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RADIOACTIVITY SURVEY DATA in Japan

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This report is periodically published from The National Institute of Radiological Sciences by compilation of the data supplied by 32 prefectural laboratories and the Japan Chemical Analysis Center which are engaged in sampling and radiochemical analysis of environmental and dietary materials under the contract of the Science and Technology Agency.

The present issue is the results on the samples obtained from April, 1977 to December, 1978.

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Radioactivity Survey related with Environmental and Dietary Materials

1. Samples and Sampling

(1) Rain and Dry Fallout

For sampling of rain and dry fallout, an about 5,000 cm^2 tray is used. In the beginning of the month, it is filled with water 1 cm deep and left untouched for the month. In the end of the month, the water depth is measured to determine the water amount. The sampled water is added with carriers of strontium and cesium. After sufficiently stirred, it is filtered. The tray is washed with about 5ℓ pure water, which is then filtered and added to the water above. The filtered water is made to go, at a flow rate of 80mℓ/min, through a column of previously adjusted sodium cation exchange resin (equivalent to DOWE x 50 WX – 80 ~ 100 mesh, 50mℓ), so that all positive ions may be absorbed and the liquid, flowing out, is thrown away.

(2) Air-borne Dust

For the sampling of airborne dust, there is a rain cover provided about 1 ~ 1.5m above the ground to keep rain from coming in. Over 3,000m^3/month of air is absorbed by an electric static precipitator or a "filter-paper" precipitator. The sample for three months is put together.

(3) Service Water, (Source Water, Tap Water), and Fresh Water.

Service water is divided into two types, source water and tap water. Source water is sampled with a proper water-collector, and tap water is sampled after left running for about 5 minutes. Sampled amount is 100mℓ respectively. After sampled, the water is added with carriers of strontium and cesium. After fully stirred up, it is filtered, and the subsequent process is same as in (1) above. Fresh water is handled just same as source water.

(4) Soil

For sampling, a sampling place should be relatively spacious and flat, an area capable of representing the neighbourhood. Besides, it should be a place with the surface never disturbed in the past, free from dust storms, dust-sand accumulated by wind, inflow and outflow of precipitation, and stagnant water. Avoid a place located under trees in a forest, stony area or inside of river banks.

Soil sample is taken, with a soil collector, from two kinds of depth, 0 ~ 5cm depth and 5 ~ 20cm depth. Collected sample is air dried. In the course of the process, roots of plants, and pebbles are removed incidentally and lumps are crushed by hand. The soil then, is passed through a 2mm mesh sifter for the removal of small stones. (Airdry-fine-soil).

(5) Sea Water

Sea water is sampled when fine weather has continued for a few days. A sampling place should be located where no river water comes in. Once a place is chosen, be sure to do sampling at the same place.

Surface water should be sampled, with a polyethylene or canvas bucket, and stored in a 20ℓ polyethylene cubtaner. The bottle, bucket, funnel, etc., should be washed first in hydrochloric acid and next distilled water, prior to use.

Sampling should be done at the front of the ship, just before the ship comes to a stop. Immediately after the collection, the sample water should be added with concentrated hydrochloride acid at a rate of 1mℓ/liter (sea water).

By the way, separately, 200ℓ of sea water is picked up per sample and is used for measuring the concentration of chlorine. (This is not added with hydrochloric acid.)

(6) Sea Sediment

Sampling should be done at the same place after the Sampling of sea-water. The place should be one meter deep on the ebb tide in an area where sea sediment does not move and the seabottom is mud. Sample as much as 4 kg by wet weight should be put on a large size porcelain dish and dried with a thermo-drier.

(7) Total Diet

Samples should be meals to be eaten daily. Avoid meals specially prepared. One sample should consist of breakfast, lunch, supper, and snacks (tea and water are inclusive) for five persons per day. The stuff is carbonized under direct fire on a large-sized stainless plate. Take care not to raise smoke. The carbide is

moved on to a porcelain dish and then ashed at 500°C in an electric oven.

(8) Rice (producing place, consuming place)

Sampling is done in a producing place at the harvest and in a consuming place when new rice is put on sale.

Polished rice is sampled, put on a porcelain dish, carbonized and ashed.

(9) Milk

Sampling is done both in a producing place and consuming place. In the producing place, sample is taken from raw milk, and in the consuming place, commercial milk is purchased.

Milk sample is put in a stainless pan or porcelain dish. After evaporation to dryness, the stuff is carbonized and ashed.

(10) Vegetables

Vegetable materials divide into edible herbs (green vegetable) and edible roots. In principle, spinash represents green vegetable, while Japanese radish, edible roots.

Each material is washed with water to remove mud. Green vegetable gets rid of bad leaves and roots which are not eaten. After dried, each sample is carbonized on a stainless pan or porcelain dish.

(11) Tea (Green Tea)

500g of manufactured tea is put on a stainless pan or porcelain dish, carbonized and ashed.

(12) Fish, Shellfishes and Seaweed (producing place and consuming place)

Sampling is done independently at producing places and consuming places. Living things differ depending on periods and places, resulting in difference in marine products. Kinds of products representing respective areas and places should be chosen. Producing places should be those where the catch is great, accompanied by great consumption, and the catch is possible all the year round.

(a) Sea Fish

Each sample is washed in water and wiped with filter paper. (Only the estable portion is used in case of a large-sized fish, and the whole is used in case of a small fish). Each is weighed, placed on a stainless pan or porcelain dish, carbonized and further ashed in an electric oven.

(b) Shellfishes

Shellfishes with shells on are collected or purchased. With the removal of the shell, the inside is processed in the same manner as in (a) above, sea fish.

(c) Seaweed

Seaweed to be sampled should be those of useful kinds. Each sample is washed with water, after removal of sand. Next, it is rid of water, weighed, dried, carbonized and ashed.

(13) Fresh-water Fishes

Samples are processed in the way same as for sea fish.

With reference to samples above mentioned, Table 1 shows the number of prefectures, the number of sampling and quantity of samples.

2. Preparation of analysis data (Prior treatment)

(1) Rain and Dry Fallout, Service Water, Fresh Water

changed and absorbed into the cation exchange resin column. For elution, hydrochloric acid (1+3) is flowed into the colum, and the elution liquid is retained. Dry-fallout separated by the filtering of the water sampled previously is ashed along with the filter paper and next the ash is treated with hydrochloric acid and decomposed; then the stuff is extracted by use of hydrochloric acid and water and insoluble matters are filtered. The filtrate and liquid used for washing are put into the elution liquid. The solution thus turned out is the solution for analysis.

(2) Soil

Airdry soil is passed thru a 20 mesh sifter. Out of it, a portion weighing 100g is taken out and added with a fixed amount of carriers of strontium and cecium. With further addition of sodium hydroxide solution (IN), the stuff is heated, added with hydrochloric acid, and heated again for decomposition. Then, the insoluble portion is filtered out and washed. The filtrate and washing liquid are added with nitric acid and heated for the decomposition of organic matters. The resulting solution is the sample solution for analysis.

(3) Sea Sediment

The sediment is first rid of pieces of stone and shell and dried by hot air. Then the stuff is pulverized finely in a mortar and passed thru a 20 mesh sifter for preparation. Then, it is treated same as above (2) soil, and made into sample solution for analysis.

(4) Rice

The ashed sample is cooled and pulverized in a porcelain mortar, to pass thru a 40 mesh sifter. A certain amount is taken out and added with carriers of strontium and cesium, and hydrochloric acid; it is then heated for decomposition. With further addition of nitric acid, it is heated again and dried.; the stuff then is treated with hydrochloric acid and water for extraction, filtering and washing. The filtrate and washing liquid are used for sample solution for analysis.

(5) Air-borne Dust, Total Diet, Milk, Vegetables, Fishes and Shellfishes, Seaweed, Tea, etc.

A certain amount is taken out respectively from ash sample of these. Each is treated in the way same as in (4) above.

3. Separation and Measurement of ^{90}Sr and ^{137}Cs

(1) Strontium-90

Sample solution pretreated neutralizes with sodium hydroxide, and strontium, calsium, magnesium, and other ions in it are to precipitate as the carbonates of them by adding sodium carbonate. Supernatant solution is kept as the sample solution for analysis of cesium content in the materials (see (2) Cesium-137).

Following disolvation of these carbonate precipitations with hydrochloric acid, strontium element is separated in precipitation as strontium oxalate. This precipitation disolves again with nitric acid, and then the strontium element is separated as strontium nitrate in precipitation by treatment with furning nitric acid.

Precipitation of strontium nitrate is disolved with water, and added a unit volume of Ba^{2+}. Then radium and barium elements are to separated in precipitation by adding potassium chromate. Strontium carbonate is obtained as precipitation by adding ammonium carbonate into the supernatant.

To obtain strontium carbonate, the precipitation is filtered off, washed, and dried, and it's volume and the chemical recovery rate are determined. After the precipitation dissolves again with hydrochloric acid, it is allowed to stand two weeks under the presence of iron (III) chloride.

Yttrium-90 element derived in above procedure is precipitated with iron ions by adding ammonium water. And it apply as the sample in order to determine the strontium content in it, after filtration and washing of precipitation.

(2) Cesium-137

As described in previous section, supernatant solution, which derived in analytic process of strontium-90 content, is utilized as the sample solution of cesium-137 content determination.

This solution is made just acidic with hydrochloric acid, and then cesium ions is coprecipitated with other ions by addition and mixture of ammonium phosphomolybdate powder. After filtration and washing the precipitate, it dissolves with 2.5N sodium hydroxide solution, and ammonium involved remoues by adding iron (III) chloride (Fe^{3+}) and boiling.

After it is allowed to stand for cooling the pH of sample solution adjustes to 8.2, and precipitations of iron (III) chloride, molybdic acid precipitated, and others remove through filtration and washing.

(Concerning sea-water samples, it is applied on a column filled the cation exchange resin after adding EDTA, and cesium and rubisium elements are absorbed on it. Then, cesium element absorbed on the resin are eluted with the addition of hydrochloric acid.)

Following these procedures, chloroplatinic acid is added into sample solution to precipitate the cesium element. The precipitation separates by filtration using a separatory funnel. After it is determined the volume of cesium content obtained and the chemical recovery rate, and it is applied as sample for measurement of cesium content in original materials.

4. Estimation of stable Strontium, Potassium, and Calcium.

Sample soil and sea sediment are respectively weighed to get a necessary portion. Each portion is processed with sodium hydroxide solution and hydrochloric acid and decomposed. Sample ash of total diet, vegetables, milk, fishes, shellfishes and seaweed are measured for a necessary amount. For decomposition, each sample ash is processed with hydrochloric acid

and nitric acid, and, if necessary, hydrofluoric acid is used. Then, the solution is diluted into a certain fixed amount of acid solution having the characteristic of hydrochloric acid.

Estimation is carried out as follows:

Strontium : By atomic absorption spectroscopy.

Potassium : By flame spectrophotometry.

Calcium : By potassium permanganate titration, or atomic absorption spectroscopy, after calcium is precipitated and isolated as calcium oxalate.

5. General Plan of Radioactivity Survey in Japan

Radioactivity survey was enforced in accordance with the following standards.

Samples	Number of prefectures sampled	Period of sampling	Volume of samples collected
Environmental Materials			
Rain and Dry Fallout	32	12 times/year (monthly)	
Air-borned Dust	10	4 times/year (1 sample consists of the totals collected during 3 months)	~1,000 m^3/3 months
Service Water (Source Water)	8	2 times/year (June, December)	100 ℓ
" (Tap Water)	32	2 times/year (June, December)	100 ℓ
Fresh Water	9	1 time/year (fishing season)	100 ℓ
Soil (0~5 cm)	32	1 time/year (June, July)	~4 kg
Soil (5~20 cm)	32	1 time/year (June, July)	~4 kg
Sea Water	12	1 time/year (July, August)	40 ℓ
Marine Sediments	12	1 time/year (July, August)	~4 kg
Diet Materials			
Total Diet	32	2 times/year (June, November, December)	all the daily regular diet consumed for five persons
Rice (Producing districts)	9	1 time/year (Heavesting season)	5 kg of processed rice
Rice (Consuming districts)	27	1 time/year (Heavesting season)	5 kg of processed rice
Milk (the report to WHO)	10	4 times/year (quarterly)	3 ℓ
Milk (Producing districts)	4	2 times/year (August, February)	3 ℓ
Milk (Consuming districts)	29	2 times/year (August, February)	3 ℓ
Vegetables (Producing districts)	19	1 time/year (Producing season)	4 kg
Vegetables (Consuming districts)	15	1 time/year (Producing season)	4 kg
Green Tea (Producing districts)	4	1 time/year (season of the first pick)	500 g of processed tea
Marine Fish (Producing districts)	21	1 time/year (fishing season)	4 kg of fresh materials
Marine Fish (Consuming districts)	11	1 time/year (fishing season)	4 kg of fresh materials
Shell Fish (Producing districts)	7	1 time/year (fishing season)	4~5 kg of fresh materials with shell
Sea Weeds (Producing districts)	7	1 time/year (fishing season)	2~3 kg of fresh materials
Fresh-Water Fish (Producing districts)	9	1 time/year (fishing season)	4 kg of fresh materials

Environmental Data

(1) Strontium-90 and Cesium-137 in Rain and Dry Fallout

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 1 and the sampling locations are shown in Figure 1.

Table 1: ^{90}Sr and ^{137}Cs in Rain and Dry Fallout
– January, 1978 to March, 1978 –
(Continued from Table 1, No. 48 of this publication)

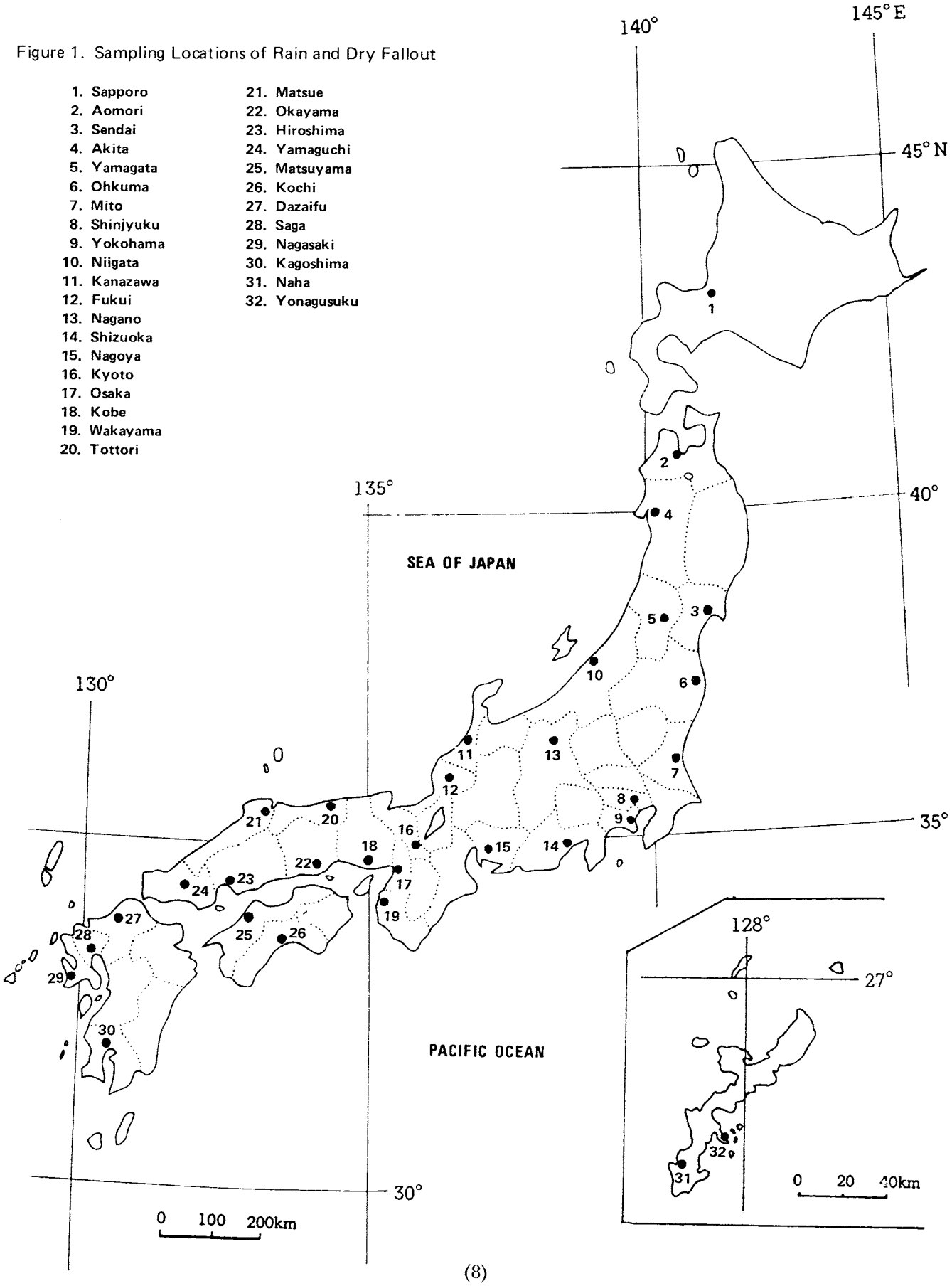
Location	Duration (Days)	Precipitation (mm)	^{90}Sr (mCi/km^2)	^{137}Cs (mCi/km^2)
January, 1978				
Sapporo, HOKKAIDO	36	166.5	0.10 ± 0.003	0.16 ± 0.003
Aomori, AOMORI	28	172	0.11 ± 0.003	0.18 ± 0.003
Sendai, MIYAGI	28	64.3	0.023 ± 0.0013	0.033 ± 0.0015
Akita, AKITA	29	100.39	0.11 ± 0.003	0.16 ± 0.003
Yamagata, YAMAGATA	35	108.5	0.097 ± 0.0026	0.15 ± 0.003
Ohkuma, FUKUSHIMA	29	8.0	0.008 ± 0.0009	0.013 ± 0.0010
Mito, IBARAKI	28	60	0.015 ± 0.0011	0.026 ± 0.0014
Shinjyuku, TOKYO	31	45.2	0.008 ± 0.0009	0.010 ± 0.0010
Yokohama, KANAGAWA	30	33.3	0.009 ± 0.0011	0.008 ± 0.0009
Niigata, NIIGATA	33	135.7	0.10 ± 0.003	0.13 ± 0.003
Kanazawa, ISHIKAWA	26	231	0.24 ± 0.004	0.31 ± 0.004
Fukui, FUKUI	29	319.0	0.30 ± 0.005	0.43 ± 0.005
Nagano, NAGANO	29	60	0.036 ± 0.0017	0.049 ± 0.0017
Shizuoka, SHIZUOKA	28	41.0	0.026 ± 0.0014	0.052 ± 0.0017
Nagoya, AICHI	28	91.7	0.036 ± 0.0016	0.050 ± 0.0017
Kyoto, KYOTO	28	23.5	0.023 ± 0.0014	0.033 ± 0.0015
Osaka, OSAKA	27	35.0	0.022 ± 0.0013	0.033 ± 0.0015
Kobe, HYOGO	27	42.4	0.022 ± 0.0014	0.034 ± 0.0015
Wakayama, WAKAYAMA	26	32	0.017 ± 0.0013	0.035 ± 0.0015
Tottori, TOTTORI	34	127	0.22 ± 0.004	0.32 ± 0.004
Matsue, SHIMANE	33	122.2	0.20 ± 0.004	0.31 ± 0.004
Okayama, OKAYAMA	27	53.4	0.014 ± 0.0012	0.023 ± 0.0013
Hiroshima, HIROSHIMA	31	42.0	0.010 ± 0.0010	0.013 ± 0.0010
Yamaguchi, YAMAGUCHI	30	49.5	0.081 ± 0.0023	0.13 ± 0.003
Matsuyama, EHIME	37	44.0	0.039 ±0.0030	0.054 ± 0.0032

