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(Japan Chemical Analysis Center)

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Environmental and Dietary Materials*

(Japan Chemical Analysis Center)

1. Collection and pretreatment of samples

(1) Rain and dry fallout

Rain and dry fallout was collected monthly on asampling tray, approximately 5000cm^2 in area, which was filled with water to a depth of 1 cm at the beginning of every month.

Strontium and cesium carrier solutions were added after the sample was filtered. Thetray was washed with 5ℓ of distilled water and the washing was combined to the filtrate.

The sample was passed through a cation exchange column (500mℓ of Dowex 50W X8, 50~100 mesh, Na form) at a rate flow of 80mℓ/min.

(2) Airborne dust

Airborne dust was collected by an electrostatic precipitator or a filter air sampler for every three-months at a rate of more than 3000m^3 per month.

The sampling was done 1 to 1.5 meters above the ground.

(3) Service water and freshwater

Service water, 100ℓ each, was collected at the intake of the water-treatment plant and at the tap after water was left running for five minutes. Strontium andcesium carriers were added to the filtered water sample. The subsequent process was the same as that describedin thesection (1). Freshwater was treated inthe sameway as the service water.

(4) Soil

Soil was collected from the location in the spacious and flat area without past surface disturbance caused by duststorms, inflow and out flow due to precipitation, etc.. Any places located under trees in a forest, in astony area or inside of river banks were avoided. Soil was taken from two layers of different depths, 0-5cm and 5-20cm. The soil lumps were crushed by hands and driedin a drying oven regulated 105℃ . The soil was then passed through a 2mm sieve to remove plant roots and pebbles.

(5) Sea water

Sea water was collected at the fixed stations where the effect of terrestrial fresh water from rivers was expected to be negligibly small. A special consideration was also givento weather conditions.

The sampling was carried out when there was no rainfall for the last few days. To prevent contamination, water samples were collected at the bow of a sampling boat just before she stood still by scooping surface water using a polyethylene bucket.

Immediately after the collection, the samples were acidified to a pH lower than 3 by adding concentrated hydrochloric acid in a ratio of 1mℓ to 1 ℓ of sea water, and then stored in 20ℓ polyethylene containers. The sampling equipments as well as containers were thoroughly rinsed with dilute hydrochloric acid and then with distilled water before use. Two hundred milliliters of sea water was also collected at the same stations for the determination of chlorinity.

(6) Sea sediments

Sediment was collected in the same area as that for the sea water sample, taking the following criteria into account:

a. The depth of water exceeds 1m at low tide.
b. No significant sedimental movement is observed in the vicinity of concern.
c. Mud, silt and fine sand are preferable.

A conventional sediment sampling device was used for collecting the top few centimeters of surface sediment. Approximately 4kg of thesample in wet weight was spread on a stainless steel dish after removed of the pebbles, shells and other foreign materials, and ried in a drying oven regulated at 105 ℃.

(7) Total diet

A full one day ordinary diet including three meals, water, tea and otherin-between snacks for five persons was collected as a sample of "total diet".

The sample in a large stainless steel pan was carbonized carefully by direct application of gas flame, and was transfered to a porcelain dish and then ashed at 450℃ in an electric muffle furnace.

(8) Rice

Polished rice was collected in producing districts at the harvest and in consuming areaswhen new crops were first put on sale. The sample was carbonized and ashed in a porcelain dish.

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* Samples were sent to the Center from 46 contracted prefectures.

(9) Milk

Raw milk was collected in producing districts and commercial milk was purchased in consuming districts. Milk in a stainless steel pan or a porcelain dish was evaporated to dryness followed by carbonization and ashing.

(10) Vegetables

Spinach and Japanese radish were selected as the representatives for left vegetables and for nonstarch roots, respectively. After removing soil, the edible part of vegetable samplewas dried and carbonized in a stainless steelpan or a porcelain dish.

(11) Tea

Five hundred grams of manufactured green tea was collected, carbonized and ashed in a stainless steel pan or a porcelain dish.

(12) Fish, shellfish and seaweeds

a. Sea fish and freshwater fish

Fish was rinsed with water and blotted with a filter paper. Only the edible part wasused in case of larger sized fish, and the whole part was used in case of smaller ones. Each sample was weighed and placed in a stainless steel pan or a porcelain dish. After carbonized, the sample was ashed in an electric muffle furnace.

b. Shellfish

Approximately 4kg of shellfish including the shells was collected or purchased. Afterremoving the shells, it was treated in the same way as that for the sea fish.

c. Seaweeds

Edible seaweeds were collected and rinsed with water to remove sand and other adhering matters on the surface. These were removed of excess water, weighed dried and ashed.

Table 1 shows detailes of sample collection.

Table 1 Details of sample collection

Sample	Frequency of sampling	Quantity of sample
=Environmental materials=		
(1) Rain and dry fallout		
1. For domestic program	monthly	
2. For WHO program	monthly	
(2) Airborne dust	quarterly	>3000 m^3/month
(3) Service water and freshwater		
1. Service water (source water)	semiyearly	100 ℓ
2. Service water (tap water)	semiyearly	100 ℓ
3. Freshwater	yearly (fishing season)	100 ℓ
(4) Soil		
1. 0～ 5 cm	yearly	4 kg
2. 5～ 20cm	yearly	4 kg
(5) Sea water	yearly	40 ℓ
(6) Sea sediments	yearly	4 kg
=Dietary materials=		
(7) Total diet	semiyearly	daily amount for 5 persons
(8) Rice		
1. Producing districts	yearly (harvesting season)	5 kg (polished rice)
2. Consuming districts	yaerly (harvesting season)	5 kg (polished rice)
(9) Milk		
1. Producing districts for WHO program	quarterly (February, May, August and November)	3 ℓ
2. Producing districts for domestic program	semiyearly (February and August)	3 ℓ

Sample	Frequency of sampling	Quantity of sample
3. Consuming districts	semiyearly (February and August)	3 ℓ
4. Powdered milk	semiyearly (April and October)	2～ 3 kg
(10) Vegetables		
1. Producing districts	yearly (harvesting season)	4 kg
2. Consuming districts	yearly (harvesting season)	4 kg
(11) Tea	yearly (the first harvesting season)	500g (manufactured tea)
(12) Fish, shellfish and seaweeds		
1. Sea fish	yearly (fishing season)	4 kg
2. Freshwater fish	yearly (fishing season)	4 kg
3. Shellfish	yearly (fishing season)	4 kg
4. Seaweeds	yearly (fishing season)	2～ 3 kg

2. Preparation of samples for analysis

(1) Rain, service water and freshwater

Strontium and cesium were eluted with hydrochloric acid from the cation exchange column. The residue of rain sample on the filter paper was ashed in an electric muffle furnace and the ash was dissolved in hydrochloric acid. The insoluble part was filtered and washed. The filtrate and the washings were combined to the previous eluate and used for radiochemical analysis.

(2) Soil and Sea sediment

Dried soil was crushed to smaller ones than 0.25 mm in size by a crusher. The sieved sample was ashed in an electric muffle furnace regulated at 450 ℃. The sample was then heated with hydrochloric acid, strontium and cesium carrier solutions and the mixture washeated. The insoluble constituent was filtered off and washed with water.

The dried sample was crushed to smaller ones than 0.25mm by a crushing machine. The further preparation of the sample was the same as that described in the section 2-(2).

(3) Rice

The ashed sample was pulverized with a porcelain mortar and passed through a 0.35mm sieve. The sievedsample to which both strontium and cesium carriers were added, was digested with nitric acid by heating. After the sample was heated again with nitric acid to dryness, strontium and cesium were extracted with hydrochloric acid and water. The insoluble constituent was filtered and washed. The filtrate and washings were combined for subsequent radiochemical analysis.

(4) Airborne dust, diet, milk, vegetables, fish and shellfish, seaweeds, tea and others

These ashed samples were treated with thesame procedure as that described in the section 2-(4).

3. Separation of strontium-90 and cesium-137

(1) Strontium-90

Sample solutions, prepared as in the foregoing sections 2-(1) through 2-(4), were neutralized with sodium hydroxide. After sodium carbonate was added, the precipitate of strontium and calcium carbonates was separated. Thesupernatant solution was retainedfor cesium-137 determination. The carbonates weredissolved in hydrochloric acid and strontium and calcium were precipitated as oxalates. The precipitate was dissolved in nitric acid and strontium was separated from calcium by successive fuming nitric acid separation. Iron scavenge was made after addition of ferric iron carrier followed by barium chromate separation after addition of barium carrier to remove radium, its daughters and lead. Strontium was recovered as carbonate, and the precipitate was dried and weighed to determine strontium recovery. The strontium carbonate was dissolved in hydrochloric acid and iron carrier was added. The solution was allowed to stand for two weeks for strontium-90 and yttrium-90 to attain equilibrium. Yttrium-90 was coprecipitated with ferric hydroxide andthe precipitate was filtered off, washed and counted.

(2) Cesium-137

The supernatant separated from the strontium fraction was acidified with hydrochloricacid. While stirring, cesium was adsorbed on the ammonium molybdophosphate added.

After filtered off and washed with hydrochlotric acid the precipitate was dissolved in 2.5N sodium hydroxide solution. The solution was adjusted to pH 8.2 with hydrochloric acid and allowed to cool. Resultant molybdenum hydroxide which separated out in the solution, was filtered off and washed with

water. EDTA was added to the filtrate and washings. Cesium and rubidium were adsorbed on a cation exchange column and cesiumwas separated from rubidium by eluting with hydrochloric acid.

The eluate was evaporated to dryness and was dissolved. The solution was filtered.
Chloroplatinic acid was added to precipitate cesium. The precipitate was filtered onto a tared paper using a demountable filter and washed with water and then ethanol. After drying, the chemical yield of cesium was determined by weighing the precipitate. Cesium-137 radioactivity was measured for this precipitate.

4. Determination of stable strontium, calcium and potassium

A weighed amount of soil or sea sediment was heated in a electric muffle furnace at 450℃ and then treated with hydrochloric acid forextraction.
A weighed aliquot of ashed samples of total diet, vegetables, milk, fish, shellfish or seaweeds was digested with hydrofluoric acid and nitric acid.
The extract was made up to an appropriate volume with dilute hydrochloric acid. The sample solution was analyzed for calcium by titration with standard potassium permanganate solution after separating calcium as oxalate. Atomic absorption spectroscopy was applied when appropriate. Stable strontium andpotassium were determined by atomic absorption andflame emission spectrometry, respectively.

5. Counting

After the radiochemical separation the mounted precipitates were counted for activity using low background beta counters normally for 60 to 90min. Net sample counting rates were corrected for counter efficiency, recovery, self-absorption and decay to obtain the content of strontium-90 and cesium-137 per sample aliquot. From theresults, concentrations of these nuclides in the original samples were calculated.

6. Results

(1)-1 Strontuim-90 and Cesium-137 in Rain and Dry Fallout (for domestic program)
(from Apr. 1994 to Sep. 1994)

-continued from No. 108 of this publication-

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

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
April, 1994				
Sapporo, HOKKAIDOU	32	25.5	0.048 ± 0.013	0.049 ± 0.015
Aomori, AOMORI	28	16.5	0.023 ± 0.015	0.051 ± 0.015
Morioka, IWATE	32	28.9	0.046 ± 0.011	0.046 ± 0.020
Onagawa-machi, MIYAGI	32	20.5	0.036 ± 0.010	0.046 ± 0.018
Yamagata, YAMAGATA	32	12.7	0.036 ± 0.021	0.097 ± 0.018
Ookuma-machi, FUKUSHIMA	32	10.8	0.008 ± 0.017	0.11 ± 0.022
Mito, IBARAKI	32	48.0	0.038 ± 0.019	0.10 ± 0.021
Utsunomiya, TOCHIGI	29	24.2	0.027 ± 0.0087	0.16 ± 0.024
Maebashi, GUNMA	32	12.5	0.002 ± 0.021	0.11 ± 0.018
Urawa, SAITAMA	32	36.1	0.028 ± 0.010	0.097 ± 0.015
Ichihara, CHIBA	32	61.4	0.030 ± 0.016	0.069 ± 0.016
Shinjuku, TOKYO	32	47.8	0.0089 ± 0.0073	0.041 ± 0.016
Yokohama, KANAGAWA	32	90.0	0.065 ± 0.011	0.35 ± 0.031
Kosugi-machi, TOYAMA	32	72.7	0.037 ± 0.015	0.089 ± 0.019
Fukui, FUKUI	32	122.7	0.045 ± 0.039	0.018 ± 0.076
Koufu, YAMANASHI	32	45.0	0.0059 ± 0.0058	0.043 ± 0.017
Gifu, GIFU	32	149.0	0.017 ± 0.028	0.017 ± 0.017
Shizuoka, SHIZUOKA	32	221.0	0.043 ± 0.025	0.015 ± 0.011
Nagoya, AICHI	30	108.5	0.099 ± 0.028	0.084 ± 0.020
Tsu, MIE	32	64.5	0.18 ± 0.018	0.34 ± 0.033
Ootsu, SHIGA	32	132.2	0.027 ± 0.010	0.033 ± 0.016
Kyoto, KYOTO	33	98.0	0.051 ± 0.0089	0.024 ± 0.027
Kobe, HYOUGO	29	108.2	0.024 ± 0.0086	0.044 ± 0.019
Nara, NARA	32	93.4	0.021 ± 0.011	0.041 ± 0.017
Wakayama, WAKAYAMA	36	54.5	0.048 ± 0.018	0.029 ± 0.016
Tottori, TOTTORI	32	66.5	0.095 ± 0.018	0.094 ± 0.018

