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Abdur Razzak, Rahman Md. Rashedur Tanvir, P. K. M. Golam Rahman, Islam Md. Robiul, Nilufar Yeasmin*

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RESPONSE OF LENTIL VARIRTIES ON YIELD AND YIELD CONTRIBUTING CHARACTER AS INFLUENCE BY DEFICIT IRRIGATION.

Abdur Razzak, Rahman Md. Rashedur Tanvir, P. K. M. Golam Rahman, Islam Md. Robiul, Nilufer Yeasmin*

Department of Agronomy and Agricultural Extension, University of Rajshahi, Rajshahi, Bangladesh

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ABSTRACT

The field experiment was conducted at the Agronomy Field Laboratory, Department of Agronomy and Agricultural Extension, University of Rajshahi, during the period from 2nd December, 2018 to 21th March, 2019 to find out the effect of deficit irrigation schedule for lentil, which was measured on the basis of field capacity. The field experiment was set up using split plot experimental design including two lentil varieties (BARI masur-3 & BARI masur-6) and four irrigation regimes viz. T_1 (irrigation based on 125% of field capacity), T_2 (irrigation based on 100% of field capacity), T_3 (irrigation based on 75% of field capacity) and T_4 (irrigation based on 50% of field capacity). Considering different phyto-physiological responses as well as yield components, and yield of lentil, it was found that different irrigation regimes differed significantly and most of the cases highest performance was noted for maximum irrigation treatment (T_1) which reduced gradually with the reduction of irrigation amount. Highest grain yield (1.17 t ha^{-1}) was observed in the treatment T_1 which was statistically identical to the T_2 (1.03 t ha^{-1}). However, grain yield reduced significantly by 23.93% and 34.18% for T_3 and T_4 respectively, but water use efficiency (WUE) was higher in T_4 (2.82 kg ha^{-1} mm^{-1}) and the lower (2.18 kg ha^{-1} mm^{-1}) in T_3. The lentil varieties differ significantly; overall performance was good in V_2 (BARI masur-6). Highest grain yield (1.29 t ha^{-1}) was obtained from combination of V_2T_1, which was more or less similar to combination of V_2T_2. Based on my result, it was seemed that, irrigation amount equivalent to 100% of field capacity can produce nearly same amount of yield of lentil with 25 % less irrigational water compared with T_1. Therefore, it is suggested that irrigation amount equivalent to 100% of field capacity would be the best practices for lentil cultivation that achieves an acceptable grain yield and allows for reductions in irrigation water consumption.