

FY 2025 Survey Results of Agricultural Chemicals in Drainage Waters from Golf Courses
September 8, 2026

The Ministry of the Environment has collected the results of monitoring surveys of agricultural chemicals in drainage waters from golf courses, conducted by local governments in FY 2025.

The monitoring surveys were conducted in accordance with the “Guideline for the Prevention of Water Pollution, and Damage to Aquatic Animals and Plants by Agricultural Chemicals Used in Golf Courses”. A total of 34,773 samples from 2,064 golf courses were analyzed in the surveys, and 2 samples of drains exceeded the reference values specified in the Guideline (see Annex 1 and Annex 2). The reference values cited are as of January 29, 2026.

Based on the survey results, the prefectural governments will be requested to investigate the causes of the exceedances and to issue warnings to golf course operators aimed at preventing recurrence.

Annex 1 Summary of survey results*

	Prefecture	Number of golf courses surveyed**	Number of agricultural chemicals surveyed	Total number of samples***	The number of drainage-water samples	Number of samples exceeding the reference values****		Number of samples for which the limit of quantification exceeded the reference values*****	
						Water Pollution	Aquatic Animals and Plants	Water Pollution	Aquatic Animals and Plants
1	Hokkaido	111	78	974	436	0	0	0	0
2	Aomori	14	49	59	30	0	0	0	0
3	Iwate	49	62	188	41	0	0	0	0
4	Miyagi	38	97	406	209	0	0	0	0
5	Akita	15	38	98	19	0	0	0	0
6	Yamagata	8	22	99	12	0	0	0	0
7	Fukushima	26	84	561	110	0	0	0	0
8	Ibaraki	117	121	3,037	1,388	0	1	0	1
9	Tochigi	106	111	1,984	578	0	0	0	0
10	Gunma	91	86	718	14	0	0	0	0
11	Saitama	300	134	2,016	524	0	0	0	0
12	Chiba	62	112	809	376	0	0	0	0
13	Tokyo	39	74	481	353	0	0	0	0
14	Kanagawa	52	87	1,058	396	0	0	0	0
15	Yamanashi	36	88	450	113	0	0	0	0
16	Nagano	58	131	2,638	864	0	0	0	0
17	Niigata	30	55	550	263	0	0	0	22
18	Toyama	30	27	235	235	0	0	0	0
19	Ishikawa	46	62	233	133	0	0	0	0
20	Fukui	33	47	155	44	0	0	0	0
21	Gifu	39	113	388	66	0	0	0	0
22	Shizuoka	8	123	154	116	0	0	0	0
23	Aichi	18	67	147	55	0	0	0	0
24	Mie	51	64	531	75	0	0	0	0
25	Shiga	82	43	479	83	0	0	0	0
26	Kyoto	31	89	841	475	0	0	0	0
27	Osaka	36	101	835	365	1	0	0	0
28	Hyogo	115	156	5,524	495	0	0	0	0
29	Nara	29	82	1,167	15	0	0	0	0
30	Wakayama	3	35	175	0	-	-	-	-
31	Tottori	3	10	17	0	-	-	-	-
32	Shimane	5	18	95	0	-	-	-	-
33	Okayama	34	81	1,312	138	0	0	0	0
34	Hiroshima	8	116	877	802	0	0	0	0
35	Yamaguchi	15	53	98	67	0	0	0	0
36	Tokushima	7	13	61	16	0	0	0	0
37	Kagawa	39	33	253	6	0	0	0	0
38	Ehime	25	25	61	2	0	0	0	0
39	Kochi	9	23	115	0	-	-	-	-
40	Fukuoka	58	126	1,915	714	0	0	0	6
41	Saga	16	71	564	218	0	0	0	0
42	Nagasaki	25	75	245	2	0	0	0	0
43	Kumamoto	68	82	1,056	90	0	0	0	0
44	Oita	23	60	398	24	0	0	0	0
45	Miyazaki	26	49	272	28	0	0	0	0
46	Kagoshima	26	81	359	206	0	0	0	9
47	Okinawa	4	14	85	54	0	0	0	0
total		2,064		34,773	10,250	1	1	0	38

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The total number of samples includes those collected through surveys conducted by municipalities and golf courses and reported to the relevant prefectures.

