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RADIOACTIVITY SURVEY DATA in Japan

NUMBER 21

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National Institute of Radiological Sciences

Chiba, Japan

Radioactivity Survey Data in Japan

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Contents

National Institute of Radiological Sciences

Soil Data

Strontium-90, Cesium-137 and Cerium-144 in Soil

(Japan Analytical Chemistry Research Institute)

The Japan Analytical Chemistry Research Institute has analyzed surface soil samples collected from 16 prefectures, to determine the total deposits of fallout. Sampling locations are indicated in Figure 1.

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 6~7, Issue No. 4 of this publication.

Results obtained during the period from July to December, 1967 are shown in Table 1.

Figure 1. Soil Sampling Location

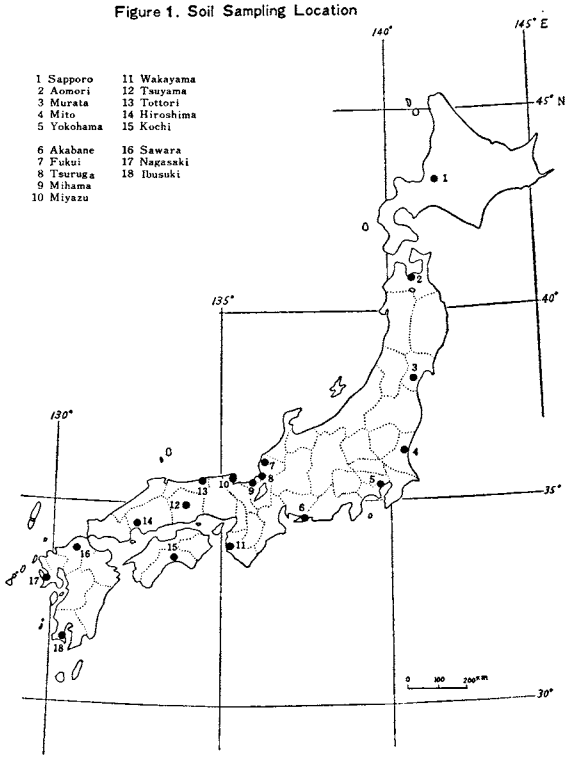

Table 1. ^{90}Sr, ^{137}Cs and ^{144}Ce in Soil —July to Dec., 1967—

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

(Japan Analytical Chemistry Research Institute)

(Continued from Table 11, Issue No. 18 of this Publication)

Location	Type	Dry Soil collected			^{90}Sr			^{137}Cs			$^{144}Ce+^{144}Pr$
		Weight (%)	Ca (%)	K (%)	(pCi/kg)	(mCi/km²)	(mCi/gCa)	(pCi/kg)	(mCi/km²)	(mCi/gK)	(mCi/km²)
July 1967											
Sapporo, HOKKAIDO	Green	89.56	1.27	0.08	528	15.7	42	1368	40.5	1710	18.7
Aomori, AOMORI	〃	85.91	0.30	0.15	530	10.0	177	904	17.0	602	5.0
Murata, MIYAGI	〃	90.16	0.34	0.13	628	19.6	185	1177	36.8	905	25.8
Mito, IBARAKI	〃	85.69	0.47	0.04	424	14.5	90	634	21.6	1585	13.7
Yokohama, KANAGAWA	〃	81.90	0.87	0.02	1170	22.8	134	1612	31.3	8060	27.0
Akabane, AICHI	〃	97.80	0.12	0.09	232	11.9	193	630	32.3	700	9.5
Tsuruga, FUKUI	〃	97.87	0.16	0.07	217	9.5	136	671	29.3	958	9.0
Fukui, FUKUI	Bare	96.40	0.49	0.11	442	17.6	90	976	38.8	887	21.9
Mihama, FUKUI	Green	97.56	0.07	0.09	478	12.7	683	1191	39.9	1323	37.6
Miyazu, KYOTO	〃	98.11	0.06	0.20	663	18.6	1103	2368	66.6	1182	43.9
Wakayama, WAKAYAMA	〃	98.15	1.09	0.33	444	57.6	41	976	115.7	295	78.8

