Abstract

Wind erosion is a natural destructive phenomenon that causes abundant social and environmental problems. Sistan plain is one of the most important stormy areas of the country among which the 120- days storm is quite significant. Due to the physical conditions and fragile natural ecosystems of the area, it creates drastic erosion. Given the breadth and diversity of the faces of wind erosion in Sistan plain, its central region has been studied in this research. Existing land uses in the study area consist of sandy land, forest and pasture lands, abandoned lands, agricultural lands, and fallow lands. One of the most important factors, which play some role in determining soil erosion, is wind speed threshold. In this study, portable wind erosion tunnel was used to measure the erosion speed threshold. Based on the results, the maximum speed threshold belonged to agricultural land use (11.55 m / s), whereas the lowest threshold speed belonged to sand hills (52.5 m / s) suggesting low wind erosion threshold as well as high soil erosion of the area. In addition, the relationship between the physical and chemical properties of soil Including soil texture, its moisture content, its bulk density, EC, SAR, ESP, $Na^{+,}$ $k^{+,}$ $Caco_3$, and the wind erosion threshold were analyzed. The results showed that of the physical properties, the most significant effect belonged to soil texture. The greater soil amount will result in more erosion. Among its chemical properties, the most significant effect on soil wind erosion belonged to EC, pH, ESP, and SAR .in other words; their values were correlated with soil wind erosion.

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Investigation on Soil Wind Erodibility in Major Landuses of Sistan Plain Central Areas Using Wind Tunnel

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