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Effect of Salinity and Drought Stresses on Growth and Eco physiological Parameters in Carob Seedlings (C*eratonia siliqua* L.)

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In order to evaluate the tolerance of carob seedlings to drought and salinity stresses based on growth and ecophysiological indices, a factorial experiment was conducted based on a completely randomized design with three replications. Factors included drought at 3 levels (5, 10 and 15 days irrigation intervals) and 3 salinity levels (0, 80 and 160 mM NaCl). The results showed that drought and salinity stresses reduced the vegetative indices of carob seedlings so that the lowest vegetative indices were observed in 15 days irrigation interval and 160 mM NaCl. The shoot fresh and dry weight decreased with increasing salinity and drought intensity. The highest shoot fresh and dry weight were recorded in control plants and the lowest shoot fresh and dry weight were recorded in plants treated with 160 mM NaCl and 15 days irrigation interval. The results of this study also showed that relative water content of leave decreased in plants treated with 10 days irrigation interval with increasing salinity levels while there was no significant difference between salinity levels in 15 irrigation intervals. The results also showed that the concentration of Na in root and shoot was increased with increasing salinity and drought stresses so that the highest concentrations of Na in shoots and roots were observed in plants treated with 15 days irrigation interval and 160 mM NaCl. According to the results of this study, it can be concluded that carob seedlings can tolerate 10 days of irrigation and 80 mM salinity.

Keywords: Carob tree, Chlorophyll, Stress, RWC.

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