Location	Type	Dry Soil collected			^{90}Sr			^{137}Cs			$^{144}Ce+^{144}Pr$
		Weight (%)	Ca (%)	K (%)	(pCi/kg)	(mCi/km^2)	(mCi/gCa)	(pCi/kg)	(mCi/km^2)	(mCi/gK)	(mCi/km^2)
Tsuyama, OKAYAMA	Bare	98.47	0.26	0.07	254	11.6	98	973	44.3	1390	25.9
Kochi, KOCHI	〃	94.00	0.67	0.11	804	24 0	120	2285	68.1	2077	31.3
Sawara, FUKUOKA	〃	96.46	0.26	0.09	1014	31.6	390	2445	75.7	2716	28.4
Aug. '67											
Tottori, TOTTORI	Green	98.81	0.09	0.15	813	24.2	903	1350	40.1	900	39.9
Hiroshima, HIROSHIMA	〃	98.88	0.17	0.14	438	16.2	258	1230	45.6	914	9.5
Nagasaki, NAGASAKI	〃	93.80	0.11	0.05	408	16.8	371	411	16.9	822	7.9
Ibusuki, KAGOSHIMA	〃	96.48	2.69	0.02	209	6.4	8	220	6.8	1100	7.0
Nov. '67											
Sapporo, HOKKAIDO	〃	96.06	0.49	0.09	254	15.9	52	518	32.5	535	7.5
Aomori, AOMORI	〃	84.51	0.37	0.05	64	21.4	17	710	23.8	1420	5.7
Murata, MIYAGI	Bare	93.60	0.35	0.09	408	19.3	117	1018	48.1	1130	24.0
Akabane, AICHI	〃	96.87	0.26	0.10	379	15.2	146	858	34.5	858	10.7
Fukui, FUKUI	〃	95.23	0.16	0.07	289	12.4	181	933	39.9	1333	9.5
Mihama, FUKUI	〃	97.94	0.12	0.10	134	5.3	112	1297	51.6	1297	18.5
Tsuruga, FUKUI	〃	99.03	0.57	0.07	183	5.6	32	566	17.2	809	17.1
Miyazu, KYOTO	Green	97.84	0.10	0.16	477	18.5	477	1093	42.3	633	37.1
Wakayama, WAKAYAMA	Bare	98.81	0.28	0.10	43	2.4	15	155	8.7	155	4.3
Tsuyama, OKAYAMA	Green	93.55	0.22	0.10	96	3.6	43	492	18.3	492	8.1
Hiroshima, HIROSHIMA	Bare	98.53	0.41	0.33	249	9.4	60	903	34.1	274	18.8
Kochi, KOCHI	〃	98.08	2.00	0.09	503	15.9	25	2219	70.1	2460	13.6
Sawara, FUKUOKA	〃	98.03	0.15	0.15	253	14.4	169	1387	78.6	924	26.4
Ibusuki, KAGOSHIMA	〃	96.31	1.32	0.03	300	15.4	23	541	27.5	1804	8.2
Dec. '67											
Mito, IBARAKI	〃	88.76	0.50	0.07	600	29.3	120	1024	50.0	1462	16.7
Yokohama, KANAGAWA	〃	99.00	0.53	0.04	216	8.1	41	340	12.8	850	3.3
Tottori, TOTTORI	Green	98.77	0.08	0.09	149	6.7	19	93	41.0	1030	7.3
Nagasaki, NAGASAKI	Bare	95.08	0.13	0.05	324	15.1	249	203	9.5	405	2.4

Water Data

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 the 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 the Japan Analytical Chemistry Research Institute for strontium-90 and cesium-137 content analyses.

Sampling locations are shown in Figure 2. 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 1966 to January 1968 are shown in Table 2.

Figure 2. Potable Rain Water Sampling Location

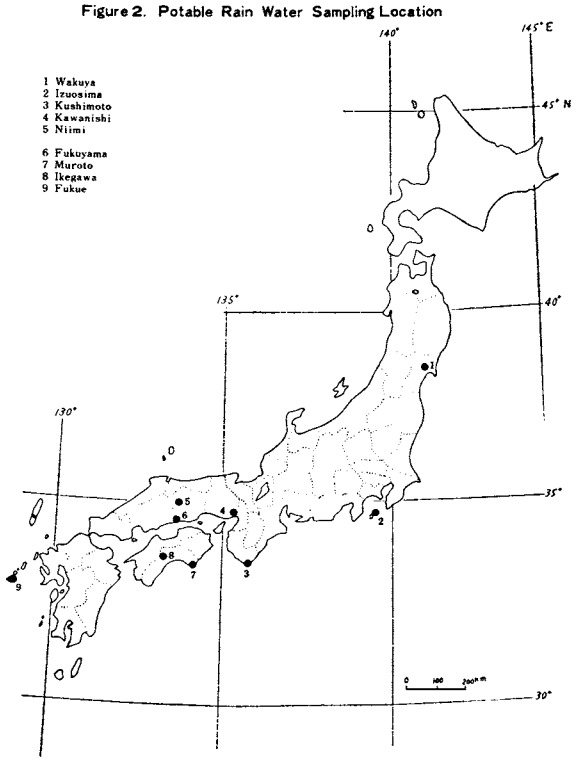

Table. 2. ^{90}Sr and ^{137}Cs in Potable Rain Water —July 1966 to Jan. 1968—

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

(*Japan Analytical Chemistry Reseach Institute*)

