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RADIOACTIVITY SURVEY DATA in Japan

Part 2
= Dietary Materials =

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National Institute of Radiological Sciences
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Contents

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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 montyly on a sampling tray, approximately 5000cm^2 in area. which was filled with water to a depth of 1 cm at the beginning of every manth.

Strontium and cesium carrier solutions were added to the sample.

(2) Airborne dust

Airborne dust was collected by 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, 100 ℓ each , was collected at the intake of the water-treatment plant and at the tap after water was left running for five minutes.

Strontium and cesium carriers were added to the sample. The subsequent process was the same as that described in the section (1) Freshwater was treated in the same way as the service water.

(4) Soil

Soil was collected from the location in the spacious and flat area without past surface disturbance caused by dust storms, inflow and out flow due to precipitation, etc... Any places located under trees in a forest, in a stony area or inside of river banks were avoided. Soil was taken from two layers of different dephes, 0-5cm and 5-20cm.

The soil lumps were crushed by hands and dried in 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 given to 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 20 ℓ 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 staions for the demermination of chlorinity.

(6) Sea sediments

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

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 the sample in wet weight was spread on a stainless steel dish after removed of the pebbles. shells and other foreign materials, and dried in a drying oven regulated at 105 ℃

(7) Total diet

A full one day ordinary diet including three meals, water, tea, and other in-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 transterred 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 areas when 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 47 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 sample was dried and carbonized ashing in a stainless steel pan or a procelain 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 was used 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. Sellfish

Approximately 4kg of shellfish including the shells was collected or purchased. After removing 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 details 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) Airborne dust	quarterly	>3000m^3 /month
(3) Service waterand freshwater		
1. Service water (source water)	semiyearly	100 ℓ
2. Servicewater (tap water)	semiyearly	100 ℓ
3. Freshwater	yearly (fishing season)	100 ℓ
(4) Soil		
1. 0 ~ 5cm	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	yearly (harvesting season)	5 kg (polished rice)
(9) Milk		
1. Producing districts for domestic program	quarterly (February,May,August and November)	3 ℓ
	semiyearly (February and August)	3 ℓ

Sample	Frequency of sampling	Quantity of sample
3. Consumng districts	semiyearly (February and August)	3 ℓ
4. Powdered milk	semiyearly (January and Jun)	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

The dried sample was decompased with nitric acid and dissolved in hydrochlovic acid for radiochemical analysis.

(2) Soil and Sea sediment

Dried soil was crushed to smaller ones than 0.25mm 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 was heated. The insoluble constituent was filtered off and washed with water.

(3) Rice

The ashed sample was pulverized with a porcelain mortar and passed through a 0.35mm sieve. The sieved sample 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, and shellfish, seaweeds, tea and others

These ashed samples were treated with the same 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. The supernatant solution was retained for cesium-137 determination.

The carbonates were dissolved 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 and the precipitate was filtered off, washed and counted.

(2) Cesium-137

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

After filtered off and washed with hyfrochloric acid the precipitate was dissolved in 2.5M sodium hydroxide solution. The soluion was adjusted to pH8.2 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 cesiumn was 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 pecipitate. 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 for extraction. 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.
Stable calcium and strontium were determined by ICP-AES and potassium were determined by flame emission spectrometry.

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 stontium-90 and cesium-137per sample aliquot. From the results, concentrations of these nuclides in the original samples were calculated.

6. Results

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

(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (1) : Strontium-90 and Cesium-137 in Total Diet

Location	Ash	Ca	K	90Sr		137Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(Bq/p/d)	(Bq/g Ca)	(Bq/p/d)	(Bq/g K)
May, 2000							
Yamagata, YAMAGATA	12.5	371	1560	0.057 ± 0.0098	0.15 ± 0.026	0.021 ± 0.0059	0.013 ± 0.0038
Higashine, YAMAGATA	13.9	506	1600	0.048 ± 0.0094	0.094 ± 0.019	0.037 ± 0.0058	0.023 ± 0.0036
Jun, 2000							
Sapporo, HOKKAIDO	18.7	634	2260	0.037 ± 0.0083	0.059 ± 0.013	0.022 ± 0.0059	0.0099 ± 0.0026
Iwanai-machi, HOKKAIDO	14.3	474	2130	0.047 ± 0.0094	0.099 ± 0.02	0.047 ± 0.0065	0.022 ± 0.003
Aomori, AOMORI	18.7	874	2580	0.11 ± 0.013	0.12 ± 0.015	0.045 ± 0.007	0.017 ± 0.0027
Ajigasawa-machi, AOMORI	14.4	527	1530	0.055 ± 0.011	0.11 ± 0.021	0.027 ± 0.0058	0.018 ± 0.0038
Morioka, IWATE	12	405	1840	0.058 ± 0.01	0.14 ± 0.026	0.02 ± 0.0056	0.011 ± 0.0031
Iwaizumi-machi, IWATE	12.8	578	1950	0.048 ± 0.0095	0.083 ± 0.016	0.12 ± 0.01	0.062 ± 0.0052
Fukushima, FUKUSHIMA	11.4	389	1510	0.027 ± 0.0083	0.07 ± 0.021	0.02 ± 0.0055	0.014 ± 0.0036
Okuma-machi, FUKUSHIMA	14.7	522	1800	0.081 ± 0.013	0.15 ± 0.025	0.025 ± 0.0063	0.014 ± 0.0035
Mito, IBARAKI	18.3	640	2730	0.054 ± 0.01	0.084 ± 0.016	0.065 ± 0.0079	0.024 ± 0.0029
Tokai-mura, IBARAKI	15.1	468	2120	0.036 ± 0.0092	0.077 ± 0.02	0.031 ± 0.0058	0.015 ± 0.0027
Utsunomiya, TOCHIGI	10.8	497	1710	0.047 ± 0.0093	0.095 ± 0.019	0.04 ± 0.0071	0.024 ± 0.0042
Maebashi, GUNMA	13.1	642	2110	0.037 ± 0.009	0.058 ± 0.014	0.037 ± 0.0065	0.018 ± 0.0031
Nakanojo-machi, GUNMA	12.5	512	1900	0.056 ± 0.0097	0.11 ± 0.019	0.02 ± 0.0059	0.01 ± 0.0031
Urawa, SAITAMA	20	886	2900	0.074 ± 0.011	0.084 ± 0.012	0.048 ± 0.0077	0.017 ± 0.0027
Kumagaya, SAITAMA	15	632	1980	0.061 ± 0.01	0.096 ± 0.016	0.03 ± 0.006	0.015 ± 0.003
Chiba, CHIBA	15.1	479	2250	0.05 ± 0.0096	0.11 ± 0.02	0.05 ± 0.0079	0.022 ± 0.0035
Chikura-machi, CHIBA	16.1	487	2260	0.03 ± 0.0084	0.061 ± 0.017	0.025 ± 0.0058	0.011 ± 0.0026
Shinjuku, TOKYO	10	435	1340	0.024 ± 0.0076	0.056 ± 0.017	0.0092 ± 0.0046	0.0068 ± 0.0034
Hachijo-machi, TOKYO	10.4	608	1400	0.041 ± 0.0092	0.067 ± 0.015	0.015 ± 0.0044	0.011 ± 0.0031

