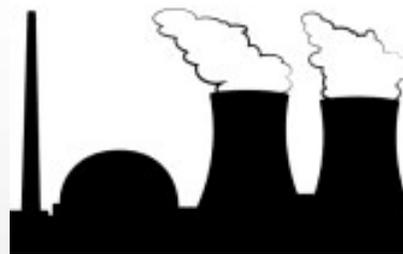


Radioactivity in Food



Source of Radioactivity

- Naturally occurring radioactivity
- Nuclear power plant accident
- Nuclear weapon

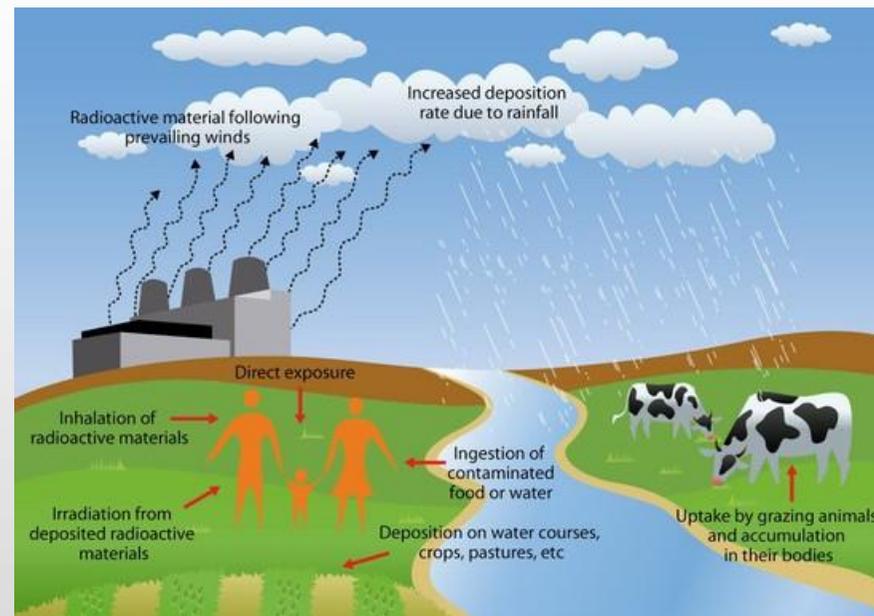


Nuclear Power Plant Accident

- Radioactivity may be released into the surrounding area

- Ways of dispersion

- Direct exposure
- Winds
- Rainfall



Food Contamination

- Radioactive substances are deposited on plants, soil or water
- They might enter food chain
- Plants and animals are contaminated by
 - surface contamination
 - tissue contamination after inhalation
 - ingestion of contaminated nutrients
- People are at risk after ingestion of the contaminated food

Possible Health Effects

- Acute health effect
 - nausea, vomiting, extreme tiredness, hair loss, skin burns and diminished organ function
- Chronic health effect
 - increase the risk of cancer



Radionuclides : Iodine-131(I-131), Caesium-134(Cs-134) and Caesium-137(Cs-137)

- I-131, Cs-134 & Cs-137 do not naturally occur in food
- They are artificially produced fission products
- Presence in food due to possible contamination from nuclear reactor operations or military nuclear operations

Standard for Radiation Testing Level

- CFS currently adopts the standards laid down by the Codex Alimentarius Commission in the Guidelines Levels for Radionuclides in Foods Contaminated following a Nuclear or Radiological Emergency (Guideline Levels)



Radionuclides	Codex Guideline Level
Iodine-131	100 Bq/kg
Caesium-134	1,000 Bq/kg
Caesium-137	1,000 Bq/kg

Reduce the Level of Radionuclides in Food

- By suitable food preparation
 - e.g. Washing, brushing, scrubbing or peeling
- By storing contaminated food for prolonged times to allow radioactive decay of short-lived radionuclides

Food Surveillance

Import, Wholesale and Retail Level

- Take food samples
- Use Contamination Monitoring System (CMS) for examination



Food Surveillance

Import, Wholesale and Retail Level

- Food consignment failing hand-held survey meter or CMS screening will be held
- Samples will be sent to Government Laboratory for further quantitative analysis