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

Location	Date of Sampling	^{90}Sr (pCi/*l*)	^{137}Cs (pCi/*l*)	pH
Wakuya, MIYAGI	July 1966	2.62	0.73	9.8
Izuoshima, TOKYO	〃 〃	1.88	1.00	
Kushimoto, WAKAYAMA	〃 〃	1.78	0.43	6.6
Kawanishi, HYOGO	〃 〃	2.84	2.34	6.7
Niimi, OKAYAMA	〃 〃	1.32	0.09	7.0
Fukuyama, HIROSHIMA	〃 〃	0.12	0.08	7.2
Muroto, KOCHI	〃 〃	0.34	0.28	6.8
Fukue, NAGASAKI	〃 〃	2.39	0.56	7.6
Wakuya, MIYAGI	Oct. '66	0.87	1.41	
Izuoshima, TOKYO	〃 〃	0.50	0.42	
Kushimoto, WAKAYAMA	〃 〃	1.96	0.50	
Kawanishi, HYOGO	〃 〃	0.64	0.66	6.7
Niimi, OKAYAMA	〃 〃	0.93	0.08	7.0
Fukuyama, HIROSHIMA	〃 〃	0.12	0.02	7.1
Muroto, KOCHI	Oct. '66	0.31	0.31	6.8
Fukue, NAGASAKI	〃 〃	2.03	0.61	7.7
Izuoshima, TOKYO	Jan. 1967	0.82	0.40	
Kushimoto, WAKAYAMA	〃 〃	2.55	0.56	
Kawanishi, HYOGO	〃 〃	1.47	0.77	6.5
Niimi, OKAYAMA	〃 〃	1.86	0.19	6.8
Fukuyama, HIROSHIMA	〃 〃	0.10	0.05	7.1
Muroto, KOCHI	〃 〃	9.39	0.20	6.8
Fukue, NAGASAKI	〃 〃	2.55	0.57	7.6
Izuoshima, TOKYO	July '67	0.78	0.14	
Kushimoto, WAKAYAMA	〃 〃	1.63	0.62	6.9
Kawanishi, HYOGO	〃 〃	0.76	1.48	6.7
Niimi, OKAYAMA	〃 〃	1.78	0.12	6.8
Fukuyama, HIROSHIMA	〃 〃	0.20	0.09	7.3

Location	Date of Sampling	^{90}Sr (pCi/l)	^{137}Cs (pCi/l)	pH	Location	Date of Sampling	^{90}Sr (pCi/l)	^{137}Cs (pCi/l)	pH
Muroto, KOCHI	July '67	0.27	0.11	6.8	Fukue, NAGASAKI	Oct. '67	0.81	0.26	7.8
Ikegawa, KOCHI	〃 〃	0.40	0.34	7.0	Izuoshima, TOKYO	Jan. 1968	0.44	0.08	6.5
Fukue, NAGASAKI	〃 〃	1.42	0.34	7.6	Kushimoto, WAKAMA	〃 〃	1.37	0.29	6.5
Izuoshima, TOKYO	Oct. '67	0.39	0.17	6.5	Kawanishi, HYOGO	〃 〃	0.69	1.35	7.4
Kushimoto, WAKAYAMA	〃 〃	1.95	0.52	6.8	Niimi, OKAYAMA	〃 〃	1.41	0.21	7.0
Kawanishi, HYOGO	〃 〃	0.66	1.23	8.0	Fukuyama, HIROSHIMA	〃 〃	0.10	0.03	7.3
Niimi, OKAYAMA	〃 〃	1.93	0.31	7.4	Muroto, KOCHI	〃 〃	0.32	0.31	6.8
Fukuyama, HIROSHIMA	〃 〃	0.08	0.03	7.3	Ikegawa, KOCHI	〃 〃	0.36	0.23	7.0
Muroto KOCHI	〃 〃	0.42	0.14	6.8	Fukue, NAGASAKI	〃 〃	1.68	0.45	8.0
Ikegawa, KOCHI	〃 〃	0.39	0.15	7.0					

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

(*Japan Analytical Chemistry Research Institute*)

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

Samples of potable rain water were collected in polyethylene bottles at 8 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 3.

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

Results obtained during the period from May 1967 to February 1968, are shown in Table 3.

Figure 3. Potable Rain Water used by Lighthouse Sampling Location

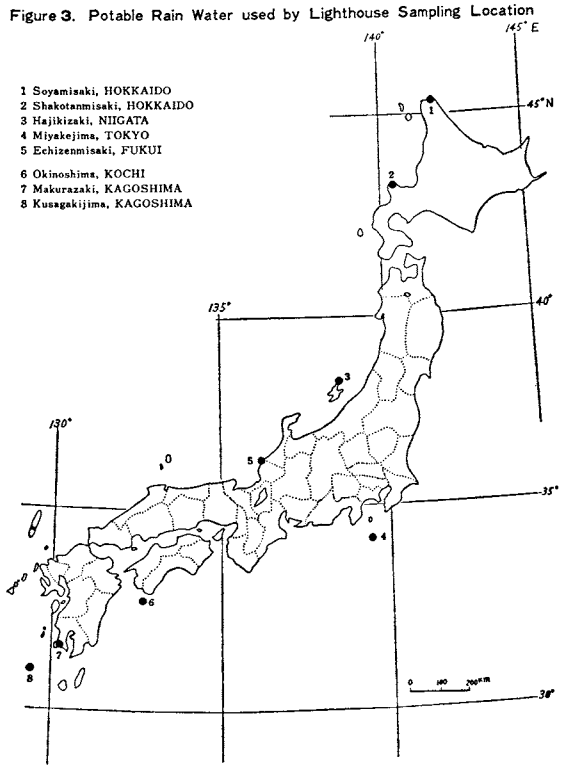

Table 3. ^{90}Sr and ^{137}Cs in Potable Rain Water used by Lighthouses —May, 1967 to Feb., 1968—