Location	Ash	Ca	K	90Sr		137Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(Bq/p/d)	(Bq/g Ca)	(Bq/p/d)	(Bq/g K)
Nishikawa-machi, NIIGATA	19.8	718	2730	0.076 ± 0.011	0.11 ± 0.015	0.046 ± 0.0071	0.017 ± 0.0026
Kashiwazaki, NIIGATA	13	274	1650	0.045 ± 0.0095	0.16 ± 0.035	0.024 ± 0.0056	0.015 ± 0.0034
Toyama, TOYAMA	14.5	539	2090	0.035 ± 0.0083	0.065 ± 0.015	0.016 ± 0.0053	0.0078 ± 0.0026
Kosugi-machi, TOYAMA	10.8	415	1820	0.04 ± 0.0085	0.0097 ± 0.02	0.022 ± 0.0054	0.012 ± 0.0029
Kanazawa, ISHIKAWA	14.9	596	1960	0.042 ± 0.0087	0.07 ± 0.015	0.039 ± 0.006	0.02 ± 0.003
Torigoe-mura, ISHIKAWA	16.6	751	2300	0.035 ± 0.0087	0.046 ± 0.012	0.039 ± 0.0061	0.017 ± 0.0026
Kofu, YAMANASHI	14.2	594	2060	0.032 ± 0.0081	0.054 ± 0.014	0.031 ± 0.0063	0.015 ± 0.003
Ichinomiya-machi, YAMANASHI	12.1	391	1890	0.03 ± 0.01	0.077 ± 0.026	0.029 ± 0.0064	0.015 ± 0.0034
Nagano, NAGANO	15.3	640	2380	0.054 ± 0.0099	0.084 ± 0.015	0.042 ± 0.0069	0.018 ± 0.0029
Toyono-machi, NAGANO	15.8	776	2250	0.056 ± 0.0096	0.072 ± 0.012	0.053 ± 0.0076	0.023 ± 0.0034
Gifu, GIFU	12.4	395	1920	0.03 ± 0.0084	0.077 ± 0.021	0.022 ± 0.0054	0.011 ± 0.0028
Takayama, GIFU	11.9	312	1760	0.037 ± 0.0082	0.12 ± 0.026	0.021 ± 0.0051	0.012 ± 0.0029
Shizuoka, SHIZUOKA	14.7	669	2060	0.029 ± 0.0084	0.043 ± 0.013	0.026 ± 0.0064	0.013 ± 0.0031
Hamaoka-machi, SHIZUOKA	12.6	449	1680	0.042 ± 0.0095	0.094 ± 0.021	0.0081 ± 0.005	0.0048 ± 0.003
Nagoya, AICHI	14.4	510	2240	0.038 ± 0.0091	0.075 ± 0.018	0.025 ± 0.0057	0.011 ± 0.0025
Shinshiro, AICHI	10.2	283	1410	0.014 ± 0.0072	0.048 ± 0.025	0.019 ± 0.0053	0.013 ± 0.0038
Tsu, MIE	13.8	549	2250	0.043 ± 0.0094	0.079 ± 0.017	0.03 ± 0.006	0.013 ± 0.0026
Owase, MIE	10.5	379	1470	0.048 ± 0.0099	0.13 ± 0.026	0.016 ± 0.005	0.011 ± 0.0034
Otsu, SHIGA	14.3	551	2130	0.052 ± 0.01	0.094 ± 0.019	0.018 ± 0.0054	0.0084 ± 0.0025
Imazu-machi, SHIGA	12.6	410	1950	0.033 ± 0.0076	0.082 ± 0.019	0.035 ± 0.0063	0.018 ± 0.0032
Kyoto, KYOTO	12.8	496	1840	0.014 ± 0.0088	0.028 ± 0.018	0.012 ± 0.005	0.0064 ± 0.0027
Maizuru, KYOTO	13.6	845	1850	0.025 ± 0.0087	0.029 ± 0.01	0.01 ± 0.0044	0.0056 ± 0.0024
Osaka, OSAKA	16.4	604	2250	0.052 ± 0.0086	0.086 ± 0.014	0.034 ± 0.0064	0.015 ± 0.0028
Izumiotsu, OSAKA	15.2	472	1940	0.033 ± 0.0084	0.07 ± 0.018	0.024 ± 0.0055	0.012 ± 0.0028
Kakogawa, HYOGO	13.8	584	1760	0.023 ± 0.0075	0.039 ± 0.013	0.026 ± 0.0053	0.015 ± 0.003
Hamasaka-machi, HYOGO	15.1	624	1590	0.053 ± 0.0088	0.085 ± 0.014	0.025 ± 0.0055	0.016 ± 0.0035
Kashihara, NARA	13	794	1660	0.033 ± 0.0073	0.041 ± 0.0092	0.027 ± 0.0057	0.016 ± 0.0034
Gojo, NARA	13.7	917	1640	0.036 ± 0.0087	0.039 ± 0.0094	0.014 ± 0.0055	0.0088 ± 0.0033

