

## **A Survey on Endocrine Disruptors among Agricultural Products in the North of Seoul**

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### **1. Abstract**

This study was carried out to monitor suspected endocrine disrupting pesticides and industrial organic chemicals among circulated agricultural products in the north area of Seoul in 2001.

Procymidone, vinclozolin, endosulfan, chlorothalonil, chlorpyrifos and pendimetaline (pesticides) and butylated hydroxytoluene(industrial organic chemicals) were certified by GC-MS. Detected 6 pesticides were remained mostly in the green vegetables, spices and wild plants with 3% detected. Butylated hydroxytoluene(industrial organic chemicals) used for green house cover stuffs was contained mostly in the green vegetables, spices and wild plants not in the fruits and cereals with 43% detected. In the same agricultural products containing butylated hydroxytoluene showed same detection tendency with remaining endocrine disrupting pesticides.

### **2. Introduction**

Endocrine disrupting pesticides(31 kinds) and industrial organic chemicals (19 kinds) listed in Korean Environment Ministry, EPA and Japanese Health Labor and Welfare Ministry were surveyed. Endocrine disrupting materials disorder biological function during long term with a small amount. Detected disrupted pesticides(6 kinds detected) and industrial organic chemicals(BHT detected) in the agricultural products circulated in the north area of Seoul is enough to stimulate seriousness in citizen's daily diet.

### **3. Material and method**

Agricultural products circulated(2149 products) in the north area of Seoul are daily examined pesticides and industrial organic chemicals and analysed by GC-MSD(HP-5973) using multipesticides extraction method offered by KFDA. This method can certify 158 kinds of pesticides and some

industrial organic chemicals. Among those detected chemicals endocrine disrupting pesticides(31 kinds) and industrial organic chemicals (19 kinds) are surveyed by GC-MSD(HP-5973).

#### 4. Result and conclusion

6 kinds of endocrine disrupting pesticides were detected with low ppm level and butylated hydroxytoluene was detected with high ppb level.. Endocrine disrupting pesticides were mostly contained in the vegetable(67%) and spices(13%) and butylated hydroxytoluene was detected in the vegetable(70%) and spices(14.7%). The recovery of each Endocrine disrupting pesticides and butylated hydroxytoluene were 85-105% and detection limit were low pg level using GC-MSD with SIM mode.

	endocrine disrupting chemicals	no. of residue found	ratio of residue found(%)	detected range(ppm)
pesticides	chlorothalonil	6	0.3	1.7-17
	chlorpyrifos	3	0.15	0.2-5
	endosulfan	11	0.5	0.1-4
	pendimetaline	2	0.04	0.15-1.0
	procymidone	44	2.0	0.2-15
	vinclozolin	13	0.6	0.01-7.2
	total	79	3.6	
industrial organic chemicals	butylated- hydroxytoluene	1250	43.0	0.5-5.0

Table Summary of endocrine disrupting pesticides and industrial organic chemicals detected in agricultural products.

#### 5. Reference

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