

Effect of deficit irrigation and paclobutrazol on vegetative growth and performance of young olive plants CV. Manzanillo

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Olive (*Olea europea* L.) is one of the most important fruit trees for its both olive oil and table olive. Recently olive cultivation and orchard development well considered in Iran in which cultivation area of this crop will be increased to 1000000 ha. In this developmental project of olive culture it is necessary to provide number substantial of suitable rooted cuttings with standard characteristics and in low production costs. Present research was carried out in order to explore and evaluate the performance of producing suitable olive plants with the objective of saving irrigation water. So 120 uniform young olive plants cv. Manzanillo were used, based on a randomized complete block design (RCBR) experiment. Young olive plants were irrigated under different irrigation regimes (60, 70, 80, 90, 100% ETc) in addition, paclobutrazol (PBZ) treatment 0.25ga.i/pot was added to 60% ETc treatment. To evaluate the effect of different treatments, several characters such as, root and aerial parts, fresh and dry weight, plant height, leaf area and leaf number were measured. Results showed that PBZ treatment reduced shoot growth, leaf area, plant height and internode length. Although, PBZ treatment increased root to shoot fresh and dry weight ratio. Root, shoot fresh and dry weight, leaf number, leaf area and plant height increased with the amount of applied irrigation water from 60 to 100% ETc. There were no significant differences in measured characters between 90 and 100% ETc irrigation treatment. In add conclusion, this is possible to save at least 10% of irrigation water. In addition in case of shortage of water PBZ treatment is able to ameliorate the effect of water stress.