Effect of different hormonal treatments and rooting-cofactors on rooting of olive cultivars (Fishomi and Shiraz)

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Abstract

This research was conducted to find an appropriate method to increase rooting percentage in difficult to root olive cultivars. This experiment, with 15 treatments and 2 cultivars (Fishomi and Shiraz) was arranged as a split-plot based on completely randomized design and four replications. The main factor was cultivar and the sub-main factor was hormonal treatments. Treatments consisted of indole-3-butyric acid (IBA) (concentrations of 2000, 4000 and 6000 mg/L) and naphthalene acetic acid (NAA) with concentration of 2000 mg/L alone or with 2% ascorbic acid and 3.5% H_2O_2. Meanwhile, distilled water was taken as control treatment. After 110 days, number of rooted cutting, number of cuttings with buds, number of roots per cutting and root length in each cutting. Results showed that rooting percentage in Shiraz cultivar was more than Fishomi cultivar. Hormonal treatments had significant difference in all the measured traits ($P \leq 0.01$). Combination of 4000 mg/L IBA for 5 seconds plus 3.5% H_2O_2 for 30 seconds was the most effective treatment in rooting of the olive cuttings. Also, the next effective treatment on rooting of the cuttings was 4000 mg/L IBA for 5 seconds plus 2% ascorbic acid for 15 minutes. Therefore, with regards to the results of this research, it could be stated that using cofactors plus rooting hormones, has had positive effects on improving the rooting in difficult to root olive cultivars.

Keywords: Plant growth regulators, Hormonal treatments, Ascorbic acid, H_2O_2.

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