

Characterization, changes in soil properties and vegetation distribution as affected by topography in Ayer Hitam Forest Reserve, Selangor, Peninsular Malaysia

ABSTRACT

The influence of topography on soil morphology, classification and characteristic is poorly understood in Ayer Hitam Forest Reserved, Malaysia. Topographic vegetation-soil interrelations are important because the existing plants are used to indicate environmental conditions and potential forest productivity. This study aims to identify the effect of toposequence on soil morphology, soil classification, soil characteristic and forest vegetation. Five plots surveyed on 100-150 cm soil profile depth to identify soil development, soil classification and nutrient status (i.e. organic matter, Al, pH, K, Na, Ca, Mg, CEC, Base Saturation). Besides, the distribution of forest vegetation serve as the basis to evaluate the trees' basal area and diversity. Soil subgroups ranged from Fragic Hapludults in the ridge, Typic Hapludults and Plintic Hapludults on the middle slope, Typic Hapludults on the lower slope, and Typic Hapludults in footslope. Each soil subgroup has its characteristics at various elevations (Morphology and Physio-chemical). Vegetation on each plot was dominated by species of Euphorbiaceae, Myrtaceae, Dipterocarpaceae Malvaceae, Moraceae, Verbenaceae, Phyllanthaceae, and Santalaceae.

Keyword: Low dipterocarp forest; Pedology; Soil properties; Topography; Vegetation