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Genesis, classification and clay mineralogy of saline gypsiferous soils in Koshkooiyeh-Anar area, Kerman

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Abstract: Formation of clay minerals is affected by soil forming factors which in turn play an important role in soil management. The aim of the present research was to study genesis, classification, and clay mineralogy of Koshkooiyeh-Anar soils. Four representative pedons were studied for physicochemical and clay mineralogy analyses. Gypsic, salic, and natric were among the diagnostic horizons that have been identified by field and laboratory studies. Gypsic Haplosalid and Typic Haplosalid subgroups were classified by Soil Taxonomy. Illite, kaolinite, chlorite, smectite, palygorskite, and sepiolite clay minerals were identified using X-ray diffraction (XRD). In addition, Transmission Electron Microscope (TEM) was also used to prove the presence of fibrous palygorskite clay mineral. Sepiolite is reported in soils of Kerman Province for the first time. A reverse relation between smectite and palygorskite was found in studied soils, thus the maximum content of smectite and palygorskite were identified in surface and subsurface horizons, respectively.

Keywords: *Central Iran; Palygorskite; Saline gypsiferous soils; Sepiolite; Koshkooiyeh-Anar area*.

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