

عنوان مقاله:

The effect of mycorrhizal fungi on the yield and active ingredient of Borage (*Borago officinalis* L.) under water deficit stressL.) under water deficit stress

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خلاصه مقاله:

In order to evaluate the effect of mycorrhizal fungi on the yield and active ingredient of borage (*Borago officinalis* L.) under water deficit stress, the experiment conducted as split-plot in randomized complete block design with 3 replications in the Boyerahmad region at year 2015. The experiment factors were considered of irrigation levels (main-plot) as irrigation after $S_1 = 30$, $S_2 = 60$, $S_3 = 90$, $S_4 = 120$ and $S_5 = 150$ mm water evaporation from evaporation pan class A and mycorrhiza fungi (sub-plot) were considered at the levels of non application (NM), application with mycorrhiza fungi species of *Glomus mosseae* (GM) and *Glomus intraradices* (GI). The results showed that the effect of water stress on flower yield of borage was significant at level 1% and in the treatment 30 mm evaporation was obtained the highest yield of flower (188.9 kg/ha). The most flower yield was obtained in application treatments of mycorrhizal fungus *G. Mossea* and *G. intraradices* respectively with flower yield 147.2 and 145.5 kg/ha compared to non application of mycorrhizal fungus. The interaction of water stress and mycorrhiza fungi on phytochemistry traits of mucilage weight and mucilage percent of flower borage was significant at level 1%. The treatments $S_3 \times N.G$, $S_3 \times GM$, $S_3 \times GI$, $S_9 \times N.G$, $S_9 \times GM$ and $S_9 \times GI$ respectively with the weight of flower mucilage 11.77, 12.47, 12.06, 10.32, 12.34 and 11.78 kg/ha with the highest value were in first class (A). Treatments $S_3 \times N.G$, $S_3 \times GM$, $S_3 \times GI$, $S_6 \times N.G$, $S_6 \times GM$, $S_6 \times GI$, $S_9 \times GM$, $S_9 \times GI$ and $S_{12} \times GM$ respectively with flower phosphorus content 268.4, 290.1, 275.6, 253.9, 252.9, 282.9, 268.9, 192.4 and 174.3 ppm had the highest amount. The treatments $S_9 \times GM$ and $S_9 \times GI$ respectively with water use efficiency 0.0178 and 0.0176 kg/m³ had the highest amount. The application of mycorrhizal fungi generally reduced the negative effects of water stress in this study and could increase flower yield, water use efficiency, percentage and weight of flower mucilage of borage in this research

کلمات کلیدی:

Flower phosphorus, Flower yield, Mucilage, Water use efficiency, Flower phosphorus, Flower yield, Mucilage, Water

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