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

(Japan Analytical Chemistry Research Institute)

(Continued from Table 6, Issue No. 18 of this Publicatition)

Lighthouse Location	^{90}Sr (pCi/l)		^{137}Cs (pCi/l)	
	Original	Filtrate	Original	Filtrate
May 1967				
Soyamisaki, HOKKAIDO	3.89	0.04	1.59	0.03
Shakotanmisaki, HOKKAIDO	0.20	5.89	0.13	5.99
Hajikizaki, NIIGATA	2.49	3.22	2.21	2.33
Okinoshima, KOCHI	1.24	0.49	0.87	0.48
June '67				
Miyakejima, TOKYO	1.15	0.60	1.09	1.35
Echizenmisaki, FUKUI	2.05	1.27	0.44	0.83
Makurazaki, KAGOSHIMA	1.26	2.60	0.24	0.56
Sept. '67				
Soyamisaki, HOKKAIDO	1.73	0.04	1.58	0.21
Shakotanmisaki, HOKKAIDO	0.31	1.24	0.10	1.68
Hajikizaki, NIIGATA	1.50	1.26	0.32	0.88
Miyakejima, TOKYO	2.34	0.61	3.43	1.91
Echizenmisaki, FUKUI	1.65	1.08	0.64	0.84
Okinoshima, KOCHI	1.83	1.71	0.41	0.79
Kusagakijima, KAGOSHIMA	1.09	0.75	0.22	0.57
Jan. '1968				
Soyamisaki, HOKKAIDO	1.42	0.12	1.11	0.18
Shakotanmisaki, HOKKAIDO	0.82	0.13	0.82	0.87
Hajikizaki, NIIGATA	2.51	2.74	0.11	0.17
Kusagakijima, KAGOSHIMA	1.30	3.05	0.39	2.02
Feb. '68				
Miyakejima, TOKYO	1.32	0.59	1.26	0.67
Echizenmisaki, FUKUI	2.90	1.57	0.23	0.60
Okinoshima, KOCHI	1.78	1.04	1.90	0.79

Human Data

Strontium-90 in Human Bone

(National Institute of Radiological Sciences)

Since 1959, human bones collected from various parts of Japan have been analyzed at National Institute of Radiological Sciences.

The bone samples were collected from Tokyo. Sampling location is shown in Figure 4.

The values of strontium-90 in bone samples were determined by the same method mentioned in the explanation of page 25, Issue No. 3 of this publication.

Results derived from human bone samples from subjects that deceased during the period from February 1967 to January 1968 are shown in Table 4.

Natural strontium content was analyzed by atomic absorption spectrophotometry.

Figure 4. Human Bone Sampling Location

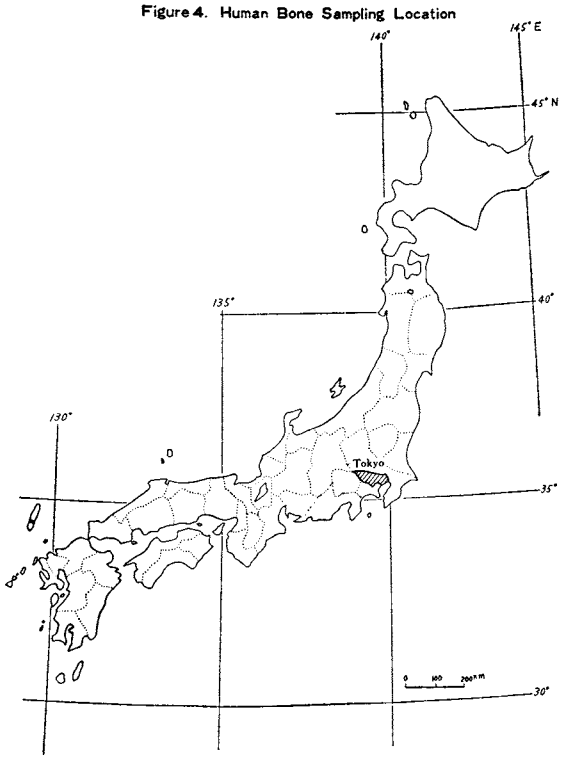

Table 4. ^{90}Sr in Human Bone —Feb. 1967 to Jan. 1968—

By G. Tanaka, H. Kawamura,M. Izyuin

(*National Institute of Radiological Sciences*)

(Continued from Table 9, Issue No. 17 of this Publication)

