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COMPARATIVE PERFORMANCE OF FODDER MAIZE VARIETIES AT GRADED LEVELS OF NITROGEN

Cultivation of maize asa fodder crop is not popular in Kerala, dueto the relatively lower green yield. Some of the high yielding hybrid maize varieties are likely to become popular in the State. The present investigation was taken up to assess the performance of a few prominent hybrid and composite fodder maize varieties in the red loam soils of Kerala and to evaluate their response to applied nitrogen. Meenakshi *et al.* (1975) have reported that the optimum dose of nitrogen for grain yield of hybrid and composite maize was 236 kg/ha in the soils of Coimbatore.

The experiment was laid out in Randomised block design and was replicated thrice. Treatments included factorial combinations of seven varieties and three levels of nitrogen. The varieties tested were Him-123, Vijay, Karnal, Deccan Macca, Ganga-5, Ganga Safed 2 and Hi-starch. The three levels of nitrogen were 40, 80 and 120 kg/ha. The experiment was laid out at the Fodder Research and Development Centre, Kerala Agricultural University, Mannuthy. Sowing was done in November, 1973 adopting a spacing of 25 x 20 cm. Nitrogen was given in three splits, first as basal, second during the third week and the remainder in the sixth week. Phosphatic and potassic fertilizers were applied basally to supply phosphate and potash at 60 kg/ha. The crop was harvested 68 days after sowing

Data on the yield of the varieties at different levels of nitrogen are given in the Table-1. The differences between mean yield of varieties and levels of nitrogen were significant. Among the varieties, Him-123 recorded the highest yield of 35,2 t/ha foltowed by Deccan Macca and Hi-starch and Ganga-5 in that order, the mean yields being 33.9, 33.7 and 31.8 t/ha respectively. The difference between the latter three varieties were not significant. The variety Karnal recorded the lowest yield 23.6 t/ha. The difference in yield between levels of nitrogen were also significant, there being marked increase with increasing levels of nitrogen The average response in yield for the first increment of 40 kg was 11.3 t ha, whereas for the subsequent increase, the response decreased to 7.0 t/ha.

The interaction between levels of nitrogen and varieties was significant thereby indicating that there were varietal differences in the nature of response to levels of nitrogen. in all varieties excepting Ganga Safed-2, there was more or less steady increase in yield with incremental doses of nitrogen. The response was nega'.ive in the variety Ganga Safed-2 beyond 80 kg N/ha.

Table—1

Green yields of fodder maize varieties at different levels of nitrogen (t/ha)

Levels of N (Kg/ha)	Varieties							
	Him 123	Vijay	Karnal	Deccan Macca	Ganga-5	Ganga Safed-2	Hi-starch	Mean
40	27.9	22.9	16.9	29.6	15.7	22.7	25.7	26.9
80	33.9	31.2	23.4	33.9	38.2	38.9	29.4	38.2
120	46.8	38.5	30,6	38.1	41.5	29.7	45.9	45.2
Mean	36.2	30.9	23.6	33.8	31.8	30.4	33.7	

CD (0.05) for comparison between varieties : 5.3
CD (0.05) for comparison between N levels : 3.5
CD (0.05) for interaction—9.1

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