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Matsue, SHIMANE	32	73.5	0.026 ± 0.012	0.063 ± 0.012
Hiroshima, HIROSHIMA	32	226.2	0.032 ± 0.013	0.048 ± 0.016
Ishii-machi, TOKUSHIMA	34	70.5	0.020 ± 0.0074	0.032 ± 0.015
Matsuyama, EHIME	32	43.5	0.031 ± 0.022	0.022 ± 0.012
Matsuyama, EHIME	32	113.5	0.013 ± 0.0076	0.007 ± 0.014
Dazaifu, FUKUOKA	32	164.0	0.033 ± 0.014	0.027 ± 0.017
Saga, SAGA	32	204.6	0.017 ± 0.011	0.020 ± 0.016
Nagasaki, NAGASAKI	32	221.0	0.017 ± 0.0083	0.019 ± 0.016
Kumamoto, KUMAMOTO	32	191.0	0.027 ± 0.017	0.026 ± 0.018
Ooita, OOITA	32	202.0	0.0096 ± 0.0080	0.020 ± 0.015
Miyazaki, MIYAZAKI	32	380.7	0.038 ± 0.0099	0.041 ± 0.017
Yonagusuku-mura, Okinawa	33	76.0	0.021 ± 0.014	0.008 ± 0.016
May, 1994				
Sapporo, HOKKAIDOU	31	52.5	0.020 ± 0.011	0.057 ± 0.016
Aomori, AOMORI	35	77.5	0.034 ± 0.016	0.087 ± 0.018
Morioka, IWATE	31	126.9	0.000 ± 0.024	0.056 ± 0.033
Onagawa-machi, MIYAGI	31	90.5	0.030 ± 0.0076	0.097 ± 0.022
Yamagata, YAMAGATA	31	58.9	0.046 ± 0.022	0.094 ± 0.018
Ookuma-machi, FUKUSHIMA	31	159.6	0.041 ± 0.019	0.068 ± 0.019
Mito, IBARAKI	31	103.5	0.011 ± 0.020	0.038 ± 0.013
Utsunomiya, TOCHIGI	31	190.7	0.003 ± 0.012	0.035 ± 0.014
Maebashi, GUNMA	31	90.0	0.007 ± 0.020	0.050 ± 0.014
Urawa, SAITAMA	31	95.6	0.018 ± 0.0093	0.045 ± 0.011
Ichihara, CHIBA	31	107.8	0.000 ± 0.019	0.056 ± 0.015
Shinjuku, TOKYO	31	145.8	0.016 ± 0.012	0.017 ± 0.017
Yokohama, KANAGAWA	31	132.3	0.028 ± 0.0086	0.080 ± 0.019
Kosugi-machi, TOYAMA	31	49.6	0.080 ± 0.018	0.056 ± 0.019

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Fukui, FUKUI	31	111.3	0.075 ± 0.059	0.054 ± 0.074
Koufu, YAMANASHI	31	76.5	0.010 ± 0.0062	0.031 ± 0.018
Gifu, GIFU	31	158.0	0.009 ± 0.015	0.027 ± 0.017
Shizuoka, SHIZUOKA	31	259.0	0.062 ± 0.033	0.024 ± 0.012
Nagoya, AICHI	33	96.1	0.027 ± 0.011	0.054 ± 0.015
Tsu, MIE	31	103.5	0.15 ± 0.023	0.16 ± 0.021
Ootsu, SHIGA	31	116.7	0.024 ± 0.015	0.055 ± 0.015
Kyoto, KYOTO	32	90.0	0.031 ± 0.0084	0.069 ± 0.019
Kobe, HYOUGO	34	74.2	0.007 ± 0.011	0.010 ± 0.016
Nara, NARA	31	93.3	0.026 ± 0.014	0.087 ± 0.023
Wakayama, WAKAYAMA	29	71.5	0.033 ± 0.016	0.016 ± 0.011
Tottori, TOTTORI	31	132.2	0.094 ± 0.017	0.10 ± 0.018
Matsue, SHIMANE	31	114.1	0.027 ± 0.014	0.068 ± 0.014
Hiroshima, HIROSHIMA	30	127.5	0.075 ± 0.018	0.039 ± 0.016
Ishii-machi, TOKUSHIMA	31	77.5	0.038 ± 0.0086	0.018 ± 0.014
Matsuyama, EHIME	31	62.0	0.031 ± 0.020	0.042 ± 0.014
Matsuyama, EHIME	31	66.0	0.023 ± 0.0081	0.005 ± 0.013
Dazaifu, FUKUOKA	31	78.1	0.026 ± 0.012	0.000 ± 0.012
Saga, SAGA	31	164.7	0.018 ± 0.0071	0.040 ± 0.018
Nagasaki, NAGASAKI	31	109.5	0.015 ± 0.0083	0.027 ± 0.016
Kumamoto, KUMAMOTO	31	53.6	0.026 ± 0.017	0.026 ± 0.018
Ooita, OOITA	31	65.5	0.0089 ± 0.0085	0.032 ± 0.017
Miyazaki, MIYAZAKI	31	166.0	0.023 ± 0.0087	0.012 ± 0.016
Yonagusuku-mura, Okinawa	30	268.0	0.020 ± 0.0093	0.022 ± 0.019
June, 1994				
Sapporo, HOKKAIDOU	31	7.5	0.026 ± 0.012	0.046 ± 0.015
Aomori, AOMORI	31	48.5	0.018 ± 0.015	0.021 ± 0.013

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Morioka, IWATE	31	73.4	0.0000 ± 0.0078	0.013 ± 0.016
Onagawa-machi, MIYAGI	34	94.5	0.061 ± 0.017	0.023 ± 0.015
Yamagata, YAMAGATA	31	78.7	0.038 ± 0.019	0.002 ± 0.015
Ookuma-machi, FUKUSHIMA	31	82.0	0.037 ± 0.019	0.023 ± 0.015
Mito, IBARAKI	31	84.5	0.000 ± 0.019	0.027 ± 0.012
Utsunomiya, TOCHIGI	31	97.1	0.006 ± 0.012	0.020 ± 0.011
Maebashi, GUNMA	31	95.0	0.0025 ± 0.0090	0.000 ± 0.015
Urawa, SAITAMA	31	106.3	0.0073 ± 0.0087	0.024 ± 0.010
Ichihara, CHIBA	31	135.0	0.005 ± 0.014	0.013 ± 0.012
Shinjuku, TOKYO	31	155.4	0.012 ± 0.0078	0.040 ± 0.017
Yokohama, KANAGAWA	31	121.0	0.035 ± 0.019	0.039 ± 0.014
Kosugi-machi, TOYAMA	31	86.8	0.023 ± 0.021	0.023 ± 0.017
Fukui, FUKUI	31	150.3	0.08 ± 0.11	0.029 ± 0.056
Koufu, YAMANASHI	31	78.5	0.0044 ± 0.0065	0.020 ± 0.017
Gifu, GIFU	31	142.0	0.000 ± 0.015	0.006 ± 0.016
Shizuoka, SHIZUOKA	31	147.5	0.060 ± 0.025	0.000 ± 0.012
Nagoya, AICHI	31	115.5	0.030 ± 0.021	0.039 ± 0.015
Tsu, MIE	31	110.0	0.000 ± 0.010	0.012 ± 0.016
Ootsu, SHIGA	31	149.2	0.022 ± 0.016	0.000 ± 0.016
Kyoto, KYOTO	30	110.5	0.037 ± 0.0080	0.000 ± 0.014
Kobe, HYOUGO	31	57.5	0.041 ± 0.015	0.009 ± 0.014
Nara, NARA	31	168.1	0.000 ± 0.012	0.022 ± 0.016
Wakayama, WAKAYAMA	32	79.5	0.023 ± 0.012	0.017 ± 0.012
Tottori, TOTTORI	31	102.2	0.12 ± 0.020	0.025 ± 0.012
Matsue, SHIMANE	31	138.4	0.025 ± 0.014	0.001 ± 0.010
Hiroshima, HIROSHIMA	31	112.0	0.020 ± 0.013	0.000 ± 0.016
Ishii-machi, TOKUSHIMA	30	58.0	0.031 ± 0.0087	0.000 ± 0.014

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Matsuyama, EHIME	31	71.0	0.001 ± 0.012	0.000 ± 0.016
Matsuyama, EHIME	31	104.5	0.012 ± 0.011	0.006 ± 0.014
Dazaifu, FUKUOKA	31	184.1	0.041 ± 0.014	0.006 ± 0.012
Saga, SAGA	31	203.3	0.0086 ± 0.0059	0.015 ± 0.015
Nagasaki, NAGASAKI	31	185.5	0.017 ± 0.0084	0.011 ± 0.015
Kumamoto, KUMAMOTO	31	218.9	0.007 ± 0.013	0.024 ± 0.015
Ooita, OOITA	31	176.4	0.014 ± 0.0079	0.000 ± 0.013
Miyazaki, MIYAZAKI	31	486.5	0.011 ± 0.0081	0.016 ± 0.017
Yonagusuku-mura, Okinawa	31	146.5	0.0080 ± 0.0082	0.000 ± 0.019
July,1994				
Sapporo, HOKKAIDOU	32	49.5	0.062 ± 0.011	0.087 ± 0.021
Aomori, AOMORI	32	104.5	0.050 ± 0.018	0.005 ± 0.011
Morioka, IWATE	32	46.1	0.0097 ± 0.0064	0.003 ± 0.017
Onagawa-machi, MIYAGI	29	40.5	0.035 ± 0.0078	0.026 ± 0.016
Yamagata, YAMAGATA	32	49.4	0.014 ± 0.017	0.002 ± 0.014
Ookuma-machi, FUKUSHIMA	32	46.1	0.030 ± 0.017	0.005 ± 0.011
Mito, IBARAKI	32	47.5	0.017 ± 0.013	0.000 ± 0.014
Utsunomiya, TOCHIGI	32	84.7	0.006 ± 0.013	0.067 ± 0.016
Maebashi, GUNMA	32	90.0	0.023 ± 0.012	0.029 ± 0.017
Urawa, SAITAMA	32	55.0	0.0077 ± 0.0093	0.0000 ± 0.0087
Ichihara, CHIBA	32	25.8	0.000 ± 0.013	0.017 ± 0.012
Shinjuku, TOKYO	32	183.9	0.019 ± 0.0090	0.021 ± 0.015
Yokohama, KANAGAWA	33	174.0	0.017 ± 0.0086	0.011 ± 0.016
Kosugi-machi, TOYAMA	32	14.2	0.0000 ± 0.0051	0.000 ± 0.015
Fukui, FUKUI	32	65.6	0.000 ± 0.045	0.000 ± 0.081
Koufu, YAMANASHI	32	74.5	0.012 ± 0.0070	0.031 ± 0.019
Gifu, GIFU	32	29.0	0.000 ± 0.014	0.000 ± 0.015

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Shizuoka, SHIZUOKA	32	168.0	0.0058 ± 0.0065	0.039 ± 0.016
Nagoya, AICHI	32	62.7	0.000 ± 0.026	0.026 ± 0.014
Tsu, MIE	32	35.5	0.000 ± 0.010	0.010 ± 0.017
Ootsu, SHIGA	32	74.6	0.019 ± 0.0089	0.006 ± 0.015
Kyoto, KYOTO	32	47.5	0.016 ± 0.0066	0.000 ± 0.013
Kobe, HYOUGO	30	20.2	0.012 ± 0.0072	0.000 ± 0.012
Nara, NARA	32	35.5	0.022 ± 0.012	0.011 ± 0.016
Wakayama, WAKAYAMA	29	18.5	0.036 ± 0.019	0.000 ± 0.011
Tottori, TOTTORI	32	2.0	0.23 ± 0.025	0.040 ± 0.017
Matsue, SHIMANE	32	7.3	0.035 ± 0.013	0.011 ± 0.010
Hiroshima, HIROSHIMA	34	33.0	0.007 ± 0.023	0.002 ± 0.014
Ishii-machi, TOKUSHIMA	33	161.0	0.042 ± 0.011	0.008 ± 0.016
Matsuyama, EHIME	32	54.5	0.008 ± 0.011	0.001 ± 0.014
Matsuyama, EHIME	32	21.5	0.0075 ± 0.0066	0.000 ± 0.014
Dazaifu, FUKUOKA	32	14.9	0.022 ± 0.0078	0.000 ± 0.015
Saga, SAGA	32	22.9	0.011 ± 0.0065	0.000 ± 0.013
Nagasaki, NAGASAKI	32	5.5	0.024 ± 0.0092	0.003 ± 0.015
Kumamoto, KUMAMOTO	32	79.6	0.026 ± 0.014	0.000 ± 0.015
Ooita, OOITA	32	102.9	0.016 ± 0.0076	0.018 ± 0.015
Miyazaki, MIYAZAKI	32	76.7	0.0068 ± 0.0079	0.007 ± 0.015
Yonagusuku-mura, Okinawa	33	127.0	0.016 ± 0.0097	0.000 ± 0.016
August,1994				
Sapporo, HOKKAIDOU	32	112.5	0.10 ± 0.013	0.048 ± 0.015
Aomori, AOMORI	32	137.0	0.036 ± 0.017	0.000 ± 0.016
Morioka, IWATE	32	76.3	0.0000 ± 0.0064	0.000 ± 0.015
Onagawa-machi, MIYAGI	32	62.5	0.027 ± 0.0080	0.016 ± 0.018
Yamagata, YAMAGATA	32	85.2	0.030 ± 0.011	0.029 ± 0.017