Location	Ash	Ca	K	90Sr		137Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(Bq/p/d)	(Bq/g Ca)	(Bq/p/d)	(Bq/g K)
Tottori, TOTTORI	14.1	516	1610	0.037 ± 0.0079	0.072 ± 0.015	0.012 ± 0.0048	0.0074 ± 0.003
Fukube-mura, TOTTORI	12.1	397	1590	0.03 ± 0.0083	0.075 ± 0.021	0.014 ± 0.0052	0.0091 ± 0.0033
Okayama, OKAYAMA	18.5	433	2180	0.036 ± 0.0081	0.084 ± 0.019	0.015 ± 0.005	0.007 ± 0.0023
Kamisaibara-mura, OKAYAMA	11.6	298	1190	0.021 ± 0.0091	0.07 ± 0.03	0.02 ± 0.0053	0.017 ± 0.0044
Hiroshima, HIROSHIMA	13.3	616	1840	0.039 ± 0.0086	0.063 ± 0.014	0.032 ± 0.0056	0.018 ± 0.003
Miyoshi, HIROSHIMA	12.1	518	1430	0.046 ± 0.0086	0.088 ± 0.017	0.013 ± 0.0048	0.0092 ± 0.0034
Yamaguchi, YAMAGUCHI	14.3	502	1870	0.036 ± 0.0081	0.071 ± 0.016	0.012 ± 0.0047	0.0065 ± 0.0025
Mine, YAMAGUCHI	10.6	259	1530	0.018 ± 0.0078	0.071 ± 0.03	0.021 ± 0.005	0.013 ± 0.0032
Tokushima, TOKUSHIMA	19	374	2150	0.065 ± 0.011	0.17 ± 0.028	0.017 ± 0.0052	0.008 ± 0.0024
Kamiita-machi, TOKUSHIMA	11.7	338	1360	0.027 ± 0.0078	0.08 ± 0.023	0.027 ± 0.0057	0.02 ± 0.0042
Takamatsu, KAGAWA	11.6	349	1800	0.016 ± 0.0065	0.045 ± 0.019	0.011 ± 0.0047	0.0061 ± 0.0026
Marugame, KAGAWA	13.2	396	1640	0.051 ± 0.011	0.13 ± 0.028	0.0072 ± 0.0049	0.0044 ± 0.003
Matsuyama, EHIME	10.3	352	1300	0.045 ± 0.0093	0.13 ± 0.027	0.014 ± 0.0047	0.011 ± 0.0036
Ikata-machi, EHIME	12	560	1330	0.023 ± 0.0073	0.041 ± 0.013	0.018 ± 0.005	0.013 ± 0.0038
Kochi, KOCHI	12.5	428	1750	0.059 ± 0.011	0.14 ± 0.025	0.034 ± 0.006	0.019 ± 0.0034
Saga-machi, KOCHI	14.9	369	1920	0.038 ± 0.0088	0.1 ± 0.024	0.055 ± 0.0075	0.029 ± 0.0039
Dazaifu, FUKUOKA	14.2	618	1800	0.039 ± 0.0084	0.064 ± 0.014	0.027 ± 0.0056	0.015 ± 0.0031
Fukuoka, FUKUOKA	12.5	478	1260	0.0083 ± 0.0058	0.017 ± 0.012	0.01 ± 0.0046	0.0082 ± 0.0037
Nagasaki, NAGASAKI	14.3	558	1850	0.037 ± 0.0083	0.067 ± 0.015	0.034 ± 0.0065	0.018 ± 0.0035
Matsuura, NAGASAKI	11.1	277	1620	0.015 ± 0.0093	0.055 ± 0.034	0.026 ± 0.0059	0.016 ± 0.0036
Kumamoto, KUMAMOTO	12	367	1560	0.026 ± 0.0078	0.071 ± 0.021	0.022 ± 0.0056	0.014 ± 0.0036
Tomiai-machi, KUMAMOTO	17.3	446	2040	0.033 ± 0.0084	0.074 ± 0.019	0.032 ± 0.006	0.016 ± 0.0029
Saeki, OITA	11.5	441	2050	0.026 ± 0.0097	0.059 ± 0.022	0.022 ± 0.0054	0.011 ± 0.0026
Miyazaki, MIYAZAKI	12.2	388	1750	0.047 ± 0.009	0.12 ± 0.023	0.031 ± 0.006	0.018 ± 0.0034
Takachiho-machi, MIYAZAKI	14.6	531	1990	0.05 ± 0.013	0.093 ± 0.024	0.025 ± 0.0057	0.012 ± 0.0029
Sendai, KAGOSHIMA	13.1	398	1810	0.0072 ± 0.0079	0.018 ± 0.02	0.019 ± 0.0055	0.011 ± 0.0031
Okuchi, KAGOSHIMA	16.9	592	2100	0.041 ± 0.011	0.07 ± 0.019	0.022 ± 0.0061	0.011 ± 0.0029

Jul, 2000

Location	Ash	Ca	K	90Sr		137Cs	
	(g/p/d)	(mg/p/d)	(mg/p/d)	(Bq/p/d)	(Bq/g Ca)	(Bq/p/d)	(Bq/g K)
Ishinomaki, MIYAGI	14.7	616	2190	0.043 ± 0.0095	0.07 ± 0.015	0.04 ± 0.007	0.018 ± 0.0032
Onagawa-machi, MIYAGI	22	1170	3260	0.037 ± 0.009	0.031 ± 0.0077	0.051 ± 0.0074	0.016 ± 0.0023
Akita, AKITA	13.6	569	2290	0.062 ± 0.011	0.11 ± 0.019	0.034 ± 0.0066	0.015 ± 0.0029
Yokote, AKITA	10.4	292	1440	0.0082 ± 0.0065	0.028 ± 0.022	0.028 ± 0.0056	0.019 ± 0.0039
minamikawachi-machi, TOCHIGI	15.7	680	1980	0.024 ± 0.0094	0.035 ± 0.014	0.034 ± 0.0065	0.017 ± 0.0033
Yokohama, KANAGAWA	11.8	396	1940	0.03 ± 0.0092	0.076 ± 0.023	0.028 ± 0.0063	0.014 ± 0.0032
Hiratsuka, KANAGAWA	14.7	710	2700	0.056 ± 0.01	0.079 ± 0.014	0.035 ± 0.0065	0.013 ± 0.0024
Fukui, FUKUI	19	705	2140	0.036 ± 0.0084	0.051 ± 0.012	0.015 ± 0.0049	0.0068 ± 0.0023
Tsuruga, FUKUI	12.7	501	1560	0.03 ± 0.0084	0.061 ± 0.017	0.02 ± 0.0053	0.013 ± 0.0034
Wakayama, WAKAYAMA	13.6	222	1430	0.037 ± 0.0083	0.17 ± 0.037	0.018 ± 0.005	0.012 ± 0.0035
Shingu, WAKAYAMA	11	382	1150	0.029 ± 0.0082	0.075 ± 0.022	0.022 ± 0.0057	0.019 ± 0.0049
Matsue, SHIMANE	20	674	2260	0.073 ± 0.013	0.11 ± 0.019	0.028 ± 0.0059	0.012 ± 0.0026
Kashima-machi, SHIMANE	14.4	691	1890	0.048 ± 0.011	0.07 ± 0.016	0.02 ± 0.0057	0.011 ± 0.003
Saga, SAGA	15.1	508	1790	0.021 ± 0.0089	0.041 ± 0.018	0.016 ± 0.0053	0.0091 ± 0.003
Karatsu, SAGA	15.6	563	1920	0.057 ± 0.012	0.1 ± 0.021	0.029 ± 0.006	0.015 ± 0.0031
Oita, OITA	14.1	416	1510	0.029 ± 0.0076	0.07 ± 0.018	0.035 ± 0.0064	0.023 ± 0.0042
Naha, OKINAWA	15	442	1980	0.022 ± 0.0071	0.05 ± 0.016	0.022 ± 0.0055	0.011 ± 0.0028
Itoman, OKINAWA	15.7	477	1870	0.042 ± 0.011	0.088 ± 0.023	0.032 ± 0.0062	0.017 ± 0.0033

