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MAGNETIC FIELD EFFECT ON GERMINATION, SEEDLING GROWTH AND PHYSIOLOGIC CHARACTERS OF ENGLISH MARIGOLD *(CALENDULA OFFICINALIS L.)* UNDER SALINITY CONDITION

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The aim of this study was to investigate the effect of salinity levels (0, 75 and 150 mM) and the duration of treatment of seeds with magnetism (non-treatment of seeds with magnetism, treatment of seeds with magnetic intensity of 20 µT for 5, 10, 15 min) on germination and growth of seedlings in English marigold. This study was conducted under laboratory conditions based on a completely randomized design in Depako Lab. In most traits, the interaction of salinity levels and magnetic treatment duration was significant. In the absence of magnetic treatment, salinity of 75 mM significantly reduced the seedling length (43.5%), seedling dry weight (28.3%), seedling dry weight (30.4%) and germination percentage (59.1%). In salinity of 150 mM, due to the lack of germination of seeds of English marigold, seedling growth characteristics were also zero, while the magnetic treatment improved germination and seedlings growth in marigold under salinity conditions and reduced the negative effect of salinity on these traits. However, in most of the traits, the magnetic treatment of seeds did not have a significant effect on zero salinity. It seems that the magnetic treatment of seeds with an effect on alpha-amylase activity improves the transfer of seed reservoirs and improves seedlings growth in the marigold at salinity conditions. Both salinity treatments and magnetic treatment of seeds have a significant effect on alpha amylase activity. In general, the magnetic treatment of seeds for 15 minutes was the best treatment to improve germination and seedling growth of English marigold in non-stress conditions and salinity. The results of this study showed that the use of magnetism can reduce the effect of soil salinity on the growth and yield of plants, in addition, it is necessary to investigate the potential of magnetism in reducing soil salinity in the next researches.

Biography

Behruz Rahimzadeh has completed his primary, secondary education in Tabriz. He has completed his Bachelors and Master's degree from East Azerbaijan province universities. Since 2011, he has been working in the Green Landscaping Organization of East Azerbaijan. He is a Member of the Agricultural Engineering Academy, Member of the Green Space Organization of the Province, Member of the Association of Students of the Azad University and Member of the Committee for reviewing the Tabriz Green Environment Convention, 1397. He is currently working as a Senior Greenhouse Contractor in the field of green space. He has published two conference proceedings.

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