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Ookuma-machi, FUKUSHIMA	32	368.4	0.015 ± 0.016	0.007 ± 0.012
Mito, IBARAKI	32	144.5	0.006 ± 0.011	0.017 ± 0.016
Utsunomiya, TOCHIGI	32	148.2	0.0067 ± 0.0079	0.044 ± 0.015
Maebashi, GUNMA	31	135.5	0.016 ± 0.0088	0.033 ± 0.012
Urawa, SAITAMA	32	78.9	0.0041 ± 0.0057	0.026 ± 0.0083
Ichihara, CHIBA	32	124.8	0.000 ± 0.012	0.0000 ± 0.0089
Shinjuku, TOKYO	32	153.1	0.0018 ± 0.0071	0.000 ± 0.012
Yokohama, KANAGAWA	31	290.0	0.029 ± 0.010	0.000 ± 0.016
Kosugi-machi, TOYAMA	32	78.6	0.012 ± 0.0063	0.039 ± 0.016
Fukui, FUKUI	32	13.6	0.05 ± 0.10	0.000 ± 0.053
Koufu, YAMANASHI	32	58.5	0.0000 ± 0.0047	0.012 ± 0.011
Gifu, GIFU	32	74.0	0.007 ± 0.013	0.0000 ± 0.0091
Shizuoka, SHIZUOKA	32	37.0	0.015 ± 0.0075	0.025 ± 0.015
Nagoya, AICHI	32	85.7	0.002 ± 0.013	0.043 ± 0.015
Tsu, MIE	32	77.5	0.000 ± 0.012	0.048 ± 0.014
Ootsu, SHIGA	32	23.4	0.027 ± 0.016	0.003 ± 0.011
Kyoto, KYOTO	33	44.5	0.012 ± 0.0065	0.040 ± 0.016
Kobe, HYOUGO	34	18.8	0.0087 ± 0.0093	0.039 ± 0.018
Nara, NARA	32	95.6	0.0000 ± 0.0093	0.008 ± 0.014
Wakayama, WAKAYAMA	32	5.5	0.049 ± 0.019	0.000 ± 0.011
Tottori, TOTTORI	32	41.8	0.34 ± 0.031	0.047 ± 0.018
Matsue, SHIMANE	32	79.4	0.0092 ± 0.0047	0.0042 ± 0.0062
Hiroshima, HIROSHIMA	30	19.2	0.011 ± 0.011	0.000 ± 0.014
Ishii-machi, TOKUSHIMA	32	57.0	0.097 ± 0.018	0.000 ± 0.014
Matsuyama, EHIME	32	11.5	0.022 ± 0.013	0.054 ± 0.017
Matsuyama, EHIME	32	2.0	0.029 ± 0.0083	0.021 ± 0.015
Dazaifu, FUKUOKA	32	71.6	0.012 ± 0.0073	0.016 ± 0.015

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Saga, SAGA	32	37.8	0.0026 ± 0.0052	0.041 ± 0.017
Nagasaki, NAGASAKI	32	31.0	0.017 ± 0.0090	0.000 ± 0.014
Kumamoto, KUMAMOTO	32	87.2	0.023 ± 0.011	0.022 ± 0.011
Ooita, OOITA	32	62.5	0.0057 ± 0.0069	0.010 ± 0.016
Miyazaki, MIYAZAKI	32	115.6	0.022 ± 0.0081	0.000 ± 0.015
Yonagusuku-mura, Okinawa	31	66.5	0.01 ± 0.010	0.000 ± 0.020
September, 1994				
Sapporo, HOKKAIDOU	30	259.5	0.012 ± 0.0082	0.009 ± 0.011
Aomori, AOMORI	33	115.0	0.000 ± 0.013	0.000 ± 0.015
Morioka, IWATE	33	247.7	0.0000 ± 0.0057	0.020 ± 0.016
Onagawa-machi, MIYAGI	33	392.5	0.0082 ± 0.0080	0.000 ± 0.016
Yamagata, YAMAGATA	33	228.7	0.023 ± 0.0080	0.012 ± 0.010
Ookuma-machi, FUKUSHIMA	33	640.4	0.0044 ± 0.0074	0.000 ± 0.011
Mito, IBARAKI	33	341.5	0.039 ± 0.015	0.025 ± 0.015
Utsunomiya, TOCHIGI	33	331.8	0.000 ± 0.010	0.0000 ± 0.0096
Maebashi, GUNMA	31	305.0	0.012 ± 0.0082	0.017 ± 0.013
Urawa, SAITAMA	33	286.5	0.0020 ± 0.0080	0.024 ± 0.0079
Ichihara, CHIBA	33	353.6	0.021 ± 0.015	0.023 ± 0.018
Shinjuku, TOKYO	33	322.4	0.029 ± 0.023	0.007 ± 0.012
Yokohama, KANAGAWA	31	217.7	0.011 ± 0.012	0.045 ± 0.014
Kosugi-machi, TOYAMA	33	271.3	0.0044 ± 0.0059	0.047 ± 0.017
Fukui, FUKUI	33	232.6	0.013 ± 0.029	0.099 ± 0.082
Koufu, YAMANASHI	33	235.0	0.016 ± 0.0076	0.003 ± 0.012
Gifu, GIFU	33	355.5	0.000 ± 0.011	0.000 ± 0.010
Shizuoka, SHIZUOKA	33	252.5	0.023 ± 0.010	0.061 ± 0.023
Nagoya, AICHI	33	356.0	0.0078 ± 0.0060	0.081 ± 0.020
Tsu, MIE	33	400.5	0.026 ± 0.013	0.038 ± 0.018

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km²)	^{137}Cs (MBq/km²)
Ootsu, SHIGA	33	201.2	0.0038 ± 0.0076	0.018 ± 0.017
Kyoto, KYOTO	29	126.5	0.037 ± 0.0090	0.029 ± 0.016
Kobe, HYOUGO	31	50.2	0.000 ± 0.012	0.013 ± 0.012
Nara, NARA	33	198.8	0.008 ± 0.010	0.028 ± 0.015
Wakayama, WAKAYAMA	33	85.0	0.015 ± 0.017	0.009 ± 0.013
Tottori, TOTTORI	33	296.3	0.10 ± 0.019	0.000 ± 0.015
Matsue, SHIMANE	30	329.3	0.0022 ± 0.0096	0.024 ± 0.011
Hiroshima, HIROSHIMA	31	56.8	0.0096 ± 0.0075	0.0000 ± 0.0092
Ishii-machi, TOKUSHIMA	30	125.5	0.073 ± 0.020	0.000 ± 0.014
Matsuyama, EHIME	30	149.0	0.015 ± 0.0068	0.012 ± 0.016
Matsuyama, EHIME	30	59.5	0.011 ± 0.0076	0.013 ± 0.014
Dazaifu, FUKUOKA	33	155.6	0.012 ± 0.0076	0.000 ± 0.014
Saga, SAGA	33	65.5	0.0028 ± 0.0055	0.008 ± 0.015
Nagasaki, NAGASAKI	33	46.0	0.0000 ± 0.0071	0.021 ± 0.012
Kumamoto, KUMAMOTO	33	6.6	0.0000 ± 0.0059	0.0000 ± 0.0093
Ooita, OOITA	33	129.1	0.016 ± 0.0064	0.006 ± 0.013
Miyazaki, MIYAZAKI	33	83.3	0.0000 ± 0.0061	0.033 ± 0.013

(1)-2 Strontuim-90 and Cesium-137 in Rain and Dry Fallout (for WHO program)
(from Apr. 1994 to Sep. 1994)

-continued from No, 108 of this publication-

Table (1)-2 : Strontium-90 and Cesium-137 in Rain and Dry Fallout

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km^2)	^{137}Cs (MBq/km^2)
April, 1994				
Akita, AKITA	32	41.3	0.051 ± 0.014	0.070 ± 0.015
Chiba, CHIBA	28	48.3	0.0080 ± 0.0073	0.034 ± 0.013
Niigata, NIIGATA	28	20.3	0.042 ± 0.017	0.12 ± 0.019
Kanazawa, ISHIKAWA	29	69.5	0.034 ± 0.0094	0.059 ± 0.018
Nagano, NAGANO	28	12.0	0.024 ± 0.0083	0.043 ± 0.015
Osaka, OSAKA	33	96.1	0.061 ± 0.014	0.055 ± 0.021
Okayama, OKAYAMA	32	67.2	0.0000 ± 0.0084	0.000 ± 0.015
Yamaguchi, YAMAGUCHI	32	231.5	0.033 ± 0.012	0.012 ± 0.012
Kochi, KOCHI	32	293.9	0.090 ± 0.018	0.076 ± 0.020
Kagoshima, KAGOSHIMA	29	406.5	0.012 ± 0.012	0.036 ± 0.018
May, 1994				
Akita, AKITA	31	116.2	0.026 ± 0.012	0.084 ± 0.017
Chiba, CHIBA	35	93.1	0.013 ± 0.0078	0.053 ± 0.014
Niigata, NIIGATA	35	31.5	0.042 ± 0.0088	0.13 ± 0.022
Kanazawa, ISHIKAWA	34	108.0	0.049 ± 0.015	0.098 ± 0.018
Nagano, NAGANO	35	42.6	0.000 ± 0.0097	0.027 ± 0.017
Osaka, OSAKA	31	62.3	0.031 ± 0.015	0.057 ± 0.019
Okayama, OKAYAMA	31	75.7	0.000 ± 0.011	0.028 ± 0.018
Yamaguchi, YAMAGUCHI	31	261.5	0.027 ± 0.012	0.034 ± 0.014
Kochi, KOCHI	31	180.6	0.23 ± 0.026	0.023 ± 0.013
Kagoshima, KAGOSHIMA	34	92.5	0.022 ± 0.0084	0.031 ± 0.021
June, 1994				
Akita, AKITA	31	61.7	0.0044 ± 0.0097	0.035 ± 0.014
Chiba, CHIBA	31	107.8	0.010 ± 0.0070	0.009 ± 0.011
Niigata, NIIGATA	31	50.3	0.027 ± 0.0080	0.029 ± 0.016
Kanazawa, ISHIKAWA	31	108.5	0.14 ± 0.022	0.000 ± 0.016

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km^2)	^{137}Cs (MBq/km^2)
Nagano, NAGANO	31	59.8	0.0044 ± 0.0090	0.030 ± 0.018
Osaka, OSAKA	31	85.9	0.042 ± 0.017	0.020 ± 0.016
Okayama, OKAYAMA	31	86.3	0.006 ± 0.013	0.000 ± 0.014
Yamaguchi, YAMAGUCHI	31	178.0	0.012 ± 0.0087	0.002 ± 0.015
Kochi, KOCHI	31	194.6	0.090 ± 0.018	0.022 ± 0.013
Kagoshima, KAGOSHIMA	31	474.5	0.029 ± 0.0076	0.000 ± 0.017
July, 1994				
Akita, AKITA	32	147.3	0.017 ± 0.0077	0.037 ± 0.016
Chiba, CHIBA	32	28.5	0.0000 ± 0.0063	0.0000 ± 0.0098
Niigata, NIIGATA	32	53.3	0.0000 ± 0.0057	0.013 ± 0.015
Kanazawa, ISHIKAWA	30	78.0	0.022 ± 0.014	0.000 ± 0.012
Nagano, NAGANO	33	20.8	0.015 ± 0.0094	0.008 ± 0.016
Osaka, OSAKA	32	56.2	0.025 ± 0.014	0.006 ± 0.014
Okayama, OKAYAMA	32	61.4	0.003 ± 0.014	0.006 ± 0.010
Yamaguchi, YAMAGUCHI	32	142.0	0.011 ± 0.012	0.005 ± 0.016
Kochi, KOCHI	32	196.2	0.13 ± 0.015	0.000 ± 0.014
Kagoshima, KAGOSHIMA	33	41.5	0.019 ± 0.0065	0.025 ± 0.018
August, 1994				
Akita, AKITA	32	99.3	0.019 ± 0.0090	0.024 ± 0.015
Chiba, CHIBA	32	105.7	0.0000 ± 0.0070	0.004 ± 0.010
Niigata, NIIGATA	32	14.6	0.027 ± 0.014	0.032 ± 0.013
Kanazawa, ISHIKAWA	33	63.0	0.019 ± 0.012	0.000 ± 0.014
Nagano, NAGANO	31	17.7	0.0079 ± 0.0061	0.000 ± 0.015
Osaka, OSAKA	32	59.2	0.12 ± 0.026	0.000 ± 0.016
Okayama, OKAYAMA	32	20.2	0.014 ± 0.014	0.017 ± 0.011
Yamaguchi, YAMAGUCHI	32	6.5	0.033 ± 0.020	0.013 ± 0.014
Kochi, KOCHI	32	118.3	0.13 ± 0.023	0.002 ± 0.016

