

**NIRS-RSD-27**

**RADIOACTIVITY  
SURVEY DATA  
in Japan**

**NUMBER 27  
MAY. 1970**

**National Institute of Radiological Sciences**

**Chiba, Japan**

# Radioactivity Survey Data in Japan

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National Institute of Radiological Sciences

# Meteorological Data

## Strontium-90, Cesium-137 and Cerium-144 in Air-borne Dust

(Japan Analytical Chemistry Research Institute)

Since April 1969 Japan Analytical Chemistry Research Institute started the analyses of strontium-90, cesium-137 and cerium-144 content in air-borne dust.

Samples are collected by 9 prefectural public health laboratories, using a cottrell type dust collector (1,200 liters per hour).

Figure 1 shows the sampling locations. Results obtained during the period from April 1969 to March 1970, are shown in Table 1.

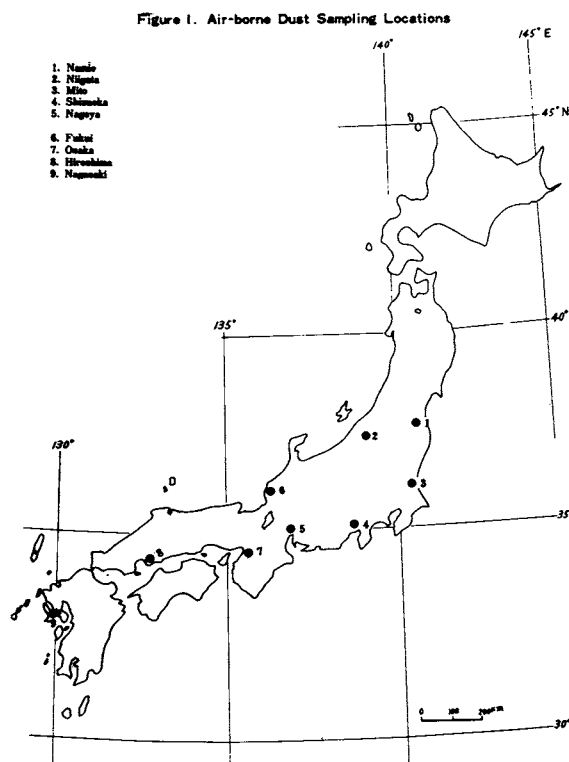


Table 1.  $^{90}\text{Sr}$ ,  $^{137}\text{Cs}$  and  $^{144}\text{Ce}$  in Air-borne Dust – April, 1969 to March, 1970 –

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 4, Issue No. 23, of this Publication)

Location	Duration (days)	Air Inhaled ( $\text{m}^3$ )	Efficiency Cottrell (%)	$^{90}\text{Sr}$ ( $\text{pCi}/10^6 \text{ l}$ )	$^{137}\text{Cs}$ ( $\text{pCi}/10^6 \text{ l}$ )
<b>Apr. 1969</b>					
Fukushima FUKUSHIMA	24	2160	96	2.51	5.30
Niigata NIIGATA	21	1728	95	1.11	2.27
Mito IBARAGI	21	20574	70	0.74	1.37
Shizuoka SHIZUOKA	22	3240	90	1.16	6.21
Nagoya AICHI	19	1620	95	1.57	1.94
Fukui FUKUI	20	2160	96	2.73	3.81
Osaka OSAKA	14	7768	90	2.50	3.78
Hiroshima HIROSHIMA	28	7400	80	2.07	2.95
Nagasaki NAGASAKI	16	1800	90	4.16	7.19
<b>May '69</b>					
Fukushima FUKUSHIMA	31	2268	97	3.74	4.82
Niigata NIIGATA	21	1728	95	1.35	2.05
Mito IBARAGI	24	38880	70	0.66	1.27
Shizuoka SHIZUOKA	14	3240	90	1.57	5.32
Nagoya AICHI	15	2160	95	1.47	2.16

Location	Duration (days)	Air Inhaled (m <sup>2</sup> )	Efficiency Cottrell (%)	<sup>90</sup> Sr (pCi/10 <sup>6</sup> l)	<sup>137</sup> Cs (pCi/10 <sup>6</sup> l)
Fukui FUKUI	26	2160	96	2.24	3.45
Osaka OSAKA	16	7324	90	2.61	3.47
Hiroshima HIROSHIMA	23	7333	80	2.87	4.24
Nagasaki NAGASAKI	21	1800	90	3.11	4.37
<b>June '69</b>					
Fukushima FUKUSHIMA	31	2268	97	2.51	3.45
Niigata NIIGATA	29	2160	95	1.07	2.06
Mito IBARAGI	29	35280	70	1.06	1.76
Shizuoka SHIZUOKA	22	3240	90	1.66	2.34
Nagoya AICHI	16	2340	95	1.49	2.32
Fukui FUKUI	22	2160	96	3.42	6.41
Osaka OSAKA	22	8333	90	2.58	3.11
Hiroshima HIROSHIMA	23	6967	80	2.44	4.66
Nagasaki NAGASAKI	23	1800	90	4.26	5.26
<b>July '69</b>					
Fukushima FUKUSHIMA	29	2400	97	1.31	1.52
Niigata NIIGATA	22	2728	95	0.47	1.13
Mito IBARAGI	29	38880	70	0.46	0.67
Shizuoka SHIZUOKA	17	3240	90	3.51	1.41
Nagoya AICHI	12	2340	95	1.32	1.94
Fukui FUKUI	21	2160	96	2.30	2.93
Osaka OSAKA	22	7614	90	2.62	4.34
Hiroshima HIROSHIMA	27	7450	80	2.09	3.07
Nagasaki NAGASAKI	22	1800	90	1.18	2.40
<b>Aug. '69</b>					
Fukushima FUKUSHIMA	28	2644	97	1.38	2.15
Niigata NIIGATA	22	1728	95	0.57	0.51
Mito IBARAGI	25	34560	70	0.39	0.63
Shizuoka SHIZUOKA	19	3240	90	3.13	2.03
Nagoya AICHI	21	2250	95	1.41	1.75
Fukui FUKUI	21	2160	96	1.17	1.31
Osaka OSAKA	22	8094	90	1.39	2.11
Hiroshima HIROSHIMA	22	6733	80	1.88	2.31
Nagasaki NAGASAKI	22	1800	90	1.52	1.96
<b>Sept. '69</b>					
Fukushima FUKUSHIMA	30	2264	97	2.15	3.21
Niigata NIIGATA	30	2592	95	1.01	1.48
Mito IBARAGI	30	43200	70	0.35	0.41
Shizuoka SHIZUOKA	15	3240	90	2.65	2.29
Nagoya AICHI	27	2790	95	0.86	1.45
Fukui FUKUI	30	5112	96	1.20	1.74
Osaka OSAKA	14	7447	90	1.71	2.40
Hiroshima HIROSHIMA	28	7817	80	2.04	2.95
Nagasaki NAGASAKI	30	2000	90	1.13	2.41
<b>Oct. '69</b>					
Fukushima FUKUSHIMA	30	4988	97	2.72	2.87
Niigata NIIGATA	27	3732	96	0.42	0.73
Mito IBARAGI	30	77760	70	0.25	0.25
Shizuoka SHIZUOKA	18	3240	90	1.45	2.64
Nagoya AICHI	26	2880	95	2.47	3.25
Fukui FUKUI	31	11520	96	3.86	4.88
Osaka OSAKA	29	8416	90	3.62	4.82
Hiroshima HIROSHIMA	22	8000	80	1.75	2.74
Nagasaki NAGASAKI	27	2400	90	1.70	3.96

