IMRP
Shanghai 2013
INTERNATIONAL MEETING ON RADIATION PROCESSING

Would consumers accept foods treated with radiation if they understand the benefit?

Views of a Japanese Consumers' Association on Food Irradiation

Mariko ICHIKAWA

Roundtable for Food communication, Japan

Contents

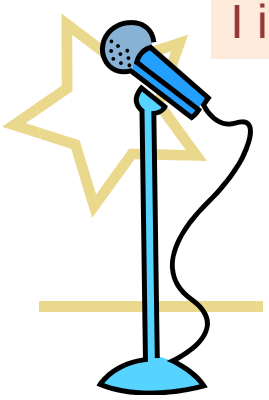
Ⅰ. Why we focused on food irradiation?

Ⅱ. Our findings from learning and experiments.

Ⅲ. We'd like to share our experiences with others and reply to their questions and concerns.

Ⅳ. Our style ：We overcame the fear about food irradiation in this way

Ⅰ. The reason why we focused on "food irradiation"



I introduce myself･･･

◆ 2006,

we formed Roundtable for Food Communication.
Food irradiation is our main theme from the beginning.
Our opinions and the results obtained by scientific learning and experience are open to the public.

◆In 2005,

I participated in the government's committee on food irradiation as a consumer representative.
I learned that consumers were told nothing!

Ⅰ. The reason why we focused on "food irradiation"

IMRP Shanghai 2013 INTERNATIONAL MEETING ON RADIATION PROCESSING

Irradiated Food for consumers

- We have never seen
- Hard to understand the purpose and benefit.
- The words “irradiation” and “radiation” sound scary to consumers.

Unacceptable, since it seems dangerous!

We would like to understand
what is meant by the food irradiation.

- Visit to an irradiation facility：JAEA-Takasaki
- Looks and smells of irradiated foods
- Shelf life and quality of vegetables and fruits

Food irradiation building (JAEA Takasaki)

We were surprised !

- Thickness and weight of the door of irradiation chamber!
- Immediately after irradiation, we could enter the inside!
- Irradiation would change the hardness!

Experience experiment: Material and a method

Item	Aim of observation	Condition
Kamaboko	・Appearance and Taste	1 kGy (R.T.)
Cheese		4 kGy (R.T.)
Canned Tuna		1 kGy (0℃)
Bacon	・Irradiation off-odor	4 kGy (0℃)
Milk		1 kGy (R.T.) 4 kGy (R.T.)
Filling Tofu		
Udon-Noodle		
Cucumbers		
Broccoli	・Shelf life extension	1 kGy (R.T.)
Cut vegetables		10 kGy (R.T.)
Ginger		5 kGy (R.T.)
		10 kGy (R.T.)
Garlic	・Flavor ・Sprouting inhibition	50 Gy (R.T.) 5 kGy (R.T.)
Potato	・Over dose irradiation ・Sprouting inhibition	150 Gy (R.T.)
		300 Gy (R.T.)
		600 Gy (R.T.)
		1.2 kGy (R.T.)
		2.4 kGy (R.T.)

Arrangement of vegetables in an irradiation chamber. Gingers and many garlic were contained in the bags.

We are doing the sensory test.
We compared foods
irradiated at different dose levels
with un-treated controls.

The conclusion obtained from experience

Indeed!

- Food irradiation makes it possible to sterilize foods at low temperature .
- Some foods are damaged after irradiation. Irradiation works better for some foods.
- The dose should not be too high or too low

Ⅱ. Our findings from learning and experiments

◆ **“Garlic letters"**

We publish the *newsletters* reporting our experimental results and scientific visits *on the Web*.
(latest issue : No. 42)

◆**Presentation at the Meetings:**

Since 2009, we have presented our findings at academic meetings;

- radiation effect on various foods
- results of sensory evaluation

IMRP Shanghai 2013 INTERNATIONAL MEETING ON RADIATION PROCESSING

Consumers' questions and concerns

1. Irradiated food is harmful to human health, isn't it ?
2. Irradiated food is not delicious, is it?
3. Once irradiation is permitted to food other than potatoes, all the food will be irradiated ?
4. Can the processor hide the fact of over dose irradiation from us?

Ⅲ. We reply to consumers' questions and concerns

1. Are irradiated foods harmful to health?

◆ WHO, EFSA, U.S. FDA and other food safety organizations performed scientific evaluations about irradiated food, and judged it as “safe.”
The government of Japan ignores these assessments; they do not affirm nor deny these results.

◆ In 2011, we proposed a safety assessment of irradiated food to the Food Safety Commission, the risk assessment organization.
The FSC answered that they will not carry out the evaluation until the risk management organization (Ministry of Health, Labour and Welfare) requests it.

2. Irradiated food is not delicious?

Irradiation does not change the taste.
Potatoes are delicious after irradiation.

Visit to the irradiation facility at Shihoro

2. Irradiated food is not delicious?

Irradiated spices are more spicy !

Comparison of irradiated spices with steam-heated spices in chicken curry (blind test)

Two woks of chicken curry cooked at the same time following the same recipe.
Which contains irradiated spices?

At a cooking studio of a university in Tokyo

Ⅲ. We reply to consumers' questions and concerns

3. Once irradiation is permitted for food other than potatoes, will all foods be irradiated?

Some foods are not suitable for irradiation.

Apple “Suntugaru”

un-irradiated 500 Gy

* immediately after irradiation.

4. Can the processor hide the fact of over dose irradiation from us?

We understood that quality changed easily when food was irradiated at higher dose than needed.

Dried prune

un-irradiated 2 kGy small difference 4 kGy too soft

◆ To share our surprise and experience, we held …

- ”Café round table” a free seminar open to the public and the media on timely subject

A sensory test for raw cattle liver appeared in a news paper .

SankeiBiz 暮らし 2012.7.12 10:50

「色、においの差なし」！ 牛の生レバー、消費者グループが放射線照射テスト

生の牛レバー（肝臓）の提供・販売を禁じた食品衛生法の規格基準が今月、施行された。重い食中毒を起こす病原性大腸菌が見つかったためだが、焼き肉店などでの「レバ刺し」復活の手段として放射線照射による殺菌法が改めて注目を集めている。食品への照射実験をしている消費者グループが生の牛レバーにガンマ線を照射、見た目の色やにおいを比較した。その結果は－。（平沢裕子）

生レバーのにおいをチェックする参加者。放射線照射と非照射で大きな差は見られなかった＝東京都江戸川区のタワーホール船堀

- A panel discussion with young government officials from food safety administration.

芽止め（左）と　非芽止め（右）　常温で2ヶ月放置

Look! These are irradiated potatoes!

It is the first time.
A difference is clear!

Ⅳ. Our style

IMRP Shanghai 2013 INTERNATIONAL MEETING ON RADIATION PROCESSING

Unacceptable, since it seems dangerous!

- Pleasure to learn actively
- Surprised with what we had not known
- Stimulated by scientific experiences
- Appreciate the opportunity to share our experience

We would like to share our surprise with other people who are not familiar with this topic.

Acknowledgement

Dr Yasuhiko KOBAYASHI & Dr Masahiro Kikuchi
Takasaki Advanced Radiation Research Institute,
Japan Atomic Energy Agency

Ms. Etuko CHIBA , Ms.Tomoko IITUKA & Ms.Midori IIJIMA
All the members of Roundtable for Food communication, and all of you.

Roundtable for Food communication

HP: http://food-entaku.org

e-mail：entaku000@yahoo.co.jp