

Investigation of magnetic water on germination of two safflower cultivars under saline stress

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Abstract

In order to investigation of magnetic water on germination of two safflowers (Goldasht and Zenderud) under saline stress, an experiment was conducted in 2009 at Agricultural College of Agronomy Laboratory of Tarbiat Modares University. Using a factorial in randomized complete block design with three replicates search, two cultivars levels (Goldasht and Zenderud), two waters levels (magnetic and pure water) and four salinity levels (0, 2, 6, 10, 14 ds/m) were studied. In this experiment, germination rate, germination percentage, root and shoot height, and shoot and root dry weight were studied. Analysis of variance showed the effects of different concentrations on germination percentage, germination rate, root and shoot height, and shoot and root weight were significant ($p \leq 0.01$). Type of water on shoot weight was significant ($p \leq 0.01$). Dry weight shoot was increased in magnetic water in comparison to pure water. germination percentage was reduced by growing salinity. The highest germination related to without salinity treatment and the lowest one related to 14 ds/m treatment. germination rate was reduced to 41.71 percent in 14 (ds/m) salt treatment. The highest germination rate is related to Zenderud cultivar in without salinity environments and the lowest one related to Goldasht cultivar in 14 (ds/m) salinity. the germination rate was reduced in Magnetic water in Zenderud cultivar but did not affected on Goldasht cultivar. root length was reduced in 6, 10, 14 (ds/m) salinity treatment. Zenderod cultivar shoot length was reduced in magnetic water in without salinity environments. Goldasht cultivar had higher dry weight shoot than the Zenderud cultivar. Dry weight root was reduced by increasing in salinity.

Key words: Germination, Safflower, Salinity and Magnetic water