Vegetative and reproductive responses of tuberose (*Polianthes tuberosa* L. cv. Dezful) to application of different amountsof natural clinoptilolite zeolite in potting medium

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Abstract

In order to investigate the effect of clinoptilolite natural zeolite on vegetative and reproductive properties of tuberose (*Polianthes tuberosa* L.), this research was performed as a completely randomized design with five treatments (0, 25, 50, 100 and 200 g zeolite/kg soil mixture) and 10 replications (each replication consisted of a pot containing two bulbs). Results showed that the use of zeolite in soil mixtures of pot culture of tuberose has significant effects on measured vegetative and reproductive characteristics; although vegetative traits had a positive and significant response to the application of zeolite in soil mixtures compared to reproductive traits. The highest number of leaves, fresh and dry weight of leaf, root and bulblets, longest root length, and root volume were obtained in the application of 25 g zeolite/kg soil mixture. Although the highest flowering stem length and diameter were obtained in the application of 25 g zeolite/kg soil mixture, but no significant difference was observed as compated to control (no zeolite applicaion) treatment. The use of zeolite in growing medium reduced fresh and dry weight of flowering stem, and the highest amounts of these traits were observed in the control treatment. Also, application of zeolite in the medium caused early flowering of the bulbs. In all the measured traits, increasing the amount of zeolite from 25 to 200 g zeolite/kg soil mixture reduced their values. Therefore, according to the results of this study, 25 g zeolite/kg soil mixture could be recommended for pot culture of tuberose; although, more research is needed in this regard.

Keywords: Soil amendments, Bulblet, Flowering, Bulbous plants.

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