Initiatives to acquire a better knowledge of the radioactive materials in foods for Japanese consumers after the Fukushima Daiichi NPP Accident

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Day 1 (18 FEB 2020) SESSION 3: FOOD (16:20-18:20)
Content

• Role of Consumer Affairs Agency (CAA) in food safety administrations
• Trend of the survey on consumer’s attitude to the radioactive materials in foods (RAMs)
• Provision of information and the dialogue with various stakeholders
RISK ANALYSIS:
A process consisting of three components: risk assessment, risk management and risk communication.


Definition of HAZARD and RISK focus on food safety

**HAZARD**: A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

**RISK**: A function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard(s) in food.

**Box 1.3. Examples of hazards that may occur in foods**

<table>
<thead>
<tr>
<th>Biological hazards</th>
<th>Chemical hazards</th>
<th>Physical hazards</th>
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<tbody>
<tr>
<td>• Infectious bacteria</td>
<td>• Naturally occurring toxins</td>
<td>• Metal, machine filings</td>
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<td>• Toxin-producing organisms</td>
<td>• Food additives</td>
<td>• Glass</td>
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<td>• Moulds</td>
<td>• Pesticide residues</td>
<td>• Jewellery</td>
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<td>• Parasites</td>
<td>• Veterinary drug residues</td>
<td>• Stones</td>
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<td>• Viruses</td>
<td>• Environmental contaminants</td>
<td>• Bones</td>
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<tr>
<td>• Prions</td>
<td>• Chemical contaminants from packaging</td>
<td>• Bone chips</td>
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<td></td>
<td>• Allergens</td>
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Role of Consumer Affairs Agency (CAA) in Food Safety Administrations

**CAA established in 2009**

*Food Safety Basic Act (Act No. 48 of 2003, abolished in 2018)*

- Conduct the survey
- Information provision
- Coordination of **Risk Communication** with various stakeholders

Themes: BSE, Dietary Supplements, Imported Foods, Agricultural Chemicals, Food Poisoning, Food Additives etc.

**RAMs was added to one of the themes after the accident**

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**RISK COMMUNICATION**: The interactive exchange of information and opinions throughout the risk analysis process, concerning risk, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions.

Control of radioactive materials in foods

Establish limits for radioactive materials in foods
- The indicator values given by the Nuclear Safety Commission were set as the provisional regulation values. (March 17, 2011 - March 31, 2012)
- The present limits for radioactive materials in foods took effect. (April 1, 2012 - )

Monitor radioactive materials in foods
- The monitoring is conducted by the local governments around the 17 prefectures. (March 18, 2011 - )
- The Nuclear Emergency Response Headquarters established guidelines on the local governments’ formulation of monitoring plans for radioactive materials in foods. (April 4, 2011)

Recall and dispose of foods containing radioactive materials above the limits
- All the articles in a lot in which the levels are exceeded are recalled or disposed of.

Restrict the distribution of foods
- Distribution is restricted on a prefecture basis (or a smaller area basis in a prefecture), judging from the spreading of places where radioactive materials above the limits are detected as a result of inspections. (March 21, 2011-)

Lift restrictions
- Every testing result from samples collected within the past one month from at least three different locations in a municipality must be below the corresponding limits.
Monitoring of radioactive materials in foods

The monitoring of radioactive materials in foods is conducted by the local governments around the 17 prefectures on the basis of the inspection plan.

March 18, 2011 – March 31, 2012
137,037 of which 1,204 were detected as above the provisional regulation values. (excess rate: 0.88%)

April 1, 2012 – March 31, 2013
278,275 of which 2,372 were detected as above the present limits. (excess rate: 0.85%)

April 1, 2013 – March 31, 2014
335,860 of which 1,025 were detected as above the present limits. (excess rate: 0.31%)

April 1, 2014 – March 31, 2015
314,216 of which 565 were detected as above the present limits. (excess rate: 0.18%)

April 1, 2015 – March 31, 2016
340,311 of which 291 were detected as above the present limits. (excess rate: 0.09%)

April 1, 2016 – March 31, 2017
322,563 of which 461 were detected as above the present limits. (excess rate: 0.14%)

April 1, 2017 – March 31, 2018
306,623 of which 200 were detected as above the present limits. (excess rate: 0.07%)

April 1, 2018 – March 31, 2019
299,424 of which 313 were detected as above the present limits. (excess rate: 0.10%)

※The number of food samples tested includes test results of foods distributed in the market and test results implemented by the local governments other than the 17 prefectures designated by the guideline.

