Effects of two mycorrhiza species (*Glomus mosseae* and *G. interaradices*) on some morphological and physiological characteristics of *Pelargonium graveolens* L. under salinity stress

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Abstract

This research was carried out to evaluate the effect of two mycorrhiza species on growth, yield and oil content of geranium under salinity stress. The factorial experiment, based on completely randomized design with three replications, was performed at Research Greenhouse of Faculty of Agriculture, Lorestan University, Iran, in 2014. Factors included four levels of substrate (sterilized and non-sterilized control soil and sterilized soil inoculated with *Glomus mosseae* or *G. intraradices*) and three levels of salinity (0, 30 and 60 mM NaCl). Results showed significant differences at 5% probabilty level for plant height, stem diameter, number of lateral shoots, number of leaves, leaf area, root length, root volume, leaf fresh and dry weights, stem, root and shoot fresh weights, essential oil content and yield, relative water content and electrolyte leakage and at 1% probability level for number of nodes, root diameter and stem and root dry weights. As salinity level increased, plant height, stem diameter, number of lateral shoots and leaves/plant, leaf area, leaf, stem and root fresh and dry weight, and oil yield decreased; while, oil content was increased. Inoculation with both mycorrhiza species increased leaf relative water content, decreased electrolyte leackage and improved shoot yield, oil content and oil yield under salinity stress. At the 60 mM salinity level, oil yield in plants treated with *Glomus mosseae* and *G. intraradices* was 41.9 and 56.8 percent hiegher, respectively, as compared to sterilized control substrate. According to these results and due to environmental sustainability of mycorrhiza, application of mycorrhiza in substrate could be recommended to decrease the detrimental effects of salinity stress and increase plant yield in geranium.

Keywords: Sterilized substrate, NaCl, Essential oil, Yield.

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