NIRS-RSD-37

RADIOACTIVITY SURVEY DATA in Japan

NUMBER 37
Nov. 1972

National Institute of Radiological Sciences
Chiba, Japan

Radioactivity Survey Data in Japan

Number 37

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Science and Technology Agency
National Institute of Radiological Science

Geographical Data

Strontium-90 and Cesium-137 in Soil

(Japan Analytical Chemistry Research Institute)

Japan analytical Chemistry Research Institute has analyzed surface soil samples collected from 18 prefectures, to determine the total deposits of fallout.

Sampling locations are indicated in Figure 1.

Soil samples were collected at depths of 0–5 and 0–20 cm on grassland or bare surface at each sampling location. The samples were analyzed using the method recommended by Science and Technology Agency.

Results obtained during the period from July to September, 1971 are shown in Table 1.

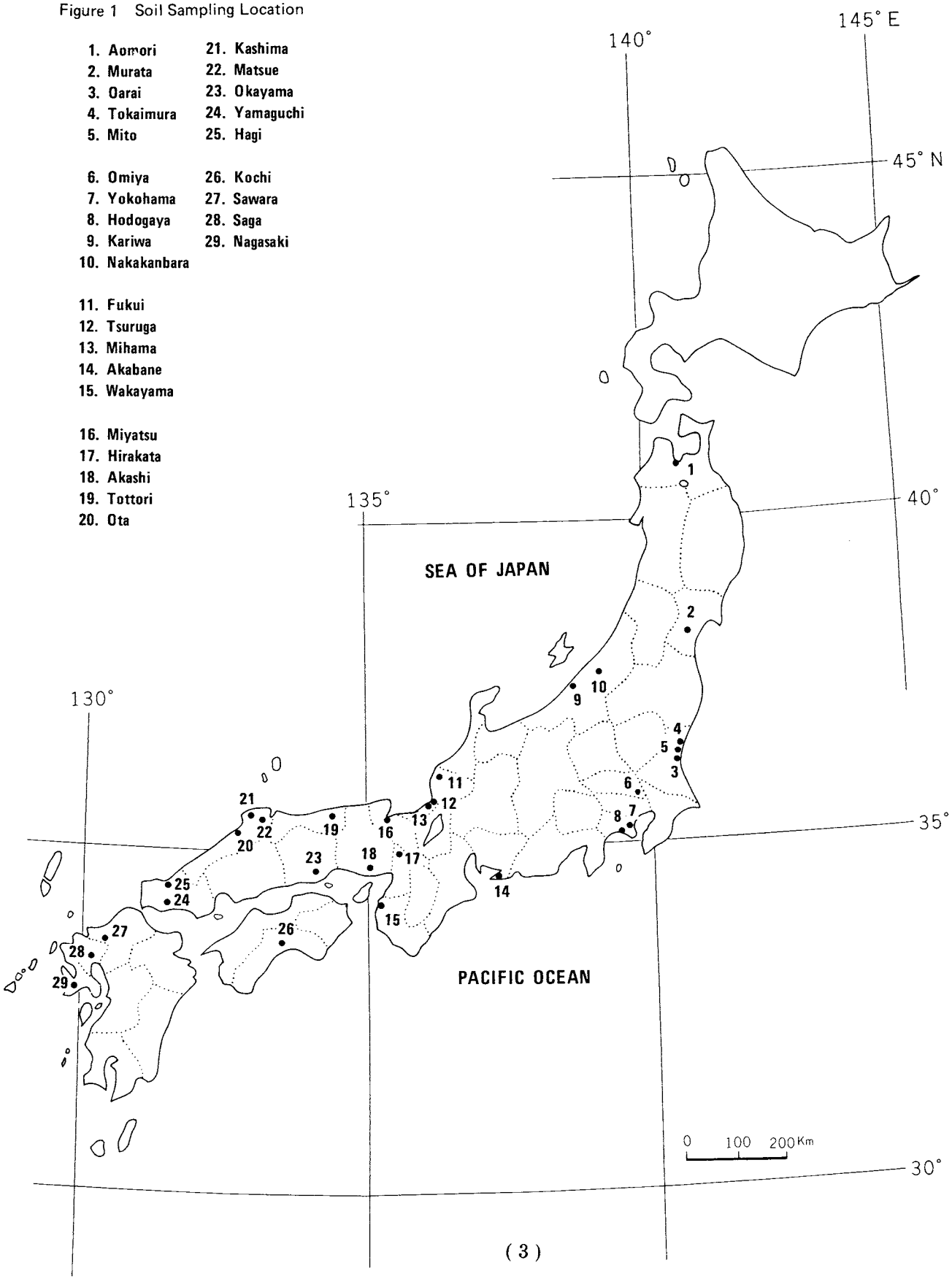
Table 1. ^{90}Sr and ^{137}Cs in Soil
– July to Sep., 1971 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 2, No. 32, of this Publication)

Location	Sampling Depth (cm)	Dry Soil		^{90}Sr		S.U	^{137}Cs		C.U
		Ca (%)	K (%)	(pCi/Kg)	(mCi/Km^2)		(pCi/Kg)	(mCi/Km^2)	
July 1971									
Murata MIYAGI	0 ~ 5	0.43	0.12	68	2.5	16	79	2.9	66
,,	0 ~ 20	0.42	0.10	43	5.8	10	73	9.9	73
Oarai IBARAKI	0 ~ 5	0.09	0.08	292	16.2	325	326	18.0	407
,,	0 ~ 20	0.08	0.09	196	26.4	245	152	20.4	168
Tokaimura IBARAKI	0 ~ 5	0.42	0.19	996	54.2	237	2124	115.6	1118
,,	0 ~ 20	0.35	0.12	579	91.3	165	838	132.2	699
Mito IBARAKI	0 ~ 5	0.28	0.14	804	37.4	287	2035	94.7	1454
,,	0 ~ 20	0.18	0.11	429	68.2	238	494	78.5	449
Miyatsu KYOTO	0 ~ 5	0.04	0.13	341	16.4	853	912	43.9	702
,,	0 ~ 20	0.04	0.12	156	49.9	391	273	87.2	228
Hirakata OSAKA	0 ~ 5	0.36	0.37	466	13.2	129	1147	32.5	310
,,	0 ~ 20	0.23	0.33	265	59.2	115	549	122.4	166
Wakayama WAKAYAMA	0 ~ 5	0.33	0.12	56	5.8	17	1.3	10.6	85
,,	0 ~ 20	0.26	0.08	19	4.5	7	33	8.0	41
Ota SHIMANE	0 ~ 5	0.24	0.09	1523	33.3	635	2795	61.0	3106
,,	0 ~ 20	0.14	0.05	822	77.4	587	1310	123.3	2620
Kashima SHIMANE	0 ~ 5	0.38	0.22	889	31.3	234	2016	70.9	916
,,	0 ~ 20	0.32	0.26	672	99.1	210	1182	174.1	455
Matsue SHIMANE	0 ~ 5	0.38	0.25	173	7.6	46	325	14.2	130
,,	0 ~ 20	0.40	0.16	101	13.8	25	211	28.6	132
Sawara FUKUOKA	0 ~ 5	0.19	0.16	602	24.1	317	1454	58.1	909
,,	0 ~ 20	0.13	0.16	331	76.4	254	604	139.5	377

Location	Sampling Depth (cm)	Dry Soil		^{90}Sr		S.U.	^{137}Cs		C.U
		Ca (%)	K (%)	(pCi/Kg)	(mCi/Km^2)		(pCi/Kg)	(mCi/Km^2)	
Saga SAGA	0 ~ 5	0.09	0.34	446	23.9	496	910	48.7	267
"	0 ~ 20	0.07	0.23	184	37.6	263	338	69.0	147
Aug. 1971									
Aomori AOMORI	0 ~ 5	0.14	0.11	32	1.1	23	47	1.7	43
"	0 ~ 20	0.15	0.09	25	5.1	17	47	9.4	52
Omiya SAITAMA	0 ~ 5	0.54	0.10	801	24.4	148	1884	57.4	1884
"	0 ~ 20	0.84	0.10	473	52.6	56	681	75.7	681
Yokohama KANAGAWA	0 ~ 5	0.99	0.06	117	3.4	12	187	5.4	311
"	0 ~ 20	0.21	0.04	121	11.5	58	241	22.9	604
Hodogaya KANAGAWA	0 ~ 5	0.77	0.08	888	30.8	115	1943	67.4	2429
"	0 ~ 20	0.92	0.05	465	51.2	50	942	103.6	1883
Kariwa NIIGATA	0 ~ 5	0.10	0.06	126	79.2	1256	3210	201.5	5350
"	0 ~ 20	0.16	0.20	112	154.5	697	2014	279.1	1007
Fukui FUKUI	0 ~ 5	0.19	0.08	482	23.2	253	1365	65.7	1706
"	0 ~ 20	0.11	0.11	174	36.2	158	181	37.6	164
Tsuruga FUKUI	0 ~ 5	0.08	0.06	182	8.8	228	1322	63.8	2203
"	0 ~ 20	0.05	0.06	109	20.8	218	997	190.5	1662
Mihama FUKUI	0 ~ 5	0.08	0.06	239	11.4	299	1517	72.1	2528
"	0 ~ 20	0.06	0.05	186	37.1	310	840	167.6	1680
Akabane AICHI	0 ~ 5	0.06	0.18	186	10.9	310	489	28.6	272
"	0 ~ 20	0.06	0.15	200	66.6	333	493	164.6	329
Akashi HYOGO	0 ~ 5	0.02	0.12	156	7.7	778	392	19.3	326
"	0 ~ 20	0.04	0.11	178	29.6	445	322	53.5	293
Tottori TOTTORI	0 ~ 5	0.10	0.12	136	8.2	136	330	19.9	275
"	0 ~ 20	0.32	0.13	178	48.4	56	253	68.5	194
Okayama OKAYAMA	0 ~ 5	0.26	0.15	324	15.3	125	785	37.2	523
"	0 ~ 20	0.22	0.17	286	59.8	130	482	100.5	283
Yamaguchi YAMAGUCHI	0 ~ 5	0.13	0.12	138	8.4	106	284	17.3	236
"	0 ~ 20	0.14	0.12	145	37.4	104	319	82.0	266
Hagi YAMAGUCHI	0 ~ 5	0.12	0.09	119	6.1	99	456	23.4	506
"	0 ~ 20	0.32	0.07	131	33.4	41	286	72.9	409
Kochi KOCHI	0 ~ 5	0.59	0.16	837	34.2	142	2282	93.3	1426
"	0 ~ 20	0.31	0.07	412	84.1	133	660	134.6	942
Nagasaki NAGASAKI	0 ~ 5	0.16	0.04	286	15.1	179	500	26.4	1251
"	0 ~ 20	0.12	0.04	211	43.1	176	238	48.7	596
Sept. 1971									
Nakakanbara NIIGATA	0 ~ 5	0.37	0.20	297	20.9	80	280	19.7	140
"	0 ~ 20	0.28	0.13	72	18.9	26	54	14.0	41

Figure 1 Soil Sampling Location

1. Aomori
2. Murata
3. Oarai
4. Tokaimura
5. Mito
6. Omiya
7. Yokohama
8. Hodogaya
9. Kariwa
10. Nakakanbara
11. Fukui
12. Tsuruga
13. Mihama
14. Akabane
15. Wakayama
16. Miyatsu
17. Hirakata
18. Akashi
19. Tottori
20. Ota
21. Kashima
22. Matsue
23. Okayama
24. Yamaguchi
25. Hagi
26. Kochi
27. Sawara
28. Saga
29. Nagasaki



Water Data

Strontium-90 and Cesium-137 in Source Water

(Japan Analytical Chemistry Research Institute)

Since May 1963, Japan Analytical Chemistry Research Institute has analyzed the Strontium-90 and Cesium-137 content in source water from 19 locations in Japan.

Sampling locations are shown in Figure 2. Sampling procedures and treatment method of the samples for Strontium-90 and Cesium-137 analyses are the same as those mentioned in the explanation of page 16, Issue No. 19 of this publication.

Results obtained during the period June, 1971 to March 1972, are shown in Table 2.

Table 2. ^{90}Sr and ^{137}Cs in Source Water
– June 1971 to Mar. 1972 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 5, No. 31 of This Publication)

Location	Source	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)	pH	Nature of Water Appearance
June 1971					
Aomori, AOMORI	Water Purification Station	0.09	0.04	7.0	clear
Sendai, MIYAGI	〃	0.24	0.08	6.7	clear
Mito, IBARAKI	〃	0.09	0.05	7.0	slight muddy (brown)
Mito, IBARAKI		0.08	0.05	6.5	
Niitsu, NIIGATA		0.36	0.07	7.0	clear
Niitsu, NIIGATA		0.37	0.03	6.6	clear
Fukui, FUKUI		0.03	LTD	7.2	
Inuyama, AICHI	Station Intake	0.16	0.03	6.8	clear
Kyoto, KYOTO	Station Intake	0.73	0.07	6.9	slight muddy (white)
Yodogawa, OSAKA	Station Intake	0.35	0.05	6.8	slight muddy (brown)
Osaka, OSAKA		0.20	LTD	6.9	clear
Kobe, HYOGO	Reservoir	0.15	0.04	7.4	slight muddy (yellow)
Wakayama, WAKAYAMA	Water Purification Station	0.11	0.04	6.8	slight muddy (white)
Tottori, TOTTORI	Reservoir	0.13	0.05	6.9	slight muddy (brown)
Matsue, SHIMANE	Water Purification Station	0.48	0.07	6.5	slight muddy
Hamada, SHIMANE	Reservoir	0.38	0.08	6.7	muddy
Okayama, OKAYAMA	Station Intake	0.07	0.07	6.8	slight muddy (yellow, gray)
Kochi, KOCHI		0.10	0.04	7.2	clear
Fukuoka, FUKUOKA	Water Purification Station	0.12	0.04	6.8	clear
Saga, SAGA	〃	0.19	0.04	2.2	muddy (black, gray)
Karatsu, SAGA	〃	0.08	0.06	7.1	muddy (gray, black)
Nagasaki	Reservoir	0.19	0.09	6.5	slight muddy (yellow, brown)

