

Profile characteristics, and form and surface activity of inorganic phosphorus in a deep red Kenya coffee soil (Nitosol)

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Abstract:

The paper examines some of the physical and chemical properties of a deep red friable clay profile (Nitosol) developed in the Kenya highlands over trachyte. This soil is widely planted to coffee. The profile is remarkable for the depth and uniformity of the B horizon and for its stable microaggregation. Despite a clay content of 50–60% throughout the deep solum, the soil feels and handles like a loam. Work with radioactive phosphorus on samples from the profile and from nearby experimental plots under coffee showed that the activity, and the amounts, of surface phosphate fractions decreased in the order Fe-P, Al-P and Ca-P, but the order of decrease of specific surface activity was Al-P, Fe-P, Ca-P. The relative availabilities of these forms is discussed.