

Pollution sources and occurrences of selected persistent organic pollutants (POPs) in sediments of the Mekong River delta, South Vietnam

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Abstract: The Mekong River delta is one of the largest agricultural land in the Southeast Asia. It plays a very important role for agriculture and fisheries in South Vietnam. However, comprehensive studies on the environmental pollution of persistent organic pollutants (POPs) in Mekong River delta have not been carried out in recent years. In this study, we collected sediment samples from the Mekong River to evaluate the contamination and ecological risks caused by several POPs. The contamination pattern of POPs was DDT > PCBs > CHLs > HCHs > HCB. DDTs are the most abundant pollutants, their concentration ranging from 0.01 to 110 ng/g dry wt, followed by PCBs (0.039-9.2 ng/g dry wt). DDTs and PCBs concentrations were higher in sediment from adjacent to urban areas than those from rural and agricultural sites, suggesting urban areas as important point sources of DDTs and PCBs to the river. Ratio of p,p'-DDT/p,p'-DDE was lower compared to those previously reported. However, some samples still had the ratio higher than 0.5, indicating recent input of DDT into the aquatic environments. This result shows that although the magnitude of contamination decreased over time, recent inputs of DDTs to the river still occur. Some sediment samples had concentrations of DDT compounds higher than the standards from the Canadian Environmental Quality Guideline, suggesting continuous monitoring for POPs contamination in the Mekong River is necessary. ?? 2006 Elsevier Ltd. All rights reserved.

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