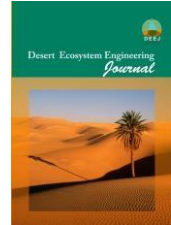




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## The importance of climate in determining the effect of rangeland enclosure on change some soil characteristics of rangelands

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### Abstract

This study investigates the effect enclosure on some soil characteristics in two different climates; include semiarid climate (Incheh boron region) and Cold climate of semi-humid (Chahar bagh) in Golestan province. In order to do soil sampling by the systematic-random methods, 5 transect were used in each areas and Physical and chemical properties were measure. T-test method was used in order to compare the soil parameters of same depths. Principle component analysis (PCA) and the data ratio percentage changes were used to understand the role of climate and determine the most important factors that are affected by enclosure and climate. The result of PCA showed that the most important factors that affected by enclosure and climate and cause to separate sites are Organic carbon, Nitrogen, EC,  $\text{CaCO}_3$  and clay. Results showed that temperature cause to enclosure have the maximum effect in Incheh boron on Organic carbon and Nitrogen with aigen value (-0.994) and (-0.910), respectively, and cold climate cause to enclosure have maximum effect in Chahar bagh on EC,  $\text{CaCO}_3$  and clay with aigen value of (0.989), (0.982) and (0.987), correspondingly. According to same enclosure duration, it seems Mountainous area and cold and freezing have a greater impact on soil properties rather than Rainfall, and subsequently cause to reduce soil changes in this region, so Chahar bagh region needs more time for enclosure.

**Keywords:** Climate, Enclosure, Soil characteristics, Golestan rangelands.

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