Heavy-metal concentrations in the mangrove snail, nerita lineata and surface sediments collected from Klang River Estuary, Selangor, Malaysia.

Abstract

The mangrove snail, Nerita lineata, and the surface sediments were collected from the Klang River Estuary, potentially receiving anthropogenic inputs such as domestic, sewage and industrial waste. The snails were divided into three parts, namely soft tissues, operculum and shells and analysed for heavy-metal (Cd, Cu, Fe, Ni, Pb and Zn) concentrations. The total concentrations (μg/g dry weight) of heavy-metals in the surface sediments collected from the four sampling sites ranged from 0.21-1.45, 5.29-53.9, 22121-24175, 14.2-19.5, 30.4-62.3 and 46.4-207 for Cd, Cu, Fe, Ni, Pb and Zn, respectively. The ranges of heavy-metal concentrations (μg/g dry weight) in the shells were 3.45-7.48, 5.54-7.27, 39.8-49.6, 23.8-28.6, 66.3-71.8 and 4.10-7.33 for Cd, Cu, Fe, Ni, Pb and Zn, respectively. The ranges of heavy-metal concentrations (μg/g dry weight) in the operculum were 3.28-5.81, 6.67-11.2, 45.4-68.8, 23.5-24.7, 62.5-66.2 and 14.5-24.9, for Cd, Cu, Fe, Ni, Pb and Zn, respectively. As for the soft tissues, the heavy-metal concentrations (μg/g dry weight) ranges were 1.54-4.47, 17.3-24.4, 627-716, 4.41-5.32, 10.8-43.6 and 87.5-109 for Cd, Cu, Fe, Ni, Pb and Zn, respectively. It was found that the concentrations of Cu, Fe and Zn were higher in the soft tissues while the concentrations of Cd, Ni and Pb were higher in the operculum and shells of the snails.

Keyword: Heavy metals; Nerita lineata; Klang River Estuary; Sediment.