The effect of inoculation with two species of arbuscular mycorrhizal fungi on growth rate and physicochemical traits of young olive plantlets in greenhouse conditions

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Abstract

This study was conducted to assess the effects of two species of arbuscular mycorrhiza fungi (*Glomus mosseae* and *G. intraradices*) on growth of young plantlets of two olive cultivars (Koroneiki and Valanolia). Recently rooted cuttings were inoculated with the mycorrhiza, planted in pots containing sterile soil and located in the greenhouse. Eighteen months following inoculation, some morphological, physical and biochemical traits were studied. The results showed that inoculated plantlets with both mycorrhizal fungi species had taller height, more shoots, thicker stems, longer internodes and more leaves as compared to control plantlets. They also had more fresh and dry weight of stem, but showed lower amount of fresh and dry weight of roots. Mycorrhiza inoculation significantly increased total chlorophyll, carotenoids and phenol content of leaf, but there were no significant difference in the amount of iron and phosphorus in the leaf. In all the studied traits, there wasn't any difference between the two mycorrhiza species. Percent of root colonization in both mycorrhiza fungi was found to be higher than control.

Keywords: *Glomus mosseae*, *Glomus intraradices*, Koroneiki, Valanolia, Chlorophyll, Phenol.

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