Location	Duration (days)	Precipitation (mm)	^{90}Sr (MBq/km^2)	^{137}Cs (MBq/km^2)
Kagoshima, KAGOSHIMA	32	88.0	0.054 ± 0.010	0.060 ± 0.025
September, 1994				
Akita, AKITA	33	265.8	0.049 ± 0.019	0.006 ± 0.015
Chiba, CHIBA	30	382.0	0.012 ± 0.0077	0.009 ± 0.010
Niigata, NIIGATA	33	253.7	0.034 ± 0.014	0.023 ± 0.012
Kanazawa, ISHIKAWA	32	182.5	0.040 ± 0.015	0.001 ± 0.010
Nagano, NAGANO	33	124.9	0.012 ± 0.0066	0.010 ± 0.015
Osaka, OSAKA	33	198.6	0.077 ± 0.029	0.032 ± 0.014
Okayama, OKAYAMA	33	114.5	0.015 ± 0.068	0.000 ± 0.016
Yamaguchi, YAMAGUCHI	33	93.0	0.013 ± 0.0076	0.006 ± 0.011
Kochi, KOCHI	33	174.2	0.16 ± 0.015	0.020 ± 0.012
Kagoshima, KAGOSHIMA	30	24.0	0.071 ± 0.012	0.037 ± 0.018

(2) Strontium-90 and Cesium-137 in Airborne Dust
(from Apr. 1994 to Sep. 1994)

-continued from No. 108 of this publication-

Table (2) :Strontium-90 and Cesium-137 in Airborne Dust

Location	Sampling period	Absorption volume (m^2)	^{90}Sr (mBq/m^3)	^{137}Cs (mBq/m^3)
April~June, 1994				
Akita, AKITA	4~ 6	10,800.0	0.00048 ± 0.00043	0.00083 ± 0.00053
Yamagata, YAMAGATA	4~ 6	12,960.0	0.00096 ± 0.00045	0.0018 ± 0.00049
Mito, IBARAKI	4~ 6	9,932.6	0.00000 ± 0.00059	0.00073 ± 0.00058
Utsunomiya, TOCHIGI	4~ 6	15,327.0	0.00009 ± 0.00043	0.00044 ± 0.00031
Maebashi, GUNMA	4~ 6	13,013.0	0.00005 ± 0.00037	0.00060 ± 0.00043
Ichihara, CHIBA	4~ 6	12,960.0	0.00000 ± 0.00046	0.00000 ± 0.00030
Yokohama, KANAGAWA	4~ 6	10,547.0	0.00099 ± 0.00059	0.00090 ± 0.00057
Niigata, NIIGATA	4~ 6	10,348.0	0.00064 ± 0.00087	0.00050 ± 0.00056
Kosugi-machi, TOYAMA	4~ 6	18,710.0	0.00075 ± 0.00052	0.00016 ± 0.00031
Fukui, FUKUI	4~ 6	12,944.3	0.00094 ± 0.00044	0.0016 ± 0.00050
Koufu, YAMANASHI	4~ 6	14,513.0	0.00069 ± 0.00027	0.00062 ± 0.00042
Nagano, NAGANO	4~ 6	11,712.0	0.00030 ± 0.00047	0.00066 ± 0.00050
Gifu, GIFU	4~ 6	12,121.0	0.00000 ± 0.00055	0.00071 ± 0.00048
Hamaoka-machi, SHIZUOKA	4~ 6	12,219.0	0.00000 ± 0.00023	0.00021 ± 0.00046
Nagoya, AICHI	4~ 6	10,406.7	0.00000 ± 0.00076	0.00055 ± 0.00062
Tsu, MIE	4~ 6	14,184.0	0.00000 ± 0.00037	0.00000 ± 0.00026
Ootsu, SHIGA	4~ 6	10,560.0	0.00022 ± 0.00070	0.00059 ± 0.00051
Kyoto, KYOTO	4~ 6	10,202.0	0.00026 ± 0.00061	0.00000 ± 0.00049
Osaka, OSAKA	4~ 6	16,296.0	0.0011 ± 0.00039	0.00073 ± 0.00036
Kobe, HYOUGO	4~ 6	10,299.0	0.00021 ± 0.00052	0.00000 ± 0.00055
Nara, NARA	4~ 6	11,527.9	0.00045 ± 0.00051	0.00037 ± 0.00037
Tottori, TOTTORI	4~ 6	13,451.0	0.00029 ± 0.00068	0.00044 ± 0.00042
Okayama, OKAYAMA	4~ 6	12,974.0	0.00069 ± 0.00048	0.00015 ± 0.00026
Hiroshima, HIROSHIMA	4~ 6	10,763.0	0.0017 ± 0.00060	0.00027 ± 0.00050

Location	Sampling period	Absorption volume (m^2)	^{90}Sr (mBq/m^3)		^{137}Cs (mBq/m^3)	
Yamaguchi, YAMAGUCHI	4～ 6	19,205.0	0.0016	± 0.00057	0.0013	± 0.00037
Tokushima, TOKUSHIMA	4～ 6	10,080.0	0.00000	± 0.00086	0.00026	± 0.00041
Takamatsu, KAGAWA	4～ 6	15,512.0	0.00005	± 0.00033	0.00000	± 0.00032
Saga, SAGA	4～ 6	10,438.8	0.00039	± 0.00091	0.00000	± 0.00052
Nagasaki, NAGASAKI	4～ 6	10,165.0	0.00000	± 0.00090	0.00023	± 0.00046
Kumamoto, KUMAMOTO	4～ 6	12,575.0	0.00063	± 0.00050	0.00065	± 0.00038
Ooita, OOITA	4～ 6	10,389.0	0.00043	± 0.00092	0.00000	± 0.00035
Miyazaki, MIYAZAKI	4～ 6	15,697.0	0.0011	± 0.00043	0.0012	± 0.00034
May~June, 1994						
Morioka, IWATE	5～ 6	10,431.0	0.00008	± 0.00029	0.00060	± 0.00059
Ookuma-machi, FUKUSHIMA	5～ 6	10,006.5	0.00000	± 0.00061	0.00082	± 0.00060
Wakayama, WAKAYAMA	5～ 6	10,440.0	0.00000	± 0.00094	0.00033	± 0.00042
July~September, 1994						
Morioka, IWATE	7～ 9	15,110.0	0.00028	± 0.00022	0.00000	± 0.00034
Akita, AKITA	7～ 9	10,800.0	0.00000	± 0.00049	0.00011	± 0.00034
Yamagata, YAMAGATA	7～ 9	12,960.0	0.00000	± 0.00043	0.00000	± 0.00031
Ookuma-machi, FUKUSHIMA	7～ 9	10,586.8	0.00000	± 0.00031	0.00000	± 0.00030
Mito, IBARAKI	7～ 9	9,722.3	0.00000	± 0.00054	0.00025	± 0.00044
Utsunomiya, TOCHIGI	7～ 9	15,622.0	0.00000	± 0.00032	0.00000	± 0.00031
Maebashi, GUNMA	7～ 9	13,105.0	0.00060	± 0.00071	0.00055	± 0.00034
Ichihara, CHIBA	7～ 9	12,960.0	0.00000	± 0.00045	0.00015	± 0.00039
Yokohama, KANAGAWA	7～ 9	10,048.0	0.00000	± 0.00053	0.00035	± 0.00040
Niigata, NIIGATA	7～ 9	10,263.0	0.00059	± 0.00094	0.00016	± 0.00055
Kosugi-machi, TOYAMA	7～ 9	18,569.0	0.00003	± 0.00018	0.00000	± 0.00022
Fukui, FUKUI	7～ 9	13,452.8	0.00032	± 0.00047	0.00061	± 0.00031

Location	Sampling period	Absorption volume (m^2)	^{90}Sr (mBq/m^3)		^{137}Cs (mBq/m^3)	
Koufu, YAMANASHI	7～ 9	14,661.0	0.00008	± 0.00026	0.00037	± 0.00030
Nagano, NAGANO	7～ 9	11,915.0	0.00034	± 0.00034	0.00003	± 0.00031
Gifu, GIFU	7～ 9	10,400.0	0.00000	± 0.00021	0.00000	± 0.00047
Hamaoka-machi, SHIZUOKA	7～ 9	10,711.0	0.00007	± 0.00028	0.00076	± 0.00035
Nagoya, AICHI	7～ 9	10,642.0	0.00055	± 0.00062	0.00047	± 0.00037
Tsu, MIE	7～ 9	14,244.0	0.00043	± 0.00021	0.00043	± 0.00046
Ootsu, SHIGA	7～ 9	12,540.0	0.00011	± 0.00050	0.00020	± 0.00042
Kyoto, KYOTO	7～ 9	10,349.0	0.00000	± 0.00051	0.00030	± 0.00053
Osaka, OSAKA	7～ 9	16,759.0	0.00027	± 0.00039	0.00000	± 0.00020
Kobe, HYOUGO	7～ 9	10,405.0	0.00026	± 0.00059	0.00000	± 0.00046
Nara, NARA	7～ 9	10,811.4	0.00000	± 0.00080	0.00039	± 0.00036
Wakayama, WAKAYAMA	7～ 9	10,368.0	0.0011	± 0.00038	0.00000	± 0.00041
Tottori, TOTTORI	7～ 9	13,449.0	0.00000	± 0.00040	0.00029	± 0.00041
Okayama, OKAYAMA	7～ 9	13,082.0	0.00030	± 0.00048	0.00006	± 0.00041
Hiroshima, HIROSHIMA	7～ 9	11,178.0	0.00011	± 0.00050	0.00000	± 0.00048
Yamaguchi, YAMAGUCHI	7～ 9	20,752.0	0.00000	± 0.00023	0.00022	± 0.00027
Tokushima, TOKUSHIMA	7～ 9	10,080.0	0.00000	± 0.00054	0.00034	± 0.00057
Takamatsu, KAGAWA	7～ 9	15,521.0	0.00000	± 0.00037	0.00013	± 0.00035
Saga, SAGA	7～ 9	9,883.3	0.00026	± 0.00061	0.00000	± 0.00053
Nagasaki, NAGASAKI	7～ 9	10,294.0	0.00000	± 0.00091	0.00000	± 0.00035
Kumamoto, KUMAMOTO	7～ 9	11,318.0	0.00000	± 0.00048	0.00011	± 0.00048
Ooita, OOITA	7～ 9	10,414.0	0.00032	± 0.00033	0.00000	± 0.00030
Miyazaki, MIYAZAKI	7～ 9	13,846.0	0.00000	± 0.00043	0.00009	± 0.00030

(3) Strontium-90 and cesium-137 in Service Water
(from Apr. 1994 to Sep. 1994)

-continued from No. 108 of this publication-

Table (3) :Strontium-90 and cesium-137 in Service Water

Location	pH	^{90}Sr (mBq/ ℓ)	^{137}Cs (mBq/ ℓ)
(Source Water)			
June, 1994			
Urawa, SAITAMA	7.6	0.000 ± 0.067	0.12 ± 0.085
Kisarazu, CHIBA	7.60	2.0 ± 0.18	0.000 ± 0.053
Katsushika, TOKYO	7.3	1.8 ± 0.13	0.18 ± 0.074
Tsukui-machi, KANAGAWA	8.3	0.52 ± 0.061	0.000 ± 0.058
Nagano, NAGANO	7.02	1.2 ± 0.16	0.16 ± 0.073
Inuyama, AICHI	7.1	2.4 ± 0.22	0.000 ± 0.062
Moriguchi, OSAKA	7.0	3.8 ± 0.25	0.23 ± 0.079
Fukuoka, FUKUOKA	9.8	1.8 ± 0.17	0.000 ± 0.075
July, 1994			
Sapporo, HOKKAIDOU	7.0	1.5 ± 0.16	0.20 ± 0.090
August, 1994			
Kyoto, KYOTO	7.84	3.4 ± 0.15	0.17 ± 0.072
(Tap Water)			
May, 1994			
Yamagata, YAMAGATA	7.2	1.4 ± 0.19	0.059 ± 0.066
Nagano, NAGANO	6.74	1.0 ± 0.25	0.083 ± 0.069
Hiroshima, HIROSHIMA	6.85	2.1 ± 0.12	0.11 ± 0.068
June, 1994			
Wakkanai, HOKKAIDOU	6.7	1.6 ± 0.16	0.034 ± 0.085
Aomori, AOMORI	7.2	1.5 ± 0.15	0.22 ± 0.092
Morioka, IWATE	7.5	1.1 ± 0.21	0.016 ± 0.053
Fukushima, FUKUSHIMA	7.00	2.6 ± 0.21	0.000 ± 0.052
Mito, IBARAKI	7.8	1.7 ± 0.24	0.15 ± 0.073
Utsunomiya, TOCHIGI	7.3	0.79 ± 0.14	0.19 ± 0.067

