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Productivity of hybrid rice (*Oryza sativa* L.) as affected by nitrogen levels and plant geometry under transplanted situation in eastern Uttar Pradesh

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ABSTRACT : Field experiments were conducted at the research farm of the Narendra Deva University of Agricultural and Technology, Kumarganj, Faizabad, Uttar Pradesh, during rainy *(kharif)* seasons, to find out the optimum dose of nitrogen and suitable plant geometry for hybrid rice (*Oryza sativa* L.) under transplanted situation. Increasing levels of nitrogen significantly increased plant height, tillers, dry matter accumulation, panicles, panicle weight, spikelets/panicle, grains/panicle, grain and straw yields, nitrogen content in grain and straw (%) and nitrogen uptake upto 200 kg/ha. Hybrid rice recorded good response to nitrogen upto 184.9 kg/ha. Based on the nitrogen use efficiency and benefit: cost ratio application 200 kg nitrogen/ha was found to be superior to the other treatments. Closer plant geometry of 15 × 10 cm proved to be significantly higher plant height, tillers, dry matter accumulation, panicles, spikelets/panicle, grains/panicle, grain and straw yields, nitrogen content in grain over wider plant geometry of 20 × 15, 15 × 15 and 20 × 10 cm. However, the treatment combination of 200 kg N/ha with planting spacing of 15 × 10 cm was found economically feasible agronomic practice for rice hybrid PHB 71.

Key Words: Paddy, nitrogen levels, plant geometry, yields; NUE, ANR, economics.