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RADIOACTIVITY SURVEY DATA in Japan

NUMBER 20

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National Institute of Radiological Sciences

Chiba, Japan

Radioactivity Survey Data in Japan

Number 20

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Contents

National Institute of Radiological Sciences

Dietary Data

Strontium-90 and Cesium-137 in Milk

(Japan Analytical Chemistry Research Institute)

Since December 1961, milk samples from various parts of Japan have been collected by 25 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 1.

Three liters of fresh milk were purchased at a representative farm in each prefecture and carbonized 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 the Science and Technology Agency.

Results obtained during the period from April, 1967 to March, 1968 are shown in Table 1.

Figure 1. Milk Sampling Location

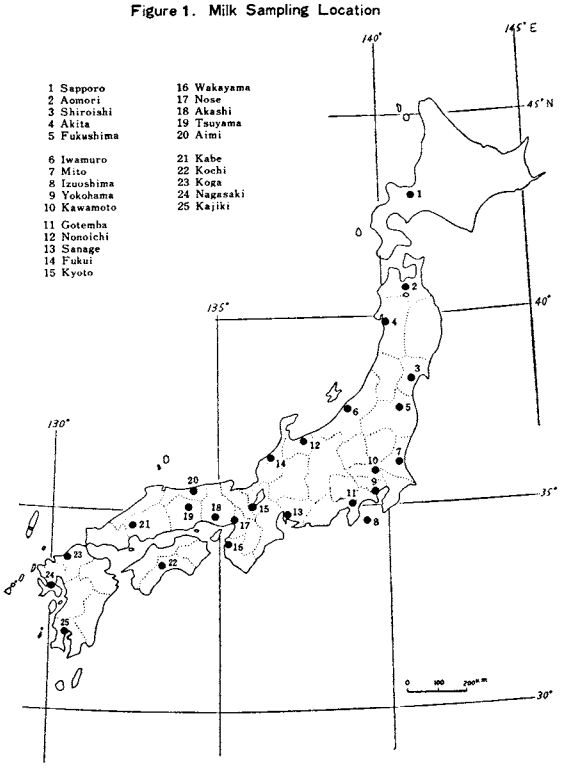


Table 1. ^{90}Sr and ^{137}Cs in Milk — Apr. 1967 to Mar. 1968 —

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

(Japan Analytical Chemistry Research Institute)

(Continued from Table 3, Issue No. 17 of this Publication)

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/*l*)	Ca (g/*l*)	K (g/*l*)	(pCi/*l*)	(pCi/gCa)	(pCi/*l*)	(pCi/gK)
Apr. 1967							
Aomori, AOMORI	7.00	1.05	1.45	14.1	13.4	27.6	19.0
Iwamuro, NIIGATA	6.00	0.86	1.24	5.0	5.8	14.5	11.7
Mito, IBARAKI	8.00	1.22	1.51	3.8	3.1	19.6	13.0
Nonoichi, ISHIKAWA	6.33	0.96	1.35	6.7	7.0	15.9	11.8
Sanage, AICHI	7.33	1.16	1.59	3.3	2.8	10.6	6.7
Fukui, FUKUI	7.67	1.06	1.30	5.9	5.6	13.8	10.6
Tsuyama, OKAYAMA	6.67	1.13	1.20	4.3	3.8	12.0	10.0
May '67							
Sapporo, HOKKAIDO	7.00	1.10	1.48	7.3	6.6	24.8	16.8
Shiroishi, MIYAGI	8.00	1.13	1.47	5.1	4.5	16.3	11.1
Akita, AKITA	8.00	1.30	1.57	14.3	11.0	18.8	12.0

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/*l*)	Ca (g/*l*)	K (g/*l*)	(pCi/*l*)	(pCi/gCa)	(pCi/*l*)	(pCi/gK)
Fukushima, FUKUSHIMA	6.67	1.19	1.44	6.5	5.5	16.2	11.2
Miyakejima, TOKYO	7.00	1.18	1.51	12.8	10.8	52.9	35.0
Yokohama, KANAGAWA	7.50	1.23	1.55	4.3	3.5	16.9	10.9
Kawamoto, SAITAMA	6.67	0.97	1.53	4.9	5.1	10.4	6.8
Gotemba, SHIZUOKA	6.67	1.03	1.41	5.3	5.1	34.5	24.5
Kyoto, KYOTO	8.00	1.19	1.58	4.4	3.7	15.3	9.7
Wakayama, WAKAYAMA	6.39	0.98	1.37	4.2	4.3	7.5	5.5
Nose, OSAKA	7.33	1.11	1.58	4.6	4.1	12.6	8.0
Akashi, HYOGO	7.00	1.00	1.43	2.7	2.7	7.7	5.4
Aimi, TOTTORI	6.33	1.04	1.06	12.1	11.6	36.2	34.1
Kabe, HIROSHIMA	7.33	0.96	1.56	10.1	10.5	11.7	7.5
Kochi, KOCHI	7.67	1.21	1.55	4.4	3.6	20.6	13.3
Koga, FUKUOKA	8.33	1.34	1.56	5.4	4.0	17.0	10.9
Nagasaki, NAGASAKI	7.33	1.09	1.68	9.2	8.4	27.3	16.2
Kajiki, KAGOSHIMA	7.00	1.04	1.51	9.9	9.5	25.3	16.8
June. '67							
Aomori, AOMORI	6.33	0.96	1.41	12.9	13.4	64.2	45.5
Iwamuro, NIIGATA	7.33	0.96	1.48	6.8	7.1	12.8	8.8
Gotemba, SHIZUOKA	6.33	0.94	1.34	7.8	8.3	53.5	39.9
Nonoichi, ISHIKAWA	5.67	0.89	1.26	6.2	7.0	11.2	8.9
Sanage, AICHI	6.67	1.07	1.38	4.6	4.3	7.9	5.7
Fukui, FUKUI	7.00	1.08	1.25	6.5	6.0	11.9	7.8
Tsuyama, OKAYAMA	6.67	1.04	1.53	3.2	3.1	16.5	10.8
July. '67							
Sapporo, HOKKAIDO	7.00	1.17	1.44	5.3	4.5	19.6	13.6
Shiroishi, MIYAGI	7.33	1.04	1.56	4.1	3.9	18.7	12.0
Akita, AKITA	8.33	1.37	1.75	31.4	22.9	16.5	9.4
Fukushima, FUKUSHIMA	6.33	1.06	1.48	8.7	8.2	18.2	12.3
Mito, IBARAKI	6.67	1.04	1.34	2.9	2.8	11.0	8.2
Miyakejima, TOKYO	5.71	1.02	0.94	11.6	11.4	29.3	31.2
Yokohama, KANAGAWA	7.30	1.20	1.51	4.3	3.6	15.9	10.5
Kawamoto, SAITAMA	6.89	1.03	1.56	3.4	3.3	8.5	5.4
Kyoto, KYOTO	7.33	1.02	1.44	4.0	3.9	11.6	8.1
Wakayama, WAKAYMA	6.94	0.90	1.29	3.3	3.7	7.7	6.0
Nose, OSAKA	7.33	1.11	1.55	4.1	3.7	12.7	8.2
Akashi, HYOGO	7.33	1.09	1.52	2.6	2.4	10.1	6.6
Aimi, TOTTORI	7.67	1.26	1.57	9.9	7.9	26.9	17.1
Kabe, HIROSHIMA	9.67	1.24	1.58	5.1	4.1	12.9	8.2
Kochi, KOCHI	8.33	1.25	1.52	5.1	4.1	14.9	9.8
Koga, FUKUOKA	8.00	1.21	1.64	7.0	5.8	13.5	8.2
Nagasaki, NAGASAKI	9.00	1.26	1.78	6.8	5.4	22.0	12.4
Kajiki, KAGOSHIMA	7.00	1.21	1.38	7.4	6.1	26.9	19.5
Aug. '67							
Aomori, AOMORI	6.67	0.96	1.36	18.6	19.4	38.6	28.4
Iwamuro, NIIGATA	6.33	1.03	1.06	3.3	3.2	14.0	13.2
Gotemba, SHIZUOKA	5.67	0.90	1.12	4.9	5.4	29.9	26.7
Nonoichi, ISHIKAWA	7.33	1.11	1.43	5.4	4.9	17.0	12.0
Sanage, AICHI	7.33	1.17	1.45	5.1	4.4	10.4	7.2
Fukui, FUKUI	7.00	1.02	1.33	4.3	4.2	17.5	13.2
Tsuyama, OKAYAMA	6.67	1.04	1.37	3.7	3.6	13.5	9.9
Sept. '67							
Sapporo, HOKKAIDO	7.40	1.46	1.45	6.5	4.5	24.6	17.1
Shiroishi, MIYAGI	7.00	1.00	1.37	3.5	3.5	18.5	13.5
Akita, AKITA	7.33	1.13	1.33	14.1	13.0	20.8	15.6
Fukushima, FUKUSHIMA	7.50	1.37	1.48	7.8	5.7	24.3	16.4
Mito, IBARAKI	7.67	1.16	1.63	3.5	3.0	11.7	7.2
Miyakejima, TOKYO	4.78	0.72	1.00	4.9	6.8	35.6	35.6
Yokohama, KANAGAWA	7·63	1.15	1.37	3.9	3.4	21.6	15.3
Kawamoto, SAITAMA	6.88	1.16	1.19	3.7	3.2	10.1	8.5
Kyoto, KYOTO	8.67	1.15	1.38	3.3	2.9	10.6	7.7
Wakayama WAKAYAMA	7.22	0.98	1.24	3.3	3.4	7.4	6.0
Nose, OSAKA	7.33	1.19	1.39	6.0	5.0	15.8	11.4