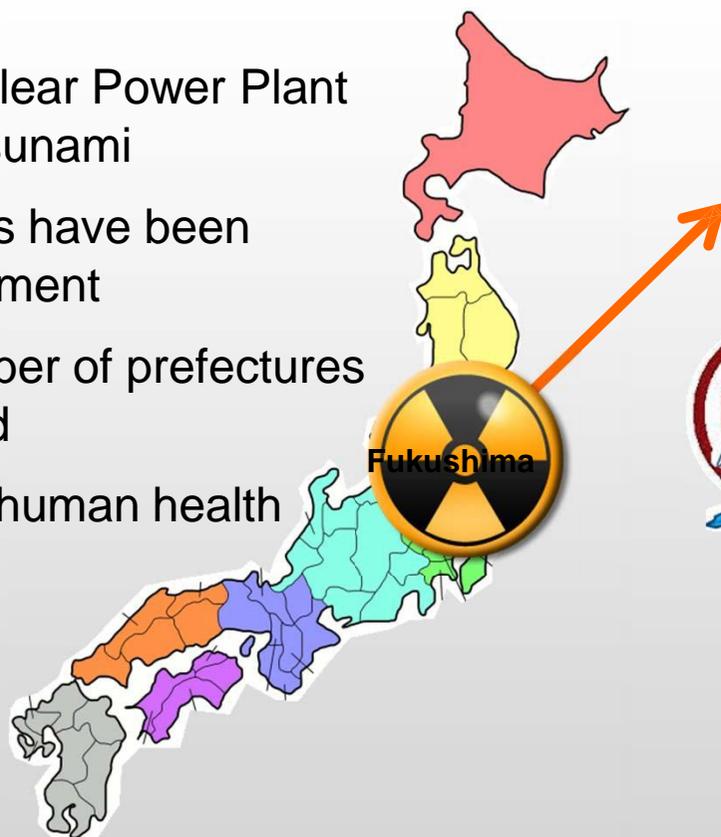


Testing on Radiation Level in Imported Food from Japan



Background

- Earthquake at Japan on 11 March 2011
- The earthquake triggered powerful tsunami
- Fukushima Daiichi Nuclear Power Plant was damaged by the tsunami
- Radioactive substances have been released in the environment
- Certain foods in a number of prefectures had been contaminated
- At levels hazardous to human health



Food Surveillance

- Since 12 March 2011, the Centre for Food Safety (FCS) stepped up surveillance on radiation level of imported food from Japan
- Including vegetables, fruits, milk, meat, aquatic products, milk powder and other processed foods

Food Surveillance

Result of Tested Samples

As at 31 July 2013, more than 143,000 samples have been tested

Iodine-131 level in 3 samples exceeded the standards in the Guideline Levels

1 White Radish
260 Bq/kg

1 Turnip
800 Bq/kg

1 Spinach
1,000 Bq/kg

47 samples contained low levels of radioactivity but not exceeding the Guideline Levels

2 Vegetables

1 Oats

44 Tea Products

Section 78B Order

- Director of Food and Environmental Hygiene make an order under Section 78B of Public Health and Municipal Services Ordinance, Cap 132
- Prohibits import and supply of the following food harvested, manufactured, processed or packed on or after 11 March 2011 from the five affected prefectures in Japan, namely Fukushima, Ibaraki, Tochigi, Gunma and Chiba -
 - All fruits, vegetables, milk milk beverage and dried milk
 - All chilled or frozen game, meat, poultry, poultry eggs, live, chilled or frozen aquatic products, unless accompanied by a certificate issued by the competent authority of Japan certifying the radiation levels do not exceed the standards laid down by the Guideline Levels



Unsatisfactory samples

Iodine-131 level in 3 samples exceeding the Guideline Levels

1 White Radish
260 Bq/kg

1 Turnip
800 Bq/kg

1 Spinach
1,000 Bq/kg

Section 78B Order



香港特別行政區政府 憲報號外

政府印行

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PUBLIC HEALTH AND MUNICIPAL SERVICES ORDINANCE
(Chapter 132)
(Section 78B)
Section 78B Order

Order No. : CFS/1/2011
LALID Ref. : FJLD/CFS/78B

TO : All persons

This Order takes effect at 12:00 noon on 21 March 2011.

I now have reasonable grounds to believe that the making of this order in relation to the food specified in Annex A is necessary to prevent or reduce a possibility of danger to public health, or to mitigate any adverse consequence of a danger to public health, the details of which are specified in Annex B. I do, in exercise of my power under section 78B(1) of the Public Health and Municipal Services Ordinance (Chapter 132), order that:

- a. you be prohibited from importing into Hong Kong the food specified in Annex A, that is intended for human consumption, for the period from 12:00 noon on 24 March 2011 until further notice;
- b. you be prohibited from supplying¹ within Hong Kong the food specified in Annex A, that is imported into Hong Kong after 12:00 noon on 24 March 2011, and is intended for human consumption, for the period from 12:00 noon on 24 March 2011 until further notice.

If you feel that you are aggrieved by this order, you may, within 28 days from becoming bound by it (that is the date and time specified in paragraph 1), appeal to the Municipal Services Appeals Board.

¹ "supplying" means to: set for the food; the offering, keeping or exhibiting the food for sale; the exchanging or disposing of the food for consideration; the transferring, conveying or delivering the food; the payment of (a) a price or fee; an exchange or disposal fee; or (b) any amount, in money, giving the food as a gift or making a gift of the food.