The figures represent the total number of surveys conducted. Surveys conducted at the same golf course during different periods, such as spring and autumn, are counted separately.

The total includes samples collected from drainage outlets, ponds on golf courses, and waters outside golf courses.

“-” indicates that no drainage-water samples were collected.

Number of samples for which exceedance of the reference values could not be determined because the limit of quantification exceeded the reference values.

Annex 2 Summary of survey results of each chemical in golf course drains

Agricultural chemicals			Number of golf courses surveyed*	Total number of samples**	The number of drainage-water samples	Concentration range detected (µg/L)***	detection limits (µg/L)	Number of Detection	Reference Values (µg/L)		Number of samples exceeding the reference values		Number of samples for which the limit of quantification exceeded the reference values****	
									Water Pollution	Aquatic Animals and Plants	Water Pollution	Aquatic Animals and Plants	Water Pollution	Aquatic Animals and Plants
A*****	1	Asulam-sodium or Asulam	781	2,129	652	N.D. ~ 180	0.001 ~ 9,000	193	10,000	90,000	0	0	0	0
	2	Chlorothalonil or TPN	398	932	289	N.D. ~ 10	0.001 ~ 40	3	470	80	0	0	0	0
	3	Cyclosulfamuron	231	503	152	N.D. ~ 5.1	0.07 ~ 80	2	800	35	0	0	0	10
	4	Pencycuron	542	1,254	367	N.D. ~ 33	0.001 ~ 140	22	1,400	1,000	0	0	0	0
	5	Diazinon	171	341	90	N.D. ~ 0.19	0.0001 ~ 5	2	20	0.77	0	0	0	12
	6	Pyroxasulfone	284	565	141	N.D. ~ 29	0.0005 ~ 50	50	500	7.4	0	1	0	3
Others*****	Acephate		-	-	-	170	1.2	-	63	55,000	1	0	-	-

Notes* The figures represent the total number of surveys conducted. Surveys conducted at the same golf course during different periods, such as spring and autumn, are counted separately.

Notes** The total includes samples collected from drainage outlets, ponds on golf courses, and waters outside golf courses.

Notes*** “N.D.”: Not detected.

Notes**** Number of samples for which exceedance of the reference values could not be determined because the limit of quantification exceeded the reference values.

Notes***** These agricultural chemicals warrant particular attention because of their high usage in golf courses or the relatively large number of samples that exceeded the reference values in the past.

Notes***** Agricultural chemicals other than Group "A" for which the reference values were exceeded (only exceeded samples are shown).

(Annex 3) Trends in Survey Results (FY2021–FY2025)

1. Trends in survey results across Japan

Items	2021	2022	2023	2024	2025
Number of golf courses surveyed ¹	1,605	1,904	1,730	2,095	2,064
Number of samples collected from drainage outlets	9,573	9,083	9,740	10,310	10,250
Number of samples exceeding the reference values					
Water pollution	0	0	0	2	1
Aquatic animals and plants	16	8	7	7	1
Number of samples for which exceedance of guideline values could not be determined ²					
Water pollution	1	3	5	0	0
Aquatic animals and plants	85	41	43	79	38

Note 1: The figures represent the total number of surveys conducted. Surveys conducted at the same golf course during different periods, such as spring and autumn, were counted separately.

Note 2: Number of samples for which exceedance of the reference values could not be determined because the limit of quantification exceeded the reference values.

2. Agricultural chemicals for which the reference values were exceeded (FY2021–FY2025)

【Exceedance of water pollution reference values】

Agricultural chemicals	Number of exceedance samples (five-year total)
Thiuram (thiram)	1
Triclopyr	1
Acephate	1
Total	3

【Exceedance of aquatic animals and plants reference values】

Agricultural chemicals	Number of exceedance samples (five-year total)
Pyroxasulfone	26
Diazinon	2
Bifenthrin	2
Cafenstrole	2
Clothianidin	2
Chlorothalonil (TPN)	1
Oxine-Copper	1
Fenoxasulfone	1
Ziram	1
Thiuram (thiram)	1
Total	39