(2) Strontium-90 and Cesium-137 in Rice(producing districts)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (2) : Strontium-90 and Cesium-137 in Rice(producing districts)

Location	Component			90Sr		137Cs	
	(%)	(g/kgwet)	(g/kgwet)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/gK)
Jul, 2000							
Sadohara-machi, MIYAZAKI	0.578	0.026	0.844	0 ± 0.0053	0 ± 0.2	0.0024 ± 0.0039	0.0028 ± 0.0046
Aug, 2000							
Chiba, CHIBA	0.499	0.032	0.763	0.011 ± 0.0065	0.33 ± 0.2	0.0041 ± 0.0035	0.0053 ± 0.0046
Gifu, GIFU	0.417	0.038	0.767	0.0085 ± 0.0061	0.22 ± 0.16	0.0045 ± 0.0033	0.0058 ± 0.0043
Sep, 2000							
Uchinada-machi, ISHIKAWA	0.523	0.029	0.774	0.0027 ± 0.0055	0.09 ± 0.19	0.0038 ± 0.004	0.0049 ± 0.0052
Matsusaka, MIE	0.527	0.03	1.02	0.0075 ± 0.0063	0.25 ± 0.21	0.003 ± 0.0032	0.003 ± 0.0031

(3)-1 Strontium-90 and Cesium-137 in Milk(producing districts for domestic proguram)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (3)-1 : Strontium-90 and Cesium-137 in Milk(producing districts for domestic proguram)

Location	Component			90Sr				137Cs			
	Ash(%)	Ca(g/kg)	K(g/kg)	(Bq/kgwet)		(Bq/g Ca)		(Bq/kgwet)		(Bq/g K)	
May, 2000											
Hokudainojo, HOKKAIDO	0.71	1.17	1.54	0.054	± 0.0072	0.046	± 0.0061	0.041	± 0.0049	0.027	± 0.0032
Hachijo-machi, TOKYO	0.72	1.06	1.33	0.039	± 0.0062	0.036	± 0.0058	0.02	± 0.0035	0.015	± 0.0027
Iwamuro-mura, NIIGATA	0.76	1.11	1.57	0.022	± 0.0079	0.02	± 0.0072	0.0031	± 0.0038	0.002	± 0.0024
Katsuyama, FUKUI	0.72	1.11	1.6	0.017	± 0.0071	0.016	± 0.0064	0.0077	± 0.0046	0.0048	± 0.0029
Shijonawate, OSAKA	0.77	1.14	1.34	0.037	± 0.0085	0.032	± 0.0075	0.0055	± 0.004	0.0041	± 0.003
Matsue, SHIMANE	0.73	1.15	1.51	0.027	± 0.007	0.024	± 0.0061	0.013	± 0.0043	0.0087	± 0.0028
Chiyoda-machi, HIROSHIMA	0.68	1.11	1.45	0.014	± 0.0069	0.012	± 0.0062	0.005	± 0.0042	0.0034	± 0.0029
Kochi, KOCHI	0.73	1.18	1.61	0.024	± 0.0042	0.02	± 0.0036	0.007	± 0.0023	0.0043	± 0.0014
Yasu-machi, FUKUOKA	0.68	1.07	1.44	0.022	± 0.0082	0.02	± 0.0076	0.0096	± 0.0045	0.0066	± 0.0031
Kajiki-machi, KAGOSHIMA	0.73	1.14	1.52	0.019	± 0.0067	0.017	± 0.0059	0.0066	± 0.0039	0.0043	± 0.0026
Jun, 2000											
Yamato-machi, SAGA	0.68	1.05	1.48	0.025	± 0.007	0.024	± 0.0067	0.0059	± 0.0039	0.004	± 0.0026
Jul, 2000											
Takane-machi, YAMANASHI	0.66	1.04	1.37	0.017	± 0.0067	0.017	± 0.0065	0.011	± 0.0045	0.0078	± 0.0033
Matsue, SHIMANE	0.72	1.11	1.45	0.03	± 0.007	0.027	± 0.0063	0.012	± 0.0041	0.008	± 0.0028
Kamiita-machi, TOKUSHIMA	0.68	1.12	1.58	0.023	± 0.0065	0.021	± 0.0058	0.0059	± 0.0035	0.0038	± 0.0023
Aug, 2000											
Hokudainojo, HOKKAIDO	0.69	1.09	1.55	0.037	± 0.0098	0.034	± 0.0089	0.043	± 0.0067	0.028	± 0.0043
Aomori, AOMORI	0.71	1.08	1.47	0.068	± 0.011	0.063	± 0.0097	0.094	± 0.0088	0.064	± 0.006
Takizawa-mura, IWATE	0.71	1.1	1.47	0.022	± 0.0065	0.02	± 0.0059	0.031	± 0.0058	0.021	± 0.004
Mito, IBARAKI	0.73	1.12	1.54	0.0036	± 0.0069	0.0032	± 0.0062	0.011	± 0.0047	0.0073	± 0.003

