

Revealing copper contamination at the Penang industrial area by using Malaysian mussel watch approach.

Abstract

Concentrations of Cd, Cu, Ni, Fe, Pb and Zn were determined in the four different parts of soft tissues and shells of *Perna viridis* collected from 6 geographical sites in the Straits of Malacca in 2005. All the 6 metal concentrations except for Cu were considered low and comparable to those reported in the literature. The Cu concentrations found in the Penang population was found to be extremely elevated and exceeding the ranges for most reported studies as well as safety guidelines, which may be derived from a variety of industrial activities at Penang industrial area. Therefore, the consumption of mussels collected from the intertidal water adjacent to Penang Industrial Area should be given a special caution since human consumption on the mussels could pose toxicological risk of Cu. The present study showed that the Penang coastal water was receiving industrial effluents as a point source of Cu pollution as indicated by the elevated concentration of Cu in the different soft tissues of *P. viridis*.

Keyword: Heavy metals; *Perna viridis*; Penang industrial area; Mussel watch approach.