Location	pH	^{90}Sr (mBq/ ℓ)		^{137}Cs (mBq/ ℓ)	
Maebashi, GUNMA	7.0	1.6	± 0.17	0.36	± 0.074
Urawa, SAITAMA	7.0	1.9	± 0.19	0.15	± 0.087
Ichihara, CHIBA	7.37	2.2	± 0.20	0.027	± 0.052
Katsushika, TOKYO	7.3	1.6	± 0.12	0.17	± 0.076
Yokohama, KANAGAWA	7.2	0.75	± 0.074	0.047	± 0.054
Niigata, NIIGATA	7.59	2.8	± 0.16	0.22	± 0.063
Kosugi-machi, TOYAMA	6.8	1.4	± 0.15	0.13	± 0.077
Kanazawa, ISHIKAWA	6.35	2.8	± 0.13	0.19	± 0.066
Fukui, FUKUI	6.53	0.59	± 0.11	0.044	± 0.066
Koufu, YAMANASHI	6.5	0.58	± 0.069	0.032	± 0.057
Gifu, GIFU	6.84	1.3	± 0.19	0.012	± 0.061
Shizuoka, SHIZUOKA	7.34	0.74	± 0.13	0.011	± 0.042
Nagoya, AICHI	6.6	2.9	± 0.39	0.41	± 0.10
Tsu, MIE	7.1	2.8	± 0.20	0.074	± 0.076
Ootsu, SHIGA	6.6	3.7	± 0.28	0.044	± 0.062
Osaka, OSAKA	7.3	3.4	± 0.26	0.089	± 0.069
Kobe, HYOUGO	6.82	1.9	± 0.29	0.000	± 0.057
Nara, NARA	7.4	2.7	± 0.21	0.22	± 0.089
Tottori, TOTTORI	7.4	2.4	± 0.20	0.000	± 0.076
Matsue, SHIMANE	—	3.1	± 0.24	0.000	± 0.042
Okayama, OKAYAMA	6.9	2.1	± 0.18	0.000	± 0.067
Ube, YAMAGUCHI	7.8	2.4	± 0.37	0.22	± 0.11
Tokushima, TOKUSHIMA	7.0	2.1	± 0.25	0.000	± 0.046
Takamatsu, KAGAWA	7.65	2.4	± 0.31	0.000	± 0.065
Matsuyama, EHIME	7.7	1.6	± 0.16	0.087	± 0.057
Kochi, KOCHI	7.5	1.9	± 0.17	0.000	± 0.076

Location	pH	^{90}Sr (mBq/ ℓ)		^{137}Cs (mBq/ ℓ)	
Fukuoka, FUKUOKA	7.2	3.0	± 0.21	0.052	± 0.079
Saga, SAGA	6.76	1.6	± 0.17	0.069	± 0.073
Nagasaki, NAGASAKI	7.3	1.4	± 0.17	0.000	± 0.053
Kumamoto, KUMAMOTO	7.26	0.18	± 0.14	0.090	± 0.058
Ooita, OOITA	7.3	0.94	± 0.12	0.047	± 0.078
Miyazaki, MIYAZAKI	6.95	0.99	± 0.13	0.21	± 0.084
Kagoshima, KAGOSHIMA	7.4	0.72	± 0.13	0.39	± 0.083
July, 1994					
Sendai, MIYAGI	—	1.6	± 0.11	0.076	± 0.063
Akita, AKITA	6.3	3.2	± 0.26	0.079	± 0.076
August, 1994					
Kyoto, KYOTO	7.75	3.8	± 0.17	0.13	± 0.070
Shinguu, WAKAYAMA	6.8	1.1	± 0.08	0.11	± 0.052
September, 1994					
Naha, Okinawa	7.65	3.9	± 0.16	0.027	± 0.057

(4) Strontium-90 and cesium-137 in Freshwater
(from Apr. 1994 to Sep. 1994)

-continued from No. 108 of this publication-

Table (4) :Strontium-90 and cesium-137 in Freshwater

Location	pH	^{90}Sr (mBq/ ℓ)		^{137}Cs (mBq/ ℓ)	
(FreshWater)					
May, 1994					
Kasumigaura-lake, IBARAKI	9.3	2.6	± 0.13	0.34	± 0.086
July, 1994					
Ishikari-machi, HOKKAIDOU	6.7	2.5	± 0.18	0.49	± 0.10
August, 1994					
Akita, AKITA	5.92	4.0	± 0.24	0.50	± 0.086
September, 1994					
Tsuruga, FUKUI	7.86	2.9	± 0.14	3.0	± 0.19

(5) Strontium-90 and Cesium-137 in Soil
(from Apr. 1994 to Sep. 1994)
-continued from No. 108 of this publication-

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

Location	Sampling Depth (cm)	^{90}Sr (Bq/kg) (dried Soil)	^{90}Sr (MBq/km²)	^{137}Cs (Bq/kg) (dried Soil)	^{137}Cs (MBq/km²)
May, 1994					
Tokai-mura, IBARAKI	0～ 5	8.4 ± 0.33	360 ± 14	60 ± 0.8	2500 ± 40
	5～20	12 ± 0.4	1400 ± 40	10 ± 0.4	1300 ± 40
Akabane-machi, AICHI	0～ 5	0.62 ± 0.068	32 ± 3.5	5.7 ± 0.26	290 ± 13
	5～20	0.56 ± 0.065	86 ± 10	2.8 ± 0.19	430 ± 29
June, 1994					
Fukushima, FUKUSHIMA	0～ 5	11 ± 0.4	190 ± 6	69 ± 0.9	1200 ± 20
	5～20	8.1 ± 0.30	510 ± 19	26 ± 0.6	1700 ± 40
Katsushika, TOKYO	0～ 5	0.82 ± 0.12	45 ± 6.7	1.1 ± 0.14	61 ± 7.5
	5～20	0.47 ± 0.096	65 ± 13	0.97 ± 0.13	140 ± 19
July, 1994					
Aomori, AOMORI	0～ 5	1.6 ± 0.12	55 ± 3.9	5.6 ± 0.26	190 ± 9
	5～20	1.7 ± 0.10	180 ± 11	0.73 ± 0.10	79 ± 11
Mutsu, AOMORI	0～ 5	5.5 ± 0.18	220 ± 7	26 ± 0.6	1100 ± 20
	5～20	3.5 ± 0.15	340 ± 15	2.0 ± 0.16	200 ± 16
Yamagata, YAMAGATA	0～ 5	2.3 ± 0.17	130 ± 10	14 ± 0.4	780 ± 23
	5～20	1.5 ± 0.15	120 ± 12	2.6 ± 0.18	220 ± 15
Imaichi, TOCHIGI	0～ 5	23 ± 0.4	510 ± 8	39 ± 0.7	870 ± 15
	5～20	7.1 ± 0.21	430 ± 13	10 ± 0.4	630 ± 21
Urawa, SAITAMA	0～ 5	2.1 ± 0.19	53 ± 4.8	10 ± 0.4	260 ± 9
	5～20	0.93 ± 0.14	87 ± 14	0.93 ± 0.13	87 ± 12
Ichihara, CHIBA	0～ 5	0.084 ± 0.042	4.8 ± 2.4	1.4 ± 0.14	83 ± 8.0
	5～20	0.089 ± 0.050	16 ± 8.9	0.72 ± 0.10	130 ± 18
Kashiwazaki, NIIGATA	0～ 5	0.78 ± 0.13	59 ± 10	12 ± 0.4	950 ± 30
	5～20	0.70 ± 0.11	120 ± 19	8.5 ± 0.33	1400 ± 50
Kosugi-machi, TOYAMA	0～ 5	0.49 ± 0.12	44 ± 11	1.3 ± 0.13	120 ± 12
	5～20	0.74 ± 0.13	140 ± 25	1.7 ± 0.15	340 ± 29

Location	Sampling Depth (cm)	^{90}Sr (Bq/kg) (dried Soil)		^{90}Sr (MBq/km²)		^{137}Cs (Bq/kg) (dried Soil)		^{137}Cs (MBq/km²)	
Kanazawa, ISHIKAWA	0～ 5	12	± 0.4	540	± 17	39	± 0.7	1800	± 30
	5～20	9.4	± 0.34	1700	± 60	26	± 0.6	4800	± 100
Fukui, FUKUI	0～ 5	0.26	± 0.098	20	± 7.5	14	± 0.4	1100	± 30
	5～20	0.81	± 0.13	200	± 31	6.1	± 0.29	1500	± 70
Nagano, NAGANO	0～ 5	3.0	± 0.13	87	± 3.9	23	± 0.5	670	± 15
	5～20	2.6	± 0.13	180	± 9	9.8	± 0.34	680	± 24
Gifu, GIFU	0～ 5	0.64	± 0.067	29	± 3.0	10	± 0.3	460	± 15
	5～20	0.88	± 0.077	120	± 11	10	± 0.3	1400	± 50
Gotenba, SHIZUOKA	0～ 5	1.6	± 0.10	35	± 2.2	10	± 0.4	230	± 8
	5～20	1.4	± 0.09	140	± 9	2.9	± 0.20	290	± 20
Tsu, MIE	0～ 5	0.30	± 0.11	22	± 7.4	1.2	± 0.14	83	± 9.9
	5～20	0.72	± 0.13	110	± 20	1.6	± 0.16	260	± 25
Osaka, OSAKA	0～ 5	0.35	± 0.098	22	± 6.2	3.7	± 0.21	230	± 13
	5～20	1.1	± 0.13	190	± 23	3.7	± 0.21	670	± 38
Kasai, HYOUGO	0～ 5	1.9	± 0.16	78	± 6.5	35	± 0.6	1400	± 30
	5～20	0.53	± 0.11	61	± 13	7.9	± 0.30	910	± 35
Kashihara, NARA	0～ 5	1.3	± 0.14	97	± 11	4.6	± 0.23	350	± 18
	5～20	1.1	± 0.14	200	± 26	6.6	± 0.28	1200	± 50
Kokufu-machi, TOTTORI	0～ 5	0.16	± 0.11	10	± 7.0	1.7	± 0.16	110	± 10
	5～20	0.40	± 0.12	51	± 15	1.3	± 0.15	170	± 19
Oota, SHIMANE	0～ 5	16	± 0.4	480	± 13	37	± 0.7	1100	± 20
	5～20	5.5	± 0.27	480	± 24	19	± 0.5	1600	± 40
Asahi-machi, OKAYAMA	0～ 5	0.39	± 0.12	23	± 7.2	0.38	± 0.11	23	± 6.4
	5～20	0.22	± 0.15	30	± 20	0.34	± 0.10	47	± 14
Kamiita-machi, TOKUSHIMA	0～ 5	0.57	± 0.11	41	± 7.8	3.0	± 0.19	210	± 14
	5～20	0.67	± 0.12	140	± 24	3.6	± 0.21	740	± 43
Sakaide, KAGAWA	0～ 5	3.4	± 0.20	110	± 6	36	± 0.6	1100	± 20

Location	Sampling Depth (cm)	^{90}Sr (Bq/kg) (dried Soil)	^{90}Sr (MBq/km²)	^{137}Cs (Bq/kg) (dried Soil)	^{137}Cs (MBq/km²)
	5～20	4.1 ± 0.22	270 ± 15	2.1 ± 0.16	140 ± 11
Matsuyama, EHIME	0～ 5	0.74 ± 0.069	30 ± 2.8	24 ± 0.5	990 ± 22
	5～20	0.34 ± 0.050	29 ± 4.2	5.7 ± 0.27	490 ± 23
Kochi, KOCHI	0～ 5	5.2 ± 0.40	280 ± 22	23 ± 0.5	1300 ± 30
	5～20	5.3 ± 0.18	960 ± 33	12 ± 0.4	2100 ± 70
Fukuoka, FUKUOKA	0～ 5	5.2 ± 0.17	300 ± 10	4.6 ± 0.24	260 ± 13
	5～20	2.6 ± 0.12	380 ± 18	0.92 ± 0.11	130 ± 16
Saga, SAGA	0～ 5	0.41 ± 0.11	12 ± 3.2	1.5 ± 0.15	44 ± 4.3
	5～20	0.77 ± 0.13	150 ± 27	2.6 ± 0.19	520 ± 38
Obama-machi, NAGASAKI	0～ 5	3.1 ± 0.20	110 ± 7	35 ± 0.6	1200 ± 20
	5～20	5.8 ± 0.26	610 ± 28	8.1 ± 0.31	850 ± 33
Kujuu-machi, OOITA	0～ 5	3.2 ± 0.22	52 ± 3.6	93 ± 1.0	1500 ± 20
	5～20	2.7 ± 0.19	130 ± 9	19 ± 0.5	870 ± 22
Sadohara-machi, MIYAZAKI	0～ 5	1.2 ± 0.14	72 ± 8.7	7.4 ± 0.30	450 ± 18
	5～20	1.0 ± 0.12	170 ± 20	6.9 ± 0.29	1200 ± 50
Kaimon-machi, KAGOSHIMA	0～ 5	0.45 ± 0.055	23 ± 2.9	1.4 ± 0.14	71 ± 7.6
	5～20	0.44 ± 0.054	61 ± 7.5	1.6 ± 0.15	220 ± 21
August, 1994					
Sapporo, HOKKAIDOU	0～ 5	9.5 ± 0.32	340 ± 11	27 ± 0.6	950 ± 20
	5～20	7.1 ± 0.27	1100 ± 40	10 ± 0.3	1500 ± 50
Takizawa-mura, IWATE	0～ 5	11 ± 0.4	260 ± 9	76 ± 0.9	1800 ± 20
	5～20	10 ± 0.4	1000 ± 40	7.2 ± 0.29	720 ± 30
Maebashi, GUNMA	0～ 5	1.7 ± 0.16	72 ± 6.9	3.4 ± 0.20	150 ± 9
	5～20	1.1 ± 0.13	190 ± 23	1.1 ± 0.13	200 ± 23
Yokohama, KANAGAWA	0～ 5	9.0 ± 0.35	250 ± 10	24 ± 0.5	670 ± 15
	5～20	6.2 ± 0.30	700 ± 34	11 ± 0.4	1200 ± 40
Takane-machi, YAMANASHI	0～ 5	8.2 ± 0.32	180 ± 7	35 ± 0.7	770 ± 14

