

## Study of Salinity Tolerance in Salad Burnet (*Poterium sanguisorba*) Through Physiological Characteristics

A. Shariat<sup>1\*</sup>, and H. Heidari Sharifabad<sup>2</sup>

1. **Corresponding Author:** M.Sc. of plants breeding, Research Institute of forests and rangelands, (shariat@rifr-ac.ir)
2. Associate Professor, of Seed and Plant Certification and Registration institute

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### Abstract

Salinity is one of the environmental stresses that impose a reduction or delay in germination of seeds. Also it suppresses establishment and growth of both halophyte and glycophyte plants. Salad burnet has a lot of importance such as medicinal, ornamental and forage purpose. This research was carried out to estimate the salinity tolerance of *Poterium sanguisorba* at germination phase and seedling growth phase at the physiology laboratory of the Research Institute of Forest and Rangelands in 1388. Five NaCl level (0, 25, 50, 75 and 100 mM) treatments were used in three replication in a factorial experiment design based on completely randomized plots in growth chamber on *Poterium sanguisorba*. Usage of the above concentrations was due to lack of tolerance to higher salt concentration so that the first experimental treatments were zero to 200 mM, but the plants couldnot tolerate higher concentrations of 100 mM. Range of treatments were changed to 0 to 100 mM. Increase of salt stress led to increased germination percentage but decreased vigour index. Also the increase in salinity with 75 mM salt concentration on three month seedlings increased proline and soluble sugars, but the salt levels above mentioned were reduced the two indicators. Pigments (total chlorophyll, a, b, and carotene) with a growth rate and t relative water content with increasing concentrations of salinity decreased. In conclusion our results show salad burnet can for reclamation of lands with salinity up to 75 mM NaCl.

**Keywords:** Salt Stress, Salad Burnet, Chlorophyll, Prolin, Soluble Sugar.