Abstract

Water shortages have heightened the importance of water in agricultural production in the area and have triggered recent regulations affecting irrigation water use. Under these conditions, it is important to know how much yield can be expected from a given water allocation for each alternative crop, which is especially important for field corn (Zea mays L.), the most important irrigated crop in the region.The management of deficit irrigation is one of the savings strategies in water resources in agricultural sector. This research was conducted to study the effects of different levels of irrigation on grain and biological yield, yield components, and water use efficiency of grain corn (hybrid SC.704) in 2010 cropping season at Natural Resources and Agricultural Researches Center of moghan, north-west Iran.The study factorial split block experiment, Vertical strip irrigation factorial with three replications was conducted at Agricultural Research Center Moghan. Irrigation treatments included: full irrigation (I1), treatment is based on 50% water requirement (I2), treatment is based on 75% water requirement (I3), irrigation based on 120% water requirement (I4) (calculated for water based on Penman - mantis). The amount of water applied was determined by Class-A Pan evaporation every day. Required irrigation water was applied as 70 mm of evaporation of Class-A Pan. The results indicated that the effect of drought stress on grain and biological yields was significant at 1% probability level. The maximum grain yield of about 10.1 ton per hectare was obtained in 100% water requirement (I1). Step-wise regression analysis indicated that about 88% of grain yield variation was related to the grain number per ear. The investigation also indicated that because there is no significant difference in the grain yield between the water level of 100% and 120% water requirement, in conditions which we have to apply mild deficit irrigation, the irrigation treatment of 100% water requirement for corn is recommended.

Key words: Irrigation, Tape (T-tape), Corn, water use efficiency.

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Dissertation for M.Sc Degree in Irrigation & Drainage

Effect of different water levels on yield of corn through under drip irrigation(t-tap) in Moghan

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December 2012