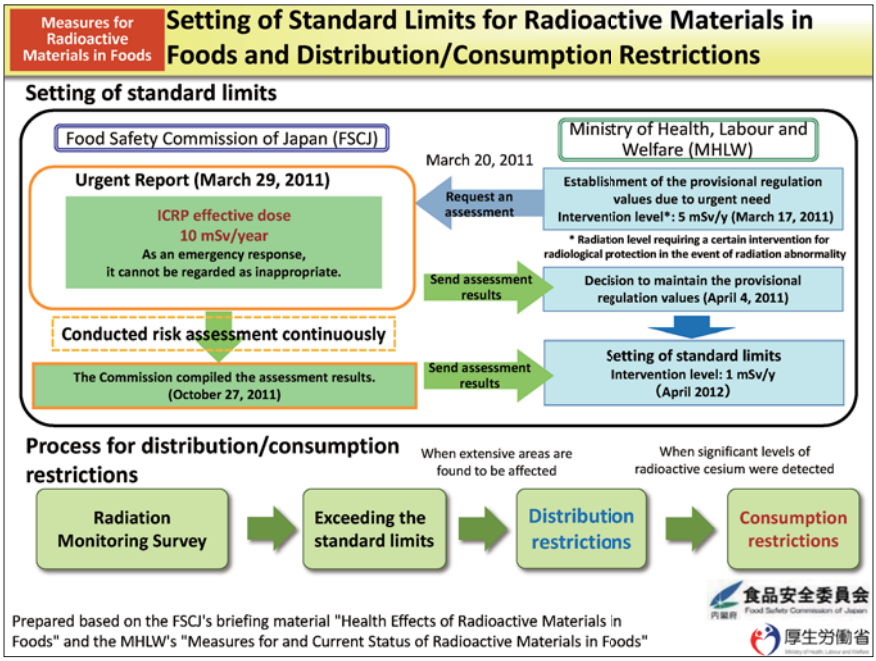

Generally, health effects caused by consumption of hazardous materials in foods are assessed by the Food Safety Commission of Japan (FSCJ), a risk assessment organization, which implements science-based risk assessments in an objective, neutral and fair manner. Based on the FSCJ's risk assessment, risk management organizations, such as the Ministry of Health, Labour and Welfare (MHLW) and the Ministry of Agriculture, Forestry and Fisheries (MAFF), formulate and implement risk management policies by establishing regulation values for each type of food.

However, under an emergency situation immediately after the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS, on March 17, 2011, the MHLW set the provisional regulation values for radioactive materials in foods mainly based on the guideline values given by the Nuclear Safety Commission. Then, the FSCJ held a total of five meetings, compiled the "Urgent Report on Radioactive Materials," and sent it to the MHLW on March 29, 2011. Based on this Urgent Report, the ministry decided to maintain the provisional regulation values as an interim measure.

In October 2011, the FSCJ notified the MHLW of the results of the risk assessment, and the MHLW reviewed the provisional regulation values and set the current standard limits by reducing the intervention level to 1 mSv/year in order to further ensure security and safety and deal with the situation on a long-term basis. The new regulation was adopted on April 1, 2012.

Local governments conduct inspections of radioactive materials in foods based on their respective plans formulated in line with the guideline established by the Nuclear Emergency Response Headquarters. When any item with radioactivity concentration exceeding the standard values is found through an inspection, the relevant item is collected and disposed of. When extensive areas are found to be affected, the Director General of the Nuclear Emergency Response Headquarters (Prime Minister) issues distribution restrictions by designating the regions and the items.

When significant levels of radioactive materials are detected from a food item, consumption restrictions are promptly issued irrespective of the number of inspected samples of that item.

(Related to p.174 of Vol. 1, "Indices Concerning Radioactive Materials in Foods," and p.51 of Vol. 2, "Standard Limits Applied from April 2012")

Source

・Prepared based on the website of the Government's Public Relations Office and the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" (March 22, 2019), Nuclear Emergency Response Headquarters

Included in this reference material on March 31, 2013
Updated on March 31, 2020

Measures for Radioactive Materials in Foods

Publication of the Inspection Results Concerning Radioactive Materials in Foods

The national government proposes food items to be inspected and inspection frequencies, and respective prefectural governments formulate their inspection plans and carry out inspections accordingly.
Inspection results are publicized by the Ministry of Health, Labour and Welfare and respective local governments.

"Measures for Radioactive Materials in Foods," Ministry of Health, Labour and Welfare
https://www.mhlw.go.jp/shinsai_jouhou/shokuhin.html (in Japanese)

Database of radioactive substances in food
http://www.radioactivity-db.info/ (in Japanese)

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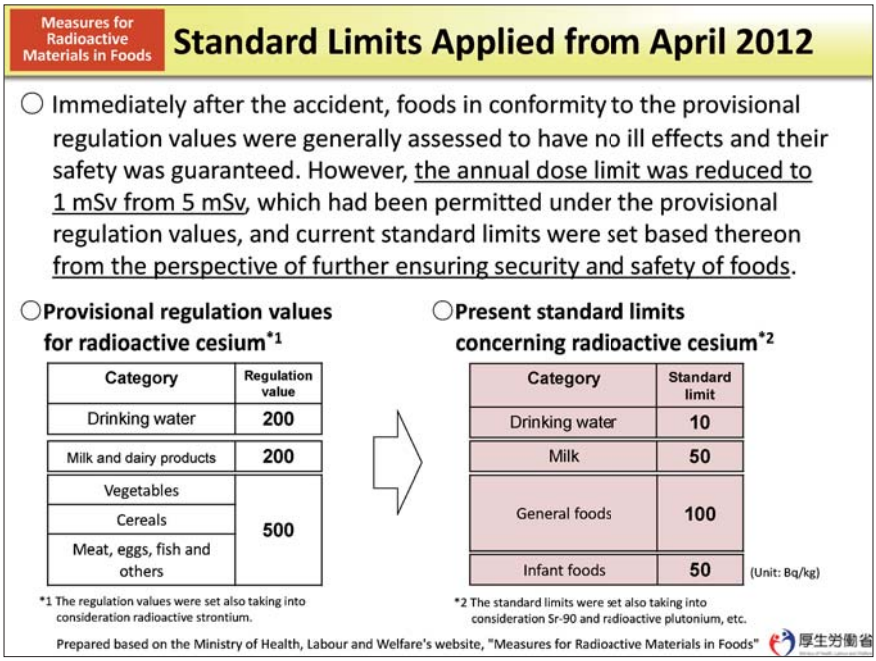
In response to the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS on March 11, 2011, the provisional regulation values concerning radioactive materials were established on March 17, 2011, based on the Food Sanitation Act (Act No. 233 of 1947). Then, the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" was compiled on April 4.

The "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" has been revised in light of the inspection results and accumulated knowledge on countermeasures to reduce radioactive materials (the latest revision was made on March 22, 2019).

Inspection results and information on distribution restrictions and consumption restrictions are positively publicized through websites of the national government and local governments.

Included in this reference material on February 28, 2018
Updated on March 31, 2020



Even based on the provisional regulation values applied up to March 2012, safety of foods in conformity thereto was guaranteed in terms of the effects on human health. However, from the perspective of further ensuring the security and safety of foods, the current standard limits were established and have been applied since April 1, 2012.

First of all, the provisional regulation values for radioactive cesium and strontium were based on the premise that the annual radiation dose from foods does not exceed 5 mSv.

The present standard limits are set so that the annual radiation dose from foods should not exceed 1 mSv (p.55 of Vol. 2, "Approach for the Establishment of the Standard Limits ◆ Grounds for the Standard Limits"). Additionally, foods were classified into five categories for the provisional regulation values, but were newly classified into four for the present standard limits (for details, see p.52 of Vol. 2, "Food Categories [Reference]").

(Related to p.174 of Vol. 1, "Indices Concerning Radioactive Materials in Foods," p.57 of Vol. 2, "Approach for the Calculation of the Standard Limits (1/2)," and p.58 of Vol. 2, "Approach for the Calculation of the Standard Limits (2/2)")

Included in this reference material on March 31, 2013
Updated on March 31, 2019

Measures for Radioactive Materials in Foods

Food Categories [Reference]

● **Basic idea**

Drinking water, infant foods and milk, for which special consideration is required, are separately classified into three different categories, while the others are all classified into a single category as general foods. In this manner, all foods and drinks are classified into four categories.

Food category	Reasons to establish the limits	Range of foods
Drinking water	1. Water is essential for human life and there is no substitution for water, and its consumption is large. 2. WHO's guidance level for radioactive cesium in drinking water is 10Bq/kg. 3. Strict management is possible for radioactive materials in tap water.	○ Drinking water, water used for cooking and tea drinks, which is a substitute for water
Infant foods	○ The Food Safety Commission pointed out that "the susceptibility to radiation may be higher in childhood than in adulthood."	○ Foods approved tc be labeled as "fit for infants" based on Article 26, paragraph (1) of the Health Promotion Act (Act No. 103 of 2002) ○ Foods and drinks sold as intended for infants
Milk	1. Children consume a lot. 2. The Food Safety Commission pointed out that "the susceptibility to radiation may be higher in childhood than in adulthood."	○ Milk (cow milk, low-fat milk, processed milk, etc.) and milk drinks specified in the Ministerial Order concerning the Ingredient Standards for Milk and Dairy Products (Order of the Ministry of Health and Welfare No. 52 of 1951)
General foods	For the following grounds, foods other than given above are categorized as "general foods." 1. Can minimize the influence of individual differences in eating habits (deviation of the foods to be consumed) 2. Easy to understand for the general public 3. Consistent with international views, such as those of the Codex Alimentarius Commission	○ Foods other than given above

Prepared based on the Ministry of Health, Labour and Welfare's website, "Measures for Radioactive Materials in Foods" 厚生労働省

Standard limits concerning radioactive materials in foods are established respectively for the four food categories.

For "drinking water," the standard limit was set at 10 Bq/kg due to the following three grounds: (i) Water is essential for human life and there is no substitution for water, and its consumption is large; (ii) WHO's guidance level for radioactive cesium in drinking water is 10Bq/kg; and (iii) Strict management is possible for radioactive materials in tap water (p.38 of Vol. 2, "Waterworks System").

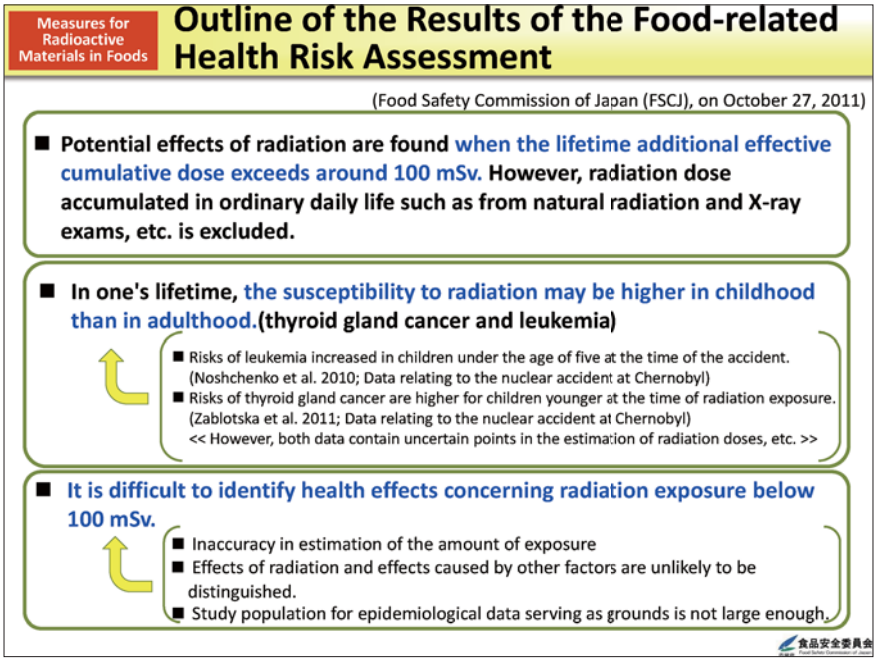
For "milk," the standard limit was set at 50 Bq/kg because (i) children consume a lot and (ii) the Food Safety Commission pointed out that "the susceptibility to radiation may be higher in childhood than in adulthood."

For "infant foods," the standard limit is the same as that for milk at 50 Bq/kg as the Food Safety Commission pointed out that "the susceptibility to radiation may be higher in childhood than in adulthood."

As reasons to set the limit at 100 Bq/kg for "general foods," the following three points are cited: Setting the value in this manner (i) can minimize the influence of individual differences in eating habits (deviation of the foods to be consumed), and is (ii) easy to understand for the general public and (iii) consistent with international views, such as those of the Codex Alimentarius Commission (an intergovernmental body created for the purpose of protecting consumers' health and ensuring fair-trade practices in the food trade, etc. that establishes international standards for foods).

(Related to p.174 of Vol. 1, "Indices Concerning Radioactive Materials in Foods")

Included in this reference material on March 31, 2013
Updated on March 31, 2019



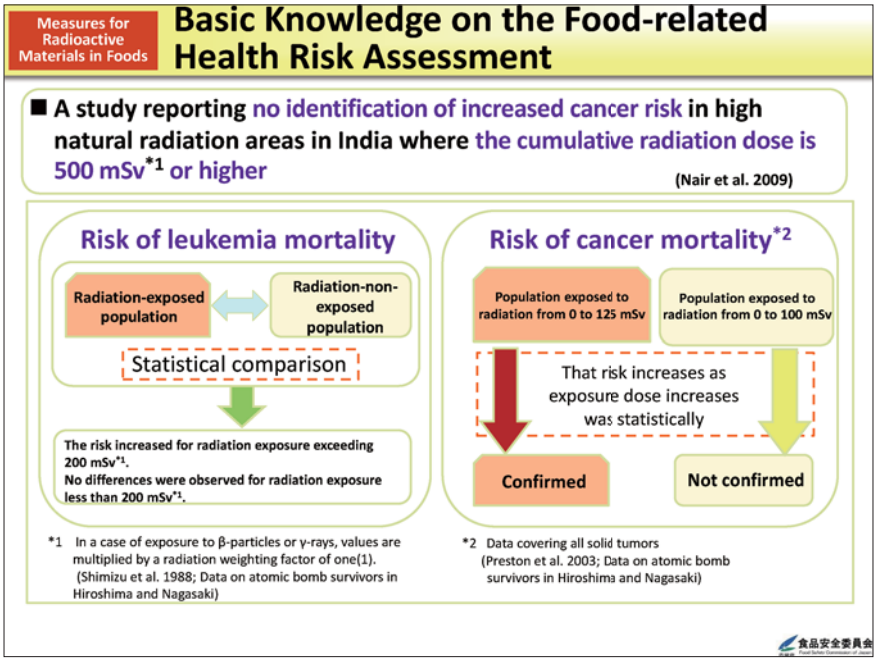
Based on currently available scientific knowledge, the FSCJ discussed additional radiation exposure through contaminated food consumption, and concluded that health effects could be found when the lifetime additional effective dose exceeds around 100 mSv, excluding radiation exposure from everyday life.

