

## Heavy metals in neuston from the straits of Malacca.

### ABSTRACT

Heavy metals cadmium, lead, copper and zinc in neuston were analyzed from samples collected with a modified neuston net (310  $\mu\text{m}$  mesh size) during an oceanographic cruise from July 29 to August 8, 2000 in the Straits of Malacca. The period of sampling coincided with South-West (SW) monsoon. The heavy metal concentrations in neuston were relatively low: ranging from 1.19-1013.70  $\mu\text{g g}^{-1}$  wet weight for copper, 16.54-235.78  $\mu\text{g g}^{-1}$  wet weight for zinc, 3.92-36.08  $\mu\text{g g}^{-1}$  wet weight for lead and from 0.32-4.09  $\mu\text{g g}^{-1}$  wet weight for cadmium. The heavy metal concentrations in neuston in this study were within the ranges published elsewhere, except for cadmium, there were significant differences ( $p < 0.05$ ) in concentrations of Cu, Pb and Zn between northern, central and southern parts of the Straits. However, concentrations of Cu and Zn were significantly ( $p < 0.05$ ) higher in near-coastal than offshore or neritic areas, whereas those of Pb and particularly Cd were higher in offshore areas though not significantly ( $p > 0.05$ ). The presence of two groups of stations with high and low heavy metal concentration as revealed by multivariate analyses corresponded mostly to near-coastal and neritic waters, respectively.

**Keyword:** Heavy metals; Zooplankton; Neuston; Straits of Malacca; Malaysia.