

INFLUENCE OF DIFFERENT LEVELS OF COWDUNG MANIPULATION TO MITIGATE DROUGHT STRESS OF WHEAT

Dr. A.K.M. Ruhul Amin*

Executive Summary

Wheat is grown in our country in dry month of November, 2018 to March, 2019. So, water deficit or drought is a common phenomenon that affects the productivity of wheat particularly in the dry areas of Bangladesh due to unavailability of irrigation water. Reviews says that organic manure especially cowdung has the capability to combat drought stress of wheat to certain extent. Taking these views in consideration, a pot experiment was conducted in the net house of the Agronomy Department, Sher-e-Bangla Agricultural University, Dhaka 1207 during November, 2018 to March, 2019 to select the optimum dose(s) of cowdung to mitigate the drought stress of wheat. The experiment comprised three factors viz. factor A: Variety -2; i) V_1 = BARI Gom28, ii) V_2 = BARI Gom30; factor B: Cowdung leves- 5, i) C_0 = RDCF + Control (Without cowdung), ii) C_1 = RDCF + 25% less cowdung of recommended dose, C_2 = RDCF + Recommended dose of cowdung, C_3 = RDCF + 25% higher cowdung of recommended dose and C_4 = RDCF + 50% higher cowdung of recommended dose; factor C: Comprising drought by avoiding irrigation- 4: i) D_0 = Control (without drought), i) D_1 = Crown root initiation stage (20-19 DAS), ii) D_2 = Booting stage (45-54 DAS), iii) D_3 = Anthesis stage (55-64 DAS). Randomized complete block design (Factorial) was followed in this experiment and replicated thrice. Result revealed that BARI Gom30 was highest grain yielder ($5.73 \text{ g plant}^{-1}$) and treatment C_4 (RDCF+50% higher cowdung of recommended dose) gave highest grain yield ($5.72 \text{ g plant}^{-1}$) than other levels. In respect of drought imposition treatments, grain yield was found highest in control treatment (D_0) and that of second highest was recorded in drought imposition at booting stage treatment (D_2). Regarding the interaction of variety, cowdung and drought imposition, the interaction of BARI Gom30 \times RDCF+50% higher cowdung of recommended dose \times without drought imposition ($V_2C_4D_0$) was highest yielder than others. Finally, it may be concluded that 50% higher cowdung level than recommended dose seems promising in combating drought stress in wheat.

* Professor, Dept. of Agronomy, Sher-e-Bangla Agricultural University, Dhaka-1207