

## FY 2005 Survey Results of Water Pollution by Agricultural Chemicals Used at Golf Courses

November 2, 2006

The Ministry of the Environment (hereinafter referred to as the “MoE”) has compiled the monitoring results of golf course runoff conducted by prefectural governments in FY 2005 according to the Provisional Guidelines for Prevention of Water Pollution by Agricultural Chemicals used at Golf Courses (hereinafter referred to as the “guidelines”). The concentration of 45 agricultural chemicals in runoff at 833 golf courses was monitored for 35,687 samples, and no sample exceeded the guideline targets ([Table 1](#)).

In order to prevent water pollution caused by agricultural chemicals used at golf courses, the MoE notified the guidelines to the prefectural governments in May 1990, in which the method of water quality survey and guideline targets, which are the concentration of the 45 target agricultural chemicals at the drain outlet are provided. Prefectural governments submit reports on the monitoring results to the MoE every year since FY 1990 and its recent trend is shown in [Table 2](#).

Table 1 FY 2005 Survey Results of Water Pollution by Agricultural Chemicals Used at Golf Courses

Agricultural chemicals	Guideline target (mg/ l )	Concentration range detected( 1) (mg/ l )	Number of samples exceeding the guideline target	Total number of samples( 2)
<b>(Insecticides)</b>				
Acephate	0.8	ND to 0.001	0	706
Isoxathion	0.08	ND	0	882
Isofenphos	0.01	ND	0	596
Ethofenprox	0.8	ND to 0.0001	0	611
Chlorpyrihos	0.04	ND	0	786
Diazinon	0.05	ND to 0.0085	0	1,143
Thiodicarb	0.8	ND	0	700
Trichlorfon(DEP)	0.3	ND	0	603
Pyridaphenthion	0.02	ND	0	688
Fenitrothion (MEP)	0.03	ND to 0.006	0	1,057
<b>(Fungicides)</b>				
Azoxystrobin	5	ND to 0.016	0	1,024
Isoprothiolane	0.4	ND to 0.0006	0	797
Iprodione	3	ND	0	919
Iminoctadine-triacetate	0.06	ND to 0.0006	0	562
Etridiazol	0.04	ND	0	584
Oxine-copper	0.4	ND to 0.004	0	740

Captan	3	ND	0	648
Chlorotalonil (TPN)	0.4	ND	0	913
Chloroneb	0.5	ND	0	814
Thiram	0.06	ND	0	803
Tolclofos-methyl	0.8	ND to 0.044	0	961
Flutoranil	2	ND to 0.0045	0	920
Propiconazole	0.5	ND to 0.002	0	949
Pencycuron	0.4	ND to 0.016	0	1,101
Phosethyl	23	ND	0	617
Polycarbamate	0.3	ND to 0.001	0	592
Metalaxyl	0.5	ND to 0.0032	0	918
Mepronil	1	ND to 0.00065	0	943
(Herbicides)				
Asulam	2	ND to 0.13	0	1,055
Dithiopyr	0.08	ND to 0.0005	0	792
Siduron	3	ND to 0.001	0	770
Simazine	0.03	ND to 0.018	0	708
Terbucarb (MBPMC)	0.2	ND to 0.0024	0	661
Triclopyr	0.06	ND to 0.005	0	810
Napropamide	0.3	ND to 0.002	0	710
Halosulfuron-methyl	0.3	ND to 0.016	0	863
Pyributicarb	0.2	ND	0	722
Butamifos	0.04	ND to 0.0026	0	712
Flazasulfuron	0.3	ND	0	729
Propyzamide	0.08	ND to 0.03	0	777
Bensulide (SAP)	1	ND	0	628
Pendimethalin	0.5	ND to 0.0014	0	934
Benfluralin	0.8	ND	0	736
Mecoprop (MCP)	0.05	ND to 0.023	0	871
Methyldymron	0.3	ND	0	632
Total		-	0	35,687

- Notes:
1. Table above shows the data collected at drain outlets of golf courses.
  2. Total number of samples includes those collected in water outside of golf courses.

Table 2 Trend in Water Pollution by Agricultural Chemicals Used at Golf Courses

FY	Total number of golf courses surveyed	Number of agricultural chemicals surveyed	Total number of samples (A)	Total number of samples exceeding the guideline target (B)	Ratio of the samples exceeding the guideline target (B/A) (%)
2001	1,526	35	78,184	0	0
2002	1,539	45	79,893	1	0.0013
2003	1,233	45	60,858	0	0
2004	997	45	45,880	0	0
2005	833	45	35,687	0	0