

Soil characteristics in an oil palm field, Central Pahang, Malaysia with special reference to micro sites under different managements and slope positions

ABSTRACT

Within an oil palm field, different micro sites are established for fertilizer application (weeded circle), organic matter addition (frond heap) and operation paths (harvest path). This study reports the soil characteristics on an oil palm field with special reference to the micro sites as well as slope positions. For this study purpose, a second generation oil palm field (average slope gradient of 8°) with 10 years old oil palm was selected. The soils (Typic Hapludox) could be generally characterized by acidic nature and low levels in exchangeable bases with high aluminum activity. Soil properties were significantly or tended to be different at the depth of 0-5 cm and 5-10 cm in terms of micro sites; total carbon (T-C), total nitrogen (T-N), exchangeable magnesium (Mg) and exchangeable calcium (Ca) contents were higher at the frond heap. On the other hand, higher amounts of available phosphorus were accumulated in the weeded circle due to fertilizer application. Meanwhile, between different slope positions, non-distinct soil particles movement was observed and no evidence of soil erosion was found.

Keyword: Field management; Oil palm; Slope positions; Soil fertility