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Environmentally Sensitive Areas in Semiarid Grasslands as Affected by Soil Parent Material

Melda Dölarslan (1), Ebru Gül (2), and Sabit Erşahin (2)

(1) Cankiri Karatekin University, Faculty of Science, Department of Biology, Cankiri/Turkey (mld@karatekin.edu.tr), (2) Cankiri Karatekin University, Faculty of Forestry, Department of Soil Science and Ecology, Cankiri/Turkey (acapsu@gmail.com)

Soil parent material is an important soil forming factor in semiarid landscapes. In desertification studies, parent material is often used as a desertification indicator. The aim of this study was to determine the effects of parent material on environmental sensitive areas (ESAs) in semiarid grasslands. Environmentally sensitive areas type was determined at 34 quadrats (5-x5-m) on different parent materials (chrome, marble, serpentine red chalk and red chalk mostra) in semiarid grasslands in the Central Anatolia Region of Turkey. The EASs scores were determined with Desertification Indicator System for Mediterranean Europe (DIS4ME). The DIS4ME-calculated ESAs type sensitivity scores ranged from 1.34 to 1.40 in soil derived from chrome, 1.42 to 1.48 from serpentine, 1.39 to 1.51 in red chalk, 1.42 to1.49 from red chalk mostra and, 1.44 to 1.49 from marble parent material. One-way ANOVA analysis with Tamhane's post hoc test was used to determine differences in means of ESAs type scores for different parent materials. The mean of ESAs scores was significantly higher for the soils derived from red chalk mostra than those from marble and chrome ($p<0.05$), suggesting that parent material is an important desertification indicator on the studied grasslands.

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Key words: Environmentally sensitive areas, semiarid grassland, parent material, one-way ANOVA