Asia-Pacific mussel watch: Monitoring contamination of persistent organochlorine compounds in coastal waters of Asian countries

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Abstract: Contamination of persistent organochlorines (OCs) such as PCBs (polychlorinated biphenyls), DDT and its metabolites (DDTs), HCH (hexachlorocyclohexane) isomers (HCHs), chlordane compounds (CHLs), and HCB (hexachlorobenzene) were examined in mussels collected from coastal waters of Asian countries such as Cambodia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Philippines, Far East Russia, Singapore, and Vietnam in 1994, 1997, 1998, 1999, and 2001 to elucidate the contamination status, distribution and possible pollution sources and to assess the risks on aquatic organisms and human. OCs were detected in all mussels collected from all the sampling sites investigated. Considerable residue levels of p,p?-DDT and ?-HCH were found in mussels and the concentrations of DDTs and HCHs found in mussels from Asian developing countries were higher than those in developed nations suggesting present usage of DDTs and HCHs along the coastal waters of Asian developing countries. On the other hand, lower concentrations of PCBs detected in mussels from Asian developing countries than those in developed countries indicate that PCBs contamination in mussels is strongly related to industrial and activities. To our knowledge, this is a first comprehensive report on monitoring OCs pollution in the Asia-Pacific region. ??

Author Keywords: Asia-Pacific region; Developed nations; Developing countries; Mussels; Organochlorine compounds (OCs)

Index Keywords: Chlorine compounds; Coastal zones; Contamination; Isomers; Coastal waters; Marine pollution; 1,1 dichloro 2,2 bis(4 chlorophenyl)ethane; 1,1 dichloro 2,2 bis(4 chlorophenyl)ethylene; 4,4' chlorphenotane; alpha hexachlorocyclohexane; beta hexachlorocyclohexane; chlordane; chlorphenotane; hexachlorobenzene; hexachlorocyclohexane; lindane; nonachlor; organochlorine derivative; oxychlordane; polychlorinated biphenyl derivative; unclassified drug; bioaccumulation; coastal water; marine pollution; mollusc; organochlorine; animal tissue; Asia; bioaccumulation; controlled study; developed country;

developing country; environmental impact; geographic distribution; mussel; nonhuman; Pacific islands; pollution monitoring; review; sea pollution; seashore; tissue level; water contamination; Animals; Asia; Bivalvia; DDT; Developing Countries; Environmental Monitoring; Environmental Pollutants; Industry; Insecticides; Lindane; Polychlorinated Biphenyls; Risk Assessment; Asia

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