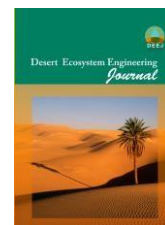




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## Assessing the Effect of Soil Physicochemical Properties on *Haloxylon persicum* (Case Study: Yanesy Region, Gonabad)

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### Abstract

Due to the harsh environmental conditions in arid and semi-arid area of country, it is essential to assess the factors affecting the vegetation in such areas. This study aimed to investigate the effect of some soil physicochemical properties (including texture, bulk density, moisture, organic matter, carbon, nitrogen, potassium, lime, sodium, electrical conductivity and pH) on *Haloxylon persicum* canopy cover in Yanesy region, north Gonabad. After field assessments, two adjacent areas including natural and planted stands of *Haloxylon persicum* were selected for sampling. Randomly located quadrats along transects were used for vegetation sampling. Soil samples were taken from each quadrat at 0-10 and 10-50 cm depths. After transferring the samples to the laboratory, soil texture, bulk density, humidity, organic matter, carbon, nitrogen, potassium, lime, sodium, EC and pH were determined. The results showed that there are significant relationships between *Haloxylon persicum* canopy cover and some soil properties, so that in planted stand, canopy increase was positively correlated with increasing in sodium, electrical conductivity, potassium, nitrogen, organic matter (at superficial soil) and decreasing in humidity. In natural stand, canopy cover was increased with increase in soil moisture, silt, nitrogen, clay, carbon and organic matter and was decreased with increased sodium, potassium, salt and sand. There were no significant relationships between the amount of lime, pH and bulk density with canopy cover of *Haloxylon persicum*. Therefore it could be stated that increase of *Haloxylon persicum* cover has different effects on the soil properties of two sites, so that the negative effects of planted site can be related to high plantation density.

**Keywords:** *Haloxylon persicum*, Canopy cover, Soil, physiochemical properties.

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