Location	Duration (Days)	Precipitation (mm)	^{90}Sr (mCi/km^2)	^{137}Cs (mCi/km^2)
Kochi, KOCHI	26	38.9	0.022 ± 0.0013	0.031 ± 0.0014
Dazaifu, FUKUOKA	27	78.2	0.078 ± 0.0023	0.12 ± 0.003
Saga, SAGA	34	24.5	0.063 ± 0.0023	0.096 ± 0.0024
Nagasaki, NAGASAKI	27	84	0.11 ± 0.003	0.15 ± 0.003
Kagoshima, KAGOSHIMA	38	106.5	0.099 ± 0.0029	0.11 ± 0.003
Naha, OKINAWA	32	112	0.064 ± 0.0022	0.097 ± 0.0025
February, 1978				
Sapporo, HOKKAIDO	29	121.0	0.071 ± 0.0022	0.11 ± 0.002
Aomori, AOMORI	29	151	0.088 ± 0.0025	0.15 ± 0.003
Sendai, MIYAGI	30	27.9	0.020 ± 0.0013	0.037 ± 0.0016
Akita, AKITA	29	53.51	0.080 ± 0.0025	0.12 ± 0.003
Yamagata, YAMAGATA	28	46.6	0.066 ± 0.0022	0.095 ± 0.0023
Ohkuma, FUKUSHIMA	29	16.5	0.022 ± 0.0014	0.036 ± 0.0015
Mito, IBARAKI	29	26	0.023 ± 0.0014	0.037 ± 0.0015
Shinjyuku, TOKYO	28	12	0.044 ± 0.0017	0.050 ± 0.0017
Yokohama, KANAGAWA	29	11.4	0.031 ± 0.0016	0.034 ± 0.0015
Niigata, NIIGATA	23	86.2	0.11 ± 0.003	0.15 ± 0.003
Kanazawa, ISHIKAWA	34	341	0.31 ± 0.005	0.46 ± 0.005
Fukui, FUKUI	28	180.5	0.24 ± 0.005	0.41 ± 0.005
Nagano, NAGANO	29	39	0.039 ± 0.0017	0.061 ± 0.0019
Shizuoka, SHIZUOKA	23	66	0.083 ± 0.0026	0.13 ± 0.003
Nagoya, AICHI	29	25.0	0.051 ± 0.0021	0.085 ± 0.0022
Kyoto, KYOTO	27	11.0	0.038 ± 0.0019	0.057 ± 0.0019
Osaka, OSAKA	28	16.42	0.029 ± 0.0016	0.039 ± 0.0016
Kobe, HYOGO	28	4.3	0.026 ± 0.0014	0.036 ± 0.0016
Wakayama, WAKAYAMA	27	26	0.047 ± 0.0019	0.061 ± 0.0019
Tottori, TOTTORI	25	101.5	0.19 ± 0.004	0.31 ± 0.004
Matsue, SHIMANE	31	89.3	0.23 ± 0.004	0.35 ± 0.004
Okayama, OKAYAMA	28	50.3	0.011 ± 0.0010	0.018 ± 0.0012
Hiroshima, HIROSHIMA	28	40.94	0.053 ± 0.0021	0.094 ± 0.0023
Yamaguchi, YAMAGUCHI	27	58.5	0.086 ± 0.0024	0.15 ± 0.003
Matsuyama, EHIME	29	41.5	0.048 ± 0.0018	0.075 ± 0.0021
Kochi, KOCHI	29	66	0.048 ± 0.0018	0.066 ± 0.0020
Dazaifu, FUKUOKA	28	48.9	0.071 ± 0.0023	0.11 ± 0.002
Saga, SAGA	29	59	0.041 ± 0.0019	0.067 ± 0.0020
Nagasaki, NAGASAKI	28	26.5	0.048 ± 0.0018	0.073 ± 0.0021
Kagoshima, KAGOSHIMA	31	43.4	0.066 ± 0.0021	0.088 ± 0.0022
Naha, OKINAWA	29	76.5	0.062 ± 0.0022	0.087 ± 0.0023

Location	Duration (Days)	Precipitation (mm)	^{90}Sr (mCi/km^2)	^{137}Cs (mCi/km^2)
March, 1978				
Sapporo, HOKKAIDO	32	99.5	0.072 ± 0.0022	0.12 ± 0.003
Aomori, AOMORI	32	97	0.091 ± 0.0025	0.14 ± 0.003
Sendai, MIYAGI	30	122.5	0.12 ± 0.003	0.19 ± 0.003
Akita, AKITA	32	81.74	0.12 ± 0.003	0.21 ± 0.004
Yamagata, YAMAGATA	31	66.6	0.045 ± 0.0019	0.081 ± 0.0023
Ohkuma, FUKUSHIMA	32	129	0.15 ± 0.003	0.22 ± 0.003
Mito, IBARAKI	32	93.5	0.069 ± 0.0022	0.11 ± 0.004
Shinjyuku, TOKYO	31	136	0.11 ± 0.002	0.16 ± 0.0
Yokohama, KANAGAWA	31	142.8	0.12 ± 0.003	0.20 ± 0.0
Niigata, NIIGATA	32	61.4	0.094 ± 0.0026	0.15 ± 0.0
Kanazawa, ISHIKAWA	25	131.5	0.22 ± 0.004	0.33 ± 0.0
Fukui, FUKUI	32	144.4	0.20 ± 0.004	0.33 ± 0.004
Nagano, NAGANO	32	33.5	0.044 ± 0.0018	0.074 ± 0.0021
Shizuoka, SHIZUOKA	24	182	0.10 ± 0.003	0.16 ± 0.003
Nagoya, AICHI	32	77.3	0.077 ± 0.0024	0.12 ± 0.003
Kyoto, KYOTO	30	53.1	0.069 ± 0.0024	0.11 ± 0.003
Osaka, OSAKA	30	60.1	0.044 ± 0.0021	0.065 ± 0.0020
Kobe, HYOGO	33	29.3	0.030 ± 0.0017	0.056 ± 0.0018
Wakayama, WAKAYAMA	24	31.1	0.026 ± 0.0015	0.044 ± 0.0017
Tottori, TOTTORI	31	133.8	0.23 ± 0.004	0.35 ± 0.005
Matsue, SHIMANE	31	95	0.23 ± 0.004	0.34 ± 0.004
Okayama, OKAYAMA	31	46.2	0.033 ± 0.0016	0.052 ± 0.0018
Hiroshima, HIROSHIMA	31	75.7	0.063 ± 0.0023	0.083 ± 0.0022
Yamaguchi, YAMAGUCHI	32	119.5	0.11 ± 0.003	0.17 ± 0.003
Matsuyama, EHIME	31	23	0.040 ± 0.0018	0.060 ± 0.0019
Kochi, KOCHI	31	131.4	0.12 ± 0.003	0.17 ± 0.003
Dazaifu, FUKUOKA	31	86.9	0.071 ± 0.0027	0.099 ± 0.0025
Saga, SAGA	30	59.5	0.045 ± 0.0021	0.067 ± 0.0021
Nagasaki, NAGASAKI	31	58.5	0.054 ± 0.0019	0.086 ± 0.0022
Kagoshima, KAGOSHIMA	31	84.1	0.078 ± 0.0023	0.13 ± 0.003
Naha, OKINAWA	35	275.5	0.12 ± 0.003	0.19 ± 0.003

Figure 1. Sampling Locations of Rain and Dry Fallout

1. Sapporo
2. Aomori
3. Sendai
4. Akita
5. Yamagata
6. Ohkuma
7. Mito
8. Shinjyuku
9. Yokohama
10. Niigata
11. Kanazawa
12. Fukui
13. Nagano
14. Shizuoka
15. Nagoya
16. Kyoto
17. Osaka
18. Kobe
19. Wakayama
20. Tottori
21. Matsue
22. Okayama
23. Hiroshima
24. Yamaguchi
25. Matsuyama
26. Kochi
27. Dazaifu
28. Saga
29. Nagasaki
30. Kagoshima
31. Naha
32. Yonagusuku



(2) Strontium-90 and Cesium-137 in Air-borne Dust

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

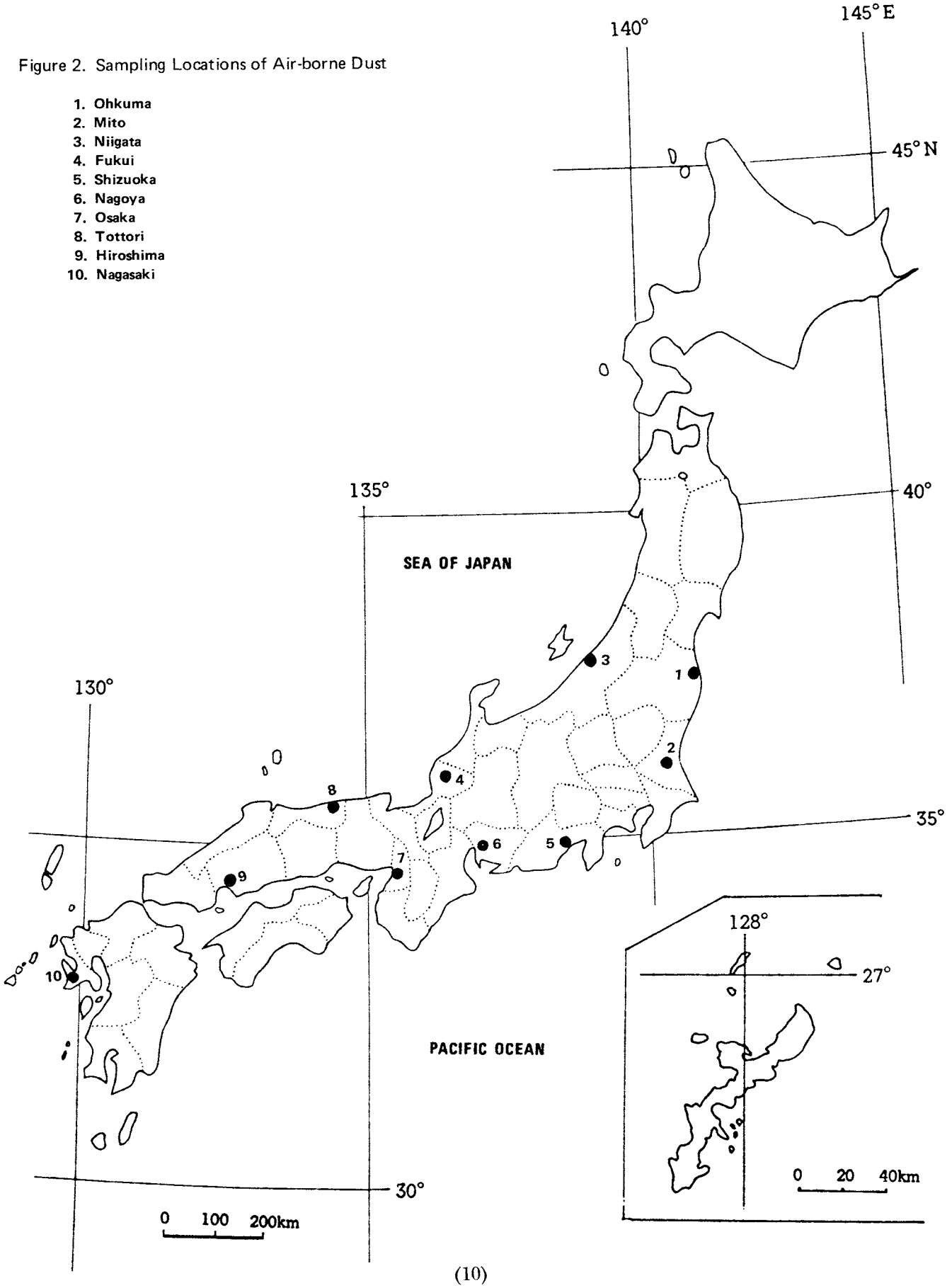
The results obtained are shown in Table 2 and the sampling locations are shown in Figure 2.

Table 2: ^{90}Sr and ^{137}Cs in Air-borne Dust
– October, 1977 to March, 1978 –
(Continued from Table 2, No. 48 of this publication)

Location	Sampling period	Absorption volume (m^3)	^{90}Sr (10^{-3} pCi/m^3)	^{137}Cs (10^{-3} pCi/m^3)
October ~ December, 1979				
Ohkuma, FUKUSHIMA	10 ~ 11	7,934	4.4 ± 0.14	6.0 ± 0.12
Mito, IBARAKI	10 ~ 12	11,232	0.6 ± 0.05	1.0 ± 0.04
Niigata, NIIGATA	〃	14,991.5	1.3 ± 0.05	2.2 ± 0.05
Fukui, FUKUI	〃	21,224	1.4 ± 0.04	2.5 ± 0.05
Nagoya, AICHI	〃	15,397	1.2 ± 0.05	1.8 ± 0.05
Osaka, OSAKA	〃	7,776	1.1 ± 0.07	1.6 ± 0.07
Tottori, TOTTORI	〃	11,572	1.5 ± 0.07	2.0 ± 0.06
Hiroshima, HIROSHIMA	〃	10,800	0.5 ± 0.04	0.7 ± 0.04
Nagasaki, NAGASAKI	〃	2,700	0.9 ± 0.14	1.4 ± 0.13
January ~ March, 1978				
Ohkuma, FUKUSHIMA	1 ~ 3	12,307	1.4 ± 0.06	2.2 ± 0.06
Mito, IBARAKI	〃	12,096	0.5 ± 0.05	0.8 ± 0.04
Niigata, NIIGATA	〃	13,324.2	1.9 ± 0.07	3.2 ± 0.07
Fukui, FUKUI	〃	27,824	1.7 ± 0.04	2.7 ± 0.04
Shizuoka, SHIZUOKA	〃	22,375	0.3 ± 0.02	0.6 ± 0.02
Nagoya, AICHI	〃	22,352	1.5 ± 0.05	2.5 ± 0.05
Osaka, OSAKA	〃	8,424	1.4 ± 0.09	2.1 ± 0.08
Tottori, TOTTORI	〃	11,598	2.2 ± 0.09	3.3 ± 0.07
Hiroshima, HIROSHIMA	〃	10,800	0.7 ± 0.06	1.0 ± 0.04
Nagasaki, NAGASAKI	〃	6,600	1.4 ± 0.10	2.4 ± 0.09

Figure 2. Sampling Locations of Air-borne Dust

1. Ohkuma
2. Mito
3. Niigata
4. Fukui
5. Shizuoka
6. Nagoya
7. Osaka
8. Tottori
9. Hiroshima
10. Nagasaki



(3) Strontium-90 and Cesium-137 in Service Water

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 3 and the sampling locations are shown in Figure 3, 4.

Table 3: ^{90}Sr and ^{137}Cs in Service Water
– October, 1977 to March, 1978 –
(Continued from Table 3, No. 48 of this publication)

Location	pH	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)
(Source Water)			
December, 1977			
Katsushika, TOKYO	7.0	0.09 ± 0.006	0.02 ± 0.004
Aoyama (Tsukui-gun), KANAGAWA	8.0	0.04 ± 0.005	0.004± 0.003
Inuyama, AICHI	7.1	0.15 ± 0.007	0.02 ± 0.003
Moriguchi, OSAKA	7.0	0.26 ± 0.009	0.01 ± 0.004
Dazaifu, FUKUOKA	7.18	0.12 ± 0.007	0.01 ± 0.004
January, 1978			
Sapporo, HOKKAIDO	6.9	0.12 ± 0.007	0.02 ± 0.004
February, 1978			
Kyoto, KYOTO	7.22	0.33 ± 0.012	0.01 ± 0.004
(Tap Water)			
November, 1977			
Kagoshima, KAGOSHIMA	7.3	0.03 ± 0.004	0.005± 0.003
December, 1977			
Sapporo, HOKKAIDO	0.9	0.50 ± 0.013	0.02 ± 0.004
Aomori, AOMORI	6.2	0.01 ± 0.003	0.001± 0.003
Sendai, MIYAGI	7.18	0.10 ± 0.006	0.006± 0.003
Akita, AKITA	6.9	0.21 ± 0.008	0.02 ± 0.004
Yamagata, YAMAGATA	6.8	0.12 ± 0.007	0.01 ± 0.003
Mito, IBARAKI	5.8	0.06 ± 0.006	0.01 ± 0.003
Shinjyuku, TOKYO	6.9	0.09 ± 0.006	0.01 ± 0.004
Yokohama, KANAGAWA	7.0	0.04 ± 0.005	0.01 ± 0.003
Niigata, NIIGATA	7.47	0.22 ± 0.009	0.01 ± 0.003
Kanazawa, ISHIKAWA	7.2	0.12 ± 0.006	0.02 ± 0.004
Nagoya, AICHI	6.8	0.12 ± 0.007	0.001± 0.004
Osaka, OSAKA	6.6	0.19 ± 0.008	0.01 ± 0.003
Kobe, HYOGO	5.5	0.22 ± 0.008	0.001± 0.003
Tottori, TOTTORI	6.5	0.09 ± 0.006	0.003± 0.003
Matsue, SHIMANE	6.7	0.19 ± 0.009	0.01 ± 0.004

Location	pH	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)
Okayama, OKAYAMA	6.8	0.07 ± 0.005	0.004± 0.003
Hiroshima, HIROSHIMA	7.0	0.12 ± 0.007	0.01 ± 0.003
Ube, YAMAGUCHI	6.4	0.09 ± 0.006	0.01 ± 0.003
Matsuyama, EHIME	–	0.07 ± 0.006	0.01 ± 0.003
Kochi, KOCHI	7.2	0.10 ± 0.006	0.001± 0.003
Dazaifu, FUKUOKA	6.82	0.12 ± 0.007	0.01 ± 0.003
Saga, SAGA	7.88	0.07 ± 0.005	0.005± 0.003
Nagasaki, NAGASAKI	7.2	0.13 ± 0.007	0.01 ± 0.004
January, 1978			
Okuma, FUKUSHIMA	–	0.13 ± 0.008	0.01 ± 0.003
Shizuoka, SHIZUOKA	6.6	0.01 ± 0.003	0.01 ± 0.003
Naha, OKINAWA	7.5	0.21 ± 0.009	0.01 ± 0.003
February, 1978			
Fukui, FUKUI	6.9	0.001± 0.003	0.002± 0.004
Kyoto, KYOTO	7.30	0.35 ± 0.012	0.02 ± 0.004
Wakayama, WAKAYAMA	7.5	0.10 ± 0.006	0.01 ± 0.003

Figure 3. Sampling Locations of Service Water (Source Water)

