

Evaluation of Morphological Traits, Yield and Yield Component of Three *Plantago* Species Under Salinity Stress

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Abstract

In order to study the salinity effect on morphological traits, yield and yield components of Isabgul (*Plantago ovata*), French psyllium (*P. psyllium*) and Great plantain (*P. Major*), an experiment was conducted at Vali-e-Asr University of Rafsanjan in 2010. The study was carried out as factorial experiment based on RCBD design with 4 replications to determine the influence of salinity (9, 15, 21 ds/m and control with distilled water) and three plantago species (Isabgul, French psyllium, Great plantain). Results indicated that plant height, leaf area, root and shoot dry matter, yield and yield components were decreased significantly ($P < 0.05$) with increasing salinity levels. However, the reduction trend was different among species. Seed yield of Isabgul, French psyllium and Great plantain decreased in 15 ds/m salinity by 44, 79 and 77 percent in comparison with control, respectively. Contrary to Great plantain, the thousand seed weight decreased in 15 ds/m salinity by 38 and 35 percent in Isabgul and French psyllium compared with control, respectively. Salinity did not affect specific leaf area (SLA) in all species. In general, among the three species, Great plantain, with higher dry matter and seed yield, was recognized as a species that is more suitable to be cultivated in saline areas.

Keywords: *Plantain, Salinity, Yield, Yield component*