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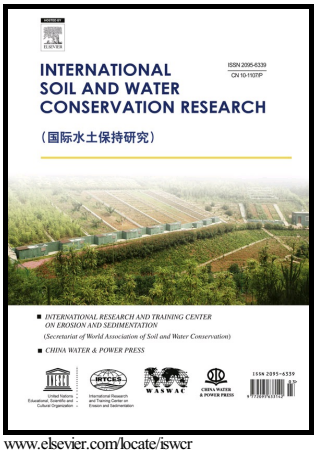

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PII: S2095-6339(17)30325-8
DOI: https://doi.org/10.1016/j.iswcr.2018.03.004
Reference: ISWCR135

To appear in: *International Soil and Water Conservation Research*

Received date: 31 December 2017
Revised date: 28 January 2018
Accepted date: 15 March 2018

Cite this article as: Basga Simon Djakba, Tsozue Désiré, Temga Jean Pierre, Balna Jules and Nguetnkam Jean Pierre, Land use impact on clay dispersion/flocculation in irrigated and flooded vertisols from Northern Cameroon, *International Soil and Water Conservation Research,* https://doi.org/10.1016/j.iswcr.2018.03.004

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Short title: Land use impact on clay dispersion/flocculation

Abstract

Clay dispersion by water is important for soil and water conservation as well as for irrigation scheduling. In the present study, clay dispersion/flocculation of irrigated and flooded vertisols in North Cameroon was investigated using clay dispersion/stability indices. Nine vertisols topsoils (0-20 cm) samples were collected on different land use and their clay dispersion indices were assessed. Vertisols were acidic to slightly basic, with smectites as dominant clay mineral. The water dispersible clay (160-340 gkg^{-1}), the dispersion ratio (0.55-0.79) and the clay dispersion ratio (0.48-0.83) were high in the studied vertisols while the clay flocculation index (0.17-0.54) and the clay aggregation (70-230 gkg^{-1}) were low to moderate, indicating their high dispersion. Cropped vertisols displayed the higher amount of water dispersible clay while not cropped recorded the smaller amount. Concerning the cropped soils, irrigated vertisols displayed the highest clay dispersion indices suggesting that agricultural practices