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**Evaluating heavy metal accumulation in *Scylla serrata* (mud crabs) inhabiting the Negombo lagoon, Sri Lanka**

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A multitude of anthropogenic and industrial uses lead to the extensive dispersion of heavy metals in aquatic environments. The protracted presence and poisonous nature of heavy metals inflict negative impacts including organ malfunction and the inactivation of enzymes in aquatic organisms. The bottom-dwelling mud crabs are frequently used as bioindicators for evaluating such heavy metal contamination in lagoons and estuaries. Therefore, the main emphasis of this study was on the amounts of heavy metals found in the meat of the *Scylla serrata* mud crab that lives in Negombo Lagoon, Sri Lanka. Due to their great sensitivity, mud crabs, bottom dwelling crustaceans that live in the bottom zones of lagoons, are frequently utilized as indicators for evaluating heavy metal contamination. Mud crab samples (n = 42) were randomly collected from the Negombo Lagoon from March to May 2023. Three replicates, 1 g each, of the flesh from each crab sample, were treated to acid digestion (conc. HNO<sub>3</sub> and H<sub>2</sub>O<sub>2</sub>) and analysed separately using an atomic absorption spectrophotometer (AAS). Cu, Fe, Mn, and Zn were found to be the most common heavy metals in crab flesh based on the metal analysis. The amounts of Cd and Cr were not detectable. Zn (0.70 ± 0.24 mg/L) was the most prevalent heavy metal in the meat, followed by Mn (0.08 ± 0.07 mg/L), Cu (0.15 ± 0.12 mg/L), and Fe (0.46 ± 0.30 mg/L). The study's findings support the notion that the mud crabs living in the Negombo Lagoon have heavy metals in their meat. A recent study offers strong proof that heavy metals are present in mud crabs, a popular edible shellfish in Sri Lanka. The Negombo Lagoon's whole food chain may be affected by this contamination.

**Keywords:** AAS, flesh, heavy metals, mud crabs, Negombo lagoon

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