Location	Source	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)	pH	Nature of Water Appearance
July 1971					
Odawara, KANAGAWA		0.03	LTD	6.8	
Spet. 1971					
Aomori, AOMORI	Water Purification Station	0.08	0.08	6.9	clear
Sendai, MIYAGI	"	0.17	0.02	5.8	clear
Mito, IBARAKI		0.09	0.02	7.0	clear
Mito, IBARAKI	Station Intake	0.07	LTD	7.1	slight muddy (white)
Odawara, KANAGAWA		0.03	LTD	6.9	
Niitsu, NIIGATA	Water Purification Station	0.24	0.04	6.8	slight muddy (brown)
Niitsu, NIIGATA	"	0.31	0.06	6.7	clear
Fukui, FUKUI		0.09	LTD	7.0	
Fukui, FUKUI		0.01	LTD	7.0	
Inuyama, AICHI	Station Intake	0.14	0.03	6.8	muddy (yellow, white)
Kyoto, KYOTO	Station Intake	0.58	0.05	7.7	slight muddy (white)
Osaka, OSAKA	Station Intake	0.51	0.06	7.0	slight muddy (brown)
Kobe, HYOGO	Reservoir	0.17	0.04	7.6	muddy (yellow, green)
Wakayama, WAKAYAMA	Water Purification Station	0.12	0.07	6.8	slight muddy (white)
Tottori, TOTTORI	Reservoir	0.14	0.05	6.7	muddy (white)
Matsue, SHIMANE	Senbon Dam	0.23	0.05	6.6	floatage
Hamada, SHIMANE	Hamadagawa	0.27	0.03	7.3	floatage
Okayama, OKAYAMA	Station Intake	0.18	LTD	6.5	slight muddy (white)
Kochi, COCHI		0.15	LTD	7.2	clear
Fukuoka, FUKUOKA	Water Purification Station	0.12	0.05	6.8	clear
Saga, SAGA	Water Purification Station	0.03	0.02	7.2	clear
Karatsu, SAGA	"	0.21	0.07	7.1	muddy (gray)
Nagasaki, NAGASAKI	Reservoir	0.12	0.08	7.0	muddy (yellow, brown)
Dec. 1971					
Yokouchi, AOMORI	Water Purification Station	0.09	0.05	7.0	clear
Sendai, MIYAGI	"	0.15	0.05	6.8	clear
Mito, IBARAKI	"	0.06	LTD	7.1	slight muddy (brown)
Mito, IBARAKI		0.07	0.03	6.8	clear
Odawara, KANAGAWA	Station Intake	0.03	LTD	7.0	
Niitsu, NIIGATA	Water Purification Station	0.28	0.03	6.4	clear
Niitsu, NIIGATA		0.33	0.08	7.0	slight muddy (brown)
Fukui, FUKUI		0.02	LTD	6.4	
Inuyama, AICHI	Station Intake	0.14	0.03	6.9	clear
Kyoto, KYOTO	Station Intake	0.52	0.04	7.3	slight muddy (white)
Osaka, OSAKA	Station Intake	0.48	0.04	6.8	slight muddy (brown)
Kobe, HYOGO	Reservoir	0.13	0.03	7.4	
Wakayama, WAKAYAMA	Water Purification Station	0.09	0.02	6.8	slight muddy
Tottori, TOTTORI		0.15	0.06	6.9	slight muddy
Matsue, SHIMANE	Senbon dam	0.36	0.06	6.9	floatage

Location	Source	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)	pH	Nature of Water Appearance
Hamada, SHIMANE	Water Purification Station	0.03	LTD	6.5	
Okayama, OKAYAMA	Station Intake	0.13	LTD	6.8	slight muddy (white)
Kochi, KOCHI		0.12	LTD	7.2	clear
Fukuoka, FUKUOKA	Water Purification Station	0.12	0.03	6.8	clear
Saga, SAGA	Water Purification Station	0.10	0.02	7.0	slight muddy (yellow, white)
Karatsu, SAGA	Water Purification Station	0.13	0.02	6.7	slight muddy (white)
Nagasaki, NAGASAKI	Reservoir	0.11	0.07	7.2	muddy (yellow, brown)
Mar. 1972					
Aomori, AOMORI	Water Purification Station	0.05	0.03	7.4	clear
Sendai, MIYAGI	Reservoir	0.12	0.04	7.0	clear
Mito, IBARAKI		0.07	0.02	7.0	clear
Mito, IBARAKI	Water Purification Station	0.08	LTD	7.1	muddy (white)
Odawara, KANAGAWA	Station Intake	0.03	LTD	–	
Niitsu, NIIGATA	Water Purification Station	0.16	0.03	7.1	clear
Niitsu, NIIGATA	Water Purification Station	0.23	0.03	7.3	clear
Fukui, FUKUI		0.02	0.02	6.6	
Inuyama, AICHI	Station Intake	0.14	0.03	6.9	clear
Kyoto, KYOTO	Station Intake	0.55	0.03	7.2	slight muddy (white)
Osaka, OSAKA	Station Intake	0.39	0.03	6.9	slight muddy (brown)
Kobe, HYOGO	Reservoir	0.10	0.03	7.4	muddy (yellow)
Wakayama, WAKAYAMA	Water Purification Station	0.10	LTD	6.8	slight muddy
Tottori, TOTTORI		0.13	0.05	6.7	slight muddy (brown)
Matsue, SHIMANE	Senbon Dam	0.20	0.06	6.2	
Hamada, SHIMANE	Water Purification Station	0.04	LTD	6.2	
Okayama, OKAYAMA	Station Intake	0.15	0.02	6.8	slight muddy (yellow)
Kochi, KOCHI		0.12	LTD	7.2	clear
Fukuoka, FUKUOKA	Water Purification Station	0.12	0.04	6.8	clear
Saga, SAGA	Water Purification Station	0.04	0.03	6.9	slight muddy (yellow, white)
Karatsu, SAGA	Water Purification Station	0.11	LTD	7.0	slight muddy (yellow, white)
Nagasaki, NAGASAKI	Water Purification Station	0.11	0.05	7.4	muddy (yellow, brown)

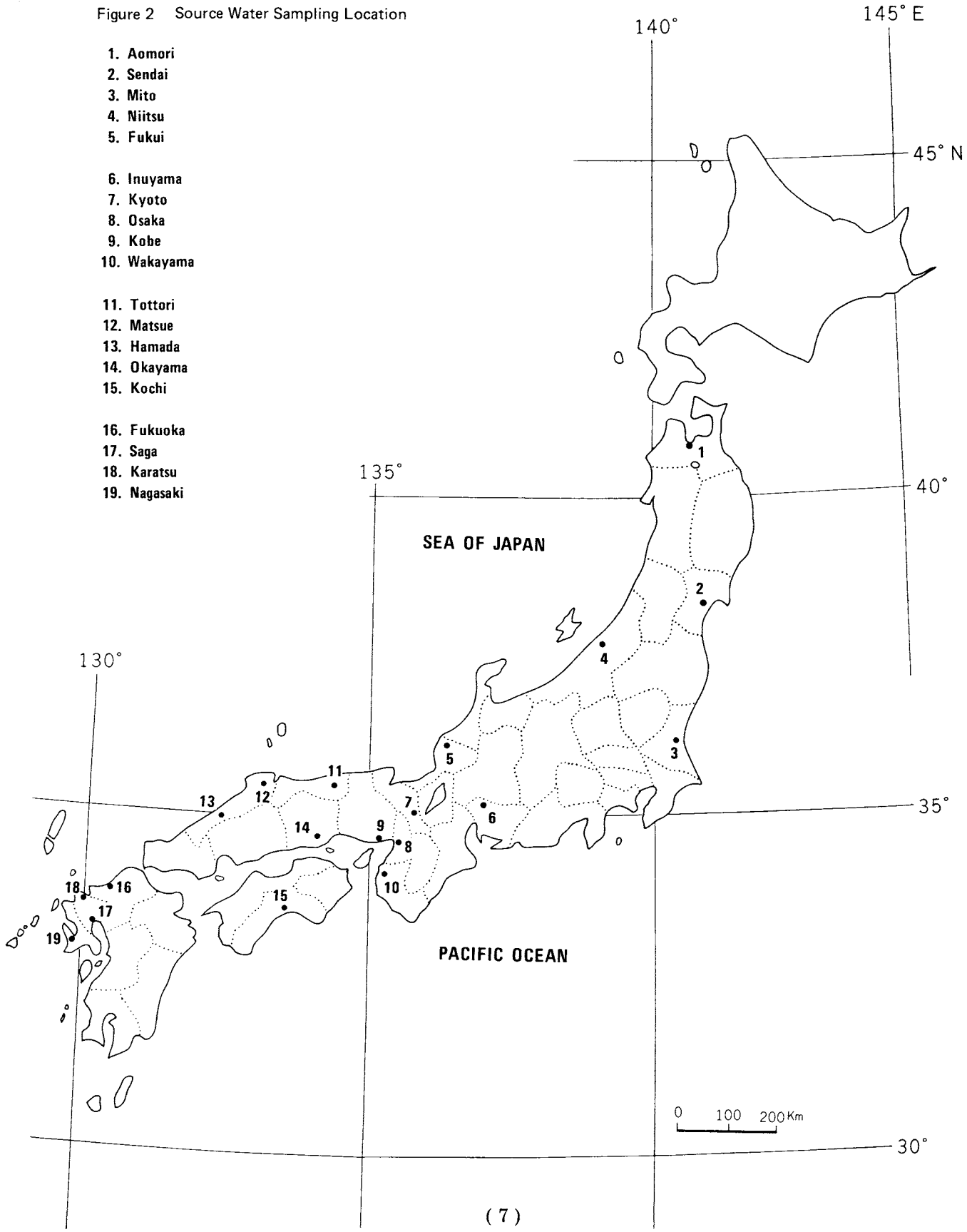
Figure 2 Source Water Sampling Location

1. Aomori
2. Sendai
3. Mito
4. Niitsu
5. Fukui

6. Inuyama
7. Kyoto
8. Osaka
9. Kobe
10. Wakayama

11. Tottori
12. Matsue
13. Hamada
14. Okayama
15. Kochi

16. Fukuoka
17. Saga
18. Karatsu
19. Nagasaki



Strontium-90 and Cesium-137 in Source Water and Treated Water

(National Institute of Radiological Sciences)

Since December 1961, the concentration of Radionuclides in city water in Japan have been determined, in co-operation with 24 prefectural Public Health Laboratories.

