Effect of water distribution patterns on productivity, fruit quality and water use efficiency of Ziziphus jujube in arid regions under drip irrigation system.

Ismail S. M. and Almarshadi M.H. 2013

Abstract:

A field experiment was carried out at the Agriculture Experimental Station of King Abdulaziz University located at Hada Alsham to study the effect of water distribution patterns on productivity of Ziziphus jujuba under arid conditions. Three water distribution treatments giving the same amount of water were investigated. The first treatment (T1) contained 8 drippers with a discharge of 4 l/h, the second treatment (T2) 4 drippers with a discharge of 8 l/h and the third one (T3) contained 2 drippers with a discharge of 16 l/h. The drippers were installed to distribute water in a circle with a diameter of 1 m around tree for the two growing seasons of 2009-2010 and 2010-2011. Results revealed that increasing number of drippers with low discharge distributed irrigation water homogenously around trees and covered large area of tree roots. T1 significantly increased branch length, number of branches, collar diameter, soil moisture content and fruit yield and quality. The increase in these parameters was gradually decreased in T2 followed by T3. Increasing number of drippers from 2 to 8 and decreasing dripper discharge from 16 to 4 l/h around tree increased fruit yield by about 78.3% and 69.4% in the first and second seasons, respectively.

Published In: