

Health risk of PCBs and DDTs in seafood from Southern Iran

ABSTRACT

Levels of polychlorinated biphenyls (PCBs) congeners and dichlorodiphenyltrichloroethane and its metabolites (DDTs) were measured in 18 species of fish, crab, shrimp, and bivalve samples collected from the northern region of the Persian Gulf in Iran. The levels of \sum PCBs varied from 259.92 ± 31.04 ng/g to 1648.88 ± 176.96 ng/g in lipid weight. CB118 showed the highest concentration. \sum DDT variations ranged from ND to 570.45 ± 806.74 ng/g in lipid weight. Health risk was assessed by estimating both dietary intakes and screening values (SVs). Daily intake levels were much lower than the Food and Agriculture Organization (FAO)/World Health Organization (WHO) standards for PCBs and DDTs. Based on an average bodyweight of 73 kg and consumption rates of 0.055 kg/person. day, the SVs for the carcinogen and non-carcinogen effects of PCB and DDT were calculated. Average concentrations of PCBs and DDTs showed that the levels of PCBs exceeded the established SV for carcinogens. This finding suggests the need to enhance risk management regarding seafood consumption through public advisory.

Keyword: Polychlorinated biphenyls; DDTs; Chlorinated pesticides; Seafood; Hormozgan Province; Iran