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/l)	Ca (g/l)	K (g/l)	(pCi/l)	(pCi/gCa)	(pCi/l)	(pCi/gK)
Akashi, HYOGO	7.67	1.12	1.24	2.3	2.1	8.3	6.7
Aimi, TOTTORI	6.67	0.90	1.53	5.5	6.1	17.7	11.6
Kabe, HIROSHIMA	7.67	1.13	1.28	3.1	2.7	22.3	17.4
Kochi, KOCHI	7.33	1·25	1.08	5.0	4.0	12.5	11.6
Koga, FUKUOKA	7.57	1.32	1.44	4.6	3.5	16.9	11.7
Nagasaki, NAGASAKI	7.66	1.13	1.61	8.3	7.3	21.3	13.2
Kajiki, KAGOSHIMA	7.33	1.13	1.44	7.3	6.5	23.2	16.1
Oct. '67							
Aomori, AOMORI	6.73	1.03	1.54	17.2	16.7	55.0	22.7
Iwamuro, NIIGATA	6.00	0.93	1.10	3.5	3.8	20.5	18.6
Miyakejima, TOKYO	5.69	0.98	1.11	6.8	6.9	36.1	32.5
Gotemba, SHIZUOKA	6.83	0.93	1.09	6.0	6.5	41.6	38.2
Nonoichi, ISHIKAWA	6.33	0.94	1.25	6.3	6.7	12.4	9.9
Sanage, AICHI	8.27	1.54	1.63	6.8	4.4	12.8	7.9
Fukui, FUKUI	7.33	1.21	1.37	5.7	4.7	20.6	15.0
Tsuyama, OKAYAMA	6.40	1.02	1.21	2.7	2.6	13.1	10.8
Nov. '67							
Shiroishi, MIYAGI	7.40	1.25	1.49	5.9	4.7	23.8	16.0
Akita, AKITA	7.17	1.21	1.39	3.8	3.1	19.8	14.2
Fukushima, FUKUSHIMA	9.17	1.36	1.44	5.6	4.1	18.5	12.8
Mito, IBARAKI	6.83	1.02	1.49	3.2	3.1	17.6	11.8
Kawamoto, SAITAMA	6.83	0.98	1.35	4.0	4.1	8.0	5.9
Kyoto, KYOTO	7.57	1.14	1.45	3.8	3.3	12.9	8.9
Nose, OSAKA	7.77	1.17	1.39	3.5	3.0	11.0	7.9
Akashi, HYOGO	8.83	1.05	1.43	3.9	3.7	13.8	9.7
Aimi, TOTTORI	6.50	1.34	1.38	8.0	6.0	22.2	16.1
Kabe, HIROSHIMA	8.17	1.10	1.25	2.6	2.4	16.1	12.9
Kochi, KOCHI	9.73	1.23	1.31	4.4	3.6	14.5	12.6
Koga, FUKUOKA	7.50	1.17	1.19	4.4	3.8	11.8	9.9
Nagasaki, NAGASAKI	8.50	1.68	1.15	3.8	2.3	21.5	18.7
Kajiki, KAGOSHIMA	7.43	1.21	1.42	9.7	8.0	28.8	20.3
Dec. '67							
Sapporo, HOKKAIDO	7.33	1.21	1.44	4.2	3.5	25.6	17.8
Aomori, AOMORI	6.83	0.95	1.36	18.2	19.2	25.8	19.0
Iwamuro, NIIGATA	7.33	0.97	1.33	6.8	7.0	20.4	15.3
Yokohama, KANAGAWA	7.56	1.23	1.44	3.2	2.6	21.9	15.2
Gotemba, SHIZUOKA	7.33	1.01	1.06	4.9	4.9	37.3	35.2
Nonoichi, ISHIKAWA	8.00	1.09	1.33	0.7	0.6	11.9	8.9
Sanage, AICHI	7.83	1.21	1.43	4.4	3.6	7.5	5.2
Fukui, FUKUI	8.00	1.05	1.04	3.9	3.7	13.9	13.4
Tsuyama, OKAYAMA	7.17	1.27	1.18	3.2	2.5	18.6	15.8
Jan. 1968							
Sapporo, HOKKAIDO	7.17	1.05	1.35	3.1	3.0	19.9	14.7
Shiroishi, MIYAGI	7.33	1.09	1.47	3.5	3.2	19.0	12.9
Akita, AKITA	6.43	0.90	1.02	2.1	2.1	10.1	9.9
Fukushima, FUKUSHIMA	9.66	1.21	1.55	6.4	5.3	24.7	15.9
Mito, IBARAKI	7.73	1.39	1.10	3.5	2.5	10.6	9.6
Miyakejima, TOKYO	5.19	0.85	0.85	5.5	6.5	39.9	46.9
Yokohama, KANAGAWA	8.97	1.30	1.63	3.4	2.6	23.9	14.7
Kawamoto, SAITAMA	7.23	1.14	1.18	6.3	5.5	8.6	7.3
Kyoto, KYOTO	7.67	1.13	1.28	7.2	6.4	15.1	11.8
Akashi, HYOGO	8.00	0.91	1.17	2.6	2.9	12.3	10.5
Aimi, TOTTORI	7.07	1.07	1.32	1.9	1.8	17.9	13.6
Kabe, HIROHIMA	9.00	1.25	1.31	4.7	3.8	12.2	9.3
Kochi, KOCHI	7.33	0.96	1.08	4.3	4.5	14.0	13.0
Koga, FUKUOKA	7.00	1.07	1.29	4.0	3.7	11.0	8.5
Nagasaki, NAGASAKI	7.60	1.15	1.13	6.9	6.0	10.3	9.1
Kajiki, KAGOSHIMA	7.67	1.24	1.40	3.0	2.4	17.4	12.4
Feb. '68							
Aomori, AOMORI	7.33	1.10	1.39	20.3	18.5	41.8	30.1
Iwamuro, NIIGATA	6.67	1.18	1.24	6.6	5.6	17.2	13.9
Gotemba, SHIZUOKA	7.00	1.07	0.73	5.2	4.9	42.5	58·2

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/l)	Ca (g/l)	K (g/l)	(pCi/l)	(pCi/gCa)	(pCi/l)	(pCi/gK)
Nonoichi, ISHIKAWA	7.00	1.06	1.42	5.4	5.1	15.2	10.7
Toyota, AICHI	7.67	1.17	1.58	6.0	2.1	8.8	5.6
Fukui, FUKUI	7.00	1.00	1.13	4.8	4.8	15.4	13.6
Wakayama, WAKAYAMA	6.67	0.91	1.20	2.1	2.3	8.0	6.7
Nose, OSAKA	7.50	1.12	1.48	3.7	3.3	11.8	8.0
Tsuyama, OKAYAMA	7.50	1.14	1.70	6.5	5.7	15.1	8.9
Mar. '68							
Sapporo, HOKKAIDO	7.00	1.11	1.46	4.3	3.9	16.4	11.2
Shiroishi, MIYAGI	7.50	1.14	1.49	4.8	4.2	11.6	7.8
Akita, AKITA	7.83	1.17	1.56	3.9	3.3	13.3	8.5
Fukushima, FUKUSHIMA	8.33	1.24	1.62	4.1	3.3	28·9	17.8
Mito, IBARAKI	7.00	1.06	1.17	2.5	2.4	11.7	10.0
Miyakejima, TOKYO	6.50	0.96	1.47	8.4	8.7	33.5	22.8
Yokohama, KANAGAWA	8.97	1.17	1.30	6.9	5.9	14.5	11.2
Kawamoto, SAITAMA	6.81	0.90	1.78	2.7	3.0	4.7	2.6
Kyoto, KYOTO	7.17	1.03	1.18	2.7	2.6	9.9	8·4
Wakayama, WAKAYAMA	7.22	1.03	1.39	2.4	2.3	9.5	6.8
Nose, OSAKA	7.50	1.11	1.48	3.5	3.2	17.1	11.6
Akashi, HYOGO	8.00	1.04	1.34	1.7	1.6	8.1	6.0
Aimi, TOTTORI	7.33	1.08	1.49	8.7	8.1	17.7	11.9
Kabe, HIROSHIMA	9.33	1.31	0.93	5.0	3.8	11.4	12.3
Kochi, KOCHI	7.50	1.11	1.56	2.2	2.0	11.7	7.5
Koga, FUKUOKA	7.33	1.10	1.29	15.8	14.4	9.8	7.6
Nagasaki, NAGASAKI	8.33	1.12	1.42	1.8	1.6	38.5	27.1
Kajiki, KAGOSHIMA	7.67	1.22	1.48	7.9	6.5	18.4	12.4

Strontium-90 and Cesium-137 in Powdered Milk

(Japan Analytical Chemistry Research Institute)

Since 1960, the Japan Analytical Chemistry Research Institute has analyzed the strontium-90 and cesium-137 content in powdered whole milk and skim milk.

