

## Investigation of Environmental Factors Influence on *Gundelia tournefortii* L. Distribution in Isfahan Province

A. Salehi Ardali<sup>1</sup>, M. R. Vahabi<sup>1</sup>, M. Tarkesh Isfahani<sup>1</sup>, S. Pourmanafi<sup>2</sup>,  
E. Ghehsareh Ardestani<sup>3\*</sup> and H. R. Farhang<sup>1</sup>

(Received: March 11-2017; Accepted: Sept. 3-2017)

### Abstract

Vegetation is the most important factor influencing the sustainability of rangeland ecosystems. Therefore, it is important to understand the environmental factors and their effect on vegetation and restoration of rangeland ecosystems. The aim of this study was to identify factors influencing on *Gundelia tournefortii* L. distribution. Accordingly, the information of *Gundelia tournefortii* L. was determined in six habitats in Isfahan province. Random-systematic sampling was conducted to calculate canopy and density of the species. In each rangeland place, climate, physiography and soil factors were identified. RDA ordination analysis using CANOCO software was used to investigate the vegetation relationship with environmental factors. In the cluster analysis and RDA ordination analysis, six main habitats of the species were classified into three groups. The first axis of ordination showed a very strong correlation with canopy cover and density and the second axis showed a very strong correlation with soil depth. According to study of the habitats of this species, annual precipitation about 250 to 500 mm, altitude 2300 to 2500 meter, slope about 10 to 40 percent and average of annual temperature about 10°C to 12°C are appropriate for presence of this species.

**Keywords:** Climate, Cluster analysis, Physiographic factors, RDA analysis, Soil characteristics.

- 
1. Dept. of Range and Watershed Manage., Faculty of Natur. Resour., Isf. Univ. of Tech., Isfahan, Iran.
  2. Dept. of Environ. Sci., Faculty of Natur. Resour., Isf. Univ. of Tech., Isfahan, Iran.
  3. Dept. of Range and Watershed Manage., Faculty of Natur. Resour. and Geo. Sci., Shahrekord Univ., Shahrekord, Iran.

\*: Corresponding Author, Email: elham.ghehsareh@nres.sku.ac.ir