1. Sapporo
2. Katsushika
3. Aoyama
4. Inuyama
5. Moriguchi
6. Kyoto
7. Fukuoka

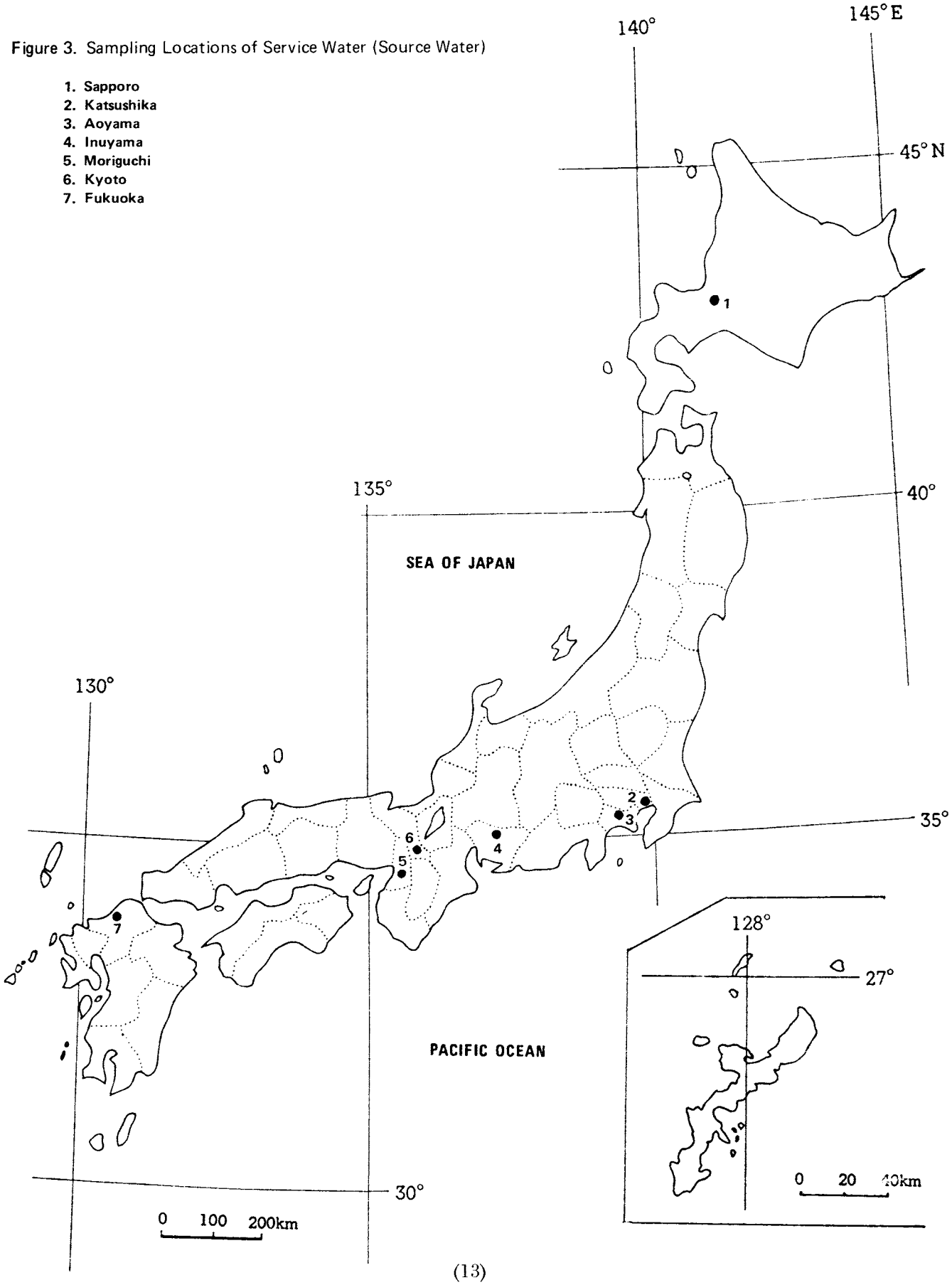
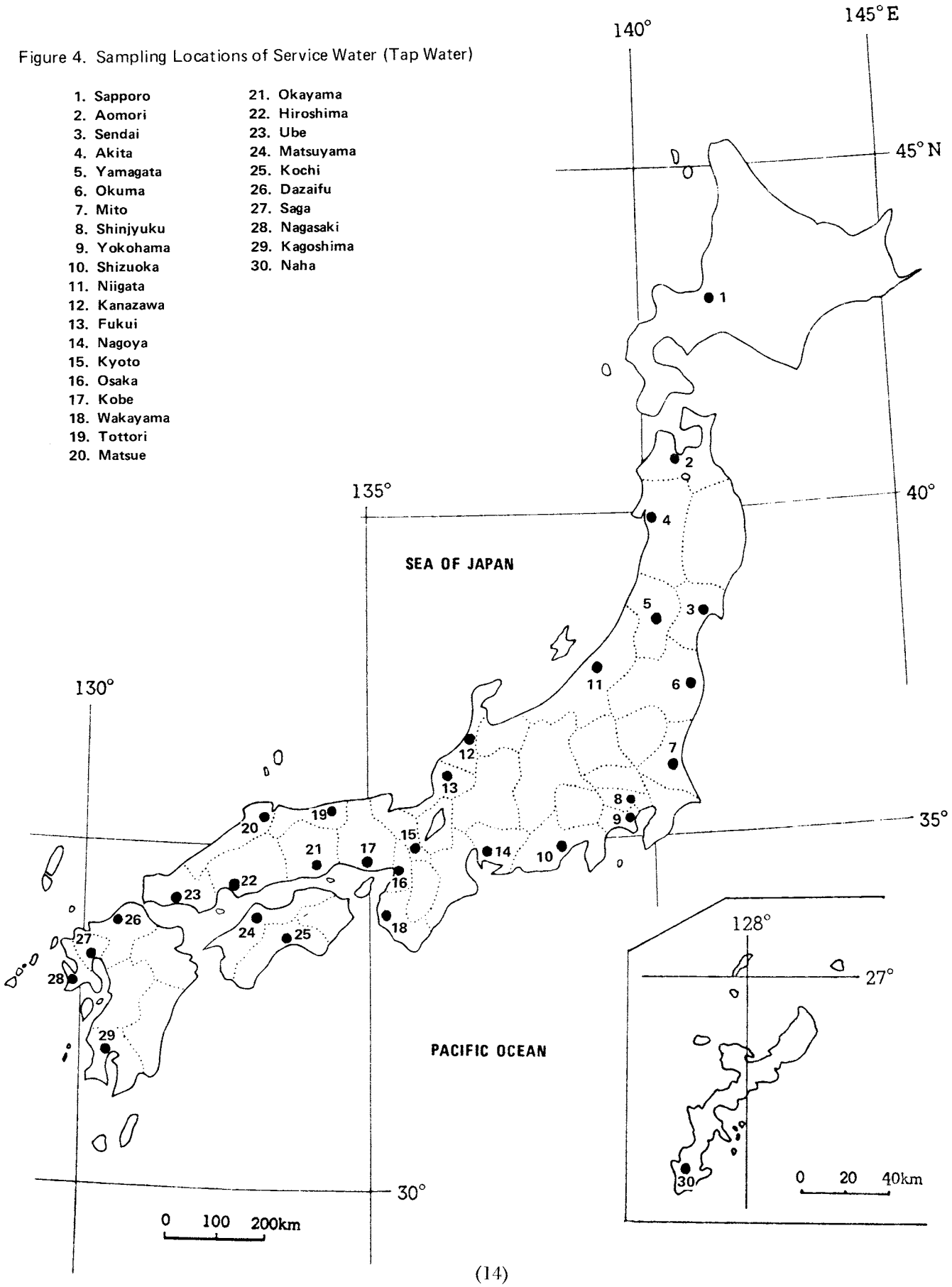


Figure 4. Sampling Locations of Service Water (Tap Water)

1. Sapporo
2. Aomori
3. Sendai
4. Akita
5. Yamagata
6. Okuma
7. Mito
8. Shinjyuku
9. Yokohama
10. Shizuoka
11. Niigata
12. Kanazawa
13. Fukui
14. Nagoya
15. Kyoto
16. Osaka
17. Kobe
18. Wakayama
19. Tottori
20. Matsue
21. Okayama
22. Hiroshima
23. Ube
24. Matsuyama
25. Kochi
26. Dazaifu
27. Saga
28. Nagasaki
29. Kagoshima
30. Naha



(4) Strontium-90 and Cesium-137 in Fresh Water

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

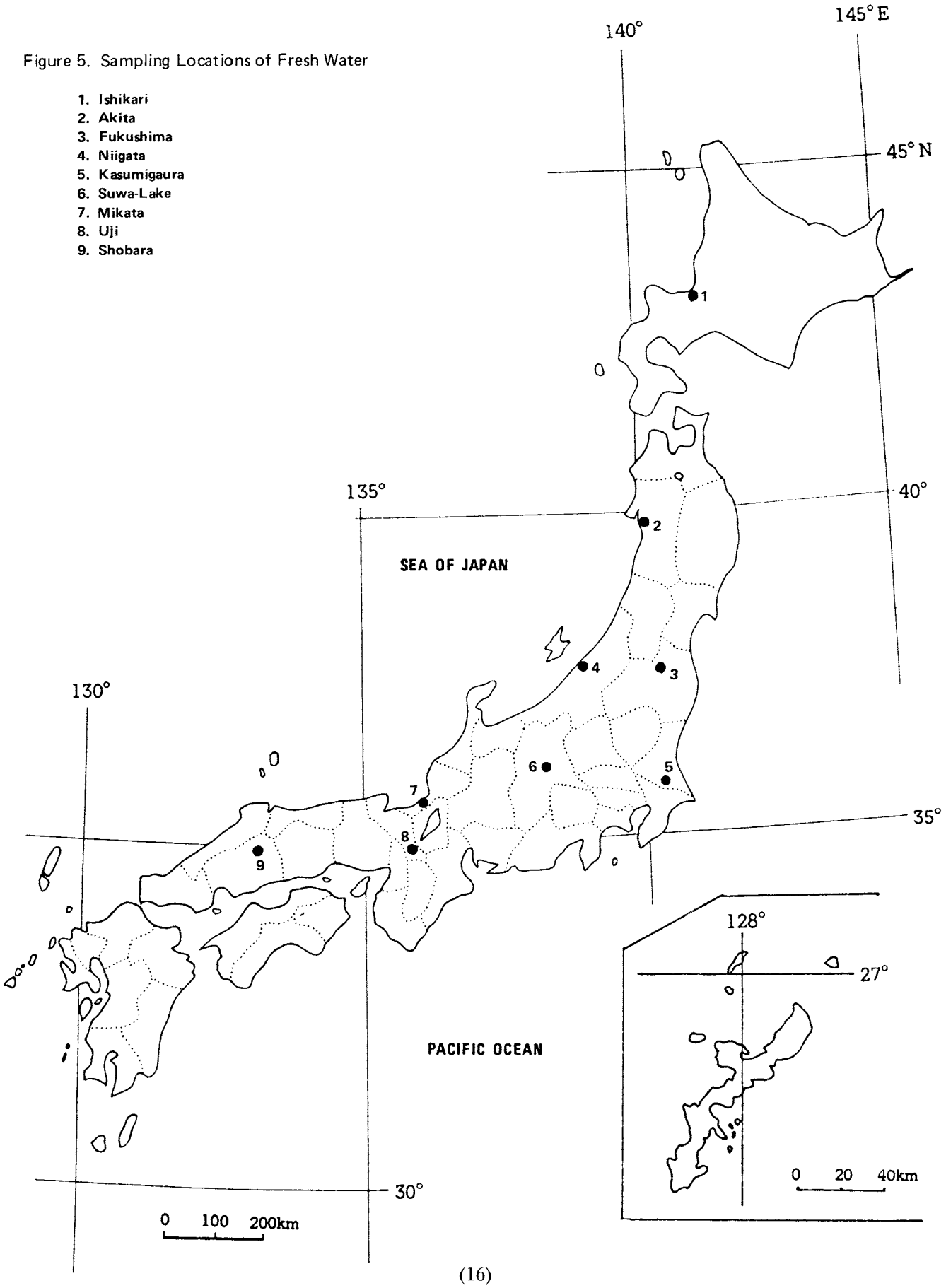
The results obtained are shown in Table 4 and the sampling locations are shown in Figure 5.

Table 4: ^{90}Sr and ^{137}Cs in Fresh Water
– April, 1977 to March, 1978 –
(Continued from Table 15, No. 44 of this publication)

Location	pH	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)
May, 1977			
Kasumigaura, IBARAKI	–	0.26 ± 0.010	0.06 ± 0.005
June, 1977			
Shobara, HIROSHIMA	7.0	0.13 ± 0.007	0.01 ± 0.003
July, 1977			
Akita, AKITA	6.0	0.18 ± 0.009	0.03 ± 0.004
October, 1977			
Ishikari, HOKKAIDO	6.9	0.18 ± 0.009	0.05 ± 0.005
Fukushima, FUKUSHIMA	–	0.11 ± 0.006	0.01 ± 0.004
November, 1977			
Niigata, NIIGATA	6.98	0.42 ± 0.011	0.06 ± 0.005
Mikata (Mikata-gun), FUKUI	7.7	0.45 ± 0.014	0.18 ± 0.016
December, 1977			
Suwa-lake, NAGANO	7.4	0.09 ± 0.013	0.03 ± 0.004
Uji, KYOTO	7.67	0.03 ± 0.004	0.01 ± 0.004

Figure 5. Sampling Locations of Fresh Water

1. Ishikari
2. Akita
3. Fukushima
4. Niigata
5. Kasumigaura
6. Suwa-Lake
7. Mikata
8. Uji
9. Shobara



(5) Strontium-90 and Cesium-137 in Soil

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 5 and the sampling locations are shown in Figure 6.

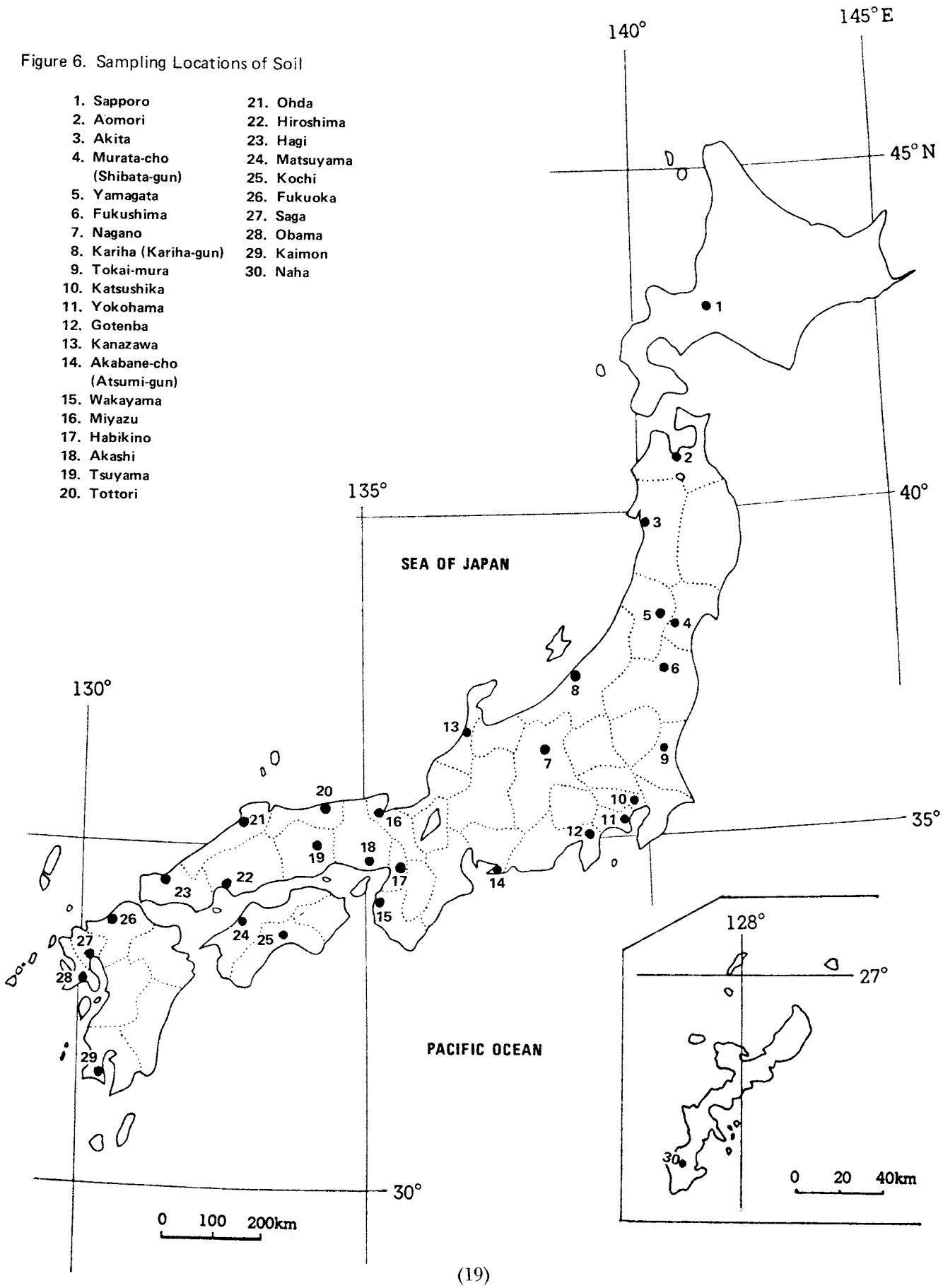
Table 5: ^{90}Sr and ^{137}Cs in Soil
– April, 1977 to September, 1977 –
(Continued from Table 3, No. 45 of this publication)

