



Effects of Forestation with *Eucalyptus camaldulensis* (Dehnh.) and *Amygdalus scoparia* (Spach.) on Carbon Sequestration and Some Soil Properties (Case Study: Dashte Mazeh Forest Park, Dehdasht)

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Abstract

Today, climate change and global warming caused by the emission of greenhouse gases is a big challenge to the world, especially in arid and semi-arid area. Afforestation is the most effective strategy to absorb carbon dioxide in terrestrial ecosystems and reduce global warming of the earth. The purpose of this study is to evaluate the effects of planting *Eucalyptus camaldulensis* and *Amygdalus scoparia* on carbon sequestration and some soil properties in Dashte Mazeh forest park of Dehdasht, southwest of Iran. For this purpose, soil samples were taken by the systematic-random method from depths of 0-15 and 30-15 cm. After measuring the soil chemical and physical properties inclusive of clay, sand, silt, pH, electrical conductivity, phosphorus, potassium and organic carbon in the laboratory, the data were analyzed with Orthogonal Comparisons method, using statistical software SPSS 20. The results showed that the soil carbon sequestration in forested area and non-forested area was estimated to be 20.8 and 8.73 t/ha, respectively ($P < 0.01$). In addition, the rate of carbon sequestration, soil organic carbon and potassium in the *Eucalyptus* stand was more than that of *Amygdalus* stand ($P < 0.05$). The results have shown that soil depth had no effect on carbon sequestration and other soil properties. The results of correlation analysis showed that there were positive correlations between soil organic carbon with percentage of clay, silt and potassium and negative correlation with sand.

Keywords: Kohgiluyeh and Boyer-Ahmad Province, Climate Change, Soil Organic Carbon, Orthogonal Comparisons.

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