Location	Component			90Sr				137Cs			
	Ash(%)	Ca(g/kg)	K(g/kg)	(Bq/kgwet)		(Bq/g Ca)		(Bq/kgwet)		(Bq/g K)	
Yachimata, CHIBA	0.71	1.07	1.47	0.019	± 0.007	0.018	± 0.0066	0.0098	± 0.0044	0.0067	± 0.003
Hachijo-machi, TOKYO	0.71	1.09	1.38	0.022	± 0.0066	0.02	± 0.006	0.012	± 0.004	0.0084	± 0.0029
Iwamuro-mura, NIIGATA	0.73	1.11	1.54	0.026	± 0.007	0.024	± 0.0063	0.011	± 0.0042	0.0069	± 0.0027
Tonami, TOYAMA	0.69	1	1.54	0.024	± 0.0075	0.024	± 0.0075	0.034	± 0.0061	0.022	± 0.004
Oshimizu-machi, ISHIKAWA	0.74	1.18	1.48	0.029	± 0.0076	0.025	± 0.0064	0.0061	± 0.004	0.0041	± 0.0027
Katsuyama, FUKUI	0.71	1.08	1.6	0.016	± 0.0071	0.014	± 0.0066	0.0064	± 0.0041	0.004	± 0.0025
Kasamatsu-machi, GIFU	0.67	1.04	1.29	0.031	± 0.0081	0.03	± 0.0078	0.0065	± 0.004	0.005	± 0.0031
Ouchiyama-mura, MIE	0.72	1.1	1.53	0.031	± 0.0078	0.028	± 0.007	0.0012	± 0.0036	0.0008	± 0.0023
Hino-machi, SHIGA	0.72	1.13	1.63	0.018	± 0.0066	0.016	± 0.0058	0.0042	± 0.0038	0.0026	± 0.0023
Habukino, OSAKA	0.71	1.16	1.43	0.03	± 0.0086	0.026	± 0.0074	0.0008	± 0.0035	0.0006	± 0.0024
Mihara-machi, HYOGO	0.73	1.15	1.5	0.023	± 0.0071	0.02	± 0.0062	0.0028	± 0.0038	0.0019	± 0.0025
Ouda-machi, NARA	0.71	1.1	1.42	0.0026	± 0.0049	0.0024	± 0.0045	0.0019	± 0.0036	0.0014	± 0.0025
Chiyoda-machi, HIROSHIMA	0.7	1.1	1.51	0.024	± 0.006	0.022	± 0.0055	0.0096	± 0.0036	0.0063	± 0.0024
Takase-machi, KAGAWA	0.71	1.12	1.58	0.015	± 0.0066	0.014	± 0.0059	0.011	± 0.0038	0.007	± 0.0024
kawauchi-machi, EHIME	0.68	1.06	1.46	0.029	± 0.0072	0.028	± 0.0068	0.0059	± 0.0036	0.004	± 0.0025
Kochi, KOCHI	0.74	1.16	1.62	0.034	± 0.0085	0.029	± 0.0074	0.01	± 0.0045	0.0064	± 0.0028
Yasu-machi, FUKUOKA	0.69	1.1	1.47	0.018	± 0.0076	0.016	± 0.0069	0.0057	± 0.0042	0.0038	± 0.0028
Koshi-machi, KUMAMOTO	0.71	1.12	1.59	0.015	± 0.0052	0.013	± 0.0047	0.0098	± 0.0038	0.0062	± 0.0024
Kuju-machi, OITA	0.71	1.1	1.6	0.019	± 0.0059	0.017	± 0.0054	0.028	± 0.0053	0.018	± 0.0033
Takahara-machi, MIYAZAKI	0.72	1.13	1.71	0.019	± 0.006	0.017	± 0.0053	0.063	± 0.0074	0.037	± 0.0043
Kajiki-machi, KAGOSHIMA	0.73	1.11	1.51	0.013	± 0.0062	0.012	± 0.0056	0.018	± 0.0049	0.012	± 0.0033

(3)-2 Strontium-90 and Cesium-137 in Milk(consuming districts)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (3)-2 : Strontium-90 and Cesium-137 in Milk(consuming districts)

Location	Component			90Sr				137Cs			
	Ash(%)	Ca(g/kg)	K(g/kg)	(Bq/kgwet)		(Bq/g Ca)		(Bq/kgwet)		(Bq/g K)	
May, 2000											
Rifu-machi, MIYAGI	0.74	1.12	1.51	0.019	± 0.0079	0.017	± 0.0071	0.016	± 0.0052	0.01	± 0.0034
Jun, 2000											
Fukushima, FUKUSHIMA	0.74	1.14	1.58	0.021	± 0.0082	0.019	± 0.0072	0.013	± 0.0047	0.0082	± 0.003
Kyoto, KYOTO	0.72	1.11	1.56	0.017	± 0.006	0.016	± 0.0054	0.011	± 0.0043	0.0073	± 0.0027
Aug, 2000											
Sapporo, HOKKAIDO	0.69	1.04	1.38	0.037	± 0.0075	0.036	± 0.0073	0.04	± 0.0062	0.029	± 0.0045
Akita, AKITA	0.7	1.1	1.36	0.0092	± 0.0053	0.0083	± 0.0048	0.018	± 0.0047	0.013	± 0.0034
Yamagata, YAMAGATA	0.69	1.08	1.41	0.022	± 0.0064	0.02	± 0.0059	0.0098	± 0.004	0.007	± 0.0028
Urawa, SAITAMA	0.73	1.1	1.58	0.027	± 0.0074	0.025	± 0.0068	0.0087	± 0.0041	0.0055	± 0.0026
Shinjuku, TOKYO	0.69	1.03	1.5	0.016	± 0.0064	0.016	± 0.0061	0.0016	± 0.0033	0.001	± 0.0022
Yokohama, KANAGAWA	0.72	1.11	1.56	0.018	± 0.007	0.016	± 0.0064	0.015	± 0.0047	0.0097	± 0.003
Niigata, NIIGATA	0.74	1.09	1.55	0.013	± 0.0055	0.012	± 0.0051	0.013	± 0.0043	0.0081	± 0.0028
Fukui, FUKUI	0.71	1.2	1.53	0.0073	± 0.0067	0.0061	± 0.0056	0.025	± 0.0056	0.016	± 0.0036
Nagano, NAGANO	0.68	1.07	1.49	0.034	± 0.0084	0.032	± 0.0078	0.0075	± 0.0042	0.0051	± 0.0028
Shizuoka, SHIZUOKA	0.69	1.05	1.41	0.029	± 0.007	0.028	± 0.0067	0.016	± 0.0045	0.011	± 0.0032
Nagoya, AICHI	0.72	1.1	1.53	0.023	± 0.0075	0.02	± 0.0068	0.02	± 0.0052	0.013	± 0.0034
Osaka, OSAKA	0.72	1.09	1.53	0.038	± 0.0085	0.035	± 0.0078	0.1	± 0.009	0.066	± 0.0062
Yonago, TOTTORI	0.68	1.07	1.46	0.017	± 0.0073	0.016	± 0.0068	0.019	± 0.005	0.013	± 0.0034
Matsue, SHIMANE	0.72	1.11	1.59	0.02	± 0.0065	0.018	± 0.0059	0.068	± 0.004	0.0043	± 0.0025
Okayama, OKAYAMA	0.71	1.08	1.53	0.0098	± 0.064	0.0091	± 0.0059	0.0039	± 0.0036	0.0025	± 0.0024
Hiroshima, HIROSHIMA	0.7	1.08	1.5	0.02	± 0.008	0.019	± 0.0074	0.0099	± 0.0046	0.0066	± 0.0031

