P-79 (80)
BIOCHEMICAL CHANGES OF SOME OLIVE (OLEA EUROPAEA L.) CULTIVARS UNDER WATER STRESS

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This experiment was carried out to determine the effect of water stress on biochemical characteristics of three young potted olive cultivars during 2015 growing season. A factorial experiment based on completely randomized design was used with three replications in Gilanegharb region of Kermanshah province. One year old olive rooted cutting of three olive cultivars (Zard, Amigdalolia and Konservolia) was planted in 12 liter pots and subjected to three irrigation treatments. Irrigation treatments were included of control (100% of field capacity), 75% and 50% field capacity. Biochemical characteristics such as Chlorophyll a, b & total, proline and total carbohydrate were measured at the end of experiment. Results showed that water stress reduced the Chlorophyll content of all cultivars in compare to controls. The highest total chlorophyll content reduction was occurred in Konservolia olive cultivar under severs water stress in compare to the others. Water stress induces increasing in free proline and soluble carbohydrate in all olive cultivars. The highest proline content was recorded in Zard olive cultivar under water stress regimes. Konservolia accumulates higher amount of soluble carbohydrate under water stress conditions. Generally based on obtained results Zard, Konservolia and Amigdalolia were tolerant to water stress respectively.

Keywords: olive, stress, biochemical markers, Proline, Carbohydrate