NIRS-RSD-36

RADIOACTIVITY SURVEY DATA in Japan

NUMBER 36

Aug. 1972

National Institute of Radiological Sciences

Chiba, Japan

Radioactivity Survey Data in Japan

Number 36

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Contents

DATA OF ROUTINE SURVEY

Science and Technology Agency
National Institute of Radiological Science

Meteorological Data

The Concentration of Radionuclides in Air Borne Dust

(National Institute of Radiological Sciences)

The air borne dust samples were collected from 1-1.5m above the ground in the campus of National Institute of Radiological Sciences in Chiba City, using a improved dust collector that composed of a prefilter, a cottrell type dust collector and a spongy polyurethane filter.

Sampling station is shown in Figure 1.

The design of the improved dust collector is the same one mentioned in page 1, No. 29 of this publication.

The samoles were ignited in a muffle furnace of nuclides in ashed samples were measured by Gamma-ray spectrometry using a NaI(Tl) detector coupled with Multi-channel pulse height analyzer, while concentration of Strontium-90 and Cesium-137 in ashed samples were determined by the radiochemical separation method after Na_2CO_3 fusion.

The results obtained during the period from April, 1971 to April, 1972 are shown in Table 1.

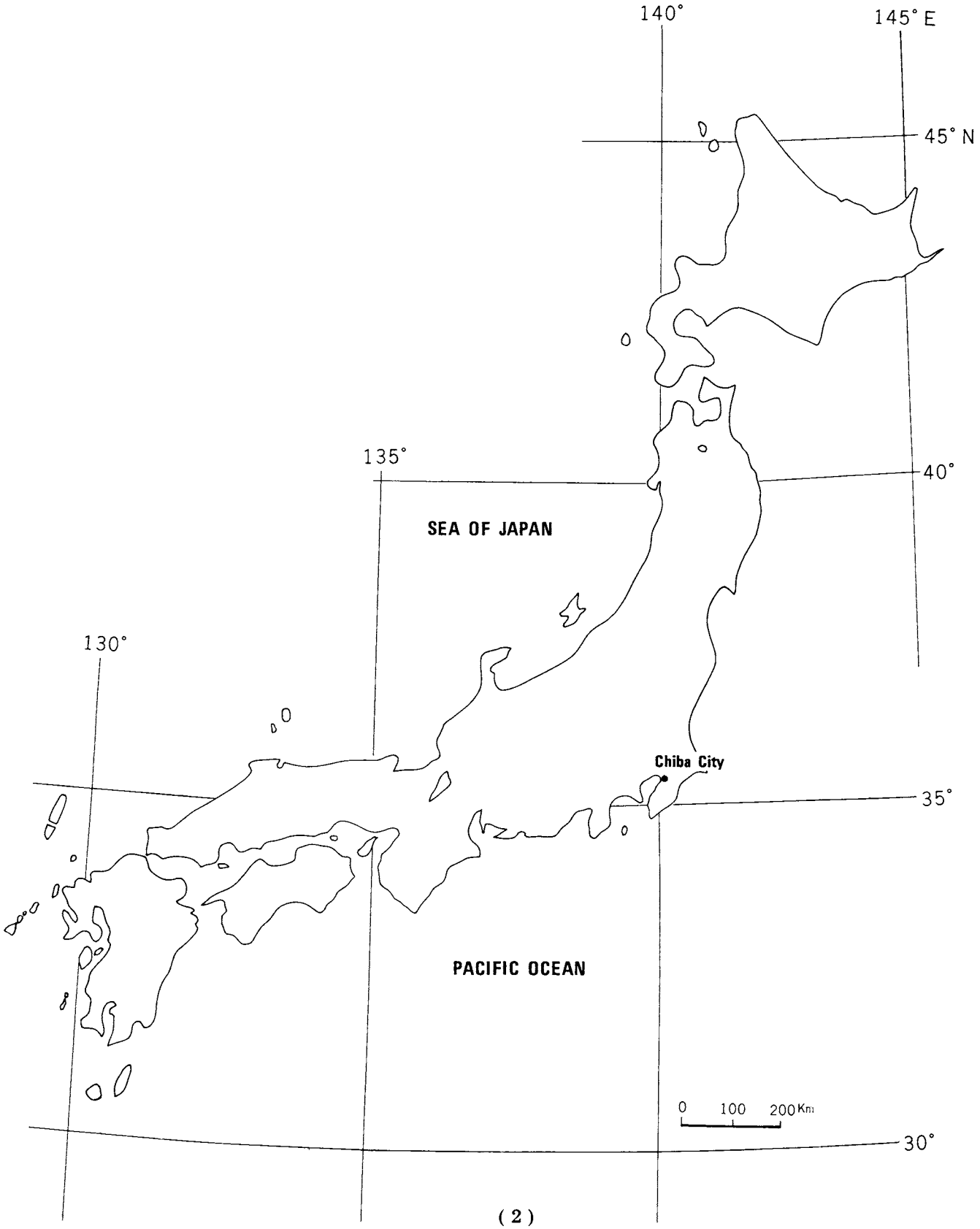
Table 1. The Concentration of Radionuclides Air Borne Dust in Chiba City ($\times 10^{-3}$ pCi/m^3)
– April, 1971 to April, 1972 –

By M. Saiki, H. Kamada, M. Mita, Maung. U. San
(National Institute of Radiological Sciences)

(Continued from Table 1, No. 29, of this publication)

Month collected	Duration (days)	Air inhaled (10^3m^3)	Ash Weight (g)	^{89}Sr	^{90}Sr	^{95}Zr	^{95}Nb	^{103}Ru	^{106}Ru	^{137}Cs	^{141}Ce	^{144}Ce
1971												
Apr. 1~Apr. 30	30	432.0	18.7	27.18	1.52	118.05		9.72		2.92	26.81	
May 1~May 31	31	446.4	20.4	18.67	1.49	121.84		10.68		3.21	43.82	
June 1~June 30	30	432.0	14.0	7.73	1.01	56.77		10.49		1.61	27.09	
July 1~July 31	31	446.4	11.3	0.16	0.42	30.80		0.91		1.50	17.45	
Aug. 1~Aug. 31	31	446.4	14.0	1.80	0.39	12.99		4.50		0.96	11.16	
Sep. 1~Sep. 30	30	432.0	13.3	0.48	0.08	10.06		3.90		0.76	9.13	
Oct. 1~Nov. 9	40	576.0	12.0	0.47	0.52	2.83	6.17	–	6.39	1.51	–	13.68
Nov. 10~Dec. 12	33	475.2	23.8	1.60	0.39	1.98	4.09	5.57	4.97	1.53	2.53	6.99
1972												
Dec. 13~Jan. 9	27	388.8	12.0	0.78	0.19	0.86	1.54	–	2.93	1.28	–	3.69
1972												
Jan. 10~Feb. 4	26	374.4	15.3	3.14	0.37	6.88	9.59	10.34	3.83	1.26	8.84	12.22
Feb. 5~Mar. 1	26	374.4	15.9	1.22	0.77	2.20	3.65	2.98	7.26	2.20	1.54	15.31
Mar. 2~Apr. 5	35	504.0	26.5	0.42	0.51	0.95	1.87	0.69	4.15	1.45	0.72	7.89
Apr. 6~May 1	26	374.4	14.5	–	–	11.86	17.32	2.40	2.61	1.25	15.07	22.58

Figure 1 Air Borne Dust Sampling Location



Strontium-90 and Cesium-137 in Air-borne Dust

(Japan Analytical Chemistry Research Institute)

Since April 1969, Japan Analytical Chemistry Research Institute started the analyses of Strontium-90 and Cesium-137 content in air-bone dust.

Samples are collected by 10 prefectural public health laboratories, using a Cottrell type dust collector (1,200 liters per hour).

Figure 2. shows the sampling locations. Results obtained during the period from April 1971 to March 1972, are Shown in Table 2.

Table 2. ^{90}Sr and ^{137}Cs in Air-Borne Dust
– Apr. 1971 to Mar. 1972 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 1. No. 32 of this publication)

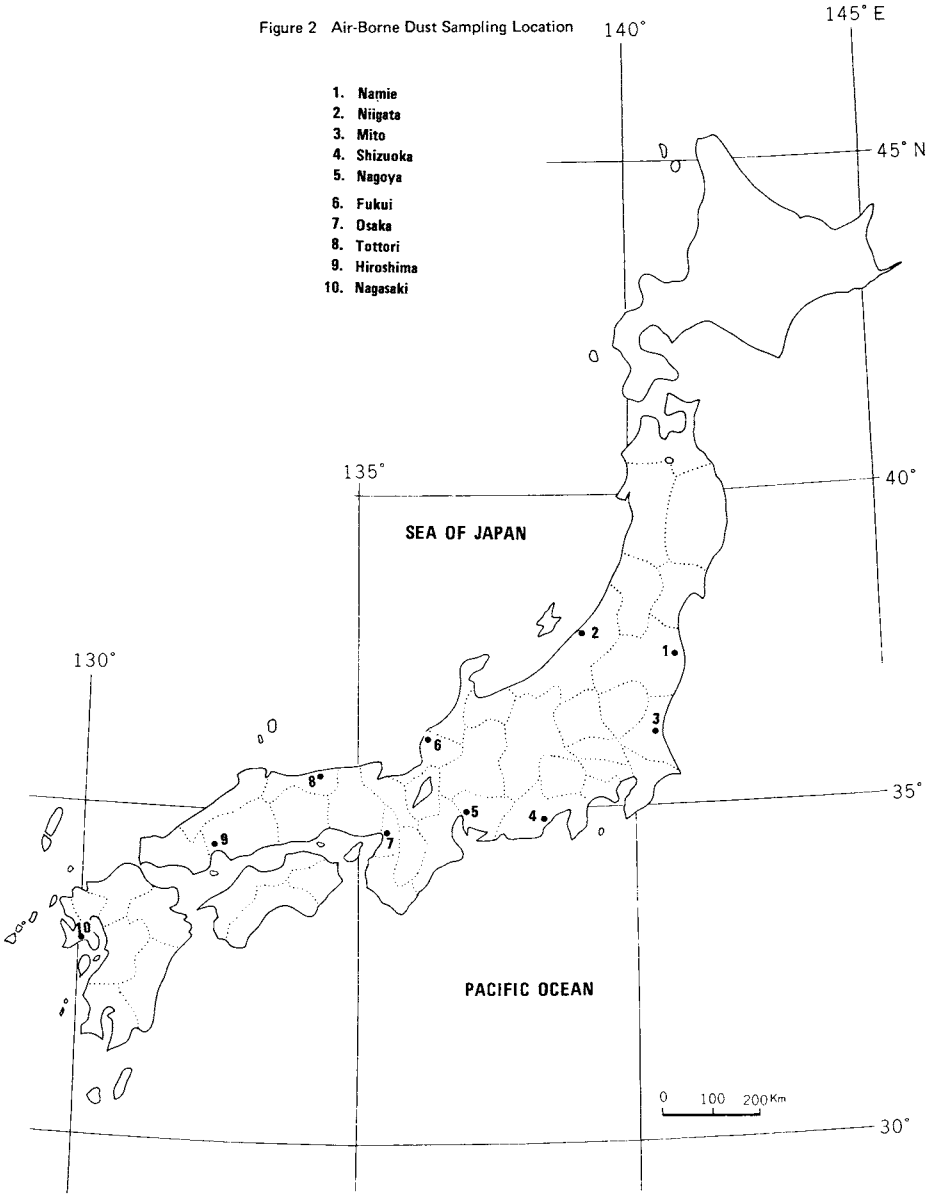
Name of I.P.H.	Sampling Station	Sampling Date from	Sampling Date to	Absorption volume (m^3)	^{90}Sr (10^{-3} pCi/m^3)	^{137}Cs (10^{-3} pCi/m^3)
Namie	FUKUSHIMA	1971. 4.21	4.27	1086	8.0±0.4	11.9±0.9
Mito	IBARAKI	4.1	4.26	29520	0.8±0.1	0.9±0.1
Niigata	NIIGATA	4.5	4.19	3005	1.6±0.2	4.0±0.3
Fukui	FUKUI		4.7	2380	2.8±0.3	4.1±0.1
Shizuoka	SHIZUOKA	4.21	4.27	2160	6.3±0.4	11.1±0.9
Osaka	OSAKA	4.5	4.27	2592	4.0±0.3	5.4±0.6
Nagoya	AICHI	4.26	4.28	1620	4.7±0.4	5.9±0.5
Hiroshima	HIROSHIMA	4.6	4.26	6900	7.0±0.4	11.2±0.3
Tottori	TOTTORI	4.13	4.27	882	6.1±0.1	10.4±1.0
Nagasaki	NAGASAKI	4.5	4.20	1800	1.3±0.2	1.8±0.3
Namie	FUKUSHIMA	5.17	5.26	1078	8.5±0.5	14.7±1.1
Mito	IBARAKI	5.6	5.27	25200	1.1±0.1	1.7±0.1
Niigata	NIIGATA	5.10	5.31	3022	3.3±0.2	6.0±0.4
Fukui	FUKUI		5.6	1020	2.7±0.3	3.1±0.4
Shizuoka	SHIZUOKA	5.13	5.31	3240	5.2±0.2	9.6±0.7
Nagoya	AICHI	5.25	5.26	1620	3.8±0.3	5.9±0.5
Osaka	OSAKA	5.7	5.26	2592	6.0±0.3	9.4±0.8
Tottori	TOTTORI	5.12	5.28	1033	7.9±0.6	9.8±0.9
Hiroshima	HIROSHIMA	5.10	5.26	7100	6.2±0.3	11.4±0.3
Nagasaki	NAGASAKI	5.10	5.26	1800	0.9±0.2	1.8±0.3
Namie	FUKUSHIMA	6.15	6.23	1105	4.8±0.4	8.0±0.8
Mito	IBARAKI	6.1	6.28	33840	0.9±0.1	1.7±0.1
Niigata	NIIGATA	6.7	6.28	3757	2.5±0.2	3.5±0.3
Fukui	FUKUI		6.4	1020	2.1±0.2	2.7±0.4
Shizuoka	SHIZUOKA	6.11	6.23	3240	2.1±0.2	13.3±0.8
Nagoya	AICHI	6.22	6.23	1620	1.2±0.2	1.7±0.2
Osaka	OSAKA	6.7	6.22	2592	4.3±0.2	7.9±0.7
Tottori	TOTTORI	6.4	6.25	1006	7.3±0.4	11.7±1.4
Hiroshima	HIROSHIMA	6.1	6.16	6300	5.8±0.3	9.9±0.3
Nagasaki	NAGASAKI	6.1	6.21	1800	0.6±0.1	1.3±0.2

