

Comparison of the Effect of Two Rootstocks Citrus Macrophylla and Citrus Volkameriana on Water Productivity of Citrus “Orogrande” Under Three Irrigation Doses

Authors : Hicham Elomari, Absa Fall, Taoufiq Elkrochni

Abstract : This present work mainly concerns the improvement of citrus water productivity in the Souss Massa region. The objective is to evaluate the effect of deficit irrigation applied during the fruit growth stage on fruit size, quality and yield of the Orogrande variety grafted on Citrus macrophylla and Citrus volkameriana. Three irrigation regimes were adopted, a control D0 of 3.6 l/h and two doses D1 (58% D0 =2.1 l/h) and D2 (236% D0 =8.5 l/h). The experimental design was a randomized complete block while keeping the same spacing between drippers, the same duration of irrigation and the beginning of trials (fruit growth stage). Results showed that at the end of the cycle from October 1, 2020, to September 30, 2021, a total water supply of 732 mm and 785 mm using the D1 dose was provided to trees of Orogrande variety, respectively grafted on Citrus macrophylla and Citrus volkameriana rootstocks. Citrus macrophylla presented largest fruit size of 38 mm compared to Citrus volkameriana (33mm) with a significant difference. Total soluble sugar (8°Brix) and juice content level (40%) were higher with the application of the D1 dose on both rootstocks. Yield of 36 Tons was not affected by the deficit irrigation. Reduction of water supply by 18% increases agronomic productivity (6 MAD/m³) and economic productivity (3 MAD/m³).

Keywords : citrus, irrigation, fruit size, fruit quality, yield

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