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FOR CONSERVATION AND SUSTAINABLE USE OF TUNAS

OPRT Interview

Tuna is a tasty and healthy food

Dr. Taneko Suzuki

Visiting Professor, Kokusai Gakuin Saitama Junior College

How do you answer when you are asked why you eat sashimi tuna—sliced raw tuna to be eaten with soy sauce and wasabi (Japanese horseradish)? Some people may say that the tuna contains much DHA or it must be healthy. But it seems that many people like sashimi tuna because it tastes good. This I believe is the reason for eating tuna. But if you pause to think, what about the food being both tasty and healthy? By eating such a food, you will certainly feel that you gained a lot from it. In this issue, OPRT interviewed Prof. Taneko Suzuki, who is an authority on nutrition science, on useful information on tasty and healthy tunas.

QUESTION: What is the reason for you, an expert on fish nutrition, to eat tunas?

SUZUKI: That's because it is delicious. The key to a good meal is not in whether it is healthy but in whether or not it is tasty. There are several ways of eating tuna and skipjack by processing in high temperature, like canned tuna. But I think the best way to it is sashimi. In the days when a low-temperature distribution network had not been developed, people use to eat tuna by boiling because its freshness was easy to be lost. But now that high-level freshness is ensured in Japan, it is quite natural that most delicious sashimi has become the main way of eating tuna. Some level of stickiness and soft feeling of tuna are good. Also it does not smell fishy. I guess this is the reason that tuna is liked by people of all ages from the young to the old.

Tuna has the highest protein contents

QUESTION: What kind of fish is tuna from nutritional viewpoint?

SUZUKI: Before I answer to your question, I have one question for you. What do you think is the fresh food served in our meals daily that contains

the largest contents of protein? Many consumers and students at my university say that it is beef. Probably they have a fixed image that beef equals protein. But the fact is



that it is tuna that has the largest protein contents. Especially, the protein contents in tuna red meat are by far the highest among fresh foods served for our meals. In other words, 100 grams of tuna red meat contains 26 grams of protein. By comparison, beef (sirloin), which many people believe has the highest protein contents, has only 11 grams per 100 grams while pork has 19 grams. Certainly, these two commodities lag behind tuna. Among fish, the protein contents of tuna are by far the highest. That means tuna is the best food to take protein efficiently. It digests better than beef and other protein foods.

QUESTION: In what way the high protein

contents serve to our health?

SUZUKI: Protein is an essential element for human body, but a large amount of consumption is not necessarily significant. Protein is dissolved into amino acid in human body once, and then is absorbed into the body. Tuna has a good balance of amino acid – just perfect if we give a mark to it.

QUESTION: Are there types of protein that has a poor balance of amino acid?

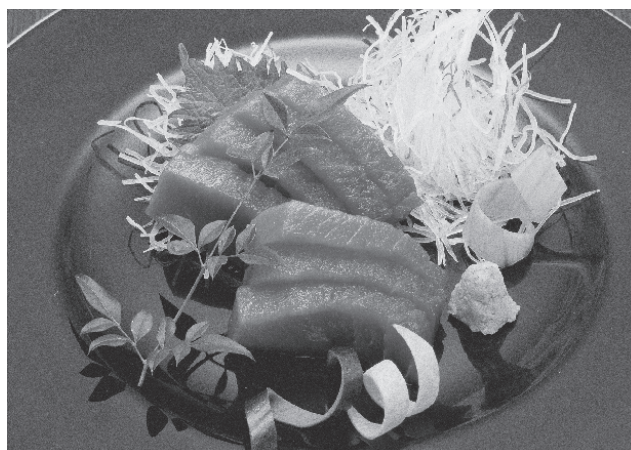
SUZUKI: Yes, there are many. Like in animal meat, the balance of amino acid in fish is equally good. Compared with soybean, which is known as “the beef in the field,” the amino acid balance of fish protein is by far superior. Among food having poor balance, we can point out that collagen, which is popular for its effect on beauty care, is lacking essential amino acid.

Tuna is highly recommendable to aged people

QUESTION: What are the other characteristics of tuna than a good protein balance?

SUZUKI: There are more characteristics of tuna. One is that it has a large amount of potassium. A large amount of potassium has the function to dispose sodium which tends to cause high blood pressure. It does much in reducing blood pressure. The amount of potassium in tuna is 400 milligrams per 100 grams while that in beef or pork is 300 milligrams. It would be good for a person having high blood pressure to eat more tuna.