The samples were purchased on the open market of various places, or collected from powdered milk producers. Sampling locations are shown in Figure 2.

The analysis of strontium-90 and cesium-137 content was carried out using the method recommended by the Sience and Technology Agency.

Results obtained during the period from June, 1966 to March, 1968 are shown in Table 2.

Figure 2. Powdered Milk Sampling Location

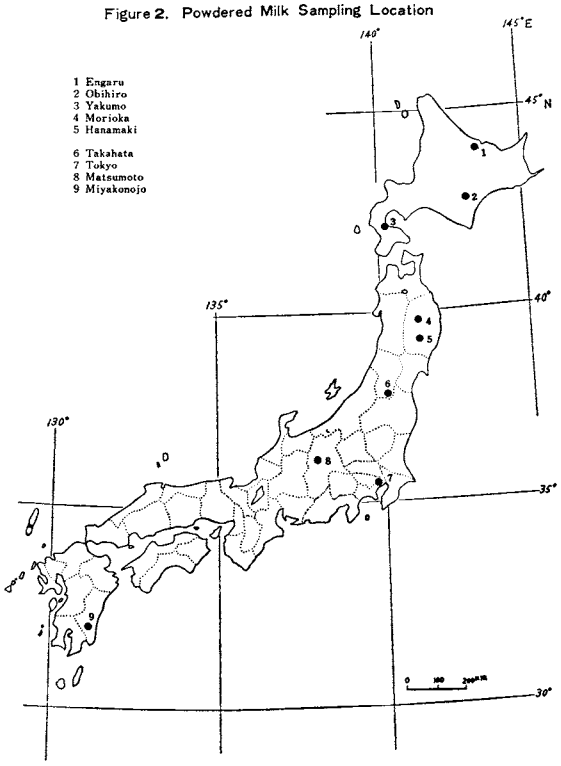


Table 2. ^{90}Sr and ^{137}Cs in Powdered Milk — June 1966 to Mar. 1968 —

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

(Japan Analytical Chemistry Research Institute)

(Continued from Table 6, Issue No. 8, of this Publication)

Location	Date	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/100 g)	(pCi/gCa)	(pCi/100 g)	(pCi/gK)
(Powdered Whole Milk)								
Miyakonojo, MIYAZAKI	June 1966	8.66	1.33	1.84	11.9	8.9	32.3	17.6
Obihiro, HOKKAIDO	July 〃	6.02	0.98	2.01	13.9	14.2	64.0	31.8
Engaru, HOKKAIDO	〃 〃	3.96	0.63	1.21	7.9	12.5	19.1	15.8
〃 〃	Aug. 〃	6.18	1.02	2.05	11.4	11.2	37.3	18.2
Hanamaki, IWATE	〃 〃	3.28	0.49	0.73	6.6	13.5	23.0	31.5
Obihiro, HOKKAIDO	Sept. 〃	5.93	0.96	1.97	11.5	12.0	60.3	31.8
Hanamaki, IWATE	〃 〃	6.23	1.02	2.09	10.3	10.0	47.1	22.6
YAMAGATA	〃 〃	5.70	0.91	1.63	4.6	5.1	15.7	9.6
Obihiro, HOKKAIDO	Nov. 〃	6.30	0.95	1.24	9.2	9.7	30.0	24.2
Yakumo, HOKKAIDO	〃 〃	5.68	0.86	1.15	17.5	20.3	51.0	44.3
Hanamaki, IWATE	〃 〃	5.56	0.85	1.20	7.9	9.3	23.5	19.6
〃 〃	〃 〃	4.25	0.53	0.87	5.8	10.9	23.4	25.7
Takahata, YAMAGATA	〃 〃	6.14	0.92	1.26	5.1	5.5	16.7	13.3
Miyakonojo, MIYAZAKI	〃 〃	8.06	1.30	1.65	10.7	8.2	26.9	16.3
Engaru, HOKKAIDO	Dec. 〃	6.07	0.88	1.29	8.7	9.9	15.4	11.9
Obihiro, HOKKAIDO	Jan. 1967	5.87	0.94	1.14	6.8	7.2	30.2	26.5
Yakumo, HOKKAIDO	〃 〃	5.60	0.87	1.04	13.3	15.3	47.0	45.2
Hanamaki, IWATE	〃 〃	2.28	0.29	0.42	2.2	7.6	6.5	15.5
〃 〃	〃 〃	3.27	0.50	0.72	4.2	8.4	11.8	16.4
Obihiro, HOKKAIDO	Mar. 〃	4.07	0.59	0.80	4.6	7.9	14.4	18.0
Hanamaki, IWATE	〃 〃	2.32	0.30	0.43	1.9	6.3	6.1	14.2
〃 〃	〃 〃	2.54	0.32	0.47	2.3	7.2	7.2	15.3
〃 〃	July 〃	6.38	1.00	1.38	7.7	7.7	27.9	20.2
Engaru, HOKKAIDO	Aug. 〃	8.77	1.23	0.73	8.9	7.3	34.8	20.1
Morioka, IWATE	〃 〃	3.40	0.29	0.47	2.4	8.2	7.0	14.9
Engaru, HOKKAIDO	Sept. 〃	8.23	1.01	1.44	7.2	7.1	18.4	12.8
Morioka, IWATE	〃 〃	2.51	0.35	0.46	3.3	9.4	10.0	21.7
〃 〃	Oct. 〃	3.21	0.37	0.50	2.9	8.1	12.5	25.0
〃 〃	Nov. 〃	2.25	0.32	0.35	3.6	11.2	4.9	14.1
Hanamaki, IWATE	〃 〃	4.27	0.61	0.80	5.1	8.4	19.1	23.9
Morioka, IWATE	Dec. 〃	3.10	0.39	0.48	3.0	7.6	12.4	25.8
Matsumoto, NAGANO	〃 〃	2.44	0.32	0.43	3.1	9.8	14.1	32.8
Morioka, IWATE	Jan. 1968	2.36	0.30	0.42	2.4	7.8	9.2	21.8
Matsumoto, NAGANO	〃 〃	2.52	0.30	0.41	2.3	7.7	10.2	24.6
Morioka, IWATE	Mar. 〃	2.24	0.34	0.36	1.3	3.8	9.8	27.3
Matsumoto, NAGANO	〃 〃	2.30	0.35	0.39	1.3	3.7	6.1	15.8
(Powdered Skim Milk)								
Hanamaki, IWATE	July 1966	8.61	1.36	3.02	15.2	11.2	73.5	24.4
TOKYO	〃 〃	7.10	1.14	2.01	6.7	5.9	17.0	8.5
Hanamaki IWATE	Sept. 〃	8.07	1.30	2.81	34.7	26.7	121.5	44.8
Miyakonojo, MIYAZAKI	〃 〃	8.69	1.38	3.06	13.1	9.5	33.8	11.0
TOKYO	Dec. 〃	7.91	1.23	1.65	6.0	4.9	18.8	11.4
Hanamaki, IWATE	Jan. 1967	8.28	1.23	1.70	9.2	7.5	31.2	18.4
Miyakonojo, MIYAZAKI	〃 〃	8.43	1.38	1.73	9.7	7.0	28.1	16.2
〃 〃	Mar. 〃	8.43	1.35	1.74	6.9	5.1	23.4	13.4
Obihiro, HOKKAIDO	July 〃	8.40	1.24	1.84	12.1	9.8	153.0	83.1
Yakumo, HOKKAIDO	〃 〃	8.45	1.23	1.81	27.4	22.3	98.6	54.5
Obihiro, HOKKAIDO	Aug. 〃	8.65	1.23	1.82	11.6	9.4	20.0	11.0
Hanamaki, IWATE	〃 〃	8.42	1.31	1.92	9.6	7.3	31.4	16.4

Strontium-90 and Cesium-137 in Vegetables

(Japan Analytical Chemistry Research Institute)

The 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 3. 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 the Japan Analytical Chemistry Research Institute and analyzed for strontium-90 and cesium-137 content, using the method recommended by the Science and Technology Agency.

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

Figure 4 shows the all Japan mean values of vegetables.