Although there are some unclear points in the estimation of radiation doses, etc., on the basis of findings of health effects after the Chernobyl NPS Accident concerning risks of thyroid gland cancer and leukemia, it is likely that the susceptibility to radiation is higher in childhood than in adulthood (p.115 of Vol. 1, "Difference in Radiosensitivity by Age").

On the other hand, if any health effects may occur by exposure to radiation below 100 mSv, it would be very small. As effects of radiation and effects caused by other factors are unlikely to be clearly distinguished and the epidemiological data, due to the small study population, is insufficient to prove the health effects of additional exposure, such as a causal association with cancer, the FSCJ has concluded that it is difficult to identify health effects from the extra cumulative exposure to radiation doses below 100 mSv.

The lifetime additional effective cumulative dose of "around 100 mSv" is not a threshold meaning that radiation exposure below this level causes no health effects nor that radiation exposure above this level surely causes health effects. This is the dose value which risk management organizations should consider for appropriate management of foods.
(Related to p.100 of Vol. 1, "Risks of Cancer Death from Low-Dose Exposure")

Included in this reference material on March 31, 2013



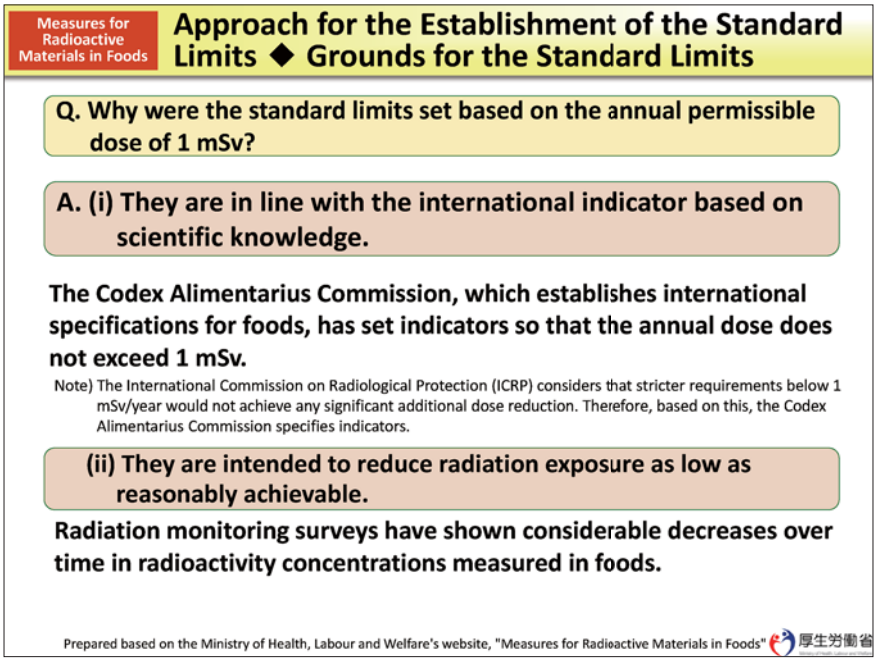
This figure shows epidemiological data on which the Food-related Health Risk Assessment was based.

There was a study report that the increased cancer risk by radiation was not observed among persons exposed to radiation exceeding 500 mSv in total in areas in India where natural radiation doses are high (p.124 of Vol. 1, "Effects of Long-Term Low-Dose Exposure").

The data on atomic bomb survivors in Hiroshima and Nagasaki shows that the risk of leukemia mortality increased for the population exposed to radiation exceeding 200 mSv but that there was no statistically significant difference in the mortality risk between the populations exposed to radiation less than 200 mSv and not exposed to radiation (p.119 of Vol. 1, "Risks of Developing Leukemia").

Another report which analyzed the same data of atomic bomb survivors shows that for the population exposed to radiation from 0 to 125 mSv, it was statistically confirmed that the risk of cancer mortality increases as the exposure dose increases. However, for the population exposed to radiation from 0 to 100 mSv, no statistically significant difference was observed between radiation doses and the mortality risk. Based on these data, the result of the Food-related Health Risk Assessment was derived.

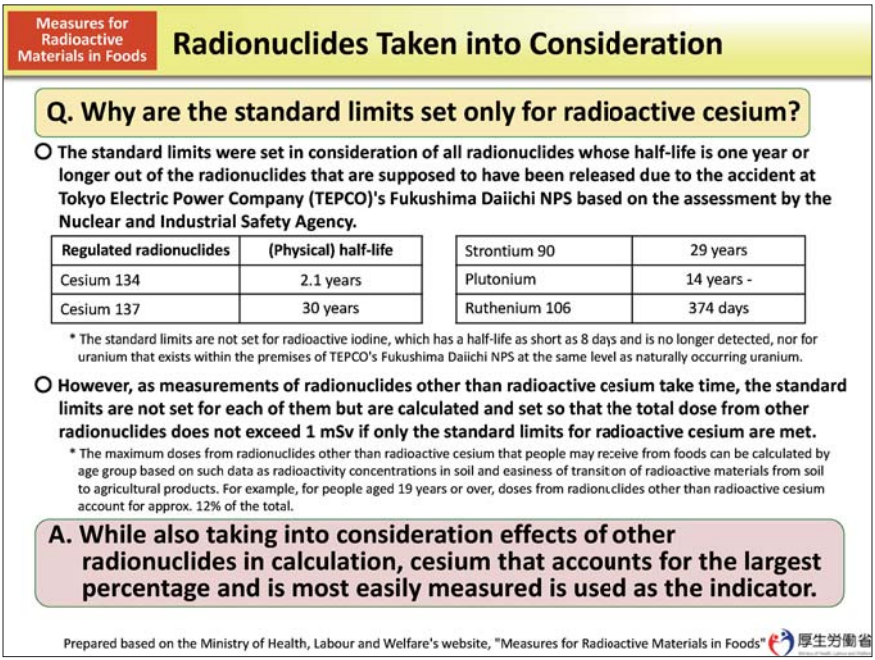
Included in this reference material on March 31, 2013



The standard limits concerning radioactive materials in foods were set based on the annual permissible dose of 1 mSv, which is adopted as an indicator by the Codex Alimentarius Commission, which establishes international specifications for foods. Originally, the International Commission on Radiological Protection (ICRP) publicized the idea that stricter requirements below 1 mSv/year would not achieve any significant additional dose reduction. Based on this idea, the Codex Alimentarius Commission specifies indicators.

Additionally, the standard limits are based on the principle of ALARA (As Low As Reasonably Achievable) (p.169 of Vol. 1, "Optimization of Radiological Protection"). Radiation monitoring surveys have shown considerable decreases in radioactivity concentrations measured in many of the food samples. Therefore, it was found that the reduction of the standard limit for radioactive cesium concentrations in general foods to 100 Bq/kg would not cause any problem for the dietary patterns of the Japanese people.
(Related to p.57 of Vol. 2, "Approach for the Calculation of the Standard Limits (1/2)")

Included in this reference material on March 31, 2013
Updated on March 31, 2019

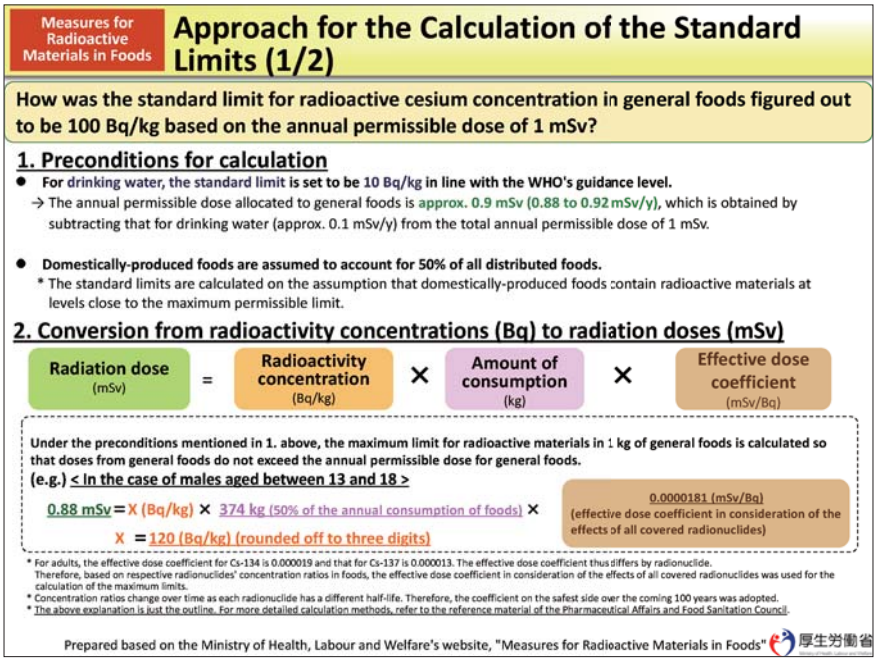


This figure shows the grounds why the standard limits are set only for radioactive cesium out of diverse radioactive materials.

All radionuclides whose half-life is one year or longer are taken into consideration, out of the radionuclides that are supposed to have been released due to the accident at TEPCO's Fukushima Daiichi NPS. Radionuclides shown in the table above, such as strontium 90, plutonium, and ruthenium 106, are taken into account in calculation, in addition to radioactive cesium. However, as the standard limits are intended for long-term regulations of radioactive materials in foods, only radionuclides with a relatively long half-life whose long-term influence needs to be taken into account are covered. For example, the standard limits are not set for radioactive iodine. Even if measurements are conducted for these other radionuclides by setting specific standard limits for each of them, it takes time to obtain measurement results. On the other hand, it is easy to measure radioactive cesium. Therefore, the standard limits are calculated and set so that the total dose from other radionuclides does not exceed 1 mSv if only the standard limits for radioactive cesium are met.

Specifically, effects of the radionuclides shown in the table above, such as radioactive cesium, strontium 90 and plutonium, were ascertained through surveys of soil, etc. For example, assuming the entirety of the effects caused by the consumption of foods containing radioactive materials released from TEPCO's Fukushima Daiichi NPS as 100, the effects of radioactive cesium account for around 88 in the case of people aged 19 years or over. On the other hand, the effects of the other radionuclides were found to account for around 12. In this manner, the standard limits were established also taking into consideration the effects of radionuclides other than radioactive cesium.

Included in this reference material on March 31, 2013
Updated on March 31, 2019



This figure shows the approach for the calculation of the standard limits, explaining the relation between the annual dose limit (1 mSv) and the standard limit for radioactive cesium concentration in general foods (100 Bq/kg).

First, the annual permissible dose of 0.88 to 0.92 mSv is allocated to general foods by subtracting approx. 0.1 mSv permitted for drinking water from the total annual permissible dose of 1 mSv. Next, in consideration of the status of food self-sufficiency in Japan, it is assumed that 50% of all distributed foods (all of the domestically-produced foods) contains radioactive materials. Based on that assumption, in the case of males aged between 13 and 18, 374 kg of foods or 50% of the total annual consumption per person (approx. 748 kg) is supposed to be domestically produced. Additionally, the effective dose coefficient in consideration of the effects of all covered radionuclides (0.0000181 mSv/Bq) is to be used for calculation.

Then, the calculation formula is as follows.

0.88 mSv = (Radioactivity concentration: Bq/kg) × 374 kg × 0.0000181 (mSv/Bq)

(Radioactivity concentration: Bq/kg) = 120 Bq/kg

If concentrations of radioactive materials in general foods do not exceed 120 Bq/kg, the annual dose will remain within 0.88 mSv.

Therefore, the standard limit for general foods (100 Bq/kg), which is lower than 120 Bq/kg, is the value set on the safe side to guarantee safety.

(Related to p.51 of Vol. 2, "Standard Limits Applied from April 2012," and p.58 of Vol. 2, "Approach for the Calculation of the Standard Limits (2/2)")

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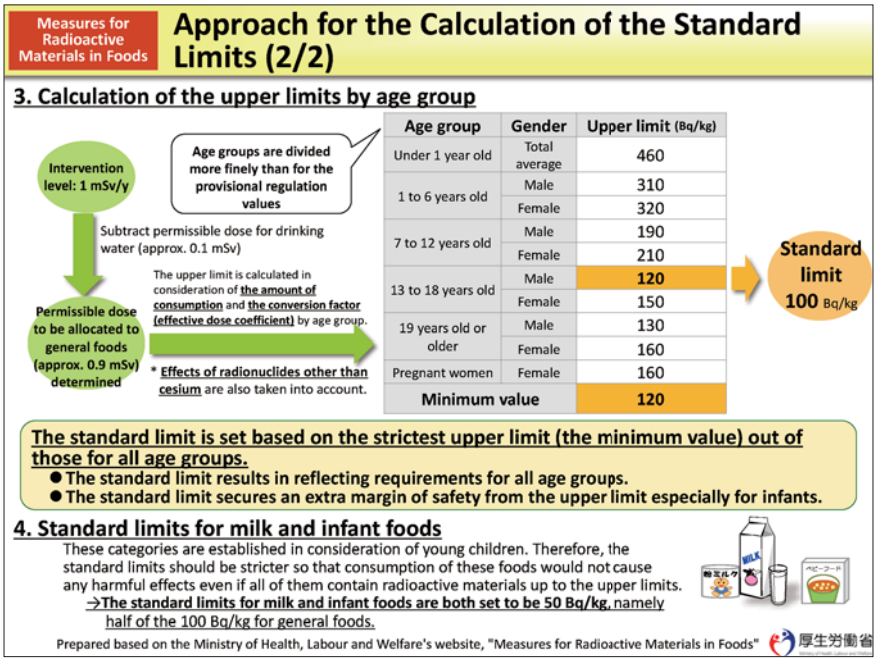

The basic approach to set the standard limits is to figure out dose limits for each age group.

