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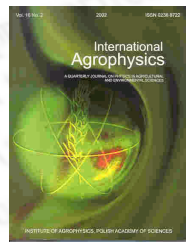
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Soil strength of some Central Eastern Nigeria soils and effect of potassium and sodium on their dispersion

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abstract Five soils with variable clay contents were studied with the objective of describing their physical properties and the influence of NaCl and KCl on their dispersion. The soils were analyzed for particle size distribution, Atterberg limits, chemical properties, coefficient of linear extensibility (COLE) and clay dispersion under different levels of treatments with NaCl and KCl. COLE ranged from 0.03-0.09 with all soils occurring within moderate to severe shrink-swell hazard rating. COLE significantly correlated positively with liquid and plastic limits ($r = 0.90^*$). Introduction of NaCl or KCl increases clay yield over that treated only with deionized water. Although there was significant difference in mean clay of the KCl treatment levels, there was no significant difference on the mean treatment levels of NaCl. The results will guide farmers in selection of optimal fertilizer and irrigation water rates, as wrong use may increase clay dispersion.

keywords Atterberg limits, coefficient of linear extensibility, clay dispersion, Nigeria