Figure 3. Vegetables Sampling Location

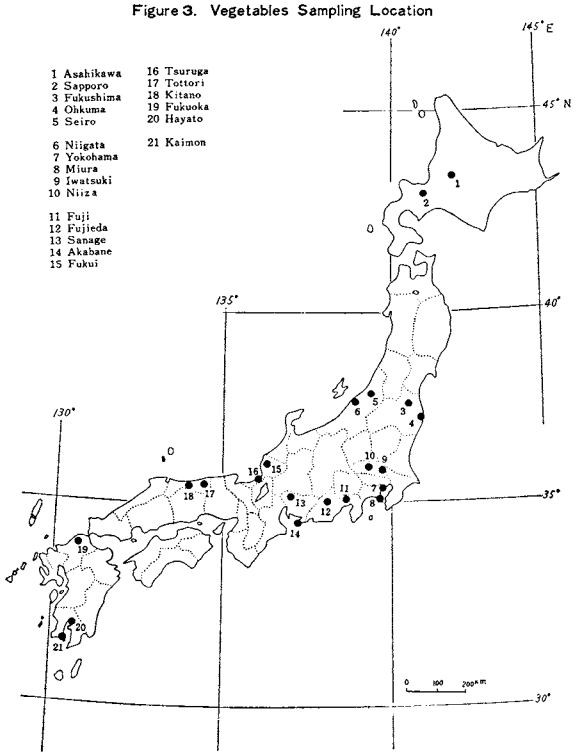


Table 3. ^{90}Sr and ^{137}Cs in Vegetables —Apr. 1967 to Mar. 1968—

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

(Japan Analytical Chemistry Research Institute)

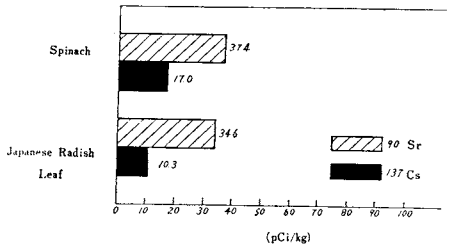
(Continued from Table 7, Issue No. 17 of this Publication)

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
(Spinach)								
Sapporo, HOKKAIDO	July '67	1.532	0.052	0.738	22.1	42.5	7.9	1.1
Asahikawa, HOKKAIDO	〃	1.800	0.078	0.705	17.1	21.9	16.2	2.3
Asahikawa, HOKKAIDO	Nov. '67	1.475	0.065	0.516	14.7	22.6	14.0	2.7
Sapporo, HOKKAIDO	〃	2.300	0.109	0.575	28.0	25.7	19.8	3.4
Fukushima, FUKUSHIMA	〃	1.860	0.102	0.496	12.1	11.9	11.5	2.3
Ohkuma, FUKUSHIMA	〃	1.725	0.120	0.644	74.2	61.8	17.7	2.7
〃 〃	Mar. '68	2.350	0.155	0.866	66.0	42.6	17.1	2.0
Fukushima, FUKUSHIMA	〃	1.450	0.071	0.330	10.8	15.2	18.3	5.5
Mito, IBARAKI	Nov. '67	1.675	0.078	0.577	12.7	16.3	24.1	4.2
Tokai, IBARAKI	〃	1.650	0.078	0.566	11.7	15.0	16.5	2.9
Mito, IBARAKI	Jan. '68	2.200	0.086	0.765	16.5	19.2	19.0	2.5
Tokai, IBARAKI	〃	2.200	0.088	0.799	33.1	37.6	12.8	1.6
Odawara, KANAGAWA	〃	2.100	0.085	0.814	18.3	21.5	14.1	1.7
Yokohama, KANAGAWA	〃	2.200	0.126	0.436	40.5	31.4	25.4	5.8
Odawara, KANAGAWA	Feb. '68	1.800	0.110	0.605	26.8	24.4	14.7	2.4
Yokohama, KANAGAWA	Mar. '68	1.850	0.519	0.300	49.7	31.3	25.2	8.4

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Iwatsuki, SAITAMA	Dec. '67	1.640	0.084	0.462	17.8	21.2	23.3	5.0
Niiza, SAITAMA	〃	2.080	0.102	0.730	37.6	36.9	12.7	1.7
Iwatsuki, SAITAMA	Mar. '68	1.532	0.081	0.494	31.4	38.8	13.1	2.7
Niiza, SAITAMA	〃	1.880	0.075	0.654	19.4	25.9	16.2	2.5
Fuji, SHIZUOKA	Nov. '67	1.460	0.070	0.444	162.9	232.7	45.9	10.3
Fujieda, SHIZUOKA	〃	0.858	0.061	0.227	56.6	92.8	8.7	3.8
Fuji, SHIZUOKA	Jan. '68	1.900	0.138	0.336	32.1	23.3	24.0	7.1
Fujieda, SHIZUOKA	〃	2.200	0.110	0.542	41.0	37.3	32.9	6.1
Sanage, AICHI	Apr. '67	1.485	0.106	0.448	25.3	23.9	9.4	2.1
Akabane, AICHI	May '67	1.485	0.128	0.453	31.0	24.2	9.4	2.1
Sanage, AICHI	Oct. '67	1.455	0.074	0.539	41.4	55.9	9.4	1.7
Akabanae, AICHI	Nov. '67	1.840	0.071	0.701	50.5	71.1	8.5	1.2
Fukui, FUKUI	May '67	1.856	0.167	0.173	50.0	29.9	11.4	6.6
Tsuruga, FUKUI	〃	1.235	0.201	0.283	134.6	67.0	21.2	7.5
〃 〃	Dec. '67	1.250	0.094	0.369	47.5	50.5	14.5	3.9
Fukui, FUKUI	〃	1.150	0.074	0.296	36.2	48.9	11.7	4.0
Tottori, TOTTORI	Oct. '67	1.675	0.088	0.488	33.7	38.3	14.9	3.1
Kurayoshi, TOTTORI	〃	0.925	0.044	0.316	27.8	63.2	9.1	3.9
Tottori, TOTTORI	Nov. '67	1.575	0.089	0.506	41.7	46.8	17.8	3.5
Kurayoshi, TOTTORI	〃	1.685	0.073	0.599	31.4	43.0	16.9	2.8
Fukuoka, FUKUOKA	〃	1.538	0.037	0.480	18.7	50.5	11.2	2.3
Shime, FUKUOKA	Dec. '67	1.242	0.098	0.289	19.8	20.2	12.7	4.4
Fukuoka, FUKUOKA	〃	1.116	0.054	0.329	31.3	58.0	14.4	4.4
Shime, FUKUOKA	〃	1.748	0.087	0.553	21.8	25.0	38.1	6.9
(Japanese Radish Leaf)								
Sapporo, HOKKAIDO	July '67	0.825	0.023	0.352	15.0	65.2	3.1	0.9
Asahikawa, HOKKAIDO	〃	0.800	0.025	0.351	48.4	193.6	9.6	2.7
〃 〃	Nov. '67	0.500	0.028	0.169	9.1	32.5	7.6	4.5
Sapporo, HOKKAIDO	〃	0.512	0.027	0.184	21.8	80.7	7.0	3.8
Ohkuma, FUKUOKA	July '67	0.892	0.030	0.294	24.4	81.3	9.6	3.3
Fukusima, FUKUSHIMA	Nov. '67	0.625	0.035	0.107	2.5	7.1	8.6	8.0
Ohkuma, FUKUSHIMA	〃	0.630	0.022	0.207	31.1	141.4	5.2	2.5
Fukushima, FUKUSHIMA	Mar. '68	0.750	0.036	0.237	23.6	65.6	10.4	4.4
Niigata, NIIGATA	Aug. '67	0.717	0.027	0.233	40.0	148.1	4.5	1.9
Seiro, NIIGATA	〃	0.767	0.044	0.251	57.0	129.5	15.2	6.1
Niigata NIIGATA	Nov. '67	0.462	0.019	0.178	41.6	218.9	9.4	5.3
Seiro, NIIGATA	〃	0.437	0.025	0.136	15.2	60.8	4.3	3.2
Yokohama, KANAGAWA	June '67	0.631	0.035	0.176	3.9	11.1	15.2	8.6
〃 〃	〃	1.796	0.453	0.248	36.5	8.1	35.5	14.3
Miura, KANAGAWA	〃	1.248	0.036	0.468	9.7	26.9	9.4	2.0
〃 〃	〃	1.284	0.166	0.323	30.5	18.4	15.9	4.9
〃 〃	Nov. '67	0.525	0.027	0.132	9.1	33.7	5.5	4.2
〃 〃	〃	1.195	0.148	0.188	38.6	26.1	11.9	6.3
Yokohama, KANAGAWA	Dec. '67	0.598	0.027	0.175	9.3	34.4	4.0	2.3
〃 〃	〃	1.139	0.134	0.155	27.0	20.1	10.9	7.0
Niiza, SAITAMA	July '67	0.655	0.022	0.240	15.9	72.3	4.9	2.0
Iwatsuki, SAITAMA	〃	1.052	0.026	0.396	9.9	38.1	7.0	1.8
〃 〃	Dec. '67	0.410	0.028	0.149	8.2	29.3	3.4	2.3
Niiza, SAITAMA	〃	0.600	0.032	0.251	19.4	60.6	3.8	1.5
Fuji, SHIZUOKA	Nov. '67	0.408	0.012	0.069	7.3	60.8	3.6	5.2
Fujieda, SHIZUOKA	〃	0.428	0.016	0.171	37.3	195.8	2.1	1.2
Fuji, SHIZUOKA	Jan. '68	0.750	0.047	0.272	57.9	123.2	5.7	2.1
Fujieda, SHIZUOKA	〃	0.700	0.062	0.259	34.2	55.2	4.9	1.9
Sanage, AICHI	Apr. '67	0.758	0.242	0.248	16.7	39.8	7.1	2.9
〃 〃	〃	0.819	0.238	0.161	59.7	25.1	16.6	10.3
Akabane, AICHI	May '67	0.788	0.018	0.257	16.5	91.7	3.6	1.4
〃 〃	〃	1.140	0.152	0.331	58.3	38.3	13.6	4.1
Sanage, AICHI	Oct. '67	0.883	0.035	0.363	44.5	127.1	6.3	1.7
〃 〃	〃	1.403	0.208	0.369	147.8	71.0	11.5	3.1
Akabane, AICHI	Nov. '67	1.167	0.053	0.415	32.3	60.9	5.4	1.3
〃 〃	〃	1.282	0.172	0.345	49.8	28.9	9.2	2.7
Mihama, FUKUI	〃	0.625	0.023	0.239	56.9	290.9	7.7	3.2
〃 〃	〃	0.525	0.024	0.158	40.7	169.6	7.3	4.6