The annual permissible dose allocated to general foods is approx. 0.9 mSv/year, subtracting that for drinking water from the total.

The table above shows the upper limits for radioactive cesium concentrations (Bq/kg) by age group, which were derived based on the annual consumption and the committed effective dose coefficients for each age group. These limits also take into consideration the influence of radionuclides other than radioactive cesium (p.56 of Vol. 2, "Radionuclides Taken into Consideration").

As a result, the upper limit set for males aged between 13 and 18, 120 Bq/kg, was the strictest of all age groups.

To further ensure safety for all age groups, the standard limit was set at 100 Bq/kg, below the highest upper limit of 120 Bq/kg.

To further ensure the safety of children, the standard limit for milk and infant foods was set to be 50 Bq/kg, which is half of that for general foods. This limit was set so that no negative influence appears, even assuming that milk and all infant foods contain radioactive materials up to the maximum permissible limit.

(Related to p.51 of Vol. 2, "Standard Limits Applied from April 2012," and p.57 of Vol. 2, "Approach for the Calculation of the Standard Limits (1/2)")

Included in this reference material on March 31, 2013
Updated on March 31, 2019

Measures for Radioactive Materials in Foods

Approach for Applying Standard Limits for Drinks and Dried Foods [Reference]

Food category	Standard limits for radioactive materials
Drinks	
Green tea and blend tea partially containing green tea	10 Bq/kg The standard limit for drinking water is applied.
Green tea, etc. with sugar, *matcha* tea, flavoring, vitamin C, etc.	
Barley tea	100 Bq/kg The standard limit for general foods is applied to barley as ingredient.
Tea other than green tea and barley tea, such as black tea, oolong tea, herbal tea, du zhong tea, and houttuynia cordata tea; and coffee.	100 Bq/kg The standard limit for general foods is applied to the products in drinkable form.
Products falling under milk (cow milk, low-fat milk, processed milk, etc.) and milk drinks specified in the Ministerial Order on Milk and Milk Products Concerning Compositional Standards, etc.(Order of the Ministry of Health and Welfare No. 52 of 1951)	50 Bq/kg The standard limit for milk is applied.
Matcha tea and other powdered tea (tea made by grinding tea leaves)	100 Bq/kg The standard limit for general foods is applied to the products in powder form.
Powdered drinks that are served in diluted form	100 Bq/kg The standard limit for general foods is applied to the final products.
Bottled drinks containing *matcha* tea but not containing green tea extract	
Dried foods	
Concentrated foods, including condensed soups, sauces, and dips	100 Bq/kg The standard limit for general foods is applied to the final products.
Dried foods including freeze-dried foods, powdered soups, and instant miso soups	

Prepared based on the Ministry of Health, Labour and Welfare's website, "Measures for Radioactive Materials in Foods" (in Japanese)

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The table shows part of the standard limits for radioactive materials applied to drinks, condensed foods, and dried foods such as powdered soups that are served by dissolving them in cold or hot water. The details of each category are as follows.

• Green tea: Non-fermented tea that is made from leaves of tea plants, including *sencha* (ordinary green tea) and its equivalents—*gyokuro* (refined green tea), roasted green tea, brown rice tea (green tea with roasted brown rice)

• *Matcha* tea and other powdered tea (tea made by grinding tea leaves): This type of tea is ingested in powder form, not as liquid tea obtained by brewing tea leaves and is used as an ingredient for foods like ice cream. Therefore, the standard limit for general foods is applied to this type of tea in powder form.

• Dried foods: For some dried foods, the standard limit for general foods is applied to foods both in dried form and in edible form (reconstituted form). "Dried foods" refers to dried mushrooms, vegetables, and seafood, including sea weeds.

• Dried mushrooms: Dried mushrooms listed in the Japan Standard Commodity Classification (JSCC), including *shiitake* mushrooms (*Lentinula edodes*), and *kikurage* mushrooms (*Auricularia polytricha*).

• Dried vegetables: Dried vegetables listed in the JSCC, including gourd shavings, Japanese radish, fiddleheads (*Osmunda japonica*), brackens (*Pteridium aquilinum*), and taro stems. Products in flake form and in powder form are excluded.

• Dried seaweeds: Processed seaweeds listed in the JSCC, including dried kelp, dried *wakame* (*Undaria pinnatifida*) products, dried *hijiki* (*Sargassum fusiforme*), dried *arame* (*Eisenia bicyclis*), agar.

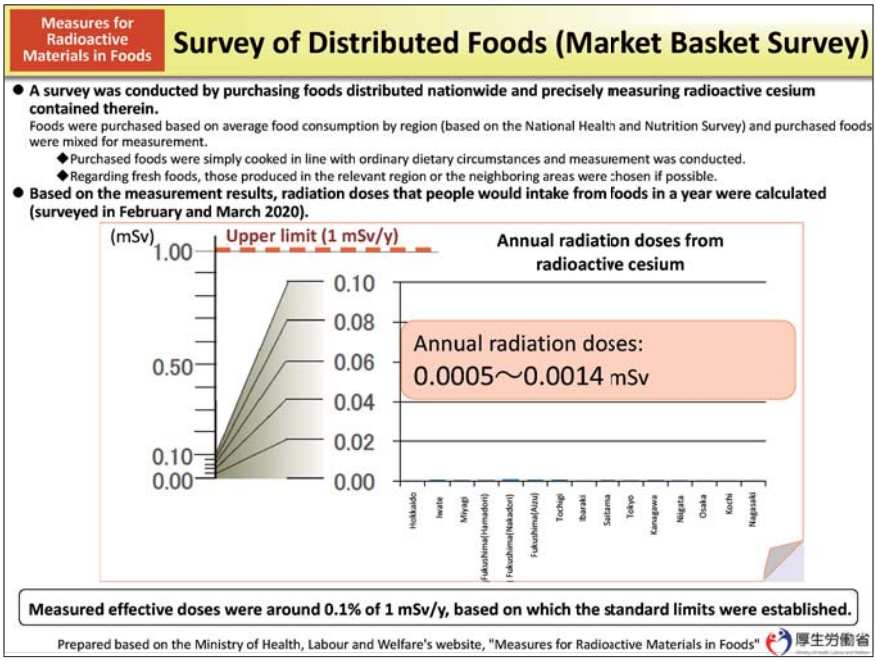
• Dried seafoods: Open-air dried seafoods listed in the JSCC, including fully dried herring fillets, cod fillets, and shark fins; as well as dried boiled-seafoods listed in the JSCC, including abalone and sea cucumbers.

• Dried shiitake mushrooms: Basically, tests are conducted using ground samples to which an adequate amount of water is added. The amount of added water is based on the data (weight change rate)— made public in the Standard Tables of Food Composition in Japan—of the water taken into dried mushrooms as the result of reconstitution. As water used for reconstitution is often used as soup stock in Japan, the amount of radioactive materials migrating from dried mushrooms into the water needs to be determined. This method is equivalent to the testing being conducted by considering the amount of radioactive materials migrating from the samples into the water.

• Concentrated fruit juice: For fruit juice that is distributed in concentrated form for the purpose of transportation and that is surely reprocessed into diluted form at processing facilities before being sold for unspecified persons, the standard limit is basically applied to the products obtained by being diluted to the state of original fruit juice, based on the concentration factor. This is because such concentrated fruit juice is unlikely to be served for human consumption as is.

These standard limits are compiled in the "Q&As on the Setting of Standard Limits for Radioactive Materials in Foods" by the Ministry of Health, Labour and Welfare. (in Japanese)

Included in this reference material on March 31, 2019



Since FY2011, the amount of radioactive materials contained in the average diet has been surveyed using the market basket method.

From February to March 2020, the Ministry of Health, Labour and Welfare conducted a survey by purchasing distributed foods in 15 areas across Japan and measuring radioactive cesium contained therein to estimate annual radiation doses received from radioactive cesium in foods.

Annual radiation doses received from radioactive cesium in foods were estimated to be 0.0005 to 0.0014 mSv, being around 0.1% of the annual permissible dose of 1 mSv/y, based on which the current standard limits were established. Thus, annual radiation doses received from foods were confirmed to be extremely small.

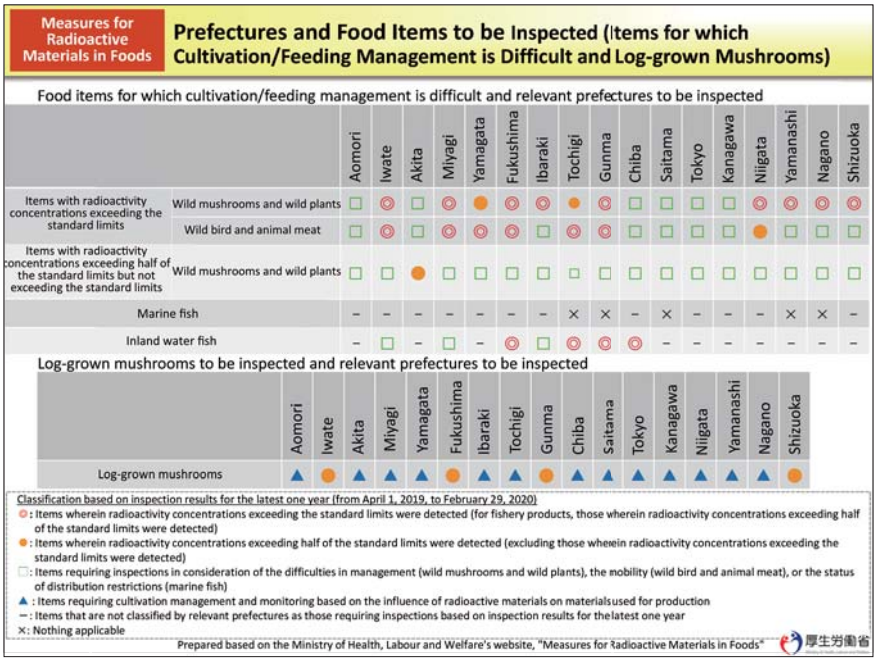
Market basket survey:

One of the survey methods for estimating daily consumption of various chemical substances

Source

・Ministry of Health, Labour and Welfare's website (https://www.mhlw.go.jp/shinsai_jouhou/market_basket.html, in Japanese)

Included in this reference material on March 31, 2013
Updated on March 31, 2021



In FY2016, more than five years after the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS, radioactivity concentrations had decreased as a whole and food items with radioactivity concentrations exceeding the standard limits had become limited. Therefore, the national government reviewed and made inspection methods more reasonable and efficient, centered on items whose cultivation/feeding is manageable.

Thereafter, as inspection results had been accumulated, the approach for deciding prefectures and items to be inspected and lifting distribution restrictions has been reviewed every year and inspection targets are as shown in the table above as of FY2020.

With regard to items for which cultivation/feeding management is difficult, prefectures where inspections need to be continued are specified for each item in consideration of the difficulties in management therefor.

With regard to log-grown mushrooms, prefectures where inspections need to be continued are also specified considering the influence of radioactive materials on materials used for production.

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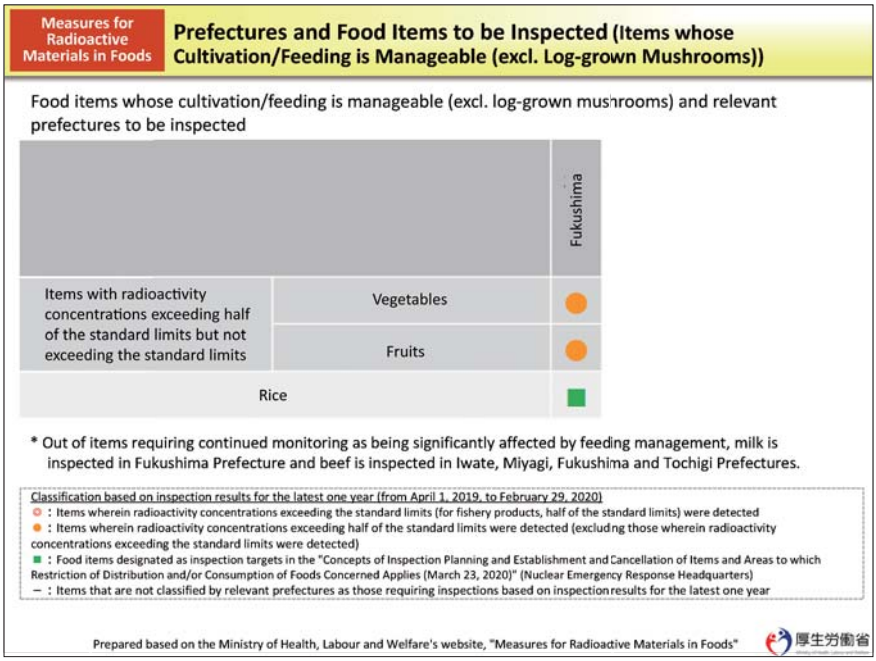

With regard to items whose cultivation/feeding is manageable (excluding log-grown mushrooms), prefectures where inspections need to be continued are specified for each item based on inspection results for the latest three years, such as prefectures where items with radioactive cesium exceeding half of the standard limits were detected.

In other prefectures, inspections are to be conducted as needed.

