

## **Heavy metals (As, Cd, Cr and Pb) concentration in selected freshwater fishes and health risk assessment among adults in Kluang, Johor**

### **ABSTRACT**

A cross-sectional comparative study was conducted in two areas at Kluang, Johor to determine the heavy metals concentration in freshwater fish and health risk assessment among adults in the area. Kahang River is less polluted compared to Sembrong River. A total of 30 respondents from each area were randomly selected based on inclusion criteria. A set of pre-tested questionnaire was used to obtain the socio-demographic information, food frequency intake and health status of respondents. Three freshwater fish species from these rivers which were frequently consumed by locals were analysed for arsenic (As), cadmium (Cd), chromium (Cr) and lead (Pb) concentration using Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The health risk of respondents was assessed through the calculation of HQ and LCR. Results showed that heavy metals concentration in freshwater fishes of polluted river (Sembrong River) were higher than the less polluted river (Kahang River). There was also a significant difference in the health risk of respondents of the two areas which indicated that respondents who consumed fishes from the polluted river may have higher risk of health problems associated with heavy metals exposure.

**Keyword:** Sembrong River; Kahang River; Adults; HQ; LCR