INTEGRATED AGRONOMIC MANAGEMENT PRACTICES AND THEIR INDIVIDUAL CONTRIBUTION ON GROWTH AND YIELD OF WHEAT

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Executive Summary

The project was carried out by setting an experiment at the research field of Sher-e-Bangla Agricultural University, Dhaka during the period of November to May, 2018-2019 to study the effect of variety and agronomic managements on growth and yield of wheat. The experiment comprised two factors; Factor A: Variety (2) *viz.* BARI Gom-30 (V_1) and BARI Gom-32 (V_2) in the main plots and Factor B: Agronomic managements (7) *viz.* No managements as control (M_1), No fertilizer but all other managements (M_2), No weeding but all other managements (M_3), No irrigation but all other managements (M_4), No thinning but all other managements (M_5), No pesticides but all other managements (M_6) and Complete managements (M_7) in the sub-plots. The experiment was laid out in split-plot design with three replications. Urea, Triple super phosphate (TSP), Muriate of potash (MoP), Gypsum, Zinc sulphate and Boric acid were added in the experimental soil as a source of nitrogen (N), phosphorous (P), potassium (K), Sulfur (S), Zinc (Zn) and Boron (B), respectively. The fertilizers were applied @ 220, 140, 100, 110, 10 and 0.5 kg ha^{-1} with the soil as per treatment. One third of urea along with all other fertilizers were applied during final land preparation as basal dose and rest urea was top dressed in two equal installments at crown root initiation stage (20 DAS) and before flowering (45 DAS). The seeds were sown in 20 cm rows having a depth of 2-3 cm on November 12, 2018. Plants from one linear meter of each plot were randomly selected from which effective tiller number was recorded at harvest. Plant height, maturity duration, spike length, grains $spike^{-1}$, 1000-seed weight, grain, straw and biological yield, shelling percentage were recorded at harvest. The results revealed significant variations in variety, agronomic managements and their interactions for most of the studied parameters. The variety BARI Gom-30 with complete management had the highest grain yield (1.88 t ha^{-1}) that followed by the same management practice with the other variety BARI Gom-32 (1.67 t ha^{-1}). No management reduced 79.26% yield of BARI Gom-30 that followed by irrigation (69.68 %) and the trend was almost similar to the other variety BARI Gom-32 having 76.65 % yield reduction with no management that was also followed by no irrigation (68.86 %). Hence irrigation was found as the most limiting agronomic management for wheat cultivation.

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