Name of I.P.H.	Sampling Station	Date from	Date to	Absorption volume (m^3)	^{90}Sr (10^{-3} pCi/m^3)	^{137}Cs (10^{-3} pCi/m^3)
Namie	FUKUSHIMA	7.19	7.29	1098	1.7±0.2	3.0±0.4
Mito	IBARAKI	7.1	7.29	32580	0.4±0.1	0.7±0.1
Niigata	NIIGATA	7.5	7.26	4007	0.6±0.1	1.5±0.2
Fukui	FUKUI		7.8	1020	1.5±0.2	1.9±0.3
Shizuoka	SHIZUOKA	7.12	7.29	3240	1.2±0.1	10.9±0.7
Nagoya	AICHI	7.27	7.28	1710	LTD	LTD
Osaka	OSAKA	7.5	7.21	2592	1.3±0.2	2.6±0.3
Tottori	TOTTORI	7.6	7.27	1049	1.1±0.2	LTD
Hiroshima	HIROSHIMA	7.5	7.19	6200	LTD	1.4±0.1
Nagasaki	NAGASAKI	7.7	7.27	1800	0.9±0.2	1.0±0.2
Namie	FUKUSHIMA	1971. 8.16	8.24	1050	2.1±0.3	3.0±0.6
Mito	IBARAKI	8.2	8.30	33840	0.2±0.02	0.2±0.22
Niigata	NIIGATA	8.2	8.23	3005	LTD	0.7±0.1
Fukui	FUKUI		8.5	1008	LTD	LTD
Shizuoka	SHIZUOKA	8.16	8.25	3240	0.9±0.1	4.5±0.3
Nagoya	AICHI	8.24	8.25	1620	LTD	LTD
Osaka	OSAKA	8.10	8.27	2592	0.9±0.1	1.2±0.2
Tottori	TOTTORI	8.10	8.27	1016	2.1±0.3	1.8±0.6
Hiroshima	HIROSHIMA	8.2	8.24	8200	0.6±0.1	0.3±0.1
Nagasaki	NAGASAKI	8.2	8.17	1800	2.0±0.2	1.2±0.2
Namie	FUKUSHIMA	9.16	9.28	1015	1.4±0.2	2.4±0.4
Mito	IBARAKI	9.2	9.30	29520	0.2±0.02	0.2±0.02
Niigata	NIIGATA	9.6	9.27	3903	0.4±0.1	0.9±0.1
Fukui	FUKUI		9.13	1008	1.0±0.2	2.4±0.4
Shizuoka	SHIZUOKA	9.16	9.20	2160	2.6±0.3	5.0±0.3
Nagoya	AICHI	9.27	9.29	1530	1.6±0.2	LTD
Osaka	OSAKA	9.3	9.27	2592	0.8±0.1	1.6±0.2
Tottori	TOTTORI	9.3	9.28	1002	3.6±0.4	4.8±0.5
Hiroshima	HIROSHIMA	9.7	9.29	8400	LTD	0.9±0.1
Nagasaki	NAGASAKI	9.13	9.28	1800	2.0±0.2	3.3±0.3
Namie	FUKUSHIMA	10.18	10.26	1031	1.4±0.3	2.1±0.5
Mito	IBARAKI	10.4	10.28	30780	0.1±0.01	0.2±0.02
Niigata	NIIGATA	10.4	10.25	2183	0.9±0.1	1.9±0.2
Fukui	FUKUI		10.18	1008	1.0±0.2	LTD
Shizuoka	SHIZUOKA	10.18	10.29	3240	1.4±0.1	5.4±0.4
Nagoya	AICHI	10.20	10.21	1530	0.8±0.2	1.7±0.3
Osaka	OSAKA	10.8	10.27	2592	2.0±0.2	2.5±0.2
Tottori	TOTTORI	10.5	10.29	924	2.4±0.3	3.5±0.5
Hiroshima	HIROSHIMA	10.6	10.25	7700	1.7±0.1	2.7±0.1
Nagasaki	NAGASAKI	10.4	10.19	1800	1.7±0.2	4.4±0.4

Name of I.P.H.	Sampling Station	Date from	Date to	Absorption volume (m^3)	^{90}Sr (10^{-3} pCi/m^3)	^{137}Cs (10^{-3} pCi/m^3)
Mito	IBARAKI	11.1	11.30	72882	0.1±0.01	0.1±0.01
Niigata	NIIGATA	11.1	11.29	5009	0.2±0.1	0.5±0.1
Fukui	FUKUI	11.19	11.26	14904	0.1±0.01	0.1±0.03
Shizuoka	SHIZUOKA	11.12	11.26	3240	0.9±0.1	1.1±0.1
Nagoya	AICHI	11.19	11.30	8820	0.3±0.03	0.7±0.1
Osaka	OSAKA	11.19	11.30	2592	0.7±0.2	1.7±0.3
Tottori	TOTTORI	11.5	11.26	1425	1.6±0.2	2.5±0.3
Hiroshima	HIROSHIMA	11.1	11.17	7800	1.4±0.1	1.9±0.1
Nagasaki	NAGASAKI	11.1	11.26	3000	1.9±0.2	3.0±0.3
Namie	FUKUSHIMA	12.7	12.8	1928	0.6±0.2	0.6±0.2
Mito	IBARAKI	12.1	12.23	42615	0.1±0.01	0.1±0.01
Niigata	NIIGATA	12.6	12.26	2980	LTD	LTD
Fukui	FUKUI		12.14	1008	LTD	LTD
Shizuoka	SHIZUOKA	12.23	12.24	2160	0.8±0.1	0.8±0.2
Nagoya	AICHI	12.20	12.22	1620	LTD	1.2±0.2
Osaka	OSAKA	12.2	12.17	2592	0.7±0.1	0.7±0.2
Tottori	TOTTORI	12.7	12.23	1157	0.8±0.5	LTD
Hiroshima	HIROSHIMA	12.7	12.22	8600	0.9±0.1	1.2±0.1
Nagasaki	NAGASAKI	12.13	12.22	1300	1.5±0.2	1.8±0.3
Namie	FUKUSHIMA	1972. 1.24	1.25	2119	2.3±0.2	3.3±0.3
Mito	IBARAKI	1.6	1.31	83178	0.1±0.01	0.1±0.01
Niigata	NIIGATA	1.9	1.31	8014	0.3±0.1	0.9±0.1
Fukui	FUKUI		1.14	2232	LTD	LTD
Shizuoka	SHIZUOKA	1.9	1.11	3240	1.0±0.1	1.7±0.2
Nagoya	AICHI	1.8	1.14	4410	0.5±0.1	0.7±0.1
Osaka	OSAKA	1.7	1.28	2592	0.5±0.1	0.7±0.2
Tottori	TOTTORI	1.6	1.28	1129	1.1±0.3	1.7±0.3
Hiroshima	HIROSHIMA	1.5	1.19	8100	1.0±0.1	1.3±0.1
Nagasaki	NAGASAKI	1.8	1.17	1800	3.0±0.2	2.7±0.3
Namie	FUKUSHIMA	2.23	2.24	2122	2.1±0.2	1.9±0.2
Mito	IBARAKI	2.3	2.28	24660	0.1±0.01	LTD
Niigata	NIIGATA	2.7	2.28	4007	0.3±0.1	0.6±0.1
Nagoya	AICHI	2.28	2.29	1620	LTD	LTD
Tottori	TOTTORI	2.4	2.29	1141	1.8±0.3	2.0±0.4
Hiroshima	HIROSHIMA	2.7	2.21	7800	1.6±0.1	2.2±0.1
Nagasaki	NAGASAKI	2.18	2.28	1800	1.9±0.2	2.4±0.2
Namie	FUKUSHIMA	3.6	3.7	2125	2.1±0.2	2.3±0.2
Mito	IBARAKI	3.2	3.30	12839	0.1±0.01	0.1±0.01
Niigata	NIIGATA	3.6	3.27	8014	0.6±0.1	1.3±0.1
Fukui	FUKUI		3.24	2232	LTD	LTD

Name of I.P.H.	Sampling Station	Sampling Date from	Sampling Date to	Absorption volume (m^3)	^{90}Sr (10^{-3} pCi/m^3)	^{137}Cs (10^{-3} pCi/m^3)
Shizuoka	SHIZUOKA		3.28	1080	1.7±0.3	2.2±0.4
Nagoya	AICHI	3.6	3.10	1080	LTD	LTD
Osaka	OSAKA	3.6	3.27	2592	0.6±0.3	2.4±0.2
Hiroshima	HIROSHIMA	3.6	3.26	7500	1.6±0.1	22.7±0.2
Tottori	TOTTORI	3.3	3.23	1164	1.5±0.3	3.6±0.5
Nagasaki	NAGASAKI	3.6	3.24	3300	2.1±0.1	4.0±0.3

Figure 2 Air-Borne Dust Sampling Location



Monthly and Cumulative Deposits of Strontium-90 and Cesium-137

(Meteorological Research Institute, Tokyo)

Since 1954, rain and fallout dust have been collected monthly, in a receiver (collected area $1m^2$) at the Meteorological Research Institute, Tokyo, to determine the content of Strontium-90 and Cesium-137.

Other samples collected monthly (receiver collection area, $0.5m^2$) at six stations located throughout Japan, have also been analyzed.

Location of the stations are shown in Figure 3.

The results of the observation during the period from January to December 1971 are shown in Table 3 and 4.

Total cumlative deposits of Strontium-90 and Cesium-137 in Tokyo reached the levels of 743 and 195.6mCi/Km^2 respectively, at the end of Dec., 1971.

Table 3. Monthly Deposits of ^{90}Sr and ^{137}Cs
– Jan. to Dec. 1971 –
by Y. Miyake, K. Saruhashi, Y. Katsuragi, and T. Kanazawa
(Meteorological Research Institute, Tokyo)
(Continued from Table 1, Issue No. 31, of this Publication)

Date	Sapporo		Akita		Sendai	
	^{90}Sr (mCi/Km^2)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	Precipitation (mm)
Jan. 1971	0.042	108.5	0.051	87.5	0.014	35.0
Feb.	0.032	49.0	0.125	115.5	0.026	51.0
Mar.	0.082	48.5	0.179	125.5	0.057	57.0
Apr.	0.096	20.0	0.327	104.0	0.210	97.5
May	0.127	64.5	0.441	88.0	0.202	106.0
June	*(0.13)	81.5	0.122	155.5	0.127	50.0
July	0.112	92.0	0.198	267.5	0.147	207.0
Aug.	0.015	40.0	0.057	270.0	0.046	245.5
Sept.	0.023	126.5	0.051	151.0	0.060	248.0
Oct.	0.079	181.5	0.126	154.5	0.052	126.0
Nov.	0.008	49.5	0.010	69.0	0.001	8.0
Dec.	0.013	94.5	0.058	197.0	0.006	24.0
Sum	*0.76	956.0	1.745	1785.0	0.948	1255.0

*estimated value

Date	Tokyo		Osaka		Fukuoka	
	^{90}Sr (mCi/Km^2)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	Precipitation (mm)
Jan. 1971	0.026	32.0	0.017	29.0	0.048	117.5
Feb.	0.029	38.0	0.025	32.0	0.052	59.5
Mar.	0.103	78.5	0.201	121.5	0.162	73.5
Apr.	0.221	123.0	0.201	107.5	0.172	38.5
May	0.150	110.0	0.375	161.0	0.152	101.0
June	0.171	91.5	0.141	211.5	0.094	141.5
July	0.184	153.5	0.074	102.5	0.077	199.0
Aug.	0.026	202.5	0.024	143.5	0.039	210.5
Sept.	0.047	265.5	0.032	131.5	0.033	141.5
Oct.	0.142	258.5	0.048	109.5	0.047	30.0
Nov.	0.005	30.5	0.004	4.0	0.010	18.0
Dec.	0.007	55.0	0.008	59.0	0.026	66.0
Sum	1.111	1438.5	1.150	1212.5	0.912	1196.5

- ○ Sapporo (Sapporo District Central Meteorological Observatory)
  Location: 43°03'N, 141°20'E (16.9m)
- ○ Akita (Akita District Meteorological Observatory)
  Location: 39°03'N, 140°06'E (9.1m)
- ○ Sendai (Sendai District Central Meteorological Observatory)
  Location: 38°16'N, 140°54'E (38.4m)
- ○ Tokyo (Tokyo District Central Meteorological Observatory)
  Location: 35°41'N, 139°46'E (4.1m)
- ○ Osaka (Osaka District Central Meteorological Observatory)
  Location: 34°39'N, 135°32'E (6.7m)
- ○ Fukuoka (Fukuoka District Central Meteorological Observatory
  Location: 33°35'N, 130°23'E (2.1m)

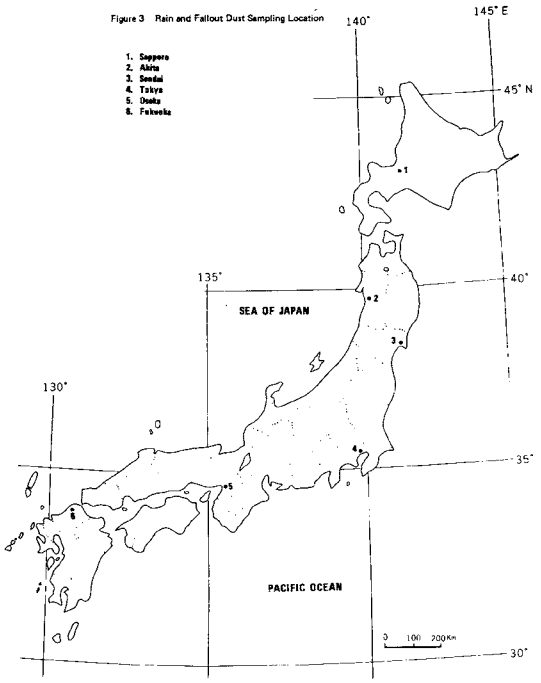


Table 4. Monthly Deposit of ^{90}Sr and ^{137}Cs in Meteorological Research Institute, Tokyo
– Jan. to Dec. 1971 –
by Y. Miyake, K. Saruhashi, Y. Katsuragi and T. Kanazawa
(Meteorological Research Institute, Tokyo)

