

Effect of Furrow Irrigation Methods and Deficit Irrigation on Yield and Water Use Efficiency of Maize in Mazandaran

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Abstract

In order to investigate the effects of furrow irrigation and amount of irrigation water on yield and water use efficiency of corn, an experiment was conducted as a split plot based on a randomized complete block design with three replications for a period of two years at Agriculture Center of Mazandaran. Treatments included three levels of 100, 80 and 60 percent water requirement as the main treatments, and three irrigation methods included fixed every-other-furrow, alternative every-other-furrow and every-furrow irrigation as the subsidiary treatments. Statistical analysis of the results of two years' data showed that treatment with 100% water requirement with every-furrow irrigation and treatment with 60% irrigation water requirement with fixed every-other-furrow had the highest and lowest yield, respectively. The highest water use efficiency was in 60 percent irrigation water requirement with a fixed every-other-furrow treatment and the lowest water use efficiency was related to the treatment with 100 percent irrigation water requirement with alternative every-other-furrow. The value of K_y was obtained 0.8 for the total growth stage.

Keywords: Every-other-furrow, Corn, Water use efficiency, Mazandaran.

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