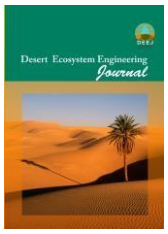
DEEJ (2015) 4 (7) 65-74

University of Kashan

Desert Ecosystem Engineering Journal

Journal homepage: http://deej.kashanu.ac.ir



# Effect of NaCl Salinity on Salsola tomentosa in Greenhouse Conditions: Growth parameters, Water Relations, Compatible Solutions and Chlorophyll

Fatemeh Panahi[1], Mohammad Hasan Asareh[2], Mohammad Jafari[3], Hosein Arzani[4], Ali Tavili[5], Alireza Givar[6], Majid Ghorbani[7], Javad Attarha[7], Zeinab Jahandideh[8]

Received: May/15/2015 Accepted: Sep/11/2015

## Abstract

Soil salinity is one of the important and determinant factors in land degradation and desertification. This study was undertaken to investigate salt tolerance in Salsola tomentosa under greenhouse conditions to choose a suitable species for saline conditions. The treatment solutions for salinity tests were different concentrations of NaCl (0, 100, 200, 300, 400, and 500 mM) with three replicates. Fresh and dry weights, relative water content, leaf water potential, proline, soluble sugar and chlorophyll contents were measured. Data analysis was performed by SPSS software and Statistical analysis was done using Duncan for mean comparison. According to the results, fresh and dry weight of organs, chlorophyll content and leaf water potential were decreased with increasing salinity level. However, leaf relative water content, proline and total soluble sugars were increased with increasing salinity levels. Finally, we have to mention that nature is unpredictable and it is not impossible to observe unexpected trends in specific conditions.

**Keywords**: Chlorophyll Content, Proline, Soil Salinity, Salsola tomentosa, Soluble Sugar, Water Relations.

1. Assistant professor University of Kashan, Email: alabd_fpanahi@yahoo.com
2. Professor Research Institute of Forests and Rangelands
3. Professor University of Tehran
4. Professor University of Tehran
5. Professor University of Tehran
6. M.sc student University of Kashan Faculty of Natural Resources and Earth Sciences
7. M.sc student University of Kashan Faculty of Natural Resources and Earth Sciences
8. M.sc student University of Kashan Faculty of Natural Resources and Earth Sciences