

Organotin contents in some freshwater fishes and amphibia in Korea

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In this study, the concentrations of six organotin compounds such as TBT, TPT and their metabolites in terrestrial freshwater fishes and amphibia collected at 31 riverine areas and ponds were determined to describe the probability of terrestrial organotin contamination.

Since their adverse effects on oyster farms near marina were revealed (Alzieu et al., 1982), a series of studies have demonstrated that organotin compounds are highly toxic towards marine organisms. But, the contamination of organotins in terrestrial area usually has been monitored only at a few selected sites in Korea.

Biota samples were collected at 31 riverine and pond systems all over the country in Korea from March to June, 2000. They consist of two species of fish and frog at each site, respectively. Collected samples were stored under -20 °C prior to treatment. Its flesh portion were homogenized with rod homogenizer and then stored in freezer prior to analysis.

All concentrations are expressed as ng/g-wet wt. as Chloride. Detection limit at each compound were applied 0.1 ng/g-wet wt. as Chloride. The recovery rate of this procedure by proportion between peak area of surrogate material and internal standard in analyzed samples was $87.48 \pm 19.25\%$ (mean \pm standard deviation).

TBT and DBT compounds were detected in almost collected and analyzed terrestrial fishes and amphibia although concentrations were closed to detection limit. The organotin concentration of gold fish, *C. auratus*, was most higher in collected fishes and for amphibia was black-spotted frog, *R. nigromaculata*. The average concentrations of organotin in terrestrial fishes was about ten times higher than frogs. It can be explained that the fishes seem to concentrate the organotins highly than the amphibia by their food web and higher ecological niche. The determined frequency of butyltin compounds was higher than that of phenyltin compounds. In the case of TBT and TPT of the amphibia was 61.29% and 27.42% although of the fish was 77.42% and 38.72%, respectively. The order of organotin concentrations by each basin is Nakdong river, Yeongsan river, Seomjin river, Han river, wet land and Keum river successively.