Date	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)	$^{137}Cs/^{90}Sr$	$^{89}Sr/^{90}Sr$	Precipitation (mm)
Jan. 1971	0.025	0.039	1.6	1.8	61.5
Feb.	0.035	0.052	1.5	4.4	46.8
Mar.	0.109	0.219	2.0	11.0	79.3
Apr.	0.236	0.456	1.9	7.1	111.6
May	0.148	0.268	1.8	6.3	95.7
June	0.171	0.478	2.8	5.0	98.2
July	0.177	0.431	2.4	3.3	119.3
Aug.	0.027	0.092	3.4	1.3	185.5
Sept.	0.048	0.124	2.6	0.9	276.3
Oct.	0.066	0.072	1.1	–	255.7
Nov.	0.004	0.009	2.2	0.9	26.4
Dec.	0.002	0.005	2.5	2.5	39.6
Sum	1.048	2.245	2.1		1395.9

* Tokyo (Meteorological Research Institute, Tokyo)
Location: 35°42'N, 139°39'E

Table 5. Annual and Cumulative amount of ^{90}Sr at six cities in Japan
by Y. Miyake, K. Saruhashi, Y. Katsuragi, and T. Kanazawa

(Unit mCi/Km^2)

	Sapporo		Akita		Sendai	
	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative
Up to 1957						
58						
59		24.85		37.76		23.23
60	2.01	26.86	3.14	40.90	2.53	25.76
61	2.23	29.09	3.80	44.70	1.91	27.67
62	10.58	39.67	14.63	59.33	10.12	37.79
63	21.26	60.93	40.28	99.61	17.00	54.79
64	17.41	78.34	21.29	120.90	15.12	69.91
65	3.80	82.14	9.92	130.82	3.00	72.91
66	2.31	84.45	4.23	130.05	1.79	74.70
67	1.01	85.46	1.75	136.80	0.90	75.60
68	1.20	86.66	1.88	138.68	1.28	76.88
69	1.17	87.83	2.02	140.70	1.11	77.99
70	1.06	88.89	1.88	142.58	0.81	78.80
71	0.76	89.65	1.75	144.33	0.95	79.75

	Tokyo (M.R.I.)		Tokyo (J.M.A.)		Osaka		Fukuoka	
	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative
Up to 1957		9.00						
58	5.28	14.28						
59	8.09	22.37				15.52		25.50
60	2.37	24.76	2.69		2.14	17.66	2.58	28.08
61	2.08	26.84	1.71		1.05	18.71	2.80	30.88
62	8.09	34.93	8.13		4.35	23.06	12.36	43.24
63	19.06	53.99	19.34		13.79	36.85	19.97	63.21
64	8.60	62.59	9.40		7.62	44.47	8.73	71.94
65	4.27	66.86	3.28		2.40	46.87	3.76	75.70
66	1.78	68.64	1.89		1.68	48.55	1.86	77.56
67	0.81	69.45	0.65		0.79	49.34	0.97	78.53
68	1.28	70.74	1.25		1.24	50.58	1.20	79.73
69	1.17	71.91	1.13		0.91	51.49	1.14	80.97
70	1.43	73.34	1.23		0.81	52.30	(1.07)	82.04
71	1.05	74.39	1.11		1.15	53.45	0.91	82.95

Strontium-90 and Cesium-137 in Rain and Dry Fallout

(Japan Analytical Chemistry Research Institute)

Since May 1963, the Japan Analytical Chemistry Research Institute has measured the level of Strontium -90 and Cesium-137 in Rain and Dry-Fallout samples aquired at various locations throughout Japan.

Sampling and pre-treatment for concentration were performed by 25 prefectural public health laboratories throughout Japan.

Sampling locations are indicated in Figure 4.

The collection tray has an area of 5000 cm^2, and is exposed to rain and dust for about a month. The depth of water in the tray is kept at 10 mm to prevent dust from being blown away. At the end of each month, water in the tray and water used to wash the tray are combined with strontium and cesium carries, and passed through a column filled with sodium type cation exchange resin (Dowex 50W-X8, 50-100 mesh). The column was then sent to the Japan Analytical Chemistry Research Institute for analysis.

After the fraction containing both Strontium-90 and Cesium-137 was eluted from the resin, radiochemical analysis was carried out using the method recommended by Science and Technology Agency.

Results obtained during the period from April 1971 to March 1972 are shown in Table 6.

Table 6. ^{90}Sr and ^{137}Cs in Rain and Dry Fallout
– Apr., 1971 to Mar., 1972 –
(Japan Analytical Chemistry Research Institute)
(Continued from Table 7, No. 30 of this Publication)

Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
Apr. 1971				
Sapporo, HOKKAIDO	30	19.0	0.10	0.17
Aomori, AOMORI	30	49.0	0.03	0.09
Sendai, MIYAGI	30	106.4	0.33	0.50
Akita, AKITA	30	104.0	0.40	0.52
Mito, IBARAKI	30	180.5	0.24	0.37
TOKYO	30	51.6	0.18	0.28
Yokohama, KANAGAWA	32	168.0	0.21	0.40
Niigata, NIIGATA	31	83.5	0.22	0.31
Kanazawa, ISHIKAWA	30	169.2	0.28	0.31
Fukui, FUKUI	30	157.6	0.19	0.39
Shizuoka, SHIZUOKA	28	129.5	0.67	1.13
Nagoya, AICHI	33	135.0	0.37	0.52
Kyoto, KYOTO	30	147.6	0.26	0.32
Osaka, OSAKA	30	131.7	0.21	0.35
Kobe, HYOGO	30	102.2	0.28	0.42
Wakayama, WAKAYAMA	30	113.0	0.19	0.24
Tottori, TOTTORI	30	82.9	0.21	0.31
Matsue, SHIMANE	30	63.1	0.15	0.21
Okayama, OKAYAMA	30	81.9	0.15	0.16
Hiroshima, HIROSHIMA	30	81.5	0.19	0.26

	Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
	Yamaguchi, YAMAGUCHI	29	45.5	0.13	0.22
	Hagi, YAMAGUCHI	28	50.0	0.15	0.33
	Kochi, KOCHI	39	236.2	0.59	0.80
	Fukuoka, FUKUOKA	30	49.5	0.15	0.24
	Saga, SAGA	8	14.0	0.04	0.06
	Nagasaki, NAGASAKI	30	43.0	0.10	0.15
	Kagoshima, KAGOSHIMA	29	92.0	0.15	0.19
May	'71				
	Sapporo, HOKKAIDO	31	145.5	0.11	0.11
	Aomori, AOMORI	31	46.5	0.05	0.09
	Sendai, MIYAGI	31	106.6	0.18	0.27
	Fukushima, FUKUSHIMA	31	63.5	0.08	0.18
	Akita, AKITA	31	90.6	0.19	0.32
	Mito, IBARAKI	31	75.0	0.17	0.34
	TOKYO	31	95.0	0.28	0.37
	Yokohama, KANAGAWA	32	86.0	0.25	0.37
	Niigata, NIIGATA	27	77.0	0.23	0.33
	Kanazawa, ISHIKAWA	31	114.5	0.21	0.25
	Fukui, FUKUI	31	148.8	0.31	0.48
	Shizuoka, SHIZUOKA	30	287.5	0.21	0.35
	Nagoya, AICHI	28	169.0	0.25	0.39
	Kyoto, KYOTO	32	156.0	0.12	0.47
	Osaka, OSAKA	31	145.0	0.22	0.36
	Kobe, HYOGO	32	140.4	0.27	0.37
	Wakayama, WAKAYAMA	31	145.5	0.11	0.11
	Tottori, TOTTORI	31	76.2	0.18	0.27
	Matsue, SHIMANE	31	96.1	0.16	0.30
	Okayama, OKAYAMA	31	100.5	0.22	0.26
	Hiroshima, HIROSHIMA	31	147.2	0.08	0.12
	Yamaguchi, YAMAGUCHI	32	194.5	0.18	0.28
	Hagi, YAMAGUCHI	31	85.0	0.13	0.16
	Kochi, KOCHI	25	276.0	0.22	0.29
	Fukuoka, FUKUOKA	31	116.9	0.12	0.18
	Saga, SAGA	31	204.9	0.09	0.13
	Nagasaki, NAGASAKI	31	308.0	0.22	0.38
	Kagoshima, KAGOSHIMA	32	272.0	0.27	0.38
June	'71				
	Sapporo, HOKKAIDO	30	76.5	0.17	0.23
	Aomori, AOMORI	30	74.0	0.02	0.04
	Sendai, MIYAGI	30	57.0	0.22	0.31
	Akita, AKITA	30	155.5	0.38	0.53
	Fukushima, FUKUSHIMA	30	79.8	0.42	0.50

	Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
	Mito, IBARAKI	30	107.0	0.38	0.56
	TOKYO	30	88.2	0.30	0.39
	Yokohama, KANAGAWA	31	96.0	0.16	0.19
	Niigata, NIIGATA	29	143.1	0.39	0.55
	Kanazawa, ISHIKAWA	30	287.5	0.40	0.56
	Fukui, FUKUI	30	208.7	0.36	0.64
	Shizuoka, SHIZUOKA	30	125.0	0.23	0.29
	Nagoya, AICHI	30	117.0	0.30	0.44
	Kyoto, KYOTO	29	123.4	0.15	0.40
	Osaka, OSAKA	30	179.7	0.20	0.57
	Kobe, HYOGO	32	166.7	0.18	0.46
	Wakayama, WAKAYAMA	30	159.0	0.19	0.41
	Tottori, TOTTORI	30	192.3	0.21	0.50
	Matsue, SHIMANE	30	344.9	0.18	0.33
	Okayama, OKAYAMA	30	149.4	0.18	0.55
	Hiroshima, HIROSHIMA	30	165.9	0.11	0.39
	Yamaguchi, YAMAGUCHI	30	186.5	0.16	0.57
	Hagi, YAMAGUCHI	30	204.5	0.24	0.72
	Kochi, KOCHI	31	210.4	0.30	0.82
	Fukuoka, FUKUOKA	30	173.0	0.23	0.70
	Saga, SAGA	30	309.0	0.16	0.19
	Nagasaki, NAGASAKI	30	350.0	0.19	0.35
	Kagoshima, KAGOSHIMA	30	659.0	0.18	0.53
July	'71				
	Sapporo, HOKKAIDO	31	96.0	0.15	0.22
	Aomori, AOMORI	31	119.0	0.05	0.10
	Sendai, MIYAGI	31	157.9	0.23	0.32
	Akita, AKITA	31	268.8	0.22	0.37
	Fukushima, FUKUSHIMA	31	128.0	0.32	0.45
	Mito, IBARAKI	32	68.5	0.16	0.24
	TOKYO	31	117.6	0.24	0.32
	Yokohama, KANAGAWA	33	58.0	0.19	0.28
	Niigata, NIIGATA	26	313.5	0.43	0.61
	Kanazawa, ISHIKAWA	31	390.5	0.21	0.31
	Fukui, FUKUI	31	311.7	0.21	0.39
	Shizuoka, SHIZUOKA	29	143.8	0.06	0.13
	Nagoya, AICHI	32	413.0	0.02	0.07
	Kyoto, KYOTO	32	300.0	0.24	0.07
	Osaka, OSAKA	32	142.6	0.08	0.14

Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
Kobe, HYOGO	32	122.7	0.10	0.18
Wakayama, WAKAYAMA	31	156.5	0.07	0.07
Tottori, TOTTORI	32	358.9	0.17	0.22
Matsue, SHIMANE	31	358.9	0.17	0.21
Okayama, OKAYAMA	32	100.9	0.10	0.15
Hiroshima, HIROSHIMA	31	241.8	0.19	0.28
Yamaguchi, YAMAGUCHI	32	266.5	0.09	0.16
Hagi, YAMAGUCHI	31	350.5	0.15	0.21
Kochi, KOCHI	31	199.6	0.14	0.17
Fukuoka, FUKUOKA	31	192.2	0.12	0.18
Saga, SAGA	31	159.9	0.20	0.43
Nagasaki, NAGASAKI	32	551.0	0.11	0.18
Kagoshima, KAGOSHIMA	31	357.6	0.15	0.21
Aug. '71				
Sapporo, HOKKAIDO	31	40.0	0.04	0.05
Aomori, AOMORI	31	86.0	0.02	0.04
Sendai, MIYAGI	31	175.7	0.15	0.21
Akita, AKITA	31	270.0	0.12	0.17
Fukushima, FUKUSHIMA	31	216.5	0.04	0.15
Fukushima, FUKUSHIMA	31	216.5	0.07	0.10
Mito, IBARAKI	30	207.5	0.04	0.09
TOKYO	31	166.9	0.04	0.07
Yokohama, KANAGAWA	31	135.2	0.03	0.05
Niigata, NIIGATA	37	121.5	0.05	0.10
Kanazawa, ISHIKAWA	31	95.0	0.04	0.08
Fukui, FUKUI	31	57.5	0.03	0.06
Shizuoka, SHIZUOKA	30	123.5	0.07	0.10
Nagoya, AICHI	31	380.0	0.05	0.12
Kyoto, KYOTO	30	158.8	0.04	0.07
Osaka, OSAKA	28	97.9	0.05	0.10
Kobe, HYOGO	31	154.1	0.03	0.03
Wakayama, WAKAYAMA	31	263.0	0.06	0.09
Tottori, TOTTORI	30	83.1	0.03	0.03
Matsue, SHIMANE	31	123.8	0.04	0.05
Okayama, OKAYAMA	30	45.3	0.03	0.05
Hiroshima, HIROSHIMA	31	140.8	0.06	0.09
Yamaguchi, YAMAGUCHI	29	457.5	0.05	0.08
Hagi, YAMAGUCHI	31	443.5	0.03	0.04
Kochi, KOCHI	30	365.4	0.07	0.12

Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
Fukuoka, FUKUOKA	31	201.9	0.04	0.06
Saga, SAGA	31	253.3	0.03	0.05
Nagasaki, NAGASAKI	30	321.0	0.03	0.06
Kagoshima, KAGOSHIMA	31	425.5	0.03	0.03
Sept. '71				
Sapporo, HOKKAIDO	30	126.5	0.04	0.06
Aomori, AOMORI	30	104.5	0.05	0.06
Sendai, MIYAGI	30	335.1	0.10	0.11
Akita, AKITA	30	151.0	0.10	0.14
Fukushima, FUKUSHIMA	30	297.1	0.07	0.09
Mito, IBARAKI	30	228.5	0.05	0.06
TOKYO	30	248.2	0.05	0.10
Yokohama, KANAGAWA	31	337.5	0.06	0.07
Niigata, NIIGATA	29	211.5	0.08	0.10
Kanazawa, ISHIKAWA	31	321.0	0.07	0.10
Fukui, FUKUI	30	274.2	0.06	0.09
Shizuoka, SHIZUOKA	29	208.5	0.05	0.07
Nagoya, AICHI	29	318.5	0.04	0.03
Kyoto, KYOTO	30	298.8	0.04	0.05
Osaka, OSAKA	30	154.0	0.03	0.03
Kobe, HYOGO	31	175.5	0.04	0.05
Wakayama, WAKAYAMA	30	242.0	0.03	0.03
Tottori, TOTTORI	30	256.1	0.06	0.07
Matsue, SHIMANE	30	147.0	0.05	0.08
Okayama, OKAYAMA	30	100.5	0.03	0.03
Hiroshima, HIROSHIMA	30	208.7	0.03	0.04
Yamaguchi, YAMAGUCHI	30	335.5	0.06	0.07
Hagi, YAMAGUCHI	34	224.5	0.04	0.04
Kochi, KOCHI	31	262.8	0.04	0.05
Fukuoka, FUKUOKA	30	157.6	0.01	0.04
Saga, SAGA	30	127.0	0.09	0.10
Nagasaki, NAGASAKI	30	147.0	0.04	0.05
Kagoshima, KAGOSHIMA	31	214.0	0.03	0.04
Oct. '71				
Sapporo, HOKKAIDO	31	158.5	0.04	0.06
Aomori, AOMORI	31	197.6	0.03	0.04
Sendai, MIYAGI	31	162.8	0.04	0.06
Akita, AKITA	31	153.5	0.08	0.11
Fukushima, FUKUSHIMA	31	103.2	0.04	0.05
Mito, IBARAKI	31	207.0	0.07	0.11
TOKYO	31	179.0	0.07	0.11
Yokohama, KANAGAWA	32	275.5	0.05	0.07
Niigata, NIIGATA	32	94.5	0.03	0.05
Kanazawa, ISHIKAWA	31	168.0	0.08	0.12

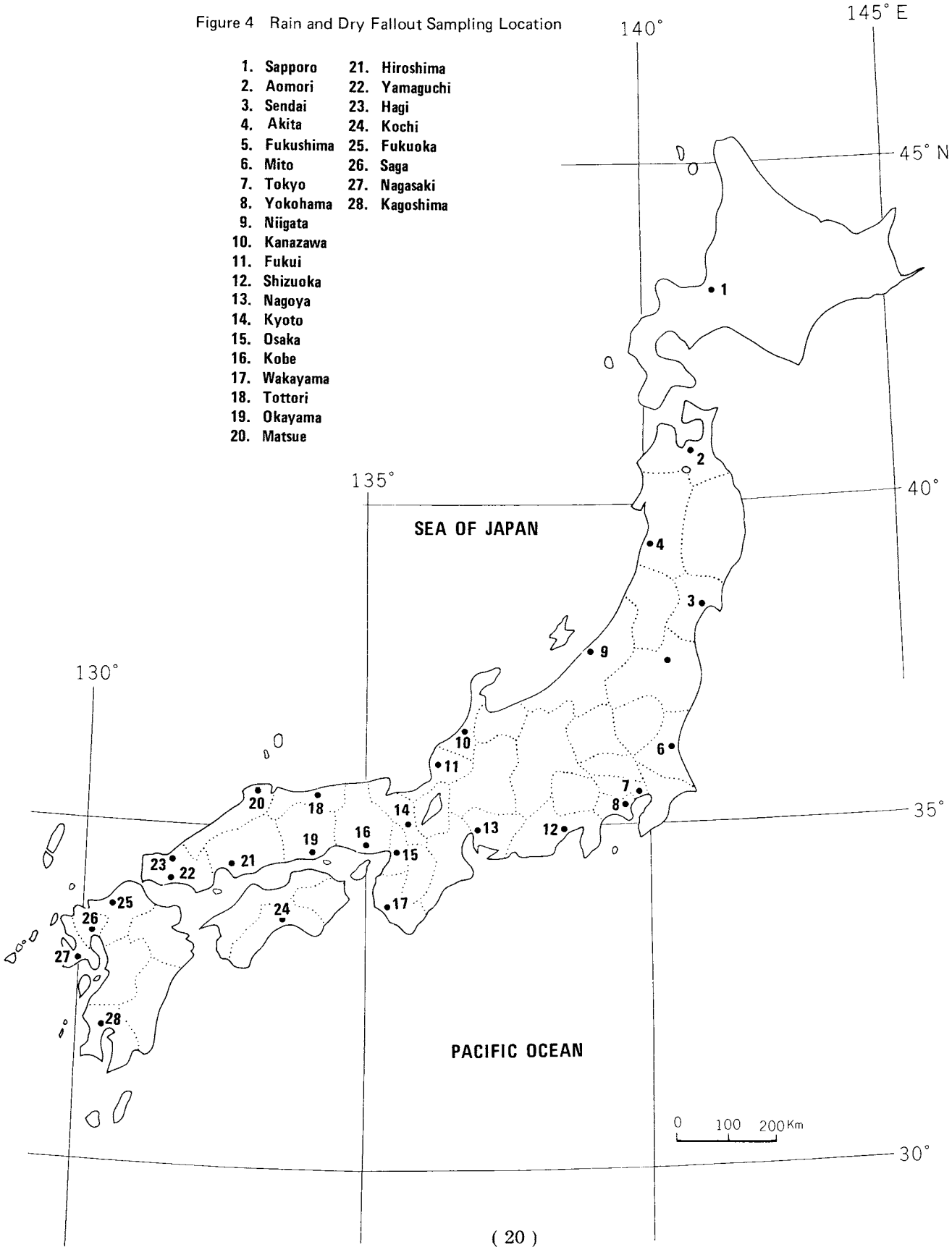
Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
Fukui, FUKUI	31	192.7	0.09	0.13
Shizuoka, SHIZUOKA	33	190.0	0.04	0.06
Nagoya, AICHI	31	108.5	0.03	0.04
Kyoto, KYOTO	31	146.1	0.03	0.04
Osaka, OSAKA	31	100.8	0.02	0.04
Kobe, HYOGO	32	96.5	0.02	0.03
Wakayama, WAKAYAMA	31	131.5	0.02	0.04
Tottori, TOTTORI	31	103.0	0.08	0.15
Matsue, SHIMANE	31	73.9	0.07	0.12
Okayama, OKAYAMA	30	68.2	0.03	0.04
Hiroshima, HIROSHIMA	30	59.6	0.02	0.03
Yamaguchi, YAMAGUCHI	26	62.5	0.03	0.04
Hagi, YAMAGUCHI	27	63.5	0.03	0.05
Kochi, KOCHI	30	122.6	0.02	0.07
Fukuoka, FUKUOKA	31	43.5	0.01	0.03
Saga, SAGA	31	32.4	0.03	0.04
Nagasaki, NAGASAKI	31	59.5	0.01	0.02
Kagoshima, KAGOSHIMA	32	130.2	0.02	0.03
Nov. '71				
Sapporo, HOKKAIDO	30	43.5	0.04	0.06
Aomori, AOMORI	30	77.5	0.03	0.06
Sendai, MIYAGI	30	7.1	0.02	0.04
Akita, AKITA	30	69.5	0.04	0.10
Fukushima, FUKUSHIMA	30	18.1	0.01	0.04
Mito, IBARAKI	30	16.5	0.01	0.02
TOKYO	30	16.0	0.02	0.02
Yokohama, KANAGAWA	31	22.0	0.02	0.04
Niigata, NIIGATA	29	187.0	0.08	0.15
Kanazawa, ISHIKAWA	30	207.5	0.15	0.24
Fukui, FUKUI	30	142.5	0.12	0.19
Shizuoka, SHIZUOKA	25	23.5	0.06	0.05
Nagoya, AICHI	30	9.0	0.02	0.03
Kyoto, KYOTO	30	4.9	0.01	0.02
Osaka, OSAKA	30	24.2	0.01	0.03
Kobe, HYOGO	31	4.5	0.02	0.02
Wakayama, WAKAYAMA	30	19.5	0.02	0.03
Tottori, TOTTORI	30	76.9	0.04	0.11
Matsue, SHIMANE	30	69.5	0.05	0.12
Okayama, OKAYAMA	30	7.9	0.01	0.01
Hiroshima, HIROSHIMA	31	1.8	0.01	0.01
Yamaguchi, YAMAGUCHI	30	6.5	0.01	0.03
Hagi, YAMAGUCHI	30	17.0	0.02	0.04
Kochi, KOCHI	30	27.9	0.02	0.02

	Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
	Fukuoka, FUKUOKA	30	22.1	0.03	0.06
	Saga, SAGA	30	10.3	0.02	0.04
	Nagasaki, NAGASAKI	30	11.5	0.02	0.04
	Kagoshima, KAGOSHIMA	31	22.8	0.01	0.02
Dec.	'71				
	Sapporo, HOKKAIDO	32	94.5	0.05	0.06
	Aomori, AOMORI	31	198.0	0.02	0.05
	Sendai, MIYAGI	28	34.1	0.01	0.01
	Akita, AKITA	28	195.0	0.11	0.21
	Fukushima, FUKUSHIMA	34	32.0	0.01	0.03
	Mito, IBARAKI	35	46.5	0.02	0.03
	TOKYO	35	55.9	0.01	0.02
	Yokohama, KANAGAWA	37	61.0	0.02	0.12
	Niigata, NIIGATA	37	242.0	0.11	0.21
	Kanazawa, ISHIKAWA	36	423.5	0.16	0.25
	Fukui, FUKUI	34	348.3	0.19	0.29
	Shizuoka, SHIZUOKA	31	104.5	0.05	0.08
	Nagoya, AICHI	35	57.5	0.03	0.05
	Kyoto, KYOTO	34	81.0	0.03	0.06
	Osaka, OSAKA	35	103.5	0.03	0.04
	Kobe, HYOGO	37	61.4	0.02	0.03
	Wakayama, WAKAYAMA	36	80.5	0.03	0.04
	Tottori, TOTTORI	35	111.5	0.12	0.17
	Matsue, SHIMANE	31	91.8	0.08	0.14
	Okayama, OKAYAMA	35	31.2	0.01	0.02
	Hiroshima, HIROSHIMA	36	36.7	0.02	0.03
	Yamaguchi, YAMAGUCHI	36	31.0	0.04	0.05
	Haqi, YAMAGUCHI	36	81.5	0.08	0.13
	Kochi, KOCHI	36	91.3	0.04	0.04
	Fukuoka, FUKUOKA	31	79.8	0.04	0.08
	Saga, SAGA	31	33.5	0.01	0.02
	Nagasaki, NAGASAKI	34	48.5	0.44	0.55
	Kagoshima, KAGOSHIMA	37	73.1	0.03	0.05
Jan.	1972				
	Sapporo, HOKKAIDO	30	144.0	0.05	0.06
	Aomori, AOMORI	31	194.5	0.01	0.02
	Sendai, MIYAGI	31	55.3	0.10	0.17
	Akita, AKITA	27	147.5	0.07	0.14
	Fukushima, FUKUSHIMA	29	102.1	0.05	0.11
	Mito, IBARAKI	27	126.0	0.08	0.15
	TOKYO	27	118.8	0.02	0.03
	Yokohama, KANAGAWA	26	111.1	0.03	0.05
	Niigata, NIIGATA	29	130.5	0.08	0.15
	Kanazawa, ISHIKAWA	28	128.5	0.09	0.16

	Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
	Fukui, FUKUI	28	94.2	0.11	0.19
	Shizuoka, SHIZUOKA	31	142.5	0.04	0.10
	Nagoya, AICHI	27	87.0	0.05	0.07
	Kyoto, KYOTO	28	92.3	0.05	0.08
	Osaka, OSAKA	27	55.1	0.05	0.07
	Kobe, HYOGO	28	51.9	0.04	0.03
	Wakayama, WAKAYAMA	30	91.0	0.02	0.05
	Tottori, TOTTORI	28	205.1	0.08	0.13
	Matsue, SHIMANE	32	186.2	0.15	0.24
	Okayama, OKAYAMA	27	55.8	0.04	0.03
	Hiroshima, HIROSHIMA	27	84.0	0.02	0.13
	Yamaguchi, YAMAGUCHI	28	141.5	0.05	0.09
	Hagi, YAMAGUCHI	21	131.5	0.08	0.13
	Kochi, KOCHI	27	114.1	0.05	0.08
	Fukuoka, FUKUOKA	31	186.8	0.08	0.13
	Saga, SAGA	31	166.6	0.07	0.06
	Nagasaki, NAGASAKI	28	236.5	0.08	0.13
	Kagoshima, KAGOSHIMA	27	148.4	0.05	0.08
Feb.	'72				
	Sapporo, HOKKAIDO	29	216.5	0.03	0.05
	Sendai, MIYAGI	29	165.0	0.06	0.08
	Akita, AKITA	29	80.5	0.05	0.10
	Fukushima, FUKUSHIMA	29	121.9	0.04	0.07
	Mito, IBARAKI	29	112.0	0.06	0.11
	TOKYO	29	156.6	0.02	0.06
	Yokohama, KANAGAWA	30	153.5	0.04	0.08
	Niigata, NIIGATA	28	117.5	0.09	0.18
	Kanazawa, ISHIKAWA	28	154.5	0.14	0.21
	Fukui, FUKUI	29	161.0	0.10	0.14
	Shizuoka, SHIZUOKA	35	90.0	0.07	0.11
	Nagoya, AICHI	29	103.0	0.04	0.06
	Kyoto, KYOTO	29	107.2	0.04	0.06
	Osaka, OSAKA	29	110.4	0.04	0.06
	Kobe, HYOGO	29	112.8	0.05	0.07
	Wakayama, WAKAYAMA	25	92.5	0.03	0.05
	Tottori, TOTTORI	29	179.1	0.13	0.24
	Matsue, SHIMANE	29	153.6	0.15	0.22
	Okayama, OKAYAMA	29	94.3	0.03	0.05
	Hiroshima, HIROSHIMA	29	91.4	0.03	0.04
	Yamaguchi, YAMAGUCHI	29	92.0	0.05	0.09
	Hagi, YAMAGUCHI	31	129.5	0.13	0.24
	Kochi, KOCHI	29	210.9	0.09	0.13
	Fukuoka, FUKUOKA	29	167.1	0.07	0.11
	Saga, SAGA	29	154.7	0.04	0.07

Location	Duration (days)	Precipitation (mm)	^{90}Sr (mCi/Km^2)	^{137}Cs (mCi/Km^2)
Nagasaki, NAGASAKI	29	131.5	0.05	0.08
Kagoshima, KAGOSHIMA	30	149.8	0.08	0.13
Mar. '72				
Sapporo, HOKKAIDO	31	29.5	0.03	0.05
Aomori, AOMORI	31	109.0	0.01	0.02
Sendai, MIYAGI	31	60.2	0.04	0.08
Akita, AKITA	31	164.6	0.07	0.14
Fukushima, FUKUSHIMA	31	52.8	0.05	0.08
Mito, IBARAKI	31	36.5	0.04	0.07
TOKYO	31	41.4	0.04	0.06
Yokohama, KANAGAWA	31	42.5	0.09	0.14
Niigata, NIIGATA	31	175.5	0.77	0.12
Kanazawa, ISHIKAWA	30	205.0	0.07	0.25
Fukui, FUKUI	31	182.1	0.12	0.23
Shizuoka, SHIZUOKA	21	292.5	0.28	0.43
Nagoya, AICHI	31	126.0	0.12	0.16
Kyoto, KYOTO	30	210.3	0.08	0.12
Osaka, OSAKA	30	90.0	0.07	0.13
Kobe, HYOGO	34	70.0	0.02	0.13
Wakayama, WAKAYAMA	31	93.5	0.07	0.12
Tottori, TOTTORI	33	100.6	0.10	0.17
Matsue, SHIMANE	31	173.0	0.15	0.18
Okayama, OKAYAMA	31	60.1	0.03	0.06
Hiroshima, HIROSHIMA	31	130.6	0.06	0.08
Yamaguchi, YAMAGUCHI	29	213.0	0.13	0.19
Hagi, YAMAGUCHI	28	189.5	0.07	0.23
Kochi, KOCHI	31	113.3	0.09	0.13
Fukuoka, FUKUOKA	31	166.9	0.08	0.14
Saga, SAGA	31	159.0	0.10	0.14
Nagasaki, NAGASAKI	31	119.5	0.10	0.11
Kagoshima, KAGOSHIMA	31	122.4	0.11	0.17

Figure 4 Rain and Dry Fallout Sampling Location



Dietary Data

Strontium-90 and Cesium-137 in Milk

(Japan Analytical Chemistry Research Institute)

Since December 1961, milk sampels from various parts of Japan have been collected by prefectural public health laboratories and analyzed for Strontium-90 and Cesium-137 content at the Japan Analytical Chemistry Research Institute. Sampling locations are indicated in Figure 5.

Three liters of fresh milk were purchased at a representative farm in each prefecture and carbonised by the public health laboratories.

The carbonized samples were sent to the Japan Analytical Chemistry Research Institute and ashed, then analyzed using the method recommended by Science and Technology Agency.

Results obtained during the period from April 1971 to February 1972 are shown in Table 7.

Table 7. ^{90}Sr and ^{137}Cs in Milk
– Apr. 1971 to Feb. 1972 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 22, No. 30 of this Publication)

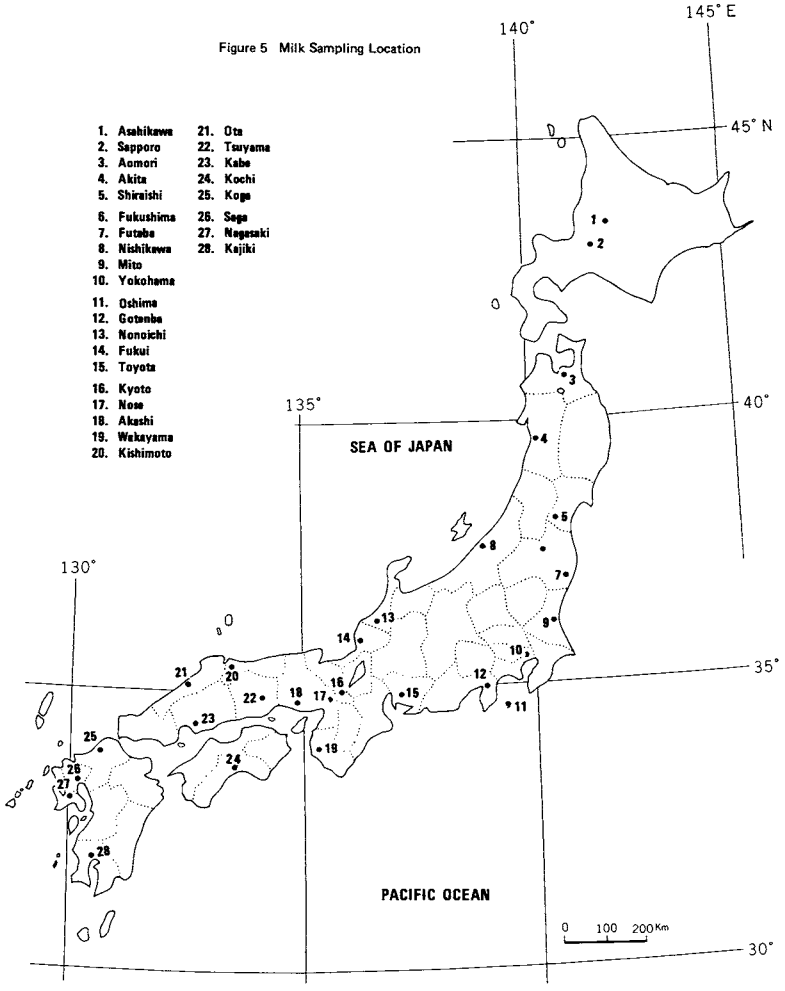
Name of I.P.H.	Sampling		Ash (g)	Component			^{90}Sr		^{137}Cs	
	Station	Date		Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	S.U	(pCi/ℓ)	C.U
				– 1971 –						
Aomori city	AOMORI	4.24	12.7	6.33	0.88	1.29	5.3±0.5	6.0±0.6	16.8±1.1	13.0±0.9
Akita city	AKITA	4.23	13.5	6.77	0.89	1.51	5.7±0.5	6.4±0.6	12.8±1.0	8.5±0.7
Shiraishi city	MIYAGI	4.28	12.9	6.47	0.98	1.36	3.4±0.3	3.5±0.3	8.3±0.6	6.1±0.4
Fukushima city	FUKUSHIMA	4.23	15.5	7.73	1.17	1.60	7.6±0.7	6.5±0.6	10.2±4	63.8±2.4
Okuma	〃	4.20	14.0	7.00	1.02	1.60	4.1±0.3	4.0±0.3	11.1±0.9	6.9±0.6
Nishikawa	NIIGATA	4.19	14.7	7.37	1.02	1.37	6.3±0.5	6.2±0.5	10.3±0.7	7.5±0.5
Mito city	IBARAKI	4.21	14.7	7.33	1.02	1.49	2.0±0.2	2.0±0.2	11.4±0.9	7.7±0.6
Izu Oshima	TOKYO	4.	12.8	6.38	0.88	1.41	5.5±0.5	6.3±0.6	25.9±1.6	18.3±1.1
Gotenba city	SHIZUOKA	4.30	13.1	6.53	1.03	1.27	4.0±0.3	3.9±0.3	16.5±1.1	13.0±0.9
Nonoichi	ISHIKAWA	4.30	12.3	6.13	0.85	1.27	3.0±0.2	3.5±0.2	8.7±0.7	6.9±0.6
Fukui city	FUKUI	4.19	14.5	7.27	0.99	1.41	5.1±0.5	5.2±0.5	8.2±0.8	5.8±0.6
Toyota city	AICHI	4.20	13.3	6.67	0.84	1.39	1.6±0.2	1.9±0.2	5.0±0.5	3.6±0.4
Kyoto city	KYOTO	4.22	13.9	6.79	1.06	1.37	2.3±0.2	2.2±0.2	4.8±0.4	3.5±0.3
Nose	OSAKA	4.24	15.1	7.57	1.16	1.48	3.1±0.3	2.7±0.3	6.2±0.5	4.2±0.3
Wakayama city	WAKAYAMA	4.22	11.5	5.77	0.82	1.13	1.4±0.1	1.7±0.1	3.6±0.4	3.2±0.4
Tsuyama city	OKAYAMA	4.23	14.7	7.33	1.16	1.57	2.4±0.2	2.1±0.2	11.1±1.0	7.1±0.6
Ota city	SHIMANE	4.30	14.2	7.10	1.06	1.31	11.2±0.4	10.6±0.4	62.0±2.9	47.3±2.2
Kabe	HIROSHIMA	4.23	14.5	7.23	1.05	1.35	4.0±0.3	3.8±0.3	5.3±0.4	3.9±0.3
Kochi city	KOCHI	4.20	13.9	6.93	1.06	1.39	3.5±0.4	3.3±0.4	7.3±0.6	5.3±0.4
Koga	FUKUOKA	4.28	15.2	7.60	1.17	1.53	3.6±0.4	3.1±0.3	13.7±1.0	9.0±0.7

Name of I.P.H.	Sampling		Ash (g)	Component			^{90}Sr		^{137}Cs	
	Station	Date		Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	S.U	(pCi/ℓ)	C.U
Saga city	SAGA	4.27	15.4	7.70	1.21	1.49	3.6±0.3	3.0±0.2	21.0±1.3	14.1±0.9
Nagasaki city	NAGASAKI	4.28	12.9	6.43	0.96	1.24	6.3±0.5	6.6±0.5	10.9±0.9	8.8±0.7
Asahikawa city	HOKKAIDO	5.17	14.7	7.33	1.16	1.54	10.1±0.6	8.7±0.5	20.1±1.3	13.1±0.8
Yokohama city	KANAGAWA	5.25	14.8	7.42	0.98	1.44	1.6±0.2	1.6±0.2	6.0±0.5	4.2±0.3
Akashi city	HYOGO	5.7	13.9	6.93	1.10	1.36	2.4±0.2	2.2±0.2	7.3±0.5	5.4±0.4
Kishimoto	TOTTORI	5.21	13.3	6.67	0.97	1.40	4.6±0.3	4.7±0.3	17.9±1.2	12.8±0.9
Ato	YAMAGUCHI	5.26	14.4	7.20	1.10	1.45	2.4±0.2	2.2±0.2	10.9±1.0	7.5±0.7
Kajiki	KAGOSHIMA	5.1	15.0	7.50	1.14	1.50	4.9±0.2	4.3±0.2	19.2±1.2	12.8±0.8
Sapporo city	HOKKAIDO	6.17	14.7	7.33	1.03	1.60	5.4±0.8	5.2±0.8	15.8±1.1	9.9±0.7
Asahikawa city	HOKKAIDO	7.19	14.6	7.30	1.10	1.62	10.5±0.8	9.5±0.7	17.3±1.3	10.7±0.8
Akita city	AKITA	7.8	14.8	7.40	1.02	1.66	4.9±0.4	4.8±0.4	10.1±0.7	6.1±0.4
Fukushima city	FUKUSHIMA	7.30	14.6	7.30	0.99	1.64	6.6±0.5	6.7±0.5	47.7±2.4	29.1±1.5
Okuma	〃	7.28	14.8	7.40	1.05	1.65	5.4±0.5	5.1±0.5	22.9±1.5	13.9±0.9
Shiraishi city	MIYAGI	7.13	17.1	8.53	0.99	1.54	3.7±0.4	3.7±0.4	11.6±1.0	7.5±0.6
Nishikawa	NIIGATA	7.15	14.2	7.10	1.03	1.57	5.3±0.4	5.1±0.4	8.3±0.7	5.3±0.4
Mito	IBARAKI	7.19	15.0	7.50	0.93	1.26	1.7±0.2	1.8±0.2	9.4±0.6	7.5±0.5
Isu Oshima	TOKYO	7.	13.9	6.95	1.00	1.49	2.8±0.3	2.8±0.3	61.9±3.4	41.5±2.3
Yokohama city	KANAGAWA	7.19	14.6	7.32	0.89	1.51	1.6±0.3	1.8±0.3	5.7±0.5	3.8±0.3
Gotenba city	SHIZUOKA	7.9	13.8	6.90	1.01	1.51	13.7±0.9	13.6±0.9	40.4±1.9	26.8±1.3
Nonoichi	ISHIKAWA	7.22	11.5	5.73	0.82	1.23	3.4±0.3	4.1±0.4	10.0±0.7	8.1±0.6
Fukui city	FUKUI	7.28	14.7	7.33	1.04	1.39	4.4±0.4	4.2±0.4	11.2±1.0	8.1±0.7
Toyota city	AICHI	7.12	13.5	6.77	1.00	1.42	2.0±0.3	2.0±0.3	8.0±0.7	5.6±0.5
Kyoto city	KYOTO	7.3	9.3	4.63	0.68	0.91	1.7±0.2	2.5±0.3	4.7±0.5	5.2±0.5
Nose	OSAKA	7.10	15.1	7.53	1.09	1.65	2.7±0.3	2.5±0.3	14.2±1.1	8.6±0.7
Wakayama city	WAKAYAMA	7.13	9.1	4.53	0.62	0.86	1.0±0.1	1.6±0.2	3.1±0.3	3.6±0.3
Akashi city	HYOGO	7.13	13.1	6.53	0.90	1.29	2.1±0.2	2.3±0.2	6.3 0.5	4.9±0.4
Kishimoto	TOTTORI	7.8	14.5	7.27	1.00	1.54	6.6±0.6	6.6±0.6	12.6 1.0	8.2±0.6
Tsuyama city	OKAYAMA	7.28	16.0	8.00	1.27	1.64	2.8±0.3	2.2±0.2	7.5 0.6	4.6±0.4
Kabe	HIROSHIMA	7.9	14.5	7.27	0.99	1.53	6.3±0.5	6.4±0.5	8.4 0.6	5.5±0.4
Ota city	SHIMANE	7.23	14.9	7.47	1.18	1.62	11.1±0.8	9.4±0.7	64.8 2.6	40.0±1.6
Ato	YAMAGUCHI	7.17	13.4	6.70	1.04	1.43	3.1±0.3	3.0±0.3	7.1±0.6	5.0±0.4
Kochi city	KOCHI	7.27	18.3	9.17	1.00	1.47	3.9±0.4	3.9±0.4	6.8±0.6	4.1±0.4
Koga	FUKUOKA	7.13	14.2	7.10	0.93	1.42	3.0±0.3	3.2±0.3	10.1±0.7	7.1±0.5
Saga city	SAGA	7.23	15.3	7.67	1.13	1.52	2.5±0.3	2.2±0.3	16.7±1.2	11.0±0.8
Nagasaki city	NAGASAKI	7.14	14.5	7.27	1.23	1.38	4.8±0.5	3.9±0.4	12.1±0.9	8.8±0.7
Kajiki	KAGOSHIMA	7.13	14.4	7.20	1.09	1.47	5.0±0.4	4.6±0.4	14.2±1.1	9.7±0.7
Sapporo city	HOKKAIDO	8.18	14.4	7.20	0.99	1.52	6.9±0.6	7.0±0.6	15.3±1.1	10.1±0.7
Aomori city	AOMORI	8.2	14.1	7.03	0.83	1.39	15.8±1.1	19.0±1.3	26.9±1.5	19.4±1.1
Asahikawa city	HOKKAIDO	9.20	14.9	7.47	1.06	1.60	9.1±0.7	8.6±0.7	15.4±1.3	9.6±0.8
Sapporo city	HOKKAIDO	10.13	15.3	7.63	1.12	1.59	4.4±0.3	3.9±0.3	22.3±1.5	14.0±0.9

