

Results for the Questionnaire Survey for Offensive Odor Situations Overseas

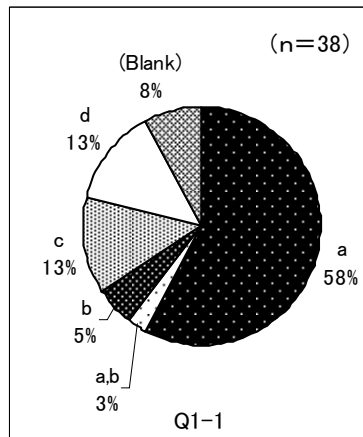
[Regulatory Measures against Offensive Odor]

Q1-1: <Regulations>

- a) There are written provisions about offensive odor regulation (in law, ordinance, assessment, etc.)
(Since year _____) Concrete name(_____)
- b) There are no written provisions, but there are unwritten concepts about offensive odor regulation
(Since year _____) Concrete name(_____)
- c) There are no written provisions or unwritten concepts about offensive odor regulation
- d) Other (_____)

【Answer number】

a	22
a , b	1
b	2
c	5
d	5
Blank	3

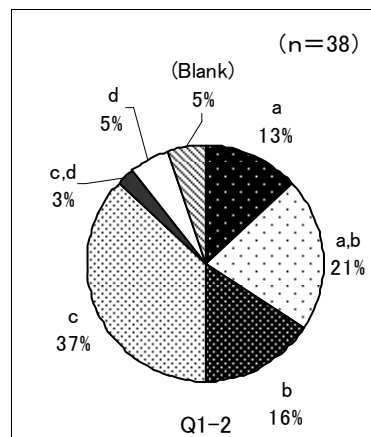


Q1-2: <Standards>

- a) There is a quantitative standard value about offensive odor regulation (Since year _____)
- b) There is a qualitative standard value about offensive odor regulation (Since year _____)
- c) There are no standard values about offensive odor regulation
- d) Other (_____)

【Answer number】

a	5
a , b	8
b	6
c	14
c , d	1
d	2
Blank	2



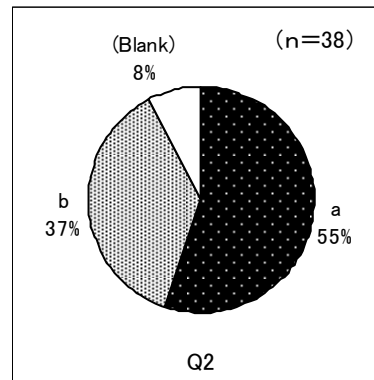
Q2:

Are statistics of the number of complaints (or problems) relating to offensive odors taken?

- a) Yes
- b) No

【Answer number】

a	21
b	14
Blank	3



Q3: (If you chose Yes in Q2) How many cases of complaints (or problems) relating to offensive odors are there per year? How is this counted?

Q3-1: Number of cases of complaints (or problems) relating to offensive odors: ()

0~100	6 place
101~1000	8 place
1001~5000	3 place
5001~	1 place

Region	Answer number	Description answer
U. S. A State of Connecticut	400	When the complaint is received - it is entered into a database
U. S. A State of Hawaii	108 (2004) 24 (2005/8)	We count the number of odor complaints filed with our agency. in 2004 there were 108 odor complains on Oahu alone. As of August 2005 there were 24 odor complaints on oahu. Approximately 40% of odor complains are undetermined. That is we could not determine the source of the odor.
U. S. A State of Kentucky	370	Information is stored in a Database.
U. S. A State of North Dakota	20~30	REPORTS FILED
U. S. A State of Utah		log book
U. S. A State of West Virginia	Approximately 300/year.	These are entered into a complaint database and tracked.
U. S. A State of Indiana	Our agency receives an average of 35 complaints per year.	This does not include complaints reported to local agencies such as health departments or city/local air pollution control agencies. Additionally, we only track the primary complaint so if a complaint includes more than one type of complaint such as open burning and odor, we would only log the open burning complaint. We would still investigate the complaint for open burning and odor, but our data system only tracks the primary complaint type.
U. S. A State of Michigan	Approximately 1200 per year.	Each complaint is logged into a database for recordkeeping and track purposes.
Australia		There are about 1000 complaints in Queensland, nearly 3400 complaints in Victoria in 2000. (http://www.deh.gov.au/soe/2001/atmosphere/atmosphere04-4k.html) No data available for other states and territories in Australia.
Australia Queensland		We have a record of air pollution related complaints. Odor related complaints are not recorded separately.