Location	Duration (days)	Air Inhaled (m <sup>2</sup> )	Efficiency Cottrell (%)	<sup>90</sup> Sr (pCi/10 <sup>6</sup> l)	<sup>137</sup> Cs (pCi/10 <sup>6</sup> l)
Nov. '69					
Fukushima FUKUSHIMA	17	6877	97	0.79	0.59
Niigata NIIGATA	21	2031	96	0.42	0.65
Mito IBARAGI	24	34560	70	0.12	0.19
Shizuoka SHIZUOKA	29	3240	90	2.03	8.49
Nagoya AICHI	13	1890	95	1.88	2.46
Fukui FUKUI	24	5040	96	1.16	1.40
Osaka OSAKA	16	8300	90	1.28	1.33
Tottori TOTTORI	2	336	97	1.70	5.40
Hiroshima HIROSHIMA	25	6917	80	0.96	1.58
Nagasaki NAGASAKI	21	1800	90	1.15	2.60
Dec. '69					
Fukushima FUKUSHIMA	5	7318	97	0.39	0.61
Niigata NIIGATA	22	2011	96	0.69	0.44
Mito IBARAGI	24	34560	70	0.08	0.12
Shizuoka SHIZUOKA	21	3240	90	1.08	2.70
Nagoya AICHI	12	2160	95	0.85	0.75
Fukui FUKUI	22	3600	96	0.72	0.89
Osaka OSAKA	13	8208	90	1.02	1.50
Tottori TOTTORI	4	526	97	1.77	4.74
Tottori TOTTORI	4	540	97	1.20	2.20
Hiroshima HIROSHIMA	22	6650	80	0.75	1.68
Nagasaki NAGASAKI	22	1800	90	2.04	3.62
Jan. '70					
Fukushima FUKUSHIMA	2	4860	97	1.44	2.65
Niigata NIIGATA	12	2283	96	0.47	0.41
Mito IBARAGI	24	38880	70	0.07	0.08
Shizuoka SHIZUOKA	22	3240	90	0.91	3.17
Nagoya AICHI	13	2340	95	0.88	1.45
Fukui FUKUI	21	3600	95	0.60	1.01
Osaka OSAKA	15	7955	90	0.62	0.84
Tottori TOTTORI	25	759	97	2.36	5.46
Hiroshima HIROSHIMA	17	7050	80	0.33	0.40
Nagasaki NAGASAKI	19	1800	90	1.43	2.59
Feb. '70					
Fukushima FUKUSHIMA	2	4680	97	2.87	3.43
Niigata NIIGATA	22	2004	96	1.17	0.80
Mito IBARAGI	25	34020	70	0.11	0.20
Shizuoka SHIZUOKA	22	3240	90	1.60	8.64
Nagoya AICHI	15	1980	95	1.34	1.97
Fukui FUKUI	25	2952	96	0.57	1.69
Osaka OSAKA	15	8103	90	1.22	2.38
Tottori TOTTORI	8	404	97	2.45	5.24
Tottori TOTTORI	3	543	97	1.60	3.00
Tottori TOTTORI	5	761	97	1.30	3.10
Hiroshima HIROSHIMA	26	8000	80	0.44	0.72
Nagasaki NAGASAKI	24	1800	90	2.12	4.81
Mar. '70					
Fukushima FUKUSHIMA	2	5280	97	1.23	2.93
Niigata NIIGATA	27	2542	96	0.67	1.16
Mito IBARAGI	29	38880	70	0.14	0.23
Shizuoka SHIZUOKA	22	3240	90	1.83	3.68
Nagoya AICHI	14	1980	95	1.40	2.28

Location	Duration (days)	Air Inhaled (m <sup>2</sup> )	Efficiency Cottrell (%)	<sup>90</sup> Sr (pCi/10 <sup>6</sup> l)	<sup>137</sup> Cs (pCi/10 <sup>6</sup> l)
Fukui FUKUI	19	2928	96	1.71	2.40
Osaka OSAKA	11	8204	90	1.42	3.05
Tottori TOTTORI	4	563	97	3.09	4.95
Tottori TOTTORI	4	548	97	1.80	4.70
Tottori TOTTORI	13	558	97	2.40	5.50
Tottori TOTTORI	6	547	97	2.50	5.20
Tottori TOTTORI	6	531	97	3.10	5.00
Hiroshima HIROSHIMA	27	7901	80	1.53	3.12
Nagasaki NAGASAKI	22	1800	90	3.49	6.96

# Geographical Data

## Strontium-90, Cesium-137 and Cerium-144 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 2.

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 December, 1969 are shown in Table 2.

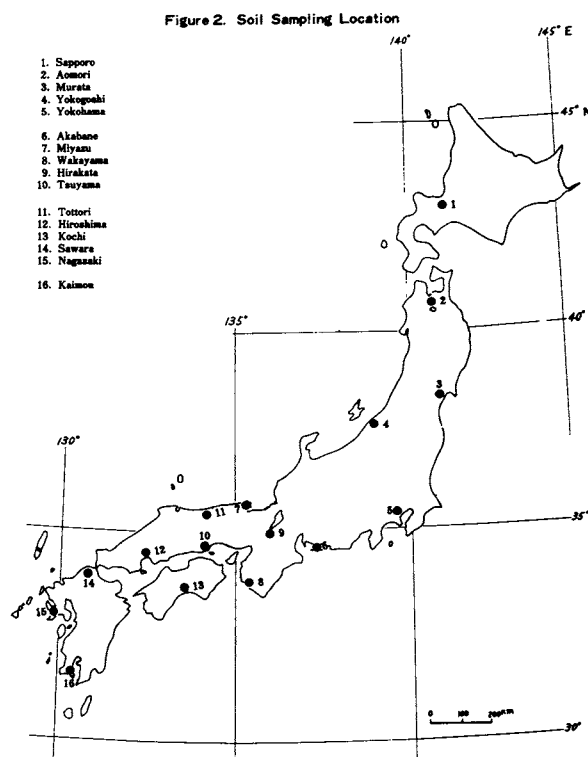


Table 2.  $^{90}\text{Sr}$ ,  $^{137}\text{Cs}$  and  $^{144}\text{Ce}$  in Soil —July to December, 1969—

