

DETERMINATION OF HEAVY METALS IN URBAN SCHOOL SOIL

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ABSTRACT

DETERMINATION OF HEAVY METALS IN URBAN SCHOOL SOIL

This study was done to determine selected heavy metals concentration in secondary schools in an urban area. A specific location for soil sampling was around canteen area. Samples were taken from two different depth which consists of surface soil (0-5cm) and depth soil (0-20cm). Samples were taken from three secondary schools around Gombak area. Five parameters were analyzed which were pH, Total Organic Carbon (TOC), Total Organic Matter (TOM), particle size analysis (pSA) and Moisture Content. There were four heavy metal have been analyzed namely nickel (Ni), copper (Cu), lead(Pb) and manganese(Mn). Atomic Absorption Spectroscopy (AAS) was applied to measure heavy metals concentration in soil samples for two different depth. One way analysis of variance (ANOVA) and Microsoft Excel were used to analyzed data. The results obtained from ANOVA were compared to determine the relationship between sampling site and parameters with heavy metals concentration. TOC and TOM and also Manganese (Mn) and Copper (Cu) showed significant different ($P < 0.05$) with the value obtained from the study. These mean, there were significantly relationship between TOC, TOM, manganese and copper. For Nickel(Ni) and Lead (Pb) showed no significant differences ($P > 0.05$). The correlation data for surface soil has shown Mn has strong correlation with TOC and TOM, Cu has strong correlation with Ni, Meanwhile, Pb and sampling site has no correlation with the other parameter. The correlation data for depth soil has shown Mn has no correlation with other metal and parameters. Parameter pH has correlation with Cu.