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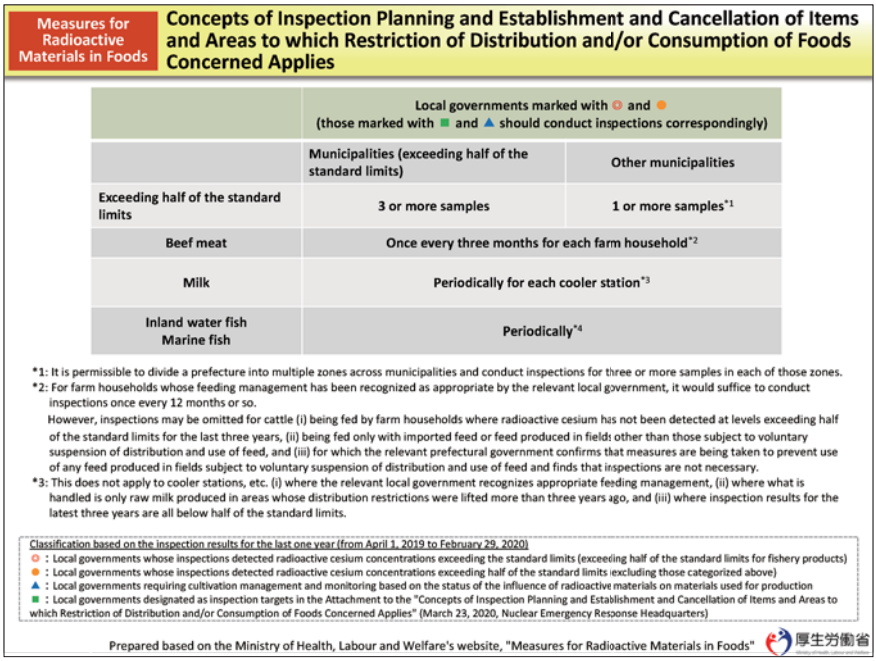


Measures for Radioactive Materials in Foods

Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies

	Local governments marked with ◎ and ● (those marked with ■ and ▲ should conduct inspections correspondingly)	
	Municipalities (exceeding half of the standard limits)	Other municipalities
Exceeding half of the standard limits	3 or more samples	1 or more samples*1
Beef meat	Once every three months for each farm household*2	
Milk	Periodically for each cooler station*3	
Inland water fish Marine fish	Periodically*4	

*1: It is permissible to divide a prefecture into multiple zones across municipalities and conduct inspections for three or more samples in each of those zones.
*2: For farm households whose feeding management has been recognized as appropriate by the relevant local government, it would suffice to conduct inspections once every 12 months or so.
However, inspections may be omitted for cattle (i) being fed by farm households where radioactive cesium has not been detected at levels exceeding half of the standard limits for the last three years, (ii) being fed only with imported feed or feed produced in fields other than those subject to voluntary suspension of distribution and use of feed, and (iii) for which the relevant prefectural government confirms that measures are being taken to prevent use of any feed produced in fields subject to voluntary suspension of distribution and use of feed and finds that inspections are not necessary.
*3: This does not apply to cooler stations, etc. (i) where the relevant local government recognizes appropriate feeding management, (ii) where what is handled is only raw milk produced in areas whose distribution restrictions were lifted more than three years ago, and (iii) where inspection results for the latest three years are all below half of the standard limits.

Classification based on the inspection results for the last one year (from April 1, 2019 to February 29, 2020)
◎ : Local governments whose inspections detected radioactive cesium concentrations exceeding the standard limits (exceeding half of the standard limits for fishery products)
● : Local governments whose inspections detected radioactive cesium concentrations exceeding half of the standard limits (excluding those categorized above)
▲ : Local governments requiring cultivation management and monitoring based on the status of the influence of radioactive materials on materials used for production
■ : Local governments designated as inspection targets in the Attachment to the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" (March 23, 2020, Nuclear Emergency Response Headquarters)

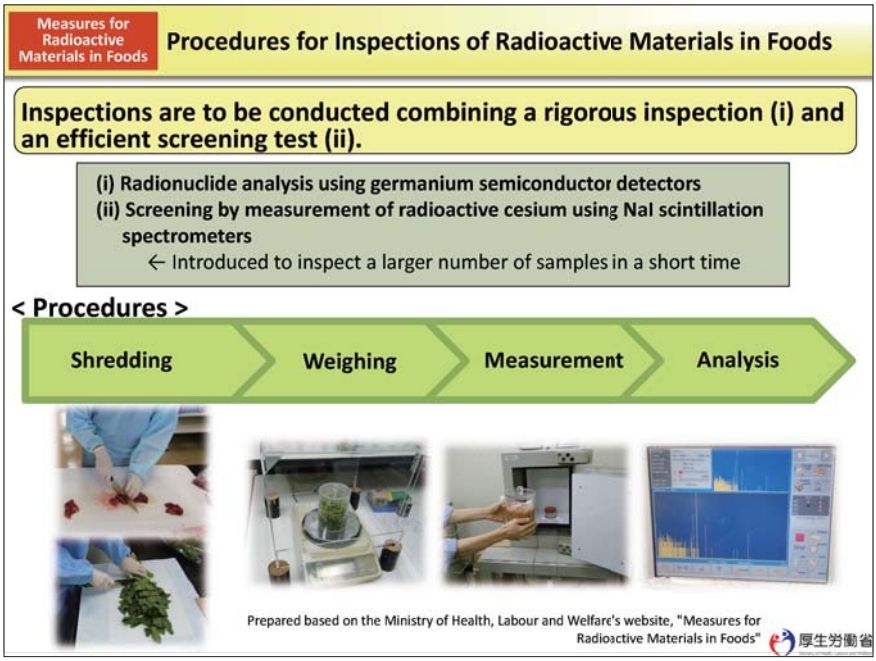
Prepared based on the Ministry of Health, Labour and Welfare's website, "Measures for Radioactive Materials in Foods"

This table shows the required number of samples and frequencies of inspections for local governments whose inspections detected radioactive cesium concentrations exceeding the standard limits (those marked with ◎) and local governments whose inspections detected radioactive cesium concentrations exceeding half of the standard limits (those marked with ●).

The "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" (March 23, 2020) by the Nuclear Emergency Response Headquarters specifies as follows.

・Regarding local governments that have detected radioactive cesium concentrations exceeding half of the standard limits in any food under this food classification since April 2019, inspections should be conducted for three or more samples for each municipality in the areas where radioactive cesium concentrations exceeding half of the standard limits were detected, and for one or more samples for each municipality in other areas (it is permissible to divide a prefecture into multiple zones across municipalities and conduct inspections for three or more samples in each of those zones) (marked with ◎ and ○ in the table).

Included in this reference material on March 31, 2013
Updated on March 31, 2021



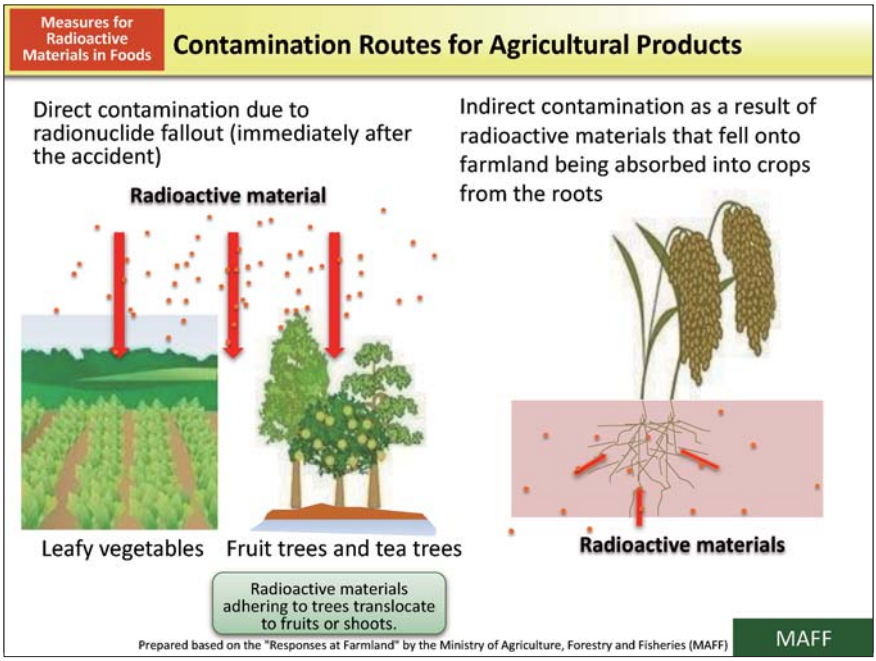
This figure shows procedures for inspections of radioactive materials in foods.

There are two ways to inspect foods, i.e., a rigorous inspection and an efficient screening test.

As a rigorous inspection, radionuclide analysis is conducted using a germanium semiconductor detector. After shredding a food sample, its weight is measured accurately. Then, the shredded sample is put in a prescribed container. The container is set in a detector, which is structured like a box covered with a thick layer of lead, and the amount of radioactive cesium is measured. Lastly, measurement results are analyzed.

For an efficient screening test, a NaI (Tl) scintillation spectrometer is used. A NaI scintillation spectrometer is inferior to a germanium semiconductor detector in terms of measurement accuracy, but can shorten the time required for inspections and is less expensive. If the measurement using a NaI scintillation spectrometer suggests the existence of radioactive cesium exceeding the standard limits, an inspection is conducted again using a germanium semiconductor detector.

Included in this reference material on March 31, 2013
Updated on March 31, 2017



Contamination routes due to radioactive fallout are roughly divided into three.

(i) The figure on the left shows the route of how radioactive fallout directly adheres to crops. High radioactivity concentrations were often detected in leafy vegetables that were grown in the fields at the time of the accident. This is considered to be due to direct contamination.

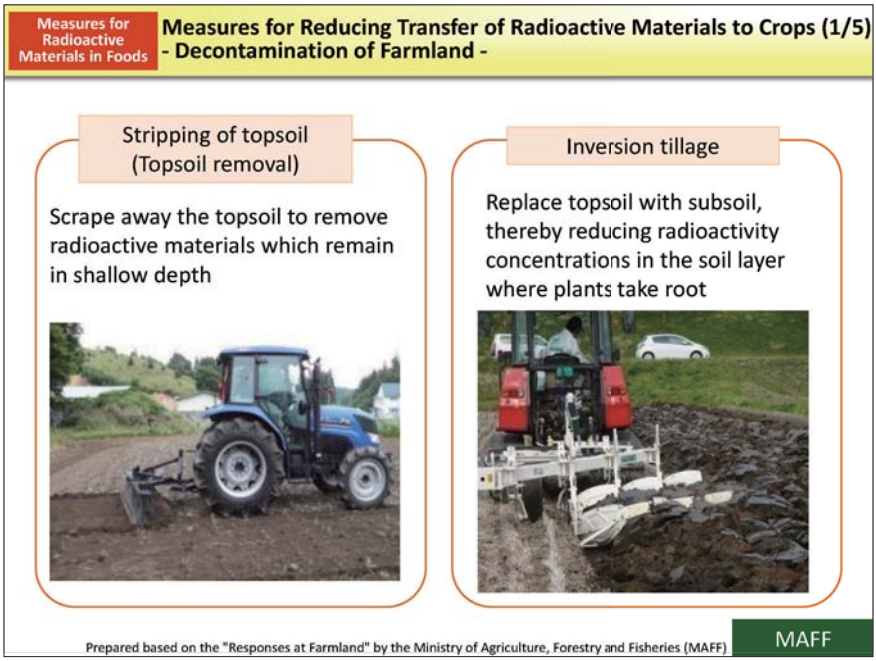
(ii) The figure in the center shows the route of how radioactive materials that adhered to fruit trees and tea trees immediately after the accident penetrate into trees and translocate*1 to fruits and tea shoots.

(iii) The figure on the right shows the route of how radioactive materials that fell onto soil are absorbed into crops from the roots. Contamination of crops planted after the accident is considered to have followed this route.

(Related to p.179 of Vol. 1, "Transfer to Plants")

*1: Phenomenon wherein nutrients absorbed in a plant or metabolites produced by photosynthesis are transported from one tissue to another tissue

Included in this reference material on March 31, 2013
Updated on March 31, 2019



Radioactive materials that were released into the air and fell onto uncultivated farmland stay on topsoil.

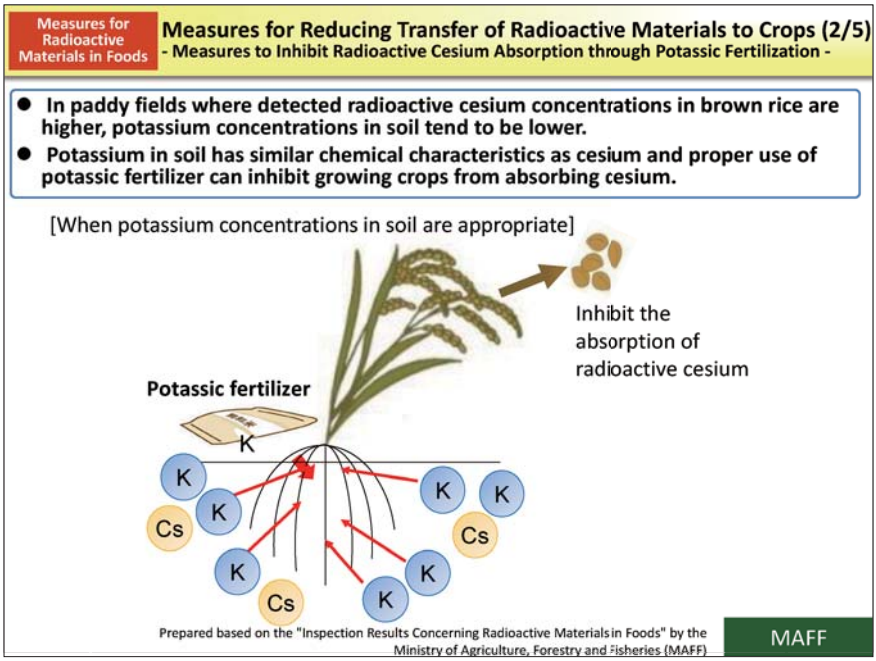
Therefore, at farmland where high radioactivity concentrations are detected, the topsoil is scraped away to remove radioactive materials which remain in shallow depth.

In the meantime, at farmland where detected radioactivity concentrations are relatively low, topsoil is replaced with subsoil (inversion tillage) to reduce radioactivity concentrations in the soil layer where plants take root.

In this manner, efforts have been made to reduce radiation doses released from farmland and inhibit growing crops from absorbing radioactive materials.

