉപയോഗിക്കുന്നതുകൊണ്ടും ptb-9 നെല്ലിന് 40 കിലോഗ്രാം നൈട്രജനും 60 കിലോഗ്രാം നെൽവിത്തും ഉപയോഗിക്കുന്നതുകൊണ്ടും പരമാവധി വിളവ് കിട്ടുന്നതായി കാണുകയുണ്ടായി.

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