EFFECT OF DIFFERENT LEVELS OF NITROGEN ON SEED QUALITY AND YIELD OF WHEAT

Dr. A.K.M. Ruhul Amin[1]

Extended Summary

A field experiment was conducted at the Research Field and Agronomy Lab of Sher-e-Bangla Agricultural University, Dhaka during the period from November, 2014 to April, 2015 to evaluate the effect of different level of nitrogen on growth, yield and seed quality of wheat. The experiment comprised five nitrogen levels viz. (i) N_0=Control (no nitrogen), (ii) N_1=25% less nitrogen from the recommended dose, (iii) N_2= Recommended dose of nitrogen for wheat cultivation, (iv) N_3=25% higher nitrogen than recommended dose, (v) N_4 = 50% higher nitrogen than recommended dose and four wheat varieties viz. (i) V_1 = BARI gom21, (ii) V_2 = BARI gom23 (iii) V_3 = BARI gom24 and (iv) V_4 = BARI gom27. The experiment was laid out in a split plot design with three replications. Data were collected on different aspects of growth, yield attributes and yield and seed quality. Results revealed that N_3 (25% higher nitrogen than recommended dose) gave the highest grain yield (3.41 t ha^{-1}) which statistically at par with N_2 (recommended dose of nitrogen) (3.29 t ha^{-1}). This may be attributed to highest number of spikes m^{-2}(194.46), spike length (15.61 cm), number of spikelets $spike^{-1}$ (20.91), number of grains $spike^{-1}$(48.17) and 1000-grain weight (47.08 g). Out of 4 varieties V_3 (BARI got 24) showed highest grain yield (3.02 t ha^{-1}) which was statistically similar with V_4 (BARI gom 27) (2.89 t ha^{-1}). The variety also showed higher number of grains $spike^{-1}$ (46.65) and 1000-grain weight (49.53 g). In respect of seed quality aspect, N_2 (recommended dose) showed higher quality of seed which was statistically similar with N_3 (25% higher nitrogen dose than recommended) because this nitrogen dose gave highest germination percentage (96.67%), vigor index (10.34), shoot length (19.94 cm) and dry weight $seedling^{-1}$ (0.19 g). In case variety, V_4, (BARI gom 27) showed the higher seed quality which may be attributed by germination percentage (95.20%), vigor index (10.52) shoot length (20.51 cm) and dry weight $seedling^{-1}$ (0.18 g). Regarding the interaction of nitrogen dose and variety, N_2V_3, N_2V_4 and N_3V_4 were best in quality seed production aspect. From the above result it may be concluded that the N_2 (recommended dose) and the variety V_4 (BARI gom 27) seems to be promising for producing higher yield and quality seed.

[1]Professor, Department of Agronomy, Sher-e-Bangla Agricultural University, Dhaka, Banglaesh