

Effect of Palm Oil Mill Effluent (POME) on an Arenic Kandiuustult in South Eastern Nigeria

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Abstract

The study investigated the impact of long term application of palm oil waste on physical and chemical properties of a sandy Ultisols (Arenic Kandiuustult) in Uga, Nigeria. Soil samples were collected from the surface (0-10cm) and (15-25cm) of palm oil polluted site. Another surface sample of (0-10) and (15-25) samples were collected 15 meters away in the palm oil unpolluted (control site). Core samples were collected from both soils. All the samples were analyzed for selected physical and chemical properties. The results showed that both soils were loamy sand but varied in the other physical properties as bulk density and total porosity. The two soils were strongly acidic, but had more carbon, nitrogen and phosphorus in the palm oil polluted soils than in the unpolluted soils. The results indicated that the area affected with the palm oil mill effluent (POME) had more nutrient status but reduced plant growth due to clogging of water and restricted aeration. The statistical package used to analyze this work is descriptive statistics and paired sample T-test. Knowledge of the component and proper disposition of these pollutants should be made known to the people of Uga.

Keywords: Degradation; Palm oil mill effluent; Environmental hazards.

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