Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Characteristics of Selected Degraded Soils of Jos South Local Government Area of Nigeria

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Abstract

In view of the escalating clashes between cattle herders and crop farmers on account of grazing on the Nigerian plateau area, some soils in these areas which had been degraded due to tin mining activities need to be rehabilitated to make these soils useful to farmers for crop production. Soils from selected areas (Foron, Kassa, Rayfield and Lamingo communities in Jos South Local Government Area (LGA) of Plateau State in Nigeria) were sampled to determine their physical and chemical characteristics in order to formulate appropriate management practices that will make them productive. Topsoil samples (0-30 cm) were taken for detailed laboratory analysis using standard methods. The results showed that all the fertility indices measured were too low in quantity for meaningful crop production. The samples were generally sandy (the sand fraction ranged from 56.6 - 97.6 %); the silt fraction ranged from 1.72 97.6 % and had low clay fractions (0.72-25.72 %). They are moderately acidic; the pH (in H_2O) ranged from 5.0-6.7; Organic carbon, total nitrogen and available phosphorus ranged from 0.21-0.66 %; 0.03- 0.30 % and 0.70 -15.50 ppm, respectively. Exchangeable K, Na and Ca were 0.01- 0.10; 0.02 - 0.05 and 0.001 - 0.008 cmol kg^{-1} soil, respectively). These nutrients are generally inadequate for arable crop production and amendment through the application of organic manures or inorganic fertilisers is recommended.

Keywords: Arable crops, degraded soils, general characteristics, mining, productivity

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