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EFFICACY OF BASAL UREA AND DEEP PLACEMENT OF UREA SUPER GRANULES (USG) ON GROWTH AND YIELD OF FLOODED RICE

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A B S T R A C T

The experiment was conducted at the Agronomy Field Laboratory, Rajshahi University during the period from May to November, 2018 in order to study the efficacy of basal urea and deep placement of urea super granules (USG) on growth and yield of flooded rice. The experiment comprised of two factors- Factor A: Basal urea application rates (three rates); B_1: 0 kg ha^{-1}; B_2: 50 kg ha^{-1}, B_3: 100 kg ha^{-1}; Factors B: of Urea super granules deep placement rates (three rates); F_1: 0 kg ha^{-1}, F_2: 50 kg $ha^{-1}$and F_3: 100 kg ha^{-1}. The experiment was laid out in a randomized completely block design (RCBD) with three replications. Experimental results showed that both basal and deep placement of USG had significant effect on flooded rice growth and yield. Basal urea application @ 100 kg ha^{-1} produced the highest plant height (156.48cm), total tillers $hill^{-1}$ (6.07), effective tillers m^{-2} (88.81), maximum panicle length (25.87cm), maximum filled grains $panicle^{-1}$ (82.02), grain yield (1.75 t ha^{-1}), straw yield (4.83 t ha^{-1}) and biological yield (6.57 t ha^{-1}). Whereas deep placement of USG @ 100 kg ha^{-1} produced the highest plant height (161.83cm), total tillers $hill^{-1}$(6.11), effective tillers m^{-2} (91.74), maximum panicle length (26.03cm), total grains $panicle^{-1}$(141.02), grain yield (1.77 t ha^{-1}), straw yield (4.98 t ha^{-1}), biological yield (6.75 t ha^{-1}). Treatment combination of B_3F_3contribute highest grain yield (1.83 t ha^{-1}), straw yield (5.41 t ha^{-1}), and biological yield (7.28 t ha^{-1}). Chalanbeel is one of the largest lowland ecosystem of Bangladesh where most of the farmers use only basal urea @ 100 kg ha^{-1}, where flooded rice (Digha) yield can be achieved 1.7 t ha^{-1}.From our experiment, we would like to suggest them to apply additional urea super granules @ 100 kg ha^{-1} as deep placement (using a self-loaded injector) at 60 DAS, which can achieve additional 7.1 % more yield (1.83 t ha^{-1}) than conventional practice.

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