

Eating Raw Food as a Culture and Issues with Its Safety

Kenji Isshiki

Faculty of Fisheries Sciences, Hokkaido University

3-1-1, Minato-cho, Hakodate-shi, Hokkaido 041-8611, Japan

Summary

Human beings will continue to eat in the future. Food poisoning incidents will not become zero, even as science and technology develops. Human beings have continued to eat since ancient times. They experienced failure, such as food poisoning, too. They got and accumulated wisdom. It has been inherited in the progeny. Because they have secured both quality and quantity of food, the population could increase to 6.3 billion.

Our ancestors tried to eat foods they had no experience with. They increased knowledge and techniques about the food, little by little. They had curiosity about novel foods in some cases when they tried to eat. In many cases, they could not endure to be hungry.

They continued to eat raw food, without heating, after learning the use of fire.

In Japan, we have been eating raw foods as a part of our culture we are proud of to the world.

Nowadays, scientists show that food has the functions of nutrition, taste and modulation of physiology. One of the reasons why eating raw food has been chosen might be the expectation of improved food functionality.

Human beings selected and improved on living things as food. After that, they tried to decrease the inedible parts. They increased the edible and tasty parts. In the case of getting sick by eating raw foods, they began to cook it to make it safe and tasty. They acquired skills such as boiling, roasting and frying with oil. Cooking should be carried out not only for making food more delicious, but also making it safer. Also, it was learned that safety risks increased with mistakes in judgment and by improper cooking.

It is not so long ago when common people began to eat fish with soy sauce. Until then, they used "Gyosho" fish sauce or vinegar "Namasu" when they ate fish. After the end of World War II and the spreading of the cold-chain in Japan, it became familiar to the common people to eat raw fish such as sashimi and sushi. Our ancestors could eat raw fish near the seaside. After expanding the cold-chain, many people can enjoy raw fish, even if they are far away from the sea. Of course, freshwater fish was also eaten, but it is often cooked by heating because of parasite-worms.

It was after World War II that, in our country, fresh vegetables were eaten as salad and so on. Human feces "Kinpi" was applied as a fertilizer for growing vegetables and parasite-worms and infectious disease were feared. At present, many vegetables are cut in the growing area and at the factory, and they are packed and shipped. The amount of these vegetables is increasing. Last

autumn, in a wide area in the USA, *E. coli* O157:H7 (O157) food poisoning by fresh-cut spinach occurred. In the end, 199 victims including three dead persons were reported. In Japan, severe O157 food poisoning caused by the white radish sprout "Kaiware-Daikon" was reported in 1996. It created the situation where people refused to eat raw fresh vegetables.

For many years, in Japan, the cause of the most frequent food poisoning was *Vibrio parahaemolyticus*. The enforcement of counter measures to seafood 2000 has effectively decreased *Vibrio* food poisoning. It is increasing abroad, so we should keep watching. The total of the food poisoning cases in 2006 were released from the Ministry of Health, Labor and Welfare. The number of patients that suffered from Noro virus increased to 27,616. The patient total is 39,026 and bacterial food poisoning and others seemed not to be increasing. There were six dead persons. The causes were 2 bacteria and 4 natural poisons (2 mushrooms, 1 plant, 1 puffer fish). In Japan, we gathered various foodstuffs from all over the world, and various food and cooking methods are enjoyed including raw food.

The eating habits in Japan continue to combine the merits of foreign cooking with Japanese methods. Moreover, the Japanese use foreign cooking and food to fit in with domestic eating habits. There are a lot of foreign foods that look like the Japanese original. The food safety situation in Japan is very good, but it is a fact that there are many people who feel anxiety about food safety.

Some people use the word freshness "Sendo", to include the message of safety.

The definition of freshness needs a concept of time and degree of freshness. This word is also used in the other field, with processed food. High freshness does not always mean safe. If there are food poisoning bacteria, Safety is low. We can not detect a pathogen in the color, the taste and with the other senses. There was a situation where people developed the disease with only 10 to 50 cells O157.

At this time, using vegetable and fish as examples, we tried clarifying the merit and the defect of eating these foodstuffs. I thank each specialist who made the effort to prepare well written documents. I hope to develop the good points of Japanese food culture including eating raw foods.