

YIELD POTENTIAL OF THREE EARLY RICE CULTURES* IN THE SOUTHERN RICE TRACT OF KERALA

A breeding programme was initiated during June 1968 for evolving early maturing and high yielding rice varieties through hybridization and selection. Three cultures possessing desirable characters belonging to the maturity range of 80–90 days were selected from the above programme. Trials were conducted at the College of Agriculture, Vellayani and the Model Agronomic Centre, Karamana, State Seed farms at Ullur and Chirayankil during 1974–75 to evaluate these selected cultures at two levels of nitrogen (75 and 90kg/ha) against the check varieties Annapurna and Rohini.

The three early rice cultures were 47-41, 28-26 and 24-20 and these were the progenies of IR8 x T140. Plant selections were done following the criteria suggested by Jennings and Beachell, (1964).

The experiment with ten treatment combinations was laid out in a Randomised block design replicated four times. A spacing of 10cm x 10cm was adopted and 20 day old seedlings were planted at three seedlings per hill.

The data are presented in Tables 1 and 2 respectively,

At the Vellayani centre the varietal influence on grain yield was marked. The culture 47-41 recorded the highest grain yield of 5885 kg per hectare while there was no significant difference in the grain yield of Annapurna, Rohini and the culture 28-26. The culture 24-20 recorded the lowest grain yield but was on par with Rohini. This indicated that culture 47-41 possessed higher yield potential of 19% above the check varieties. Varietal difference with respect to the characters like grain-straw ratio, number of productive tillers, dry matter production and per day production of grain were also detected. The culture 47-41 was found to be superior in respect of all these characters.

At the Karmana and Chirayankil centres also the culture 47-41 recorded the highest grain yield. At Ullur centre the culture 47-41 ranked first in grain yield followed by the cultures 28-26 and 24-20 which were on par. These results indicated the superiority of the culture 47-41,

The mean yield of the cultures at the three locations (Table-2) indicated that the overall performance of the culture 47-41 was far superior to other cultures and varieties. It recorded 37 percent more yield than the most popular short duration variety Annapurna.

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സംഗ്രഹം

ബീജസങ്കലനം വഴി ഉൽപ്പാദിപ്പിയ്ക്കപ്പെട്ടതും 80-90 ദിവസം കൊണ്ടു കൃഷ്ണത്തു നതുമായ 47-41, 28-26, 24-20 എന്നീ പ്രസ്ഥകാല നെൽവിത്തുകളുടെ ഉൽപ്പാദനശേഷി അനപൂർണ്ണ, രോഹിണി എന്നിവയുടെതുമായി താരതമ്യ പഠനം നടത്തുകയുണ്ടായി. കടപ്പാട് 47-41 എന്നയിനം അനപൂർണ്ണയ്ക്കക്കാൾ 25% അധികം നെല്ലുൽപ്പാദിപ്പിയ്ക്കുന്നതായി കണ്ടു

Table 1
Summary of grain yield and other characters of the varieties and cultures.

Varieties and cultures	Grain yield Kg/ha	Straw yield Kg/ha	Grain straw ratio	Number of productive tillers per sq m	Dry matter production g/sq m	Per day production of grain Kg/ha
Annapurna	4923	4614	1.070	767.6	1134	50.75
Rohini	4865	4509	1.091	737.6	1070	50.62
Culture 47-41	5885	4847	1.224	830.0	1052	66.94
Culture 28-26	5029	4360	1.140	625.0	1108	55.83
Culture 24-20	4654	3919	1.199	845.0	1066	54.36
F. test	Sig	N.S	Sig	Sig	Sig	Sig
C. D. at 0.05	190.4	—	0.078	68.6	86.9	2.39
S.E (m)	+65.19	±375.27	+ .026	+23.63	+ 29.94	+ 0.82

Table 2
Mean grain yield of varieties and cultures (Kg/ha; at three locations

Varieties and cultures	Locations			Mean
	Karamana	Chirayinkil	Ullur	
Annapurna	4072	2818	3293	3394
Rohini	3204	2846	2894	2981
Culture 47-41	4963	4390	4652	4668
Culture 28-26	3986	3306	4014	3669
Culture 24-20	3712	3004	3877	3531
F. Test	Sig	Sig	Sig	Sig
C. D, 0.05	525	628	637	328

References

Jennings, P. R. and Beachell, H. M., 1964. Breeding rice for nitrogen responsiveness. *J. ft. C. News letter*, 13, 1 9.

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