DETERMINATION OF SELECTED TRACE METALS CONCENTRATION IN TAP WATER FROM SEVERAL PLACES LOCATED IN UITM PAHANG

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ABSTRACT

DETERMINATION OF SELECTED TRACE METALSCONCENTRATION IN TAP WATER FROM SEVERAL PLACES LOCATED IN UITM PAHANG

Tap water could be derived from various sources which are surface water that includes rivers and reservoir or groundwater. The objectives of this study are to determine the concentration of selected trace metals and physico-chemical characteristics of tap water samples collected from UiTM Pahang. A total of six tap water samples which is three of it collected in morning and three in evening between two consecutive weeks were collected from three different sampling places, laboratory, student's hostel and academic block. The physico-chemical characteristic of tap water samples that has been analyzed was temperature, biological oxygen demand, turbidity, pH and electrical conductivity. The trace metal involves in determining the concentration was copper (Cu) and zinc (Zn). The physico-chemical characteristics of the tap water were determined using the YSI Multiparameter Model 556 MPS. For turbidity determination, 2100P Turbidimeter was used.Graphite Furnace Atomic Absorption Spectroscopy (GFAAS) was used for determination of trace metals concentration. Tap water collected from laboratory contains high concentration of copper and zinc which were 3.84µg/L and 19.50 µg/L. Furthermore, for all physico-chemical characteristics, the temperature, biological oxygen demand (BOD_5), turbidity, and electrical conductivity were also the highest from tap water collected at laboratory. All of the physico-chemical values and trace metals concentration in tap water obtained was compared with guideline values developed by World Health Organization (WHO) and Malaysian Ministry of Health (MMOH). Tap water samples collected from three different sampling places in UiTM Pahang shows lower concentration of trace metals and their physico-chemical characteristics were in safe condition for daily uses. Generally, all physico-chemical characteristics of tap water and trace metal concentration were below the guidelines limit that has been developed by WHO and MMOH.