Another characteristic is high contents of vitamin D. Recently, consumption of calcium is recommended because there are many people who develop osteoporosis – a condition in which the bones become brittle and fragile from loss of tissue. But mere consumption of calcium serves no good. Vitamin D is necessary for the human body to ingest calcium in the body. Although tuna has not much calcium, high-level vitamin D which dissolves in fat is found in tuna, especially in prime fatty flesh of tuna (toro). So, to eat tuna with other food containing much calcium is effective in preventing osteoporosis. Needless to say, tuna has very high contents of DHA (docosahexaenoic acid). As toro is not to be eaten in large amount, eating it with tuna red meat will make a very balanced and nutritional meal.



QUESTION: So, tuna is an excellent food commodity not only for its taste but also from nutritional point of view.

SUZUKI: Both fish and meat have their own characteristics. Among fish, sardine, for example, has abundant EPA (eicosapentaenoic acid). What we can say in common for fish is that they have much EPA and DHA and also much vitamin D and potassium in protein which has efficient digestive functions. It is certain that tuna has especially large amount of potassium and vitamin D. Seen from these characteristics, I think tuna is a good food commodity for aged people. It doesn't take much time to cook tuna. Moreover, tuna does not have bones and is soft and easy to digest. It also has much potassium effective for preventing high blood pressure as well as vitamin D that helps the intake of calcium to prevent osteoporosis. Above all, it is tasty. For these characteristics, tuna is an ideal food for aged people.

QUESTION: You say that sashimi tuna is a suitable food for the aged. But it is pointed out that consumption of fish, including tuna, has been decreasing in Japan.

SUZUKI: As I said before, tuna has other values than its tastiness for the aged. Then, how could we have other people, especially children, eat more tuna? For tuna I see no problem because it is a popular food commodity for children and young people at revolving sushi restaurants. Speaking about fish in general, I think there is no way than to educate young mothers in Japan. The first way to prevent decrease in fish consumption in Japan is to increase the opportunity for children to eat fish at home.

Simple, easy-to-eat tuna carpaccio a la Dr. Suzuki

Dr. Taneko Suzuki says that her favorite tuna dish is tuna carpaccio. Below she shows a very simple way to cook it.

First, you scatter garlic, cut into tiny pieces, over sliced tuna. Then you adjust seasoning by adding olive oil and small amount of wine. The point is to cut tasty tuna into thin slices; (cutting into thin slices is sometimes difficult). After that, you will enjoy a good meal with bread and white wine. That's all there is to it.

International organizations

WCPFC

Issues surrounding regulations on bigeye tuna in the Western and Central Pacific

Dr. Ziro Suzuki, Tuna Scientist

Substantial regulations on bigeye tuna will be introduced in the Western and Central Pacific (the areas in the Pacific west of about 150 degrees west) in 2009. On several occasions in the past, the Scientific Committee of the Western and Central Pacific Fisheries Commission (WCPFC) recommended that the catch of bigeye should be reduced at least by 30%, but this recommendation has not been adopted by the Commission because of the differences of views among member countries.

The regulations the Commission agreed this time are complex. But, in short, they are intended to reduce the bigeye mortality coefficient or harvests by 30% from the average level of 2001-2004 or the level of 2004 over a span of three years from 2009. It has been my assertion that advanced nations should take the initiative in enforcing regulations on the catch of tunas. I give a positive evaluation to the regulations agreed by the Commission this time since they are basically in line with what I have been proposing.

However, there remain several issues to be solved urgently regarding regulations of bigeye

tunas.

First, there are no catch regulations on bigeye in the Eastern Pacific adjoining the WCPFC Convention area. The catch of juvenile bigeye by purse-seine fishing vessels in the Eastern Pacific total several times more than the amount caught by purse-seiners in the Western Pacific. The bigeye tuna migrates across 150 degrees west, so the WCPFC's regulations may have only a limited significance. In order to make these bigeye regulations effective, it is crucial for the Inter-American Tropical Tuna Commission (IATTC), an organization responsible for the management of tuna resources in the Eastern Pacific, also to introduce its bigeye regulations from 2009.

