

## **Heavy metal concentrations in fish organs from upper stream area of Kelantan River, Malaysia**

*\*Zarith Sufiani Baharom* and Mohd Yusoff Ishak

*Department of Environmental Management, Faculty of Environmental Studies, Universiti Putra Malaysia, 43400, UPM Serdang, Selangor, Malaysia*

*\*Corresponding author. email address: zarithsufianibaharom@yahoo.com*

In the present study, level of heavy metal concentrations on fish organs in the Kelantan River basin was assessed using the utility of different organs and tissues as indicators of heavy metal pollution. The concentrations of Cu, Zn, Pb, Ni and Mn were detected in muscle tissue, liver and gills of ten native fish species caught using gill nets. The fishes were sampled at three different sites in the upper stream of the Kelantan River, namely Gua Musang, Kuala Geris and Limau Kasturi, isolated from each other by different local riverine characteristics. Although heavy metal pollution is believed to be one of the main threats to the fish population in the area, there is a lack of knowledge of the exact level of heavy metals in their tissues. Fish and water samples were analyzed by means of Inductively Coupled Plasma- Mass Spectrometry (ICP-MS). The initial results for both samples at all locations showed that the concentrations of Pb were higher than the permissible limit set by FAO/WHO 2004 as well as Food Act 1983 and Malaysian Food Regulations 1985. The level of heavy metal concentration in water and fish organs shall be considered as an important matter as the locals are consuming these fishes and it represents the quality of the river itself. The next step would be to determine whether these heavy metals are potentially harmful for human health as the freshwater fish are among the main in their diet.

**Keywords:** Heavy metals, fish organs, Kelantan River