

عنوان مقاله:

Comparison of pedogenic properties of some paddy and nonpaddy soils of southern Iran

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خلاصه مقاله:

ABSTRACT- Paddy soils make up the largest anthropogenic wetlands on earth. Present study was performed to investigate and compare soil formation of paddy soils with long-term rice cultivation history with non-paddy soils and study the effect of waterlogging on soil pedogenesis. Soil samples were taken from paddy and non-paddy soils derived from the same calcareous parent materials. Some pedogenic properties such as organic carbon (OC), clay content, iron fractions, pH, electrical conductivity (EC), cation exchange capacity (CEC), and calcium carbonate equivalent (CCE) were measured. Results revealed that paddy management had profound impact on soil formations and led to faster soil forming processes in paddy soils under flooded condition. In the studied paddy soils OC and CEC content significantly increased in surface and subsurface soils; but soil pH significantly decreased. Chemical analysis revealed significant increase of clay portion in subsurface of paddy soils and non-significant increase of EC in surface and subsurface of paddy soils. The CCE content in surface and subsurface of paddy soils was non-significantly lower than non-paddy soils. Rice cropping system greatly affected on different Fe forms; so that paddy soils had more available Fe (Fe_{ex}), total Fe (Fe_t), and poorly crystalline Fe oxides (Fe_o), but lower pedogenic Fe (Fe_d) and crystalline Fe oxides than non-paddy soils.

کلمات کلیدی:

Keywords: different iron oxides fractions, soil characteristics, waterlogging conditions effect

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