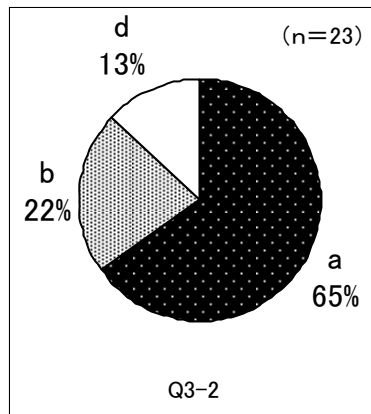
Q3-2:

Definition of one case of complaint (or problems)

- a) 1 case per 1 person who complains
- b) 1 case per 1 facility which was complained
- c) 1 case per 1 facility which was complained by () % of citizens
- d) Other ()

【Answer number】

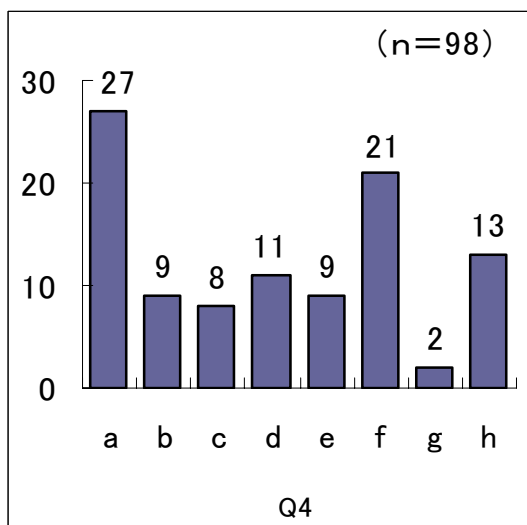
a	15
b	5
c	0
d	3



Q4:

Are there particular industry types that are especially controversial? (Select all that apply)

- a) Livestock agricultural industry b) Feeder/fertilizer manufacturing plant
- c) Food manufacturing plant d) Chemical factory e) Paper mills f) Sewage treatment plant
- g) Eating and drinking establishment h) Other ()



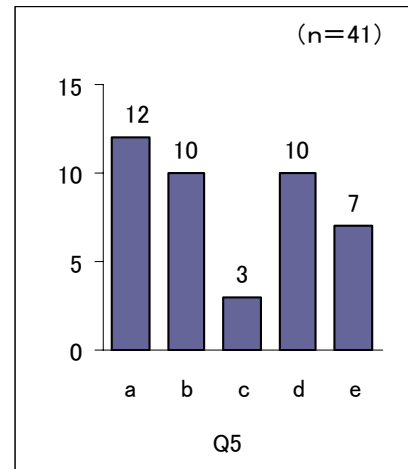
【Others】

Agriculture , Process Waste Water	2
Composting Operations	4
Power Generating Plants	2
Landfill	2
Garbage, Incinerator	2
Painting and coating industry	4
Foundries	2
Asphalt Plants	2
Rendering Facilities	2
Ethanol Plants	1
Plastic Industries	3

Q5:

In regards to offensive odor problems in your country, which of the following issues are applicable?
(Select all that apply)

- a) There are no standards
- b) Businesses do not comply with the standards in Q1
- c) Administrative guidance is not carried out well
- d) There is no optimal deodorizing equipment
- e) Other ()



Region	Description answer
U. S. A State of New Mexico	Standards not regularly enforced.
U. S. A State of Virginia	While none of the issues listed are particularly applicable to Virginia, we note that odor problems can be difficult to address because of their qualitative nature. We have been successful at addressing odor problems on a case-by-case basis, and only rarely does a problem escalate to a formal enforcement issue.
U. S. A State of Arizona	They are investigated on a case by case basis solutions are developed and implemented through enforcement procedures.
Canada Ontario	In Ontario there is no quantitative standard for odour there is a general prohibition against causing an adverse effect. Odour impacts can cause an adverse effect, we follow-up with companies that may be causing an adverse effect to require them to reduce the impact of odour.
Australia	Improvement of regulations is necessary
Australia Northern Territory of Australia	No Satisfactory and cost effective means of monitoring.