Location	Sampling Depth (cm)	^{90}Sr (Bq/kg) (dried Soil)	^{90}Sr (MBq/km²)	^{137}Cs (Bq/kg) (dried Soil)	^{137}Cs (MBq/km²)
	5～20	8.0 ± 0.38	720 ± 34	28 ± 0.6	2500 ± 50
Yasu-machi, FUKUOKA	0～ 5	0.053 ± 0.038	2.7 ± 1.9	0.23 ± 0.079	11 ± 4.0
	5～20	0.090 ± 0.041	15 ± 6.7	0.37 ± 0.085	62 ± 14
Kyoto, KYOTO	0～ 5	1.5 ± 0.10	47 ± 3.1	4.5 ± 0.24	140 ± 8
	5～20	0.96 ± 0.081	79 ± 6.6	6.9 ± 0.29	570 ± 24
Shinguu, WAKAYAMA	0～ 5	0.18 ± 0.11	13 ± 7.6	3.2 ± 0.21	230 ± 15
	5～20	0.10 ± 0.10	10 ± 10	1.3 ± 0.14	130 ± 15
Hiroshima, HIROSHIMA	0～ 5	0.22 ± 0.10	12 ± 5.8	0.88 ± 0.11	49 ± 6.2
	5～20	0.89 ± 0.080	190 ± 17	4.7 ± 0.23	1000 ± 50
Hagi, YAMAGUCHI	0～ 5	1.0 ± 0.14	63 ± 8.8	5.6 ± 0.26	350 ± 16
	5～20	0.97 ± 0.14	180 ± 25	4.6 ± 0.23	840 ± 42
Nishihara-mura, KUMAMOTO	0～ 5	4.3 ± 0.23	98 ± 5.3	69 ± 0.9	1600 ± 20
	5～20	7.6 ± 0.31	580 ± 23	15 ± 0.4	1100 ± 30
Naha, Okinawa	0～ 5	1.1 ± 0.15	71 ± 10	6.2 ± 0.29	420 ± 19
	5～20	1.6 ± 0.16	280 ± 27	4.8 ± 0.26	830 ± 44
September, 1994					
Akita, AKITA	0～ 5	6.4 ± 0.19	210 ± 6	34 ± 0.6	1100 ± 20
	5～20	4.9 ± 0.17	340 ± 12	34 ± 0.6	2300 ± 40

(6) Strontium-90 and Cesium-137 in Sea Water
(from Apr. 1994 to Sep. 1994)
-continued from No. 106 of this publication-

Table (6) Strontium-90 and Cesium-137 in Sea Water

Location	Sample volume analyzed (ℓ)	Cl (ℓ)	^{90}Sr (Bq/kg)		^{137}Cs (mBq/ℓ)	
July, 1994						
Yoichi-bay, HOKKAIDOU	42.0	18.88	2.4	± 0.19	3.7	± 0.36
Mutsu, AOMORI	60.0	18.8	1.7	± 0.17	2.8	± 0.34
Tokai, IBARAKI	40.0	14.19	2.0	± 0.17	2.9	± 0.33
Niigata, NIIGATA	45.8	19.2	1.8	± 0.17	4.4	± 0.40
Tokoname, AICHI	40.0	18.0	2.3	± 0.18	3.8	± 0.36
Moji-Port, FUKUOKA	40.0	17.74	2.1	± 0.18	4.1	± 0.36
August, 1994						
Mutsu, AOMORI	60.0	17.5	2.7	± 0.20	4.2	± 0.40
Souma, FUKUSHIMA	40.0	18.1	2.1	± 0.18	2.8	± 0.32
Ichihara, CHIBA	40.0	15.19	2.0	± 0.18	4.0	± 0.39
Yokosuka, KANAGAWA	40.0	15.5	2.2	± 0.20	3.4	± 0.34
Osaka-Port, OSAKA	40.0	13.90	2.7	± 0.20	3.4	± 0.33
Yamaguchi-bay, YAMAGUCHI	40.0	18.3	1.9	± 0.17	2.7	± 0.32
Kaseda, KAGOSHIMA	40.0	17.50	2.2	± 0.19	3.2	± 0.34

(7) Strontium-90 and Cesium-137 in Sea Sediments
(from Apr. 1994 to Sep. 1994)
-continued from No. 106 of this publication-
Table (7) Strontium-90 and Cesium-137 in Sea Sediments

Location	Depth (m)	^{90}Sr (Bq/kg·dried Soil)	^{137}Cs (Bq/kg·dried Soil)
July, 1994			
Yoichi-bay, HOKKAIDOU	13	0.035 ± 0.097	0.64 ± 0.10
Mutsu, AOMORI	26	0.068 ± 0.061	0.41 ± 0.088
Tokai-mura, IBARAKI	7	0.000 ± 0.083	0.36 ± 0.088
Niigata, NIIGATA	27	0.031 ± 0.057	0.80 ± 0.11
Tokoname, AICHI	20.0	0.055 ± 0.067	2.6 ± 0.18
Moji-Port, FUKUOKA	6.0	0.16 ± 0.095	1.9 ± 0.16
August, 1994			
Mutsu, AOMORI	13	0.29 ± 0.081	5.7 ± 0.26
Souma, FUKUSHIMA	5	0.000 ± 0.071	0.84 ± 0.11
Ichihara, CHIBA	16.2	0.12 ± 0.076	3.5 ± 0.21
Yokosuka, KANAGAWA	7	0.000 ± 0.082	3.1 ± 0.20
Osaka-Port, OSAKA	11.7	0.033 ± 0.092	3.0 ± 0.20
Yamaguchi-bay, YAMAGUCHI	10	0.019 ± 0.064	4.0 ± 0.23
Kaseda, KAGOSHIMA	11	0.000 ± 0.088	0.46 ± 0.089

＊＊ Rain and Dry Fallout (for domestic program) ＊＊

<Strontium-90>

<Cesium-137>

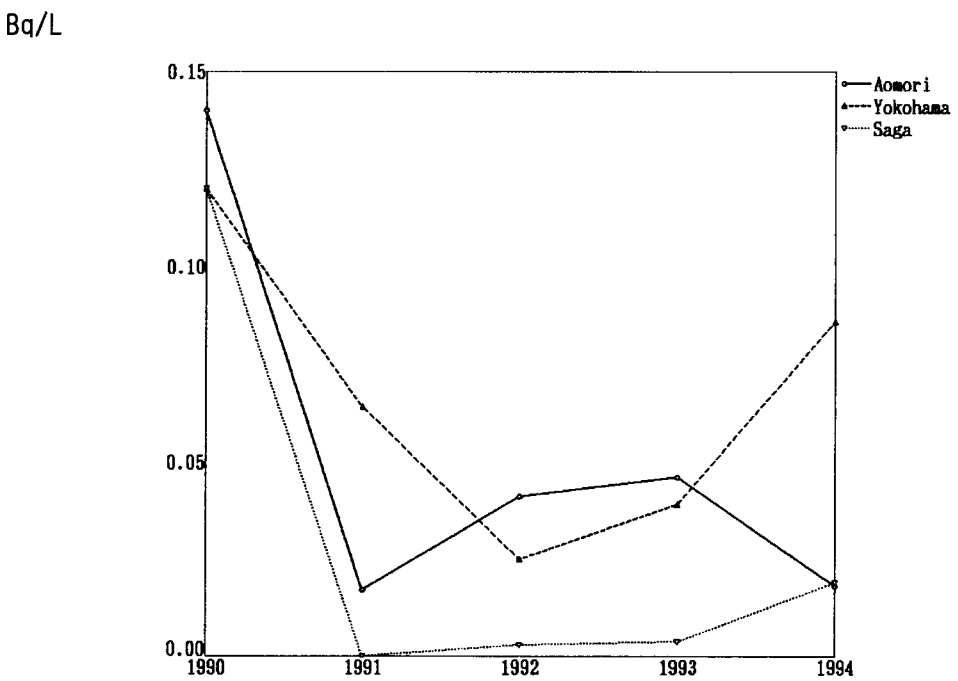
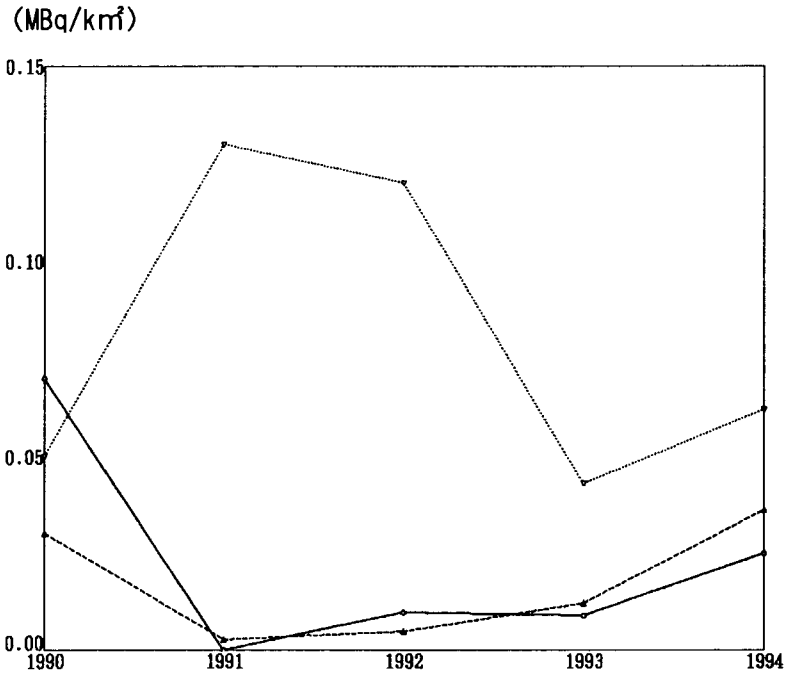


Fig. 1—1

＊＊ Rain and Dry Fallout (for WHO program) ＊＊

<Strontium-90>



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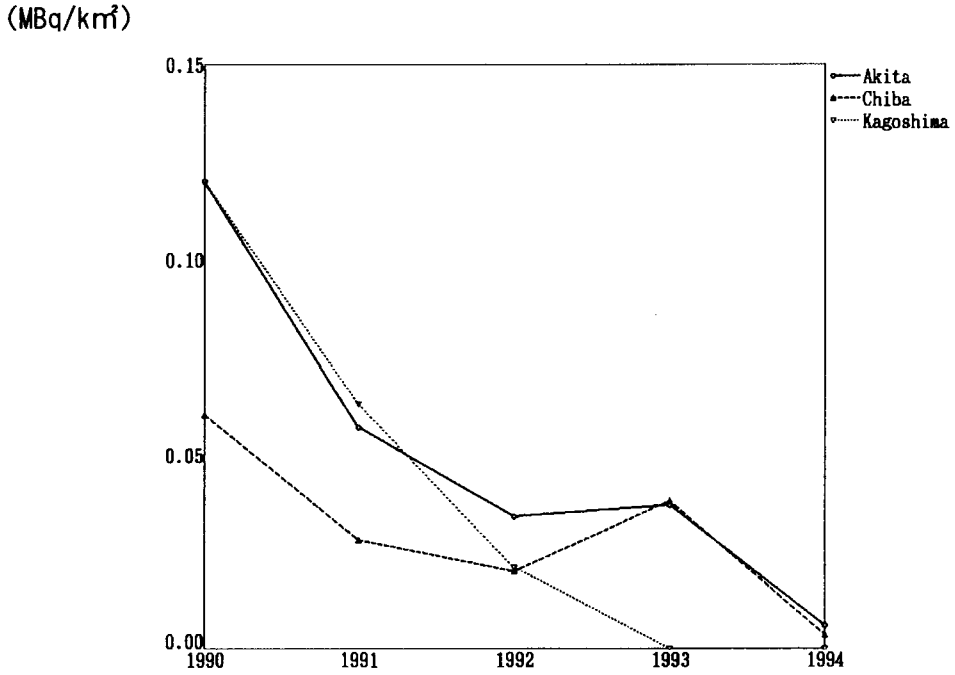
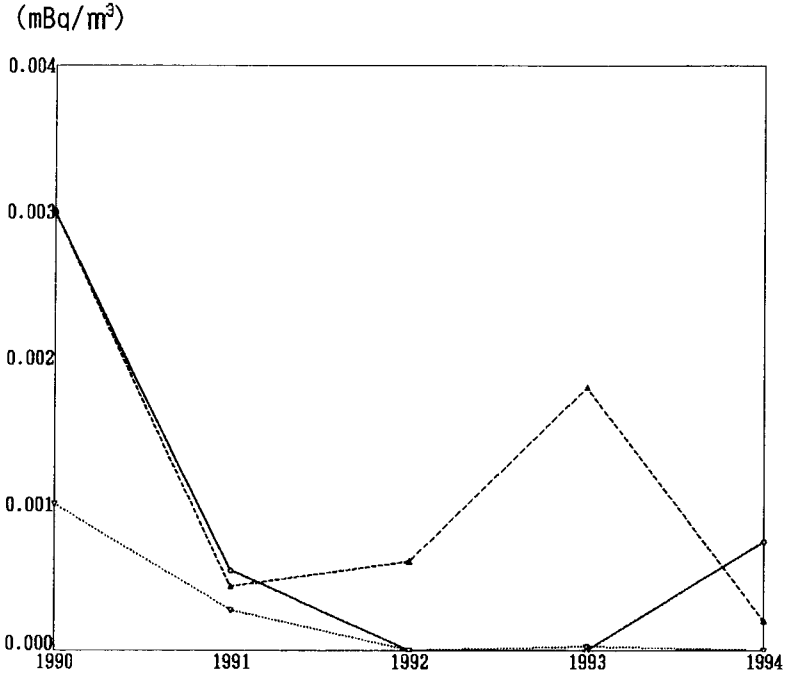