(Related to p.180 of Vol. 1, "Distribution of Radioactive Cesium in Soil")

Included in this reference material on March 31, 2013
Updated on March 31, 2017

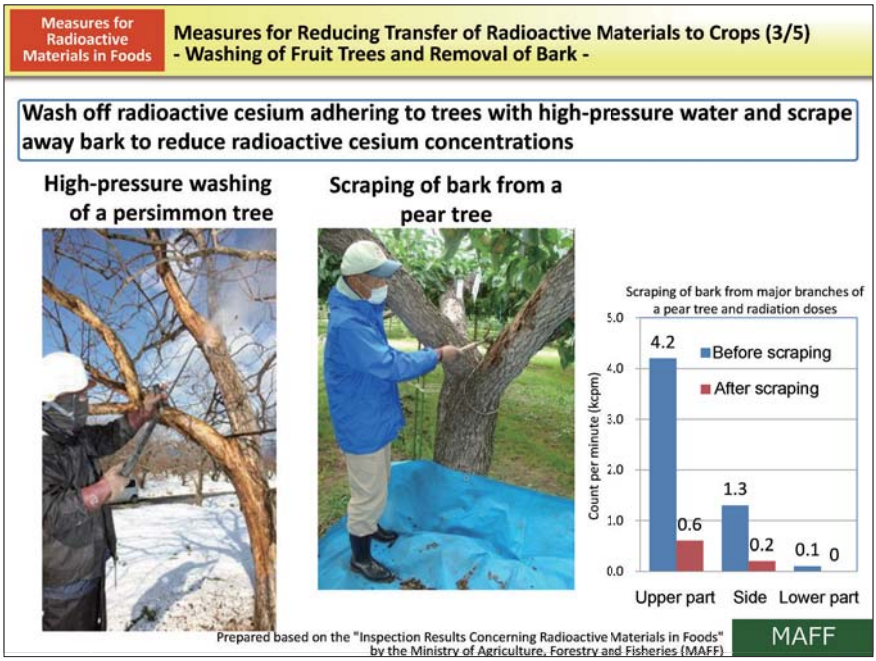


It is known that crops, such as rice, absorb more radioactive cesium when potassium concentrations in soil are lower.

Potassium and cesium have similar chemical characteristics, and when the soil contains sufficient potassium, less cesium is absorbed into crops. This is because a passage (transporter) on the root surface that lets some potassium through also lets cesium through. Recently, there is also a research report concerning rice plants that do not have such passage (unlikely to absorb cesium).

Therefore, at farmland where potassium concentrations in soil are low, a sufficient amount of potassic fertilizer is applied to increase potassium concentrations above a certain level to inhibit absorption of radioactive cesium into crops.

Included in this reference material on March 31, 2013
Updated on March 31, 2021

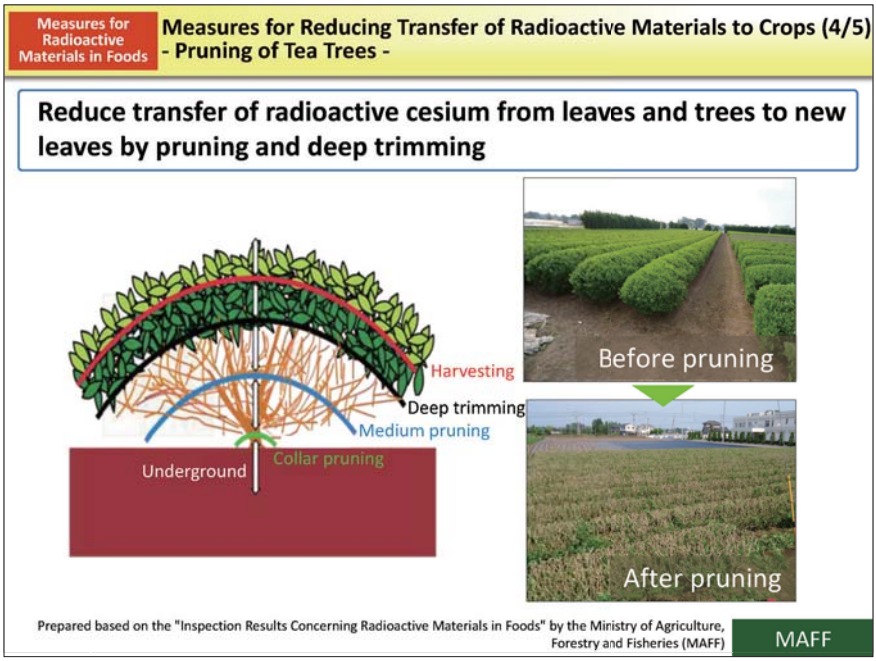


In order to prevent translocation of radioactive materials from fruit trees to fruits, trees are washed with high-pressure water and bark is scraped off from trees to remove adhering radioactive materials.

In the case of pear trees, there is data that radiation doses from major branches are reduced by nearly 90% by scraping off the bark.

(Related to p.179 of Vol. 1, "Transfer to Plants")

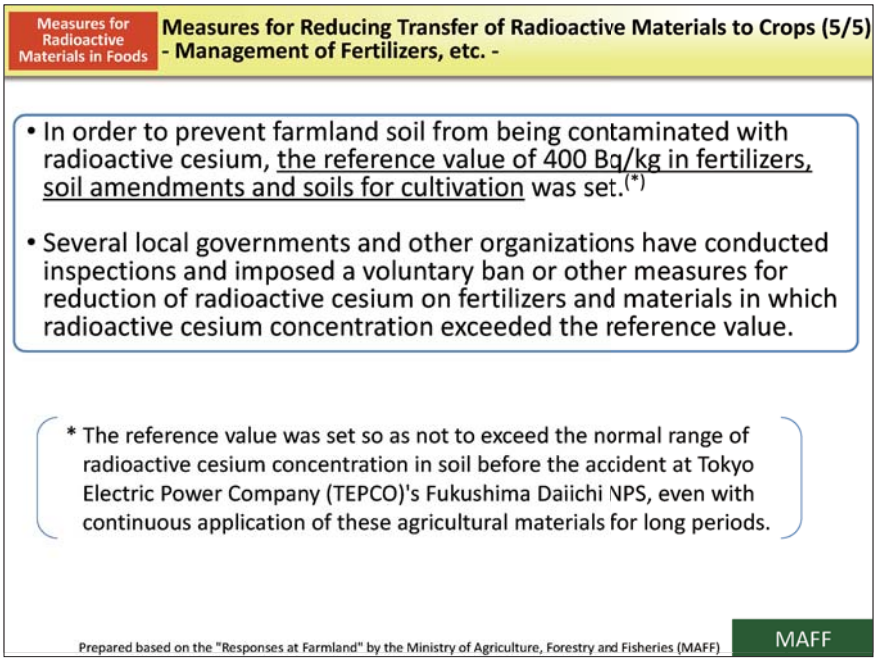
Included in this reference material on March 31, 2013
Updated on March 31, 2017



In the case of tea trees, in order to prevent transfer of radioactive materials from the surface of leaves to new leaves, leaves and branches are trimmed or pruned deeper than usual to remove contaminated parts.

(Related to p.179 of Vol. 1, "Transfer to Plants")

Included in this reference material on March 31, 2013
Updated on March 31, 2017



Regarding materials used for agricultural production, such as fertilizers, soil amendments and soils for cultivation, the reference value for radioactive cesium of 400 Bq/kg was set in order to prevent expansion of contamination of farmland soil by the use of contaminated materials.

Several local governments and other organizations have monitored radioactive cesium concentration in these materials, and provide guidance to ensure that materials containing radioactive cesium exceeding the reference value should not be used at farmland.

Included in this reference material on March 31, 2013
Updated on March 31, 2019

Rice

Changes in Inspection Results for Rice (Incl. Inspection of All Rice Bags)

Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
Harvested in 2011	26,464	592	2.2%
Harvested in 2012	Approx.10.37 million	84	0.0008%
Harvested in 2013	Approx.11.04 million	28	0.0003%
Harvested in 2014	Approx.11.02 million	2	0.00002%
Harvested in 2015	Approx.10.50 million	0	0%
Harvested in 2016	Approx.10.27 million	0	0%
Harvested in 2017	Approx.9.98 million	0	0%
Harvested in 2018	Approx.9.25 million	0	0%
Harvested in 2019	Approx.9.49 million	0	0%
Harvested in 2020 (as of the end of December)	Approx.0.3 million	0	0%

* Coverage: 17 prefectures including the Tokyo Metropolis designated as inspection targets in the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies," which compiles basic approaches concerning radioactive materials in foods

Prepared based on the "Inspection Results Concerning Radioactive Cesium Concentrations in Agricultural Products" by the Ministry of Agriculture, Forestry and Fisheries and the "Inspection Results Concerning Radioactive Materials in Foods" by the Ministry of Health, Labour and Welfare

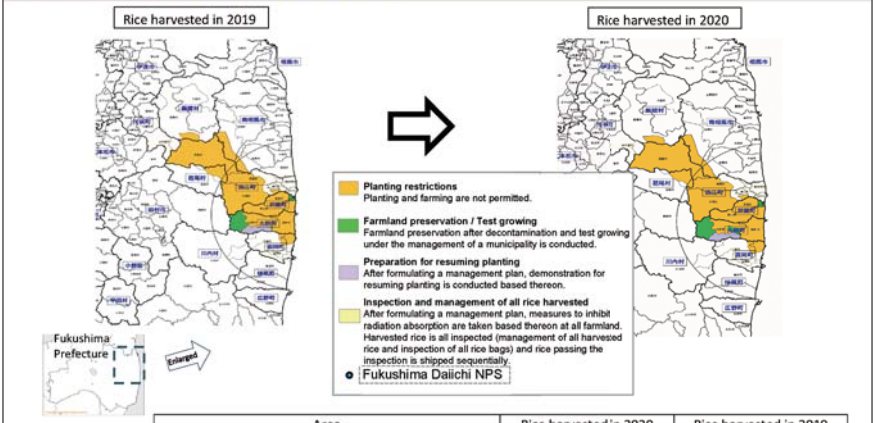
The production and distribution of rice are managed through measures to inhibit radioactive cesium absorption by the use of potassic fertilizer (p.67 of Vol. 2, "Measures for Reducing Transfer of Radioactive Materials to Crops (2/5) - Measures to Inhibit Radioactive Cesium Absorption through Potassic Fertilization -") and inspection of all bags of harvested rice. In Fukushima Prefecture, planting has been restricted and measures to inhibit radioactive cesium absorption have been taken at former Areas under Evacuation Orders and distribution of rice has been strictly controlled through inspection of all rice bags since FY2015 based on the "Policies on Planting of Rice."

Rice containing radioactive cesium at a level exceeding the standard limit decreased year by year, and there has been none since FY2015 (as of the end of December 2020). This standard limit refers to 100 Bq/kg, which has been applied since April 2012 (in FY2011, provisional regulation values were applied, but tabulation is based on the current standard for the purpose of comparison with the results in and after 2012).

Included in this reference material on March 31, 2013
Updated on March 31, 2021

Rice

Areas Subject to Planting Restrictions for Rice to be Harvested in 2020



Area	Rice harvested in 2020	Rice harvested in 2019
Planting restriction	1,950ha	2,150ha
Farmland preservation / Test growing	300ha	100ha
Preparation for resuming planting	200ha	200ha
Inspection and management of all rice harvested	0ha	0ha
Total	2,450ha	2,450ha

Prepared based on the "Areas Subject to Planting Restrictions for Rice to be Harvested in 2020 by the Ministry of Agriculture, Forestry and Fisheries (MAFF)

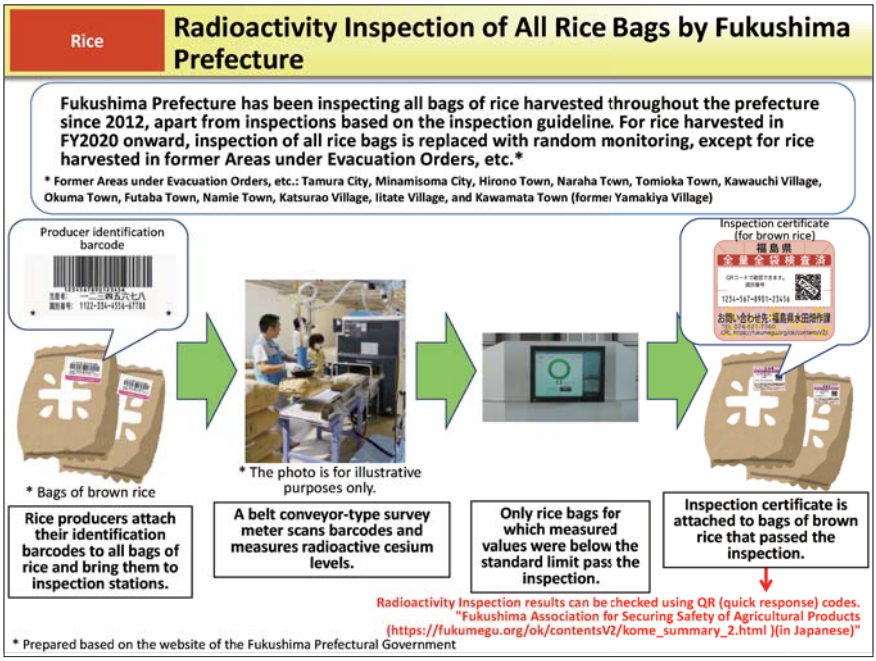
Entry and farming are restricted (planting restrictions) in Areas under Evacuation Orders. In Habitation Restricted Areas, farmland preservation after decontamination and test growing under the management of the relevant municipalities may be conducted (farmland preservation/test growing), and in Preparation Areas for Lift of Evacuation Order, demonstration for resuming planting may be conducted under a management plan formulated by the prefecture and the relevant municipalities (preparation for resuming planting).

In areas not subject to evacuation orders that were under evacuation orders in the previous year or where rice containing radioactive cesium exceeding the standard limit was detected in the previous year, the prefecture and the relevant municipalities formulate a management plan and measures to inhibit radioactive cesium absorption are taken thoroughly and all rice harvested in respective areas is managed and all bags are inspected (inspection and management of all rice harvested).

In areas where inspection and management of all rice harvested were obliged in the previous year and there was none harvested in the previous year wherein radioactive cesium exceeding the standard limit was detected, measures to inhibit radioactive cesium absorption are taken thoroughly by each farm household and all farm households are inspected (inspection and management of all farm households).

In other areas, measures to inhibit radioactive cesium absorption are taken as needed and random inspection is conducted for each area.

Included in this reference material on February 28, 2018
Updated on March 31, 2021



Since 2012, Fukushima Prefecture has been inspecting all bags of rice harvested throughout the prefecture, not limited to the areas instructed by the national government, as an initiative by the prefecture. For radioactivity inspections, belt conveyor-type survey meters are used.

For rice harvested in FY2020 onward, inspection of all rice bags is replaced with random monitoring, except for rice harvested in former Areas under Evacuation Orders*, etc.

Whether the rice has passed the inspection can be checked as follows. In the case of brown rice packed in a 30-kg paper bag that passed the inspection, an inspection certificate is attached to the paper bag.

