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COMBINED EFFECT OF VARIETY AND PLANTING METHOD ON GROWTH AND YIELD PERFORMANCE OF AUS RICE (*ORYZA SATIVA* L.)

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ABSTRACT

A field experiment was conducted at the Agronomy Farm of Sher-e-Bangla Agricultural University, Dhaka, Bangladesh, from April to August 2017 to evaluate the effect of variety and planting method on the growth and yield of aus rice (*Oryza sativa* L.). Four high-yielding varieties (BRRI dhan65, BRRI dhan55, BRRI dhan48 and BRRI dhan43) were established using three planting methods (broadcasting, dibbling and transplanting) in a randomized complete block design with three replications, giving twelve treatment combinations. Variety, planting method, and their interaction significantly ($p < 0.05$) influenced plant height, root length, leaf number, dry matter accumulation, tiller production, panicle length, grain number, 1000-seed weight, and yield. BRRI dhan48 consistently outperformed the other varieties, while transplanting produced superior growth and yield compared with dibbling and broadcasting. The combination of BRRI dhan48 with transplanting (V_3M_3) recorded the highest effective tillers hill⁻¹ (17.00), panicle length (22.42 cm), total grains panicle⁻¹ (120.80), filled grains panicle⁻¹ (110.10), 1000-seed weight (24.58 g), seed yield (4.63 t ha⁻¹), stover yield (6.30 t ha⁻¹), biological yield (10.90 t ha⁻¹) and harvest index (42.36%), whereas BRRI dhan43 under broadcasting (V_4M_1) gave the lowest values for nearly all traits. Pearson correlation analysis among the twelve treatment means revealed strong positive associations between yield-contributing traits (dry matter accumulation, tiller number, panicle length, grain number) and final seed yield ($r > 0.90$), underscoring the physiological basis of the variety $\times$ planting-method interaction. These findings indicate that adoption of BRRI dhan48 with the transplanting method can substantially improve aus rice productivity, while dibbling may serve as a comparatively water-economical alternative to transplanting in areas with limited

irrigation.



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