

Biomonitoring of heavy metal (Cd, Cu, Pb, and Zn) concentrations in the west intertidal area of Peninsular Malaysia by using *Nerita lineata*

Abstract

Snails, *Nerita lineata*, were collected from 15 sites along the west intertidal area of Peninsular Malaysia from December 2005 until April 2006. The concentrations of heavy metals (Cd, Cu, Pb, and Zn) were determined in the total soft tissues, operculums, and shells of the snails. Different patterns of heavy metal distributions were found in the different tissues (shell, operculums, and soft tissues) as well as spatial variations of heavy metal concentrations in the snails. This shows that the distribution of metals in the shells and the total soft tissues of *N. lineata* were not similar which could be due to different rates of metal accumulation, excretion, and sequestration. Since *N. lineata* is abundant on the rocky shores, below jetties and mangrove trees along the west intertidal area of Peninsular Malaysia and accumulate heavy metals, the snails are therefore potential biomonitors of heavy metal contamination for the west intertidal area of Peninsular Malaysia.

Keyword: Heavy metals; *Nerita lineata*; Peninsular Malaysia; Biomonitor