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 5, Issue No. 23 of this Publication)

Location	Sampling Depth (cm)	Dry Soil		$^{90}\text{Sr}$			$^{137}\text{Cs}$		
		Ca(%)	K(%)	(pCi/kg)	(mCi/km <sup>2</sup> )	(mCi/gCa)	(pCi/kg)	(mCi/km <sup>2</sup> )	(mCi/gK)
<b>July 1969</b>									
Sapporo HOKKAIDO	0~5	0.67	0.07	782	26.3	117	1265	42.6	1807
"	0~20	0.63	0.04	263	58.5	42	363	81.0	908
Murata MIYAGI	0~5	0.27	0.09	406	16.4	150	505	20.5	561
"	0~20	0.30	0.07	340	39.4	113	572	66.2	817
Akabane AICHI	0~5	0.22	0.07	181	10.9	82	644	39.0	920
"	0~20	0.08	0.04	243	87.3	304	352	126.0	879
Miyazu KYOTO	0~5	0.01	0.15	213	9.4	2132	491	21.7	327
"	0~20	0.04	0.09	203	61.0	507	214	64.4	238
Tsuyama OKAYAMA	0~5	0.09	0.11	259	11.9	284	638	29.4	580
"	0~20	0.10	0.07	207	43.6	207	1323	279.0	1890
Hiroshima HIROSHIMA	0~5	0.21	0.15	308	13.6	146	853	37.7	568
"	0~20	0.27	0.20	216	47.8	80	504	112.0	252

Location	Date	Component (% by Weight)				<sup>90</sup> Sr		<sup>137</sup> Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/100 g)	(pCi/gCa)	(pCi/100 g)	(pCi/gK)	
<b>Aug. 69</b>									
Aomori AOMORI	0~5	0.33	0.11	776	20.2	235	630	16.4	572
"	0~20	0.29	0.08	597	79.5	206	1170	156.0	1463
Yokogoshi NIIGATA	0~5	0.43	0.15	525	25.8	122	1406	69.2	937
"	0~20	0.37	0.15	681	129.0	184	2655	501.0	1770
Koiwa TOKYO	0~5	1.82	0.14	115	7.0	6	186	11.4	133
"	0~20	2.23	0.18	253	56.1	11	258	51.3	143
Wakayama WAKAYAMA	0~5	0.12	0.09	57	4.8	48	430	11.0	144
"	0~20	0.57	0.10	48	12.0	8	120	29.7	120
Hirakata OSAKA	0~5	0.30	0.35	368	13.0	119	1040	36.8	297
"	0~20	0.01	0.27	292	42.4	2915	709	103.0	262
Kochi KOCHI	0~5	0.64	0.13	619	24.0	97	1681	65.1	1293
"	0~20	0.59	0.08	182	41.4	31	556	127.0	695
Nagasaki NAGASAKI	0~5	0.14	0.04	528	25.8	377	408	19.9	1070
"	0~20	0.72	0.03	241	67.5	33	644	180.0	2145
Kaimon KAGOSHIMA	0~5	2.03	0.04	336	18.0	17	2022	108.0	5055
"	0~20	1.91	0.03	501	133.0	26	1239	328.0	4130
<b>Sept. 69</b>									
Yokohama KANAGAWA	0~5	0.95	0.08	999	38.0	105	2298	875.0	2873
"	0~20	0.79	0.07	452	79.8	57	679	120.0	970
Tottori TOTTORI	0~5	0.86	0.17	448	19.3	52	1059	45.7	673
"	0~20	0.69	0.17	312	74.7	45	718	172.0	422
<b>Nov. 69</b>									
Kashima SHIMANE	0~5	0.65	0.15	499	19.1	77	1474	56.4	983
"	0~20	1.30	0.18	499	54.4	38	450	49.0	250
Matsue SHIMANE	0~5	0.09	0.19	688	22.4	764	1794	58.4	944
"	0~20	0.06	0.20	955	76.3	1591	371	29.7	186
Sawara FUKUOKA	0~5	0.23	0.21	669	28.4	291	1548	65.8	737
"	0~20	0.15	0.15	302	74.4	201	721	178.0	480



# 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 23 locations in Japan.

Sampling locations are shown in Figure 3. 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 April 1969 to March 1970 are shown in Table 3.

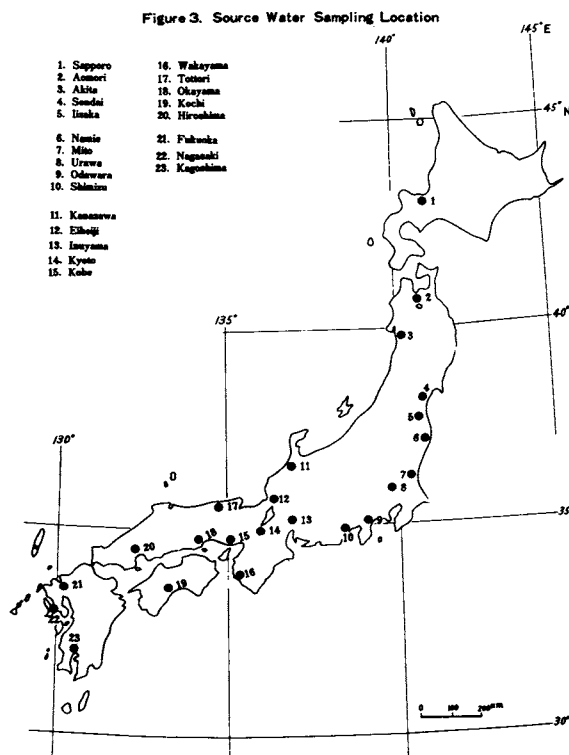


Table 3.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Source Water – April, 1969 to March, 1970 –

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 6, Issue No. 23 of this Publication)

Location	Source	$^{90}\text{Sr}$ (pCi/l)	$^{137}\text{Cs}$ (pCi/l)	pH	Nature of Water Appearance
<b>Apr. 1969</b>					
Sapporo HOKKAIDO	Water Purification Station	0.14	0.04	6.9	clear
Aomori AOMORI	Water Purification Station	0.13	0.05	6.8	clear
Sendai MIYAGI	Water Purification Station	0.16	0.06	6.9	slight muddy
Akita AKITA	Water Purification Station	0.24	0.06	6.7	clear
Mito IBARAGI	Station Intake	0.12	0.04	7.0	slight muddy (white)
Odawara KANAGAWA	Station Intake	0.03	0.02	6.9	
Urawa SAITAMA	Water Purification Station	0.02	0.01	7.2	clear
Kanazawa ISHIKAWA	Water Purification Station	0.24	0.06	7.1	clear
Inuyama AICHI	Station Intake	0.11	0.03	6.9	clear
Eiheiji FUKUI	Water Purification Station	0.08	0.03	6.7	clear
Shiga SHIGA	Reservoir	0.78	0.04	7.9	clear
Wakayama WAKAYAMA	Water Purification Station	0.12	0.03	6.8–7.2	slight muddy (white)
Okayama OKAYAMA	Water Purification Station	0.15	0.03	6.9	slight muddy (yellow)
Tottori TOTTORI	Reservoir	0.16	0.03	7.1	clear
Hiroshima HIROSHIMA	Station Intake	0.15	0.02	7.3	clear