Location	Month Harvested	Component (% by Weight)			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(pCi/gCa)	(pCi/kg)	(pCi/gK)
Tsuruga, FUKUI	Nov. '67	0.675	0.031	0.222	47.1	151.9	7.2	3.2
〃 〃	〃	0.612	0.022	0.194	70.8	321.8	10.2	5.3
Fukuoka, FUKUOKA	〃	0.587	0.026	0.181	30.0	115.4	3.7	2.0
Shime, FUKUOKA	〃	1.100	0.079	0.280	9.7	12.3	11.6	4.1
Fukuoka, FUKUOKA	Dec. '67	1.287	0.054	0.349	23.2	43.0	11.6	3.3
Shime, FUKUOKA	〃	0.562	0.034	0.224	12.8	37.6	5.1	2.3
Hayato, KAGOSHIMA	June. '67	0.565	0.025	0.218	10.0	40.0	13.1	6.0
〃 〃	〃	1.333	0.260	0.276	49.2	18.9	5.8	2.1
Kaimon, KAGOSHIMA	Aug. '67	0.735	0.047	0.277	61.6	131.1	20·0	7.2
〃 〃	〃	1.571	0.297	0.285	24.6	8.3	50.2	17.6
〃 〃	Nov. '67	0.688	0.032	0.236	26.9	84.1	13.1	5.6
〃 〃	〃	0.312	0.191	0.278	111.6	58.4	29.5	10.6
Hayato, KAGOSHIMA	〃	0.635	0.026	0.244	27.2	104.6	11.7	4.8
〃 〃	〃	1.277	0.184	0.355	75.1	40.8	18.7	5.3

Figure 4. ^{90}Sr and ^{137}Cs in Vegetables
—All Japan Mean Values—
—Apr. 1967 to Mar. 1968—



Strontium-90 and Cesium-137 in Total Diet

Part 1 *(National Institute of Radiological Sciences)*

Since June 1963, National Institute of Radiological Sciences has conducted analyses of total diet samples collected from 5 prefectures. Sampling locations are shown in Figure 5.

One city and one village in each prefecture were chosen as representative of urban and rural districts of these prefectures respectively. Seven families were chosen at random from each location, and each family presented a normal portion of the regular diet consumed in one day by an adult. Diets at special occasions were avoided. Composite samples from the 7 families were ashed together and analyzed.

Results obtained during the period from June, 1966 to August, 1968 are shown in Table 4.

Figure 5. Total Diet Sampling Location

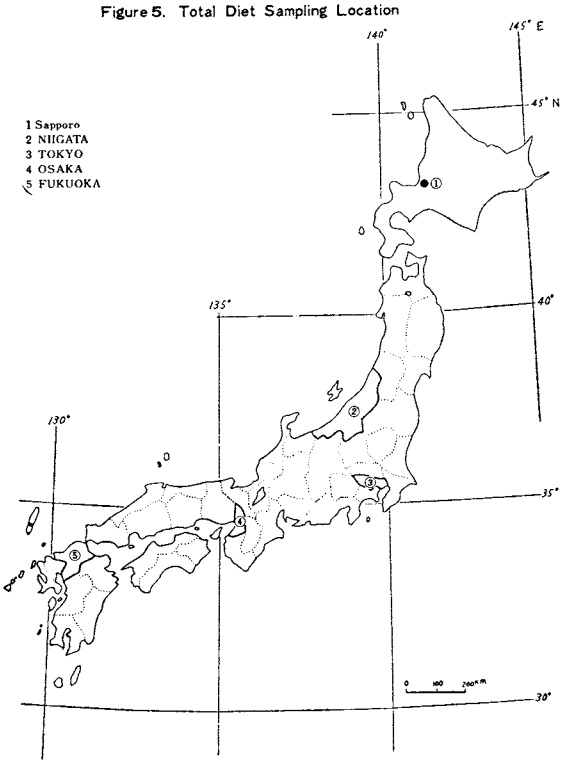


Table 4. ^{90}Sr and ^{137}Cs in Total Diet — June, 1966 to Aug., 1968 —

By M. Saiki, T. Ueda, Y. Suzuki, R. Nakamura and E. Kase
(*National Institute of Radiological Sciences*)

(Continued from Table 4, Issue No. 17 of this Publication)

Location		Daily Intake				^{90}Sr (pCi/gCa)	^{137}Cs (pCi/gK)
		Ca (mg)	K (mg)	^{90}Sr (pCi)	^{137}Cs (pCi)		
June and Nov., 1966							
			URBAN ADULT DIET				
TOKYO	June 66	420.2	2011.3	11.6	44.5	27.6	22.1
〃	Nov. 66	325.2	1336.4	6.4	21.2	19.7	15.9
			RURAL ADULT DIET				
TOKYO	June 66	513.4	2102.1	9.9	43.2	19.3	20.6
〃	Nov. 66	396.4	1845.0	6.9	32.5	17.4	17.6
June ~ Aug., 1967							
			URBAN ADULT DIET				
Sapporo, HOKKAIDO		423.4	1252.5	9.3	30.8	22.0	24.6
Niigata, NIIGATA		657.1	2076.7	13.6	23.6	20.7	11.4
TOKYO		510.0	1508.4	12.0	21.0	23.5	14.0
Osaka, OSAKA		469.2	1072.5	7.3	12.4	15.6	11.6
Fukuoka, FUKUOKA		412.4	1056.0	6.9	18.9	16.7	19.9
			RURAL ADULT DIET				
Sapporo, HOKKAIDO		742.6	1696.8	17.0	39.9	22.9	23.5
Niigata, NIIGATA		435.1	1628.3	20.9	25.2	48.0	15.5
TOKYO		390.8	1764.0	8.0	21.8	20.4	12.4
Osaka, OSAKA		463.3	1155.8	9.3	14.5	20.1	12.5
Fukuoka, FUKUOKA		728.7	877.6	8.0	16.9	11.0	19.3
Sept. ~ Oct., 1967							
			URBAN ADULT DIET				
Sapporo, HOKKAIDO		408.6	1785.0	5.3	18.8	12.9	10.5
Niigata, NIIGATA		529.1	2288.0	4.8	27.7	9.1	12.1
TOKYO		452.1	1470.0	6.3	16.7	13.9	11.3
Osaka, OSAKA		258.0	1286.0	3.7	17.4	14.3	13.6
Fukuoka, FUKUOKA		535.6	1816.8	3.3	15.6	6.2	8.6
			RURAL ADULT DIET				
Sapporo, HOKKAIDO		541.1	2430.0	5.4	35.9	10.0	14.8
Niigata, NIIGATA		507.6	2301.4	8.4	30.9	16.5	13.1
TOKYO		385.1	1639.0	7.5	17.3	19.5	10.6
Osaka, OSAKA		280.0	1790.9	4.1	14.9	14.7	8.3
Fukuoka, FUKUOKA		435.9	1464.1	3.8	19.1	8.8	13.1
Feb. ~ Mar., 1968							
			URBAN ADULT DIET				
Sapporo, HOKKAIDO		479.4	1933.5	7.5	16.0	15.6	8.3
Niigata, NIIGATA		625.7	2240.1	9.0	10.0	14.2	4.5
TOKYO		420.5	1846.0	3.7	14.0	8.8	7.6
Osaka, OSAKA		450.0	1424.9	6.9	11.0	15.4	7.7
Fukuoka, FUKUOKA		450.9	1200.0	5.0	12.0	11.0	10.0
			RURAL ADULT DIET				
Sapporo, HOKKAIDO		587.5	1954.2	9.3	24.5	15.8	12.5
Niigata, NIIGATA		412.4	2082.5	19.5	11.8	47.3	5.7
TOKYO		392.6	1353.0	4.4	15.9	11.2	11.8
Osaka, OSAKA		269.2	1418.4	4.3	14.7	15.8	10.4
Fukuoka, FUKUOKA		487.1	1402.9	6.0	12.8	12.3	9.1
June ~ Aug., 1968							
			URBAN ADULT DIET				
Sapporo, HOKKAIDO		387.9	1539.0	9.1	30.8	23.5	20.0
Niigata, NIIGATA		304.9	1521.1	7.6	16.9	24.9	11.1
Osaka, OSAKA		481.0	1256.0	11.2	17.6	23.3	14.0
Fukuoka, FUKUOKA		406.4	1212.0	13.0	16.3	32.0	13.4

Location	Daily Intake				^{90}Sr (pCi/gCa)	^{137}Cs (pCi/gK)
	Ca (mg)	K (mg)	^{90}Sr (pCi)	^{137}Cs (pCi)		
RURAL ADULT DIET						
Sapporo, HOKKAIDO	490.0	2038.8	9.8	28.0	20.0	13.7
Niigata, NIIGATA	375.6	1259.1	22.2	20.9	59.1	16.6
Osaka, OSAKA	338.8	1680.0	5.6	17.6	16.5	10.5
Fukuoka, FUKUOKA	925.9	1291.5	14.7	16.8	15.9	13.0

Part 2. (*Japan Analytical Chemistry Research Institute*)

Since June 1963, the Japan Analytical Chemistry Research Institute has conducted analyses of total diet samples from the 19 prefectures shown in Figure 6.