Location	Component			90Sr				137Cs			
	Ash(%)	Ca(g/kg)	K(g/kg)	(Bq/kgwet)		(Bq/g Ca)		(Bq/kgwet)		(Bq/g K)	
Yamaguchi, YAMAGUCHI	0.69	1.11	1.51	0.022	± 0.0066	0.02	± 0.006	0.0093	± 0.004	0.0062	± 0.0026
kawauchi-machi, EHIME	0.69	1.07	1.48	0.025	± 0.0068	0.024	± 0.0063	0.01	± 0.0041	0.007	± 0.0028
Kochi, KOCHI	0.71	1.11	1.6	0.031	± 0.0069	0.028	± 0.0063	0.017	± 0.0043	0.11	± 0.0027
Chikushino, FUKUOKA	0.71	1.12	1.56	0.01	± 0.005	0.0094	± 0.0045	0.008	± 0.0038	0.0051	± 0.0024
Nagasaki, NAGASAKI	0.69	1.12	1.55	0.02	± 0.0063	0.018	± 0.0056	0.0016	± 0.0034	0.001	± 0.0022
Kagoshima, KAGOSHIMA	0.72	1.03	1.37	0.023	± 0.0072	0.023	± 0.0069	0.013	± 0.0045	0.0095	± 0.0032
Yonagusuku-machi, OKINAWA	0.71	1.17	1.64	0.018	± 0.0063	0.016	± 0.0054	0.015	± 0.0043	0.0093	± 0.0026
Sep, 2000											
Rifu-machi, MIYAGI	0.72	1.11	1.42	0.022	± 0.007	0.02	± 0.0063	0.022	± 0.0053	0.015	± 0.0037

(3)-3 Strontium-90 and Cesium-137 in Milk(powdered milk)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (3)-3 : Strontium-90 and Cesium-137 in Milk(powdered milk)

Location	Component			90Sr		137Cs	
	(%)	(g／kg)	(g／kg)	(Bq／kg)	(Bq／g Ca)	(Bq／Kg)	(Bq／g K)
Jun, 2000							
Sample C, サンプルC	7.74	12	16.6	0.49 ± 0.031	0.041 ± 0.0025	0.98 ± 0.035	0.059 ± 0.0021
Sample A, サンプルA	7.84	12.5	16.5	0.32 ± 0.025	0.025 ± 0.002	0.34 ± 0.021	0.021 ± 0.0013
Sample B, サンプルB	2.57	3.42	6.09	0.033 ± 0.0074	0.0098 ± 0.0022	0.035 ± 0.0065	0.0057 ± 0.0011
Sample D, サンプルD	2.47	3.83	5.63	0.026 ± 0.0067	0.0067 ± 0.0017	0.025 ± 0.0057	0.0045 ± 0.001
Sample F, サンプルF	2.45	3.55	5.46	0.047 ± 0.0086	0.013 ± 0.0024	0.081 ± 0.0086	0.015 ± 0.0016
Sample E, サンプルE	3.57	6.03	6.96	0.13 ± 0.014	0.021 ± 0.0023	0.11 ± 0.011	0.016 ± 0.0015

(4)-1 Strontium-90 and Cesium-137 in Vegetables(producing districts)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (4)-1 : Strontium-90 and Cesium-137 in Vegetables(producing districts)

Location	Component			90Sr		137Cs	
	Ash(%)	(g/kg)	(g/kg)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/kgK)
May, 2000							
Tahara-machi, AICHI	0.687	0.274	2.69	0.032 ± 0.0085	0.12 ± 0.031	0 ± 0.0039	0 ± 0.0015
Tahara-machi, AICHI	1.41	0.724	5.42	0.19 ± 0.017	0.26 ± 0.024	0 ± 0.0042	0 ± 0.00078
Jul, 2000							
Kumatori-machi, OSAKA	0.382	0.133	1.53	0.042 ± 0.0092	0.31 ± 0.069	0 ± 0.0046	0 ± 0.003
Ota, SHIMANE	0.532	0.187	2.15	0.24 ± 0.02	1.3 ± 0.11	0.058 ± 0.008	0.027 ± 0.0037
Ota, SHIMANE	1.05	1.13	3.25	1.3 ± 0.04	1.1 ± 0.04	1.1 ± 0.03	0.33 ± 0.009
Aug, 2000							
Eniwa, HOKKAIDO	0.527	0.154	2.12	0.13 ± 0.014	0.85 ± 0.094	0 ± 0.0043	0 ± 0.002
Mutsu, AOMORI	0.816	0.026	3.85	0.0017 ± 0.0065	0.07 ± 0.25	0.051 ± 0.0076	0.013 ± 0.002
Eniwa, HOKKAIDO	1.68	0.467	7.12	0.11 ± 0.013	0.24 ± 0.028	0 ± 0.0047	0 ± 0.00067

(4)-2 Strontium-90 and Cesium-137 in Vegetables(consuming districts)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (4)-2 : Strontium-90 and Cesium-137 in Vegetables(consuming districts)