From April 1963, sampling points have been selected in Tokyo, Niigata and Osaka prefectures. From June 1970, the sampling points were carried out in Akita, Fukushima, Ibaraki and Fukui prefectures.

From June 1971, the sampling points were carried out in Hokkaido, Akita, Fukushima, Tokyo, Ishikawa, Shizuoka, Hiroshima and Kagoshima prefectures. Sampling locations are shown in Figure 3.

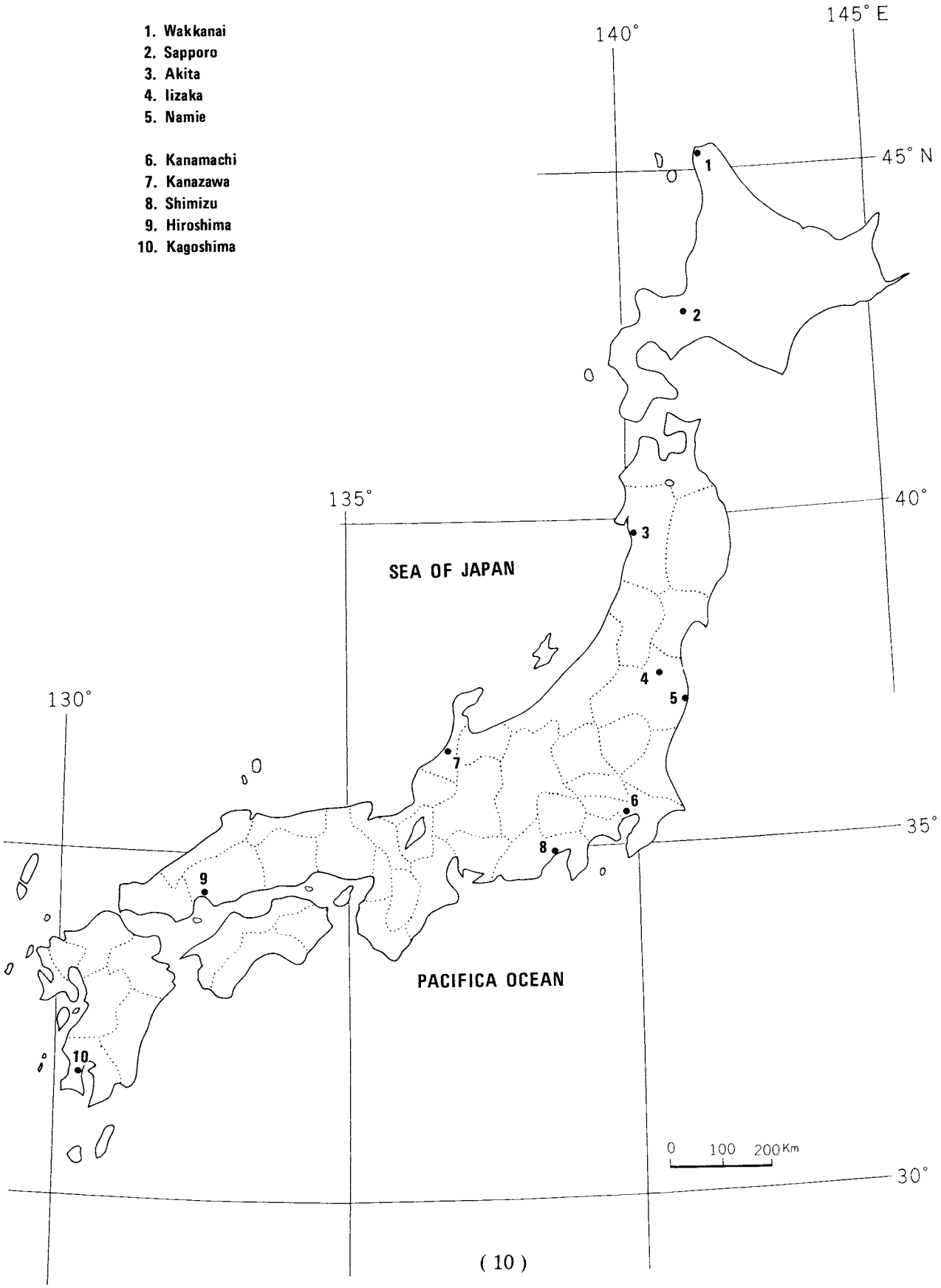
The results obtained from June, 1971 to March 1972 are shown in Table 3 .

Table 3. ^{90}Sr and ^{137}Cs in Source Water and Treated Water
– June 1971 to March 1972 –
by H. Kamada, M. Mita
(National Institute of Radiological Sciences)

Location	Type	Date	^{90}Sr (pCi/100ℓ)	^{137}Cs (pCi/100ℓ)
Wakkanai HOKKAIDO	S.W.	Jun. 1971	47.6	30.4
	〃	Sep. 〃	32.6	5.0
	〃	Dec. 〃	32.1	9.8
	〃	Mar. 1972	51.7	10.7
Sapporo HOKKAIDO	S.W.	Jun. 1971	22.7	10.6
	〃	Sep. 〃	13.6	3.6
	〃	Dec. 〃	13.7	5.3
	〃	Mar. 1972	18.2	6.8
Akita AKITA	S.W.	Jun. 1971	10.0	7.1
	T.W.	〃	7.1	4.4
	S.W.	Sep. 1971	20.7	4.4
	T.W.	〃	17.8	3.4
	S.W.	Dec. 1971	21.1	5.7
	T.W.	〃	17.3	1.1
	S.W	Mar. 1972	16.9	4.0
	T.W.	〃	15.0	1.4
Iizaka FUKUSHIMA	S.W.	Jun. 1971	18.6	5.2
	T.W.	〃	14.6	3.7
	S.W.	Sep. 1971	11.9	2.2
	T.W.	〃	11.0	0.8
	S.W.	Dec. 1971	13.9	2.1
	T.W.	〃	13.2	1.3

Location	Type	Date	^{90}Sr (pCi/100ℓ)	^{137}Cs (pCi/100ℓ)
Iizaka FUKUSHIMA	S.W.	Mar. 1972	17.7	3.0
	T.W.	〃	14.7	1.6
Namie FUKUSHIMA	S.W.	Jun. 1971	19.9	3.8
	T.W.	〃	14.4	2.1
	S.W.	Sep. 1971	13.5	2.1
	T.W.	〃	8.3	0.8
	S.W.	Dec. 1971	4.0	2.5
	T.W.	〃	3.3	1.7
	S.W.	Mar. 1972	16.0	2.5
	T.W.	〃	12.4	1.7
Kanamachi TOKYO	S.W.	Jun. 1971	22.8	7.8
	T.W.	〃	13.4	4.6
	S.W.	Sep. 1971	13.5	3.5
	T.W.	〃	11.8	2.8
	S.W.	Dec. 1971	9.4	6.3
	T.W.	〃	8.6	2.4
	S.W.	Mar. 1972	17.1	3.9
	T.W.	〃	11.5	3.0
Kanazawa ISHIKAWA	S.W.	Jun. 1971	31.9	6.2
	〃	Sep. 〃	17.2	7.0
	〃	Dec. 〃	17.2	18.1
	〃	Mar. 1972	19.1	6.2
Shimizu SHIZUOKA	S.W.	Jun. 1971	14.9	20.5
	〃	Sep. 〃	6.7	12.4
	〃	Dec. 〃	10.2	71.5
	〃	Mar. 1972	9.6	3.7
Hiroshima HIROSHIMA	S.W.	Jun. 1971	59.0	15.1
	〃	Sep. 〃	15.2	3.4
	〃	Dec. 〃	15.2	4.2
	〃	Mar. 1972	12.2	6.0
Kagoshima KAGOSHIMA	S.W.	Jun. 1971	20.8	10.4
	〃	Sep. 〃	10.0	2.2
	〃	Dec. 〃	6.9	6.9
	〃	Mar. 1972	10.6	3.9

