Seminar Geosains Kebangsaan 2007 (NGC 07)
Universiti Malaysia Sabah, Kota Kinabalu, Sabah
7 – 9 June 2007

POSTER 9 (PS9)

CRITERIA OF FOUR SOIL SERIES OF THE TASIK CHINI, PAHANG, MALAYSIA

Muhammad-Barzani Gasim, Sahibin Abd. Rahim, Zulfahmi Ali Rahman & Sujaul-Islam Mir
School of Environment and Natural Resource Sciences, Faculty Science and Technology
Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor

ABSTRACT

A total of 20 samples (0-20 cm) from topsoil and 36 samples from horizon basis were collected from four soil series namely Malacca, Rasau, Bungor and Gondang Soils.

Physico-chemical properties such as particle size distribution, texture, organic matter content (OM), density, porosity, pH, cation exchange capacity (CEC), electrical conductivity (EC), available nutrients and selected heavy metals were analyzed. The analysis showed that profile and topsoil of Rasau Soil Series were dominated by sandy loam, whereas Bungor, Malacca and Gondang Soil Series were dominated by clay in texture. The organic matter content (OM) of Rasau Soil Series was very low range from 1.1 to 3.16%, Malacca and Bungor was low range from 5.63 to 8.05% and 5.1 to 10.09% respectively. Gondang Soil Series contained comparatively high range from 1.12 to 16.7%. Bulk density and true density ranged from 1.0 to 1.33 gm/cm^3 and 2.33 to 2.74 gm/cm^3 respectively. Porosity was range from 51.35 to 62.59%. The pH of soils was less than 3.97 and was considered as strong acidic to extremely acidic. Electrical conductivity (EC) was very low range from 1.93 to 2.55 mS/cm. Cation exchange capacity of Bungor, Malacca, Rasau and Gondang Soil Series were 1.08 to 2.98 meq/100g soil, 1.96 to 4.01 meq/100g soil, 2.54 to 4.26 meq/100g soil and 5.79 to 13.52 meq/100g soil respectively. Cation exchange capacity of Bungor, Malacca and Rasau was very low at values less than 4.26 meq/100g soil. Gondang Soil series was comparatively high range 5.79 to 13.52 meq/100g soil. The range of available phosphorus, potassium and magnesium of Rasau series were 4.66 to 7.96µg/g, 21.05 to 56.20µg/g and 3.49 to 29.68µg/g, Malacca Series

were 3.7 to 6.96μg/g, 18.16 to 48.94μg/g, and 11.18 to 32.43μg/g, Bungor Series were 3.92 to 7.0μg/g, 10.63 to 51.88μg/g, and 3.45 to 35.76μg/g and Gondang Series were 6.04 to 9.88μg/g, 20.35 to 70.08μg/g and 12.28 to 47.13μg/g respectively. Results indicated that some heavy metals such as Pb, Zn, Cu, Co, Ni, Cr and Cd concentrations in all the soil series were low and still below the critical level.