Location	Component			90Sr		137Cs	
	Ash(%)	(g/kg)	(g/kg)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/kgK)
May, 2000							
Rifu-machi, MIYAGI	1.52	0.652	5.76	0.038 ± 0.0083	0.058 ± 0.013	0.0047 ± 0.0045	0.00082 ± 0.00079
Jun, 2000							
Niigata, NIIGATA	1.21	0.482	5.08	0.042 ± 0.0098	0.087 ± 0.02	0.0035 ± 0.0054	0.0007 ± 0.0011
Sep, 2000							
Rifu-machi, MIYAGI	0.636	0.213	2.67	0.29 ± 0.021	1.4 ± 0.1	0.0023 ± 0.0035	0.0009 ± 0.0013

(5) Strontium-90 and Cesium-137 in Tea (Japanese Tea)
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (5) : Strontium-90 and Cesium-137 in Tea (Japanese Tea)

Location	Component			90Sr		137Cs	
	(%)	(g/kg)	(g/kg)	(Bq/kg)	(Bq/g Ca)	(Bq/kg)	(Bq/g K)
May, 2000							
Ikeda-machi, GIFU	4.85	2.81	18.3	0.54 ± 0.06	0.19 ± 0.021	0.16 ± 0.028	0.0085 ± 0.0015
Shirakawa-machi, GIFU	5.05	2.47	19.5	0.31 ± 0.047	0.12 ± 0.019	0.11 ± 0.025	0.0058 ± 0.0013
Shuzenji-machi, SHIZUOKA	1.49	1.05	5.24	0.39 ± 0.027	0.38 ± 0.026	0.028 ± 0.0061	0.0053 ± 0.0012
Iwata, SHIZUOKA	1.37	0.785	5.08	0.067 ± 0.013	0.085 ± 0.016	0.011 ± 0.0044	0.0022 ± 0.00087
Kameyama, MIE	5.89	3.45	19.7	1 ± 0.08	0.29 ± 0.023	0.11 ± 0.024	0.0056 ± 0.0012
Odai-machi, MIE	5.47	2.26	19.2	0.2 ± 0.041	0.087 ± 0.018	0.14 ± 0.026	0.0075 ± 0.0014
Kaya-machi, KYOTO	5.05	2.84	18.7	0.58 ± 0.066	0.21 ± 0.023	0.5 ± 0.041	0.027 ± 0.0022
Nara, NARA	5.28	2.47	21.1	0.25 ± 0.05	0.099 ± 0.02	0.51 ± 0.045	0.024 ± 0.0021
Nara, NARA	5.48	2.94	20.8	0.34 ± 0.054	0.12 ± 0.018	1.1 ± 0.06	0.052 ± 0.003
Nachikatsuura-machi, WAKAYAMA	5.3	2.67	19.3	1.1 ± 0.08	0.42 ± 0.03	0.44 ± 0.041	0.023 ± 0.0021
Mifune-machi, KUMAMOTO	5.49	2.71	19.9	0.25 ± 0.049	0.094 ± 0.018	0.015 ± 0.018	0.00076 ± 0.00091
Ue-mura, KUMAMOTO	5.36	2.66	19.8	0.58 ± 0.066	0.22 ± 0.025	0.27 ± 0.035	0.013 ± 0.0018
Miyakonojo, MIYAZAKI	5.8	3.38	21	0.17 ± 0.045	0.051 ± 0.013	0.82 ± 0.053	0.039 ± 0.0025
Kawaminami-machi, MIYAZAKI	5.23	2.44	19.7	0.56 ± 0.074	0.23 ± 0.03	1.2 ± 0.06	0.062 ± 0.0033
Jun, 2000							
Uji, KYOTO	5.48	2.71	20.4	0.36 ± 0.06	0.13 ± 0.022	0.04 ± 0.017	0.002 ± 0.00083
Miyanojo-machi, KAGOSHIMA	5.72	2.95	20.4	0.36 ± 0.055	0.12 ± 0.019	0.49 ± 0.041	0.024 ± 0.002
Chiran-machi, KAGOSHIMA	5.25	2.43	19.1	0.24 ± 0.048	0.098 ± 0.02	1.2 ± 0.06	0.066 ± 0.0033
Jul, 2000							
Tokorozawa, SAITAMA	5.43	2.5	19.4	0.31 ± 0.053	0.12 ± 0.021	0.46 ± 0.041	0.023 ± 0.0021
Iruma, SAITAMA	5.33	2.54	19.2	0.5 ± 0.058	0.2 ± 0.023	0.25 ± 0.031	0.013 ± 0.0016

(6) Strontium-90 and Cesium-137 in Sea Fish
(form Apr. 2000 to Sep. 2000)
-continued from No. 133 for this publication-

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

Location	Component			90Sr		137Cs	
	(%)	(g/kgwet)	(g/kgwet)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/gK)
(Ammodytes personatus)							
Apr, 2000							
Harimanada, HYOGO	1.95	2.33	3.25	0.0089 ± 0.0061	0.0038 ± 0.0026	0.073 ± 0.0083	0.022 ± 0.0026
(Katsuwonus pelamis)							
May, 2000							
Tosa, KOCHI	1.31	0.08	4.13	0.015 ± 0.0071	0.19 ± 0.089	0.27 ± 0.015	0.066 ± 0.0036
(Limanda herzensteini)							
Jun, 2000							
Rifu-machi, MIYAGI	3.14	7.43	2.87	0.013 ± 0.0071	0.0018 ± 0.00095	0.069 ± 0.008	0.024 ± 0.0028
(Mugil cephalus)							
Sep, 2000							
Morodomi-machi, SAGA	0.98	0.287	3.08	0.0099 ± 0.0061	0.034 ± 0.021	0.055 ± 0.0075	0.018 ± 0.0024
(Oncorhynchus keta)							
Sep, 2000							
Urakawa-machi, HOKKAIDO	1.27	0.459	3.77	0.00095 ± 0.0059	0.021 ± 0.013	0.076 ± 0.0084	0.02 ± 0.0022
(Pagrus sp)							
May, 2000							
Kumanonada, MIE	1.45	0.245	4.94	0.0063 ± 0.0056	0.026 ± 0.023	0.19 ± 0.013	0.038 ± 0.0026
Jul, 2000							
Fukuoka, FUKUOKA	1.35	0.451	4.39	0.0027 ± 0.006	0.006 ± 0.013	0.12 ± 0.01	0.027 ± 0.0023