[Measurement Methods of Offensive Odor]

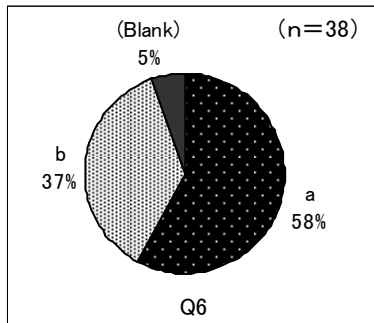
Q6:

Is measurement of offensive odors implemented?

- a) Yes
- b) No

【Answer number】

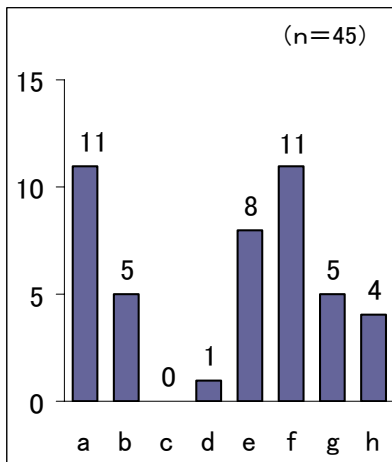
a	22
b	14
Blank	2



Q7:

(If you chose Yes in Q6) Which method is mainly used to carry out measurement?

- a) Dynamic olfactometer method
- b) Scintometer method
- c) Syringe method
- d) Triangular odor bag method
- e) Questionnaires to the residents
- f) On-site determination
- g) Measurement of offensive odor substances (instrumental analysis with gas chromatograph, etc.)
- h) Other ()



【Others】

Region	Description answer
U. S. A State of Virginia	An odor panel may be convened.
U. S. A State of West Virginia	ASTM E544-99-“Odor intensity Referencing Scale.”
U. S. A State of Arizona	Instrument specific to H ₂ S detection
Korea	Continuous measurement of offensive odorants in air.

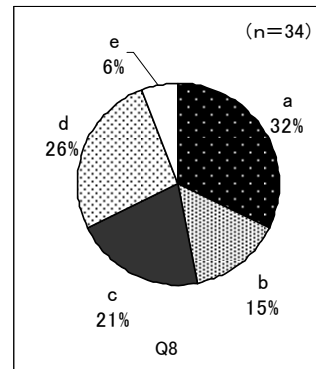
Q8:

(If you chose Yes in Q6) How many organizations are there which conduct odor measurement, and what kind of organizations are they?

- a) Local government Number of the organization ()
- b) College/university Number of the organization ()
- c) Public research institution Number of the organization ()
- d) Private corporation Number of the organization ()
- e) Other () Number of the organization ()

【Answer number】

a	11
b	5
c	7
d	9
e	2



Region	Number of organizations	Total organization and description answer
U. S. A State of Missouri		State Local Agencies
U. S. A State of North Dakota	a : 4 d : 2	6
U. S. A State of Virginia		How many organizations conduct odor measurement and what kind are they: there are a number of private corporations that provide odor management services and sell odor-control devices, but we do not use them nor can we specifically identify them.
U. S. A State of Iowa	a : 6	6
U. S. A State of Arizona	a : 4 d : 1	5
Netherlands	a : 3 d : 4	7
France	c : 10 d : 10	20
Norway	c : 1 d : 3	4
Austria	b : 2 d : 2	4
Korea	a : 15 b : 4 c : 1	20
New Zealand Taranaki	a : 1	1
New Zealand Waikato	c : 2	2
Australia	b : 1 c : 2 d : 5	8
Australia South Australia	d : 6	6

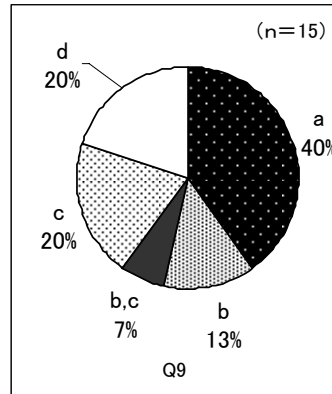
Q9:

(If you chose something in Q8) What is the average annual number of times that measurements are conducted per institution?

