Abstract

Assessing Polychlorinated Biphenyls (PCBs) and Dichlordiphenyltrichlorethane (DDTs) in freshwater bivalves, by Ho Seanghuoy.

PCBs and DDTs are among the 12 persistent organic pollutants which are considered to be persistent xenobiotic contaminants of the environment and living organisms. Bivalves have the ability to bioaccumulate organic substances like PCBs and DDTs. The harmful effects of these substances to human health include; neurotoxicity, reproductive, immunologic and teratogenic dysfunction, endocrine disruption and a possible cancer risk. The amount of research in other countries related to these substances in freshwater bivalves has increased noticeably, however, there is little information about them in Cambodia. This research is especially important in Cambodia since filter feeding bivalves are a popular snack food. Samples of clams (Corbicula Fluminea and Pilsbryoconcha exilis) were collected from Kompong Chhnang at the mouth of the Tonle Sap Lake and Kompong Cham on the Mekong River, during Feb-April 2010. The samples were extracted by solvent mixture hexane:pentane 1:1 (v/v) and then loaded onto a gravity-flow cleanup column which contained three different layers of silica gel: acidic, basic and neutral silica gel. TCDD was used as an internal standard. Calculated recovery in Corbicula Fluminea was 87-99.5%. The minimum detection limit of o,p’ DDE, o,p’ DDT, p,p’ DDE, p,p’ DDT, o,p’ DDD and p,p’ DDD were 0.45, 0.51, 0.52, 0.44, 0.20, and 0.28 ppm respectively. Levels of DDT and PCB were below detection limits.