

## Heavy metals uptake by Asian swamp eel, *Monopterus albus* from paddy fields of Kelantan, Peninsular Malaysia: preliminary study

### ABSTRACT

Swamp eel, *Monopterus albus* is one of the common fish in paddy fields, thus it is suitable to be a bio-monitor for heavy metals pollution studies in paddy fields. This study was conducted to assess heavy metals levels in swamp eels collected from paddy fields in Kelantan, Malaysia. The results showed zinc [Zn (86.40  $\mu\text{g/g}$  dry weight)] was the highest accumulated metal in the kidney, liver, bone, gill, muscle and skin. Among the selected organs, gill had the highest concentrations of lead (Pb), cadmium (Cd) and nickel (Ni) whereas muscle showed the lowest total metal accumulation of Zn, Pb, copper (Cu), Cd and Ni. Based on the Malaysian Food Regulation, the levels of Zn and Cu in edible parts (muscle and skin) were within the safety limits. However, Cd, Pb and Ni exceeded the permissible limits. By comparing with the maximum level intake (MLI), Pb, Ni and Cd in edible parts can still be consumed. This investigation indicated that *M. albus* from paddy fields of Kelantan are safe for human consumption with little precaution.

**Keyword:** Heavy metals; Swamp eel; Paddy fields