Abstract

Rosemary *(Rosmarinus officinalis* L.) is a popular herb with many uses. This experiment was conducted in 2012 at the Agricultural Research Station of University of Zabol, Iran in a completely randomized design based on factorial arrangement with three replications. Phosphate values included (ammonium phosphate): 100, 75, 50, 25 and 0 (control) kg per hectare and two mycorrhizal fungi *Glomus intraradices* (M1) and *Glomus mosseae* (M2). Traits measured including number of leaves, stem dry weight, root fresh weight, shoot dry weight, shoot fresh weight, stem diameter, root length, plant height, SPAD readings, root and shoot nitrogen content, essential oil yield and essential oil percentage. The results showed that the use of *G mosseae* compared with *G. intraradices* had a predominant significant effect on traits measured. The highest essential oil percentage rate (2.2%) and the lowest rate (1.6%) were respectively due to taking 100 kg.ha^{-1} ammonium phosphate applications and in the control (no ammonium phosphate). However, recorded higher shoot and root nitrogen percentage with mean 1.17% and 1.96% followed by *G. mosseae* species and control trait respectively. The highest SPAD reading was obtained on *G. intraradices* (M1) and of 75 kg.ha^{-1} ammonium phosphate application. The highest shoot dry weight with mean 8 gr per plant was obitained from 75 kg.ha^{-1} ammonium phosphate application. Our results indicated that the inoculation of AM fungi in soil with optimal fertilizer application greatly improved rosemary growth and nutrient uptake, and the effect was greater under greenhouse condition.

Key words: Fertilizer, Glomus, Greenhouse, Rosemary, SPAD Value.

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Effects of Mycorrhiza and Phosphorus Fertilizer on early Establishment and Morphological Traits of Rosemary plant (*Rosmarinus officinalis* L.) under Greenhouse Condition.

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