

P135

Polybrominated Diphenyl Ethers (PBDEs) Levels in Food Samples from 5 Different Cities in Korea

Yu Jin Cho, Sung Ug We, Sang Ah Park and Byung Yoon Min

Department of Environmental Engineering, Kyungnam University, Masan, 631-701

Polybrominated diphenyl ethers (PBDEs) have been used as brominated flame retardants in foams, fabrics and plastics, and are common contaminants of household air and dust and bioaccumulate in wildlife, and are detectable in human blood, milk and tissues and in fish and animal food products. We determined the concentrations of PBDEs in a number of food samples (9 food groups, 17 food items) Food samples were required in 5 cities of Korea from 2004 to 2006. The seven tri- through heptabrominated congeners were detected. Seven congeners were routinely found in the samples with an range sum of 0.92~891.39 pg/g (mean±S.D; 79.65 ± 173.79 pg/g wet wt). BDE-47 and BDE-99 were identified in the majority of food samples. The highest concentration of total PBDEs was found in a fish (891.39 pg/g) and oil and fats group (628.81 pg/g). In order to determine the exposure to PBDEs through the diet, the results were compared with the food intake. Although fish and shellfish are a minor constituent of the participants diet, fish was the major contributor to the total daily PBDE intake (around 42.6%), due to the high PBDE levels in this type of food. An increase of fish product consumption could be associated with an increase of PBDE levels.

Key words: PBDEs, Food, Intake, HRGC/HRMS

P136

Concentration of PCDD/DFs and Dioxin-like PCBs in Breast Milk Collected from 44 Pregnant Women in Seoul and Ansan City, Korea: Risk Assessment about Delivery Experience and Process

Bong hui Cho, Yu Jin Cho, Sung Ug We and Byung Yoon Min*

Department of Environmental Engineering, Kyungnam University, Masan, 631-701

To discover exposure of dioxin compounds of infants through nursing, we measured the concentrations of polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), dioxin-like polychlorinated biphenyls in breast milk collected in 2007 from 44 pregnant women living in Seoul and Ansan City, Korea. The breast milk sample were collected about 132, each time on regional colostrum, 30 and 60 day after delivery and analysis. The arithmetic mean total TEQ concentrations of PCDDs, PCDFs, dioxin-like PCBs of primiparous and multiparous mothers according to delivery experience were 9.82 pg TEQ/g lipid and 6.24 pg TEQ/g lipid, respectively, total TEQ concentration of primiparous are approximately 36% higher than those of multiparous. Also mean total TEQ concentration of PCDD/DFs and dioxin-like PCBs of primiparous are respectively 40% and 30% higher than multiparous. This results are indicated that concentration of dioxin-like PCBs had a correlation with the number of delivery. When we confirm relationship between dioxin compounds concentration and delivery process, the mean total TEQ concentration of naturalbirth and cesareansection were 7.56 pg TEQ/g and 8.35 pg TEQ/g, respectively. The mean total TEQ concentration of Naturalbirth were lower than those cesareansection but we can not find significant statistical relationship between dioxin compounds concentration and delivery process. The results indicate that current levels of PCDD/DFs and dioxin-like PCBs in breast milk of mothers of Korea and can be used as baseline data that dioxin compounds can be exposed to infants through nursing.

Key words: Risk assessment, PCDD/DFs, dioxin-like PCBs, breast milk