Figure 3 City Water Sampling Location



Strontium-90 and Cesium-137 in Potable Rain Water used by Lighthouses

(Japan Analytical Chemistry Research Institute)

Since April 1964, potable rain water used residents of beacon lighthouses has been analyzed for Strontium-90 and Cesium-137 content by Japan Analytical Chemistry Research Institute.

Samples of potable rain were collected in polyethylene bottles at 7 lighthouses and also ten liter samples, with and without filtration through sand and charcoal, were sent from each lighthouse.

Sampling locations are shown in Figure 4. The analytical procedure applied was the method recommended by the Science and Technology Agency.

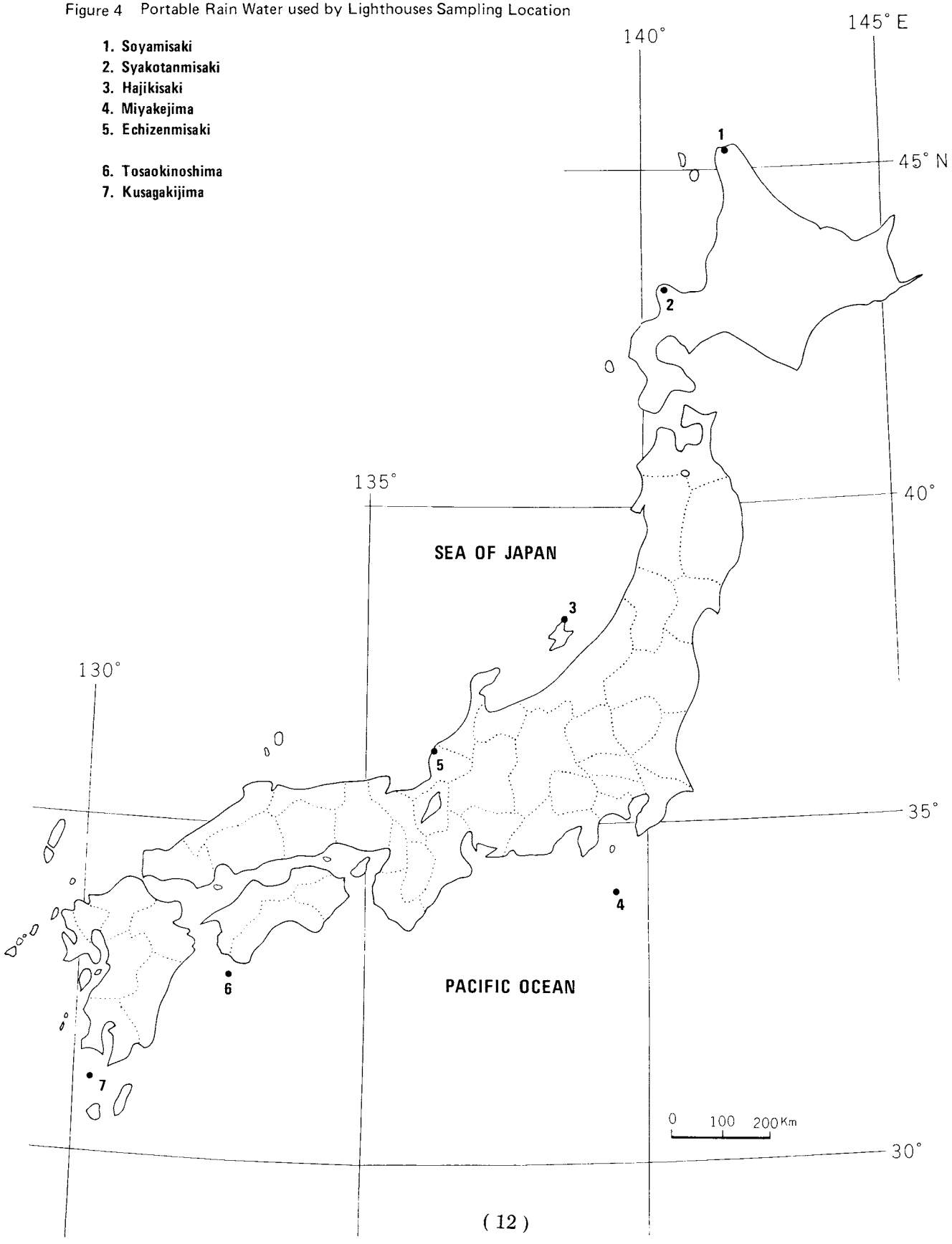
Results obtained during the period from July, 1971 to March 1972, are shown in Table 4.

Table 4. ^{90}Sr and ^{137}Cs in Potable Rain Water used by Lighthouses
– July, 1971 to Mar., 1972 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 6, No. 31 of this Publication)

Lighthouse Location	^{90}Sr (pCi/ℓ)		^{137}Cs (pCi/ℓ)	
	Original	Filtrate	Original	Filtrate
July 1971				
Soyamisaki HOKKAIDO	3.1	LTD	0.5	LTD
Syakotanmisaki HOKKAIDO	3.3	LTD	1.1	LTD
Miyakejima TOKYO	2.1	–	2.5	–
〃	2.0	–	2.6	–
Hajikisaki NIIGATA	1.2	0.7	1.4	LTD
Kusagakijima KAGOSHIMA	0.7	0.6	0.4	LTD
Aug. 1971				
Echizenmisaki FUKUI	1.0	1.0	0.4	0.4
Tosaokinoshima KOCHI	3.1	1.3	4.8	0.4
Nov. 1971				
Tosaokinoshima KOCHI	1.4	1.1	0.8	0.5
Jan. 1972				
Soyamisaki HOKKAIDO	1.4	LTD	2.4	LTD
Syakotanmisaki HOKKAIDO	1.7	1.5	0.4	LTD
Miyakejima TOKYO	1.5	0.6	1.9	1.0
Hajikisaki NIIGATA	1.6	0.6	0.6	LTD
Echizenmisaki FUKUI	1.1	0.1	1.8	LTD
March 1972				
Kusagakijima KAGOSHIMA	0.9	0.7	0.5	LTD

Figure 4 Portable Rain Water used by Lighthouses Sampling Location

1. Soyamisaki
2. Syakotanmisaki
3. Hajikisaki
4. Miyakejima
5. Echizenmisaki
6. Tosaokinoshima
7. Kusagakijima



Dietary Data

Strontium-90 and Cesium-137 in Vegetables

(Japan Analytical Chemistry Research Institute)

Japan Analytical Chemistry Research Institute has analyzed the Strontium-90 and Cesium-137 content in vegetables obtained from 14 prefectures. Sampling locations are shown in Figure 5 . The samples were taken twice at the same location during the harvest period. At the prefectural public health laboratories, several kilograms of the fresh vegetable samples were washed with water, and the inedible parts removed, then only the edible parts ashed at 450°C. These samples were then sent to Japan Analytical Chemistry Research Institute and analyzed for Strontium-90 and Cesium-137 content, using the method recommended by Science and Technology Agency.

