HEAVY METALS OF CADMIUM, LEAD AND MERCURY CONTENT IN WATER, SEDIMENT AND SELECTED TWO FISH SPECIES IN *CHILAW* LAGOON

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Heavy metal contamination in aquatic ecosystems has become an emerging environmental issue and their stable physicochemical properties create bio-concentration in marine environments. The study was carried out to assess the level of three metals; Cadmium (Cd), Lead (Pb) and Mercury (Hg) in water, sediment and two food fish species, *Liza parsia* (gold spot mullets) and *Etroplus sureness* (pearl spot) in *Chilaw* Lagoon, Sri Lanka. Microwave-assisted digestion was done for water, sediment and fish samples and tested for Cd and Pb using atomic absorption spectrophotometer (AAS) with graphite tube atomizer. Hg was tested using cold vapour generator. Deference in the level of each metal level in water, sediment and fish species was tested by one-way analysis of variance. Significant difference mean value was compared by mean separation ($p<0.05$). The average concentration of Cd, Hg and Pb in water was 0.098 ± 0.091, 0.005 ± 0.003 and 3.486 ± 2.925 μgL^{-1}, respectively. In sediments the average concentrations of Cd, Hg and Pb were 0.691 ± 0.487, 0.723 ± 0.613 and 9.479 ± 6.047 ($mgkg^{-1}$ dry weight basis), respectively. Edible fish tissues of *Liza parsia* contained Cd 0.613 ± 0.520, Hg 0.0367 ± 0.026, Pb 0.2053 ± 0.206, where *Etroplus suratensis* contained Cd 0.2600 ± 0.246, Hg 0.0426 ± 0.026, and Pb 0.256 ± 0.266 ($mgkg^{-1}$ wet weight basis). No significant difference was observed for Hg and Pb contents in two fish types except Cd. The accumulated levels of three heavy metals in the edible fish tissue of both fish species were followed the order Hg<Pb<Cd and content of metals in lagoon were varied water<fish<sediment, accordingly. The results of linear regression comparisons between metal concentrations and the fish body weight and length showed positive correlations. Based on the results of the present study, consumption of the fish species studied in the *Chilaw* lagoon is safe, as the heavy metal tested are within the recommended levels stipulated by EU/EC 1881/2006 legislation.

Keywords: Atomic absorption spectrophotometer, *Chilaw* lagoon, *Etroplus suratensi*, *Liza parsia*