

# Effect of Different Crop Establishment Techniques and Nutrient Doses on Growth, Yield and Economics of Rice (*Oryza sativa* L.)

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## ABSTRACT

A field experiment was conducted during *kharif*, 2011 on sandy loam soils of Agricultural College Farm, Naira to find out the best crop establishment technique and the optimum nutrient dose for rice. The experiment was laid out in split-plot design with four crop establishment techniques assigned to main plots and five nutrient doses assigned to sub-plots, each replicated thrice. Distinct disparities were noticed with regard to growth parameters, yield attributes and yields of rice due to establishment techniques and nutrient doses. As regards growth stature and yield structure, significantly superior performance of rice was observed with transplanting ( $C_4$ ) which was however, in parity with semi-dry system ( $C_1$ ). While the grain yield was significantly higher with transplanting ( $C_4$ ) which was however, in parity with semi-dry system ( $C_1$ ) and drum seeding of sprouted seed ( $C_2$ ). The grain yield was the lowest with broadcasting of sprouted seed ( $C_3$ ). Although maximum gross returns  $ha^{-1}$  was recorded with transplanting method ( $C_4$ ), the return per rupee invested was the highest with semi-dry system ( $C_1$ ). Among the nutrient doses tried, maximum grain yield, net returns and B:C ratio were associated with application of the highest dose of N P K ( $F_5$ - 140-105-95 kg N,  $P_2O_5$ ,  $K_2O$   $ha^{-1}$ ) which was however, comparable with  $F_4$  (120-90-80 kg N,  $P_2O_5$ ,  $K_2O$   $ha^{-1}$ ).

**Key words :** Drum seeding, Nutrient doses, Semi-dry rice, Transplanting.