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The Present State of Tuna Eaten in Tuna-Superpower Japan



The Japanese are renowned for their love of tuna. One-fifth of the world's tuna is said to be consumed by the Japanese. According to data of the Ministry of Agriculture, Forestry, and Fisheries, Japanese households eat an average of about two kilograms of tuna a year. In the ranking of fish eaten frequently by the Japanese, tuna comes second behind salmon.

Tuna is one of my favorites too. When I visited the Tsukiji Outer Market in Tokyo, the bluefin tuna sashimi and minced tuna meat cutlets that I purchased at Maguro Kobo Tsukiji Hokuei were really tasty. Ms. Junko Nishimura, a registered dietician who answered my questions there, explained to me that the Hokuei Group concludes blanket contracts with tuna fishing boats to purchase the whole of the boat's catch and then engages in dissection, processing, and sales itself. The minced tuna meat cutlets, she told me, are a popular item developed using leftover meat so that the whole tuna is eaten without any waste.

My interest in tuna piqued, I visited the office of Hokuei Shokuhin Co., Ltd. in Toyosu Fish Market in Tokyo and spoke with Mr. Ken Saito, the head of the Group's Sales and Marketing HQ, and Mr. Yasunari Sawai, deputy head of the Sales and Marketing HQ and chief of the Manufacturing Department. These two gentlemen have been handling tuna for a long time at Hokuei, which marked the fortieth anniversary of its founding last year, so they really can be described as tuna professionals.



Bluefin tuna, the "king of tuna"

As I just said, the most favorite fish eaten by the Japanese is salmon. Unlike salmon, however, tuna is mostly eaten raw in Japan. Among tuna sashimi, bluefin tuna is especially popular. Japan boasts the world's largest consumption of this "king of tuna," which is served as high-class sushi or sashimi.

In the explanation I received at Hokuei, first of all I was surprised to hear that the

amount of coastal bluefin tuna unloaded at ports in Japan, as exemplified by Oma tuna, is actually very small. Moreover, bluefin tuna fished off the coast of Japan account for only a small fraction of the total volume of bluefin tuna distributed domestically. Almost all the bluefin tuna that goes into our mouths in Japan actually is caught in distant waters more than 10,000 kilometers away from Japan. It is frozen and brought to Japan over several months.





Deep-sea fishing boats

Tuna caught several months ago is tastily eaten as sashimi in high-class sushi restaurants, Japanese-style restaurants, and homes in Japan with a freshness as if it had been caught on that very day. For this purpose, consistent and thorough quality management and high-level freezing technology are necessary from catch to transportation and delivery to consumers. Tuna sashimi can be eaten without any worry precisely because countries have established such a perfect system.

"The freshness of tuna is everything!" The tuna fishing boats with which Hokuei concludes blanket contracts are Japanese-flag vessels operating in waters from off North Ireland to the Caribbean Sea area. They have an established reputation for their careful processing of tuna, being equipped with equipment to rapidly freeze and preserve



caught tuna at minus 60 degrees. Since this temperature of minus 60 degrees is lower than the temperature at which water molecules cease to work, it prevents tuna cell destruction caused by the freezing of water and drying and deterioration due to frozen storage. In addition, freezing is carried out promptly immediately after the tuna is caught and before rigor mortis begins. It may seem a little cruel, but the tuna is frozen while it is still almost alive. That is the reason for the freshness of frozen tuna.

Meanwhile, tuna caught in the sea off Japan, like Oma tuna, is put into cold storage while still alive and apparently takes at least a week to reach the mouths of consumers. It is said that a tuna's flavor can be enriched by "maturing" it at a certain temperature, after which it can be eaten deliciously as mature tuna. In terms of freshness, however, apparently the method of rapid freezing on board a fishing vessel and delivery to consumers almost in that same condition is better.

Dissection of frozen tuna

Mr. Sawai showed me the process of carving up a frozen tuna. The workplace was so cold, it was just like being in a refrigerator. Taken out of a freezer with a temperature of minus 60 degrees, the tuna was like a solid log, so cutting it with an ordinary kitchen knife would be impossible. Instead a special cutter, rather like an electric saw, was used to cut up the tuna's body by three parts---*akami, chutoro*, and *otoro*. The tuna was frozen solid, so even when it was cut, there was not a drop of blood or water.

The akami part is near the center of the tuna's body and has little fat. The closer

you get to the skin, the more fatty is the flesh. The *otoro*, close to the head on the belly side, is the fattiest part, although it accounts for a very small ratio of the whole. Witnessing the process of cutting right before my eyes, I realized just how scarce the fatty flesh is.