Location	Sampling Depth (cm)	Air Soil (%)	Sr (%)	^{90}Sr (pCi/kg)	^{90}Sr (mCi/km^2)	^{137}Cs (pCi/kg)	^{137}Cs (mCi/km^2)
June, 1977							
Kanazawa, ISHIKAWA	0~5	95.6	0.003	320 ± 11	16 ± 0.5	990 ± 17	49 ± 0.8
"	5~20	95.4	0.004	310 ± 11	30 ± 1.1	280 ± 9	27 ± 0.9
Gotenba, SHIZUOKA	0~5	96.3	0.019	150 ± 8	3.6 ± 0.18	230 ± 9	5.6 ± 0.21
"	5~20	95.2	0.020	28 ± 4.1	2.2 ± 0.33	52 ± 5.0	4.1 ± 0.40
Akabane (Atsumi-gun), AICHI	0~5	96.9	0.001	44 ± 5.0	1.6 ± 0.18	330 ± 10	12 ± 0.4
"	5~20	97.0	0.001	45 ± 5.6	7.7 ± 0.96	220 ± 9	38 ± 1.5
Tsuyama, OKAYAMA	0~5	93.4	0.001	53 ± 6.5	1.4 ± 0.17	200 ± 8	5.3 ± 0.22
"	5~20	92.0	0.001	75 ± 7.1	2.5 ± 0.24	220 ± 8	7.2 ± 0.28
Hiroshima, HIROSHIMA	0~5	98.4	0.002	160 ± 8	14 ± 0.7	540 ± 13	49 ± 1.1
"	5~20	97.3	0.001	170 ± 8	46 ± 2.2	500 ± 12	130 ± 3
Naha, OKINAWA	0~5	95.4	0.019	110 ± 6	6.2 ± 0.37	350 ± 11	21 ± 0.6
"	5~20	95.3	0.021	99 ± 6.7	26 ± 1.7	160 ± 7	41 ± 2.0
July, 1977							
Aomori, AOMORI	0~5	89.7	0.007	110 ± 8	3.3 ± 0.26	94 ± 5.9	2.8 ± 0.18
"	5~20	88.9	0.007	28 ± 5.1	3.4 ± 0.63	12 ± 3.1	1.5 ± 0.38
Kawabe (Kawabe-gun), AKITA	0~5	91.3	0.002	340 ± 13	8.6 ± 0.33	4200 ± 40	110 ± 1
"	5~20	84.6	0.003	260 ± 12	22 ± 1.0	840 ± 17	71 ± 1.4
Yamagata, YAMAGATA	0~5	96.4	0.003	510 ± 14	17 ± 0.5	1000 ± 20	35 ± 0.6
"	5~20	96.7	0.003	120 ± 7	20 ± 1.2	54 ± 5.0	8.9 ± 0.82
Fukushima, FUKUSHIMA	0~5	89.7	0.003	270 ± 12	5.6 ± 0.24	460 ± 12	9.5 ± 0.26
"	5~20	87.9	0.003	120 ± 8	5.6 ± 0.36	52 ± 5.5	2.4 ± 0.25
Katsushika, TOKYO	0~5	95.5	0.009	87 ± 7.1	3.4 ± 0.28	160 ± 7	6.3 ± 0.27
"	5~20	92.5	0.010	56 ± 6.3	9.2 ± 1.04	110 ± 6	18 ± 1.0
Kariha (Kariha-gun), NIIGATA	0~5	97.4	0.005	320 ± 11	16 ± 0.6	1100 ± 20	58 ± 0.9
"	5~20	97.6	0.004	210 ± 8	22 ± 0.9	770 ± 15	80 ± 1.6
Nagano, NAGANO	0~5	95.6	0.012	120 ± 8	7.3 ± 0.46	270 ± 9	16 ± 0.5
"	5~20	95.7	0.012	79 ± 6.3	15 ± 1.2	65 ± 5.5	12 ± 1.0
Miyazu, KYOTO	0~5	96.4	0.001	150 ± 8	3.8 ± 0.21	2300 ± 30	57 ± 0.6
"	5~20	98.4	0.001	220 ± 10	32 ± 1.4	290 ± 9	42 ± 1.4
Akasl i, HYOGO	0~5	96.2	0.001	91 ± 6.1	6.0 ± 0.40	220 ± 9	15 ± 0.6
"	5~20	96.1	0.001	140 ± 7	17 ± 0.9	450 ± 12	55 ± 1.4
Tottori, TOTTORI	0~5	98.2	0.001	160 ± 9	8.1 ± 0.47	1100 ± 20	55 ± 0.9
"	5~20	96.4	0.003	180 ± 9	27 ± 1.3	160 ± 7	24 ± 1.0

Location	Sampling Depth (cm)	Air Soil (%)	Sr (%)	^{90}Sr (pCi/kg)	^{90}Sr (mCi/km^2)	^{137}Cs (pCi/kg)	^{137}Cs (mCi/km^2)
Ohta, SHIMANE	0~5	95.1	0.004	810 ± 16	28 ± 0.6	1900 ± 20	63 ± 0.8
〃	5~20	96.2	0.005	330 ± 11	50 ± 1.7	780 ± 15	120 ± 2
Hagi, YAMAGUCHI	0~5	96.7	0.001	69 ± 6.2	1.8 ± 0.16	280 ± 9	7.2 ± 0.24
〃	5~20	97.1	0.001	71 ± 6.7	10 ± 0.9	150 ± 7	21 ± 1.0
Matsuyama, EHIME	0~5	93.2	0.001	68 ± 6.3	3.8 ± 0.35	180 ± 8	9.9 ± 0.43
〃	5~20	92.8	0.001	69 ± 7.0	6.0 ± 0.60	220 ± 9	19 ± 0.8
Kohchi, KOCHI	0~5	94.9	0.005	500 ± 15	14 ± 0.4	1400 ± 20	39 ± 0.6
〃	5~20	94.5	0.004	290 ± 11	34 ± 1.3	400 ± 11	48 ± 1.4
Fukuoka, FUKUOKA	0~5	98.8	0.001	290 ± 10	11 ± 0.4	430 ± 11	16 ± 0.4
〃	5~20	98.7	0.001	190 ± 8	24 ± 1.0	25 ± 4.1	3.1 ± 0.51
Saga, SAGA	0~5	98.6	0.001	110 ± 6	6.7 ± 0.39	86 ± 6.1	5.2 ± 0.37
〃	5~20	98.7	0.002	71 ± 5.4	14 ± 1.1	6.5± 3.3	1.3 ± 0.65
Obama (Minamitakaki-gun), NAGASAKI	0~5	91.1	0.003	550 ± 14	9.9 ± 0.25	3100 ± 30	57 ± 0.6
〃	5~20	90.5	0.003	500 ± 13	55 ± 1.5	1300 ± 20	150 ± 2
August, 1977							
Sapporo, HOKKAIDO	0~5	88.5	0.008	680 ± 15	25 ± 0.6	1400 ± 20	50 ± 0.8
〃	5~20	91.3	0.005	200 ± 9	41 ± 1.8	200 ± 9	39 ± 1.7
Murata (Shibata-gun), MIYAGI	0~5	89.9	0.003	280 ± 10	7.2 ± 0.26	950 ± 18	24 ± 0.4
〃	5~20	88.3	0.002	110 ± 7	7.7 ± 0.48	120 ± 7	8.2 ± 0.49
Tokai (Naka-gun), IBARAKI	0~5	93.9	0.005	790 ± 17	35 ± 0.8	2500 ± 30	110 ± 1
〃	5~20	93.7	0.006	340 ± 12	33 ± 1.2	370 ± 11	36 ± 1.1
Yokohama, KANAGAWA	0~5	95.1	0.007	670 ± 20	18 ± 0.5	2500 ± 30	66 ± 0.7
〃	5~20	95.3	0.011	430 ± 14	42 ± 1.4	630 ± 15	62 ± 1.4
Fukui, FUKUI	0~5	97.0	0.005	250 ± 10	13 ± 0.5	1000 ± 20	54 ± 0.9
〃	5~20	97.0	0.005	210 ± 9	25 ± 1.0	870 ± 16	100 ± 2
Habikino, OSAKA	0~5	98.0	0.002	71 ± 5.4	3.3 ± 0.25	330 ± 10	15 ± 0.5
〃	5~20	98.0	0.003	71 ± 5.3	11 ± 0.8	120 ± 7	18 ± 1.0
Wakayama, WAKAYAMA	0~5	99.1	0.002	14 ± 3.7	0.73±0.201	39 ± 4.4	2.1 ± 0.24
〃	5~20	99.1	0.002	25 ± 4.8	3.9 ± 0.77	47 ± 4.7	7.5 ± 0.75
Kaimon (Ibusuki-gun), KAGOSHIMA	0~5	96.8	0.013	140 ± 8	9.6 ± 0.58	610 ± 14	42 ± 0.9
〃	5~20	96.8	0.013	190 ± 8	32 ± 1.4	390 ± 11	67 ± 1.9

Figure 6. Sampling Locations of Soil

1. Sapporo
2. Aomori
3. Akita
4. Murata-cho (Shibata-gun)
5. Yamagata
6. Fukushima
7. Nagano
8. Kariha (Kariha-gun)
9. Tokai-mura
10. Katsushika
11. Yokohama
12. Gotenba
13. Kanazawa
14. Akabane-cho (Atsumi-gun)
15. Wakayama
16. Miyazu
17. Habikino
18. Akashi
19. Tsuyama
20. Tottori
21. Ohda
22. Hiroshima
23. Hagi
24. Matsuyama
25. Kochi
26. Fukuoka
27. Saga
28. Obama
29. Kaimon
30. Naha



Dietary Data

(6) Strontium-90 and Cesium-137 in Total Diet

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 6 and the sampling locations are shown in Figure 7.

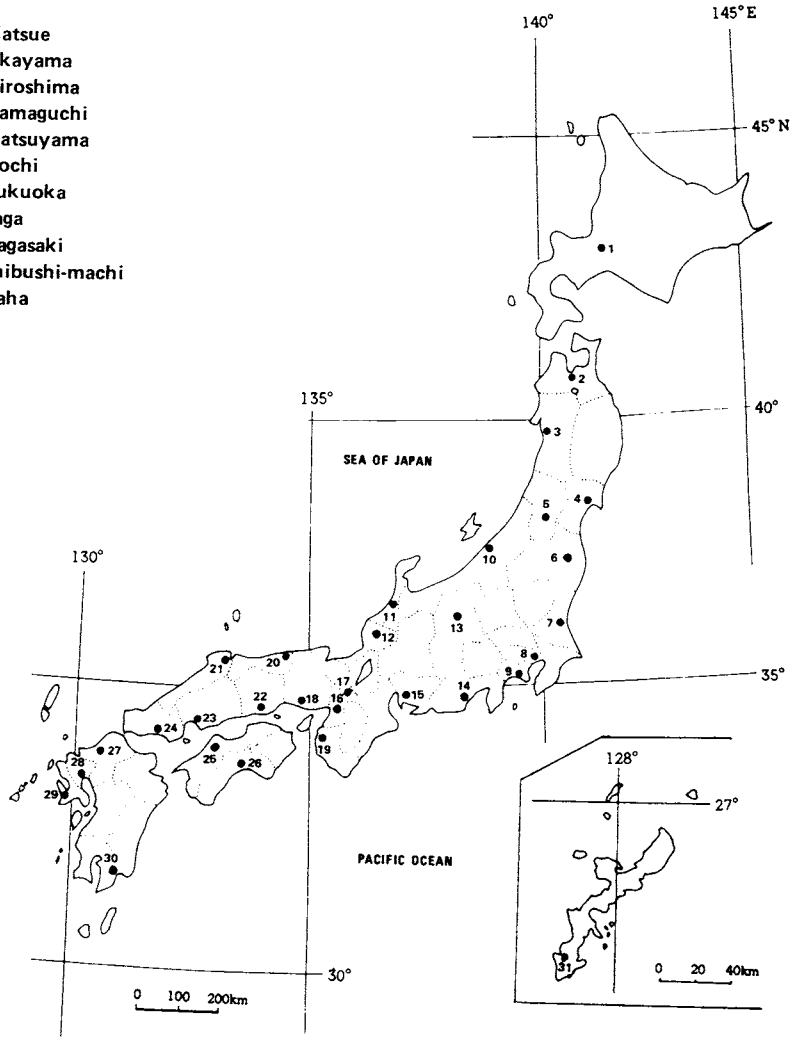
Table 6: ^{90}Sr and ^{137}Cs in Total Diet
– October, 1977 to March, 1978 –
(Continued from Table 6, No. 48 of this publication)

Location	Ash	Ca	K	^{90}Sr		^{137}Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(pCi/p/d)	(S.U.)	(pCi/p/d)	(C.U.)
November, 1977							
Sendai, MIYAGI	15.5	555	1740	4.8 ± 0.44	8.6 ± 0.79	7.0 ± 0.36	4.0 ± 0.21
Yamagata, YAMAGATA	24.9	590	2860	7.7 ± 0.59	13 ± 1.0	11 ± 0.5	3.9 ± 0.17
Fukushima, FUKUSHIMA	26.4	1080	3080	9.2 ± 0.82	8.6 ± 0.76	8.2 ± 0.56	2.7 ± 0.18
Hiratsuka, KANAGAWA	18.4	692	2090	4.2 ± 0.63	6.0 ± 0.92	6.8 ± 0.98	3.3 ± 0.47
Yoshida (Nishikanbara-gun), NIIGATA	18.9	466	2230	7.2 ± 0.51	15 ± 1.1	7.2 ± 0.38	3.2 ± 0.17
Kanazawa, ISHIKAWA	22.1	1010	2210	6.2 ± 0.58	6.1 ± 0.58	4.9 ± 0.38	2.2 ± 0.17
Neyagawa, OSAKA	15.9	607	2100	4.3 ± 0.42	7.1 ± 0.69	3.7 ± 0.46	1.8 ± 0.22
Fukube (Iwami-gun), TOTTORI	19.3	543	2450	9.1 ± 0.59	17 ± 1.1	6.2 ± 0.38	2.5 ± 0.16
Okayama, OKAYAMA	15.3	480	2170	2.2 ± 0.35	4.6 ± 0.72	3.4 ± 0.26	1.6 ± 0.12
Kochi, KOCHI	17.8	605	1990	6.8 ± 0.54	11 ± 0.9	7.3 ± 0.39	3.7 ± 0.20
Fukuoka, FUKUOKA	15.7	514	1970	4.1 ± 0.41	8.0 ± 0.80	2.7 ± 0.26	1.4 ± 0.13
Sapporo, HOKKAIDO	22.5	770	2470	4.6 ± 0.48	6.0 ± 0.63	4.2 ± 0.39	1.7 ± 0.16
Shizuoka, SHIZUOKA	16.1	903	1950	3.7 ± 0.41	4.1 ± 0.45	3.8 ± 0.29	2.0 ± 0.15
Kakogawa, HYOGO	12.5	551	1440	3.3 ± 0.29	6.0 ± 0.52	5.0 ± 0.29	3.5 ± 0.20
Nagasaki, NAGASAKI	13.7	589	1810	5.1 ± 0.48	8.7 ± 0.82	3.1 ± 0.28	1.7 ± 0.16
December, 1977							
Akita, AKITA	21.1	499	2190	7.5 ± 0.62	15 ± 1.2	12 ± 0.5	5.4 ± 0.24
Fukui, FUKUI	15.3	457	1780	4.4 ± 0.44	9.6 ± 0.96	6.3 ± 0.33	3.5 ± 0.19
Nagano, NAGANO	20.7	744	2380	4.4 ± 0.55	5.9 ± 0.75	4.6 ± 0.36	2.0 ± 0.15
Nagoya, AICHI	18.6	830	2720	7.1 ± 0.56	8.5 ± 0.67	7.0 ± 0.39	2.6 ± 0.14
Aomori, AOMORI	23.0	721	2550	7.7 ± 0.60	11 ± 0.8	6.2 ± 0.45	2.4 ± 0.18
Mito, IBARAKI	20.6	682	2350	5.4 ± 0.48	7.9 ± 0.70	4.7 ± 0.39	2.0 ± 0.17
Shinjyuku, TOKYO	16.0	700	2150	7.3 ± 0.52	10 ± 0.7	4.7 ± 0.30	2.2 ± 0.14
Kyoto, KYOTO	16.1	542	2260	4.6 ± 0.46	8.5 ± 0.86	4.2 ± 0.30	1.9 ± 0.13
Wakayama, WAKAYAMA	39.9	1380	3350	9.1 ± 0.89	6.6 ± 0.64	4.3 ± 0.60	1.3 ± 0.18
Yamaguchi, YAMAGUCHI	20.7	541	2200	5.2 ± 0.50	9.7 ± 0.92	3.5 ± 0.35	1.6 ± 0.16

Location	Ash	Ca	K	^{90}Sr		^{137}Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(pCi/p/d)	(S.U.)	(pCi/p/d)	(C.U.)
Matsuyama, EHIME	19.6	544	2550	6.4 ± 0.52	12 ± 1.0	4.8 ± 0.38	1.9 ± 0.15
Saga, SAGA	18.1	778	1800	3.3 ± 0.42	4.2 ± 0.54	2.6 ± 0.27	1.4 ± 0.15
Shibushi, KAGOSHIMA	16.9	619	2040	7.7 ± 0.49	12 ± 0.8	15 ± 0.5	7.4 ± 0.26
January, 1978							
Matsue, SHIMANE	18.6	787	2260	6.8 ± 0.58	8.7 ± 0.74	5.7 ± 0.36	2.5 ± 0.16
February, 1978							
Hiroshima, HIROSHIMA	14.3	343	1470	3.4 ± 0.46	10 ± 1.4	2.1 ± 0.26	1.5 ± 0.18
March, 1978							
Naha, OKINAWA	14.6	381	1960	4.5 ± 0.54	12 ± 1.4	3.4 ± 0.32	1.7 ± 0.17

Figure 7. Sampling Locations of Total Diet

1. Sapporo
2. Aomori
3. Akita
4. Sendai
5. Yamagata
6. Fukushima
7. Mito
8. Shinjyuku
9. Hiratsuka
10. Yoshida (Nishikanbara-gun)
11. Kanazawa
12. Fukui
13. Nagano
14. Shizuoka
15. Nagoya
16. Neyagawa
17. Kyoto
18. Kakogawa
19. Wakayama
20. Fukube (Iwami-gun)
21. Matsue
22. Okayama
23. Hiroshima
24. Yamaguchi
25. Matsuyama
26. Kochi
27. Fukuoka
28. Saga
29. Nagasaki
30. Shibushi-machi
31. Naha



(7) Strontium-90 and Cesium-137 in Rice

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 7 and the sampling locations are shown in Figure 8.

