

Higher bioavailability and contamination by copper in the edible mussels, snails and horseshoe crabs at Kampung Pasir Puteh: evidence of an industrial effluent receiving site at Pasir Gudang Area

ABSTRACT

This paper determined the heavy metal concentrations (Cd, Cu, Fe, Pb, Ni and Zn) in the different soft tissues of mussel *Perna viridis*, mudflat snail *Telescopium telescopium*, and horseshoe crabs (*Carcinoscorpius rotundicauda* and *Tachypleus gigas*), and their habitat surface sediments from an industrial effluent receiving site Kg. Pasir Puteh (KPPuteh) [1-6] (a site close to Pasir Gudang industrial area) and relatively unpolluted sites. The sediment data clearly showed that KPPuteh had higher nonresistant geochemical fraction of heavy metals, indicating anthropogenic sources and metal contamination at KPPuteh. However, based on the metal concentrations in all the different soft tissues of the above four biomonitors, Cu was significantly higher than the other comparative site, indicating distinct higher Cu bioavailabilities to the four biomonitors. Thus, it is evidenced and confirmed that KPPuteh was contaminated by heavy metals, having high Cu bioavailability to the four biomonitors [6-11].

Keyword: Biomonitors; Cu bioavailability; Sediments; Malaysia