Pertanika J. Sci. & Technol. 24 (1): 71 - 87 (2016)

SCIENCE & TECHNOLOGY

Journal homepage: http://www.pertanika.upm.edu.my/

Morphological and Physico-Chemical Characteristics of Soils in the Tasik Chini Catchment in Pahang, Malaysia

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ABSTRACT

The morphological and physico-chemical properties of 11 soil series representing the major soil types in the Tasik Chini catchment in Pahang, Malaysia were studied. Soil types of the study area showed wide variations in their morphological and physico-chemical properties as a result of mean annual precipitation, soil parent material, vegetation and topography. Analyses showed that low values of silt were recorded in the horizon and the content of clay increased with soil depth. All the soil series contained low amounts of organic matter. Physical properties showed higher values for bulk density in the disturbed soils compared to the undisturbed forest soils. Regarding the chemical properties, these soils were strongly acidic. Electrical conductivity was also very low. Due to low pH, the contents of exchangeable base in all the soil types were very low. The cation exchange capacity of all the soil series were low with values less than 13.34 meq/100g soil.

Keywords: Soil series, morphology, physico-chemical properties, soil profile, Tasik Chini

INTRODUCTION

Soils are the essential components of the environment and foundation resources for nearly all types of land use, besides being the most important component of sustainable agriculture (Bech *et al*., 2008). Therefore, an assessment of soil quality and its direction of change with time is an ideal and primary indicator of sustainable agricultural land management (Doran, 2002). Soil quality indicators refer to the measurable soil attributes that influence the capacity of a soil to function within the limits imposed by the ecosystem, to preserve biological productivity and environmental quality and to promote plant, animal and human health (Arshad & Martin, 2002). These attributes could be physical, chemical and/or biological properties of the soil (Arshad & Martin, 2002; Doran, 2002; Zornoza *et al*., 2007).

Article history:
Received: 22 September 2014
Accepted: 30 July 2015

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ISSN: 0128-7680