

Abstracts

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Exposure	food
Health domains	reproductive outcomes
Type of research	health impact assessment

Cumulative risk assessment for plasticizer-contaminated food using the hazard index approach

Background Phthalates have been demonstrated considerable adverse effects on reproduction, development, and liver function. In May 2011, a severe plasticizer-contaminated food episode occurred in Taiwan because of improper use one of plasticizer- DEHP to replace palm oil in food and drinks as a cloudy agent. Aim To conduct a cumulative risk assessment for simultaneous exposure to nine phthalates in contaminated food items using the hazard index. Methods The HPLC-ESI-MS/MS was used for determination of nine phthalates in 1200 foodstuff samples. We estimated the average daily dose (ADD) of phthalates based on the ingestion rate of foodstuffs by a sex and age-specified population database derived from the Nutrition and Health Survey in Taiwan survey. In cumulative risk assessment, estimated ADDs were divided by TDIs to produce Hazard Quotients (HQs), which would be added to produce the Hazard Index (HI). The distributions of ADD and HI values were analyzed by Monte Carlo simulation to obtain probabilistic parameters. Results In all 1200 samples, DEHP was present at the highest level among all phthalates, with a mean level of 0.443 mg/kg, followed by DiNP (0.154), DiBP (0.089), DnBP (0.083), DiDP (0.05), DMP (0.031), DnOP (0.029), BBzP (0.027), and DEP (0.026). Although the highest ADD was found in DEHP, Σ DBP(i+n) posed the highest risk potential of all the phthalates. In seven phthalates, the 99th percentile HQs for Σ DBP(i+n) in almost all the population were greater than 1, except for the women (13–16 and 19–64 years) and the elderly (> 65). Regarding to the anti-androgenic effects of phthalate, the 99th percentile HIs in almost all the population were greater than 1, except for the elderly (> 65). For the adverse hepatic effects, the 99th percentile HIs in almost all the population were greater than 1, except for the elderly women. Conclusion These results show that it is probably that Taiwan general population are suffering adverse health effects from current contaminated foods exposure to these phthalates.

Abstract Number	P-3-15-10
Presenter	Gea Oliveri Conti*, Chiara Copat, Cristina Mauceri, Maria Fiore, Alfina Grasso, Maria Grazia D' Agati, Roberto Fallico, Margherita Ferrante
Exposure	food
Health domains	cancer
Type of research	exposure measurement

Detection of antibiotics in feed and farmed fish

Background The consumption of fish products bring significant health benefits, therefore the demand for fish is greatly increased and this request is satisfied by farmed fish. Several studies have reported the presence of pharmacological residues as antibiotics in farmed fish with potential hazardous to the consumer. Use of Crystal Violet (CRI), Gentamicin (GE), Fluoroquinolones (FUQ), Chloramphenicol (CLO), Malachite Green (MG), Furaltadone (FU) and Furazolidone (FZ) is banned by Reg. CE 37/2010 for the severe effects on consumers. Aims The aim of our study was to evaluate the presence of antibiotics banned in the EU in fish muscle and in feed used for their feeding. Methods The sample extraction was carried out by specific ELISA Kits-BioScientific. Detection of antibiotics was carried out by use of a microplates reader Thermo scientific. Results All antibiotics tested were identified in feeds. The mean concentration of Σ antibiotics, is 40.44 ppb. In feed prevails use of GE, CRI and CLO (respectively with average of 31.84; 4.05 and 3.67 ppb). The fish tissues showed a positivity to all drugs investigated with a mean concentration of CLO, CRI, VM, FU and FZ respectively of 0.57; 2.05; 0.45; 0.29 and 0.09 ppb. With a mean Σ of 3.45ppb. Conclusion Our data showed that feeds used for fish feeding are contaminated by antibiotics banned and this contamination is detected in the muscle of farmed fish. In fact the 50% of farmed fish are used in the production of fish meal, primary component of the feed, hence occurs the bioaccumulation of drugs in the muscle of farmed fish. The consumption of farmed fish therefore may represent a risk to consumers that must be managed by strengthening of targeted checks for the fish- feed quality.