Name of I.P.H.	Sampling		Ash (g)	Component			^{90}Sr		^{137}Cs	
	Station	Date		Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	S.U	(pCi/ℓ)	C.U
Aomori city	AOMORI	10.29	13.8	6.90	0.92	1.22	16.2±1.0	17.6±1.1	14.7±1.2	12.0±1.0
Akita city	AKITA	10.11	13.6	6.80	0.99	1.36	2.8±0.3	2.8±0.3	7.2±0.6	5.3±0.4
Shiraishi city	MIYAGI	10.11	17.7	8.87	1.06	1.60	5.6±0.4	5.3±0.4	23.0±1.4	24.4±0.9
Okuma	FUKUSHIMA	10.13	14.6	7.30	0.99	1.70	5.4±0.5	5.5±0.5	46.1±3.0	27.1±1.8
Mito city	IBARAKI	10.27	14.0	7.00	1.03	1.10	1.9±0.2	1.8±0.2	5.6±0.6	5.1±0.5
Nishikawa	NIIGATA	10.28	14.5	7.27	1.09	1.26	3.7±0.3	3.4±0.3	7.7±0.6	6.1±0.5
Yokohama city	KANAGAWA	10.	17.2	8.59	1.29	1.41	1.8±0.2	1.4±0.2	5.2±0.6	3.7±0.4
Gotenba city	SHIZUOKA	10.5	11.5	5.73	0.90	1.15	11.8±0.8	13.1±0.9	30.5±1.7	26.5±1.5
Toyota city	AICHI	10.28	13.2	6.60	0.87	1.44	6.6±0.2	1.8±0.2	5.8±0.5	4.0±0.3
Nonoichi	ISHIKAWA	10.14	14.5	7.23	1.03	1.56	2.6±0.2	2.5±0.2	6.9±0.6	4.4±0.4
Fukui city	FUKUI	10.15	13.2	6.60	1.00	1.56	5.0±0.4	5.0±0.4	19.1±1.3	12.2±0.8
"	"	10.27	10.0	7.40	1.18	1.26	4.7±0.5	4.0±0.4	7.9±0.8	6.3±0.6
Kyoto city	KYOTO	10.9	13.0	6.50	0.89	1.50	2.2±0.3	2.5±0.3	5,9±0.6	3.9±0.4
Nose	OSAKA	10.16	14.7	7.33	1.07	1.56	2.4±0.2	2.2±0.2	5.9±0.5	3.8±0.3
Wakayama city	WAKAYAMA	10.6	13.3	5.53	0.82	0.96	1.3±0.2	1.6±0.2	2.2±0.2	2.3±0.2
Akashi city	HYOGO	10.12	14.5	7.23	1.02	1.88	0.9±0.2	0.9±0.2	5.2±0.5	2.8±0.3
Kishimoto	TOTTORI	10.13	14.5	7.23	1.15	1.36	4.9±0.4	4.3±0.3	7.5±0.6	5.5±0.4
Tsuyama city	OKAYAMA	10.18	14.0	7.00	1.03	1.47	1.9±0.2	1.8±0.2	4.7±0.4	3.2±0.3
Ota city	SHIMANE	10.21	13.1	6.57	1.11	1.30	9.3±0.7	8.4±0.6	66.8±3.4	51.4 ±2.6
Kabe	HIROSHIMA	10.11	15.0	7.50	1.11	1.20	7.2±0.7	6.5±0.6	6.0±0.6	5.0±0.5
Ato	YAMAGUCHI	10.27	15.9	7.97	1.11	1.80	2.4±0.3	2.2±0.3	8.6±0.6	4.8±0.3
Kochi city	KOCHI	10.30	16.3	8.17	1.02	1.41	3.1±0.3	3.0±0.3	7.5±0.6	5.3±0.4
Koga	FUKUOKA	10.19	15.2	7.60	1.02	1.65	1.1±0.2	1.1±0.2	4.7±0.4	2.8±0.2
Sagacity	SAGA	10.15	14.5	7.27	1.07	1.32	2.1±0.2	2.0±0.2	8.6±0.6	6.5±0.5
Nagasaki city	NAGASAKI	10.29	15.1	7.53	1.07	1.57	4.0±0.4	3.7±0.4	10.8±0.9	6.9±0.6
Kajiki	KAGOSHIMA	10.8	15.0	7.50	1.09	1.49	3.4±0.3	3.1±0.3	10.6±0.7	7.1±0.5
				– 1972 –						
Asahikawa city	HOKKAIDO	1.17	20.0	7.67	1.12	1.52	9.4±0.6	8.4±0.5	17.5±0.8	11.5±0.5
Aomori city	AOMORI	1.25	13.5	6.77	1.37	1.32	7.5±0.6	5.5±0.4	19.5±0.6	14.8±0.5
Akita city	AKITA	1.10	14.9	7.47	1.05	1.39	6.7±0.4	6.4±0.4	10.7±0.8	7.7±0.6
Shiraishi city	MIYAGI	1.26	14.5	7.23	1.06	1.43	2.5±0.2	2.4±0.2	12.2±0.5	8.5±0.3
Okuma	FUKUSHIMA	1.25	7.3	7.30	1.10	1.42	6.1±0.6	5.5±0.5	11.3±0.7	8.0±0.5
Mito city	IBARAKI	1.11	13.3	6.67	0.95	1.28	2.1±0.2	2.2±0.2	8.2±0.4	6.4±0.3
"	"	1.11	12.1	6.07	0.94	1.09	1.7±0.2	1.8±0.2	3.6±0.3	3.3±0.3
Nishikawa	NIIGATA	1.14	14.9	7.43	0.86	1.37	4.1±0.3	4.8±0.3	11.9±0.5	8.7±0.4
Izu Oshima	TOKYO	1.	16.0	8.00	1.18	1.68	5.8±0.5	4.9±0.4	29.0±1.8	17.3±1.1
Yokohama	KANAGAWA	1.24	20.0	8.25	1.31	1.44	2.4±0.2	1.8±0.2	6.8±0.5	4.7±0.3
Gotenba city	SHIZUOKA	1.24	14.3	7.13	1.08	1.39	2.7±0.3	2.5±0.3	18.4±1.3	13.2±0.9
Toyota city	AICHI	1.12	13.5	6.73	0.84	1.39	2.3±0.2	2.7±0.2	6.8±0.5	4.9±0.4
Nonoichi	ISHIKAWA	1.28	13.3	6.67	0.95	1.28	2.3±0.2	2.4±0.2	8.0±0.4	6.3±0.3
Fukui city	FUKUI	1.26	20.0	7.90	0.97	1.25	3.0±0.2	3.1±0.2	9.0±0.6	7.2±0.5
Kyoto city	KYOTO	1.6	14.3	7.13	1.07	1.40	4.2±0.4	3.9±0.4	9.4±0.7	6.7±0.5

Name of I.P.H	Sampling		Ash (g)	Component			^{90}Sr		^{137}Cs	
	Station	Date		Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	S.U	(pCi/ℓ)	C.U
Nose	OSAKA	1.18	20.0	7.53	1.12	1.45	1.9±0.2	1.7±0.2	7.4±0.6	5.1±0.4
Kishimoto	TOTTORI	1.13	20.0	7.63	1.09	1.44	5.0±0.4	4.6±0.4	17.7±0.8	12.3±0.6
Tsuyama city	OKAYAMA	1.13	14.5	7.27	1.07	1.44	2.3±0.2	2.1±0.2	11.4±0.5	7.9±0.3
Ota city	SHIMANE	1.12	20.0	7.77	1.39	1.23	8.3±0.6	6.0±0.4	68.6±1.7	55.8±1.4
Kabe	HIROSHIMA	1.	20.0	7.67	1.79	0.94	2.9±0.2	1.6±0.1	4.9±0.5	5.2±0.5
Ato	YAMAGUCHI	1.18	20.0	7.47	1.08	1.64	2.9±0.2	2.7±0.2	8.0±0.6	4.9±0.4
Kochi city	KOCHI	1.24	20.0	7.43	0.96	1.68	3.5±0.3	3.6±0.3	7.8±0.5	4.6±0.3
Koga	FUKUOKA	1.19	14.9	7.43	1.91	1.47	1.8±0.2	1.0±0.2	6.0±0.4	4.1±0.3
Saga city	SAGA	1.20	20.0	7.83	1.06	1.43	2.6±0.2	2.5±0.2	8.0±0.5	5.6±0.3
Nagasaki city	NAGASAKI	1.12	14.5	7.27	1.18	1.45	4.2±0.3	3.6±0.3	6.6±0.5	4.6±0.3
Kajiki	KAGOSHIMA	1.31	14.9	7.43	1.32	1.36	4.9±0.3	3.7±0.2	12.0±0.5	8.8±0.4
Sapporo	HOKKAIDO	2.8	14.5	7.27	1.85	1.41	5.6±0.4	3.0±0.2	19.2±1.4	13.6±1.0
Fukushima city	FUKUSHIMA	2.25	7.3	7.25	1.15	1.36	4.5±0.4	3.9±0.3	17.6±0.8	12.9±0.6
Akashi city	HYOGO	2.8	12.9	6.43	1.20	1.16	1.6±0.2	1.3±0.2	5.3±0.3	4.6±0.3

Figure 5 Milk Sampling Location



Strontium-90 and Cesium-137 in Powdered Milk

(Japan Analytical Chemistry Research Institute)

Since 1960 Japan Analytical Chemistry Research Institute has analyzed the Strontium-90 and Cesium-137 content in powdered milk.

The samples were purchased on the open market from powdered milk producers.

The analysis of Strontium-90 and Cesium-137 content was carried out using the method recommended by Science and Technology Agency. Results obtained during the period from July 1971 to December 1971 are shown in Table 8.

Table 8. ^{90}Sr and ^{137}Cs in Powdered Milk
– July to December, 1971 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 7, No. 27, of this Publication)

Name of Producer	Date	Ash (g)	Component (% by weight)			^{90}Sr		^{137}Cs	
			Ash (%)	Ca (%)	K (%)	pCi/100g	S.U	pCi/100g	C.U
MORINAGA	1971.11.26	8.0	2.49	0.31	0.54	2.2±0.2	7.0±0.6	12.6±0.8	23.3±1.5
"	12.6	8.0	2.27	0.28	0.49	1.6±0.1	5.9±0.4	8.8±0.6	18.0±1.2
MEIJI	7.3	13.0	3.22	0.47	0.67	4.2±0.2	8.8±0.5	37.5±1.8	56.0±2.7
	77.20	14.0	3.36	0.48	0.69	3.3±0.3	6.9±0.6	16.9±1.2	24.5±1.7
"	7.23	13.0	3.16	0.46	0.64	4.5±0.3	9.8±0.7	26.1±1.6	40.8±2.5
MEIJI	8.22	10.0	3.09	0.44	0.66	4.0±0.4	9.1±0.8	39.8±2.5	60.3±3.8
"	10.26	11.0	3.11	0.44	0.64	4.8±0.4	10.9±0.9	35.4±1.8	55.3±2.8
WAKODO	9.3	9.0	2.71	0.34	0.59	1.6±0.2	4.7±0.5	7.8±0.7	13.2±1.2
"	10.10	9.0	2.69	0.34	0.55	1.6±0.2	4.8±0.5	3.9±0.4	7.1±0.7
"	12.9	9.0	2.76	0.37	0.57	1.8±0.2	4.8±0.5	5.9±0.4	10.4±0.7
YUKIJIRUSHI	7.16	8.0	2.18	0.27	0.40	2.2±0.2	8.1±0.7	10.0±0.8	25.0±2.0
"	11.12	8.0	2.24	0.26	0.46	2.0±0.2	7.5±0.7	9.4±0.7	20.4±1.5

Strontium-90 and Cesium 137 in Rice

(National Institute of Agricultural Sciences)

Strontium-90 content in rice has been determined at the National Institute of Agricultural Sciences since 1957, and Cesium-137 content in rice since 1961.