Results obtained during the period from April, 1971 to February 1972, are shown in Table 5.

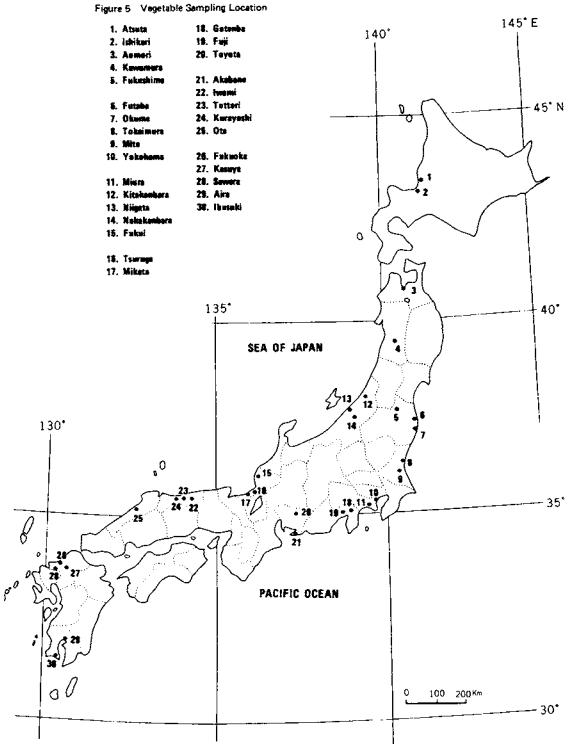
Table 5. ^{90}Sr and ^{137}Cs in Vegetables
– Apr. 1971 to Feb. 1972 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 3, No. 31 of this Publication)

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/Kg)	S.U	(pCi/Kg)	C.U
(Spinach)								
Fukushima FUKUSHIMA	Apr. '71	2.25	0.10	0.76	14.8	14.8	13.6	1.8
Okuma FUKUSHIMA	"	1.92	0.23	0.67	73.5	32.0	15.6	2.3
Toyota AICHI	"	1.09	0.05	0.43	12.6	25.2	3.4	0.8
Akabane "	"	1.17	0.06	0.44	24.9	41.5	13.6	3.1
Tsuruga FUKUI	May '71	1.93	0.07	0.72	66.9	95.6	9.5	1.3
Tottori TOTTORI	"	1.82	0.09	0.79	26.8	29.8	13.0	1.7
Kurayoshi TOTTORI	"	1.18	0.05	0.44	27.7	55.4	LTD	–
Fukuoka FUKUOKA	"	1.32	0.08	0.41	19.4	24.3	13.3	3.3
Ishikari HOKKAIDO	June '71	1.42	0.06	0.52	15.5	25.9	5.7	1.1
Atsuta "	"	2.10	0.07	0.72	35.0	50.0	10.1	1.4
Miura KANAGAWA	"	0.95	0.02	0.41	11.3	56.6	2.6	0.6
Fukui FUKUI	"	1.63	0.11	0.47	53.8	48.9	12.6	2.7
Kasuya FUKUOKA	"	1.97	0.08	0.85	32.1	40.1	8.8	1.0
Ishikari HOKKAIDO	Oct. '71	1.63	0.09	0.56	19.0	21.2	3.5	0.6
Atsuta "	"	1.69	0.14	0.53	35.5	25.3	12.0	2.3
Fukushima FUKUSHIMA	"	2.56	0.15	0.65	22.0	14.6	7.9	1.2
Toyota AICHI	"	1.28	0.05	0.51	7.7	15.3	2.2	0.4
Akabene AICHI	"	1.97	0.07	0.77	14.4	20.6	3.1	0.4
Futaba FUKUSHIMA	Nov. '71	2.05	0.09	0.62	16.7	18.6	4.4	0.7
Mito IBARAKI	"	1.74	0.13	0.50	10.1	7.8	4.3	0.9

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/Kg)	S.U	(pCi/Kg)	C.U
Tokaimura IBARAKI	Nov. '71	1.69	0.06	0.60	9.7	16.1	2.0	0.3
Gotenba SHIZUOKA	"	1.77	0.11	0.56	49.2	44.7	14.9	2.7
Fuji "	"	1.12	0.05	0.41	14.1	28.2	5.6	1.4
Kurayoshi TOTTORI	"	1.73	0.14	0.58	30.0	21.4	7.6	1.3
Kasuya FUKUOKA	"	1.06	0.01	0.22	5.0	8.4	20.3	9.2
Fukuoka FUKUOKA	"	0.72	0.05	0.26	7.8	15.7	5.5	2.1
Fukui FUKUI	Dec. '71	1.28	0.12	0.38	35.0	29.2	11.5	3.0
Tsuruga FUKUI	"	1.60	0.06	0.53	70.3	117.2	31.8	6.0
Tottori TOTTORI	"	1.98	0.07	0.80	26.4	37.8	19.2	2.4
Mito IBARAKI	Apr. '72	1.49	0.07	0.47	8.2	11.7	1.8	0.4
Tokaimura IBARAKI	"	1.27	0.06	0.40	4.8	8.0	2.2	0.5
Yokohama KANAGAWA	"	1.42	0.08	0.33	8.7	10.9	10.9	3.3
Miura "	"	1.29	0.07	0.38	5.3	7.5	2.7	0.7
Gotenba SHIZUOKA	"	1.92	0.12	0.59	52.2	43.5	31.5	5.3
Fuji "	"	1.48	0.06	0.50	20.9	34.9	21.8	4.4
Yokohama KANAGAWA	Feb. '72	1.92	0.07	0.62	10.4	14.8	5.7	0.9
Miura "	"	2.01	0.10	0.60	14.4	14.4	3.4	0.6
(Japanese Radish Whole)								
Okuma FUKUSHIMA	Apr. '71	0.73	0.05	0.27	27.0	54.0	LTD	–
Toyota AICHI	"	0.78	0.02	0.27	9.6	47.8	2.5	0.9
Akabane AICHI	"	0.63	0.03	0.21	20.2	67.4	3.4	1.6
Kukushima FUKUSHIMA	May '71	1.10	0.05	0.31	14.6	29.2	4.3	1.4
Fukuoka FUKUOKA	"	0.72	0.03	0.30	12.8	42.5	2.3	0.8
Yokohama KANAGAWA	June '71	0.59	0.02	0.20	7.2	35.9	2.9	1.5
Niigata NIIGATA	"	0.49	0.02	0.18	29.4	147.1	3.2	1.8
Kitakanbara NIIGATA	"	0.84	0.02	0.31	36.6	157.9	3.9	1.2
Nakakanbara "	"	0.74	0.07	0.28	14.1	70.7	4.9	1.7
Kasuya FUKUOKA	"	0.60	0.02	0.26	4.3	21.6	3.5	1.3
Ibusuki KAGOSHIMA	"	1.08	0.03	0.43	27.7	92.2	11.1	2.6
Aira KAGOSHIMA	"	0.69	0.03	0.26	27.4	91.3	4.3	1.7
Ishikari HOKKAIDO	July '71	0.75	0.02	0.29	36.4	181.9	LTD	–
Atsuta "	"	0.71	0.02	0.29	26.2	131.0	2.4	0.8
Ota SHIMANE	"	0.52	0.03	0.19	54.3	180.9	10.1	5.3
Aomori AOMORI	Aug. '71	0.77	0.02	0.29	21.6	108.2	LTD	–
Kawabe AKITA	"	0.67	0.02	0.16	42.3	211.5	6.4	4.0
Ishikari HOKKAIDO	Oct. '71	0.52	0.02	0.18	42.3	211.3	1.8	1.0
Atsuta "	"	0.53	0.02	0.19	21.1	105.5	2.0	1.1
Aomori AOMORI	"	0.90	0.07	0.22	54.0	77.2	LTD	–
Fukushima FUKUSHIMA	"	0.60	0.03	0.21	4.2	13.9	LTD	–
Futaba "	"	0.62	0.03	0.31	24.6	81.8	1.5	0.5
Toyota AICHI	"	0.67	0.02	0.26	7.0	35.1	LTD	–
Akabane "	"	0.55	0.12	0.22	5.6	28.2	LTD	–