Location	Component			<sup>90</sup> Sr		<sup>137</sup> Cs	
	Ash (g/l)	Ca (g/l)	K (g/l)	(pCi/l)	(pCi/gCa)	(pCi/l)	(pCi/gK)
Kochi KOCHI	Water Purification Station			0.12	0.01	7.2	clear
Fukuoka FUKUOKA	Water Purification Station			0.16	0.05	6.8	clear
Nagasaki NAGASAKI	Reservoir			0.14	0.08	7.8	slight muddy (yellow)
<b>May '69</b>							
Wakkanai HOKKAIDO	Water Purification Station			0.55	0.16	6.6	muddy (brawn)
Namie FUKUSHIMA	Water Purification Station			0.10	0.02	8.0	clear
Iizaka FUKUSHIMA	Water Purification Station			0.16	0.01	7.6	clear
Shimizu SHIZUOKA	Reservoir			0.14	0.19	7.0	slight muddy
Kobe HYOGO	Reservoir			0.13	0.03	7.0	slight muddy (brawn: white)
Kagoshima KAGOSHIMA	Water Purification Station			0.08	0.07	7.1	slight muddy (yellow)
<b>June '69</b>							
Sapporo HOKKAIDO	Water Purification Station			0.19	0.04	6.9	
Odawara KANAGAWA	Water Purification Station			0.03	0.01	6.8	
Kanazawa ISHIKAWA	Water Purification Station			0.23	0.13	7.1	clear
Inuyama AICHI	Station Intake			0.11	0.04		clear
Kyoto KYOTO	Station Intake			0.80	0.07	7.4	clear
Kobe HYOGO	Reservoir			0.06	0.02	7.3	muddy (green:yellow)
Fukuoka FUKUOKA	Water Purification Station			0.15	0.03	6.8	clear
<b>July '69</b>							
Wakkanai HOKKAIDO	Water Purification Station			0.74	0.09	6.8	muddy (yellow)
Sendai MIYAGI	Water Purification Station			0.18	0.06	7.0	slight muddy (brallow)
Akita AKITA	Water Purification Station			0.20	0.06	6.8	clear
Namie FUKUSHIMA	Water Purification Station			0.15	0.03	7.0	slight muddy
Iizaka FUKUSHIMA	Water Purification Station			0.02	0.03	7.6	clear
Mito IBARAGI	Water Purification Station			0.18	0.04	7.1	muddy
Urawa SAITAMA	Water Purification Station			0.03	0.01	7.2	clear
Shimizu SHIZUOKA	Reservoir			0.15	0.30	6.0	muddy
Eiheigi FUKUI	Water Purification Station			0.09	0.02	6.8	clear
Okayama OKAYAMA	Station Intake			0.20	0.03	6.0	slight muddy (white)
Tottori TOTTORI	Reservoir			0.22	0.06	7.0	slight muddy
Hiroshima HIROSHIMA	Station Intake			0.18	0.05	7.1	slight muddy (floatage)
Kochi KOCHI	Water Purification Station			0.19	0.01	7.2	clear
Nagasaki NAGASAKI	Reservoir			0.10	0.07	6.7	slight muddy (brown : yellow)
Kogoshima KAGOSHIMA	Station Intake			0.15	0.06	7.2	slight muddy (yellow)
<b>Aug. '69</b>							
Sapporo HOKKAIDO	Water Purification Station			0.20	0.70	7.1	slight muddy (yellow)
Aomori AOMORI	Water Purification Station			0.08	0.06	6.6	clear
Odawara KANAGAWA	Water Purification Station			0.03	0.01	6.9	
Inuyama AICHI	Station Intake			0.15	0.02	7.1	muddy (white)
Wakayama WAKAYAMA	Water Purification Station			0.13	0.05	7.2	slight muddy (white)
Kobe HYOGO	Reservoir			0.12	0.04	7.2	slight muddy (yellow:green)
Fukuoka FUKUOKA	Water Purification Station			0.14	0.03	6.8	clear
<b>Sept. '69</b>							
Wakkanai HOKKAIDO	Water Purification Station			0.67	0.13		muddy (yellow brown)
Shiga SHIGA	Reservoir			0.63	0.05	7.8	clear
<b>Oct. '69</b>							
Sapporo HOKKAIDO	Water Purification Station			0.20	0.03	8.7	clear
Aomori AOMORI	Water Purification Station			0.14	0.04	6.6	clear
Sendai MIYAGI	Water Purification Station			0.18	0.04	7.0	slight muddy (brown)
Akita AKITA	Water Purification Station			0.30	0.04	6.8	clear
Namie FUKUSHIMA	Water Purification Station			0.12	0.02	7.6	slight muddy

