

Johor Strait as a hotspot for trace elements contamination in Peninsular Malaysia.

Abstract

Present study was conducted to evaluate current status of trace elements contamination in the surface sediments of the Johor Strait. Iron ($2.54 \pm 1.24\%$) was found as the highest occurring element, followed by those of zinc ($210.45 \pm 115.4 \mu\text{g/g}$), copper ($57.84 \pm 45.54 \mu\text{g/g}$), chromium ($55.50 \pm 31.24 \mu\text{g/g}$), lead ($52.52 \pm 28.41 \mu\text{g/g}$), vanadium ($47.76 \pm 25.76 \mu\text{g/g}$), arsenic ($27.30 \pm 17.11 \mu\text{g/g}$), nickel ($18.31 \pm 11.77 \mu\text{g/g}$), cobalt ($5.13 \pm 3.12 \mu\text{g/g}$), uranium ($4.72 \pm 2.52 \mu\text{g/g}$), and cadmium ($0.30 \pm 0.30 \mu\text{g/g}$), respectively. Bioavailability of cobalt, nickel, copper, zinc, arsenic and cadmium were higher than 50% of total concentration. Vanadium, copper, zinc, arsenic and cadmium were found significantly different between the eastern and western part of the strait ($p < 0.05$). Combining with other factors, Johor Strait is suitable as a hotspot for trace elements contamination related studies.

Keyword: Johor Strait; Sediments; Trace elements; Bioavailability; Hotspot.