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/Kg)	S.U	(pCi/Kg)	C.U
Kawabe AKITA	Nov. '71	0.39	0.02	0.11	33.7	168.6	2.2	2.0
Niigata NIIGATA	"	0.45	0.03	0.16	32.8	109.5	3.8	2.4
Kitakanbara NIIGATA	"	0.51	0.02	0.19	13.5	67.6	3.4	1.8
Nakakanbara "	"	0.44	0.01	0.14	12.4	124.1	2.6	1.9
Gotenba SHIZUOKA	"	0.62	0.03	0.22	12.3	41.0	2.9	1.3
Fuji SHIZUOKA	"	0.53	0.02	0.19	23.2	116.1	12.5	6.6
Iwami TOTTORI	"	0.65	0.03	0.23	20.4	68.1	1.8	0.8
Ota SHIMANE	"	0.67	0.03	0.26	56.0	186.7	2.7	1.0
Kasuya FUKUOKA	"	0.74	0.05	0.26	8.6	17.2	LTD	–
Miura KANAGAWA	Dec. '71	0.48	0.02	0.16	5.3	26.3	LTD	–
Yokohama KANAGAWA	"	0.63	0.04	0.24	8.8	22.1	13.1	5.5
Mikata FUKUI	"	0.55	0.04	0.18	23.1	57.7	4.1	2.3
Tsuruga FUKUI	"	1.19	0.08	0.31	128.8	161.0	11.6	3.8
Iwami TOTTORI	"	0.50	0.03	0.17	15.8	52.7	LTD	–
Sawara FUKUOKA	"	0.54	0.05	0.18	18.4	36.8	8.6	4.8
Ibusuki KAGOSHIMA	"	0.68	0.03	0.21	10.1	33.7	4.3	2.0
Aira "	"	0.66	0.04	0.30	18.1	45.3	4.7	1.6
Gotenba SHIZUOKA	Jan. '72	0.48	0.02	0.17	14.5	72.5	3.4	2.0
Fuji "	"	0.61	0.04	0.20	21.8	54.4	5.0	2.5
Tsuruga FUKUI	Feb. '72	0.97	0.08	0.27	24.1	30.2	10.6	3.9

Figure 5 Vegetable Sampling Location



Strontium-90 and Cesium-137 in milk

(National Institute of Animal Industry)

The concentration of Strontium-90 and Cesium-137 in milk, were gotten from individual cows in several parts of Japan, were determined. This work was begun from December 1961 and being continued untill nowadays. The results obtained were shown in Table 6.

Sampling stations are indicated in Figure 6..

Table 6. The concentration of Strontium-90 and Cesium-137 in Milk
– Jan., 1969 to Dec., 1970 –
by T. Mitsuhashi, H. Danbara
(National Institute of Animal Industry)
(Continued from Table 1, No. 24 of this Publication)

Sampling		Ca	Sr-90		K	Cs-137	
Location	Day	(%)	(pCi/ℓ)	(pCi/gCa)	(%)	(pCi/ℓ)	(pCi/gk)
Sapporo	1969						
(Hokkaido)	Jan.	0.12	15.8±0.6	13.2±0.5	0.14	37.3±2.8	26.6±2.0
	Feb.	0.11	15.9±0.8	14.5±0.7	0.15	38.7±2.5	25.8±1.7
	Mar.	0.11	13.2±0.6	12.0±0.5	0.14	26.8±2.5	19.1±1.8
	Apr.	0.11	11.9±0.8	10.8±0.7	0.15	58.0±3.6	38.7±2.4
	May	0.13	13.6±0.7	10.5±0.5	0.15	63.2±5.9	42.1±3.9
	June	0.12	10.5±0.7	8.8±0.6	0.16	88.5±4.3	55.3±2.7
	July	0.11	9.7±0.7	8.8±0.6	0.14	35.5±2.0	25.4±1.4
	Aug.	0.11	11.2±0.7	10.2±0.6	0.17	140.3±4.8	82.5±2.8
	Oct.	0.11	15.3±0.7	13.9±0.6	0.15	32.1±2.8	21.4±1.9
	Dec.	0.10	13.3±0.8	13.3±0.8	0.14	28.5±2.3	20.4±1.6
	1970						
	Feb.	0.10	15.1±0.7	15.1±0.7	0.14	33.1±2.4	23.6±1.7
	Apr.	0.11	9.9±0.9	9.0±0.8	0.15	45.8±2.2	30.5±1.5
	June	0.10	11.3±1.0	11.3±1.0	0.17	50.1±2.8	29.5±1.6
	Oct.	0.11	19.0±0.8	17.3±0.7	0.15	23.6±2.4	15.7±1.6
	Dec.	0.10	4.6±0.8	4.6±0.8	0.17	131.2±4.9	77.2±2.9
Morioka	1969						
(Iwate)	Jan.	0.10	6.8±0.6	6.8±0.6	0 0.15	45.1±3.2	30.1±2.1
	Feb.	0.10	8.6±0.8	8.6±0.8	0.14	41.0±3.2	29.3±2.3
	Mar.	0.10	7.6±0.6	7.6±0.6	0.14	53.1±3.2	37.9±2.3
	Apr.	0.10	8.9±0.6	8.9±0.6	0.14	90.1±10.5	64.4±7.5
	May	0.11	7.5±0.6	6.8±0.5	0.15	21.7±3.0	14.5±2.0
	June	0.11	6.7±0.6	6.1±0.5	0.14	22.7±3.1	16.2±2.2
	July	0.11	5.4±0.6	4.9±0.5	0.14	22.6±2.5	16.1±1.8
	Aug.	0.11	7.2±0.6	6.5±0.5	0.14	39.0±3.4	27.9±2.4

