

Effects of salinity and manganese on growth and chemical composition of pistachio (*Pistacia vera* L.) seedlings in perlite medium

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Abstract

To investigate the effect of manganese (Mn) and salinity on some growth traits and chemical composition of pistachio (*Pistacia vera* L.) seedlings, a factorial experiment was carried out with two factors of salinity (0, 75, 150, 225 and 300 mM NaCl) and Mn (0, 12, 24 and 36 μ M Mn from MnSO₄ source) as completely randomized design with four replicates, in greenhouse in perlite medium. Results showed that salinity stress decreased leaf number, leaf area, dry weight of root and dry weight of shoots. Application of 300 mM NaCl, decreased leaf number, leaf area, dry weight of root and dry weight of shoots by 40, 30, 92 and 92 percent in comparison with control (zero level of salinity), respectively. But application of 12 and 24 μ M Mn increased dry weight of shoots and leaf number by 29 and 24 percent in comparison with zero level of Mn, respectively. Since salinity reduced leaf area and dry weight of leaf, thus, because of dilution effect, the concentration of Mn, Zn and P was increased in shoots and roots and that of K was decreased. Application of Mn increased Mn, Zn, P and K concentration. Overall results of this research showed that salinity reduced vegetative growth, and since Mn has positive effects on some growth traits, it could probably increase the tolerance of pistachio to saline environments.

Keywords: Salinity stress, Growth traits, Nutrition of pistachio trees.

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