Location	Month Harvested	Component (% by Weight)			<sup>90</sup> Sr		<sup>137</sup> Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Iizaka FUKUSHIMA	Water Purification Station			0.23	0.02	7.6	clear	
Mito IBARAGI	Water Purification Station			0.11	0.02	7.1	slight muddy	
Odawara KANAGAWA	Station Intake			0.03	0.01	6.8		
Urawa SAITAMA	Water Purification Station			0.03	0.01	7.2	clear	
Shizuoka SHIZUOKA	Water Purification Station			0.30	0.19			
Kanazawa ISHIKAWA	Water Purification Station			0.46	0.05	7.0	slight muddy (yellow)	
Inuyama AICHI	Station Intake			0.17	0.04	6.9	clear	
Eiheigi FUKUI	Water Purification Station			0.10	0.03	7.9	clear	
Kyoto KYOTO	Station Intake			0.62	0.05	7.0	slight muddy (green)	
Wakayama WAKAYAMA	Water Purification Station			0.12	0.03	6.5	slight muddy	
Kobe HYOGO	Water Purification Station			0.21	0.03	7.5	slight muddy (yellow)	
Okayama OKAYAMA	Station Intake			0.19	0.02	6.9	slight muddy	
Tottori TOTTORI	Water Purification Station			0.20	0.05	7.1	slight muddy (brown)	
Hiroshima HIROSHIMA	Station Intake			0.17	0.02	7.3	clear	
Kochi KOCHI	Water Purification Station			0.15	0.01	7.2	clear	
Fukuoka FUKUOKA	Water Purification Station			0.19	0.02	6.8	clear	
Nagasaki NAGASAKI	Reservoir			0.05	0.09	7.2	slight muddy (yellow)	
Kagoshima KAGOSHIMA	Water Purification Station			0.11	0.03	6.8	slight muddy (yellow)	
Nov. '69								
Wakkanai HOKKAIDO	Water Purification Station			0.31	0.01	6.4	slight muddy (yellow : brown)	
Dec. '69								
Sapporo HOKKAIDO	Water Purification Station			0.16	0.03	7.1	clear	
Aomori AOMORI	Water Purification Station			0.11	0.04	6.8	clear	
Odawara KANAGAWA	Station Intake			0.04	0.01	6.8		
Kanazawa ISHIKAWA	Water Purification Station			0.31	0.04	7.1	slight muddy	
Inuyama AICHI	Station Intake			0.05	0.01	6.9	clear	
Kobe HYOGO	Reservoir			0.21	0.02	7.3	slight muddy (yellow)	
Fukuoka FUKUOKA	Water Purification Station			0.19	0.03	6.8	clear	
Jan. 1970								
Wakkanai HOKKAIDO	Water Purification Station			0.09	0.07	6.8	slight muddy (yellow)	
Sendai MIYAGI	Water Purification Station			0.12	0.03	6.8	slight muddy (blown)	
Akita AKITA	Water Purification Station			0.24	0.05	6.8	slight muddy (white)	
Mito MIYAGI	Station Intake			0.08	0.01	6.9	slight muddy	
Odawara KANAGAWA	Station Intake			0.03	0.01	6.9		
Urawa SAITAMA	Water Purification Station			0.04	0.01	7.2	clear	
Shimizu SHIZUOKA	Reservoir			0.10	0.15		slight muddy	
Eiheigi FUKUI	Water Purification Station			0.09	0.04	7.3	clear	
Shiga SHIGA	Reservoir			0.74	0.03	7.4	clear	
Wakayama WAKAYAMA	Water Purification Station			0.12	0.02	6.7	slight muddy	
Okayama OKAYAMA	Reservoir			0.14	0.01	6.7	slight muddy (white)	
Tottori TOTTORI	Reservoir			0.16	0.04	7.0	slight muddy (brown)	
Hiroshima HIROSHIMA	Station Intake			0.18	0.03	7.3	clear	
Kochi KOCHI	Water Purification Station			0.12	0.008	7.2	clear	
Nagasaki NAGASAKI	Reservoir			0.21	0.07	7.2	slight muddy (yellow)	
Kagoshima KAGOSHIMA	Station Intake			0.06	0.06	6.9	clear	
Feb. '70								
Sapporo HOKKAIDO	Water Purification Station			0.17	0.09	7.1	clear	
Namie FUKUSHIMA	Water Purification Station			0.09	0.91	7.0	clear	
Iizaka FUKUSHIMA	Water Purification Station			0.19	0.01	7.0	clear	
Imuyama AICHI	Station Intake			0.15	0.03	6.9	clear	
Kyoto KYOTO	Station Intake			0.24	0.07	6.9	slight muddy (white)	
Kobe HYOGO	Water Purification Station			0.16	0.02	7.3		
Fukuoka FUKUOKA	Water Purification Station			0.13	0.03	6.8	clear	
Mar. '70								
Wakkanai HOKKAIDO	Water Purification Station			0.71	0.06	6.0	slight muddy (yellow: brown)	

## Strontium-90 and Cesium-137 in Potable Rain Water

(Japan Analytical Chemistry Research Institute)

The strontium-90 and cesium-137 content in potable rain water with filtration collected from 8 prefectural public health laboratories was determined at Japan Analytical Chemistry Research Institute.

Ten liter samples taken from potable rain water tanks with filter were collected by the prefectural public health laboratories, and sent to Japan Analytical Chemistry Research Institute for strontium-90 and cesium-137 content analyses.

Sampling locations are shown in Figure 4. After pre-treatment for concentration, the samples were analyzed by the fuming nitric acid method. The analytical procedure applied was the method recommended by the Science and Technology Agency.

Results obtained during the period from July 1969 to January 1970 are shown in Table 4.

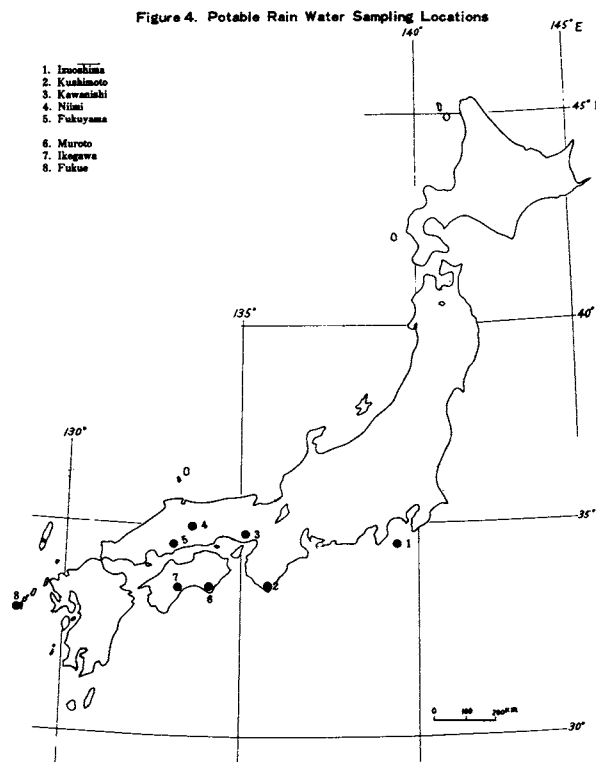


Table 4.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Potable Rain Water – July, 1969 to January 1970 –

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 7, Issue No. 23, of this Publication)

Location	Date of Sampling	$^{90}\text{Sr}$ (pCi/l)	$^{137}\text{Cs}$ (pCi/l)	pH
Izuoshima TOKYO	July 1969	0.48	0.03	
Kushimoto WAKAYAMA	"	0.99	0.29	6.7
Kawanishi KYOGO	"	1.46	0.98	7.3
Niimi OKAYAMA	"	1.50	0.15	6.3
Fukuyama HIROSHIMA	"	0.33	0.06	7.9
Muroto KOCHI	"	0.44	0.09	6.8
Ikegawa KOCHI	"	0.38	0.05	6.9
Fukue NAGASAKI	"	0.16	0.17	7.7
Izuoshima TOKYO	Oct. '69	1.14	0.12	
Kushimoto WAKAYAMA	"	1.88	0.32	6.5

