



Hexachlorocyclohexane and Dichlorodiphenyltrichloroethane in the Sediments from the Deltaic Coast of Bay of Bengal, in the East Coast of India

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Abstract: Hexachlorocyclohexane (HCH), and dichlorodiphenyltrichloroethane (DDT) are among the major organochlorine pesticides with extensive usage in India. The ecotoxicological risks of HCH and DDT were investigated in sediments from 23 sampling stations covering about 200 km length extending up to 22.5 km off-shore area in eastern coast of India. The concentration of Σ HCHs and Σ DDTs ranges from <0.01 to 45.86 (Mean \pm SD, 11.01 \pm 1.30 ng g⁻¹) and <0.01 to 51.90 (Mean \pm SD, 8.45 \pm 1.09 ng g⁻¹) respectively. The concentrations were significantly high up to 10 km offshore and declined at 22.5 km offshore. Ratio of α -HCH/ γ -HCH reflects the regular usage of technical HCH and lindane in this area. Relatively higher amounts of DDT compared to DDD and DDE indicates either minimal degradation or recent input of technical DDT. Moreover, higher ratios of DDT/(DDD+DDE) and, *o,p'*-DDT/*p,p'*-DDT shows a possible fresh DDT input. As compared with available marine sediment guidelines, the concentration of DDT indicates no adverse effects on biota. Concentration of HCH did not exceed sediment quality guidelines with the exception of lindane. In general although the mean concentration of HCH and DDT were lower than suggested guidelines, but the level of γ -HCH in some locations were above the sediment guidelines. This may lead to adverse effects among the benthic biota and is therefore a cause for ecological concern.

Key Words: Pesticides, HCH, DDT, Sediments, North East coast of India, Bay of Bengal

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