SALT TOLERANCE EVALUATION OF FIVE *SATUREJA HORTENSIS* POPULATION (MORPHOLOGICAL AND PHYSIOLOGICAL TRAITS)

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In order to evaluation of salt tolerance of savory ecotypes an experiment was conducted on factorial (include two factors) based on completely randomize design (CRD). The first factor was salinity levels (0, 25, 50 and 100 mM NaCl) and the second factor was savory population (Mashhad, Isfahan, Tabriz, Shiraz and Markazi). The important traits measured including: plant height, stem diameter, shoot number, leaves number, plant fresh weight, plant dry weight, root fresh weight, root dry weight, proline, total carbohydrate, potassium and sodium. The results showed that there were significant differences between various levels of salinity and population. Stem diameter decreased with increasing salinity in all population. The minimum stem diameter was observed on Mashhad population and the maximum stem diameter was related to Isfahan and Shiraz population. Salinity concentration reduced plant height and the highest and lowest plant height calculated in control (51.86 cm) and 100 mM NaCl (34.86cm) treatments, respectively. The most shoot number (15) was measured in Isfahans population and the lowest shoot number (6.33) belonging to Tabriz population. Salinity decreased leaf number at all NaCl treatments. Salinity also caused significantly reduced in plant fresh weight and dry weight. Increasing in Salinity caused a significant reduction in dry weight as maximum dry weight obtained in 0 Mm NaCl (5.18 g) in Shiraz population and the minimum obtained in 100 Mm NaCl (0.81 g) in Mashhad population. In addition, root fresh weight and root dry weight decreased with increasing salinity. Totally, the highest and lowest fresh weight and dry weight of root related to control treatment (0 mM NaCl) in Tabriz population and 100 Mm NaCl treatment in Shiraz population respectively. Our results also showed that proline content was varied from 2.04 (mgr/g fw) to 13.47 (mgr/g fw), in Isfahan and Markazi population, in 0 mM and 100 mM treatments, respectively. The total carbohydrate content was increased with increasing salinity in all ecotypes. The highest accumulation of carbohydrate content was obtained with 100 Mm NaCl application (194.8 ppm) and lowest accumulation was obtain with 0 Mm NaCl treatments (91.85 ppm). With increasing in salinity levels, potasium was reduced and sodium increased. Among the ecotypes highest rates of potassium reported by mean 4.06 (mgr/g) in ecotype Mashhad and least amount of potassium was obtained 3.39 (mgr/g) in Tabriz ecotype. Among ecotypes, the highest rates of sodium reported by mean 2.34 (mgr/g) in Tabriz ecotype and least amount of sodium obtained by mean 1.94 (mgr/g) in Esfahans ecotype.