

Accumulation of lead, cadmium and copper in brackish water clam, *Meretrix casta* from selected estuaries in Sri Lanka

E.A.K.K. Amarasekara¹, A. Pathiratne² and W.M.T.B. Wanninayake³

¹ National Institute of Fisheries and Nautical Engineering, Crow Island, Mattakkuliya, Colombo 15, Sri Lanka

² Department of Zoology, Faculty of Science, University of Kelaniya, Kelaniya, Sri Lanka

³ Department of Aquaculture and Fisheries, Faculty of Livestock, Fisheries and Nutrition, Wayamba University of Sri Lanka, Makadura, Gonawila (NWP), Sri Lanka

The brackish water clam, *Meretrix casta* is an abundant, edible clam species in some estuarine waters in Sri Lanka. Bivalves are reported to accumulate heavy metals from the aquatic environment and thus edible species may transfer them to humans causing health problems.

The objective of the present study was to determine levels of selected heavy metals viz. lead, cadmium and copper in the edible parts of wild populations of *M. casta* inhabiting Mundal Lake, Chilaw estuary, and Negombo estuary (Pitipana and Pamunugama areas) and to assess whether they are safe for human consumption. The clams, water and sediments were sampled from each site monthly during the period, September 2007 to May 2008 and heavy metal levels were determined by atomic absorption spectrometry using standard procedures. Levels of lead, cadmium and copper (in $\mu\text{g/g}$ wet weight) in soft tissues in the clams ranged from not detected to 1.2, not detected to 0.8, and not detected to 2.7 respectively ($n=45$). Levels of copper in the clams collected from Mundal lake were significantly higher ($P < 0.05$) than those in the clams collected from the other sampling sites. However no site specific differences in lead and cadmium levels in the clams were obtained during the study period. The results also revealed that biotransfer factors of the three metals in the clam tissues in relation to water and sediment phases were considerably high. However the metal contents in the edible parts of the clams were below the recommended guidance levels by the Food and Drug Administration for molluscan bivalves and within the safe limits for human consumption.