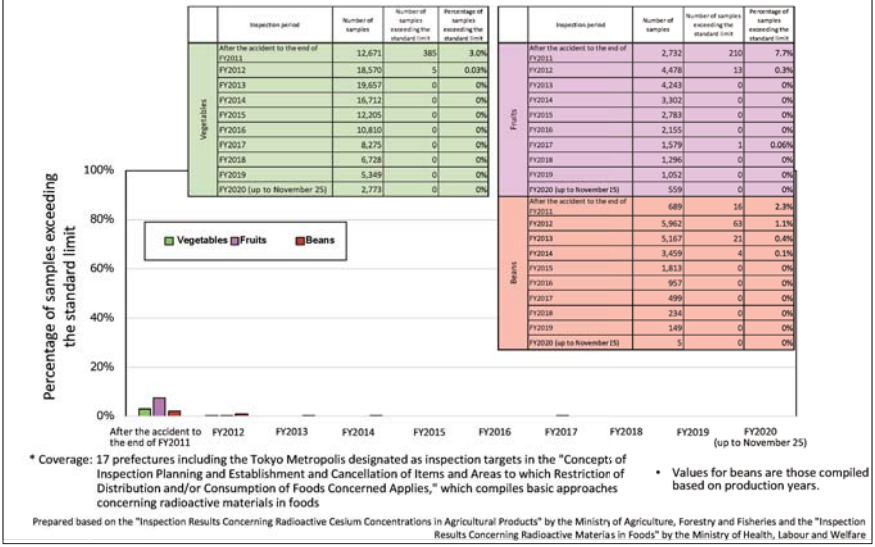
In the case of polished rice, a polished rice label to prove that it is made from brown rice that passed the inspection is attached. However, as this label is attached on a voluntary basis, some polished rice that passed the inspection may be distributed without the label.

(Partially cited from the website of Fukushima Prefecture "Frequently Asked Questions about Radioactivity Inspection of All Rice Bags": http://www.pref.fukushima.lg.jp/sec/36035b/suiden-zenryozenhukurokensa-faq.html, in Japanese)

* Former Areas under Evacuation Orders, etc.: Tamura City, Minamisoma City, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Iitate Village, and Kawamata Town (former Yamakiya Village)

Included in this reference material on March 31, 2013
Updated on March 31, 2021

Vegetables, Fruits and Beans — Changes in Inspection Results for Vegetables, Fruits and Beans



Vegetables

Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
After the accident to the end of FY2011	12,671	385	3.0%
FY2012	18,570	5	0.03%
FY2013	19,657	0	0%
FY2014	16,712	0	0%
FY2015	12,205	0	0%
FY2016	10,810	0	0%
FY2017	8,275	0	0%
FY2018	6,728	0	0%
FY2019	5,349	0	0%
FY2020 (up to November 25)	2,773	0	0%

Fruits

Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
After the accident to the end of FY2011	2,732	210	7.7%
FY2012	4,478	13	0.3%
FY2013	4,243	0	0%
FY2014	3,302	0	0%
FY2015	2,783	0	0%
FY2016	2,155	0	0%
FY2017	1,579	1	0.06%
FY2018	1,296	0	0%
FY2019	1,052	0	0%
FY2020 (up to November 25)	559	0	0%

Beans

Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
After the accident to the end of FY2011	689	16	2.3%
FY2012	5,962	63	1.1%
FY2013	5,167	21	0.4%
FY2014	3,459	4	0.1%
FY2015	1,813	0	0%
FY2016	957	0	0%
FY2017	499	0	0%
FY2018	234	0	0%
FY2019	149	0	0%
FY2020 (up to November 25)	5	0	0%

* Coverage: 17 prefectures including the Tokyo Metropolis designated as inspection targets in the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies," which compiles basic approaches concerning radioactive materials in foods

• Values for beans are those compiled based on production years.

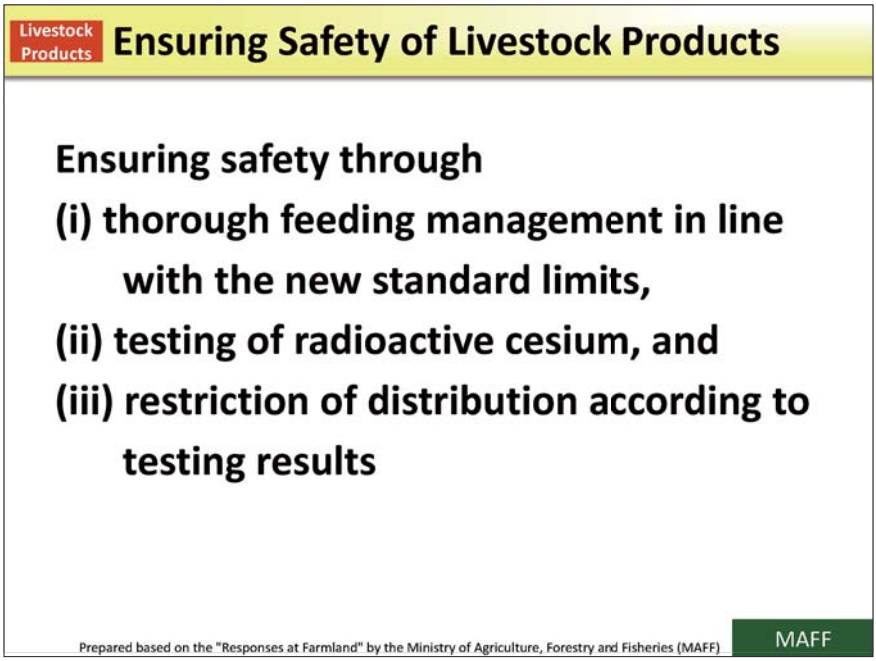
Prepared based on the "Inspection Results Concerning Radioactive Cesium Concentrations in Agricultural Products" by the Ministry of Agriculture, Forestry and Fisheries and the "Inspection Results Concerning Radioactive Materias in Foods" by the Ministry of Health, Labour and Welfare

Upon production and shipment of vegetables, fruits and beans, measures to inhibit radioactive cesium absorption by the use of potassic fertilizer are taken (p.67 of Vol. 2, "Measures for Reducing Transfer of Radioactive Materials to Crops (2/5) - Measures to Inhibit Radioactive Cesium Absorption through Potassic Fertilization -").

No vegetables and beans harvested in FY2015 onward have been found to contain radioactive cesium exceeding the standard limit up to October 2019.

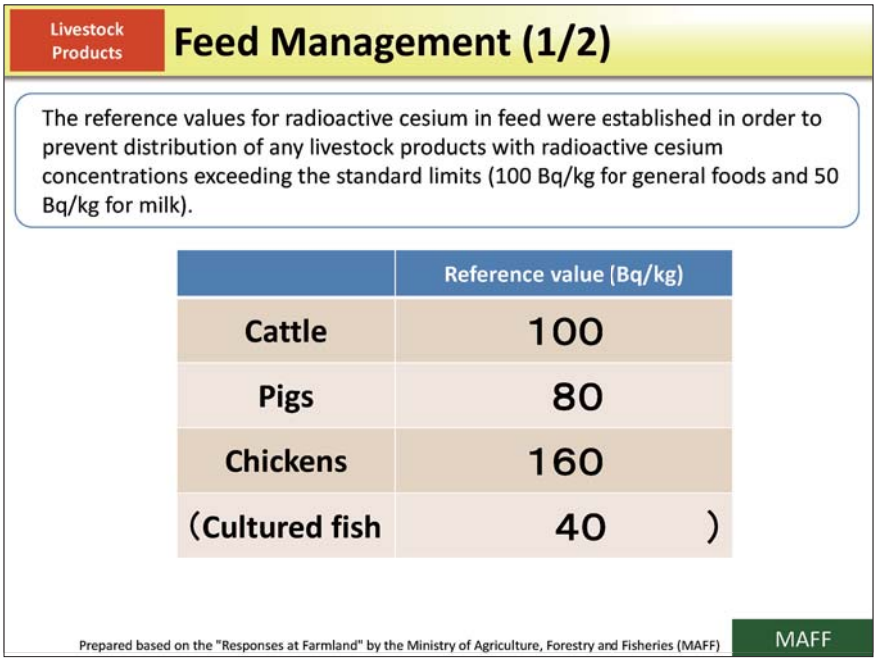
No fruits harvested in FY2013 through to FY2016 were found to contain radioactive cesium exceeding the standard limit. There was one case where radioactive cesium exceeding the standard limit was detected among fruits harvested in FY2017, but there has been no such case for fruits harvested in FY2018 onward. This standard limit refers to 100 Bq/kg, which has been applied since April 2012 (in FY2011, provisional regulation values were applied, but tabulation is based on the current standard for the purpose of comparison with the results in and after 2012).

Included in this reference material on February 28, 2018
Updated on March 31, 2021



Measures for reducing radionuclides in livestock products include (i) thorough feeding management, such as feeding livestock with safe feed, (ii) testing of radioactive cesium before shipment, and (iii) restriction of distribution according to testing results. Through these measures, safety of livestock products has been ensured.

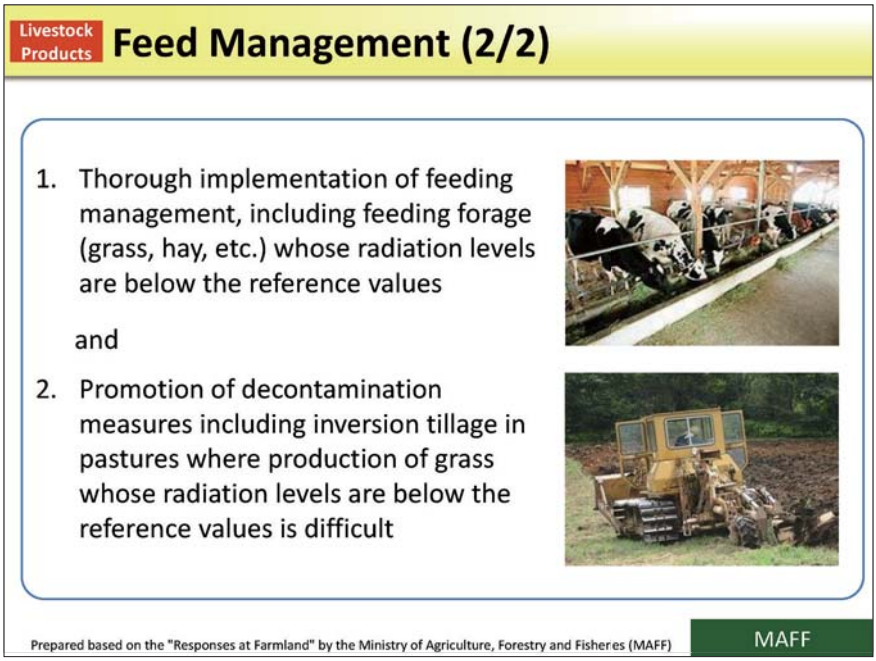
Included in this reference material on March 31, 2013



The reference values were established for feed by using radioactive cesium concentration as an indicator so that radioactive concentrations of livestock products would not exceed the standard limits.

Also for feed for cultured fish, the reference value was established in the same manner.

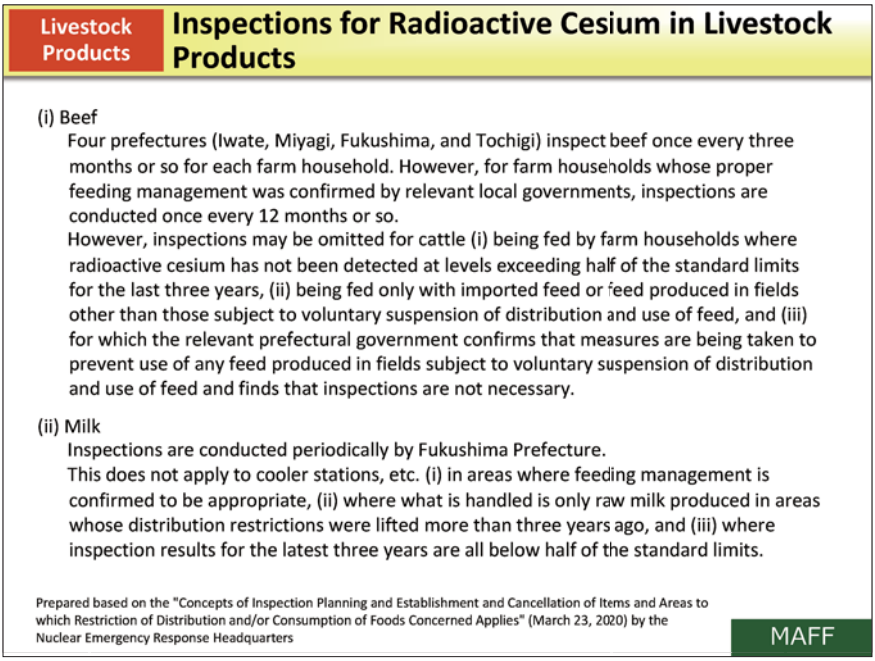
Included in this reference material on December 1, 2015
Updated on March 31, 2019



On farms, thorough implementation of feeding management, including feeding forage whose radiation levels are below the reference values is ensured.

In pastures, efforts to produce forage crops whose radiation levels are below the reference values by decontamination measures, including inversion tillage, are making progress (p.66 of Vol. 2, "Measures for Reducing Transfer of Radioactive Materials to Crops (1/5) - Decontamination of Farmland -").

Included in this reference material on December 1, 2015
Updated on March 31, 2017

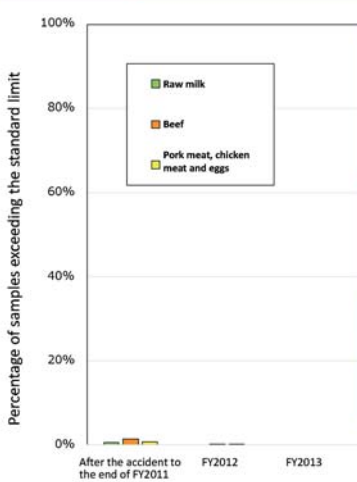


For beef, four prefectures (Iwate, Miyagi, Fukushima, and Tochigi) conduct inspections covering all relevant farm households. However, inspections are not required for farm households for which the relevant local government confirms that measures are being taken to prevent use of any feed produced in fields subject to voluntary suspension of distribution and use of feed or otherwise feeding management is being implemented appropriately.

