

## Environmental Levels of Endocrine Disrupters in Water Environment

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As the public is more concerned about endocrine disrupters (EDs), the Ministry of Environment in Korea has designed and established a mid- and long-term research plan on EDs. It includes screening and testing methodology, exposure and adverse effects, risk assessment and risk management. As a second year's project, the field test for environmental monitoring, the investigations of the impact of EDs on the natural ecosystem and the fate of EDs in environmental media were carried out.

Among these projects, the objectives of the environmental monitoring are to measure the contamination level of EDs in a variety of environmental media, such as water, sediment, soil, air and biota, and to control EDs based on scientific rationale.

With 1999 as a start, we continued to measure the contamination level of EDs in water on 2000. The investigation are performed for the same 43 sites as did in 1999 and the target endocrine disrupting chemicals are increased from 87 to 90 chemicals including *o,p*-DDT and its metabolites of DDD and DDE. The chemicals are selected among the suspicious chemicals recommended by the WWF based on a consideration of the amounts of chemicals in circulation, toxicities and possibilities of detection in environmental media. Most samples are analyzed by GC-HRMS and the examinations are carried out twice extending April through June and September through November, respectively.

Compared with the 1999 results which 13 chemicals group(25 chemicals) were detected including 4-n-pentyl phenol, 4-n-heptyl phenol, and pentachlorophenol that are not detected in 2000, 20 chemicals are detected in this investigation. The chemicals detected for the first time in 2000 are as follows: 4-n-octyl phenol, di-2-ethylhexyl adipate, carbaryl, alachlor, atrazine, permethrin, malathion, 2,4-D, and 2,4,5-T. However, the levels of the detected chemicals in water are similar to those of 1999 results.

For a few sites, some difference exists in the detected levels of EDs between the investigation periods, due to the difference of water level at the same sampling site by changing the amount of a rainfall. Generally, increase in a rainfall decreases the contamination levels of chemicals. It is suggested that environmental survey on endocrine disrupting chemicals should be continued in variety of experimental samples and conditions to investigate the exposure pathway and the relationship between chemicals and environmental media.