One city and one village in each prefecture were chosen as representative of urban and rural districts of these prefectures, respectively. Ten families from each location were chosen at random, and each family presented a normal portion of the regular diet consumed in one day by an adult or a child. Diets at special occasions were avoided.

Composite samples from the 10 families were ashed together and analyzed using the method recommended by the Science and Technology Agency.

Results obtained during the period from May to December, 1967 are shown in Table 5.

Figure 7 shows the all Japan mean values of total diet.

Figure 6. Total Diet Sampling Location

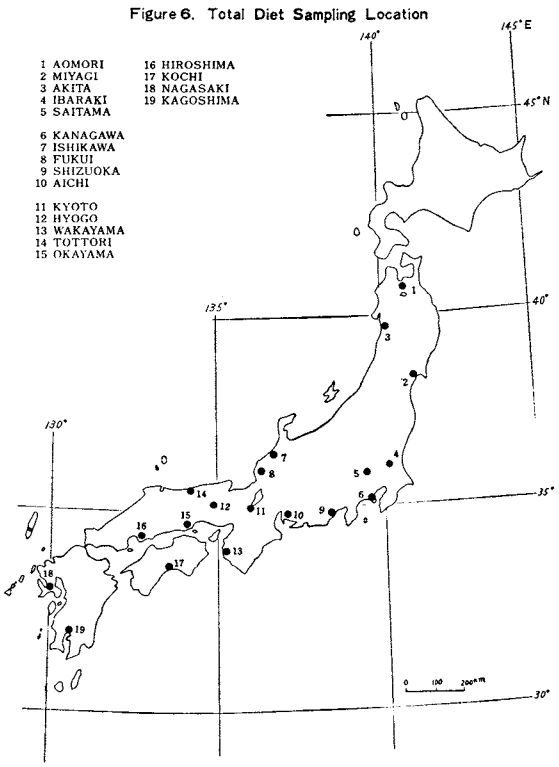


Table 5. ^{90}Sr and ^{137}Cs in Total Diet — May to Dec., 1967 —

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

(*Japan Analytical Chemistry Research Institute*)

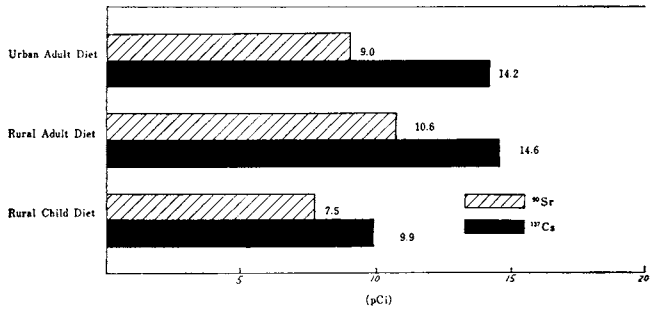
(Continued from Table 5, Issue No. 17 of this Publication)

Location	Month	Daily Intake						
		Ash (g)	Ca (mg)	K (g)	^{90}Sr (pCi)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	^{137}Cs (pCi/gK)
(URBAN ADULT DIET)								
Aomori, AOMORI	May 1967	27.6	844	2.28	18.30	21.7	30.59	13.4
〃 〃	Nov. 〃	19.8	861	1.25	6.35	7.4	11.95	9.6
Sendai, MIYAGI	June 〃	20.2	495	1.63	7.80	15.8	11.71	7.2
〃 〃	Nov. 〃	22.8	549	1.75	7.77	14.2	14.17	8.1
Akita, AKITA	June 〃	16.2	582	1.33	19.66	33.8	17.06	12.8
〃 〃	Nov. 〃	17.4	494	1.17	12.76	25.8	9.86	8.4
Mito, IBARAKI	May 〃	20.0	560	1.32	10.91	19.5	15.71	11.9
〃 〃	Nov. 〃	19.6	480	1.72	7.97	16.6	13.78	8.0

Location	Month	Daily Intake						
		Ash (g)	Ca (mg)	K (g)	^{90}Sr (pCi)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	^{137}Cs (pCi/gK)
Yamato, KANAGAWA	May 1967	19.2	618	2.28	9.40	15.2	21.50	9.4
〃 〃	Nov. 〃	23.6	408	1.78	7.92	19.4	18.09	10.2
Ohmiya, SAITAMA	May 〃	17.8	570	1.75	5.15	9.0	19.51	11.2
〃 〃	Nov. 〃	16.9	652	1.53	7.32	11.2	14.65	9.6
Atami, SHIZUOKA	〃 〃	12.4	305	1.66	7.98	26.2	9.69	5.8
Kanazawa, ISHIKAWA	May 〃	23.6	449	1.73	7.78	17.3	14.46	8.4
〃 〃	Nov. 〃	24.0	619	1.47	5.30	8.6	12.72	8.7
Kariya, AICHI	June 〃	16.6	370	1.68	5.84	15.8	11.17	6.7
〃 〃	Nov. 〃	15.5	491	1.34	7.91	16.1	10.13	7.6
Fukui, FUKUI	May 〃	13.6	723	1.32	7.07	9.8	11.27	8.5
〃 〃	Dec. 〃	18.6	536	1.89	11.58	21.6	15.44	8.2
Kyoto, KYOTO	May 〃	17.2	432	1.75	7.03	16.3	29.05	16.6
〃 〃	Nov. 〃	32.0	966	2.82	11.31	11.7	21.01	7.5
Wakayama, WAKAYAMA	June 〃	8.8	335	0.64	3.10	9.3	5.27	8.2
〃 〃	Dec. 〃	10.5	516	0.74	3.64	7.1	6.63	9.0
Kakogawa, HYOGO	June 〃	19.4	556	1.18	6.16	11.0	9.44	8.0
〃 〃	Nov. 〃	19.1	426	1.09	6.36	14.9	11.46	10.5
Okayama OKAYAMA	May 〃	15.0	159	1.16	4.92	30.9	8.30	7.2
〃 〃	Nov. 〃	20.8	383	1.56	5.59	14.6	8.53	5.5
Tottori, TOTTORI	May 〃	22.4	625	2.00	14.82	23.8	18.57	9.3
〃 〃	Nov. 〃	26.1	681	2.01	10.62	15.6	21.23	10.6
Hiroshima, HIROSHIMA	May 〃	10.0	294	1.15	5.95	20.2	9.96	8.7
〃 〃	Nov. 〃	15.7	386	1.29	7.74	20.1	15.44	12.0
Kochi, KOCHI	May 〃	15.4	379	1.37	9.35	24.7	10.66	7.8
〃 〃	Nov. 〃	16.3	381	1.41	11.62	30.5	12.22	8.7
Nagasaki, NAGASAKI	May 〃	20.6	514	1.80	9.93	19.3	18.79	10.4
〃 〃	Nov. 〃	23.6	595	1.46	11.35	19.1	14.55	10.0
Kagoshima, KAGOSHIMA	July 〃	16.2	338	1.55	7.99	23.6	3.50	8.7
〃 〃	Nov. 〃	23.5	564	1.66	20.69	36.7	19.03	11.5
(RURAL ADULT DIET)								
Aomori, AOMORI	May 1967	18.6	555	1.39	9.99	18.0	24.18	17.4
〃 〃	Nov. 〃	15.4	647	1.59	10.98	17.0	16.01	10.1
Natori, MIYAGI	June 〃	17.0	486	1.33	5.53	11.4	12.28	9.2
〃 〃	Nov. 〃	21.6	449	1.75	7.62	17.0	15.79	9.0
Yuwa, AKITA	June 〃	24.8	888	1.61	20.70	23.3	18.17	11.3
〃 〃	Nov. 〃	20.0	542	1.45	16.89	31.2	20.53	14.2
Tokai, IBARAKI	May 〃	23.0	527	1.86	9.93	18.9	16.62	8.9
〃 〃	Nov. 〃	20.1	482	1.73	8.49	17.6	12.33	7.1
Isehara, KANAGAWA	May 〃	31.4	688	2.68	12.67	18.4	37.44	14.0
〃 〃	Dec. 〃	21.2	522	1.69	6.34	12.1	19.29	11.4
Niiza, SAITAMA	May 〃	19.8	656	1.56	12.50	19.0	15.44	9.9
〃 〃	Nov. 〃	17.2	808	1.51	6.11	7.6	13.47	8.9
Kakegawa, SHIZUOKA	〃 〃	12.2	196	0.80	4.38	22.3	4.43	5.5
〃 〃	〃 〃	13.0	647	1.31	7.08	10.9	5.13	3.9
Matsuto, ISHIKAWA	May 〃	13.0	271	1.13	7.77	28.7	12.25	10.8
〃 〃	Nov. 〃	15.1	284	1.02	14.36	50.6	9.36	9.2
Nishio, AICHI	June 〃	14.4	491	1.61	5.09	10.4	10.51	6.5
〃 〃	Nov. 〃	22.7	440	1.94	6.51	14.8	13.17	6.8
Kanazu, FUKUI	May 〃	13.2	301	1.91	12.85	42.7	8.97	9.9
〃 〃	Dec. 〃	16.2	337	1.65	22.43	66.6	9.85	6.0
Miyama, KYOTO	May 〃	27.6	654	2.06	28.08	43.0	24.47	11.9
〃 〃	Nov. 〃	24.0	624	2.27	17.92	28.7	13.68	6.0
Hidaka, WAKAYAMA	June 〃	9.4	463	1.00	1.78	3.8	6.54	6.5
〃 〃	Nov. 〃	13.4	728	1.33	9.67	13.3	7.03	5.3
Kakogawa, HYOGO	June 〃	11.2	503	1.18	7.14	14.2	19.15	16.2
〃 〃	Nov. 〃	15.1	489	1·24	6.53	13.4	19.28	9.9
Tsudaka, OKAYAMA	May 〃	12.4	211	1.10	4.26	20.2	8.88	8.1
〃 〃	Nov. 〃	13.8	454	1.15	9.31	20.5	11.18	9.7
Fukube, TOTTORI	May 〃	19.2	763	1.84	9.9	12.0	15.55	8.5
〃 〃	Nov. 〃	20.8	522	1.32	13.79	26.4	13.38	10.1
Shiwa, HIROSHIMA	June 〃	18.0	500	1.55	14.33	28.7	9.42	6.1