※The sampling is purposive to detect the contamination or to remove restrictions and the majority of occurrence (exceeding JML) is limited to wild harvest monitored at area where distribution is already restricted.
The survey on the consumer’s attitude for the RAMs

**Background**

- The central and local governments cooperating with the related organizations conducting inspections to check the values/levels of the RAMs, before distribution
- The consumer’s attitude for the RAMs after the accident is not clearly known

**Aim**

To explore the consumer’s attitude for the RAMs from affected area from the accident at Fukushima Daiichi nuclear power plant since February 2013
Design, Method and Sample

Design and method
A series of cross-sectional design using internet-based survey

Sample
A total of 62,112 consumers, male and female, aged from 20s to 60s who are living in mainly two areas

1. Affected four areas (4 prefectures)
   Iwate, Miyagi, Fukushima and Ibaraki prefecture

2. Additional areas where main sale of regional agriculture, forestry and fishery products (7 prefectures)
   Saitama, Chiba, Tokyo, Kanagawa, Aichi, Osaka, and Hyogo prefecture
Survey period and questionnaire

Survey period

• Conducted 12 time surveys
• The survey was conducted two types of period according to time-related situation from the accident
  • Twice a year; 1\textsuperscript{st} - 10\textsuperscript{th} survey conducted in February and August
  • Once a year; after 11\textsuperscript{th} survey conducted in February

Questionnaire

• Basic concepts for food choice, Consciousness and knowledge about the radiation or the RAMs etc.
• Mean values for continuous variables and percentage for categorical variables were calculated according to survey years

Participated 5,176 consumers per time
Participants

Age and sex distribution of 5,176 participants at 12th survey, February 2019

More than half of participants concern the place of the food production on a daily basis

Do you concern the place of the food production? *(Single answer.)*

- Yes, I concern: 22.2%
- I would rather concern: 13.9%
- I wouldn't rather concern: 5.7%
- No, I don't: 36.8%
- I don't know because I wouldn't buy foods by myself: 21.4%

The reason to concern the place of the food production, the answer “Buy the food that radioactive material is not included” has been decreasing constantly.

What is the reason to concern the place of the food production? (Multiple answer.)

1. Because quality (taste) is different depend on the place of production
2. Because freshness is different depend on the place of production
3. Because price is different depend on the place of production
4. Because I want to buy the local special foods which have brand values
5. Because I want to buy the local foods which is nearby my living area
6. Because I want to support the producer who made production in the affected areas
7. Because I want to buy the foods that the radioactive material is not included
8. Others

More than half of the participants know the RAMs were inspected before distribution

Do you know about the inspection of the RAMs before distribution?

- 55.2% I know
- 44.8% I don't know

How do you think about low dose of radiation risk against human health? *(Single answer.)*

- **Acceptable:** I accept in case RAMs within standard value, because the cancer risk become lower than other risks (smoking, drinking, ethanol over 60g, underweight)
- **+ I don't mind it because there’re factors cause cancer except for radioactive material**
- **Not accepted because:** even though the amount of RAMs are within the standard level, there still considerable cancer causing risk exists
- **Couldn't realize the risk because of there aren't enough information yet**

Trend of consumer’s consciousness for the low dose radiation risk to human health have been constant

Information Provision about the RAMs

Booklets

Question and answer about food and radioactive

- The 1st edition was published in May 2011
- The latest; 13th edition, June 2019
- Approximately 910,000 booklet were distributed for free, including 700,000 booklet for all consumers lived in Fukushima prefecture

Summarized version

- Published in March 2015 for the 1st edition
- The latest; 5th edition, June 2019

https://www.caa.go.jp/disaster/earthquake/understanding_food_and_radiation/material/
Risk Communication (Dialogue with various stakeholders)

1. Forming “Team for the consumer’s promotion for better understanding for food and radioactivity” in CAA since 2013

Organized based on the instruction of Prime Minister Abe, to ex-Minister Mori in charge of Consumer Affairs and Food Safety at her inauguration

Member: Director general in charge of food, director of consumer education and local cooperation, director of consumer safety and person who was selected the member by Vice-Commissioner among these divisions

2. The number of Risk Communication*1

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<tbody>
<tr>
<td>About the RAMs</td>
<td>45</td>
<td>175</td>
<td>99</td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>108</td>
<td>136</td>
<td>96</td>
<td>958</td>
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*1As of end of January 2020, *2 FY; fiscal year

Collaborate with central/local governments, consumer organizations, producers and trade associations
To provide a better knowledge of food safety to consumers

• There are the consumers who are acceptable after deep consideration, although the others are still not

• Some consumers think they needs more information and communication for the RAMs and future risk for health

• Long-term issue; use the result of the survey to promote information provision and risk communication for the RAMs and make another initiatives for the RAMs