Table 7: ^{90}Sr and ^{137}Cs in Rice
– April, 1977 to March, 1978 –
(Continued from Table 2, No. 46 of this publication)

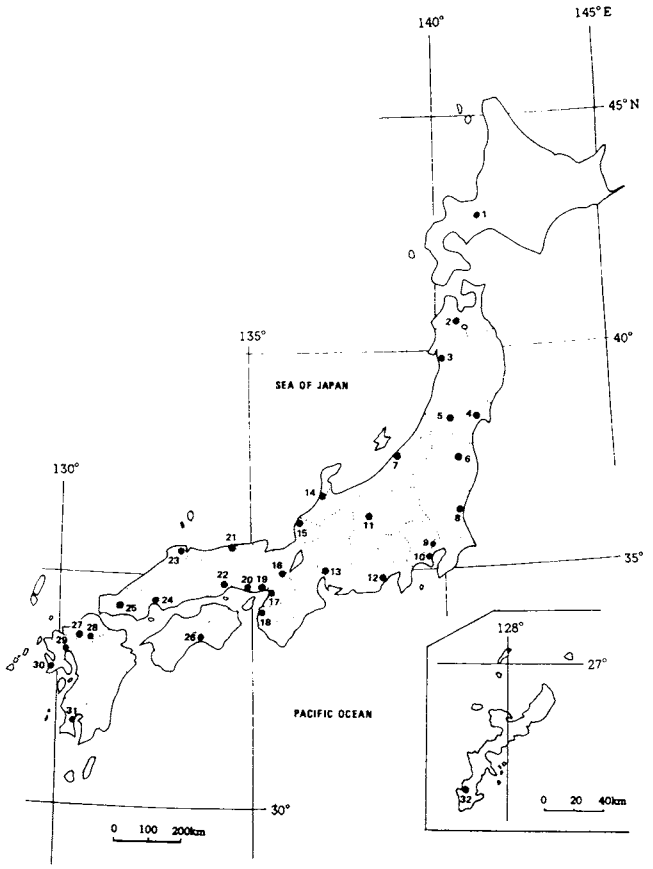
Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
August, 1977							
Yokohama, KANAGAWA	0.469	0.0045	0.11	0.06 ± 0.31	1.3 ± 6.9	3.9 ± 0.33	3.6 ± 0.30
September, 1977							
Hodaka, (Minamiazumi-gun), NAGANO	0.349	0.0051	0.072	0.61 ± 0.14	12 ± 2.8	3.9 ± 0.18	5.5 ± 0.25
Katsuren, OKINAWA	0.428	0.0046	0.092	0.0 ± 0.29	0.0 ± 6.2	3.5 ± 0.29	3.8 ± 0.31
October, 1977							
Akita, AKITA	0.459	0.0048	0.096	0.70 ± 0.36	15 ± 7.5	17 ± 0.6	18 ± 0.6
Shinjyuku, TOKYO	0.488	0.0054	0.12	0.97 ± 0.39	18 ± 7.2	8.9 ± 0.46	7.5 ± 0.38
Maki (Nishikanbara-gun), NIIGATA	0.402	0.0050	0.085	0.71 ± 0.30	14 ± 6.0	2.5 ± 0.25	2.9 ± 0.30
"	0.358	0.0042	0.083	0.51 ± 0.30	12 ± 7.1	5.3 ± 0.32	6.5 ± 0.38
Kanazawa, ISHIKAWA	0.413	0.0050	0.085	0.11 ± 0.28	2.2 ± 5.6	4.2 ± 0.29	4.9 ± 0.35
November, 1977							
Sapporo, HOKKAIDO	0.453	0.0044	0.10	0.76 ± 0.36	17 ± 8.2	4.5 ± 0.33	4.4 ± 0.32
"	0.427	0.0038	0.091	0.35 ± 0.36	9.1 ± 9.5	7.6 ± 0.39	8.3 ± 0.43
Yamagata, YAMAGATA	0.493	0.0063	0.11	0.38 ± 0.36	6.0 ± 5.7	3.0 ± 0.31	2.7 ± 0.28
Fukushima, FUKUSHIMA	0.438	0.0042	0.085	1.1 ± 0.20	27 ± 4.7	17 ± 0.4	20 ± 0.4
Mito, IBARAKI	0.376	0.0053	0.064	1.2 ± 0.27	23 ± 5.1	13 ± 0.4	20 ± 0.7
"	0.408	0.0044	0.075	1.2 ± 0.18	27 ± 4.0	9.5 ± 0.28	13 ± 0.4
Osaka, OSAKA	0.395	0.0049	0.088	0.27 ± 0.32	5.6 ± 6.5	2.8 ± 0.26	3.1 ± 0.29
Kagoshima, KAGOSHIMA	0.443	0.0060	0.075	0.92 ± 0.34	15 ± 5.6	8.4 ± 0.41	11 ± 0.5
Shizuoka, SHIZUOKA	0.468	0.0045	0.098	0.8 ± 0.20	17 ± 4.4	6.0 ± 0.28	6.2 ± 0.28
December, 1977							
Fukui, FUKUI	0.653	0.0058	0.14	1.5 ± 0.29	25 ± 5.0	1.6 ± 0.20	1.2 ± 0.14
Nagoya, AICHI	0.450	0.0053	0.098	1.2 ± 0.37	22 ± 7.0	5.4 ± 0.34	5.5 ± 0.35
Akashi, HYOGO	0.399	0.0046	0.083	0.40 ± 0.16	8.7 ± 3.4	2.6 ± 0.16	3.1 ± 0.19
Kobe, HYOGO	0.411	0.0044	0.078	0.43 ± 0.16	9.8 ± 3.7	3.7 ± 0.19	4.7 ± 0.24
Wakayama, WAKAYAMA	0.424	0.0046	0.087	0.72 ± 0.38	16 ± 8.3	3.6 ± 0.29	4.2 ± 0.34

Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
Tottori, TOTTORI	0.418	0.0048	0.085	1.9 ± 0.21	40 ± 4.4	5.0 ± 0.21	5.9 ± 0.25
Seto, OKAYAMA	0.579	0.0066	0.13	0.40 ± 0.45	6.0 ± 6.8	4.6 ± 0.39	3.6 ± 0.30
Kochi, KOCHI	0.472	0.0054	0.090	0.48 ± 0.34	8.9 ± 6.3	4.4 ± 0.33	4.9 ± 0.37
Matsue, SHIMANE	0.470	0.0047	0.11	1.0 ± 0.21	21 ± 4.5	3.4 ± 0.22	3.1 ± 0.20
Yamaguchi, YAMAGUCHI	0.474	0.0048	0.094	0.0 ± 0.17	0.0 ± 3.6	4.0 ± 0.24	4.3 ± 0.25
Tsukushino, FUKUOKA	0.432	0.0044	0.090	0.2 ± 0.16	4.6 ± 3.6	5.6 ± 0.23	6.2 ± 0.26
Dazaifu,(Tsukushi-gun), FUKUOKA	0.445	0.0054	0.11	0.3 ± 0.17	5.1 ± 3.2	1.4 ± 0.16	1.4 ± 0.16
Saga, SAGA	0.512	0.0054	0.12	0.7 ± 0.22	13 ± 4.0	3.8 ± 0.23	3.1 ± 0.19
Hurukawa, MIYAGI	0.497	0.0046	0.093	1.7 ± 0.38	37 ± 8.2	17 ± 0.5	18 ± 0.5
January, 1978							
Hirosaki, AOMORI	0.430	0.0054	0.094	0.8 ± 0.20	15 ± 3.8	7.8 ± 0.29	8.4 ± 0.31
Kyoto, KYOTO	0.638	0.0068	0.14	0.6 ± 0.27	9.1 ± 3.9	5.4 ± 0.32	3.9 ± 0.23
Hiroshima, HIROSHIMA	0.382	0.0047	0.083	0.6 ± 0.16	13 ± 3.4	5.2 ± 0.21	6.3 ± 0.26
Nagasaki, NAGASAKI	0.319	0.0039	0.074	0.3 ± 0.14	7.4 ± 3.5	2.8 ± 0.15	3.8 ± 0.20

Note: Samples used for analysis are obtained as processed rice.

Figure 8. Sampling Locations of Rice

1. Sapporo
2. Hirosaki
3. Akita
4. Furukawa
5. Yamagata
6. Fukushima
7. Maki (Nishikanbara-gun)
8. Mito
9. Shinjyuku
10. Yokohama
11. Hodaka (Minamiazumi-gun)
12. Shizuoka
13. Nagoya
14. Kanazawa
15. Fukui
16. Kyoto
17. Osaka
18. Wakayama
19. Kobe
20. Akashi
21. Tottori
22. Seto
23. Matsue
24. Hiroshima
25. Yamaguchi
26. Kochi
27. Tsukushino
28. Dazaifu (Tsukushi-gun)
29. Saga
30. Nagasaki
31. Kagoshima
32. Katsuren



(8) Strontium-90 and Cesium-137 in Milk

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 8, 9 and the sampling locations are shown in Figure 9, 10.

Table 8: ^{90}Sr and ^{137}Cs in Milk
– October, 1977 to March, 1979 –
(Continued from Table 8, No. 48 of this publication)

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
(Production)							
October, 1977							
Yamato (Saga-gun), SAGA	7.58	1.18	1.70	1.9 ± 0.29	1.6 ± 0.24	2.5 ± 0.27	1.4 ± 0.16
December, 1977							
Aomori, AOMORI	6.99	0.983	1.72	12 ± 0.5	12 ± 0.5	7.7 ± 0.34	4.5 ± 0.20
February, 1978							
Oshimizu (Hakui-gun), ISHIKAWA	5.54	0.76	1.35	2.1 ± 0.30	2.7 ± 0.40	1.6 ± 0.24	1.2 ± 0.17
Akashi, HYOGO	7.69	1.25	1.58	0.8 ± 0.26	0.7 ± 0.21	1.6 ± 0.21	1.0 ± 0.13
Matsuyama, EHIME	7.46	1.08	1.66	2.6 ± 0.30	2.4 ± 0.28	2.8 ± 0.26	1.7 ± 0.16
June, 1978							
Yamato (Saga-gun), SAGA	7.42	1.15	1.68	1.2 ± 0.25	1.0 ± 0.22	2.7 ± 0.24	1.6 ± 0.14
July, 1978							
Oshimizu (Hakui-gun), ISHIKAWA	6.63	1.02	1.67	3.1 ± 0.40	3.0 ± 0.39	7.0 ± 0.32	4.2 ± 0.19
August, 1978							
Akashi, HYOGO	7.23	0.94	1.66	1.4 ± 0.28	1.5 ± 0.30	2.6 ± 0.24	1.5 ± 0.14
Aomori, AOMORI	6.98	1.10	1.66	16 ± 0.6	14 ± 0.6	19 ± 0.6	12 ± 0.4
Matsuyama, EHIME	6.92	1.02	1.47	1.3 ± 0.30	1.3 ± 0.29	3.0 ± 0.25	2.0 ± 0.17
October, 1978							
Yamato (Saga-gun), SAGA	7.43	1.18	1.67	1.5 ± 0.30	1.3 ± 0.26	2.4 ± 0.25	1.4 ± 0.15
(Consumption)							
November, 1977							
Kyoto, KYOTO	6.95	1.03	1.60	2.2 ± 0.28	2.1 ± 0.28	1.5 ± 0.22	1.0 ± 0.14
Matsue, SHIMANE	7.25	1.10	1.62	3.3 ± 0.31	3.0 ± 0.28	14 ± 0.5	8.6 ± 0.29
December, 1977							
Kagoshima, KAGOSHIMA	6.68	1.00	1.51	1.7 ± 0.27	1.7 ± 0.27	6.9 ± 0.36	4.6 ± 0.24

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
January, 1978							
Sapporo, HOKKAIDO	7.06	1.07	1.68	4.7 ± 0.38	4.4 ± 0.36	8.6 ± 0.38	5.1 ± 0.23
Yamagata, YAMAGATA	7.39	1.08	1.78	2.6 ± 0.29	2.4 ± 0.27	4.3 ± 0.30	2.4 ± 0.17
Osaka, OSAKA	7.13	1.07	1.65	1.9 ± 0.30	1.8 ± 0.28	3.5 ± 0.29	2.1 ± 0.18
February, 1978							
Sendai, MIYAGI	7.25	1.12	1.59	1.5 ± 0.28	1.3 ± 0.25	5.9 ± 0.32	3.7 ± 0.20
Akita, AKITA	7.16	1.09	1.53	3.7 ± 0.37	3.4 ± 0.34	6.3 ± 0.35	4.1 ± 0.23
Fukushima, FUKUSHIMA	8.02	1.26	1.76	2.2 ± 0.30	1.7 ± 0.24	7.1 ± 0.36	4.0 ± 0.20
Shinjyuku, TOKYO	6.87	1.00	1.61	2.1 ± 0.28	2.1 ± 0.28	5.9 ± 0.36	3.7 ± 0.23
Niigata, NIIGATA	7.44	1.05	1.57	1.5 ± 0.35	1.5 ± 0.33	3.7 ± 0.30	2.4 ± 0.19
Fukui, FUKUI	7.26	1.17	1.55	2.1 ± 0.31	1.8 ± 0.26	4.2 ± 0.27	2.7 ± 0.18
Nagano, NAGANO	7.09	1.07	1.66	1.6 ± 0.27	1.5 ± 0.25	3.3 ± 0.27	2.0 ± 0.17
Shizuoka, SHIZUOKA	7.20	1.08	1.55	1.8 ± 0.28	1.6 ± 0.26	5.6 ± 0.31	3.6 ± 0.20
Nagoya, AICHI	7.55	1.04	1.61	1.5 ± 0.27	1.4 ± 0.26	7.6 ± 0.26	1.6 ± 0.16
Wakayama, WAKAYAMA	6.61	0.90	1.54	2.0 ± 0.29	2.3 ± 0.32	2.5 ± 0.24	1.6 ± 0.15
Yonago, TOTTORI	7.07	1.06	1.59	2.8 ± 0.29	2.6 ± 0.27	8.7 ± 0.38	5.5 ± 0.24
Okayama, OKAYAMA	7.17	1.13	1.54	1.4 ± 0.32	1.3 ± 0.28	4.0 ± 0.28	2.6 ± 0.18
Hiroshima, HIROSHIMA	6.05	0.90	1.41	2.1 ± 0.24	2.3 ± 0.26	3.6 ± 0.25	2.6 ± 0.18
Yamaguchi, YAMAGUCHI	7.14	1.05	0.71	1.4 ± 0.28	1.4 ± 0.27	3.3 ± 0.27	1.9 ± 0.16
Matsuyama, EHIME	7.23	1.04	1.60	3.4 ± 0.35	3.2 ± 0.33	3.8 ± 0.30	2.4 ± 0.19
May, 1978							
Kyoto, KYOTO	6.83	1.00	1.61	1.6 ± 0.28	1.6 ± 0.28	3.1 ± 0.25	1.9 ± 0.16
June, 1978							
Matsue, SHIMANE	6.99	1.02	1.52	2.9 ± 0.31	2.9 ± 0.30	8.5 ± 0.34	5.6 ± 0.22
July, 1978							
Sendai, MIYAGI	7.14	1.10	1.59	1.9 ± 0.28	1.7 ± 0.25	6.5 ± 0.31	4.1 ± 0.20
August, 1978							
Sapporo, HOKKAIDO	7.12	1.10	1.66	3.2 ± 0.37	2.9 ± 0.34	13 ± 0.4	7.7 ± 0.25
Yamagata, YAMAGATA	6.65	1.00	1.43	1.7 ± 0.25	1.7 ± 0.26	4.3 ± 0.25	3.0 ± 0.17
Nagano, NAGANO	6.96	1.02	1.50	0.8 ± 0.28	0.8 ± 0.27	2.9 ± 0.22	1.9 ± 0.14
Akita, AKITA	7.26	1.36	1.62	3.1 ± 0.36	2.3 ± 0.26	6.3 ± 0.33	3.9 ± 0.20
Fukushima, FUKUSHIMA	7.02	1.06	1.73	2.1 ± 0.33	2.0 ± 0.31	5.7 ± 0.33	3.3 ± 0.19
Mito, IBARAKI	6.91	1.01	1.60	2.1 ± 0.32	2.1 ± 0.32	4.3 ± 0.28	2.7 ± 0.17
Shinjyuku, TOKYO	6.42	0.977	1.60	2.5 ± 0.34	2.6 ± 0.35	11 ± 0.4	6.6 ± 0.24
Yokohama, KANAGAWA	6.50	0.984	1.49	1.7 ± 0.27	1.7 ± 0.27	4.3 ± 0.27	2.9 ± 0.18
Niigata, NIIGATA	7.68	1.21	1.72	2.5 ± 0.37	2.1 ± 0.31	4.6 ± 0.32	2.7 ± 0.18
Fukui, FUKUI	7.05	1.24	1.63	2.0 ± 0.31	1.6 ± 0.25	3.7 ± 0.26	2.2 ± 0.16
Shizuoka, SHIZUOKA	7.10	1.20	1.61	1.6 ± 0.28	1.4 ± 0.24	7.3 ± 0.34	4.5 ± 0.21
Nagoya, AICHI	6.95	1.10	1.61	1.6 ± 0.28	1.5 ± 0.26	3.5 ± 0.26	2.2 ± 0.16
Osaka, OSAKA	6.73	1.03	1.50	2.2 ± 0.31	2.1 ± 0.30	6.3 ± 0.34	4.2 ± 0.22

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
Yonago, TOTTORI	6.55	1.02	1.47	2.5 ± 0.31	2.5 ± 0.30	13 ± 0.4	9.2 ± 0.30
Okayama, OKAYAMA	7.11	1.09	1.61	2.1 ±	2.0 ± 0.28	3.1 ± 0.26	1.9 ± 0.16
Hiroshima, HIROSHIMA	6.73	1.01	1.57	1.9 ± 0.28	1.9 ± 0.28	4.7 ± 0.29	3.0 ± 0.18
Matsuyama, EHIME	7.10	1.04	1.53	1.6 ± 0.35	1.5 ± 0.34	3.0 ± 0.25	2.0 ± 0.16
Kochi, KOCHI	6.88	1.07	1.60	2.1 ± 0.32	2.0 ± 0.30	3.1 ± 0.28	1.9 ± 0.18
Chikushino, FUKUOKA	7.17	1.05	1.64	2.1 ± 0.33	2.0 ± 0.31	3.2 ± 0.26	1.9 ± 0.16
Nagasaki, NAGASAKI	6.66	1.00	1.52	1.6 ± 0.28	1.6 ± 0.28	3.8 ± 0.27	2.5 ± 0.18
September, 1978							
Wakayama, WAKAYAMA	7.14	0.959	1.39	1.7 ± 0.34	1.7 ± 0.35	2.4 ± 0.25	1.7 ± 0.18
Katsuren, OKINAWA	6.64	1.10	1.61	1.2 ± 0.25	1.1 ± 0.23	3.2 ± 0.26	2.0 ± 0.16
October, 1978							
Yamaguchi, YAMAGUCHI	7.16	1.14	1.72	2.2 ± 0.34	1.9 ± 0.29	6.5 ± 0.35	3.8 ± 0.20
November, 1978							
Kagoshima, KAGOSHIMA	7.09	1.10	1.71	2.4 ± 0.36	2.2 ± 0.32	9.6 ± 0.41	5.6 ± 0.24

Table 9: ^{90}Sr and ^{137}Cs in Milk (Report to WHO) – April, 1978 to December, 1978 –

(Continued from Table 7, No. 48 of this publication)

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
April, 1978							
Yagumo (Yatsuka-gun), SHIMANE	7.72	1.17	1.57	1.3 ± 0.27	1.1 ± 0.23	5.9 ± 0.30	3.8 ± 0.19
May, 1978							
Kochi, KOCHI	7.02	1.05	1.36	1.6 ± 0.26	1.5 ± 0.25	3.0 ± 0.26	2.2 ± 0.19
Koga (Kasuya-gun), FUKUOKA	7.73	1.15	1.75	1.9 ± 0.31	1.6 ± 0.27	9.8 ± 0.42	5.6 ± 0.24
Kajiki (Aira-gun), KAGOSHIMA	7.40	1.16	1.67	3.4 ± 0.35	2.9 ± 0.30	8.6 ± 0.39	5.2 ± 0.23
Hachijyo-Island, TOKYO	7.54	1.19	1.69	8.6 ± 0.49	7.2 ± 0.41	55 ± 0.9	33 ± 0.5
June, 1978							
Sapporo, HOKKAIDO	6.36	1.05	1.36	4.2 ± 0.31	4.0 ± 0.30	10 ± 0.4	7.7 ± 0.27
Nishikawa (Nishikanbara-gun), NIIGATA	6.67	0.93	1.42	2.1 ± 0.27	2.3 ± 0.29	6.6 ± 0.31	4.7 ± 0.22
Katsuyama, FUKUI	7.10	1.09	1.67	5.2 ± 0.39	4.8 ± 0.36	12 ± 0.4	7.1 ± 0.26
Yagumo (Yatsuka-gun), SHIMANE	7.17	1.09	1.56	2.0 ± 0.27	1.8 ± 0.25	5.5 ± 0.28	3.5 ± 0.18
July, 1978							
Nose (Toyono-gun), OSAKA	7.18	1.04	1.56	1.9 ± 0.28	1.8 ± 0.27	3.6 ± 0.27	2.3 ± 0.18
August, 1978							
Hachijyo-Island, TOKYO	6.56	1.02	1.51	3.9 ± 0.37	3.8 ± 0.37	24 ± 0.6	16 ± 0.4
Nishikawa (Nishikanbara-gun), NIIGATA	7.48	1.28	1.62	1.9 ± 0.34	1.5 ± 0.26	4.4 ± 0.32	2.7 ± 0.20
Katsuyama, FUKUI	7.80	1.30	1.97	4.7 ± 0.46	3.6 ± 0.36	8.6 ± 0.39	4.4 ± 0.20
Nose (Toyono-gun), OSAKA	7.19	1.09	1.55	1.8 ± 0.30	1.7 ± 0.28	2.9 ± 0.25	1.9 ± 0.16
Yagumo (Yatsuka-gun), SHIMANE	7.39	1.50	1.55	2.9 ± 0.43	1.9 ± 0.29	6.4 ± 0.33	4.1 ± 0.22
Shobara, HIROSHIMA	5.90	0.832	1.46	1.0 ± 0.22	1.2 ± 0.26	1.3 ± 0.18	0.9 ± 0.12
Kochi, KOCHI	7.45	1.14	1.23	3.1 ± 0.37	2.7 ± 0.32	2.6 ± 0.29	2.1 ± 0.23
Koga (Kasuya-gun), FUKUOKA	7.35	1.16	1.64	1.9 ± 0.33	1.6 ± 0.28	4.6 ± 0.30	2.8 ± 0.19
Kajiki (Aira-gun), KAGOSHIMA	6.90	1.04	1.61	3.3 ± 0.33	3.2 ± 0.31	7.1 ± 0.35	4.5 ± 0.22
September, 1978							
Sapporo, HOKKAIDO	7.52	1.34	1.70	4.9 ± 0.45	3.7 ± 0.34	22 ± 0.6	13 ± 0.3
October, 1978							
Shobara, HIROSHIMA	6.82	1.12	1.63	1.3 ± 0.28	1.2 ± 0.25	3.2 ± 0.25	2.0 ± 0.15