Location	Age	Sex	Month of Death	Number	Name of Bone	Natural Sr (mg/gCa)	^{90}Sr (pCi/gCa)
Tokyo	0	M F	1967 Apr.	2	Whole Skeleton	0.258	3.90
〃	1	M	〃 Aug.	1	〃	0.287	4.76
〃	〃	〃	〃 Sept.	〃	〃	0.255	2.89
〃	〃	〃	1968 Jan.	〃	〃	0.273	5.56
〃	〃	〃	〃 〃	〃	〃	0.240	12.0
〃	2	〃	1967 Aug.	〃	〃		3.84
〃	〃	F	〃 〃	〃	〃	0.290	2.71
〃	3	M	〃 Nov.	〃	Rib.	0.294	2.45
〃	4	F	〃 Aug.	〃	〃	0.276	2.05
〃	5	M	〃 〃	〃	〃	0.302	3.27
〃	〃	F	〃 Nov.	〃	Femur		1.40
〃	6	〃	〃 Aug.	〃	Rib	0.339	2.20
〃	〃	M	〃 Sept.	〃	〃	0.305	2.25
〃	〃	F	〃 Nov.	〃	Vertebra	0.312	3.03
〃	7	〃	〃 Feb.	〃	Rib	0.325	1.93
〃	8	M	〃 Aug.	〃	〃	0.302	1.43
〃	〃	〃	〃 Nov.	〃	Rib, Femur	0.342	2.00
〃	〃	F	〃 〃	〃	Rib	0.335	3.43
〃	9	M	〃 Feb.	〃	〃		1.66
〃	〃	F	〃 Nov.	〃	〃	0.386	2.55
〃	11	F	1967 Feb.	〃	〃	0.372	1.93
〃	〃	〃	〃 Aug.	〃	Rib, Femur	0.365	1.68
〃	〃	〃	〃 Noy.	〃	Vertebra	0.321	5.28
〃	12	〃	〃 〃	〃	Rib	0.382	3.01
〃	〃	〃	〃 〃	〃	〃		3.32
〃	13	M	〃 〃	〃	〃	0.410	2.01
〃	14	〃	〃 〃	〃	〃	0.392	3.25

Location	Age	Sex	Month of Death	Number	Name of Bone	Natural Sr (mg/gCa)	^{90}Sr (pCi/gCa)
Tokyo	15	F	1967 Aug.	1	Rib	0.422	2.05
〃	16	M	〃 Jan.	〃	〃	0.403	1.74
〃	18	F	〃 Nov.	〃	〃		2.85
〃	24	M	〃 Feb.	〃	〃	0.472	0.40

Total Body Burden of Cesium-137 as Assessed by Blood Analysis

(Institute of Public Health)

Basic investigation conducted at the Institute of Public Health since 1963 through 1965 on the assessment of total body burden of cesium-137 by the analysis of blood revealed such assessment justifiably be made under limited conditions[1),2)].

Citrated whole blood samples (about 200 m*l* each) were supplied by blood banks or other sources throughout Japan and from abroad.

The samples were analyzed for cesium-137 content by a radiochemical method[3)].

Sampling locations in Japan and in foreign countries are shown in Figures 5 and 6. The results obtained in Japan for 1966 and in foreign countries for 1965～1967 are shown in Table 5 and 6.

To estimate the body levels of cesium-137, the relation factor of 6 was multiplied to the blood concentration to get the body burden per unit body weight (pCi/kg), which was then divided by an assumed concentration of potassium in unit body weight (2 g/kg) to get the concentration of cesium-137 per gram of potassium in the body (pCi/gK).

The relation factor is defined as :

$$\text{Factor} = \frac{\text{Total body burden of } ^{137}\text{Cs in pCi}}{\text{Body weight(kg)} \times ^{137}\text{Cs in blood(pCi/kg)}}$$

Total body burdens thus estimated in Japan for 1966 and foreign countries for 1965～1967 are shown in Table 7 and 8.

1) N. Yamagata and T. Iinuma, Total body burden of cesium-137 in Japanese in 1964 as assessed by blood analysis. Health Physics 12, No 7 (1966).

2) N. Yamagata et al., In vivo experiment on the metabolism of cesium in human blood with reference to rubidium and potassium. J. Rad. Res. Japan, 7, 30～47 (1966).

3) N. Yamagata, The currently used methods of radiochemical separation of cesium-137 in blood and low-background counting with a 4 counter. Bull. Inst. Publ. Health 13, 153～8 (1964).

4) N. Yamagata, Blood Cesium-137 Project in 1967. Health Phisics No. 15, 276～280 (1968).

