

Survey on heavy metals contamination and health risk assessment in commercially valuable Asian swamp eel, *monopterus albus* from Kelantan, Malaysia

ABSTRACT

This work investigates the metals concentration in the tissues of Asian swamp eel, *Monopterus albus*. Five selected tissues, including liver, gill, bone, skin, and muscle were examined for the concentration of Zn, Cu, Cd, Pb, and Ni. The concentrations of Cd and Pb were found high in the muscle tissues of the eels. Additionally, high amounts of Zn and Cu metals were observed in the liver, whereas the Cd, Pb, and Ni metals were highly detected in gill. The accumulation of Zn, Cu, Cd, Pb, and Ni in both skin and bone of the eel seems to vary between seasons. Low levels of Zn, Cu, and Ni were identified in the muscle tissues of the eels. This study revealed that the concentration of Cd and Pb in the muscle tissues of Asian swamp eels exceeded the permissible limits by the US EPA, suggesting the consumption of the muscle may be hazardous and can severely affect one's health.

Keyword: Asian swamp eel; *Monopterus albus*; Zn and Cu