Location	Date of Sampling	<sup>90</sup> Sr (pCi/l)	<sup>137</sup> Cs (pCi/l)	pH
Kawanishi KYOGO	"	0.92	0.47	7.0
Niimi OKAYAMA	"	1.51	0.12	6.8
Fukuyama HIROSHIMA	"	0.33	0.04	7.5
Muroto KOCHI	"	0.84	0.16	7.1
Ikegawa KOCHI	"	0.56	0.07	6.8
Fukue NAGASAKI	"	1.89	0.26	7.1
Izuoshima TOKYO	Jan. '70	0.81	0.09	
Kushimoto WAKAYAMA	"	0.97	0.30	6.5
Kawanishi HYOGO	"	0.82	0.49	7.3
Niimi OKAYAMA	"	1.45	0.14	6.9
Hukuyama HIROSHIMA	"	0.38	0.03	7.5
Muroto KOCHI	"	0.41	0.09	7.0
Ikegawa KOCHI	"	0.39	0.24	6.9
Fukue NAGASAKI	"	1.27	1.10	7.4

## 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 water 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 5. The analytical procedure applied was the method recommended by the Science and Technology Agency.

Results obtained during the period from May 1969 to January 1970, are shown in Table 5.

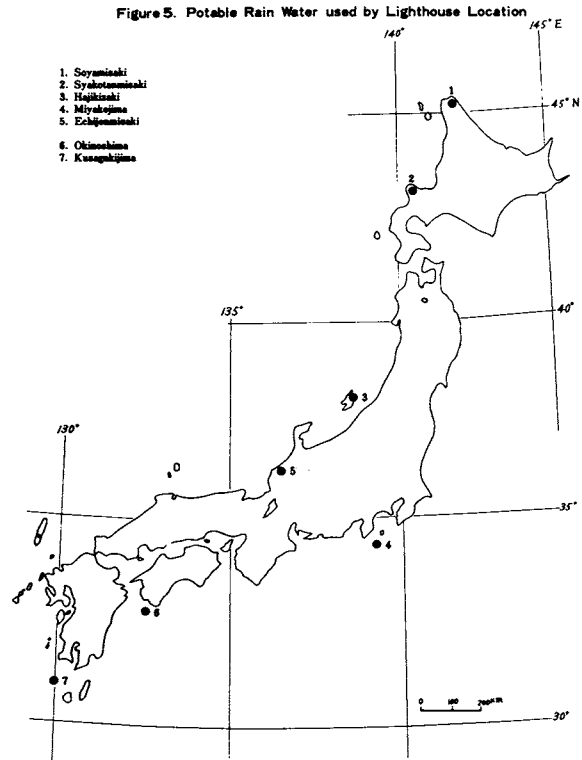


Table 5.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Potable Rain Water used by Lighthouses

— May, 1969 to January, 1970 —

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 8, Issue No. 23, of this Publication)

Lighthouse Location	$^{90}\text{Sr}$ (pCi/l)		$^{137}\text{Cs}$ (pCi/l)	
	Original	Filtrate	Original	Filtrate
<b>May 1969</b>				
Soyamisaki HOKKAIDO	2.95	0.14	7.58	0.04
Syakotanmisaki HOKKAIDO	1.90	0.21	1.96	0.03
Hajikizaki NIIGATA	0.50	1.86	0.33	0.24
Miyakejima TOKYO	1.18	1.13	2.43	1.76
Echizenmisaki FUKUI	1.60	1.42	0.69	0.55
Okinoshima KOCHI	1.26	1.16	0.19	0.29
Kusagakijima KAGOSHIMA	1.02	0.80	1.10	0.17

Lighthouse Location	<sup>90</sup> Sr (pCi/l)		<sup>137</sup> Cs (pCi/l)	
	Original	Filtrate	Original	Filtrate
<b>Sept. 69</b>				
Soyamisaki HOKKAIDO	1.31	0.57	0.21	0.25
Syakotanmisaki HOKKAIDO	1.89	0.49	0.53	0.07
Hajikizaki NIIGATA	1.73	1.46	0.51	0.42
Miyakejima TOKYO	1.26	0.86	1.45	0.72
Echijenmisaki HUKUI	1.85	1.78	0.40	0.39
<b>Oct. 69</b>				
Kusagakijima KAGOSHIMA	1.54	0.96	1.88	0.23
<b>Jan. 70</b>				
Soyamisaki HOKKAIDO	0.92	0.36	0.27	0.05
Hajikizaki NIIGATA	1.37	1.48	0.84	0.37
Miyakejima TOKYO	0.92	0.85	0.78	0.49
<b>Feb. 70</b>				
Shakotanmisaki HOKKAIDO	0.48	0.32	0.49	0.08
Echijenmisaki NIIGATA	5.33	2.25	0.63	0.38
Okinoshima KOCHI	1.47	1.60	0.66	0.24
Kusagakijima	1.22	1.18	0.63	0.20

# 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 12 prefectures. Sampling locations are shown in Figure 6. The samples were taken twice at the same location during the harvest period. At the prefectural public health laboratories, several kgs 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 May 1969 to March 1970 are shown in Table 6.

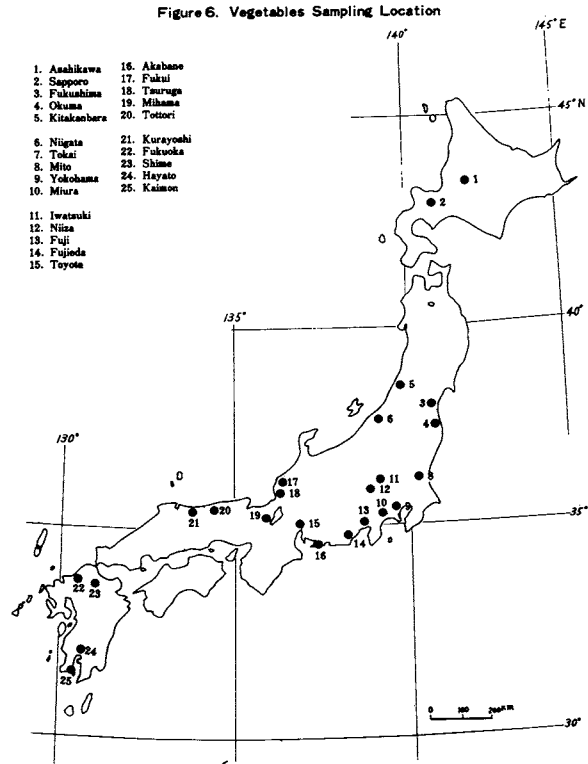


Table 6.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Vegetables – May, 1969 to March, 1970 –  
By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 4, Issue No. 24 of this Publication)

