

**Tape seagrass (*Enhalus acoroides*) as a bioindicator of trace metal contamination in Merambong shoal, Johor Strait, Malaysia**

**ABSTRACT**

Revealing the potential of seagrass as a bioindicator for metal pollution is important for assessing marine ecosystem health. Trace metal ( $^{111}\text{Cd}$ ,  $^{63}\text{Cu}$ ,  $^{60}\text{Ni}$ ,  $^{208}\text{Pb}$ ,  $^{66}\text{Zn}$ ) concentrations in the various parts (root, rhizome, and blade) of tape seagrass (*Enhalus acoroides*) collected from Merambong shoal of Sungai Pulai estuary, Johor Strait, Malaysia were acid-extracted using a microwave digester and analysed via inductively coupled plasma-mass spectrometry (ICP-MS). The ranges of trace metal concentrations (in  $\mu\text{g g}^{-1}$  dry weight) were as follows: Cd (0.05-0.81), Cu (1.62-27.85), Ni (1.89-9.35), Pb (0.69-4.16), and Zn (3.44-35.98). The translocation factor revealed that *E. acoroides* is a hyperaccumulator plant, as its blades can accumulate high concentrations of Cd, Cu, Ni, and Zn, but not Pb. The plant limits Pb mobility to minimize Pb's toxic impact. Thus, *E. acoroides* is a potential bioindicator of metal pollution by Cd, Cu, Ni, and Zn in estuarine environments.

**Keyword:** Bioindicator; Merambong shoal; Seagrass; Trace metal; Translocation factor