Secondly, because of political implications, the WCPFC has not clearly set the western border of the Convention Area. From biological point of view, it is plausible to consider that the Convention Area comprises at least the eastern end of the Asia continent, in other words, the Pacific side of China, Vietnam, Thailand, Malaysia and Indonesia. However, there exist no catch statistics on tunas in the South China Sea where Japanese fishing vessels once harvested bigeye tunas. Based on fragmentary information by the Scientific Committee, Vietnam is reportedly catching about 30,000 tons of tuna a year by its longline fishing vessels. It is highly possible that no small amount of bigeye is included in the catch. That is to say, there are no regulations on bigeye in the waters on both sides of the WCPFC Convention Area.

Thirdly, as another issue, the awareness to introduce regulations on yellowfin tuna does not seem to be so high in spite of the fact that a recommendation has been made not to increase the fishing mortality (or catch volume) of the yellowfin from the average level of 2001-2004 or the 2004 level. Regarding the yellowfin, the catch by purse-seiners, for both juveniles and adult fish combined, is exorbitantly larger than that caught by longliners. It has been pointed out in the WCPFC Scientific Committee that the impact by purse-seiners on the yellowfin resources is greater than that caused by longliners, unlike the case for bigeye in which the impact of longlining is greater than that of purse-seining. Unlike bigeye, yellowfin is a target species for purse-seiners. Therefore, compliance with regulations on yellowfin is crucial.

In this respect, the year 2009 will certainly become a year in which the presence of the WCPFC is tested regarding how effectively its

regulatory measures on bigeye and yellowfin tunas can function.

IOTC

IOTC restrains unlimited increase of tuna fishing vessels in developing countries

The Indian Ocean Tuna Commission (IOTC) held its annual meeting in Bali, Indonesia, from March 30 to April.3, and adopted a measure to restrain an increase of the number of tuna fishing vessels of developing countries.

So far, the fishing capacity targeting bigeye and yellowfin tunas has been limited to the level in 2006, and the capacity targeting swordfish and albacore to the level in 2007. But, the limits have not been applied to developing countries if they submit their fishing vessel construction plans to the IOTC, given the need of developing countries to develop their fishing industry. It has been told that some developed countries have taken advantage of such privilege of developing countries in order to realize the de facto increase of their fishing vessels in the Indian Ocean.

With the introduction of the new measure, a developing country is required to submit to the IOTC its fishing vessel construction plan by the end of this year for the review by the Commission. The measure is evaluated as a positive step by the IOTC to address the overfishing capacity issue.

Tuna science

Accurate measurement of farmed tuna by IT

As tuna farming is practiced more widely, the fish size measurement device is selling well in Japan. The device, "AQ1 system AM100," is designed to obtain high-precision data from the image of the fish swimming in the water by using a personal computer.

Accurate and useful information technology (IT) is now employed in the measurement of fish body, which previously depended on the experience and physical labor of workers.

The weight of farmed tuna reaches 30-50 kg,

and producers' prices exceed 3,000 yen per kg. If an error is made in the measurement of the body size, even a slight



difference could lead to a substantial economic loss. Supposing 10,000 tunas, each weighing 50 kg, are to be shipped, a mistake of 10% could mean a loss of 150 million yen in sales income.

However, the body of tuna is large and heavy, and the fish is prone to die by moving violently once it is landed. In point of fact, it has been impossible to measure the actual size of the body, and there has been no way other than depending on the human eye sight. An industry source says that the differences that can occur using this method is at least 15% or higher.

AM 100 is intended to solve this problem at the farming site. The image of the fish, video-recorded in the water, is taken into the personal computer. Simple clicks with the cursor set on the mouth, tail, dorsal part and belly of the tuna can provide the accurate body length, height, and weight as well as body composition instantaneously. In the measurements using the new device so far, high-rate accuracy has been proved, with the error rate from actual measurement standing less than 5% at the maximum.

(This article is based on the Minato Shimbun, March 24, 2009)

OPRT News

JFRCA joins OPRT

The Japan Fisheries Resource Conservation Association (JFRCA) was approved as the 19th full member of OPRT at the OPRT Board meeting held on May 12. JFRCA, established in 1963 for conservation of marine resources and protection of environment of fishing grounds, has 263 members, including major fisheries organizations in Japan.

"JFRCA is one of the prestigious organizations related to fisheries in Japan and its enrolment will enhance the activities of OPRT," said Isao Nakasu, President of OPRT.