



18th European Weed Research Society Symposium

EWRS 2018

17-21 June 2018
Ljubljana, Slovenia

**New approaches for
smarter weed management**

Book of Abstracts

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Effects of Arbuscular Mycorrhizal Fungi Inoculation on Redroot Pigweed on Sesame under salt stress

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The aim of this research was investigated of arbuscular mycorrhizal fungi (*Glomus mossea*) on redroot pigweed (*Amaranthus retroflexus* L.) and Sesame (*Sesamum indicum*) Darab cultivar competition under salt stress. The greenhouse experiment was laid out as a factorial based on randomized complete design with three replications at Faculty of Agriculture, Shiraz University, Iran in 2015. The treatments were consisted of salt stress (S0=water as control, S1=0.8, S2= 7 and S3=14 ds/m Of NaCl+CaCl₂), fungi (F0: control without inoculation, F1: inoculation with *Glomus mossea*) and redroot pigweed (W0: weed free, w1: weedy). The results showed that interactions effect of different levels of salt stress, mycorrhizal fungi and weed on Sesame physiological traits was significant ($P < 0.01$). Mean comparison showed that increasing of salt stress decreased grain yield, plant height and leaf area index significantly. Maximum value of all traits achieved by S1F1W0 treatment. Application of 14 ds/m salt stress stopped redroot pigweed growth, while this treatment increased inoculation of Sesame root with mycorrhizal fungi under severe salinity. Thereby, it showed a better performance on all traits. In general, it seems that application of mycorrhizal fungi can improve morphological and agronomic characteristics of Sesame by increasing nutrient uptake comparison with redroot pigweed. Mycorrhizal fungi inoculation showed significantly increased on all traits compared to non-inoculation plants under different salinity levels. Therefore, the highest biomass and plant height in Sesame were obtained from the inoculation with *Glomus mossea*. Results also indicated that weed biomass and height decreased by increasing salinity stress in non-inoculated treatments. Based on our results, mycorrhizal fungi can decrease the negative effects on weed competition in Sesame through increasing of plant growth under salinity stress conditions.



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