Fig. 1—2

* * Airborne Dust * *

<Strontium-90>



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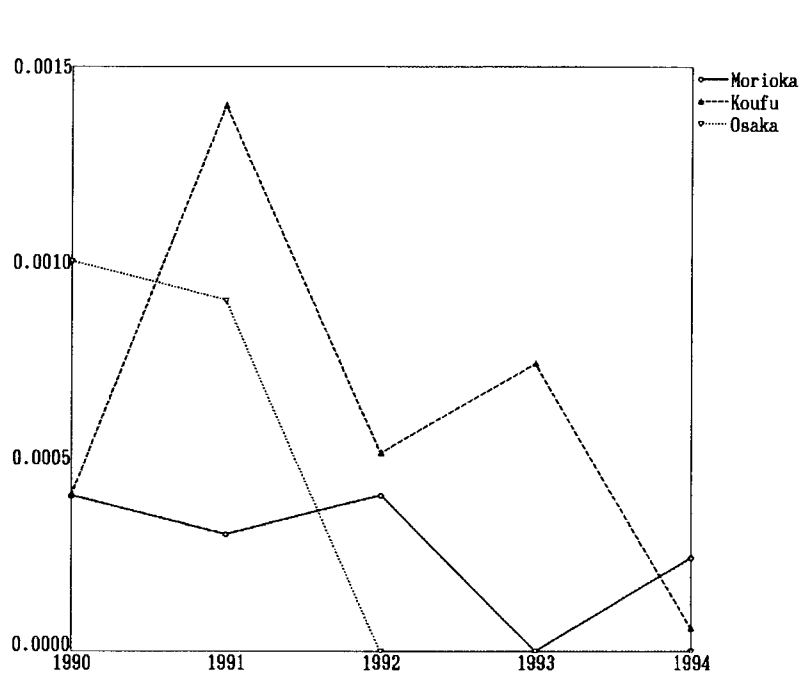

Fig. 2

* * Service Water (Source Water) * *

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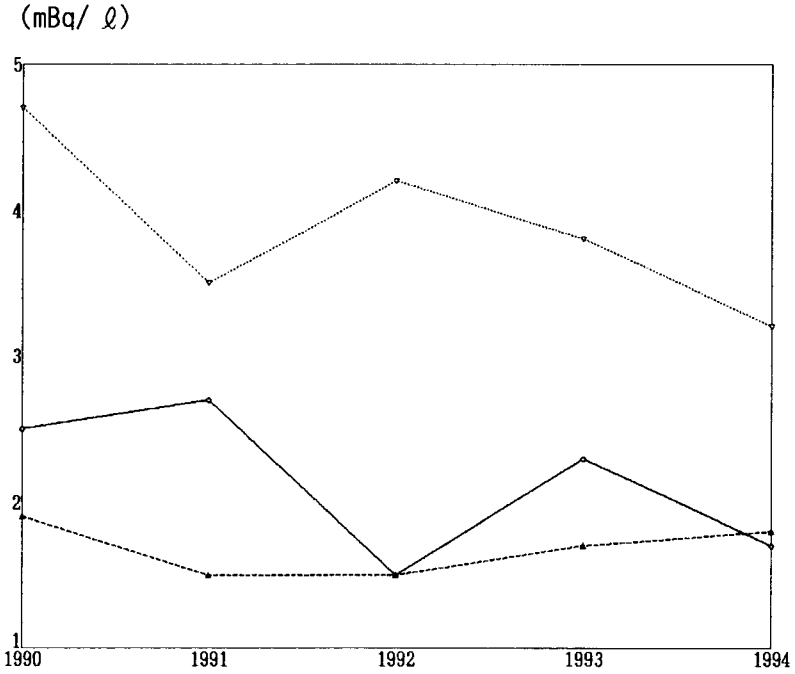

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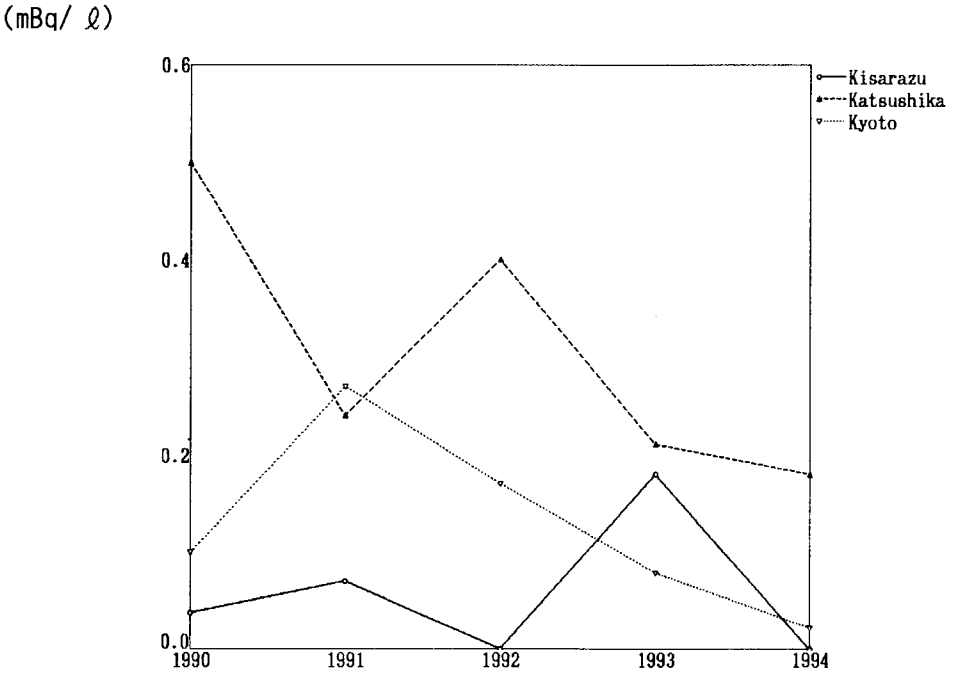

Fig. 3—1

＊ ＊ Service Water (Tap Water) ＊ ＊

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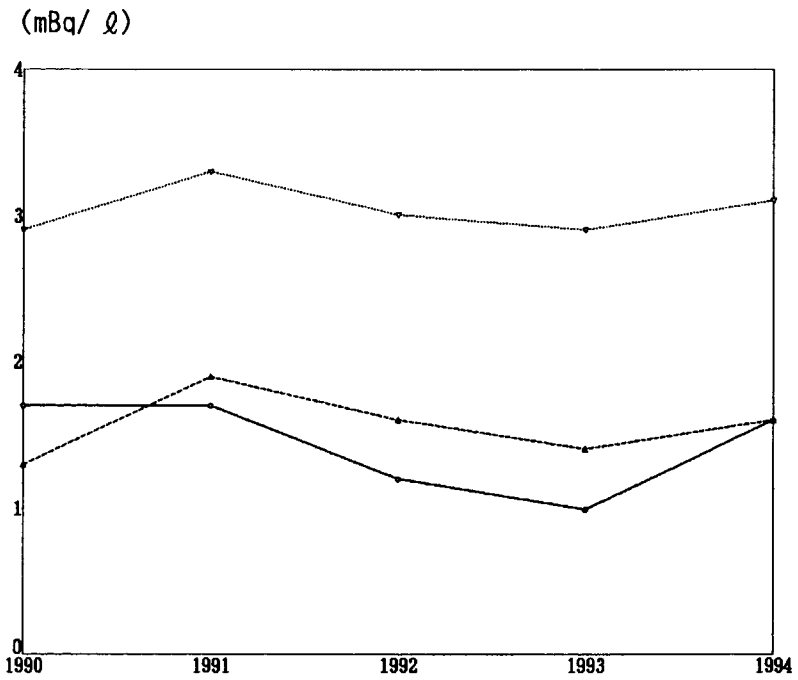

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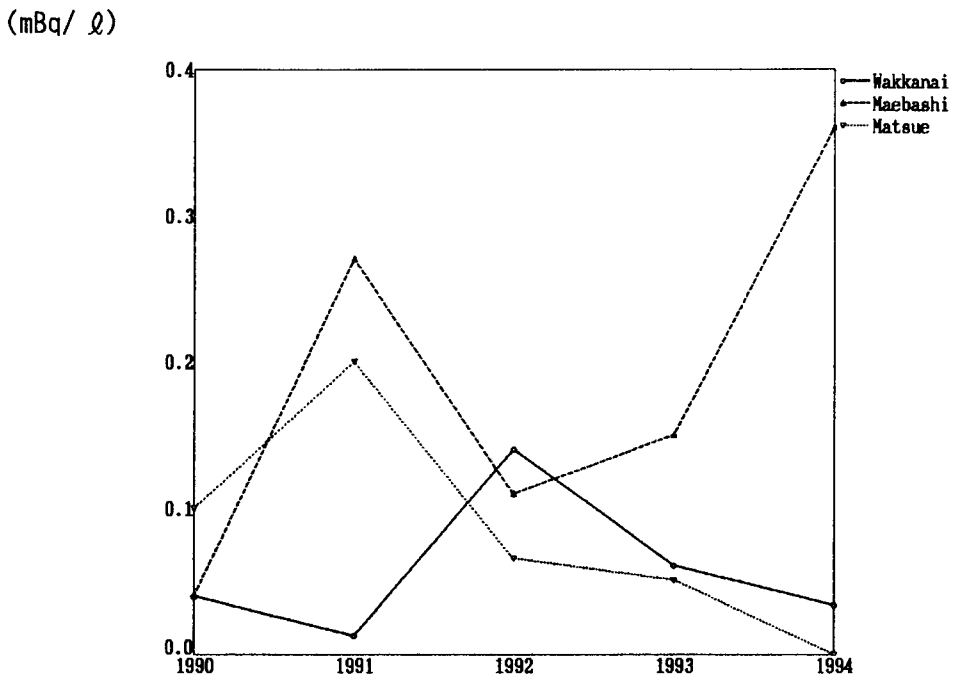

Fig. 3—2

* * Fresh Water * *

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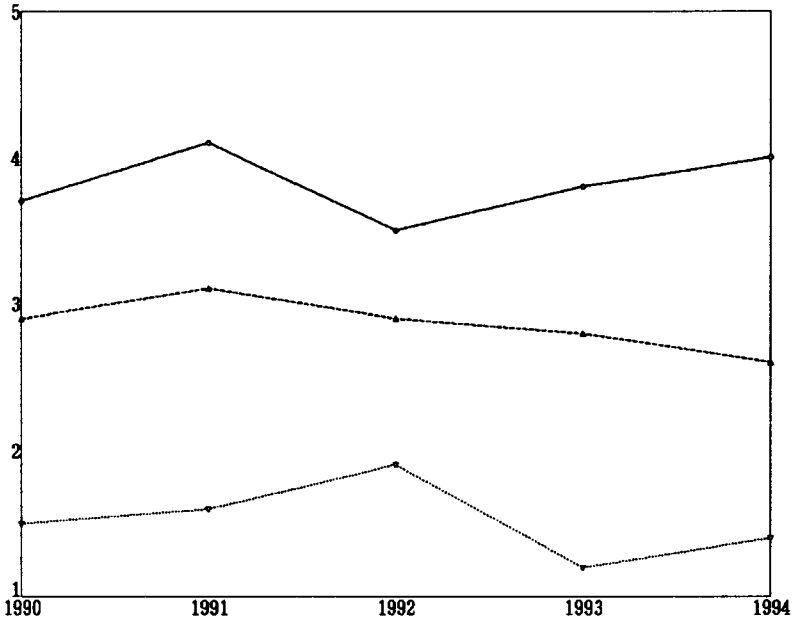
(mBq/ ℓ)



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(mBq/ ℓ)