Location	Month Harvested	Component (% by Weight)			$^{90}\text{Sr}$		$^{137}\text{Cs}$	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
<b>(Spinach)</b>								
Fukushima FUKUSHIMA	May '69	2.30	0.10	0.60	23.8	23.8	25.8	4.30
Okuma FUKUSHIMA	"	1.65	0.11	0.52	32.7	29.7	18.0	3.50
Toyota AICHI	"	2.23	0.10	0.57	18.9	18.9	8.5	1.50
Akabane AICHI	"	1.84	1.16	0.58	67.2	42.0	10.2	1.80
Fukui FUKUI	"	1.73	0.10	0.58	30.4	30.4	7.2	1.20
Tsuruga FUKUI	"	1.70	0.14	0.45	46.7	33.4	20.0	4.50
Tottori TOTTORI	"	2.25	0.16	0.70	42.1	26.3	9.7	1.40
Kurayoshi TOTTORI	"	1.95	0.10	0.64	44.3	44.3	11.1	1.70
Sapporo HOKKAIDO	June '69	1.20	0.09	0.38	23.3	33.2	11.8	3.10
Asahikawa HOKKAIDO	"	1.15	0.07	0.34	16.1	23.0	9.1	2.70
Fukushima FUKUSHIMA	Aug. '69	2.17	0.14	0.64	29.1	20.8	25.0	3.90
Okuma FUKUSHIMA	"	2.17	0.08	0.89	42.1	52.7	15.6	1.80
Sapporo HOKKAIDO	Oct. '69	1.77	0.14	0.51	40.5	28.9	23.9	4.70
Asahikawa HOKKAIDO	"	1.57	0.12	0.44	28.9	24.1	19.8	4.50
Mito IBARAGI	Nov. '69	1.62	0.08	0.54	12.5	15.6	16.2	3.00



Location	Month Harvested	Component (% by Weight)			<sup>90</sup> Sr		<sup>137</sup> Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Tokai IBARAGI	"	1.65	0.13	0.59	18.1	13.9	26.6	4.50
Fujieda SHIZUOKA	"	1.73	0.09	0.45	53.4	59.3	29.9	6.60
Fuji SHIZUOKA	"	2.35	0.21	0.53	97.3	46.3	61.1	11.50
Toyota AICHI	"	1.35	0.08	0.54	26.3	32.9	4.1	0.80
Akabana AICHI	"	1.50	0.10	0.62	13.4	13.4	5.1	0.80
Fukui FUKUI	"	1.55	0.07	0.63	38.0	54.3	13.5	2.10
Tsuruga FUKUI	"	1.54	0.17	0.44	59.7	35.1	23.8	5.40
Tottori TOTTORI	"	1.63	0.10	0.45	55.2	55.2	22.6	5.00
Kurayoshi TOTTORI	"	1.75	0.10	0.66	37.4	37.4	10.8	1.60
Shime FUKUOKA	"	1.55	0.10	0.59	12.7	12.7	20.0	3.40
Fukuoka FUKUOKA	"	1.40	0.04	0.50	15.4	38.4	4.4	0.90
Fukuoka FUKUOKA	Dec. '69	1.53	0.09	0.62	28.2	31.3	24.3	3.90
Shime FUKUOKA	"	1.58	0.06	0.62	14.1	23.4	9.0	1.50
<b>(Japanese Radish Whole)</b>								
Iwatsuki SAITAMA	Apr. '69	1.07	0.04	0.41	8.30	20.7	7.80	1.90
Fukushima FUKUSHIMA	May '69	0.73	0.02	0.22	4.90	24.4	7.10	3.20
Okuma FUKUSHIMA	"	0.73	0.02	0.27	26.90	134.7	4.20	1.60
Toyota AICHI	"	0.77	0.02	0.31	10.30	51.7	6.60	2.10
Akabane AICHI	"	1.02	0.02	0.42	16.30	81.7	2.10	0.50
Yokohama KANAGAWA	June '69	0.58	0.04	0.18	11.70	29.3	11.80	6.50
Miura KANAGAWA	"	0.86	0.03	0.28	14.70	49.1	9.20	3.30
Fukuoka FUKUOKA	"	0.65	0.02	0.21	8.70	43.5	3.60	1.70
Shime FUKUOKA	"	0.61	0.03	0.27	7.80	26.0	2.90	1.30
Hayato KAGOSHIMA	"	0.85	0.04	0.31	11.20	28.1	14.20	4.60
Kaimon KAGOSHIMA	"	0.81	0.03	0.20	8.20	27.5	21.60	10.80
Sapporo HOKKAIDO	July '69	0.63	0.02	0.16	11.70	58.4	11.50	7.20
Asahikawa HOKKAIDO	"	0.75	0.03	0.27	6.50	21.6	5.00	1.80
Kitakanbara NIIGATA	"	0.46	0.03	0.16	7.20	23.9	9.20	5.80
Niigata NIIGATA	"	1.13	0.03	0.53	57.90	193.0	12.50	2.40
Niiza SAITAMA	"	0.70	0.03	0.25	4.80	16.1	5.00	2.00
Fukushima FUKUSHIMA	Oct. '69	0.60	0.05	0.19	7.90	15.8	4.90	2.60
Okuma FUKUSHIMA	"	0.61	0.03	0.26	27.90	93.0	4.80	1.80
Sapporo HOKKAIDO	Nov. '69	0.59	0.04	0.19	36.80	92.1	14.80	7.80
Asahikawa HOKKAIDO	"	0.49	0.03	0.17	24.60	81.9	14.90	8.80
Niigata NIIGATA	Nov. '69	0.59	0.03	0.21	21.10	70.4	7.30	3.40
Kitakanbara NIIGATA	"	0.64	0.03	0.19	18.60	62.1	5.90	3.10
Miura KANAGAWA	"	0.55	0.03	0.18	7.50	24.8	2.40	1.30
Fujieda SHIZUOKA	"	0.55	0.02	0.22	13.40	67.2	7.10	3.20
Fuji SHIZUOKA	"	0.43	0.02	0.16	18.50	92.7	12.50	7.80
Toyota AICHI	"	0.71	0.03	0.29	20.90	69.8	7.20	2.50
Akabane AICHI	"	0.68	0.02	0.25	16.20	80.8	3.30	1.30
Mihama FUKUI	"	0.58	0.02	0.24	46.60	233.0	4.20	1.80
Mihama FUKUI	"	0.59	0.02	0.22	53.30	267.0	5.80	2.60
Fukuoka FUKUOKA	"	0.71	0.04	0.28	19.50	48.7	10.60	3.80
Shime FUKUOKA	"	0.55	0.05	0.14	7.60	15.3	9.60	6.90
Yokohama KANAGAWA	Dec. '69	0.62	0.04	0.20	16.70	41.6	6.40	3.20
Niiza SAITAMA	"	0.72	0.04	0.27	17.50	43.8	4.30	1.60
Iwatsuki SAITAMA	"	0.62	0.03	0.23	9.30	31.0	6.30	2.70
Hayato KAGOSHIMA	"	0.50	0.03	0.19	16.70	55.7	5.20	2.70
Kaimon KAGOSHIMA	"	0.60	0.03	0.20	13.60	45.3	7.60	3.80
Tsuruga FUKUI	"	0.56	0.04	0.11	137.10	343.0	22.00	20.00
Tsuruga FUKUI	"	0.64	0.02	0.23	140.30	70.2	11.80	5.10
Fuji SHIZUOKA	Jan. '70	0.37	0.03	0.13	14.30	44.4	9.00	6.90
Fujieda SHIZUOKA	"	0.97	0.05	0.37	24.10	48.3	9.00	2.40

## Strontium-90 and Cesium-137 in Powdered Milk

(Japan Analytical Chemistry Research Institute)

Since 1969, 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 June 1969 to January 1970 are shown in Table 7.

