Trace metals in sediments and molluscs from an estuary receiving pig farms effluent

ABSTRACT

Pig farming in Malaysia has become more active over the years as it yields high annual turnover of estimated 2 billion Malaysian Ringgit. The increase in pig farming activities has brought about changes in environmental qualities in the forms of organic matter pollution and trace metals pollution. Many earlier studies have indicated the presence of high levels of trace metals in sediment from estuarine receiving effluent from pig farming. This study shows that there are high concentrations of copper, zinc and lead in sediment and gastropods sampled close to the pig farm but this reduced about 100 fold towards the river mouth. The ranges of trace metals in sediment studied are 4-670 ε g g-1 for Cu, 4-550 ε g g-1 for Zn, 3.4-46.5 ε g g-1 for Pb and 0.1-2.1 ε g g-1 for Cd. While in molluscs, the levels range from 6-15 ε g g-1 for Cu, 18-47 ε g g-1 for Zn, 7-17 ε g g-1 for Pb and 0.1-2.5 ε g g-1 for Cd. The results also show that 60 to 70 percent of the Cu, Zn and Pb concentration in the sediments are from anthrophogenic activities.

Keyword: Mollusc; Pig effluent; Sediment; Trace metals