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## Trace metal dynamics and risk assessment in the commercially important marine shrimp species collected from the Miri coast, Sarawak, East Malaysia

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### Abstract

The present study reports a preliminary survey of the presence of trace metal concentrations (Cu, Cd, Cr, Co, Ni, Pb, Mn, Zn and Rb) in the edible shrimp (*Parapenaeopsis sculptilis*, *Litopenaeus vannamei*, *Penaeus merguensis*, *Harpisquilla harpax* and *Acetes indicus*) tissues collected from the Miri coast, Sarawak. The bioaccumulation of trace metals in the muscle tissues were determined by Flame Atomic Absorption Spectrometer. The concentration of these trace metals ranged from 32.43 - 80.87  $\mu\text{g g}^{-1}$  for Cu, 0.12 - 2.10  $\mu\text{g g}^{-1}$  for Cd, 1.20 - 4.70  $\mu\text{g g}^{-1}$  for Co, 2.55 - 10.15  $\mu\text{g g}^{-1}$  for Cr, 7.30 - 51.35  $\mu\text{g g}^{-1}$  for Mn, 1.55 - 8.07  $\mu\text{g g}^{-1}$  for Ni, 1.64 - 7.25  $\mu\text{g g}^{-1}$  for Pb and 62.43 - 203.00  $\mu\text{g g}^{-1}$  for Zn. Among the analyzed metals, Zn concentration was higher and Cd was the least accumulated metals. This is due to the bioavailability and soluble trace metals in the studied coastal environment. Variations in the inter-elemental relationship of

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