

Heavy metal levels in two species of food fish, *Etroplus suratensis* (Koraliya) and *Ambassis commersoni* (Katilla) inhabiting Negombo lagoon, Sri Lanka

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Negombo lagoon which is used by the local community mainly for fishery is becoming polluted with chemicals from various sources. The present study was carried out to assess the total levels of eight metals viz. Pb, Cu, Hg, Cd, Cr, Mn, Zn and Ni in the muscle, liver and gills of two species of food fish, *Etroplus suratensis* and *Ambassis commersoni* inhabiting the lagoon. Fish samples were collected from seven locations of the lagoon and the levels of Hg in the tissues were analysed by cold vapour atomic absorption spectrometry. The other metals were analysed by graphite furnace atomic absorption spectrometry. Total metal levels in muscle tissue (in $\mu\text{g kg}^{-1}$ wet weight) of the two species showed a wide range: Pb 11-81; Cu 23 -374; Hg 32-329; Cd 2-48; Cr 22 -283; Mn 54-506; Zn 28 -3002; Ni 14-310; in *E. suratensis* (n=150); Pb 4-61; Cu 6-251; Hg 41-258; Cd 1 - 30; Cr 7-241; Mn 9-321; Zn 65-2561; Ni 6-211; in *A. commersoni* (n = 95). Accumulation of most metals in the tissues of these two species followed the increasing order, muscle<gills<liver. Of the different metal levels detected in the tissues of the two fish species, only the level of Cd in liver tissue of *E. suratensis* (6%) and *A. commersoni* (12%) exceeded the level specified for human consumption by European Union. No significant differences in metal accumulation levels were found between the two species of fish examined in the gill and liver tissues. Mean levels of Zn and Hg in the muscle tissue of *A. commersoni* were two fold higher than that of *E. suratensis* ($P<0.001$). Bioaccumulation factors of the metals in the muscle tissues of the fish in relation to water ranged from 5 to 171 for *E. suratensis* and from 8 to 142 for *A. commersoni*. The levels of metals in the muscle tissue of both fish species were positively correlated ($P<0.001$) with the body weight or body length of the fish. Based on the levels of Hg, Pb, and Cd in fish, edible muscle of both fish species collected from the lagoon was found to be safe for human consumption. However, consumption of bigger size fish may pose a health risk to the consumers as there were strong positive correlations between body weight /body length and metal levels in muscle tissues of both species of fish.

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