Figure 5. Sampling Location of Whole Blood Samples in Japan

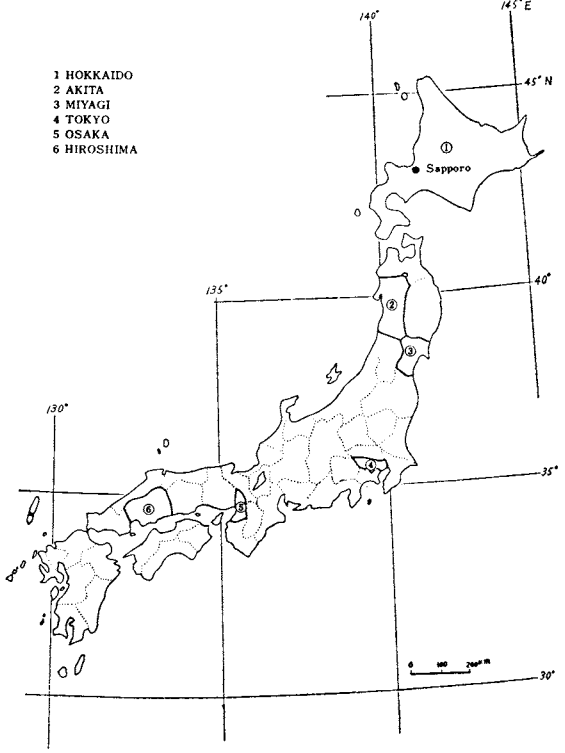

Figure 6. Sampling Location of Whole Blood Samples in Foreign Country

1 Montpellier (France)
2 Amsterdam (Netherland)
3 Madrid (Spain)
4 Belgrade (Yugoslavia)
5 Roma (Italy)

6 Lagos (Nigeria)
7 Buenos Aires (Argentina)
8 São Paulo (Brazil)
9 Lima (Peru)
10 New Delhi (India)

11 Rangoon (Burma)
12 Bangkok (Thailand)
13 Manila (Philippines)
14 Taipei (Republic of China)
15 Naha (Okinawa)

16 Brisbane (Australia)

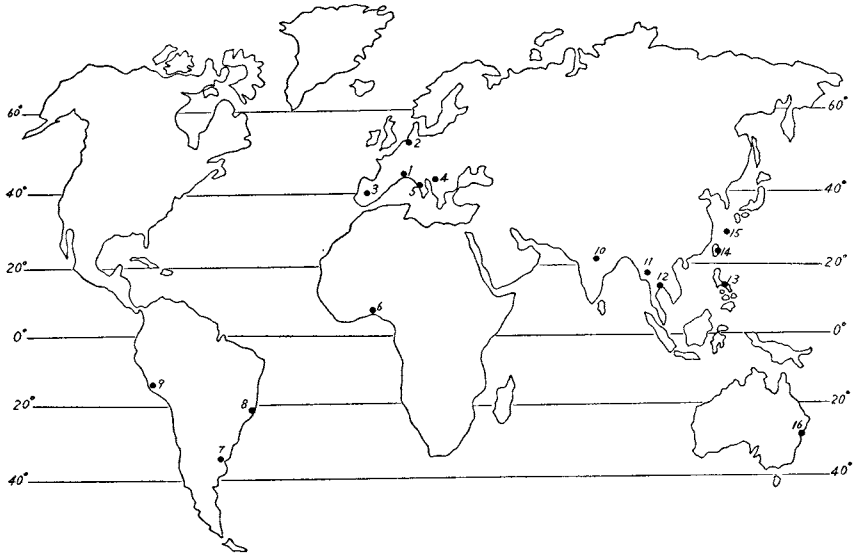

Table 5. ^{137}Cs in Whole Blood Samples Collected in Japan —1966—

By N. Yamagata

(Insiitute of Public Health)

(Continued from Table 3. Issue No. 13, of this Publication)

Location	Date of Collection	^{137}Cs in Blood (pCi/kg)	Location	Date of Collection	^{137}Cs in Blood (pCi/kg)
Hokkaido	Nov. 1966	26.0	Tokyo	Nov. 1966	24.8
	〃	23.4			18.8
Miyagi	Nov. '66	31.0			16.6
	〃	27.5			19.4
	〃	12.4	Osaka	Nov. '66	17.4
	〃	12.5		〃	21.2
	〃	25.1		〃	19.3
Akita	Sept. '66	38.8		〃	21.6
	〃	32.9		〃	24.5
	〃	27.2	**Central Part of Japan**	**Mean**	**20.4**
	〃	16.0			
	〃	26.5			
Northern Part of Japan	**Mean**	**25.0**			

Table 6. ^{137}Cs in Whole Blood Samples Collected from Foreign Countries —1965 to 1967—

By N. Yamagata

(Institute of Public Health)

Country (City)	Date of Collection	^{137}Cs in Blood (pCi/kg)	Country (City)	Date of Collection	^{137}Cs in Blood (pCi/kg)
France (Montpellier)	July 1967	28.4		〃	22.0
	〃	19.5		**Mean**	**21.3**
	〃	24.6		(*Excluded in obtaining the mean)	
	〃	24.8			
	〃	20.2			
	〃	13.1	Netherland (Amsterdam)	Sept. 1966	49.2
	〃	*62.0		〃	48.0
	〃	16.8		〃	46.6
	〃	25.1		〃	63.0
	〃	18.5		〃	76.5