Location	Component			^{90}Sr		^{137}Cs	
	Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
November, 1978							
Hachijo-Island, TOKYO	7.36	1.14	1.75	7.4 ± 0.47	6.5 ± 0.41	64 ± 1.0	36 ± 0.6
Nose (Toyono-gun), OSAKA	7.41	1.13	1.66	2.0 ± 0.33	1.8 ± 0.29	2.4 ± 0.25	1.5 ± 0.15
Kochi, KOCHI	7.88	1.21	1.64	2.7 ± 0.37	2.3 ± 0.31	2.9 ± 0.28	1.8 ± 0.17
Kajiki (Aira-gun), KAGOSHIMA	7.15	1.16	1.79	2.0 ± 0.31	1.7 ± 0.27	5.1 ± 0.31	2.9 ± 0.17
Kochi, KOCHI	6.97	1.05	2.05	2.3 ± 0.29	2.2 ± 0.27	3.5 ± 0.26	1.7 ± 0.13
Tsukushino, FUKUOKA	7.49	1.14	1.59	1.7 ± 0.28	1.5 ± 0.25	2.4 ± 0.23	1.5 ± 0.14
Nagasaki, NAGASAKI	6.73	1.02	1.58	1.5 ± 0.26	1.5 ± 0.26	4.2 ± 0.28	2.7 ± 0.18
March, 1978							
Yokohama, KANAGAWA	7.20	1.09	1.59	1.6 ± 0.26	1.5 ± 0.24	5.4 ± 0.30	3.4 ± 0.19
Katsuren, OKINAWA	6.54	1.04	1.48	1.1 ± 0.26	1.1 ± 0.25	5.6 ± 0.31	3.8 ± 0.21

Figure 9. Sampling Locations of Milk

Production ●

1. Aomori
2. Oshimizu (Hakui-gun)
3. Akashi
4. Matsuyama
5. Yamato (Saga-gun)

Consumption ◎

6. Sapporo
7. Sendai
8. Akita
9. Yamagata
10. Fukushima
11. Shinjyuku
12. Yokohama
13. Niigata
14. Fukui
15. Nagano
16. Shizuoka
17. Nagoya
18. Kyoto
19. Osaka
20. Wakayama
21. Yonago
22. Okayama
23. Matsue
24. Hiroshima
25. Yamaguchi
26. Matsuyama
27. Kochi
28. Tsukushino
29. Nagasaki
30. Kagoshima
31. Katsuren

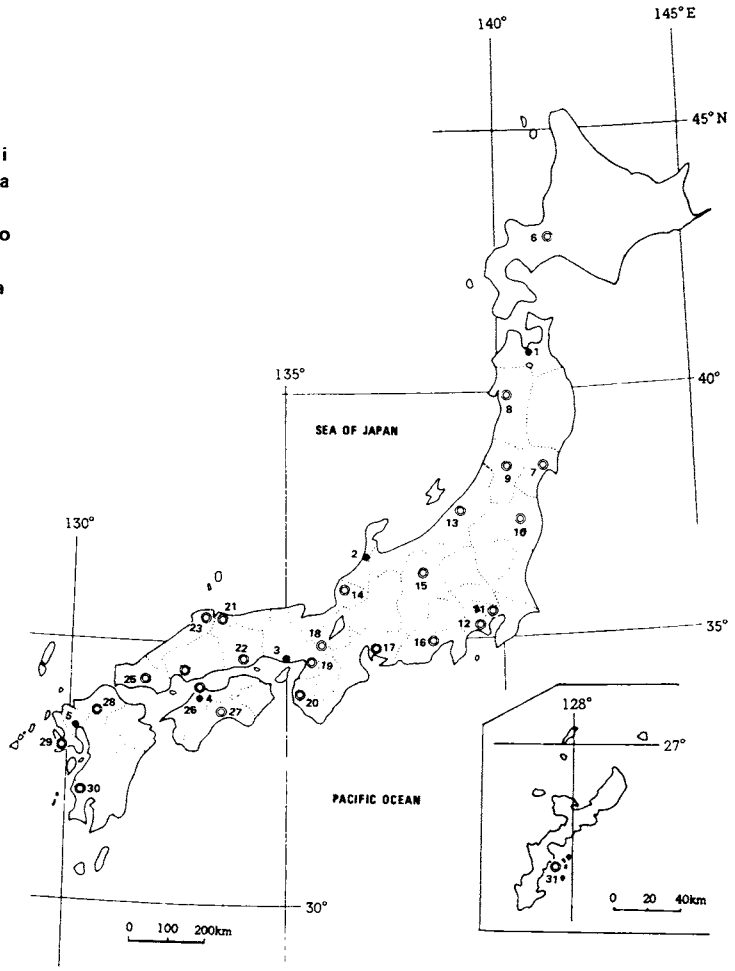
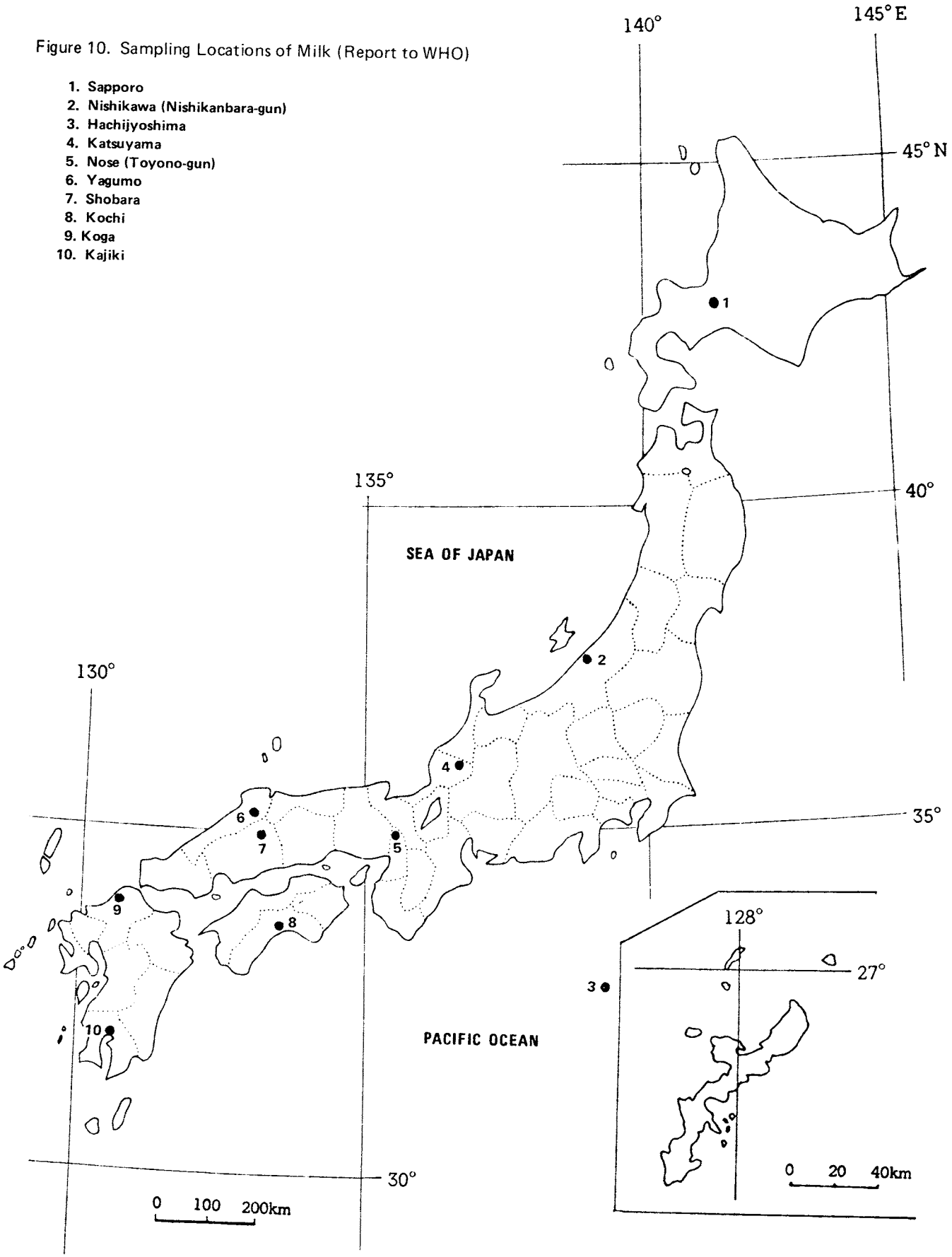


Figure 10. Sampling Locations of Milk (Report to WHO)

1. Sapporo
2. Nishikawa (Nishikanbara-gun)
3. Hachijyoshima
4. Katsuyama
5. Nose (Toyono-gun)
6. Yagumo
7. Shobara
8. Kochi
9. Koga
10. Kajiki



(9) Strontium-90 and Cesium-137 in Vegetables

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 10 and the sampling locations are shown in Figure 11.

Table 10: ^{90}Sr and ^{137}Cs in Vegetables
– April, 1977 to March, 1978 –
(Continued from Table 3, No. 46 of this publication)

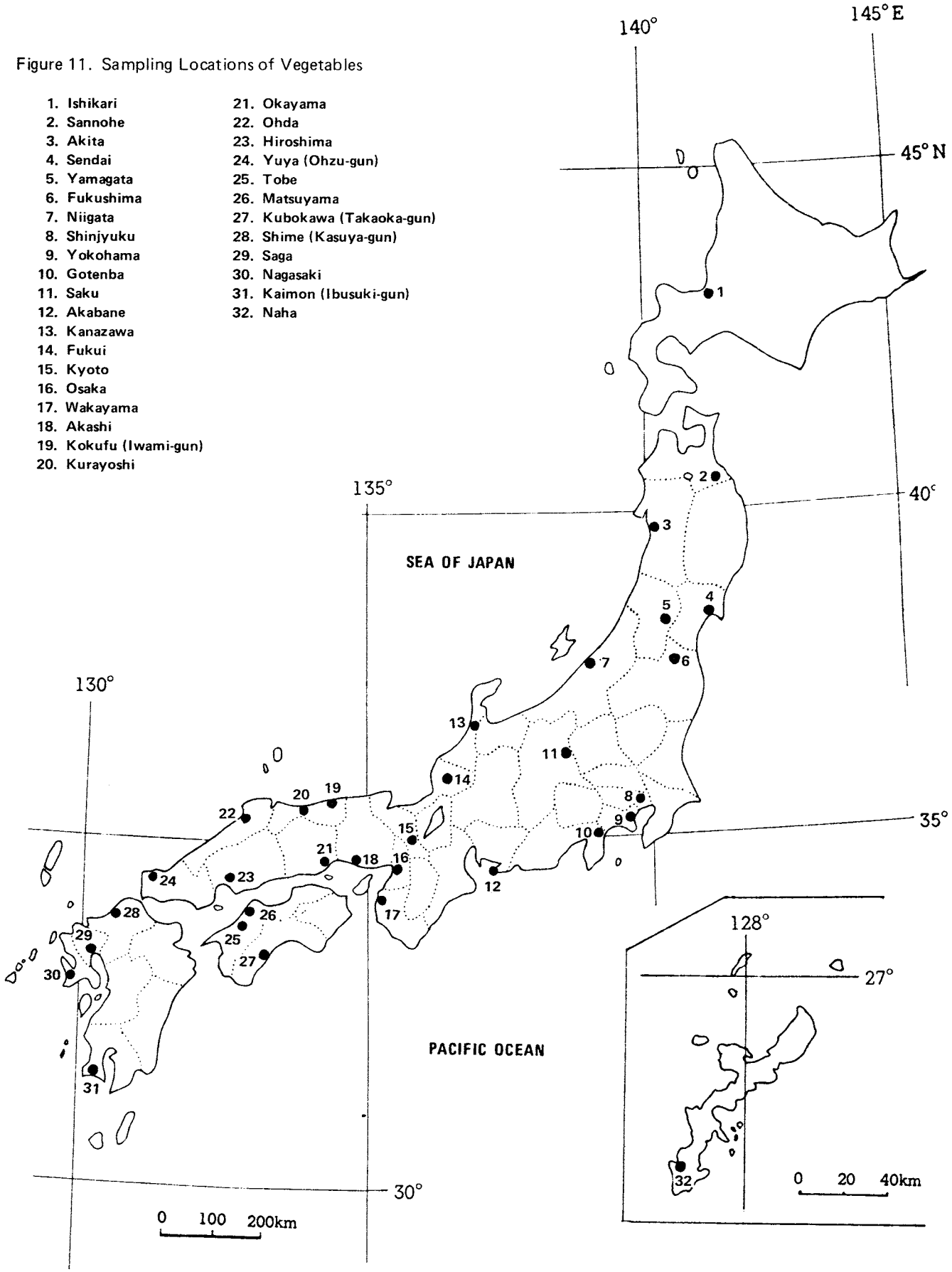
Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
Japanese-radish							
June, 1977							
Akabane (Atsumi-gun), AICHI	0.622	0.024	0.283	4.1 ± 0.53	17 ± 2.2	1.2 ± 0.28	0.4 ± 0.10
July, 1977							
Ohda, SHIMANE	0.433	0.028	0.149	53 ± 1.2	190 ± 4	17 ± 0.6	12 ± 0.4
September, 1977							
Ishikari, HOKKAIDO	0.496	0.030	0.202	40 ± 0.8	130 ± 2.7	1.6 ± 0.16	0.8 ± 0.08
October, 1977							
Akita, AKITA	0.547	0.028	0.206	20 ± 0.7	73 ± 2.4	1.3 ± 0.17	0.6 ± 0.08
Sendai, MIYAGI	0.721	0.049	0.291	21 ± 0.7	44 ± 1.5	4.7 ± 0.30	1.6 ± 0.10
Yamagata, YAMAGATA	0.603	0.033	0.270	19 ± 1.0	57 ± 2.9	1.0 ± 0.30	0.4 ± 0.11
Hiroshima, HIROSHIMA	0.413	0.015	0.210	3.2 ± 0.44	22 ± 3.0	0.3 ± 0.19	0.2 ± 0.09
November, 1977							
Sannohe, AOMORI	0.525	0.025	0.219	19 ± 0.6	77 ± 2.5	2.3 ± 0.19	1.1 ± 0.09
Fukushima, FUKUSHIMA	0.805	0.043	0.231	6.4 ± 0.48	15 ± 1.1	1.0 ± 0.20	0.4 ± 0.09
Niigata, NIIGATA	0.650	0.042	0.220	27 ± 0.7	65 ± 1.7	17 ± 0.5	7.6 ± 0.21
Shinjyuku, TOKYO	0.738	0.039	0.336	18 ± 0.6	46 ± 1.7	2.0 ± 0.22	0.6 ± 0.07
Fukui, FUKUI	0.655	0.030	0.269	12 ± 0.5	39 ± 1.8	0.6 ± 0.15	0.2 ± 0.06
Saku, NAGANO	0.532	0.030	0.211	4.9 ± 0.32	16 ± 1.1	0.7 ± 0.16	0.3 ± 0.08
Kanazawa, ISHIKAWA	0.725	0.055	0.260	17 ± 0.6	31 ± 1.2	6.1 ± 0.33	2.3 ± 0.13
Gotenba, SHIZUOKA	0.662	0.049	0.254	23 ± 0.5	48 ± 1.1	3.5 ± 0.26	1.4 ± 0.10
Osaka, OSAKA	0.478	0.028	0.201	7.1 ± 0.37	25 ± 1.3	0.4 ± 0.11	0.2 ± 0.06
Akashi, HYOGO	0.677	0.039	0.269	15 ± 0.9	38 ± 2.3	1.3 ± 0.36	0.5 ± 0.13
Okayama, OKAYAMA	0.374	0.026	0.149	2.3 ± 0.34	8.9 ± 1.3	0.7 ± 0.18	0.5 ± 0.12
Shime (Kasuya-gun), FUKUOKA	0.595	0.048	0.221	7.2 ± 0.40	15 ± 0.8	1.2 ± 0.17	0.5 ± 0.07
Kaimon, KAGOSHIMA	0.487	0.023	0.199	7.2 ± 0.40	31 ± 1.7	4.0 ± 0.21	2.0 ± 0.11
December, 1977							
Kokufu (Iwami-gun), TOTTORI	0.678	0.029	0.292	12 ± 0.5	41 ± 1.9	0.7 ± 0.16	0.2 ± 0.06
Wakayama, WAKAYAMA	0.421	0.020	0.185	3.1 ± 0.42	16 ± 2.2	0.6 ± 0.22	0.3 ± 0.12

Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
January, 1978							
Kyoto, KYOTO	0.627	0.037	0.265	0.6 ± 0.46	1.5 ± 1.2	0.6 ± 0.30	0.2 ± 0.11
Kubokawa (Takaoka-gun), KOCHI	0.665	0.054	0.426	20 ± 1.1	37 ± 2.0	0.6 ± 0.37	0.1 ± 0.09
Saga, SAGA	0.682	0.029	0.322	6.5 ± 0.71	22 ± 2.4	0.8 ± 0.33	0.2 ± 0.10
Nagasaki, NAGASAKI	0.494	0.024	0.218	6.7 ± 0.59	28 ± 2.5	0.5 ± 0.27	0.2 ± 0.12
February, 1978							
Yuya (Ohtsu-gun), YAMAGUCHI	1.53	0.051	0.681	22 1.0	44 2.0	13 0.6	2.0 0.09
March, 1978							
Yokohama, KANAGAWA	0.589	0.032	0.262	2.5 ± 0.55	7.8 ± 1.7	0.0 ± 0.27	0.0 ± 0.10
Naha, OKINAWA	0.704	0.045	0.260	4.5 ± 0.26	9.8 ± 0.57	0.8 ± 0.18	0.3 ± 0.07
Spinach							
April, 1977							
Sendai, MIYAGI	2.14	0.16	0.760	26 ± 1.0	17 ± 0.7	3.9 ± 0.36	0.5 ± 0.05
June, 1977							
Niigata, NIIGATA	1.04	0.077	0.402	27 ± 0.9	34 ± 1.2	3.3 ± 0.33	0.8 ± 0.08
Akabane (Atsumi-gun), AICHI	1.57	0.067	0.342	3.2 ± 0.48	4.8 ± 0.72	1.9 ± 0.28	0.6 ± 0.08
July, 1977							
Ohta, SHIMANE	1.20	0.041	0.508	21 ± 1.0	50 ± 2.3	4.0 ± 0.45	0.8 ± 0.09
September, 1977							
Ishikari, HOKKAIDO	1.56	0.054	0.730	10 ± 0.6	19 ± 1.1	2.9 ± 0.27	0.4 ± 0.04
October, 1977							
Yamagata, YAMAGATA	1.46	0.062	0.599	5.9 ± 0.61	9.6 ± 1.0	1.3 ± 0.26	0.2 ± 0.04
Hiroshima, HIROSHIMA	1.40	0.050	0.640	3.2 ± 0.40	6.4 ± 0.81	0.6 ± 0.18	0.1 ± 0.03
November, 1977							
Fukushima, FUKUSHIMA	1.85	0.043	0.794	8.9 ± 0.93	21 ± 2.1	0.6 ± 0.42	0.1 ± 0.05
Fukui, FUKUI	1.26	0.044	0.531	7.9 ± 0.68	18 ± 1.6	4.0 ± 0.40	0.8 ± 0.08
Saku, NAGANO	2.17	0.070	0.922	9.8 ± 1.2	14 ± 1.7	1.1 ± 0.49	0.1 ± 0.05
Kanazawa, ISHIKAWA	1.22	0.057	0.495	24 ± 1.1	42 ± 1.9	6.8 ± 0.49	1.4 ± 0.10
Osaka, OSAKA	1.61	0.062	0.778	7.6 ± 0.57	12 ± 0.9	1.1 ± 0.22	0.1 ± 0.03
Akashi, HYOGO	1.56	0.051	0.661	2.6 ± 0.63	5.0 ± 1.2	1.1 ± 0.36	0.2 ± 0.05
Okayama, OKAYAMA	0.979	0.046	0.389	3.1 ± 0.42	6.6 ± 0.91	0.9 ± 0.25	0.2 ± 0.06
Kurayoshi, TOTTORI	1.45	0.064	0.525	16 ± 1.2	26 ± 1.9	13 ± 0.6	2.4 ± 0.12
Tobe (Iyo-gun), EHIME	1.66	0.074	0.463	7.7 ± 0.67	10 ± 0.9	2.6 ± 0.36	0.6 ± 0.08
Matsuyama, EHIME	1.70	0.074	0.672	3.3 ± 0.47	4.5 ± 0.63	2.7 ± 0.35	0.4 ± 0.05
Shime (Kasuya-gun), FUKUOKA	1.49	0.13	0.483	16 ± 0.8	12 ± 0.6	7.0 ± 0.42	1.4 ± 0.09
Kaimon, KAGOSHIMA	1.54	0.12	0.374	34 ± 1.4	27 ± 1.1	66 ± 1.4	18 ± 0.4
Gotenba, SHIZUOKA	1.33	0.051	0.614	11 ± 0.8	22 ± 1.6	4.4 ± 0.47	0.7 ± 0.08

Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
December, 1977							
Shinjyuku, TOKYO	2.03	0.083	0.928	8.5 ± 0.73	10 ± 0.9	1.5 ± 0.31	0.2 ± 0.03
January, 1978							
Kyoto, KYOTO	1.15	0.073	0.387	4.2 ± 0.54	5.8 ± 0.74	4.1 ± 0.44	1.1 ± 0.11
Yuya (Ohzu-gun), YAMAGUCHI	0.604	0.035	0.264	25 ± 1.1	73 ± 3.0	2.8 ± 0.40	1.1 ± 0.15
Kubokawa (Takaoka-gun), KOCHI	1.71	0.089	1.20	22 ± 1.1	24 ± 1.2	5.9 ± 0.49	0.5 ± 0.04
Saga, SAGA	2.02	0.087	1.21	16 ± 0.9	18 ± 1.1	3.2 ± 0.48	0.3 ± 0.04
Nagasaki, NAGASAKI	1.58	0.060	0.731	5.8 ± 0.56	9.7 ± 0.93	1.9 ± 0.32	0.3 ± 0.04
March, 1978							
Yokohama, KANAGAWA	1.59	0.067	0.660	11 ± 0.5	17 ± 0.8	3.7 ± 0.38	0.6 ± 0.06
Naha, OKINAWA	1.32	0.096	0.452	8.7 ± 0.43	9.0 ± 0.45	7.7 ± 0.44	1.7 ± 0.10
Cabbage							
August, 1977							
Akita, AKITA	0.514	0.042	0.193	18 ± 0.5	42 ± 1.3	5.2 ± 0.25	2.7 ± 0.13
November, 1977							
Sannohe, AOMORI	0.618	0.043	0.232	16 ± 0.6	36 ± 1.4	1.6 ± 0.19	0.7 ± 0.08
Chinese Cabbage							
December, 1977							
Wakayama, WAKAYAMA	0.747	0.087	0.195	12 ± 0.9	13 ± 1.0	1.6 ± 0.41	0.8 ± 0.21

Figure 11. Sampling Locations of Vegetables

1. Ishikari
2. Sannohe
3. Akita
4. Sendai
5. Yamagata
6. Fukushima
7. Niigata
8. Shinjyuku
9. Yokohama
10. Gotenba
11. Saku
12. Akabane
13. Kanazawa
14. Fukui
15. Kyoto
16. Osaka
17. Wakayama
18. Akashi
19. Kokufu (Iwami-gun)
20. Kurayoshi
21. Okayama
22. Ohda
23. Hiroshima
24. Yuya (Ohzu-gun)
25. Tobe
26. Matsuyama
27. Kubokawa (Takaoka-gun)
28. Shime (Kasuya-gun)
29. Saga
30. Nagasaki
31. Kaimon (Ibusuki-gun)
32. Naha



(10) Strontium-90 and Cesium-137 in Tea (Green Tea)

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

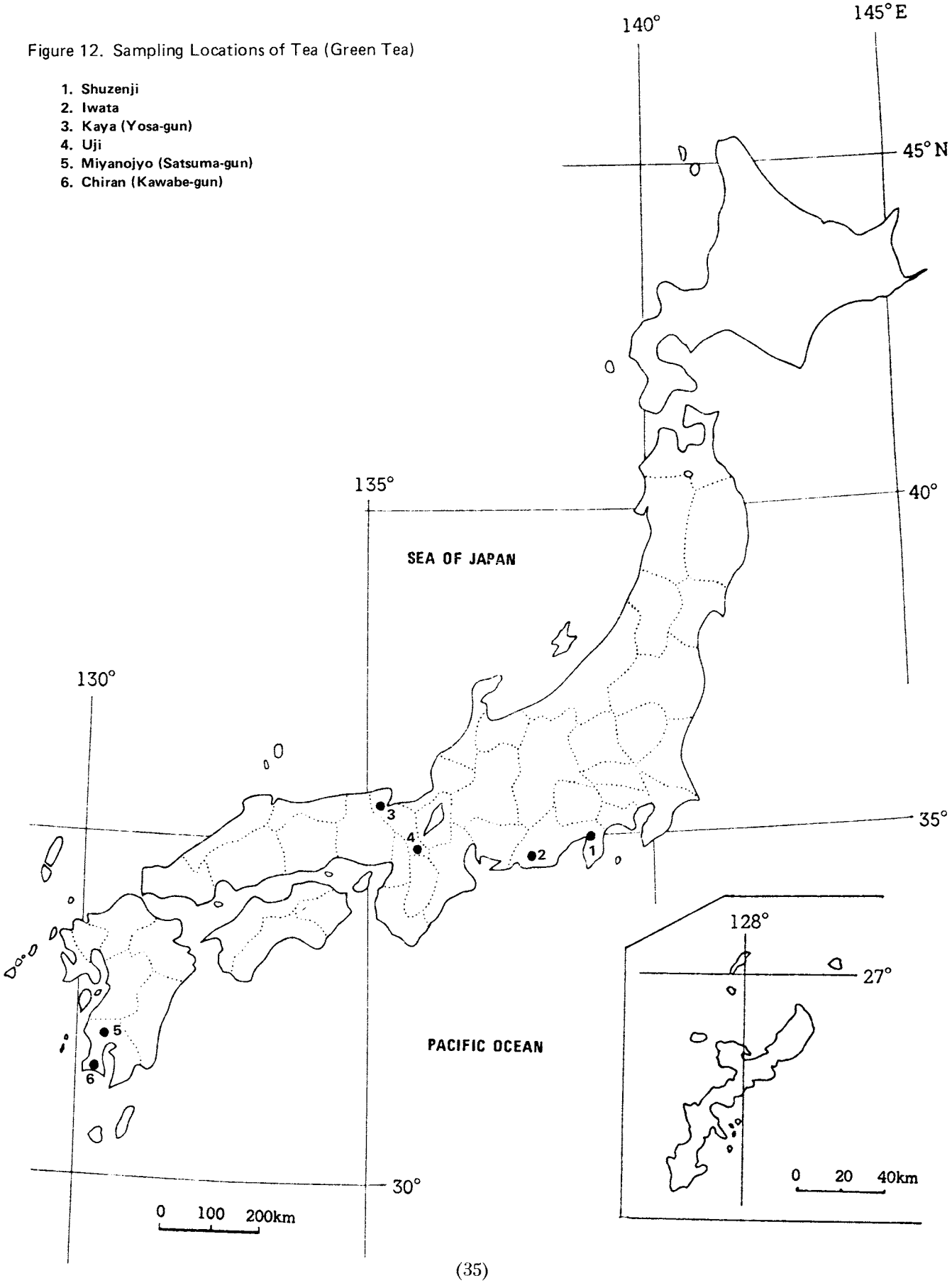
The results obtained are shown in Table 11 and the sampling locations are shown in Figure 12.

Table 11: ^{90}Sr and ^{137}Cs in Tea (Green Tea)
– April, 1977 to March, 1978 –
(Continued from Table 1, No. 46 of this publication)

Location	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
May, 1977							
Uji, KYOTO	5.98	0.197	2.23	27 ± 3.5	14 ± 1.8	47 ± 2.5	2.1 ± 0.11
June, 1977							
Shuzenji, SHIZUOKA	5.62	0.397	1.91	310 ± 8	78 ± 2.1	110 ± 4	6.0 ± 0.19
Iwata, SHIZUOKA	5.36	0.416	1.72	130 ± 5	31 ± 1.3	84 ± 3.0	4.9 ± 0.18
Kaya (Yosa-gun), KYOTO	7.56	0.541	2.37	200 ± 7	37 ± 1.4	130 ± 4	5.5 ± 0.19
Chiran (Kawabe-gun), KAGOSHIMA	5.33	0.276	1.77	92 ± 4.6	33 ± 1.7	150 ± 4	8.5 ± 0.22
Miyanojyo (Satsuma-gun), KAGOSHIMA	5.38	0.259	1.91	71 ± 4.4	27 ± 1.7	130 ± 4	6.6 ± 0.19

Figure 12. Sampling Locations of Tea (Green Tea)

1. Shuzenji
2. Iwata
3. Kaya (Yosa-gun)
4. Uji
5. Miyanojyo (Satsuma-gun)
6. Chiran (Kawabe-gun)



(11) Strontium-90 and Cesium-137 in Marine Products

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 12 and the sampling locations are shown in Figure 13.

Table 12: ^{90}Sr and ^{137}Cs in Marine Products
– April, 1977 to March, 1978 –
(Continued from Table 4, No. 46 of this publication)

Location	Sampling Date	Component			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
(Comsumption)								
Cololabis saira								
Yamagata, YAMAGATA	Sep. 1977	2.81	16.1	5.23	0.6 ± 0.25	0.1 ± 0.06	2.8 ± 0.29	1.9 ± 0.19
Pleuronectidae								
Sendai, MIYAGI	Oct. 1977	3.02	22.1	11.7	0.9 ± 0.30	0.1 ± 0.05	4.5 ± 0.39	1.3 ± 0.11
Niigata, NIIGATA	Nov. 1977	3.49	26.6	9.38	1.3 ± 0.45	0.1 ± 0.05	5.4 ± 0.37	1.6 ± 0.11
Fukui, FUKUI	Dec. 1977	1.33	9.39	28.2	0.0 ± 0.42	0.0 ± 0.33	9.2 ± 0.57	2.4 ± 0.15
Pneumatophorus japonicus								
Matsuyama, EHIME	Aug. 1977	1.23	5.03	29.8	0.0 ± 0.24	0.0 ± 0.38	10 ± 0.4	2.8 ± 0.12
Osaka, OSAKA	Nov. 1977	2.32	23.4	10.6	0.8 ± 0.32	0.2 ± 0.06	8.2 ± 0.43	3.3 ± 0.18
Shizuoka, SHIZUOKA	Dec. 1977	2.53	18.4	12.3	0.8 ± 0.34	0.2 ± 0.07	8.3 ± 0.45	2.7 ± 0.14
Mugil cephalus								
Ariake-sea, SAGA	Aug. 1977	1.27	10.1	23.6	0.7 ± 0.27	0.5 ± 0.20	4.3 ± 0.31	1.4 ± 0.10
Trachurus trachurus								
Wakayama, WAKAYAMA	Sep. 1977	3.53	18.6	7.59	1.0 ± 0.42	0.1 ± 0.06	5.8 ± 0.38	2.2 ± 0.14
Sardinops melanosticta								
Nagano, NAGANO	Jan. 1978	2.39	18.6	11.5	0.2 ± 0.25	0.1 ± 0.06	5.6 ± 0.36	2.0 ± 0.13
Caesio chrysozonus cuvier								
Naha, OKINAWA	Sep. 1977	3.41	23.0	12.9	0.3 ± 0.35	0.04 ± 0.04	9.2 ± 0.52	2.0 ± 0.11
Turbo cornutus								
Ryotsu, NIIGATA	Jun. 1977	1.96	4.17	13.0	0.9 ± 0.64	1.1 ± 0.79	2.0 ± 0.47	0.8 ± 0.19
Undaira pinnatifida								
Ryotsu, NIIGATA	Jun. 1977	4.61	3.09	15.8	2.2 ± 0.33	1.5 ± 0.23	2.6 ± 0.28	0.4 ± 0.04
(Production)								
Tracturus trachurus								
Odawara, KANAGAWA	Aug. 1977	3.15	13.2	5.31	0.8 ± 0.46	0.1 ± 0.06	8.2 ± 0.47	2.9 ± 0.16
Ogashima, HYOGO	"	3.29	14.7	11.4	2.1 ± 0.30	0.4 ± 0.06	11 ± 0.5	3.0 ± 0.13
Miyake-Island, TOKYO	Sep. 1977	2.71	16.9	16.6	0.4 ± 0.32	0.1 ± 0.07	9.3 ± 0.45	2.1 ± 0.10

Location	Sampling Date	Component			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
Pneumatophorus japonicus								
Togi (Hakui-gun), ISHIKAWA	Jul. 1977	1.68	2.72	20.0	0.0 ± 0.23	0.0 ± 0.51	9.6 ± 0.42	2.9 ± 0.13
Uwaumi, EHIME	Aug. 1977	1.07	4.69	25.7	0.3 ± 0.30	0.06 ± 0.06	10 ± 0.5	3.5 ± 0.17
Maizuru-bay, KYOTO	Nov. 1977	2.67	18.1	12.1	0.7 ± 0.31	0.1 ± 0.06	9.8 ± 0.49	3.0 ± 0.15
Sakaiminato, TOTTORI	Jan. 1978	0.692	5.05	20.9	0.1 ± 0.15	0.2 ± 0.2	6.4 ± 0.27	3.3 ± 0.14
Oncorhynchus keta								
Urakawa, HOKKAIDO	Oct. 1977	1.27	18.2	26.7	1.5 ± 0.30	0.6 ± 0.12	6.5 ± 0.38	1.8 ± 0.11
Sillago sihame								
Minamichita (chita-gun), AICHI	Jun. 1977	3.81	20.0	8.06	0.7 ± 0.35	0.1 ± 0.04	5.8 ± 0.39	1.8 ± 0.12
Katsuwonus pelamis								
Tosa, KOCHI	May 1977	3.15	15.5	12.5	1.0 ± 0.28	0.2 ± 0.06	19 ± 0.6	4.9 ± 0.15
Pleuronectidae								
Mutsu-bay, AOMORI	Nov. 1977	1.35	7.30	30.2	0.6 ± 0.30	0.6 ± 0.30	7.0 ± 0.39	1.7 ± 0.10
Mugil cephalus								
Ushimado (Oku-gun), OKAYAMA	Nov. 1977	1.01	3.29	19.7	1.8 ± 0.32	5.3 ± 0.96	2.8 ± 0.23	1.4 ± 0.11
Chrysophrys major								
Fukuoka, FUKUOKA	Jul. 1977	3.89	16.8	7.92	1.2 ± 0.30	0.2 ± 0.05	7.8 ± 0.42	2.5 ± 0.14
Sardinops melanosticta								
Hiroshima-bay, HIROSHIMA	Mar. 1978	1.98	20.5	12.4	0.6 ± 0.31	0.2 ± 0.08	1.4 ± 0.27	0.6 ± 0.11
Hexagrammos otakii								
Ajisu (Yoshishiki-gun), YAMAGUCHI	Jan. 1978	3.66	24.1	7.39	1.9 ± 0.54	0.2 ± 0.05	5.8 ± 0.52	1.9 ± 0.17
Arctoscopus japonicus								
off Funagawaminato, AKITA	Jan. 1978	2.63	20.3	8.69	0.7 ± 0.28	0.1 ± 0.05	4.4 ± 0.32	1.9 ± 0.14
Sebastiscus marmoratus								
Hamada, SHIMANE	Jul. 1977	5.65	30.5	6.31	1.6± 0.35	0.09 ± 0.02	5.1 ± 0.43	1.4 ± 0.12
Stolephorus japonicus								
Akune, KAGOSHIMA	Dec. 1977	2.92	17.3	11.5	0.0 ± 0.26	0.0 ± 0.05	8.7 ± 0.48	2.5 ± 0.14
Argyrosomus argentatus								
Nagasaki, NAGASAKI	Jul. 1977	3.93	25.4	7.00	1.7 ± 0.38	0.2 ± 0.03	9.9 ± 0.52	3.2 ± 0.17
Sebastes inermis								
Sohma, FUKUSHIMA	Feb. 1978	4.12	23.2	6.76	0.7 ± 0.46	0.1 ± 0.05	11 ± 0.7	3.7 ± 0.24

