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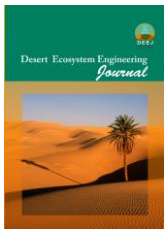

Investigation of Plant species composition and diversity along a soil salinity gradient in margin rangelands of Petregan Playa, Southern Khorasan

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Abstract

Plant species distribution, composition and diversity in deserts of arid and semi-arid areas, especially saltland; depend on soil physical and chemical gradients. The aim of this research was to investigate changes in the plant species diversity and richness along a soil salinity gradient in the margin rangelands of Petregan Playa. After vegetation zoning in relation to soil salinity, random-systematic sampling within each zone was taken. Within each zone, three stands were selected, then, within each stand, plant vegetation cover, density and species diversity indices were measured. For ordination vegetation along the soil salinity gradient, Detrended Correspondence Analysis (DCA) method was used. The results showed that there were significant differences in the plant total cover, annuals and perennials plant cover between different soil salinity zones. Also, the soil salinity gradient has a significant effect on the species richness and diversity, as the first zone (high salinity) has the lowest species richness and diversity. It can be concluded that, in general, only high salinity level has a significant effect on the plant species diversity.

Keywords: Halophytes, Salt playa, Soil Salinity gradient, Species diversity, Vegetation cover.

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