- a) Under ten b) 10 to 15 c) 50 to 100 d) over 100 (Number)

【Answer number】

a	6
b	2
b, c	1
c	3
d	3



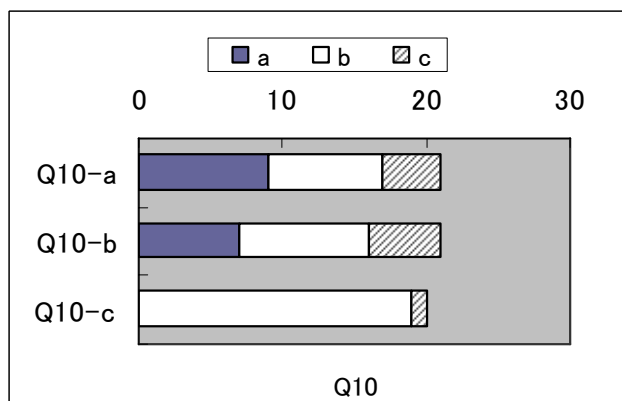
Q10:

(If you chose something in Q7) Please evaluate the following subjects concerning the measurement method mainly used currently.

- a) Cost of the measurement: (Inexpensive / Normal / Expensive)
 b) Implementation of the measurement: (Easy / Normal / Complicated)
 c) Accuracy of the measurement: (High / Normal / Low)
 d) Other evaluations ()

【Answer number】

a	Inexpensive 9	Normal 8	Expensive 4
b	Easy 7	Normal 9	Complicated 5
c	High 0	Normal 19	Low 1



Q11:

In Japan, there is a manual to improve accuracy of the triangular odor bag method and over 100 organizations participate in the accuracy assessment test every year. What do you think of quality control of accuracy when measuring offensive odor in your country?

a) Quality control is implemented:

How is it implemented? ()

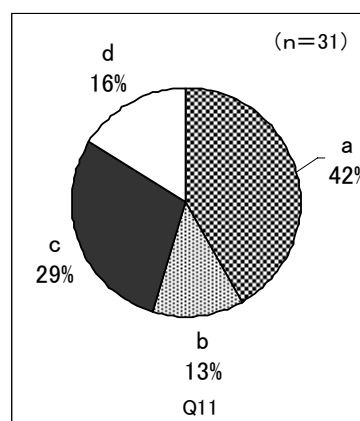
b) Quality control seems necessary but not implemented yet

c) At the present moment, there is no necessity for quality control

d) Other ()

【Answer number】

a	13
b	4
c	9
d	5



Region	Description answer
U. S. A State of Missouri	inspector Training , manuals , outside Laboratory
U. S. A State of North Dakota	Conduct odor evaluator certification to 40 persons annually.
U. S. A State of Virginia	No specific quality control measures are taken.
U. S. A State of Iowa	QA officer implement QC checks, including. n-butanol pens for monthly checks of odor observers, maintenance/calibration of Scentometer.
U. S. A State of Indiana	not applicably
Canada Ontario	Procedures for conducting Dynamic olfactometric measurements include provisions for quality control.
Norway	The corporation that deal with the measuring do the quality control.
Austria	Using a European Union Standard.
Korea	Korean Government has a plan to conduct the accuracy assessment of local measurement this year.
New Zealand	Experienced officials investigate complains.
New Zealand Waikato	Calibration of noses for onsite investigations. DDO has laboratory QC procedures.
Australia	The measurements need to follow the AS/NZS 4323.3:2001 standard. Calibration of the measuring system and panelist screening are the major concerns for accurate measurements.
Australia Queensland	As per Australian and New Zealand Standard (AS/NZS 4323.3:2001)
Australia South Australia	Accreditation by NATA; a national testing body

Q12:

Have you heard of the triangular odor bag method developed in Japan, an olfactory measurement method which needs no machinery and thus cost of the measurement is reasonable (see Reference 2 for details) ?