Location		Component			^{90}Sr		^{137}Cs	
		Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
Undaria pinnatifida								
Togi (Hakui-gun), ISHIKAWA	Jun. 1977	2.12	4.19	16.8	1.0 ± 0.34	1.0 ± 0.35	1.2 ± 0.29	0.31± 0.076
Sakata, YAMAGATA	Jul. 1977	1.69	4.93	9.63	3.0 ± 0.37	3.6 ± 0.44	0.7 ± 0.19	0.5 ± 0.12
Minamichita (Chita-gun), AICHI	Jan. 1978	3.84	2.13	22.1	1.3 ± 0.44	1.6 ± 0.53	1.5 ± 0.35	0.18± 0.041
Hiroshima, HIROSHIMA	Feb. 1978	3.37	2.36	20.3	1.9 ± 0.54	2.3 ± 0.67	1.6 ± 0.33	0.2 ± 0.05
Shimabara, NAGASAKI	Feb. 1978	1.70	3.25	32.3	1.1 ± 0.21	1.9 ± 0.35	1.3 ± 0.19	0.2 ± 0.03
Turbo cornuts								
Togi (Hakui-gun), ISHIKAWA	Jun. 1977	4.16	6.65	5.80	1.5 ± 0.52	0.6 ± 0.19	2.9 ± 0.45	1.2 ± 0.19
Venerupis phillippinarum								
Minamichita (Chita-gun), AICHI	Jun. 1977	1.81	3.11	16.1	0.3 ± 0.34	0.5 ± 0.61	2.0 ± 0.32	0.7 ± 0.11
Takaki (Kitatakaki-gun), NAGASAKI	Jul. 1977	0.956	4.96	9.91	2.6 ± 1.1	3.3 ± 1.4	1.9 ± 0.85	1.2 ± 0.54
Sargassum fulvellum								
Fukaura, AOMORI	Nov. 1977	3.85	6.19	18.5	6.5 ± 0.54	2.7 ± 0.23	3.6 ± 0.33	0.5 ± 0.05
Pecten yessoensis								
Mutsu-bay, AOMORI	Nov. 1977	1.45	1.20	17.8	0.02± 0.33	0.1 ± 1.9	2.2 ± 0.29	0.8 ± 0.11
Ostrea gigas								
Hiroshima, HIROSHIMA	Feb. 1978	2.19	14.5	14.1	0.0 ± 0.69	0.0 ± 0.21	1.8 ± 0.61	0.6 ± 0.19
Comphina melanaegis								
Sakata, YAMAGATA	Jul. 1977	1.89	4.05	10.5	4.1 ± 1.9	3.9 ± 1.8	5.9 ± 1.7	2.1 ± 0.60

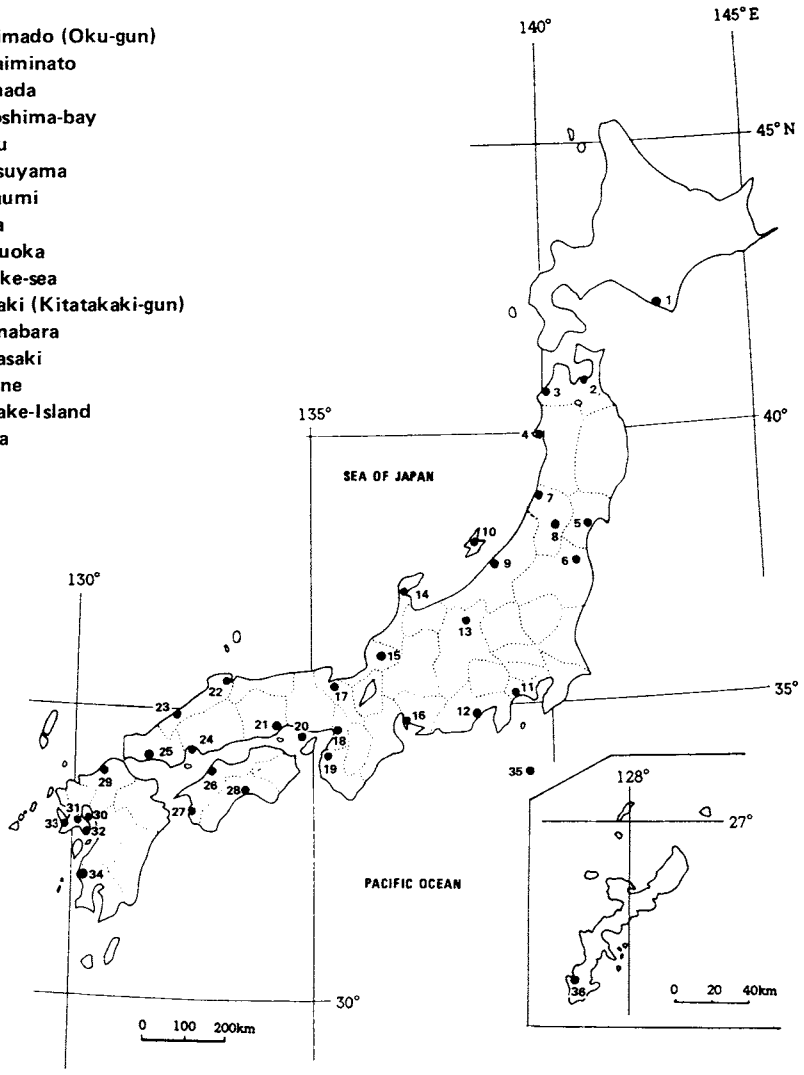
Names of Samples

Scientific name	English name	Japanese name
Oncorhynchus keta	Salmon	Sake
Pleuronectidae	Flatfish	Karei
Trachurus trachurus	Saurel	Aji
Pneumatophorus japonicus	Mackerel	Saba
Arctoscopus japonicus	Hatahata	Hatahata
Chrysophrys majo	Sea bream	Tai
Katsuwonus pelamis	Bonito	Katsuo
Mugil cephalus	Gray mullet	Bora
Hexagrammos otakii	Rock trout	Ainame
Sillago sihame	Sillago	Kisu
Sardinops melanosticta	Sardine	Iwashi
Sebastiscus marmoratus	Scorpion-fish	Kasago
Stolephorus japonicus	Kibinago	Kibinago
Caesio chrysozonus cuvier	Takasago	Takasago

Scientific name	English name	Japanese name
Sebastes inermis	Jacopever	Kurogara
Venerupis phillippinarum	Short-necked clam	Asari
Turbo cornutus	Wreath shell	Sazae
Ostrea gigas	Oyster	Kaki
Pecten yessoensis	Scallop	Hotategai
Sargassum fulvellum	Gulfweed	Hondawara
Undaria pinnatifida	Wakame seaweed	Wakame
Gomphina melanaegis	Kotama shell	Kodamagai
Argyrosomus argentatus	Croaker	Guchi (Ishimochi)
Cololabis saira	Mackerel saury	Sanma

Figure 13. Sampling Locations of Marine Products

1. Urakawa
2. Mutsu-bay
3. Fukaura
4. Funagawaminato
5. Sendai
6. Soma
7. Sakata
8. Yamagata
9. Niigata
10. Ryotsu-bay
11. Odawara
12. Shizuoka
13. Nagano
14. Togi (Hakui-gun)
15. Fukui
16. Minamichita
17. Maizuru-bay
18. Osaka
19. Wakayama
20. Tangashima
21. Ushimado (Oku-gun)
22. Sakaiminato
23. Hamada
24. Hiroshima-bay
25. Ajisu
26. Matsuyama
27. Uwaumi
28. Tosa
29. Fukuoka
30. Ariake-sea
31. Takaki (Kitatakaki-gun)
32. Shimabara
33. Nagasaki
34. Akune
35. Miyake-Island
36. Naha



(12) Strontium-90 and Cesium-137 in Fresh-water Fish

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 13 and the sampling locations are shown in Figure 14.

Table 13: ^{90}Sr and ^{137}Cs in Fresh-water Fish
– April, 1977 to March, 1978 –
(Continued from Table 16, No. 44 of this publication)

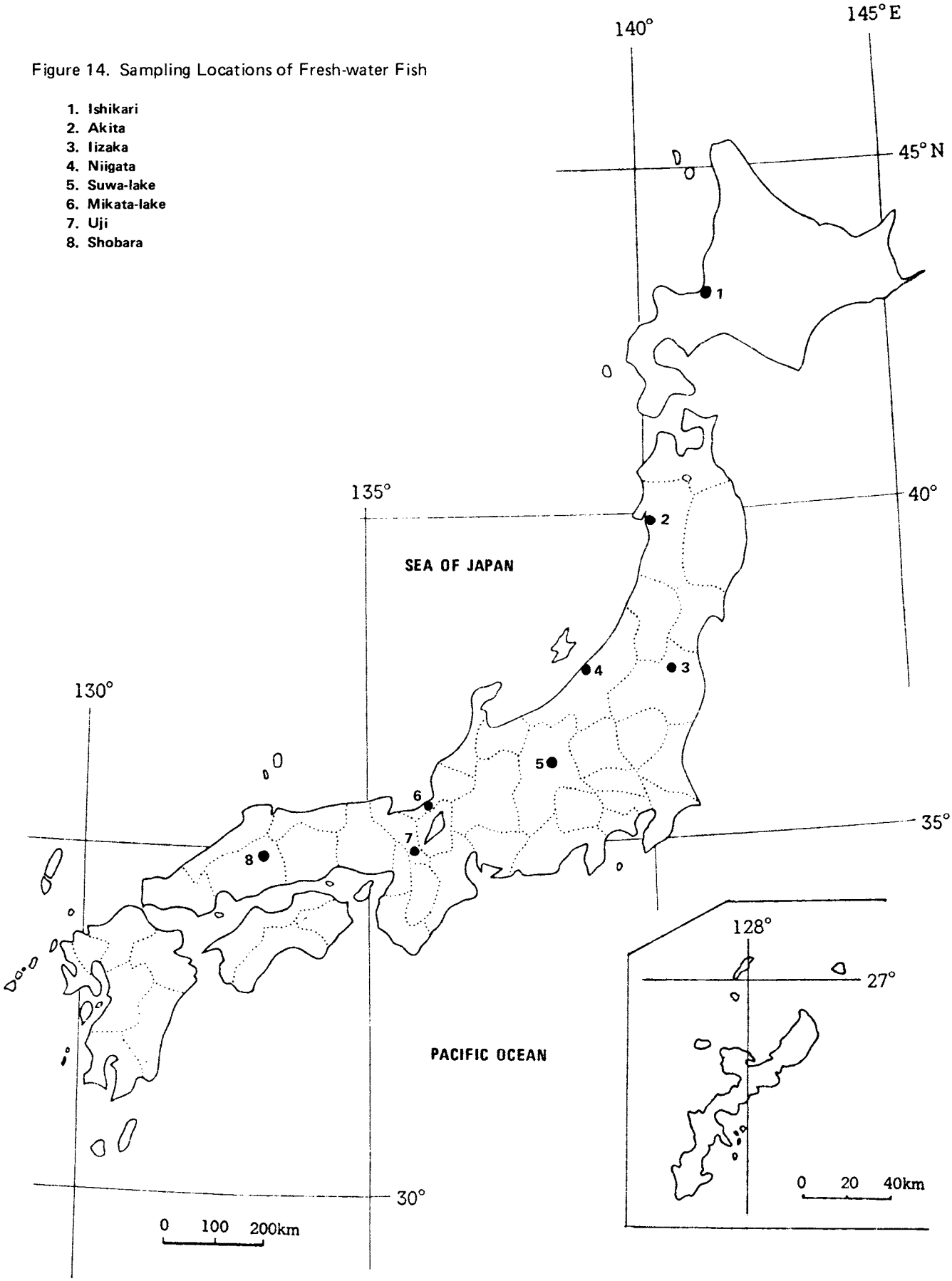
Location	Sampling Date	Ash (%)	Component (% by weight)		^{90}Sr (pCi/k)		^{137}Cs (pCi/ℓ)	
			Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
Cyprinus carpio								
Shobara, HIROSHIMA	Jun. 1977	2.92	19.0	8.26	52 ± 1.2	9.4 ± 0.22	9.0 ± 0.45	3.7 ± 0.19
Akita, AKITA	Jul. 1977	3.32	28.1	6.59	130 ± 2	13 ± 0.2	9.8 ± 0.54	4.2 ± 0.23
Iizaka, FUKUSHIMA	Oct. 1977	2.35	24.5	8.79	57 ± 1.4	9.1 ± 0.22	5.7 ± 0.39	2.6 ± 0.17
Carassius carassius								
Ishikari, HOKKAIDO	Oct. 1977	4.08	20.9	5.42	72 ± 1.6	8.4 ± 0.19	7.2 ± 0.41	3.2 ± 0.18
Mikata (Mikata-gun), FUKUI	Dec. 1977	1.09	4.69	25.2	17 ± 0.44	2.8 ± 0.72	10 ± 0.6	3.1 ± 0.18
Uji, KYOTO	"	4.56	20.1	6.29	34 ± 1.2	3.6 ± 0.13	1.3 ± 0.46	0.4 ± 0.16
Carassius carassius cuvieri								
Niigata, NIIGATA	Nov. 1977	4.47	30.7	6.08	110 ± 2	8.3 ± 0.14	9.4 ± 0.47	3.5 ± 0.17
Suwa-lake, NAGANO	Jan. 1978	2.18	20.8	13.8	5.2± 0.40	1.1 ± 0.09	8.8 ± 0.42	2.9 ± 0.14

Names of Samples

Scientific name	English name	Japanese name
Cyprinus carpio	Carp	Koi
Carassius auratus	–	Funa
Carassius carassius cuvieri	–	Herabuna
Hypomesus olidus	Pond-smelt	Wakasagi

Figure 14. Sampling Locations of Fresh-water Fish

1. Ishikari
2. Akita
3. Iizaka
4. Niigata
5. Suwa-lake
6. Mikata-lake
7. Uji
8. Shobara



(13) Strontium-90 and Cesium-137 in Powdered Milk

(Japan Chemical Analysis Center)
(Prefectural Public Health Laboratories and Institutes)

The results obtained are shown in Table 14.

Table 14: ^{90}Sr and ^{137}Cs in Powdered Milk
– April, 1977 to April 1978 –
(Continued from Table 9, No. 47 of this publication)

Name of producer	Component			^{90}Sr		^{137}Cs	
	Ash (%)	Ca (%)	K (%)	(pCi/kg)	(S.U.)	(pCi/kg)	(C.U.)
May, 1977							
Morinaga	2.45	0.339	0.561	20 ± 0.7	5.8 ± 0.21	170 ± 2	31 ± 0.3
Meiji	3.15	0.493	0.687	16 ± 0.8	3.2 ± 0.16	92 ± 1.4	13 ± 0.2
Yukijirushi	2.48	0.394	0.434	14 ± 0.6	3.5 ± 0.15	73 ± 1.1	17 ± 0.3
Wakodo	2.22	0.297	0.537	5.4± 0.40	1.8 ± 0.14	16 ± 0.5	3.0 ± 0.09
*Morinaga	8.25	1.45	1.86	25 ± 1.2	1.7 ± 0.09	42 ± 1.2	2.2 ± 0.07
*Meiji	8.14	1.28	1.85	74 ± 1.9	5.8 ± 0.15	200 ± 3	11 ± 0.1
October, 1977							
*Meiji	7.85	1.30	1.66	71 ± 2.1	5.5 ± 0.16	210 ± 3	13 ± 0.2
November, 1977							
Morinaga	2.46	0.342	0.554	10 ± 0.7	2.9 ± 0.20	32 ± 0.9	5.8 ± 0.16
Meiji	3.19	0.501	0.673	23 ± 1.3	4.6 ± 0.26	64 ± 1.4	9.6 ± 0.21
Yukijirushi	2.41	0.383	0.482	17 ± 0.8	4.5 ± 0.22	66 ± 1.2	14 ± 0.3
Wakodo	2.14	0.295	0.505	3.7± 0.55	1.3 ± 0.19	10 ± 0.5	2.0 ± 0.10
*Morinaga	8.13	1.34	1.76	40 ± 1.7	3.0 ± 0.13	80 ± 1.8	4.5 ± 0.10
April, 1978							
*Morinaga	2.48	0.330	0.575	16 ± 0.7	4.8 ± 0.22	110 ± 1	19 ± 0.3
Morinaga	8.19	1.29	1.88	33 ± 1.6	2.6 ± 0.12	67 ± 1.7	3.6 ± 0.09
Yukijirushi	2.35	0.374	0.489	16 ± 0.7	4.2 ± 0.19	79 ± 1.2	16 ± 0.3
Meiji	3.12	0.474	0.680	20 ± 0.8	4.2 ± 0.17	110 ± 2	16 ± 0.2
Wakodo	2.34	0.337	0.579	6.1± 0.48	1.8 ± 0.14	17 ± 0.6	2.8 ± 0.10
*Meiji	9.44	1.48	2.16	83 ± 2.9	5.6 ± 0.20	230 ± 3	11 ± 0.2

*Skim Milk

Errata of this publication No. 48

(E) : Error

(R) : Right

Table 1: ^{90}Sr and ^{137}Cs in Rain and Dry Fallout

Location	Duration (Days)	Precipitation (mm)	^{90}Sr (mCi/km^2)	^{137}Cs (mCi/km^2)
April, 1977				
(E) Akita, AKITA	31	132.5	0.058 ± 0.0020	0.089 ± 0.0023
(R) 〃	30	145.0	0.042 ± 0.0016	0.075 ± 0.0021
June, 1977				
(E) Fukui, FUKUI				0.0071±0.0021
(R) 〃				0.071 ± 0.0021
September, 1977				
(E) Nagano, NAGANO	32	26.5	0.012 ± 0.0011	0.020 ± 0.0012
(R) 〃	31	94.5	0.022 ± 0.0013	0.032 ± 0.0015

Table 3: ^{90}Sr and ^{137}Cs in Service Water

Location	Month to be sampled
(Source Water)	
(E) Sapporo, HOKKAIDO	June
(R) 〃	July
(E) Katsushika, TOKYO	July
(R) 〃	June
(Tap Water)	
(E) Kanazawa, ISHIKAWA	July
(R) 〃	June
(E) Dazaifu, FUKUOKA	
(R) Fukuoka, FUKUOKA	

Table 4: ^{90}Sr and ^{137}Cs in Sea Water

Location	Month to be sampled	Cl (%)	^{90}Sr (pCi/ℓ)	^{137}Cs (pCi/ℓ)
(E) off-Niigata-port, NIIGATA	July			0.14 ± 0.011
(R) "	"			0.14 ± 0.010

Table 6: ^{90}Sr and ^{137}Cs in Total Diet

Location	Month to be sampled	Ash	Ca	K	^{90}Sr		^{137}Cs	
		(g/p/d)	(mg/p/d)	(mg/p/d)	(pCi/p/d)	(S.U.)	(pCi/p/d)	(C.U.)
(E) Naha, OKINAWA	Sep.					11 ± 0.80		
(R) "	"					11 ± 0.8		

Table 7: ^{90}Sr and ^{137}Cs in Milk (Report to WHO)

Location	Month to be sampled	Compontnet			^{90}Sr		^{137}Cs	
		Ash (g/ℓ)	Ca (g/ℓ)	K (g/ℓ)	(pCi/ℓ)	(S.U.)	(pCi/ℓ)	(C.U.)
July ~ September, 1977								
(E) Yagumo, SHIMANE	Sep.							
(R) "	Jul.							
October ~ December, 1977								
(E) Yagumo, SHIMANE	Nov.	7.18						
(R) "	"	7.12						
January ~ March, 1977								
(E) Nishikanbara, NIIGATA	Feb.	6.32						
(R) "	"	6.34						
(E) Toyono, OSAKA	Jan.						2.5 ± 0.25	
(R) "	"						7.5 ± 0.25	
(E) Koga, FUKUOKA	Feb.				0.85 ± 0.22	0.79 ± 0.21		
(R) "	"				0.9 ± 0.22	0.8 ± 0.21		

Table 8 : ^{90}Sr and ^{137}Cs in Milk

Location	Month	Component			^{90}Sr		^{137}Cs	
		Ash (g/l)	Ca (g/l)	K (g/l)	(pCi/l)	(S.U.)	(pCi/l)	(C.U.)
(Production)								
(E) Aomori, AOMORI	Jul.							
(R) ,, ,,	Aug.							
(E) Oshimizu, ISHIKAWA	Jun.							
(R) ,, ,,	Aug.							
(Consumption)								
(E) Akita, AKITA	Jun.							
(R) ,, ,,	Aug.							
(E) Niigata, NIIGATA	Aug.	7.48						
(R) ,, ,,	,,	7.47						

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