Country (City)	Date of Collection	^{137}Cs in Blood (pCi/kg)
	〃	58.7
	〃	53.0
	〃	53.8
	〃	69.5
	〃	69.6
	Mean	**58.8**
Spain (Madrid)	July 1967	16.0
	〃	38.4
	〃	16.5
	〃	24.0
	〃	19.3
	〃	26.1
	〃	49.7
	〃	24.5
	〃	19.7
	〃	27.6
	Mean	**26.2**
Yugoslavia (Belgrade)	July～Aug. 1967	22.7
	〃	25.7
	〃	19.5
	〃	15.3
	〃	27.2
	〃	17.4
	〃	19.5
	〃	32.6
	〃	20.1
	〃	18.8
	Mean	**21.9**
Italy (Roma)	Sept. 1967	29.8
	〃	29.8
	〃	21.0
	〃	23.1
	〃	19.3
	〃	20.5
	〃	22.6
	〃	21.9
	〃	23.8
	〃	14.5
	〃	19.3
	Mean	**22.3**
Nigeria (Lagos)	Sept. 1967	11.9
	〃	22.9
	〃	19.6
	〃	13.2
	〃	18.4
	〃	19.4
	〃	20.3
	〃	18.6
	〃	27.2
	〃	22.0
	〃	21.0
	〃	20.4
	Mean	**19.6**
Argentina (Buenos Aires)	Aug. 1967	9.9
	〃	9.5
	〃	10.3
	〃	10.5
	〃	15.0
	〃	10.2
	〃	9.1
	〃	8.1
	〃	11.3
	〃	7.6
	Mean	**10.2**
Brazil (São Paulo)	Aug. 1967	8.6
	〃	12.2
	〃	10.4
	〃	10.7
	〃	9.9
	〃	10.0
	〃	10.4
	〃	9.7
	〃	9.6
	〃	*27.2
	〃	11.2
	Mean	**10.5**
	(*Excluded in obtaining the mean)	
Peru (Lima)	Nov.～Dec. 1967	13.1
	〃	10.7
	〃	7.4
	〃	4.4
	〃	13.0
	〃	10.1
	〃	10.5
	〃	9.3
	〃	10.8
	〃	6.3
	Mean	**9.6**
India (New Delhi)	Sept. 1965	22.8
	Dec. 1965	23.3
	〃	15.0
	〃	17.0
	〃	29.6
	〃	14.9
	〃	38.4
	〃	38.5
	〃	26.9
	〃	24.9
	Mean	**25.1**
Burma (Rangoon)	Apr. 1966	18.7
	〃	13.9
	〃	20.7
	〃	23.5
	〃	19.8
	〃	19.9
	〃	14.1
	〃	22.1
	〃	19.4
	〃	14.9
	Mean	**18.7**
Thailand (Bangkok)	Nov. 1965	21.7
	〃	34.8
	〃	20.3
	〃	44.3
	〃	34.6
	〃	41.0

Country (City)	Date of Collection	^{137}Cs in Blood (pCi/kg)
	〃	32.8
	〃	46.5
	〃	22.7
	〃	31.0
	〃	21.6
	Mean	**31.9**
Philippines (Manila)	Apr. 1966	24.6
	〃	38.2
	〃	38.6
	〃	40.5
	〃	27.5
	〃	32.9
	〃	40.7
	〃	56.5
	〃	37.7
	〃	27.8
	Mean	**36.5**
Republic of China (Taipei)	Dec. 1965	15.2
	〃	24.5
	〃	20.6
	〃	20.5
	Apr.～Dec. 1966	13.6
	〃	23.9
	〃	18.3
	〃	18.1
	〃	22.4
	〃	28.4
	Mean	**20.6**

Country (City)	Date of Collection	^{137}Cs in Blood (pCi/kg)
Okinawa (Naha)	Oct. 1966	10.1
	〃	25.4
	〃	19.0
	〃	12.1
	〃	17.6
	〃	13.9
	〃	*144
	Nov. 1966	22.8
	〃	10.6
	〃	18.2
	Mean	**16.6**
	(*Excluded in obtaining the mean)	
Australia (Brisbane)	Apr. 1966	18.8
	〃	28.9
	〃	22.1
	〃	23.7
	〃	17.4
	〃	26.7
	〃	17.4
	〃	24.4
	〃	18.4
	〃	20.0
	Mean	**21.8**

Table 7. Total Body Burden of ^{137}Cs in Japan as assessed by Blood Analysis

By N. Yamagata

(*Institute of Public Health*)

Location	Date of Collection	Body-^{137}Cs (pCi/gK)
Sapporo	Apr.～May 1966	76
Northern Part of Japan (Hokkaido, Miyagi, Akita)	Sept.～Nov. 1966	75
Hiroshima	Mar.～May 1966	62
Central and Southern Part or Japan (Tokyo, Osaka)	Nov. 1966	61
	Mean	**68.5**

Table 8. Total Body Burden of ^{137}Cs in Foreign Country as assessed by Blood Analysis

By N. Yamagata

(*Institute of Public Health*)

Country	Date of Collection	Body-^{137}Cs (pCi/gK)
France	July 1967	64
Netherland	Sept. '66	176
Spain	July '67	79
Yugoslavia	July～Aug. '67	66
Italy	Sept. '67	67
Nigeria	Sept. '67	59
Argentina	Aug. '67	31
Brazil	Aug. '67	32
Peru	Nov.～Dec. '67	29
India	Dec. '65	75
Burma	Apr. '66	56
Thailand	Nov. '65	96
Philippines	Apr. '65	110
Republic of China	Dec. '65～Apr. '66	62
Okinawa	Oct.～Nov. '66	50
Australia	Apr. '66	66
	Mean	**69.9**

Dietary Data

Strontium-90 and Cesium-137 in Tea

(Japan Analytical Chemistry Research Institute)

Since 1963, the 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° to 500°C, and analyzed by the method recommended by the Science and Technology Agency.