All rice samples are collected at, and sent from national and prefectural experimental station, covering all important agricultural areas throughout Japan. Sampling locations are shown in Figure 6.

The samples are chosen as representative of agricultural condition, including soil type, corp varety, fertilizer application and harvest time.

The analycal procedure applied is the same as described on page 14, No. 3 of this publication.

The result obtained in 1971 are shown in Table 9. The annual average of Strontium-90 and Cesium-137 contents during the period 1957 to 1971 is shown in Figure 7.

Table 9. ^{90}Sr in Rice –1971–

by H. Kobayashi and A. Tsumura

(National Institute of Agricultural Science)

(Continued from Table 3, No. 33, of this publication)

Location	Month harvested	Brown Rice			Polished Rice		
		g Ca/kg	pCi/kg	S.U	g Ca/kg	pCi/kg	S.U
Sapporo, HOKKAIDO	Oct.				0.059	2.0	34
Akita, AKITA	"	0.092	11.3	123	0.061	2.5	41
Morioka, IWATE	"	0.084	10.3	123	0.058	1.1	19
Sendai, MIYAGI	"	0.098	11.9	121	0.054	2.3	43
Mito, IBARAKI	Sept.	0.082	5.6	68	0.053	1.2	23
Konosu, SAITAMA	Oct.	0.116	12.3	106	0.064	1.4	22
Tachikawa, TOKYO	"	0.076	14.8	195	0.035	0.9	26
Kofu, YAMANASHI	"	0.090	5.1	57	0.056	1.0	18
Takada, NIIGATA	"	0.088	11.7	133	0.068	3.6	53
Kanazawa, ISHIKAWA	Aug.	0.126	6.4	51	0.064	2.1	33
Tsu, MIE	Oct.	0.104	9.7	93	0.060	2.0	33
Osaka, OSAKA	"	0.080	5.3	66	0.061	0.7	11
Okayama, OKAYAMA	Nov.	0.102	5.0	49	0.051	0.7	14
Tottori, TOTTORI	Oct.	0.102	9.0	88	0.058	1.5	26
Tsukushino, FUKUOKA	Nov.	0.086	4.3	50	0.068	0.8	12
Average for year		0.097	8.8	95	0.058	1.5	27

Figure 6 Rice Sampling Locations

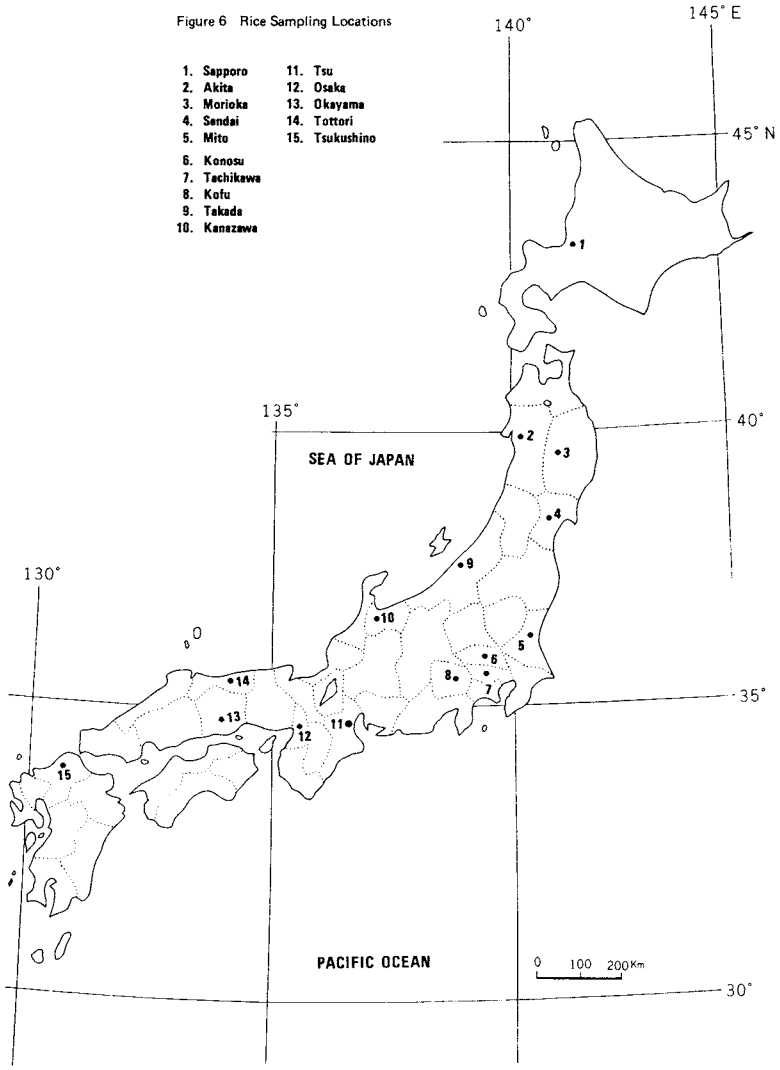
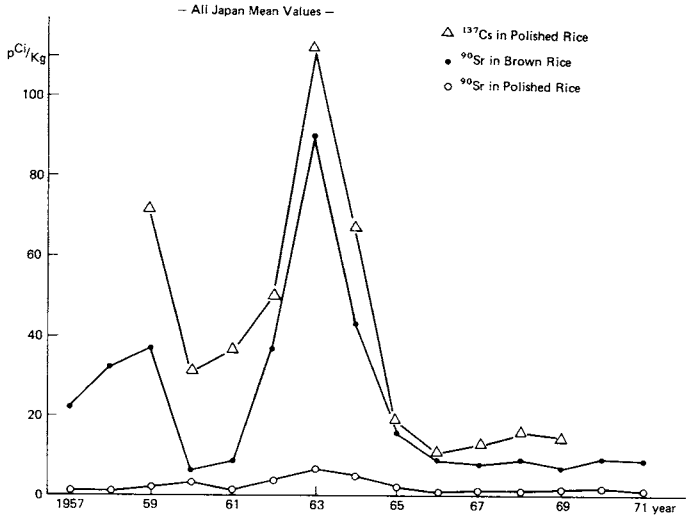


Figure 7 Temporal Variation of ^{90}Sr and ^{137}Cs in Rice – 1957 to 1971 –
– All Japan Mean Values –



Strontium-90 in Wheat

(National Institute of Agricultural Sciences)

Strontium-90 content in wheat has been determined at the National Institute of Agricultural Sciences since 1957. All wheat samples are collected at, and sent from national and prefectural experimental stations, covering all important areas of agriculture throughout Japan.

Sampling locations are shown in Figure 8. The samples are chosen as representative of agricultural conditions, including soil type, crop variety, fertilizer application and harvest time.

The analytical method applied is the same one with that shown on page 15, No. 6 of this publication.

The analytical results in 1971 are shown in Table 10. The yearly average of Strontium-90 content durint the period from 1957 to 1971 is shown in Figure 9.

Table 10. ^{90}Sr in Wheat – 1971 –

by H. Kobayashi and A. Tsumura

(National Institute of Agricultural Sciences)

(Continued from Table 5, No. 33 of this Publication)

Location	Month harvested	g Ca/kg	pCi/kg	S.U
Sapporo, HOKKAIDO	Aug.	0.201	17.4	87
Morioka, IWATE	July	0.247	58.9	238
Iwanuma, MIYAGI	June	0.205	19.2	94
Nagaoka, NIIGATA	"	0.191	22.4	117
Mito, IBARAKI	"	0.200	24.3	122
Kitamoto, SAITAMA	"	0.225	38.5	171
Tachikawa, TOKYO	"	0.291	28.1	97
Kofu, YAMANASHI	"	0.301	15.0	50
Osaka, OSAKA	"	0.181	15.3	85
Okayama, OKAYAMA	"	0.143	11.7	82
Amagi, FUKUOKA	"	0.197	29.3	149
Average for year		0.210	25.5	117

Figure 8 Wheat Sampling Location

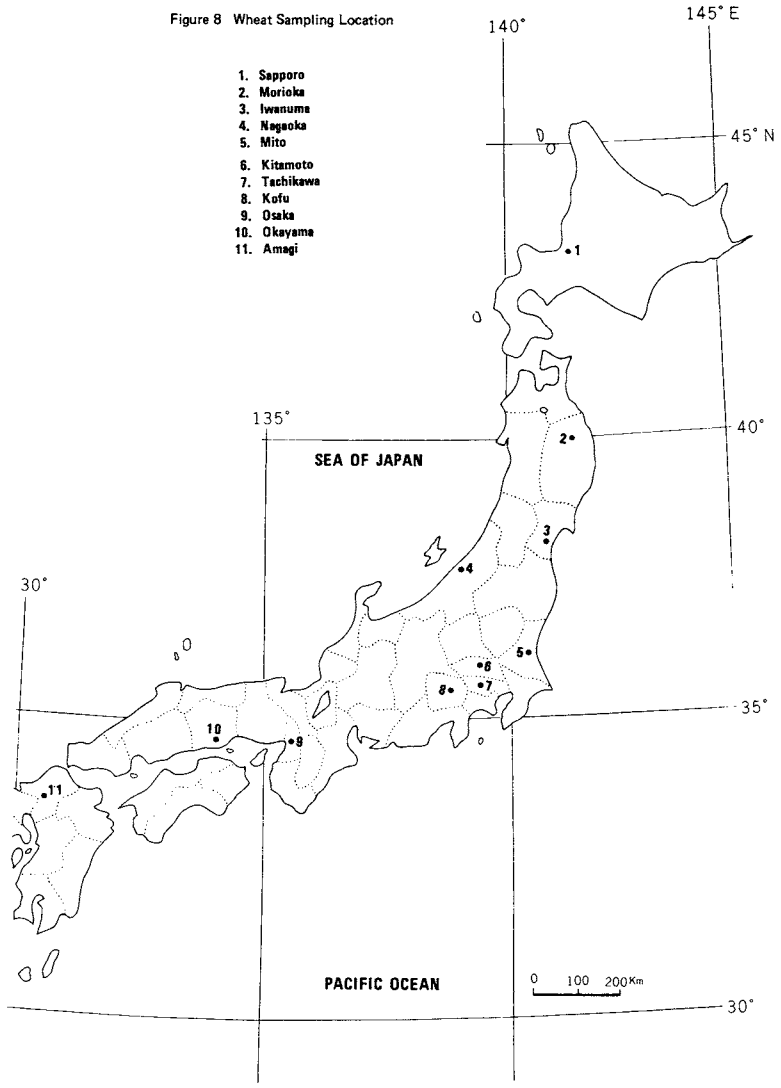
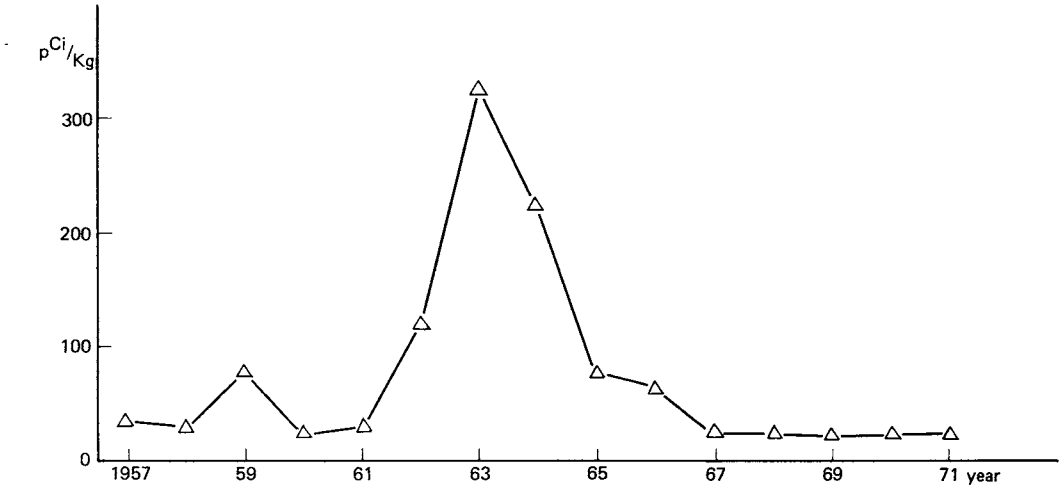


Figure 9 Temporal Variation of ^{90}Sr in Wheat – 1957 to 1971 –



Strontium-90 and Cesium-137 in Tea

(Japan Analytical Chemistry Research Institute)

Since 1963, Japan Analytical Chemistry Research Institute has analyzed the Strontium-90 and Cesium-137 content in processed-tea.

Tea samples were sena by the prefectural public health laboratories of Saitama, Shizuoka and Kyoto.

