Metals fractionation and evaluation of their risk connected with urban and industrial influx in the Klang River surface sediments, Malaysia.

ABSTRACT

In the present study, concentration, distribution and speciation of trace metals were conducted to assess the overall classification of Ni, Cu and Pb as well as their risk status in the surface sediments of Klang River. Sequential extraction technique (SET) was used to evaluate the four (exchangeable, acid-reducible, oxidisable-organic and residual) fractions of the surface sediments. The total concentrations of metals ranged from 5.26 g/g d.w. to 22.93 g/g d.w for Ni; 9.47-66.74 g/g d.w. for Cu; and 24.78-62.35 g/g d.w. for Pb. The fractionation of studied metals (except Cu) in most stations were in the order of residual > acid-reducible > oxidisable-organic > exchangeable. The degree of surface sediments contamination was computed for Risk Assessment Code (RAC), Individual Contamination Factors (ICF) and Global contamination factor (GCF). The result of this study showed that none of the metals studied had potential risk to fauna and flora of the Klang River systems.

Keyword: Metals Klang River; Industrial influx; Klang River surface sediments; Malaysia.