Results obtained during the period from May 1966 to August 1967 are shown in Table 9.

Figure 7. Tea Sampling Location

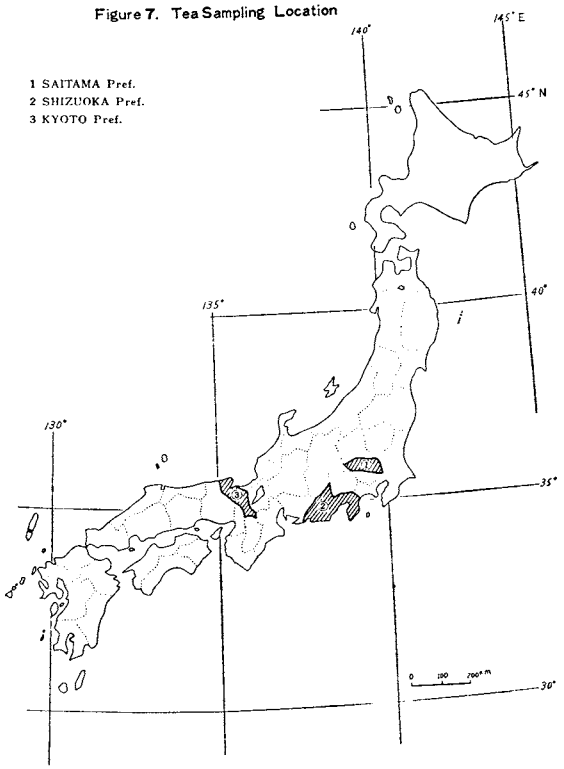

Table 9. ^{90}Sr and ^{137}Cs in Processed Tea —May 1966 to Aug. 1967—

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

(Japan Analytical Chemistry Research Institute)

(Continued from Table 20, Issue No. 2 of this Publication)

Location	Pick	Date of Sampling	Component(% by Weight)			^{90}Sr		^{137}Cs	
			Ash(%)	Ca(%)	K(%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Tokorozawa, SAITAMA	1 st	May 1966	6.32	0.58	1.63	475	82	566	37.7
Iruma, SAITAMA	〃	〃	6.60	0.39	1.83	462	119	792	43.3
Kikukawa, SHIZUOKA	〃	〃	4.58	0.36	1.44	363	102	282	19.5
Yoshiwara, SHIZUOKA	〃	〃	4.79	0.30	1.52	455	153	261	17.1
Uzi, KYOTO	〃	〃	5.18	0.49	2.06	955	195	532	25.8
〃 〃	〃	〃	5.53	0.41	1.85	617	152	348	18.8
Tokorozawa, SAITAMA	2 nd	July '66	5.13	0.39	1.62	412	107	533	32.9
Iruma, SAITAMA	〃	〃	5.28	0.44	1.71	382	87	538	31.4
Uzi, KYOTO	〃	〃	6.40	0.51	2.07	682	135	448	21.6
〃 〃	〃	〃	5.40	0.42	1.76	440	105	331	18.8
Kikukawa, SHIZUOKA	〃	Aug. '66	6.05	0.31	1.83	554	179	273	14.9
Yoshiwara, SHIZUOKA	〃	〃	7.33	0.36	2.04	250	70	482	23.6
Kikukawa, SHIZUOKA	1 st	May 1967	6.05	0.31	1.72	356	115	366	21.3

Location	Pick	Date of Sampling	Component(% by Weight)			^{90}Sr		^{137}Cs	
			Ash(%)	Ca(%)	K(%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Uzi, KYOTO	1 st	May 1967	7.59	0.57	2.49	364	64	336	13.5
〃 〃	〃	〃	5.58	0.39	1.83	381	98	203	11.1
Iruma, SAITAMA	〃	June '67	5.34	0.41	1.42	297	72	263	18.5
Tokorozawa, SAITAMA	〃	〃	5.86	0.45	1.58	409	91	272	17.2
Uzi, KYOTO	2 nd	〃	6.66	0.32	2.12	328	103	189	8.9
〃 〃	〃	〃	6.41	0.45	1.91	363	81	196	10.3
Tokorozawa, SAITAMA	〃	July '67	6.15	0.52	1.59	399	77	315	19.8
Iruma, SAITAMA	〃	〃	5.46	0.41	1.42	218	53	266	18.7
Yoshiwara, SHIZUOKA	〃	〃	5.79	0.44	1.86	295	67	268	14.4
Kikukawa, SHIZUOKA	〃	Aug. '67	6.12	0.35	1.79	503	144	311	17.4
Yoshiwara, SHIZUOKA	〃	〃	6.06	0.50	1.85	154	31	298	16.1