

**A preliminary study on heavy metal concentrations in the barnacle *Balanus* sp. from the Penang Bridge and Semilang River, Malaysia collected.**

**Abstract**

This is a preliminary report of heavy metal study in barnacles from Malaysia. In the present study, the shells and total soft tissues of the barnacles (*Balanus* sp.) collected from the Penang Bridge and Semilang River (Penang) were analyzed for Cd, Cu, Fe, Ni, Pb and Zn. The metal levels found in this study were low and it was within the range of the polluted populations reported in the literature. The ranges of heavy metal concentrations based on the two populations found in the present study were 10.3-20.3  $\mu\text{g/g dw}$  for Cu, 360.7-433.7  $\mu\text{g/g dw}$  for Zn, 633-670  $\mu\text{g/g dw}$  for Fe, 4.72-6.66  $\mu\text{g/g dw}$  for Cd, 50.1-58.6  $\mu\text{g/g dw}$  for Pb and 21.6-23.2  $\mu\text{g/g dw}$  for Ni. Based on the present findings, it is assumed that the trace metal bioavailabilities in the Penang coastal waters were relatively low. It is suggested that this preliminary baseline data could be useful for regular heavy metal monitoring. However, more studies such as genetic, taxonomic, laboratory, ecotoxicological and molecular are needed in establishing this barnacle species as a potential biomonitor in Malaysian coastal waters.

**Keyword:** Barnacles; Heavy metal bioavailabilities; Penang coastal waters.