

Abstract:

Today, environmental issues, land degradation and desertification, are serious hazards for land residents including human and is followed the climate changes caused by greenhouse effects that is the major challenges of sustainable development and poverty eradication. One of ways that's recommended to the carbon content management is increasing of the accumulation of carbon in it's sequestration way which is carried out by creating or increasing the amount of carbon preservatives (plants). The aim of this study was to compare two species including *Ziziphus spina-christi* and *Calotropis procer* in terms of carbon sequestration for cultivation and development of habitat in the sandy areas of Jazmurian region. In this study carbon sequestration in soil and shoots of these species in the existing habitats (natural and planted of *Z. spina-christi* and natural of *C. procer*) was evaluated in 15 repetitions. In each habitat and it's surrounding area without trees as a control was created fifth transect with 50 meters length. In each transect were established 3 plots of 5 m × 5 m. In 5 plots randomly from each habitat the soil sampling was carried out from the depths of 0-30 cm and 31-60 cm after removing litter layer. In the laboratory were measured the soil texture, density and organic carbon. Sampling of the leaves and stripling stems of trees was taken at the intervals were determined based on the density of trees which was in the natural habitats and the habitats 10 m and the planted 3 meters. Then, the organic carbon content of the samples was calculated using the method of combustion in an electric furnace. Data analysis was conducted using t-test and Duncan using the SPSS22 software. The results of data analysis showed that the majority of this carbon sequestration in the soil was calculated in depth of 0-30 cm in the root zone depth of *C. procer* (107.64 ton/ ha) and planted *Z. spina-christi* (104.29 ton/ ha). The results indicated that the habitats of these species in first depth greater than the second depth, as well as the carbon sequestration in habitats were greater than in the Bayer control areas. In the aerial parts of the *Z. spina-christi*, the soil sequestration amount in stripling stems (with 11.72 and 10.98 tons per hectare in planted and natural habitats, respectively) is calculated greater than leaves (with 6.33 and 6.09 tons per hectare in plantations and natural habitats respectively). Also, for *C. procer*, sequestration amount in stems stripling (5.78 t/h) is more than its leaves (2.92 t/h). So, with operation of correct ecological management and biological restoration of Jazmurian desert wetland can be increase phyto biomass and soil carbon sequestration through the planting of these native species.

Keywords: Biological restoration, carbon sequestration, *Ziziphus spina-christi*, *Calotropis procer* Jazmurian



University of Zabol
Graduate School
Faculty of Water and Soil
Department of Range and Watershed Management

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Supervisor:

Dr. Einollah Rouhi Moghaddam

Advisors:

Ms. Iraj Amiri

By:

Javad Ghalandari

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