Sampling		Ca	Sr-90		K	Cs-137	
Location	Day	(%)	(pCi/ℓ)	(pCi/gCa)	(%)	(pCi/ℓ)	(pCi/gk)
	Oct.	0.10	8.5±0.6	8.5±0.5	0.14	29.3±2.5	20.9±1.8
	Dec.	0.11	10.2±0.6	9.3±0.5	0.14	24.6±2.1	17.6±1.5
			±				
	1970		±				
	Feb.	0.10	8.5±0.5	8.5±0.5	0.14	18.3±1.6	13.1±1.1
	Apr.	0.10	6.5±0.8	6.5±0.8	0.14	17.4±1.8	12.4±1.3
	June	0.11	7.2±0.8	6.5±0.7	0.16	25.4±2.2	15.9±1.4
	Oct.	0.10	7.8±0.6	77.8±0.6	0.14	27.2±2.5	19.8±1.8
	Dec.	0.10	6.1±0.4	6.1±0.4	0.14	20.0±2.1	14.3±1.5
Toyama	1969						
(Hokuriku)	Jan.	0.10	5.1±0.4	4.6±0.4	0.14	18.7±2.2	15.4±1.6
	Feb.	0.10	5.8±0.6	5.8±0.6	0.14	15.0±2.1	10.7±1.5
	Mar.	0.10	4.2±0.5	4.2±0.5	0.13	19.9±2.8	15.3±2.2
	Apr.	0.11	5.4±0.4	4.9±0.4	0.14	22.0±3.2	15.7±2.3
	May	0.10	5.3±0.4	5.3±0.4	0.14	31.4±5.2	22.4±3.7
	June	0.14	5.0±0.4	5.0±0.4	0.15	27.1±3.0	18.1±2.0
	July	0.10	5.1±0.4	5.1±0.4	0.14	18.9±2.1	13.5±1.5
	Aug.	0.10	6.1±0.5	6.1±0.5	0.14	16.9±2.2	12.1±1.6
	Oct.	0.10	5.7±0.4	5.7±0.4	0.13	18.1±2.2	13.9±1.7
	Dec.	0.09	7.4±0.5	8.2±0.6	0 0.13	16.2±1.8	12.5±1.4
	1970						
	Feb.	0.09	4.0±0.4	4.4±0.4	0.13	14.0±2.1	10.8±1.6
	Apr.	0.10	7.7±1.3	7.7±1.3	0.14	13.7±1.3	9.8±0.9
	June	0.09	6.8±0.7	7.6±0.8	0.14	14.3±1.8	10.2±1.3
	Oct.	0.10	9.0±0.7	9.0±0.7	0.14	36.5±3.7	26.1±2.6
	Dec.	0.10	7.1±0.6	7.1±0.6	0.13	17.9±2.2	13.8±1.7
Ohiba	1969						
(Kanto)	Jan.	0.10	3.8±0.4	3.8±0.4	0.13	10.6±1.9	8.2±1.5
	Feb.	0.10	3.1±0.4	3.1±0.4	0.13	29.1±3.5	22.4±2.7
	Mar.	0.09	4.7±0.4	5.2±0.4	0.14	11.7±2.1	8.4±1.4
	Apr.	0.11	3.4±0.4	3.1±0.4	0.13	15.8±3.0	12.2±2.3
	May	0.10	3.4±0.4	3.4±0.4	0.14	11.5±4.8	8.2±3.4
	June	0.10	3.1±0.4	3.1±0.4	0.14	20.4±2.9	14.6±2.1
	July	0.11	2.8±0.4	2.5±0.4	0.13	15.3±1.9	10.4±1.5
	Aug.	0.10	2.6±0.3	2.6±0.3	0.15	16.2±1.8	10.8±1.2
	Oct.	0.09	3.8±0.4	4.2±0.4	0.14	10.5±1.7	7.5±1.2
	Dec.	0.09	3.1±0.4	3.4±0.4	0.15	11.3±1.5	7.5±1.0
	1970						
	Feb.	0.11	2.4±1.1	2.2±1.0	0.14	8.7±2.0	6.2±1.4
	Apr.	0.10	3.1±0.6	3.1±0.6	0.14	—	—
	June	0.10	4.5±0.5	4.5±0.5	0.14	11.5±1.5	8.2±1.1
	Oct.	0.10	2.3±0.3	2.3±0.3	0.13	9.1±2.9	7.0±2.2
	Dec.	0.09	2.2±0.3	2.4±0.3	0.14	12.4±1.5	8.9±1.1

Sampling		Ca	Sr-90		K	Cs-137	
Location	Day	(%)	(pCi/ℓ)	(pCi/gCa)	(%)	(pCi/ℓ)	(pCi/gk)
Shizuoka	1969						
(Tokai)	Jan.	0.12	4.7±0.4	3.9±0.3	0.14	19.2±3.0	13.7±2.1
	Feb.	0.11	6.1±0.6	5.5±0.5	0.15	17.1±2.3	11.4±2.2
	Mar.	0.10	4.9±0.4	4.9±0.4	0.15	20.7±3.0	13.8±2.0
	Apr.	0.11	5.7±0.4	5.2±0.4	0.14	17.8±2.5	12.7±1.8
	May	0.11	4.5±0.4	4.1±0.4	0.13	11.2±2.5	8.6±1.9
	June	0.11	4.3±0.4	3.9±0.4	0.13	14.7±2.4	11.3±1.8
	July	0.09	4.1±0.4	4.6±0.4	0.14	29.1±2.4	20.8±1.7
	Aug.	0.12	4.0±0.4	3.3±0.3	0.16	13.5±2.2	8.4±1.4
	Oct.	0.11	8.2±0.6	7.5±0.5	0.15	19.4±2.1	12.9±1.4
	Dec.	0.10	7.1±0.5	7.1±0.5	0.16	15.7±1.8	9.8±1.1
	1970						
	Feb.	0.10	6.2±0.6	6.2±0.6	0.15	11.3±1.2	7.5±0.8
	Apr.	0.11	3.7±0.7	3.4±0.6	0.14	12.3±1.4	8.8±1.0
	June	0.10	6.1±0.5	6.1±0.5	0.14	12.7±1.7	9.1±1.2
	Oct.	0.11	3.6±0.4	3.3±0.4	0.14	47.8±9.6	34.1±6.9
	Dec.	0.11	5.0±0.4	4.5±0.4	0.14	6.0±1.6	4.3±1.1
Kagawa	1969						
(Shikoku)	Jan.	0.11	3.2±0.4	2.9±0.4	0.15	14.0±2.4	9.3±1.6
	Feb.	0.11	3.0±0.4	2.7±0.4	0.14	13.3±2.5	9.5±1.9
	Mar.	0.10	2.8±0.4	2.8±0.4	0.15	14.4±2.4	9.6±1.6
	Apr.	0.10	3.0±0.4	3.0±0.4	0.14	10.0±3.3	7.1±2.4
	May	0.10	2.9±0.4	2.9±0.4	0.14	39.7±7.9	28.4±5.6
	June	0.10	3.0±0.4	3.0±0.4	0.13	15.9±1.8	12.2±1.4
	July	0.09	3.0±0.4	3.3±0.4	0.15	14.8±1.7	9.9±1.1
	Aug.	0.10	3.0±0.4	3.0±0.4	0.14	16.3±1.9	11.6±1.4
	Oct.	0.11	7.2±0.5	6.5±0.5	0.15	13.6±2.4	9.1±1.6
	Dec.	0.10	6.8±0.6	6.8±0.6	0.14	14.2±1.9	10.1±1.4
	1970						
	Feb.	0.10	1.8±0.5	1.8±0.5	0.14	8.4±1.0	6.1±0.7
	Apr.	0.09	1.8±0.5	1.8±0.6	0.13	12.0±2.2	9.0±1.7
	June	0.10	5.3±0.5	5.3±0.5	0.13	17.7±1.9	13.6±1.5
	Oct.	0.10	1.8±0.3	1.8±0.3	0.13	20.6±4.5	15.8±3.5
	Dec.	0.11	1.6±0.3	1.5±0.3	0.14	5.6±1.0	4.0±0.7
Fukuoka	1969						
(Kyushu)	Jan.	0.09	2.0±0.3	2.2±0.3	0.14	16.1±2.3	11.5±1.6
	Feb.	0.10	3.3±0.4	3.3±0.4	0.14	15.6±2.2	11.1±1.6
	Mar.	0.10	2.0±0.3	2.0±0.3	0.14	15.6±2.2	11.1±1.6
	Apr.	0.10	2.9±0.3	2.9±0.3	0.14	11.3±2.2	8.1±1.6
	May	0.09	2.0±0.3	2.2±0.3	0.13	18.9±3.2	14.5±2.5
	June	0.10	2.4±0.3	2.4±0.3	0.15	17.4±2.8	11.6±1.9
	July	0.10	2.7±0.4	2.7±0.4	0.13	12.2±2.5	9.4±1.9

Sampling		Ca	Sr-90		K	Cs-137	
Location	Day	(%)	(pCi/ℓ)	(pCi/gCa)	(%)	(pCi/ℓ)	(pCi/gk)
	Aug.	0.09	2.8±0.4	3.1±0.4	0.14	18.1±2.4	12.9±1.7
	Oct.	0.10	6.9±0.5	6.9±0.5	0.14	15.7±2.3	11.2±1.6
	Dec.	0.10	7.1±0.6	7.1±0.6	0.14	18.8±2.0	13.4±1.4
	1970						
	Feb.	0.10	3.2±0.4	3.2±0.4	0.13	8.6±1.0	6.6±0.8
	Apr.**	—	—	—	—	—	—
	June	0.11	5.9±0.6	5.4±0.5	0.15	19.6±1.9	13.1±1.3
	Oct.	0.10	1.8±0.3	1.8±0.3	0.13	20.6±4.5	15.8±3.5
	Dec.	0.10	2.6±0.4	2.6±0.4	0.14	7.9±1.2	5.6±0.9

** missing sample

Figure 6 Milk Sampling Stations