

Relative performance of early maturing rice (*Oryza sativa* L.) varieties under different levels of nitrogen in direct seeded upland condition

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ABSTRACT : A field experiment was conducted on silty clay loam soil at Agriculture College Farm, Rewa (M.P.) during *kharif* season 2008. The treatments comprising 3 levels of nitrogen [N_1 , 40 kg/ha; N_2 , 80 kg/ha; N_3 , 120 kg/ha] in main plots and 7 varieties (V_1 , 'IET-20144'; V_2 , 'IET-19836'; V_3 , 'Annada'; V_4 , 'Govinda'; V_5 , 'Narendra-97'; V_6 , 'Tulsi' and V_7 , 'JR-201 Local') in subplots laid out in split-plot design, replicated 3 times. The soil was low in available nitrogen, medium in phosphorus and high in available potassium. The pH of the soil was nearly neutral. Application of 120 kg N/ha produced superior growth characters; yield attributing traits and grain yield. Variety 'Govinda' gave higher values of most of the growth and yield attributing characters and resulted in significantly highest grain yield. Combination of variety 'JR-201 Local' and 120 kg N/ha was found best in respect of most of the growth and yield attributing characters along with grain yield followed by N_3V_4 ('Govinda' sown with 120 kg N/ha). The highest grain yield of 36.94 q/ha was recorded with 120 kg N/ha and it was 16.82 and 41.21% higher over the grain yield obtained with 80 and 40 kg N/ha, respectively. Variety 'Govinda' being at par with 'IET-19836' resulted in significantly highest grain yield (36.24 q/ha) which was 7.86, 9.03, 17.93, 27.02 and 57.29 per cent higher than that produced by 'Narendra-97', 'JR-201 Local', 'Annada', 'IET-20144' and 'Tulsi', respectively. Variety 'Govinda' under 40 and 80 kg N/ha and variety 'JR-201 Local' under 120 kg N/ha produced highest grain yield over rest of the varieties and treatment combination N_3V_7 resulted in significantly highest grain yield (40.47 q/ha) followed by N_3V_4 (40.20 q/ha) and N_3V_2 (39.77 q/ha). Variety 'JR-201 Local' with 120 kg N/ha gave highest gross and net return along with B:C ratio (Rs. 36481/ha, Rs. 25802/ha and 3.42).

Key Words : *Oryza sativa* L., levels of nitrogen, upland condition.