Location	Component			90Sr				137Cs			
	(%)	(g/kgwet)	(g/kgwet)	(Bq/kgwet)		(Bq/gCa)		(Bq/kgwet)		(Bq/gK)	
Aug, 2000											
Oga, AKITA	1.45	1.3	3.68	0.007	± 0.0057	0.0054	± 0.0044	0.11	± 0.01	0.031	± 0.0028
(Sardinops melanostictus)											
Aug, 2000											
Yamagata, YAMAGATA	2.44	5.66	1.74	0.0095	± 0.0068	0.0017	± 0.0012	0.026	± 0.0054	0.015	± 0.0031
(Scomber japonicus)											
Sep, 2000											
Iyonada, EHIME	1.42	0.963	3.94	0.0044	± 0.0072	0.0046	± 0.0075	0.093	± 0.0096	0.024	± 0.0024
(Sebastiscus marmoratus)											
May, 2000											
Hamada, SHIMANE	5.96	14.8	2.59	0.027	± 0.0073	0.0018	± 0.00049	0.058	± 0.0082	0.023	± 0.0032
(Sillago sp)											
Jun, 2000											
Minamichita-machi, AICHI	3.43	8.27	3.11	0.0037	± 0.0083	0.0004	± 0.001	0.082	± 0.014	0.026	± 0.0044

Sea Fish

Japanese name	English name	Scientific name
Bora	Gray mullet	Mugil cephalus
Ikanago	Japanese sand lance	Ammodytes personatus
Kasago	Scorpion-fish	Sebastiscus marmoratus
Katsuo	Skipjack tuna	Katsuwonus pelamis
Kisu	Whiting	Sillago sp
Magarei	Brown sole	Limanda herzensteini
Maiwashi	Japanese pilchard	Sardinops melanostictus
Masaba	Pacific mackerel	Scomber japonicus
Sake	Chum Salmon	Oncorhynchus keta
Tai	Sea bream	Pagrus sp

(7) Strontium-90 and Cesium-137 in Freshwater Fish
(form Apr. 2000 to Sep. 2000)

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Table (7) : Strontium-90 and Cesium-137 in Freshwater Fish

Location	Component			90Sr		137Cs	
	(%)	(g／kgwet)	(g／kgwet)	(Bq／kgwet)	(Bq／gCa)	(Bq／kgwet)	(Bq／gK)
(Carassius auratus)							
Jul, 2000 Barato-lake, HOKKAIDO	5.19	11.7	2.56	0.49 ± 0.027	0.042 ± 0.0023	0.031 ± 0.0064	0.012 ± 0.0025
(Cyprinus carpio)							
May, 2000 Kasumigaura-lake, IBARA	1.13	0.229	3.8	0.013 ± 0.0072	0.056 ± 0.031	0.16 ± 0.012	0.043 ± 0.0032
Aug, 2000 Akita, AKITA	3.31	7.91	2.34	1 ± 0.03	0.13 ± 0.004	0.15 ± 0.012	0.064 ± 0.005
(Salvelinus leucomaeni)							
Sep, 2000 Fukushima, FUKUSHIMA	1.17	0.421	3.7	0.013 ± 0.0061	0.003 ± 0.015	0.13 ± 0.011	0.035 ± 0.0029

Freshwater Fish

Japanese name	English name	Scientific name
Funa	Crucian carp	Carassius auratus
Iwana		Salvelinus leucomaenis
Koi	Carp	Cyprinus carpio

(8) Strontium-90 and Cesium-137 in Shellfish
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (8) : Strontium-90 and Cesium-137 in Shellfish

Location	Component			90Sr		137Cs	
	(%)	(g/kgwet)	(g/kgwet)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/gK)
(Mytilus edulis)							
Jun, 2000							
Mutsu, AOMORI	2.53	0.454	1.34	0.0056 ± 0.0064	0.012 ± 0.014	0.0031 ± 0.0042	0.0023 ± 0.00331
(Ruditapes phillipinarum)							
May, 2000							
Konagai-machi, NAGASAKI	2.07	0.792	1.74	0.0006 ± 0.0048	0.0008 ± 0.0061	0.011 ± 0.0046	0.0062 ± 0.00026
Jun, 2000							
Minamichita-machi, AICHI	2	0.616	3.34	0.033 ± 0.016	0.053 ± 0.026	0.024 ± 0.0098	0.007 ± 0.0029
(Turbo cornutus)							
May, 2000							
Monzen-machi, ISHIKAWA	3.2	1.91	2.58	0.15 ± 0.0071	0.0078 ± 0.0037	0.025 ± 0.006	0.0098 ± 0.0023
Jun, 2000							
Sakata, YAMAGATA	2.96	1.59	2.62	0 ± 0.0057	0.0004 ± 0.0036	0.019 ± 0.0053	0.0072 ± 0.002

Shellfish

Japanese name	English name	Scientific name
Asari	Japanese littleneck	Ruditapes phillipinarum
Murasakiigai	Common blue mussel	Mytilus edulis
Sazae	Horned turban	Turbo cornutus

(9) Strontium-90 and Cesium-137 in Seaweeds
(form Apr. 2000 to Sep. 2000)

-continued from No. 133 for this publication-

Table (9) : Strontium-90 and Cesium-137 in Seaweeds

Location	Component			90Sr		137Cs	
	(%)	(g/kgwet)	(g/kgwet)	(Bq/kgwet)	(Bq/gCa)	(Bq/kgwet)	(Bq/gK)
(Undaria pinnatifida)							
Apr, 2000							
Ryotsu, NIIGATA	2.64	0.772	7.64	0.027 ± 0.0079	0.035 ± 0.01	0.023 ± 0.0057	0.0031 ± 0.00075
Monzen-machi, ISHIKAWA	3.85	0.864	6.26	0.016 ± 0.0068	0.019 ± 0.0078	0.018 ± 0.0054	0.0029 ± 0.00086
May, 2000							
Mutsu, AOMORI	2.89	0.873	6.64	0.024 ± 0.0079	0.028 ± 0.0091	0.017 ± 0.0053	0.0026 ± 0.0008
Fukaura-machi, AOMORI	2.57	0.946	5.63	0.012 ± 0.0067	0.013 ± 0.071	0.023 ± 0.0056	0.0041 ± 0.00099
Jun, 2000							
Sakata, YAMAGATA	1.69	1.14	2.86	0.043 ± 0.0092	0.038 ± 0.0081	0.0053 ± 0.004	0.0019 ± 0.0014

Seaweeds

Japanese name	English name	Scientific name
Wakame	Wakame seaweed	Undaria pinnatifida

＊＊Sampling Locations in Japan＊＊

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