Abstract

Diversification of land use is a common phenomenon in nature and an important factor for bio-diversity. These changes can be followed the meaningful and sustained effects on soil properties and soil conservation management way. The aim of this study was to investigate the effects of different land uses (forest, rangeland, reedy and Bayer land), on carbon sequestration and soil erosion in the region Jazinak located in Zahak city, Sistan and Baluchistan province. For this purpose, after the field assessment of lands, on the transect soil samples were taken from 0-30 and 30-60 cm depths in each treatment. Studied characteristics are included soil organic carbon, total organic matter, bulk density, sequestrated carbon, soil aggregate stability index, texture,pH, EC in both depth which were measured according to standard methods in the laboratory. In order to evaluate the erosion ability and it's severity in the studied land uses, the aggregate stability index parameter was evaluated by weight-diameter index and soil texture. Laboratory results were used in SPSS software and data was analyzed by one-way analysis in a completely randomized block design and comparison of means was performed by Tukey test in 95% confidence level. The results showed that the bulk density at various depths in the reedy area, respectively, 0.99 and 0.95 (gr / cm3), was the lowest, and in Bayer land, with 1.59 and 1.61 (gr / cm3) respectively was greatest. As well as carbon sequestration in the reedy land use was 3234.02 and 2455.32 (kg / ha) as the highest and as the lowest in the Bayer land with 1967.37 and 987.65 (kg / ha) and the stability of the soil in the Bayer land was the lowest with 0.342 (mm) and the highest in the reedy land use with 1.67 (mm). In this study, it was found that the carbon content and soil organic matter are the higher and bulk density is lower; soil has the higher stability and resistance to erosion. In this region, the reedy land use is the most soil stability and carbon sequestration among the land uses.

Keywords: Carbon sequestration, Erosion, Soil gradation, Jazinak

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in Jazinak Region of Sistan

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