Table 7.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Powdered Milk – June, 1969 to January 1970 –

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 3, Issue No. 24, of this Publication)

Name of Producer	Purchase Date	Component (% by Weight)			$^{90}\text{Sr}$		$^{137}\text{Cs}$	
		Ash(%)	Ca(%)	K(%)	(pCi/100g)	(pCi/gCa)	(pCi/100g)	(pCi/gK)
MORINAGA	Jun. 1969	3.76	0.30	0.41	2.3	7.7	9.4	22.9
"	"	2.34	0.31	0.39	2.3	7.4	8.9	22.8
"	"	2.32	0.33	0.37	2.1	6.4	8.4	22.7
WAKODO	Aug. '69	2.60	0.34	0.52	1.4	4.1	5.4	10.4
YUKIJIRUSHI	Oct. '69	2.40	0.33	0.44	2.2	6.7	9.4	21.4
WAKODO	Nov. '69	2.56	0.31	1.49	1.9	6.1	4.7	9.6
"	"	2.51	0.32	0.50	1.3	4.1	4.8	9.6
"	"	2.62	0.31	0.53	2.0	6.5	5.6	10.6
YUKIJIRUSHI	"	2.50	0.31	0.49	2.1	6.8	11.3	23.1
"	Dec. '69	2.34	0.31	0.46	2.0	6.5	10.1	22.0
MORINAGA	Jan. 1970	6.20	0.96	1.14	4.3	4.5	19.4	17.0
"	"	6.24	0.98	1.21	4.4	4.5	21.0	17.4
"	"	6.42	0.94	1.16	3.8	4.0	18.3	15.8
YUKIJIRUSHI	"	2.36	0.30	0.43	1.7	5.7	13.7	31.9
MEIJI	"	3.24	0.54	0.59	3.2	5.9	9.4	15.9
MORINAGA	Feb. '70	6.20	0.95	1.19	4.0	4.2	17.9	15.0
"	"	6.08	0.98	1.19	7.5	7.7	62.5	52.5
"	"	2.58	0.35	0.51	2.2	6.3	13.1	25.7
"	"	2.52	0.33	0.46	2.4	7.3	8.8	19.1
"	"	6.91	1.01	1.14	3.9	3.7	17.1	15.0
MORINAGA	"	6.04	0.95	1.18	3.9	4.1	15.3	13.0
YUKIJIRUSHI	"	2.32	0.32	0.39	2.0	6.3	9.8	25.1
MEIJI	"	3.26	0.54	0.56	2.8	5.2	11.2	20.0
"	"	3.30	0.52	0.65	4.8	9.2	29.0	44.6

## 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 sent by the prefectural public health laboratories of Saitama, Shizuoka and Kyoto.

Sampling locations are shown in Figure 7. The samples were ashed between 400°C to 500°C, and analyzed by the method recommended by Science and Technology Agency.

Results obtained during the period from May to August 1969 are shown in Table 8.

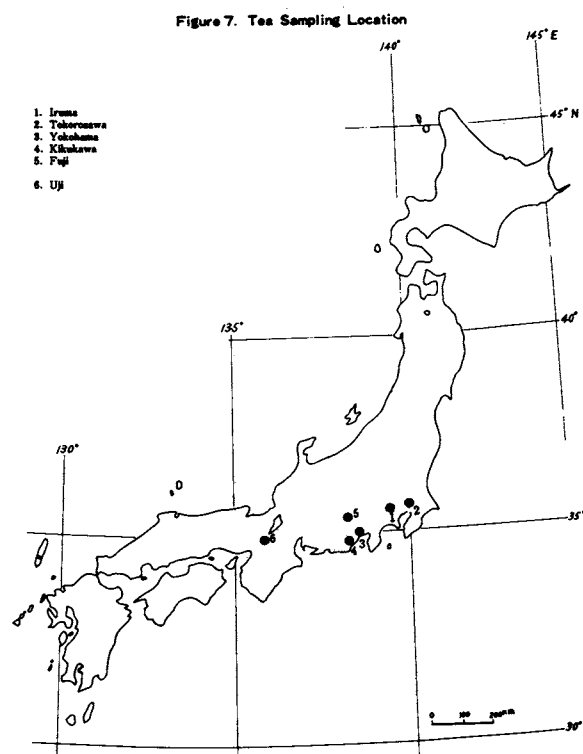


Table 8.  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  in Processed-Tea — May to August, 1969 —

By T. Asari, M. Chiba and M. Kuroda

(Japan Analytical Chemistry Research Institute)

(Continued from Table 6, Issue No. 24, of this Publication)

Location	Pick	Date of Sampling	Component (% by Weight)			$^{90}\text{Sr}$		$^{137}\text{Cs}$	
			Ash(%)	Ca(%)	K(%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Iruma SAITAMA	1st	May '69	5.70	0.45	2.45	286	63.6	297	12.1
Tokorozawa SAITAMA	"	"	5.68	0.44	1.50	270	61.4	233	15.5
Fuji SHIZUOKA	"	"	6.34	0.38	1.93	258	67.9	138	7.2
Kikukawa SHIZUOKA	"	"	5.20	0.49	1.51	657	134.1	236	15.6
Uji KYOTO	"	"	6.71	0.41	1.90	255	62.1	291	15.3
Uji KYOTO	"	"	4.67	0.27	1.21	65	24.1	165	13.7
Tokorozawa SAITAMA	"	July '69	5.95	0.55	1.47	311	56.6	281	19.1
Iruma SAITAMA	2nd	"	5.35	0.33	2.60	207	62.6	220	8.5
Uji KYOTO	"	"	6.48	0.53	1.78	521	98.2	135	7.6
Uji KYOTO	"	"	6.15	0.32	3.03	188	58.9	128	4.2
Fuji SHIZUOKA	"	Aug. '69	6.10	0.39	1.82	406	104.1	508	27.9
Kikukawa SHIZUOKA	"	"	6.12	0.48	1.86	571	118.9	415	22.3