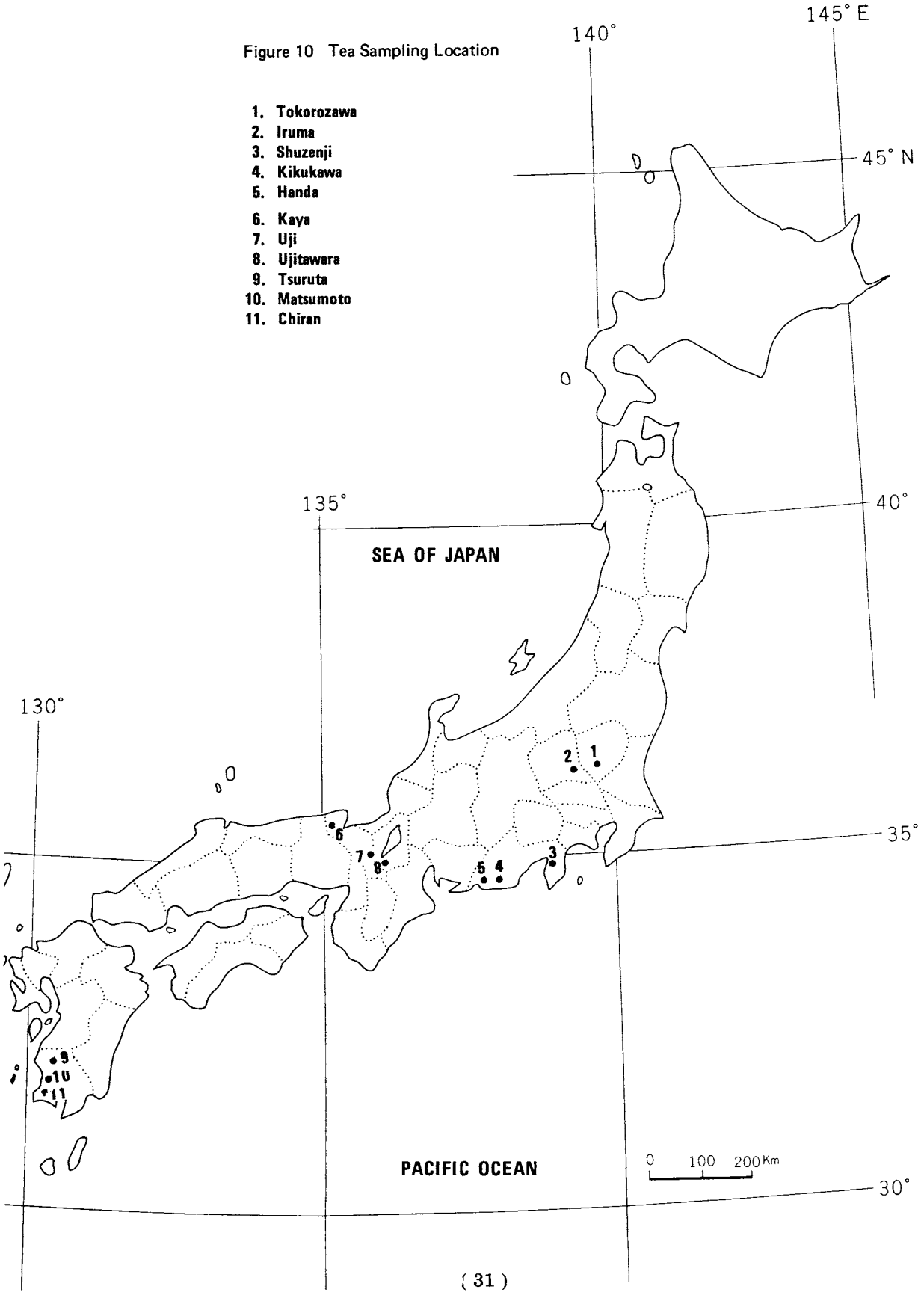
Sampling locations are shown in Figure 10. The samples were ashed between 400°C to 500°C, analyzed by the method recommended by Science and Technology Agency.

Results obtained during the period from May to July 1971 are shown in Table 11.

Table 11. ^{90}Sr and ^{137}Cs in Tea
– May to July, 1971 –
by T. Asari, M. Chiba and M. Kuroda
(Japan Analytical Chemistry Research Institute)
(Continued from Table 4, No. 31 of this Publication)

Location		Assortment	Date of Sampling	Component (% by fresh weight)			^{90}Sr		^{137}Cs	
				Ash (%)	Ca (%)	K (%)	pCi/kg. fresh	S.U	pCi/kg. fresh	C.U
Iruma city	SAITAMA	Ichibancha	1971. 6	6.62	0.50	1.74	469±24	94±5	453±21	26±1
Tokorozawa city	〃	〃	6	5.70	0.30	1.92	247±16	82±5	412±18	22±1
Handa city	SHIZUOKA	Zairai Aracha	1971. 5	5.62	0.32	1.85	266±18	83±6	327±16	18±1
Shuzenji	〃	〃 Seicha	5	6.22	0.42	1.91	702±41	167±10	529±22	28±1
Kikukawa		Inzatsu, Toko	5	6.16	0.37	1.89	557±25	151±7	432±19	23±1
Chiran	KAGOSHIMA	Zairai (Ichibancha)	5	6.30	0.36	2.11	508±24	141±7	599±22	28±1
Matsumoto	〃	Yamatomidori (〃)	5	6.22	0.33	2.04	405±22	123±7	583±22	29±1
Tsuruta	〃	Yabukita (〃)	5	6.02	0.26	2.15	270±14	104±5	390±18	18±1
Ujitawara	KYOTO	Misakiyabukita	5	5.70	0.56	1.93	315±17	56±3	273±18	14±1
Uji city	〃	Zairai	5	5.68	0.29	1.95	176±11	61±4	205±13	11±1
Kaya	〃	〃	5	5.52	0.33	1.89	598±36	181±11	463±20	25±1

Figure 10 Tea Sampling Location



Human Data

Strontium-90 in Human Bone

(National Institute of Radiological Sciences)

Since 1959, Human bone samples collected from various parts of Japan have been analyzed at National Institute of Radiological Sciences.

Radiochemical separation using fuming nitric acid and radioactivity measurement by a low background beta-counter (Tracerlab OMNI/GUARD) was carried out for fetus, infant, adolescent and adult bones. Natural strontium content was also determined atomic absorption spectrophotometrically.

The results are shown in Table 12, 13, and Figure 11. The levels of Strontium-90 concentration for the four age groups were similar to those in 1970.

Table 12. ^{90}Sr **in human bone in 1971**
by G. Tanaka, H. Kawamura and S. Iguchi
(National Institute of Radiological Sciences)
(Continued from Table 4, No. 30 of this Publication)

Age			Month of death	Sex	Number *	Name of bone	^{90}Sr pCi/gCa	Sr mg/gCa
Fetus	5	Months	1971 Mar.	Female	2	Whole skeleton	0.72	
"	"	"	May~June	**	10	"	0.44	0.178
"	"	"	May~July	**	10	"	0.38	0.247
"	6	"	May~June	**	10	"	0.58	0.261
"	"	"	May~July	**	10	"	0.47	0.198
"	7	"	May~June	**	5	"	0.74	0.221
"	"	"	May~June	**	5	"	0.53	0.207
"	8	"	Feb	**	3	"	0.69	
"	"	"	Apr.~June	**	4	"	0.70	0.249
"	"	"	May~June	**	5	"	0.83	0.226
"	"	"	June	Male	1	"	0.65	
"	9	"	May~Aug.	**	4	"	0.91	0.315
"	"	"	Sept.	**	3	"	0.82	0.188
"	10	"	May	Male	2	"	0.81	0.214
"	"	"	May	"	1	"	0.62	0.180
"	"	"	June	"	2	"	0.87	0.233
"	"	"	June	"	2	"	0.85	0.258
"	"	"	June	"	1	"	0.69	0.194
"	"	"	June	Female	2	"	0.75	0.197
"	"	"	June	Male	1	"	0.68	0.175

Age		Month of death		Sex	Number*	Name of bone	^{90}Sr pCi/gCa	Sr mg/gCa
Fetus	10	Months	Aug.	Male, Female	2	〃	0.94	0.155
〃	〃	〃	Aug.	Male	1	〃	0.73	0.198
〃	〃	〃	Sept.	Male, Female	2	〃	0.63	0.151
〃	〃	〃	Oct.	**	1	〃	0.42	
〃	〃	〃	Oct.	Male, Female	2	〃	0.98	0.239
〃	〃	〃	Oct.	Male	1	〃	0.74	0.231
〃	〃	〃	Oct.~Dec.	Female	2	〃	0.73	0.178
〃	〃	〃	Dec.	〃	1	〃	0.84	0.200
〃	〃	〃	Dec.	〃	2	〃	0.66	0.245
〃	〃	〃	Dec.	Male	1	〃	0.93	0.212
〃	〃	〃	Dec.	〃	1	〃	0.94	0.216
〃	〃	〃	Dec.	Female	1	〃	0.95	
〃	〃	〃	Dec.	Male	1	〃	1.14	0.261
〃	〃	〃	Dec.	〃	1	〃	0.90	0.189
〃	〃	〃	Dec.	〃	1	〃	1.21	0.251
〃	〃	〃	Dec.	Female	1	〃	0.73	0.450
〃	〃	〃	Dec.	〃	1	〃	0.78	
0		year	July	Male	4	〃	1.96	
3		〃	June	Female	1	Vertebral bone	2.06	
4		〃	July	Male	1	The rib	1.60	
4		〃	Sept.	Female	1	Whole skeleton	1.75	
6		〃	Mar.	Male	1	Femoral bone	1.06	
6		〃	Mar.	〃	1	The coxa	0.96	
8		〃	Dec.	〃	1	〃	1.01	
8		〃	Dec.	〃	1	Femoral bone	1.22	
9		〃	May	Female	2	The rib	0.98	
9		〃	May	Male	1	The cranium	0.29	
10		〃	Oct.	〃	1	Whole skeleton	1.39	
10		〃	Aug.	〃	1	Vertebral bone	1.42	
12		〃	Sept.	〃	1		1.59	
12		〃	Sept.	〃	1	Femoral bone	1.31	
12		〃	Nov.	〃	1	The rib	1.44	
14		〃	Oct.	Female	3	The tibia	1.77	
14		〃	Nov.	〃	1	Femoral bone	0.96	
14		〃	Nov.	〃	1	The rib	1.44	
15		〃	Oct.	Male	1	Whole skeleton	1.16	
16		〃	Nov.	〃	1	The rib	0.91	
17		〃	Oct.	〃	1	Vertebral bone	1.04	
18		〃	Oct.	〃	1	〃	1.74	
18		〃	Oct.	〃	1	〃	1.60	
19		〃	Oct.	〃	1	The radius	1.52	
25		〃	Feb.	Female	1	The rib	1.36	
25		〃	Feb.	〃	1	The radius	1.13	

*Number of the samples pooled **Unidentified or pooled

Table 13. ^{90}Sr Concentration in the Different Age Groups in 1971

Age groups (years)	Number*	^{90}Sr (pCi/gCa)	
		Min. – Max.	Mean ± S.d.
Fetus	37	0.38 ~ 1.21	0.77 ± 0.18
0 ~ 4	4	1.60 ~ 2.06	1.34 ± 0.18
5 ~ 19	20	0.29 ~ 1.77	1.24 ± 0.34
>20	2	1.13 ~ 1.36	1.25

*Number of analysis.

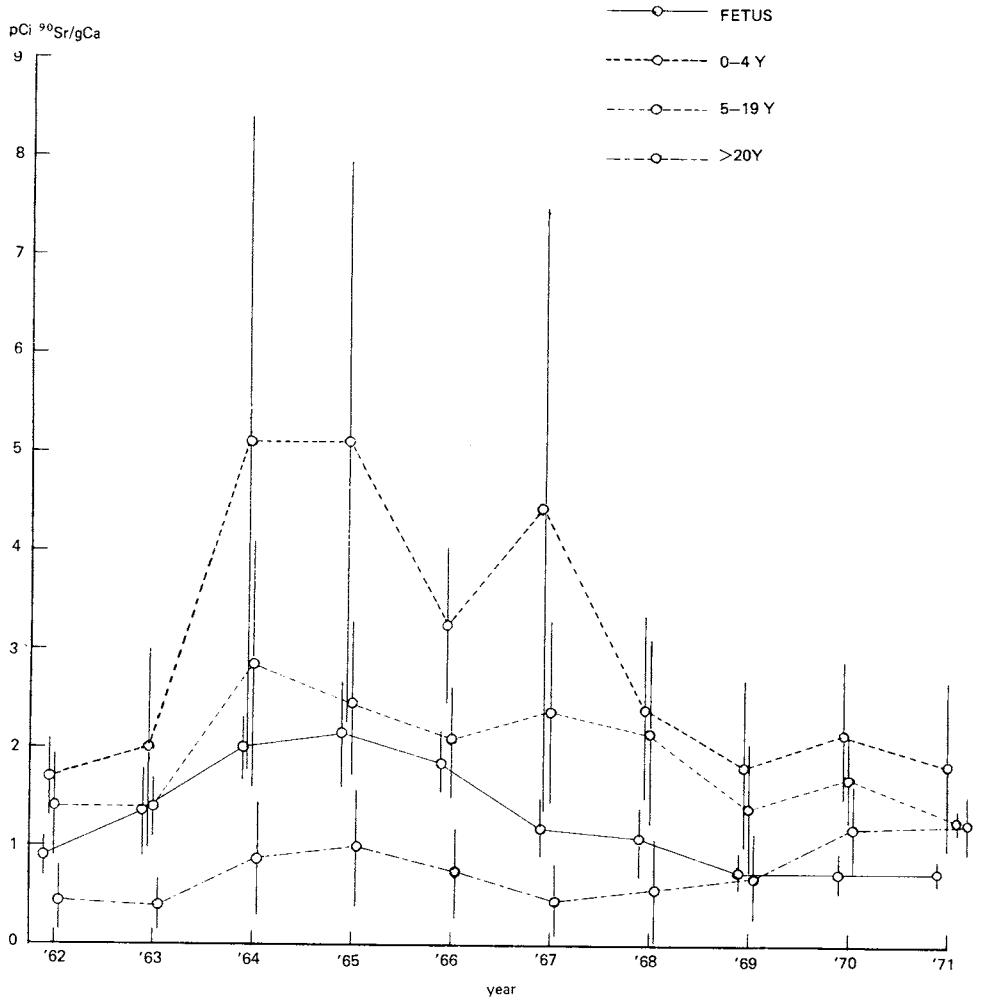


Figure 11 ^{90}Sr Concentration Trends in Japan in Bone of Different Age Groups