Additionally, milk is also inspected periodically by Fukushima Prefecture.

Included in this reference material on March 31, 2013
Updated on March 31, 2021

Livestock Products — Changes in Inspection Results for Livestock Products



	Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
Raw milk	After the accident to the end of FY2011	1,919	8	0.4%
	FY2012	2,421	0	0%
	FY2013	2,040	0	0%
	FY2014	1,846	0	0%
	FY2015	1,414	0	0%
	FY2016	1,450	0	0%
	FY2017	770	0	0%
	FY2018	610	0	0%
	FY2019 (up to October 11)	98	0	0%
Beef	After the accident to the end of FY2011	78,095	1,052	1.3%
	FY2012	153,238	6	0.004%
	FY2013	193,268	0	0%
	FY2014	186,937	0	0%
	FY2015	224,701	0	0%
	FY2016	211,288	0	0%
	FY2017	211,301	0	0%
	FY2018 (up to March 28)	209,941	0	0%
Pork meat, chicken meat and eggs	After the accident to the end of FY2011	867	6	0.7%
	FY2012	1,595	1	0.06%
	FY2013	1,486	0	0%
	FY2014	1,180	0	0%
	FY2015	942	0	0%
	FY2016	752	0	0%
	FY2017	596	0	0%
	FY2018 (up to March 28)	539	0	0%

* Coverage: 17 prefectures including the Tokyo Metropolis designated as inspection targets in the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies," which compiles basic approaches concerning radioactive materials in foods

Prepared based on the "Inspection Results Concerning Radioactive Cesium Concentrations in Livestock Products" by the Ministry of Agriculture, Forestry and Fisheries and the "Inspection Results Concerning Radioactive Materials in Foods" by the Ministry of Health, Labour and Welfare

Feed for livestock is controlled to reduce radionuclides contained therein as low as possible.

■ Reference values for radioactive cesium concentrations in feed

Feed for cattle and horses: 100 Bq/kg

Feed for pigs: 80 Bq/kg

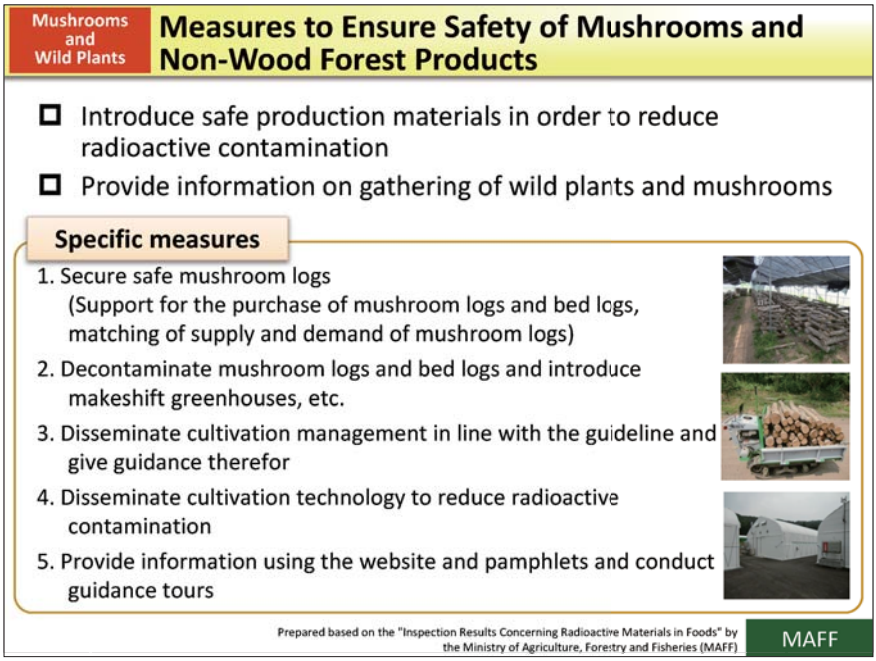
Feed for chickens: 160 Bq/kg

Feed for cultured fish: 40 Bq/kg

Since April 2011, inspection results for raw milk have all been below the standard limit of 50 Bq/kg. Regarding beef and pork meat, radioactive cesium concentrations exceeding the standard limit of 100 Bq/kg have not been detected since FY2013. Regarding chicken meat and eggs, radioactive cesium concentrations exceeding the standard limit have never been detected. Incidentally, these standard limits are those applied since April 2012 (in FY2011, provisional regulation values were applied, but tabulation is based on the current standard for the purpose of comparison with the results in and after 2012).

Raw milk is inspected for each cooler station, while beef is inspected covering all relevant farm households once every three months or so since FY2018 in Iwate, Miyagi, Fukushima, and Tochigi Prefectures.

Included in this reference material on February 28, 2018
Updated on March 31, 2021

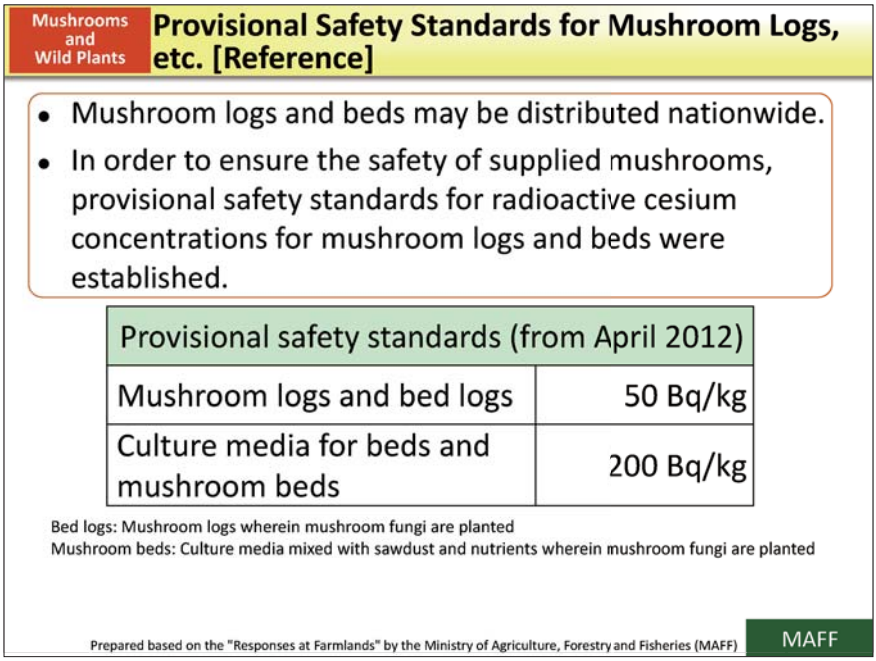


Other than wild plants and mushrooms for which cultivation management is impossible, shiitake mushrooms, etc. cultivated using mushroom logs show variation in radioactivity concentrations.

Therefore, measures to reduce contamination are being taken, such as implementing cultivation management in line with the "Guideline on Cultivation Management of Log-cultured Mushrooms to Reduce Radioactive Materials" for the purpose of ensuring that log-cultured mushrooms do not contain radioactive materials exceeding the standard limit for foods, and developing bed log washing machines necessary for cultivating safe mushrooms, etc.

In order to prevent distribution of wild plants and mushrooms with radioactivity concentrations exceeding the standard limit, each local government imposes distribution restrictions on producers and farmers markets and provides them with inspection results or other information.

Included in this reference material on March 31, 2013
Updated on March 31, 2019

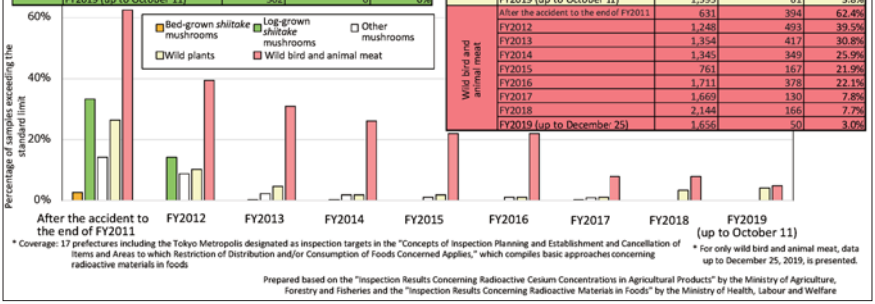


Mushroom logs and beds may be distributed nationwide in the same manner as livestock feeds. Therefore, in order to cultivate safe mushrooms, provisional safety standards for radioactive cesium concentrations were set at 50 Bq/kg for mushroom logs and bed logs and at 200 Bq/kg for mushroom beds, and they are managed properly so that contained radioactive materials do not exceed those standards.

Included in this reference material on March 31, 2013
Updated on March 31, 2021

Mushrooms and Wild Plants — Mushrooms, Wild Plants and Wild Bird and Animal Meat

	Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
Bed-grown *Shiitake* mushrooms	After the accident to the end of FY2011	358	9	2.5%
	FY2012	868	0	0%
	FY2013	869	0	0%
	FY2014	830	0	0%
	FY2015	754	0	0%
	FY2016	617	0	0%
	FY2017	494	0	0%
	FY2018	434	0	0%
	FY2019 (up to October 11)	49	0	0%
Log-grown *Shiitake* mushrooms	After the accident to the end of FY2011	1,093	364	33.3%
	FY2012	1,513	213	14.1%
	FY2013	1,298	2	0.2%
	FY2014	1,996	3	0.2%
	FY2015	2,139	0	0%
	FY2016	2,362	0	0%
	FY2017	2,264	4	0.2%
	FY2018	1,938	0	0%
	FY2019 (up to October 11)	502	0	0%
Other mushrooms	After the accident to the end of FY2011	1,881	268	14.2%
	FY2012	2,257	195	8.6%
	FY2013	2,230	50	2.2%
	FY2014	2,169	38	1.8%
	FY2015	2,117	24	1.1%
	FY2016	2,084	23	1.1%
	FY2017	1,890	16	0.8%
	FY2018	2,021	28	1.4%
	FY2019 (up to October 11)	226	1	0.4%
Wild plants	After the accident to the end of FY2011	524	138	26.3%
	FY2012	1,950	197	10.1%
	FY2013	3,184	142	4.5%
	FY2014	3,562	62	1.7%
	FY2015	3,423	63	1.8%
	FY2016	4,178	46	1.1%
	FY2017	3,237	34	1.1%
	FY2018	3,178	105	3.3%
	FY2019 (up to October 11)	1,595	61	3.8%
Wild bird and animal meat	After the accident to the end of FY2011	631	394	62.4%
	FY2012	1,248	493	39.5%
	FY2013	1,354	417	30.8%
	FY2014	1,345	349	25.9%
	FY2015	761	167	21.9%
	FY2016	1,711	378	22.1%
	FY2017	1,669	130	7.8%
	FY2018	2,144	166	7.7%
	FY2019 (up to December 25)	1,656	50	3.0%



* Coverage: 17 prefectures including the Tokyo Metropolis designated as inspection targets in the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies," which compiles basic approaches concerning radioactive materials in foods

* For only wild bird and animal meat, data up to December 25, 2019, is presented.

Prepared based on the "Inspection Results Concerning Radioactive Cesium Concentrations in Agricultural Products" by the Ministry of Agriculture, Forestry and Fisheries and the "Inspection Results Concerning Radioactive Materials in Foods" by the Ministry of Health, Labour and Welfare

Regarding mushrooms, for which cultivation management is possible, thanks to efforts for securing safe logs and the introduction of makeshift greenhouses, etc., radioactive contamination has been reduced through the use of production materials in conformity to the standards. The percentage of mushrooms with radioactive concentrations exceeding the standard limit is decreasing. This standard limit refers to 100 Bq/kg, which has been applied since April 2012 (in FY2011, provisional regulation values were applied, but tabulation is based on the current standard for the purpose of comparison with the results in and after 2012).

■ Provisional safety standards regarding radioactive cesium for mushroom logs, bed logs, culture media for beds and mushroom beds

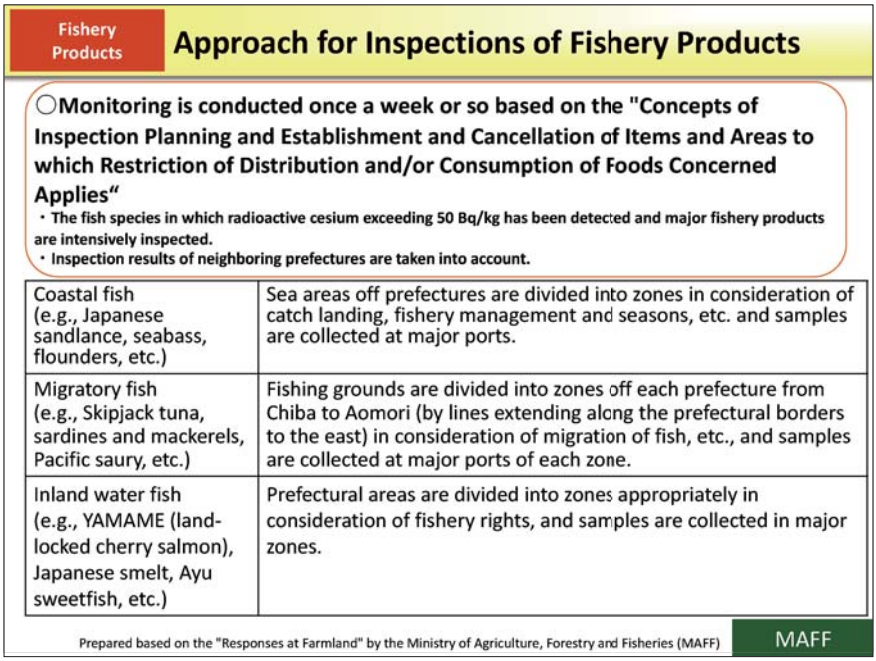
Mushroom logs and bed logs: 50 Bq/kg

Culture media for beds and mushroom beds: 200 Bq/kg

Radioactive concentrations exceeding the standard limit are still detected in some wild mushrooms and wild plants, for which cultivation management is difficult. Therefore, their shipment is thoroughly controlled continuously.