Location	Month	Daily Intake						
		Ash (g)	Ca (mg)	K (g)	^{90}Sr (pCi)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	^{137}Cs (pCi/gK)
Shiwa, HIROSHIMA	Nov. 1967	27.5	1006	3.09	21.47	21.3	24.93	4.8
Haruno, KOCHI	May 〃	16.0	413	2.14	7.39	17.9	12.41	5.8
〃 〃	Nov. 〃	16.4	403	1.40	13.32	33.1	11.37	8.1
Tokitsu, NAGASAKI	May 〃	21.2	463	1.63	6.98	15.1	15.74	9.7
〃 〃	Nov. 〃	23.7	751	1.41	6.36	8.5	15.33	10.9
Ohsumi, KAGOSHIMA	May 〃	16.4	463	1.12	7.29	15.7	15.67	14.0
〃 〃	Nov. 〃	14.6	378	1.05	10.26	27.1	15.04	14.3
		(RURAL CHILD DIET)						
Aomori, AOMORI	May 1967	12.6	318	1.09	10.06	31.6	14.99	13.8
〃 〃	Nov. 〃	8.4	381	0.80	6.09	16.0	7.08	8.9
Natori, MIYAGI	June 〃	11.0	319	0.96	3.23	10.1	6.73	7.0
〃 〃	Nov. 〃	15.8	354	1.47	5.17	14.6	15.69	10.7
Yuwa, AKITA	June 〃	12.0	286	0.71	10.62	37.2	5.76	8.1
〃 〃	Nov. 〃	9.1	376	0.85	11.67	31.0	6.85	8.1
Tokai, IBARAGI	May 〃	14.6	717	1.28	5.99	8.4	15.69	12.3
〃 〃	Nov. 〃	14.7	495	1.45	6.72	13.6	11.17	7·7
Isehara, KANAGAWA	May 〃	12.2	397	1.36	5.46	13.8	16.52	12.2
〃 〃	Dec. 〃	12.0	410	1.19	3.92	9.6	14.12	11.9
Niiza, SAITAMA	May 〃	14.2	650	1.14	6.05	9.3	9.79	8.6
〃 〃	Nov. 〃	14.0	591	1.42	6.71	11.4	12.50	8.8
Kakogawa, SHIZUOKA	〃 〃	3.0	142	1.07	16.20	114.1	4.20	3.9
〃 〃	〃 〃	9.0	615	0.70	4.95	8.0	4.21	6.0
Matsuto, ISHIKAWA	May 〃	10.4	291	0.95	7.73	26.6	9.41	9.9
〃 〃	Nov. 〃	7.2	210	0.52	6.49	30.9	4.80	9.2
Nishio, AICHI	June 〃	8.0	261	0.82	2.37	9.1	5.74	7.0
〃 〃	Nov. 〃	23.2	490	2.48	13.54	27.6	14.46	5.8
Sakai, FUKUI	May 〃	6.6	160	0.65	12.19	76.2	4.78	7.4
〃 〃	Dec. 〃	10.4	291	1.14	12.67	43.5	6.06	5.3
Miyama, KYOTO	May 〃	16.0	381	1.22	13.59	35.6	12.95	10.6
〃 〃	Nov. 〃	24.5	696	2.49	18.11	26.0	20.58	8.3
Hidaka, WAKAYAMA	June 〃	11.4	1140	1.04	0.63	0.6	5.92	5.7
〃 〃	Nov. 〃	11.8	346	1.33	5.92	17.1	6.82	5.1
Kakogawa, HYOGO	June 〃	9.8	433	0.93	7.30	16.9	24.10	25.9
〃 〃	Nov. 〃	11.8	293	1.21	5.64	19.2	13.33	11.0
Tsudaka, OKAYAMA	May 〃	5.6	99	0.75	2.29	23.1	6.91	9.2
〃 〃	Nov. 〃	6.0	212	0.54	4.25	20.0	4.42	8.2
Fukube, TOTTORI	May 〃	10.4	534	0.90	7.84	14.7	10.03	11·2
〃 〃	Nov. 〃	10.0	980	0.73	5.90	6.0	6.13	8.4
Shiwa, HIROSHIMA	June 〃	15.4	479	1.19	6.37	13.3	8.20	6.9
〃 〃	Nov. 〃	16.9	639	1.58	14.06	22.0	11.94	7.6
Haruno, KOCHI	May 〃	11.2	441	1.32	6.11	13.8	6.97	5.3
〃 〃	Nov. 〃	15.5	381	1.32	11.33	29.7	10.64	8.1
Tokitsu, NAGASAKI	May 〃	12.0	431	1.17	5.82	13.5	10.40	8.9
〃 〃	Nov. 〃	10.8	420	0.81	5.03	12.0	11.16	13.8
Ohsumi, KAGOSHIMA	May 〃	5.0	225	0.50	2.13	9.5	5.46	10.9
〃 〃	Nov. 〃	9.5	232	0.79	5.20	22.4	10.89	13.8

Figure 7. ^{90}Sr and ^{137}Cs in Total Diet
—All Japan Mean Values—
—May to Dec., 1967—



Strontium-90 and Cesium-137 in Standard Diet

(National Institute of Radiological Sciences)

Since May 1966, National Institute of Radiological Sciences has conducted analyses of individual foodstuff samples from four prefectures (Hokkaido, Niigata, Tokyo and Kagoshima). The samplings location are shown in Figure 8.

Individual foodstuffs produced in each prefecture were collected separately according to nine categories : cereals, beans, potatos, milk, eggs, meat, fish and shellfish, leafy vegetables and root vegetables.

The standard diet, taken in this study, was based on the following diet components, indicated by Resource Council, Science and Technology Agency, in 1964 : cereals : 422 g, beans : 35 g, potatos : 85 g, milk : 180 g, eggs : 30 g, meat : 30 g, fish and shellfish : 75 g, leafy vegetables : 144 g, root vegetables : 96 g.

Collected foodstuffs were ashed and analyzed separately.

Results obtained during the period from May, 1967 to June, 1968 are shown in Table 6.

Figure 8. Sampling Locations of Standard Diet

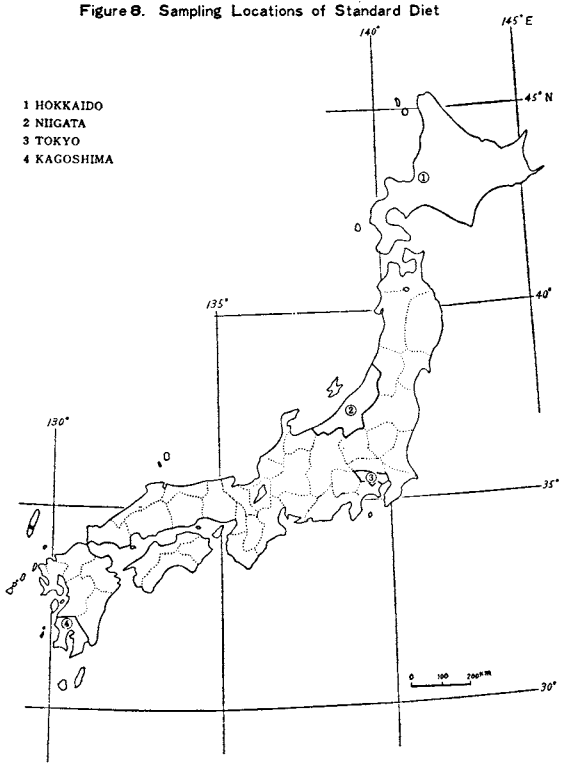


Table 6. ^{90}Sr and ^{137}Cs in Standard Diet — May 1967 to June 1968 —

By M. Saiki, T. Ueda, Y. Suzuki, R. Nakamura and E. Kase

(National Instituteof Radiological Sciences)

(Continued from Table 6, Issue No. 17 of this Publication)

Foodstuff Samples	Daily Intake/Person					
	^{90}Sr (pCi)	Ca (mg)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	K (mg)	^{137}Cs (pCi/gK)
	HOKKAIDO — July 1967 —					
Cereals	1.27	56	22.8	5.7	273	20.8
Beans	0.40	26	15.2	1.8	39	46.2
Potatos	0.33	6	54.1	0.4	109	3.7
Milk	1.51	169	8.9	14.6	195	75.3
Eggs	*	*	*	*	*	*
Meat	0.01	2	3.3	1.0	38	27.7
Fish and shellfish	0.16	42	3.8	1.6	194	8.4
Leafy vegatables	0.81	23	35.4	1.7	217	7.7
Root Vegetables	0.87	17	50.3	0.7	148	4.4
	HOKKAIDO — Nov. 1967 —					
Cereals	1.63	17	95.9	10.1	178	56.7
Beans	0.48	15	32.0	1.7	118	14.4
Potatos	0.35	14	25.0	1.5	271	5.5
Milk	1.58	240	6.6	7.5	273	27.5

* ; The analysis has not been carried out for this time.

