

Risk assessment of dietary intake of organohalogen compounds for human

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Daily dietary intakes of PCBs and organochlorine pesticides during 19 years from 1977 to 2000 by adults in Osaka was estimated by the market basket method of total diet study. The daily intake of PCBs in the period ranged from 0.11 μ g to 4.31 μ g. Others were as follows: DDTs, 0.16 to 4.77 μ g; HCHs, 0.05 to 3.65 μ g; chlordanes, 0.06 to 1.51 μ g; HCE, 0.004 to 0.17 μ g ; HCB, ND to 0.90 μ g; and dieldrin, 0.01 to 0.49 μ g. As such, the daily intakes of PCBs and organochlorine pesticides decreased to about 1/25(chlordanes)~1/73(HCHs) in about 25 years.

The time-trend of PCBs, organochlorine pesticides, total- dioxins and polybrominated diphenyl ethers (PBDEs) in pooled milk samples (fat) from mothers living in Osaka were investigated.

The concentrations of PCBs (0.20 μ g/g), HCH(0.17) and DDT(0.24) in mother's milk in 1999 decreased to 14%, 5% and 7% respectively, of their levels in 1973.

The concentration of PCDDs/PCDFs (7.99 pg-TEQ/g) and coplanar PCBs (3.36 pg-TEQ/g) in mother's milk in 2004 decreased by 27% and 9% respectively in comparison with the levels in 1975 (30.0 pg-TEQ/g and 36.0 pg-TEQ/g respectively). As such, the concentrations of total- dioxins decreased to about 1/6 of their former level in about 30 years.

The PBDEs concentration in the pooled samples continuously increased during the period between 1973 (ND) and 1988 (1.64 ng/g lipid). After a decrease at the beginning of the 1990s, the concentration of PBDEs seemed to increase again and began leveling off.