HEAVY METALS IN SELECTED FRESHWATER FISHES AT THE UPPER STREAM OF LIWAGU RIVER, RANAU

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ABSTRACT

HEAVY METALS IN SELECTED FRESHWATER FISHES AT THE UPPER STREAM OF LIWAGU RIVER, RANAU

The study of heavy metals (Cadmium, Copper, Iron and Manganese) in freshwater fishes was conducted from September to December 2013 at the upper stream of Liwagu River, Ranau. Three stations for sampling were set up (Kg. Pinausuk, Kg. Kituntul Baru and Kg. Badukan). Fish samples (muscle and gills) and water samples were collected by using casting net and collecting bottles respectively. Heavy metal concentration was analyzed by Atomic Absorption Spectrophotometer (AAS) while the physicochemical water parameters were taken by the Hydrolab parameter. In general, all physicochemical parameter are in class I which means that it is a healthy condition for the freshwater fishes. The results for heavy metals showed that all stations have Cadmium concentration below zero (below detection limit). All heavy metal fall in the classes (I, II, III) that are considered good condition except for Manganese (class v). Iron showed the highest concentration in all stations followed by Manganese and Copper. The heavy metal concentration in the muscle and gills obtained are muscle has mean concentration of 0.0464 mg/L while gills have mean concentration of 0.0462 mg/L. All stations showed a positive correlation between gills and water more than the positive correlation between muscle and water. This is due to the ability of the gills to absorb more water borne chemicals compared to muscle. All stations have heavy metal concentrations below the permissible limit according to the Malaysian Food Act 1983 and Food Regulation 1985 except for Iron. All comparisons are based on mean concentration of different species where *Lobocheilus bo* has the highest metal concentrations and *Puntius sp.* has the lowest metal concentration.