- a) Yes, I have knowledge of the method
- b) I have only heard of it
- c) I have not even heard of it

Q13:

As we would like the triangular odor bag method to be spread widely, we have prepared materials directed towards researchers or public officers abroad. Would you like to receive these? (free of cost)

- a) Yes
- b) No

		Q13			Subtotal
		a	b	(Blank)	
Q12	a	8	2		10
	b	6	1		7
	c	11	6		17
	(Blank)			4	4
Subtotal		25	9	4	38

Questionnaire answer region list

ID	地域	国	国名or州	Organization
1	North America	U.S.A	State of Alaska	Dept. of Environmental Conservation
2	North America	U.S.A	State of Connecticut	Connecticut Dept. of Environmental Protection
3	North America	U.S.A	State of Hawaii	Hawaii Department of Health, Clean air Branch
4	North America	U.S.A	State of Illinois	Illinois EPA Bureau of Air-ROS
5	North America	U.S.A	State of Kentucky	Division for Air Quality
6	North America	U.S.A	State of Massachusetts	Massachusetts Department of Environmental Protection
7	North America	U.S.A	State of Missouri	Missouri Department of Natural Resources - APCP
8	North America	U.S.A	State of Montana	Montana Department of Environmental Quality
9	North America	U.S.A	State of New Mexico	New Mexico Environment Department
10	North America	U.S.A	State of North Dakota	Division of Air Quality ND dept of health
11	North America	U.S.A	State of Utah	Utah Division of Air Quality
12	North America	U.S.A	State of Virginia	Virginia Department of Environmental Quality
13	North America	U.S.A	State of West Virginia	West Virginia Division of Air Quality
14	North America	U.S.A	State of Iowa	Iowa DNR
15	North America	U.S.A	State of Alabama	Industrial Chemical Section Chemical Branch Air Division ADEM
16	North America	U.S.A	State of Arizona	ARIZONA DEPT.ENVIRONMENTAL Quality
17	North America	U.S.A	State of Indiana	Air Compliance Branch Indiana Department of Environmental Management
18	North America	U.S.A	State of Nebraska	Nebraska Dept. of Environmental Quality
19	North America	U.S.A	State of Michigan	Michigan Air Quality Division
20	North America	Canada	Ontario	Ontario Ministry of the Environment
21	North America	Canada	Alberta	Alberta Environment
22	North America	Canada	Yukon	Environment Yukon
23	Europe	Swiss	Swiss	Swiss Agency for the Environment
24	Europe	Netherlands	Netherlands	PRA Odournet
25	Europe	France	France	Ministry of ecology and sustainable development(DPPR-SEI)
26	Europe	Belgium	Belgium	Ministry of Flander - Environmental Administration - Air Division
27	Europe	Norway	Norway	Norwegian Pollution Control Authority
28	Europe	Sweden	Sweden	Swedish Board for Health and Welfare
29	Europe	Austria	Austria	UMWELTBUNDESAMT
30	Asia	Korea	Korea	Department of Chemistry , University of Ulsan
31	Oceania	New Zealand	Hawke's Bay	Hawke's Bay Regional Council
32	Oceania	New Zealand	New Zealand	Ministry of Health
33	Oceania	New Zealand	Taranaki	Taranaki Regional Council
34	Oceania	New Zealand	Waikato	Environment Waikato
35	Oceania	Australia	Australia	Centre for Water and Waste Technology, University of New South Wales
36	Oceania	Australia	Queensland	Environmental Protection Agency
37	Oceania	Australia	Northern Territory of Australia	Office of Environment and Heritage
38	Oceania	Australia	South Australia	Environment Protection Authority