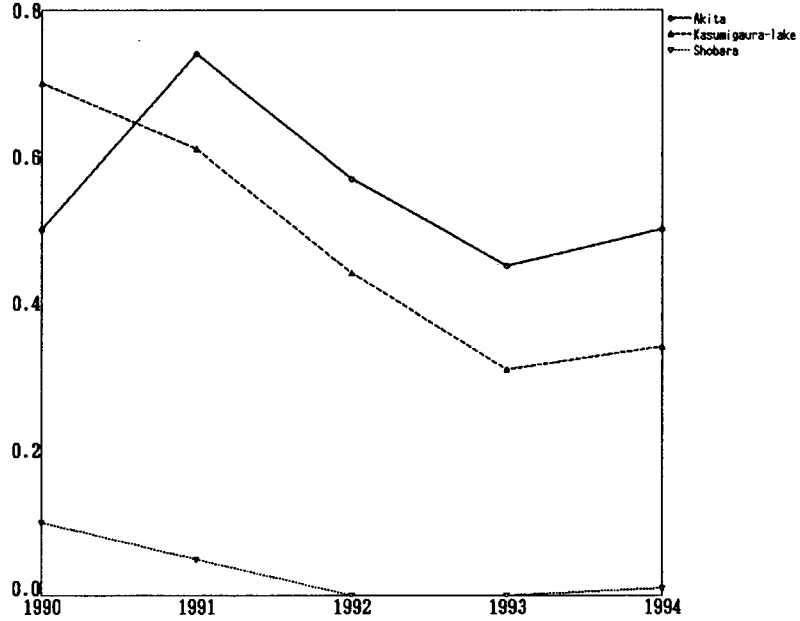
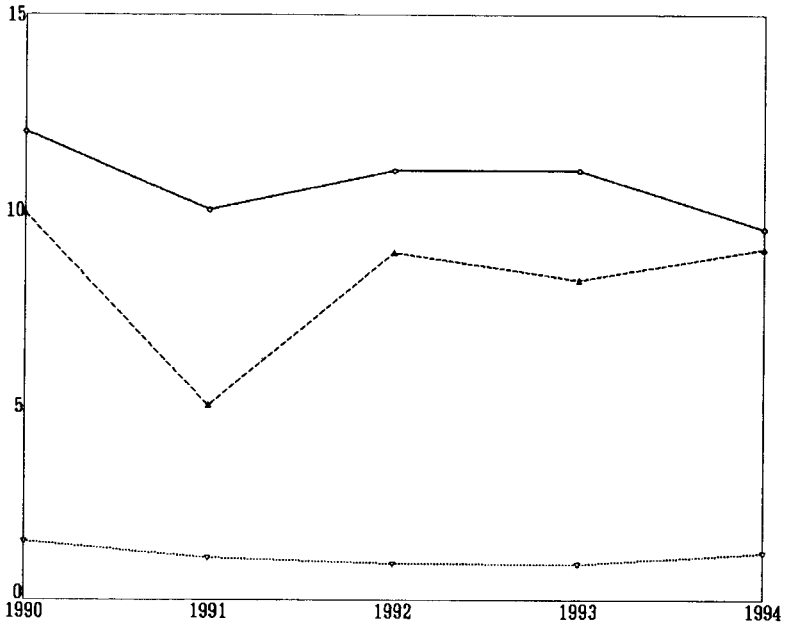


Fig. 4

* * Soil * *

<Strontium-90>

(Bq/kg)(dried So



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(Bq/kg)(dried So

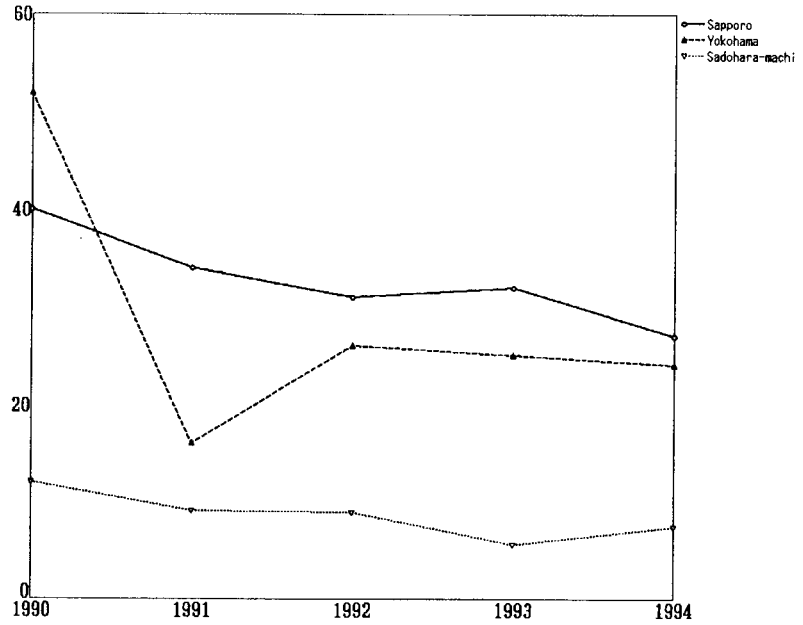

Fig. 5

＊ ＊ Sea Water ＊ ＊

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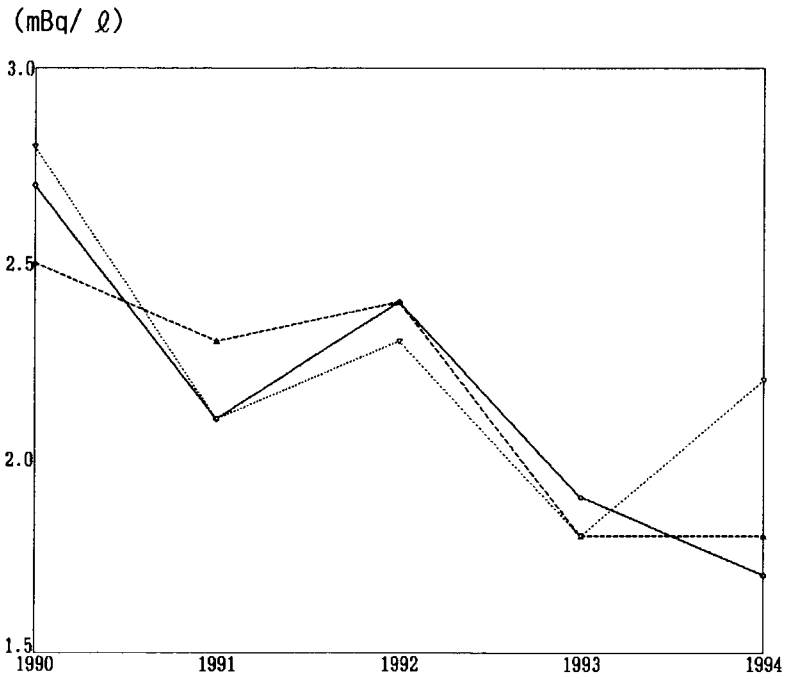

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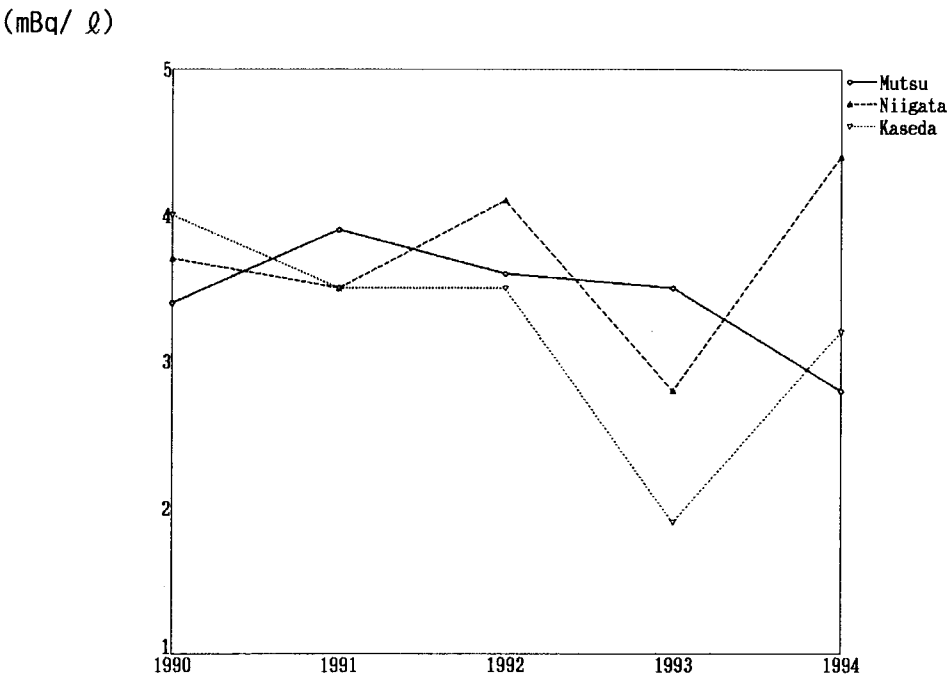
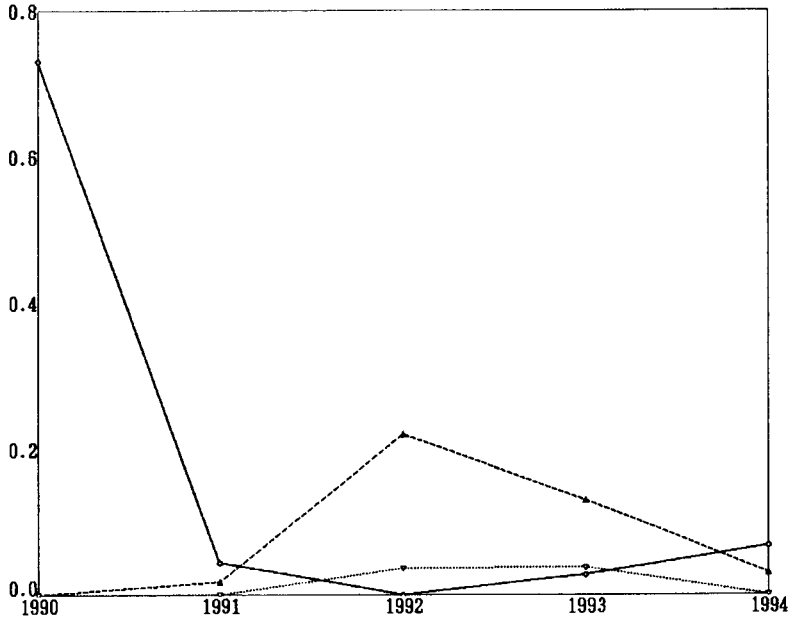


Fig. 6

* * Sea Sediments * *

<Strontium-90>

(Bq/kg･dried Soi



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(Bq/kg･dried Soi

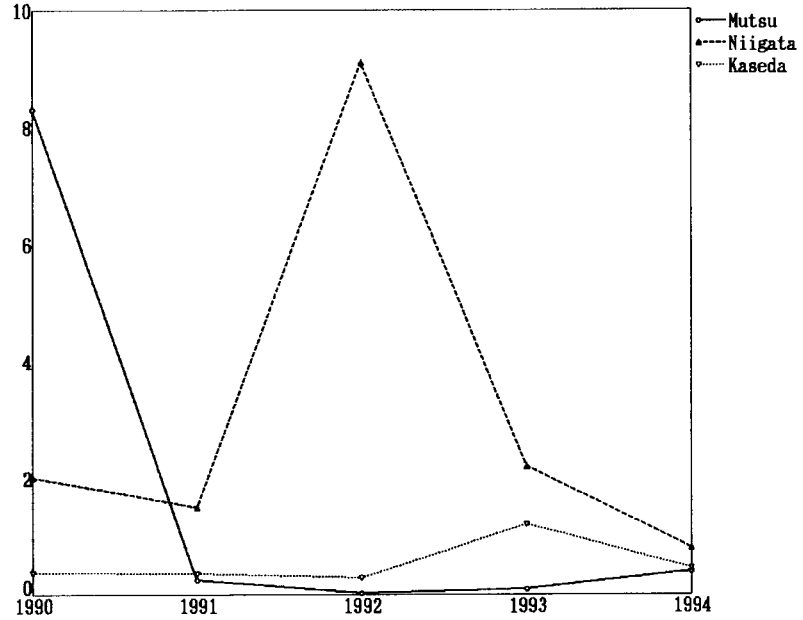

Fig. 7

* * Sampling Locations in Japan * *

1: Sapporo
2: Aomori
3: Morioka
4: Akita
5: Sendai
6: Yamagata
7: Fukushima
8: Niigata
9: Mito
10: Utsunomiya
11: Chiba
12: Urawa
13: Shinjuku
14: Maebashi
15: Nagano
16: Yokohama
17: Toyama
18: Kouhu
19: Kanazawa
20: Shizuoka
21: Gifu
22: Fukui
23: Nagoya
24: Tsu
25: Ootsu
26: Kyoto
27: Nara
28: Osaka
29: Tottori
30: Kobe
31: Wakayama
32: Okayama
33: Matsue
34: Tokushima
35: Takamatsu
36: Hiroshima
37: Kochi
38: Matsuyama
39: Yamaguchi
40: Ooita
41: Fukuoka
42: Saga
43: Kumamoto
44: Miyazaki
45: Nagasaki
46: Kagoshima
47: Naha