Foodstuff Samples	Daily Intake/Person					
	^{90}Sr (pCi)	Ca (mg)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	K (mg)	^{137}Cs (pCi/gK)
Eggs	0.01	2	5.0	0.7	44	15.9
Meat	0.03	1	30.0	2.4	62	38.7
Fish and shellfish	0.02	34	0.6	1.3	206	6.3
Leafy vegetables	1.43	15	95.3	2.1	360	5.8
Root Vegetables	4.20	20	210.0	5.5	212	25.9
Total	9.73	358	—	32.8	1724	—
S.U. of Total Diet	—	—	27.2	—	—	—
C.U. of Total Diet	—	—	—	—	—	19.0
HOKKAIDO — May 1968 —						
Cereals	1.11	39	28.5	6.7	301	22.3
Beans	0.40	29	13.8	0.9	105	8.6
Potatos	0.10	6	16.7	2.5	271	9.2
Milk	1.36	178	7.6	10.3	273	37.7
Eggs	0.01	10	1.0	0.2	24	8.3
Meat	0.01	1	10.0	1.3	51	25.5
Fish and shellfish	0.07	28	2.5	1.2	203	5.9
Leafy vegetables	1.82	24	75.8	1.0	280	3.6
Root vegetables	1.57	20	78.5	0.7	174	4.0
Total	6.45	335	—	24.8	1682	—
S.U. of Total Diet	—	—	19.3	—	—	—
C.U. of Total Diet	—	—	—	—	—	14.7
NIIGATA — May 1967 —						
Cereals	1.48	32	46.1	12.0	261	46.2
Beans	0.34	27	12.8	1.5	47	31.0
Potatos	0.36	8	46.2	0.4	83	4.8
Milk	0.92	181	5.1	2.3	271	8.5
Eggs	0.01	16	0.6	0.4	19	21.6
Meat	0.02	1	12.1	1.1	28	37.8
Fish and shellfish	0.06	34	1.8	1.6	179	8.7
Leafy vegetables	6.89	69	99.4	1.2	370	3.3
Root vegetables	4.72	36	130.0	2.2	146	15.2
Total	14.80	404	—	22.7	1404	—
S.U. of Total Diet	—	—	36.6	—	—	—
C.U. of Total Diet	—	—	—	—	—	16.2
NIIGATA — Nov. 1967 —						
Cereals	1.76	29	60.7	6.7	344	19.5
Beans	0.51	34	15.0	2.0	199	10.1
Potatos	0.36	5	72.0	1.6	298	5.4
Milk	0.92	164	5.6	6.3	305	20.7
Eggs	0.01	17	0.6	0.2	41	4.9
Meat	0.01	3	3.3	2.0	81	24.7
Fish and shellfish	0.02	150	0.1	1.3	176	7.4
Leafy vegetables	1.13	7	161.4	2.3	561	4.1
Root vegetables	4.16	16	260.0	1.0	219	4.6
Total	8.88	425	—	23.4	2224	—
S.U. of Total Diet	—	—	20.9	—	—	—
C.U. of Total Diet	—	—	—	—	—	10.5
NIIGATA — May 1963 —						
Cereals	1.58	21	75.2	11.4	368	31.0
Beans	1.08	22	49.1	1.4	166	8.4
Potatos	0.30	10	30.0	6.1	290	21.0
Milk	0.80	146	5.5	1.1	221	5.0
Eggs	0.01	14	0.7	1.3	39	33.3
Meat	0.01	2	5.0	1.6	52	30.8
Fish and shellfish	0.02	63	0.3	0.6	116	5.2

Foodstuff Samples	Daily Intake/Person					
	^{90}Sr (pCi)	Ca (mg)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	K (mg)	^{137}Cs (pCi/gK)
Leafy vegetables	1.83	10	183.0	1.1	414	2.7
Root vegetables	1.15	18	63.9	1.0	72	13.9
Total	6.78	306	—	25.6	1738	—
S.U. of Total Diet	—	—	22.2	—	—	—
C.U. of Total Diet	—	—	—	—	—	14.7
TOKYO — July 1967 —						
Cereals	*	*	*	*	*	*
Beans	0.78	20	40.0	1.1	49	23.5
Potatos	0.23	9	24.5	1.1	257	4.3
Milk	*	*	*	*	*	*
Eggs	*	*	*	*	*	*
Meat	0.02	2	10.0	1.3	49	26.2
Fish and shellfish	0.09	36	0.3	0.4	195	1.9
Leafy vegetables	1.91	50	38.5	1.3	268	4.9
Root vegetables	2.83	10	272.1	0.4	141	2.6
TOKYO — Dec. 1967 —						
Cereals	2.41	26	92.7	10.4	217	47.9
Beans	0.69	34	20.3	1.0	130	7.7
Potatos	0.35	10	35.0	1.1	264	4.2
Milk	0.63	180	3.5	2.7	260	10.4
Eggs	0.02	5	4.0	0.3	41	7.3
Meat	0.01	1	10.0	1.3	58	22.4
Fish and shellfish	0.01	37	0.3	1.8	192	9.4
Leafy vegetables	1.21	50	24.2	1.1	338	3.3
Root vegetables	3.32	24	138.3	0.9	248	3.6
Total	8.65	367	—	20.6	1748	—
S.U. of Total Diet	—	—	23.6	—	—	—
C.U. of Total Diet	—	—	—	—	—	11.8
KAGOSHIMA — July 1967 —						
Cereals	0.97	40	24.1	7.7	158	48.9
Beans	0.29	28	10.5	1.2	47	26.0
Potatos	0.17	5	31.5	0.8	316	2.6
Milk	1.10	126	8.8	5.6	223	25.0
Eggs	0.04	14	3.2	0.8	32	25.0
Meat	0.01	7	1.7	2.3	48	48.1
Fish and shellfish	0.08	29	2.7	1.4	124	11.4
Leafy vegetables	0.52	21	25.0	1.5	199	7.6
Root vegetables	0.54	20	27.0	3.3	161	20.3
Total	3.72	290	—	24.6	1308	—
S.U. of Total Diet	—	—	12.8	—	—	—
C.U. of Total Diet	—	—	—	—	—	18.8
KAGOSHIMA — Nov. 1967 —						
Cereals	1.67	24	69.6	11.4	229	49.8
Beans	0.48	40	12.0	1.1	119	9.2
Potatos	0.58	7	82.9	1.3	216	6.0
Milk	1.40	164	8.5	4.9	254	19.3
Eggs	0.02	15	1.3	0.3	43	7.0
Meat	0.01	2	5.0	1.1	57	19.3
Fish and shellfish	0.01	16	0.6	1.3	221	5.9
Leafy vegetables	2.08	53	39.2	3.3	293	11.3
Root vegetables	3.54	25	141.6	3.3	204	16.2
Total	9.79	346	—	28.0	1636	—
S.U. of Total Diet	—	—	28.3	—	—	—
C.U. of Total Diet	—	—	—	—	—	17.1

* ; The analysis has not been carried out for this time.

Foodstuff Samples	Daily Intake/Person					
	^{90}Sr (pCi)	Ca (mg)	^{90}Sr (pCi/gCa)	^{137}Cs (pCi)	K (mg)	^{137}Cs (pCi/gK)
KAGOSHIMA — June 1968 —						
Cereals	0.78	23	33.9	13.1	276	47.5
Beans	0.53	22	24.1	1.7	137	12.4
Potatos	0.16	7	22.9	2.0	277	7.2
Milk	0.83	163	5.1	4.4	265	16.6
Eggs	0.05	13	3.8	0.3	27	11.1
Meat	0.01	2	5.0	1.5	68	22.1
Fish and shellfish	0.02	17	1.2	2.5	240	10.4
Leafy vegetables	4.08	15	272.0	2.1	406	5.2
Root vegetables	1.01	19	53.2	3.4	248	13.7
Total	7.47	281	—	31.0	1944	—
S.U. of Total Diet	—	—	26.6	—	—	—
C.U. of Total Diet	—	—	—	—	—	15.9