

Effects of Different Amounts of Irrigation Water on Yield and Quality of Two Varieties of Date Palm under Subsurface Drip Irrigation

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Abstract

Application of advance irrigation methods to a proper utilization of water resources is inevitable. The effects of different amounts of irrigation water on yield and quality of two varieties of date palm under subsurface drip irrigation were studied in Behbahan Agricultural Research Station during two growing seasons (2014-2015). The study was conducted in a randomized complete block design with a split plot design with three replications where three levels of water application based on T1=75%, T2=100% and T3=125% of crop water requirement, were as the main plots and two variety of Khasi and Zahedi were as sub-plots. The results showed that different levels of irrigation have not had no significant effect on the quality and yield of fruit. However, there was a significant difference ($p<0.01$) between the levels of irrigation in terms of water use efficiency. Accordingly, T1 by 0.88 kg of dates per cubic meter of water showed higher water use efficiency. Comparison of mean interactions between the water application and varieties showed water use efficiency of Khasi and Zahedi varieties were 0.86 and 0.89 kg/m³, respectively. The applied irrigation water of palm trees based on T1 was of 7545 m³/ha which was 2515 m³/ha less compared to that under T2.

Keywords: Water requirements, Water use levels, Water use efficiency.

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