Note: A person bound by this order who contravenes a term of the order commits an offence and is liable on conviction to a fine at level 6 and to imprisonment for 12 months. It is not a defence for a person to show that the food concerned is the subject of a licence, permit or any other form of authorization issued or granted under this or any other Ordinance.

Dated this 23rd March 2011

(LEUNG CHEUK-MAN)
Director of Food and Environmental Hygiene

Section 78B Order

- The Order has taken effect on 24 March 2011 and is still in force
- Contravene a term of the Order commits an offence and is liable on conviction to a fine of HK\$100,000 and to imprisonment for 12 months



Certificate on Radiation Levels

- CFS agreed to accept certificate on radiation levels issued by the competent authority of Japan for importation of
 - aquatic products with effect from 8 November 2011
 - meat, poultry and poultry eggs with effect from 21 March 2012
- Thereafter, importation of such food with valid certificate from the five affected prefectures is allowed

Sample of Certificate on Radiation Levels

MAFF
MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES, GOVERNMENT OF JAPAN
1-1-1, Hongo 1-chome, Chiyoda-ku, Tokyo 100-8501, Japan

Certificate on radiation levels in food for export to Hong Kong

Consignment Code: _____ Declaration Number: _____

DECLARES that the food of this consignment composed of _____ (competent authority)

(description of consignment, product, number and type of packages, gross or net weight)
embarked at _____ (embarkation place)
on _____ (date of embarkation)
by _____ (identification of transporter)
going to _____ (place and country of destination)
which comes from the establishment _____ (name and address of establishment)

is falling into the category of the products in the table below and is originating from _____ (prefecture), has been inspected on _____ (date) and subjected to laboratory analysis on _____ (date) in the _____ (name of laboratory), to determine the level of the radioactivity, radionuclides-134 and caesium-137, and hereby certifies that the radiation levels do not exceed the standards laid down by the Code of Alimentarius Commission in the Guideline Levels for Radionuclides in Foods Contaminated Following a Nuclear or Radiological Emergency.

Done at _____ on _____

authorized representative of competent authority

Table
Category of food:
All live, chilled or frozen aquatic products

Sampling to make its assessment is at the time of sampling plan at Annex
The laboratory performing the examination is a laboratory accredited by Japan Accreditation Board

Sample of Certificate on radiation levels in aquatic products

Table of Sampling Plan

Number of packages per species in a consignment	Minimum number of samples to be taken (a)
N ≤ 8	1
8 < N ≤ 150	3
150 < N ≤ 1200	5
1200 < N	8

MAFF
MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES
Certificate on radiation levels in food for export to Hong Kong

Consignment Code: _____ Declaration Number: _____

DECLARES that the food of this consignment composed of _____ (competent authority)

(description of consignment, product, number and type of packages, gross or net weight)
embarked at _____ (embarkation place)
on _____ (date of embarkation)
by _____ (identification of transporter)
going to _____ (place and country of destination)
which comes from the establishment _____ (name and address of establishment)

is falling into the category of the products in the table below and is originating from _____ (prefecture), has been sampled on _____ (date), and subjected to laboratory analysis on _____ (date) in the _____ (name of laboratory), to determine the level of the radioactivity, radionuclides-134 and caesium-137, and hereby certifies that the radiation levels do not exceed the standards laid down by the Code of Alimentarius Commission in the Guideline Levels for Radionuclides in Foods Contaminated Following a Nuclear or Radiological Emergency.

Done at _____ on _____

authorized representative of competent authority

Table
Category of food:
All chilled or frozen game, meat and poultry, all poultry eggs

¹ In the case of sampling of beef, every individual cattle is subject to laboratory analysis and a part of each cattle's meat is used for that purpose. In the case of sampling of the other species, laboratory analysis is carried out in accordance with the rules of sampling plan at Annex.
² The laboratory performing the radiation test is a laboratory accredited by Japan Accreditation Board

Sample of Certificate on radiation levels in game, meat, poultry and poultry eggs

Table of Sampling Plan

Number of packages per species in a consignment	Minimum number of samples to be taken (a)
N ≤ 2	1
3 ≤ N ≤ 150	3
150 < N ≤ 1200	5
1200 < N	8

Conclusion

- The risk of Fukushima nuclear plant event has not been cleared
- Radioactive isotope Caesium-137 has a half-life of several ten years
- The order on prohibition of importation of food from the affected 5 prefectures in Japan is required to be maintained
- To ensure the safety of imported food from Japan, CFS continues to monitor closely the situation in Japan and the radiation testing results of food samples in order to formulate surveillance programme according to risk assessment

~ End ~

