The accumulation of Fe, Pb, Zn, Ni and Cd in Nerita lineata and Thais bitubercularis obtained from Tanjung Harapan and Teluk Kemang, Malaysia

ABSTRACT

The concentrations of selected heavy metals (Fe, Pb, Zn, Ni and Cd) were determined in the soft tissues and shells of two mollusc, namely, Nerita lineata and Thais bitubercularis taken from Tanjung Harapan and Teluk Kemang, Malaysia. Samples were collected in April 2012 and analysed using inductively coupled plasma mass spectrometry (ICP-MS). Fe is the most abundant metal in the tissue and shell compared to the rest of the metals. The concentrations of heavy metals in the soft tissues of Nerita lineata taken from Tanjung Harapan follow this order: Fe > Zn > Ni > Cu > Cd while in Thais bitubercularis, the metal concentrations were higher following the order of Fe > Zn > Cu > Ni > Cd. The samples taken from Teluk Kemang were higher and exhibited different trend for both organisms. For Nerita lineata, the concentrations were Fe > Cu > Zn > Ni > Cd > Pb while in the Thais bitubercularis the order was Fe > Zn > Cu > Cd > Ni > Pb. There was evidence of spatial difference where Fe was detected in large amount compared to other metals for both locations. Cd has the potential to be accumulated in Nerita lineata whereas for the T. bitubercularis Cu, Cd, and Zn were accumulated in the soft tissues.

Keyword: Heavy metals; Nerita lineata; Thais bitubercularis; Biota-sediment accumulation factors (BSAFs); Malaysia