HEALTH RISK ASSESSMENT OF DRINKING WATER IN UiTM SABAH BRANCH

ALIZA BINTI MAHDI

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ABSTRACT

HEALTH RISK ASSESSMENT OF DRINKING WATER IN UiTM SABAH BRANCH

Drinking Water in UiTM Cawangan Sabah, Kampus Kota Kinabalu can be consumed directly from water dispenser machine and tap water. However the risk assessment of drinking water is yet to be reported. This study focuses on heavy metals exist in the water as high concentration of heavy metals in the water may disrupt the consumers' health. Therefore, analysis was carried out to determine the concentration of heavy metals in drinking water and the health risk assessment in drinking water among students of UiTM Cawangan Sabah, Kampus Kota Kinabalu was conducted. The concentration of heavy metals was analyzed in Atomic Absorption Spectrophotometer while guided questionnaire was distributed to 100 respondents in order to obtain the daily consumption rate of drinking water among respondents. In assessing the risk of drinking water from both water dispenser and tap water, calculation of Hazard Quotient and Hazard Index were conducted. The results showed the average concentration of heavy metals for Cd, Cu, and Fe are 0.00918 mg/L, 0.28192 mg/L, 0.00599 mg/L respectively from water dispenser machine while 0.00929 mg/L, 0.28518 mg/L and 0.00976 mg/L respectively from tap water. Through Hazard Index calculation, it shows value of 0.3502 and 0.2502 respectively which are not exceeding maximum value of Hazard Index with the value of 1.0. The value of Hazard Index calculated indicates that the consumer's exposure towards the heavy metals through oral ingestion do not expose them to neurological problems, cancerous disease, reproductive system disease and not leads to death. In conclusion, the water is safe to be consumed and not giving any negative effects to consumers. Further studies may need to be conducted on Cd concentration in drinking water in order to determine its carcinogenic risk towards human.