Presence of persistent organochlorine pesticides in estuaries of the subtropical Mexican Pacific

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Abstract

A set of 40 samples of sediments and shrimps (Lobopenaeus spp.) from two estuaries in the subtropical Mexican Pacific (San Blas, Nayarit) was analysed to determine the levels of organochlorine pesticides (OCPs). These pesticides have been widely used and dispersed in the study area, either for agriculture crops or control of malaria. For sediments of both estuaries (Pazco-Ray and San Crisoto), the results show that the most frequent compounds were the HCH isomers, endosulphan and DDT group. The shrimp’s tissues follow the same pattern of pesticide distribution. The HCH isomers being the most frequent compounds. They demonstrated their broad use. The concentration of OCPs detected in this study area was lower than those previously reported in other wetlands of the Mexican Pacific. All OCPs identified in this work are banned by the Mexican legislation, with their consequent risks to the environment and the public health.

Keywords: organochlorine pesticides, OCPs, sediments, shrimps, estuaries, subtropical region, Mexico, water pollution, pesticide distribution, environmental pollution