Wild bird and animal meat, such as boar meat and deer meat, still show radioactive concentrations exceeding the standard limit, although the number of such cases is on a decline. Feeding management like that for livestock animals is difficult for wild birds and animals that move around freely. Therefore, shipment of wild birds and animal meat is restricted by each prefecture in principle, and in some cases, only meat managed based on shipment and inspection policies formulated independently by respective local governments is permitted to be shipped out.

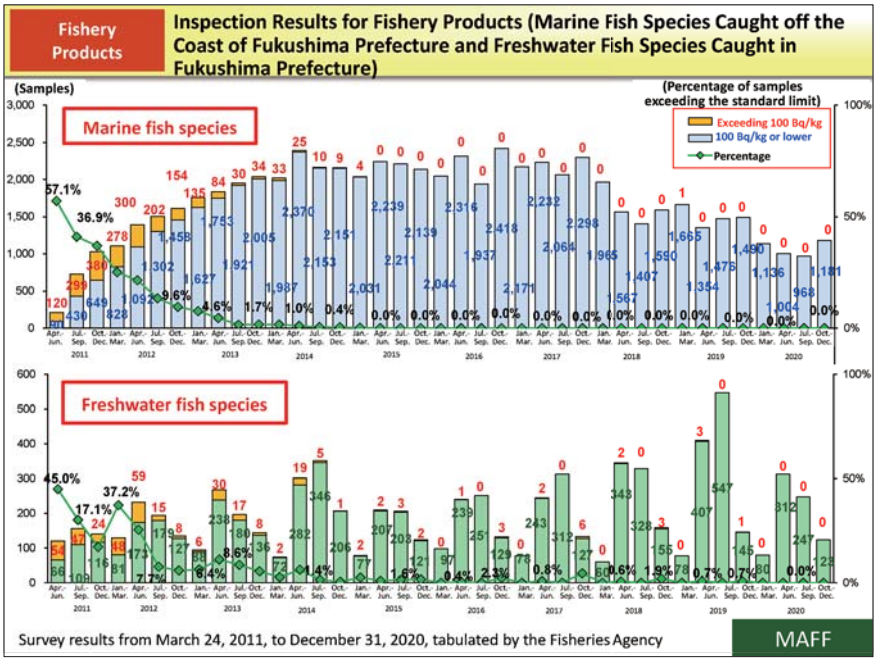
Included in this reference material on February 28, 2018
Updated on March 31, 2020



Monitoring of radioactivity in fishery products covers major fish species and fishing grounds, and species in which radioactive cesium concentration exceeding 50 Bq/kg has been detected, based on the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies (Guideline)."

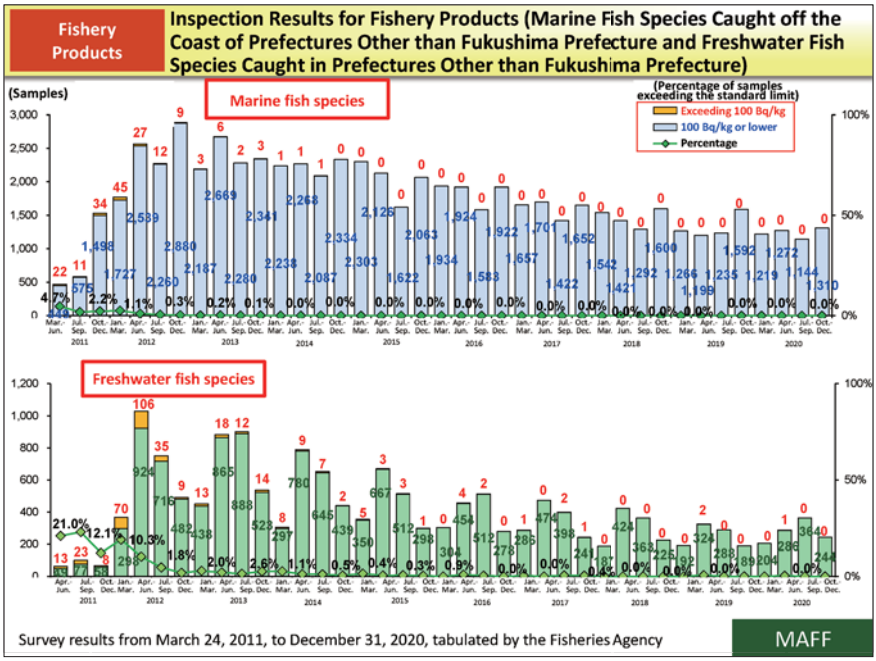
At present, inspections are conducted by classifying the fish species based on their habitats and fishing seasons, while also taking into account inspection results of neighboring prefectures, as shown in the table. Regarding migratory fish, such as bonito and Pacific saury, which migrates over a wide area in the ocean, monitoring is conducted broadly by multiple prefectures based on their migratory routes.

Included in this reference material on March 31, 2013
Updated on March 31, 2021



The percentage of samples exceeding the standard limit for radioactive cesium concentration (100 Bq/kg) was 57% for marine fish and 45% for freshwater fish during the period from April to June 2011, but the percentage decreased by half in one year after the accident. Since April 2012, inspections have been focused on the fish species in which radioactive cesium concentrations exceeding 50 Bq/kg had been detected, and the percentage of samples with radioactive cesium concentrations exceeding the standard limit is continuing to decrease. In particular, regarding marine fish, radioactive cesium concentration exceeding the standard limit was detected in only one sample in January 2019. The number of samples with radioactive cesium concentrations exceeding the standard limit is slightly larger among freshwater fish samples compared with marine fish samples.

Included in this reference material on March 31, 2014
Updated on March 31, 2021



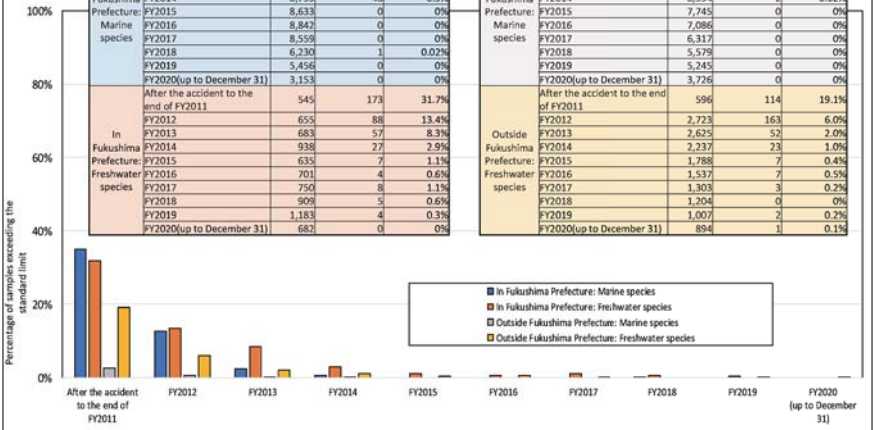
The percentage of samples with radioactive cesium concentrations exceeding the standard limit (100 Bq/kg) has also been decreasing among samples collected off or in prefectures other than Fukushima Prefecture. There have been no such marine fish samples since FY2015, but some freshwater fish samples still show radioactive cesium concentrations exceeding the standard limit.

Included in this reference material on March 31, 2014
Updated on March 31, 2021

Fishery Products — Chronological Changes in Inspection Results for Fishery Products

	Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
In Fukushima Prefecture: Marine species	After the accident to the end of FY2011	3,074	1,077	35.0%
	FY2012	6,270	791	12.6%
	FY2013	7,847	181	2.3%
	FY2014	8,753	48	0.5%
	FY2015	8,633	0	0%
	FY2016	8,842	0	0%
	FY2017	8,559	0	0%
	FY2018	6,230	1	0.02%
	FY2019	5,456	0	0%
	FY2020(up to December 31)	3,153	0	0%
In Fukushima Prefecture: Freshwater species	After the accident to the end of FY2011	545	173	31.7%
	FY2012	655	88	13.4%
	FY2013	683	57	8.3%
	FY2014	938	27	2.9%
	FY2015	635	7	1.1%
	FY2016	701	4	0.6%
	FY2017	750	8	1.1%
	FY2018	909	5	0.6%
	FY2019	1,183	4	0.3%
	FY2020(up to December 31)	682	0	0%

	Inspection period	Number of samples	Number of samples exceeding the standard limit	Percentage of samples exceeding the standard limit
Outside Fukushima Prefecture: Marine species	After the accident to the end of FY2011	4,361	112	2.6%
	FY2012	9,917	51	0.5%
	FY2013	9,540	12	0.1%
	FY2014	8,994	2	0.02%
	FY2015	7,745	0	0%
	FY2016	7,086	0	0%
	FY2017	6,317	0	0%
	FY2018	5,579	0	0%
	FY2019	5,245	0	0%
	FY2020(up to December 31)	3,726	0	0%
Outside Fukushima Prefecture: Freshwater species	After the accident to the end of FY2011	596	114	19.1%
	FY2012	2,723	163	6.0%
	FY2013	2,625	52	2.0%
	FY2014	2,237	23	1.0%
	FY2015	1,788	7	0.4%
	FY2016	1,537	7	0.5%
	FY2017	1,303	3	0.2%
	FY2018	1,204	0	0%
	FY2019	1,007	2	0.2%
	FY2020(up to December 31)	894	1	0.1%



* Inspection results are tabulated on a nationwide basis.

Monitoring results from March 24, 2011 to December 31, 2020 tabulated by the Fisheries Agency

Monitoring of fishery products has been conducted in particular focusing on fish and shellfish which exceeded a radioactive cesium concentration of 50 Bq/kg or are the major products of the relevant prefectures. Monitoring is conducted once a week or so in principle. The number of fishery products exceeding the standard limit has been gradually decreasing.

Shortly after the Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS Accident, approx. 30% of the fishery samples collected in (the sea neighboring) Fukushima Prefecture exceeded the standard limit. Such samples decreased afterwards, and there has been only one sample exceeding the standard limit since April 2015 (as of December 2020). Since September 2014, there have been no samples collected in prefectures other than Fukushima Prefecture that contained radioactive cesium exceeding the standard limit.

Some freshwater fish caught in and outside Fukushima Prefecture still show radioactive cesium concentrations exceeding the standard limit even in FY2019, but the number of such fish is decreasing year by year.

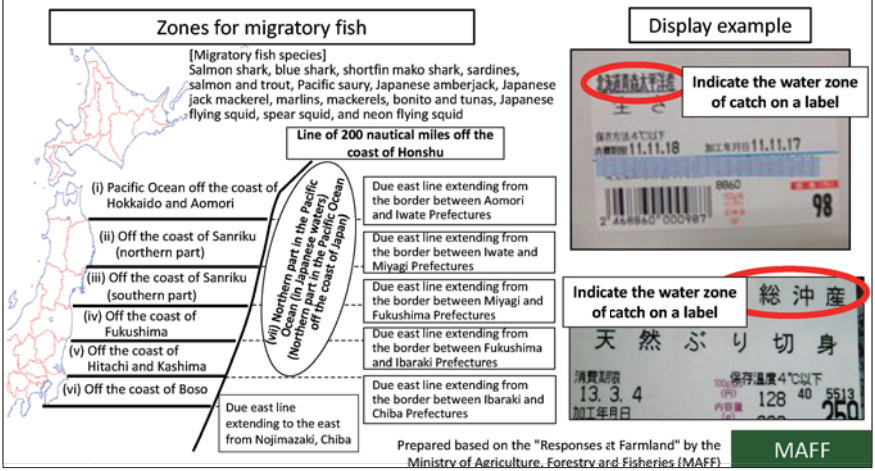
The standard limit refers to 100 Bq/kg, which has been applied since April 2012 (in FY2011, provisional regulation values were applied, but tabulation is based on the current standard for the purpose of comparison with the results in and after 2012).

Included in this reference material on February 28, 2018
Updated on March 31, 2021

Fishery Products

Provision of Information on Place of Product Origin to Consumers

○Since October 2011, it has been recommended to display places of origin of fresh fishery products, mainly those caught on the Pacific side of eastern Japan, by dividing the sea areas into 7 zones and clarifying these zone names.



Since October 2011, the national government has been encouraging producers to display places of origin of fresh fishery products, mainly those caught on the Pacific side of eastern Japan so that consumers can easily understand where the relevant fishery product was caught.

Included in this reference material on March 31, 2013
Updated on March 31, 2019

Import Measures by Other Countries

Outline of Lifting and Easing of Food Import Measures by Other Countries and Regions after the TEPCO's Fukushima Daiichi NPS Accident

In response to the accident at TEPCO's Fukushima Daiichi NPS, countries and regions all over the world imposed various measures on imports from Japan. However, as a result of all-out efforts by the government of Japan, such regulatory measures have been lifted or eased (out of the 55 countries and regions that imposed measures, 41 lifted measures, while 14 continue imposing them).

Details of regulatory measures (Number of countries and regions)		Countries and regions
Completely lifted import measures (41)		Canada, Myanmar, Serbia, Chile, Mexico, Peru, Guinea, New Zealand, Colombia, Malaysia, Ecuador, Viet Nam, Iraq, Australia, Thailand, Bolivia, India, Kuwait, Nepal, Iran, Mauritius, Qatar, Ukraine, Pakistan, Saudi Arabia, Argentina, Turkey, New Caledonia, Brazil, Oman, Bahrain, Congo DR, Brunei, Philippines, Morocco, Egypt, Lebanon, UAE, Israel, Singapore, USA
Continuing import measures (14)	Suspended import of items from some prefectures (5)	Hong Kong, China, Taiwan, South Korea, Macau
	Requests issuance of inspection certificates for items from some or all prefectures (9)	EU , EFTA (Iceland, Norway, Switzerland, Liechtenstein) , UK, French Polynesia, Russia, Indonesia

Note 1) As of October 10, 2021; Classification in accordance with the details of the regulatory measures; Prefectures in Japan and items subject to respective regulatory measures differ by country or region.
Note 2) 27 EU countries and the United Kingdom were counted as one region as they jointly imposed import measures. Number of countries / regions was revised because the UK excluding Northern Ireland adopts measures different from that of EU from 10 Oct 2021.
Note 3) The governments of Thailand and the UAE lifted import measures except for those on some wild animal meat whose export is not allowed due to quarantine or other grounds.

MAFF

In response to the accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS, countries and regions all over the world imposed various measures on imports from Japan. However, as a result of all-out efforts by the government of Japan, such regulatory measures have been eased or lifted. The number of countries or regions imposing measures has decreased from 55 immediately after the accident to 14.

Included in this reference material on February 28, 2018
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