Questionnaire answer list

ID	Q1-1	Q1-1 (since)	Q1-1	Q1-2	Q1-2	Q2	Q3	Q3-1	Q3-2	Q3-2	Q4	Q4	Q5	Q6	Q7	Q8	Q8	Q9	Q9	Q10-a	Q10-b	Q10-c	Q10-d	Q11	Q11	Q12	Q13	
1																												
2	a	1970	※	ab	a ¹⁹⁸⁶ b ¹⁹⁷⁰	a	※	400	a	a	f.g			a	b.f.g	e		a		2	2	2			b	a	a	
3	c			c		a	※	※	a	a	a.fh	※	a	b														
4	a	1970		b		a		300	b	b	a.d.f		a.d	b										c		b	a	
5	a	1979	※	b	1979	a	※	370	a	a	a.b.d.f		e	a	b	a		c		1	2	2		c	b	a		
6	a	1972	※	c		b					h	※		b											c	a	a	
7	a	1971	※	ab	a ¹⁹⁷¹ b ¹⁹⁷¹	b			b	b	a.fh	※	d	a	a.b.e	a	※	b		1	1	2		a	※	c	a	
8	c			c		b			b	b	a.e.h	※	a.d	b										c	c	b	b	
9	c			c		b			b	b	a.b.f.h	※	b.c.e	b										c	a	a	a	
10	a	1978	※	ab	a ¹⁹⁷⁸ b ¹⁹⁷⁸	a	20-30 ※	20-30	a	a	a.b.c.f		d	a	b.g	a.d	a.4 d.2	b		1	2	2		a	※	c	a	
11	c			c	※	a	※	320	a	a	a		a	b											c	b	b	
12	a			ab	※	※					a.b.c.e	※		a	f.h	※				1	1	2		a	※	c	b	
13		1967	※	b	1967	a	※	250	a	a	d.f		b	a	f.h	※	a	a		1	2	2		b	b	a	a	
14	d			c		a			d	※			a.d	a	b.f	a	6	c		1	2	2		a	※	a	a	
15	b	1972		c		b					a.d.e.f		a	b										c		b	b	
16	a	1982		ab	a:1993(for H2S only)	a		14	a	a	a.f.h	※	e	a	h	a.d	a.4 d.1	a		2	1	2		a	SOP	c	a	
17	b			c	※	a		※	a	a	a.b.c.d.f.h	※	a	b										d	※	c	a	
18	a.b			c		b					a.c		a.d	b										d		c	b	
19	a			※	※	a		※	a	a	a.d.e.f.h	※	d	a										c		a	b	
20	d			※	※	b					h	※	e	a	a		e							d	※	b	a	
21	a	1993	※	d		a		1000			a.e		e	b												a	a	
22	c			c		b					h	※	a	b										c		c	a	
23	a	1986		b	1986	b					a.b.c.d		a.b.c.d	a	a.e.f	a		a		3	3	3		a				
24	a	1984	NeR	a		a		10000~ 20000	a	a	a.b.f		b	a	a.e	a.d	a.3 d.4	d	over 1000	2	3	2		a		a	a	
25	a	1976	※	a	2/2/1998	b					a.d.e.f		b	a	a	c.d	c.10 d.10	b.c		2	2	2		d		c	a	
26																												
27	d			c		b		50	a	a	a.b.d.f.h	※	a.c	a	a	c.d	c.1 d.3	a		2	2	2		a	※	c	a	
28	d			c		b					a.e.f.g		a	b	e	b.c		a		1	1	2		c		a	a	
29	a	1994	※	a	1994	b					a		b	a	a.e.f	b.d	b.2 d.2			3	3	2		a	※	a	a	
30	a	2005	※	ab	a ¹⁹⁹² b ¹⁹⁹²	a		3000	d	※	a.b.c.d.f		b	a	d.f.g	※	a.b.c a.15 b.4 c.1			3	3	3		b	※	a	b	
31	a	1991	※	c		a		133	a	a	a.c		b.d	a	f	a		d	133/y	1	1	2		b		c	a	
32	a	1986	Health Act	c.d	※	b					a.c.e.f			b										d		c	b	
33	a	1997	※	ab		a		100	b	b	a.d.f		b	a	e.f.h	a	1	d	300	2	1	2				c	b	
34	a	1991	※	b		a		250	a	a	a.c.e		e	a	a.e.f	c	2			1	1	2		a		c	a	
35	a	2001	※	a	2001	a	※		d		h		e	a	a.g	b.c.d	b.1;c.2;d.5	c		2	2	2		a	※	a	a	
36	a	1994	※	ab	a ¹⁹⁹⁴ b ¹⁹⁹⁴	a	※		a	a		※		a	a.e.f.g	b.c.d				2	2	2		a	※	c	a	
37	d			c		a		20	a	a	a.f		e	b										c		a	a	
38	a	1995	※	a	2001	a					a.b.d.f.h	※	b.d	a	a	d	6			3	3	2		a	※	b	a	

※: Description answer