Adjacent to the tuna cutting workplace was a freezer with a temperature of minus 60 degrees. After being shipped to Japan, the tuna that was frozen onboard the fishing boat is immediately moved to a super-low-temperature freezer, where its storage continues. A tuna that is brought out for cutting is promptly returned to a temperature of minus 60 degrees too. The tuna's freshness is maintained by continuing this integrated super-low-temperature storage, from immediately after being caught to processing and sale.

Video of frozen tuna cutting: https://youtu.be/ITyNWOJ1cHk

Present state of tuna fishing

How is deep-sea tuna fishing actually carried out today? In the Japanese-flag fishing boats with which Hokuei concludes blanket contracts, there are, of course, Japanese staff, including the captain and chief engineer, but the actual fishing is conducted by mainly Indonesian fishermen. The reason is that the number of Japanese fishermen is on the decline. Some time ago, by working on a tuna fishing boat for a few years, apparently it was possible to earn enough money to build your own house. These days, however, the money is not so good. As aging advances, and young people are put off by the harsh working conditions, the number of Japanese fishermen continues to fall.

Meanwhile, the number of bluefin tuna is continuing to increase. In 2014 Pacific bluefin tuna were listed as an endangered species, and many Japanese worried that they

might never be able to eat bluefin tuna again. After that, however, countries enforced sustainable fishing quotas, and controls against illegal fishing were tightened. As a result, resources gradually recovered, and in 2021 the endangered status of Pacific bluefin tuna was downgraded to "near threatened." It was decided to raise Japan's Pacific bluefin tuna fishing quota by 15% over 2021 from 2022. According to Mr. Sawai, these days fishing vessels sometimes cannot cope with their excessively high catches. To avoid any decline in the guarantee of freshness, Hokuei has requested fishing boats to reduce their number of fishhooks.

World map of tuna fishing grounds



To see where tuna fishing boats operate, take a look at the colored map compiled by Hokuei. The fishing grounds differ depending on the type of tuna. Fishing grounds for bluefish tuna are shown in pink, for southern tuna in yellow, and for bigeye tuna, albacore, and yellowfin tuna in orange.

Bluefish tuna inhabit mainly the northern hemisphere. The higher the latitude, and the closer to the North Pole, the more good-quality fatty and tasty tuna are caught. In Japanese, bluefin tuna are known as *honmaguro*. Because their backs and eyes are black, however, they are also known as *kuromaguro*, or black tuna. There are two types, Atlantic bluefish tuna and Pacific bluefish tuna. Their scientific names and bodies are different.



Southern tuna inhabit mainly the southern hemisphere. They are also a type of bluefin tuna, but their bodies and taste are quite different to those of Atlantic and Pacific bluefin tuna. Compared to Atlantic and Pacific bluefish tuna, which grow large, the southern tuna is rather small. Because a lot are caught in the Indian Ocean, southern tuna are also known as Indian tuna. It is said that maybe they do not grow very large because of the ocean environment of their habitats, which is much rougher and harsher



than the northern hemisphere. To protect their intestines from the rough waves, their ribs characteristically form a thick fence around their bellies. Compared to other bluefin tuna, therefore, the fattiest part of their bodies (*otoro*) is very small.

Tuna farming is popular too. The main tuna farming areas are Mediterranean countries and Mexico for bluefin tuna and Australia for southern tuna. Farmed tuna is exported to Japan as well. While natural tuna differ a lot individually, farmed tuna are almost identical in terms of appearance, taste, and fattiness.

Can bigeye and yellowfin tuna become bluefin tuna?

The fishing grounds for bigeye and yellowfin tuna are distributed around the world, centering on equatorial zones. Occasionally, I was told, bigeye and yellowfin tuna appear in the bluefin tuna fishing grounds too. These bigeye and yellowfin tuna swim around in the extremely cold seas of the north, so they have physiques and fattiness on a par with bluefin tuna. Therefore, they are often sold at extremely high prices. Apparently, because they look exactly like bluefin tuna, even tuna professionals in the market sometimes cannot see the difference and purchase them in the mistaken belief that they are bluefin tuna.



Albacore, which similarly is caught around the world and mainly in equatorial zones, is the type of tuna most frequently used for canned tuna processing.



Eating the whole tuna

Even though their numbers have recovered, tuna are still a precious resource. To avoid food loss, Hokuei endeavors to ensure that the whole tuna is eaten. According to Mr. Sawai, the only parts of a tuna that cannot be eaten are the skin and the bones. Many fish have edible skin, but tuna skin is covered thickly and tightly in tough, fine scales.



Unfortunately, processing is impossible too. Almost all the other parts, however, can be eaten. Flesh from the tail, head, cheeks, and behind the eyes, and the roe and so on, are cooked as rare parts and processed into canned products.



Meat that is left over after processing is sold as *negitoro*, which is minced tuna mixed with chopped green onions. Meat that is attached around the skin and bones is scraped off using a special machine and processed into fish meatballs, which are very popular as an ingredient for hot pot dishes in the winter. Because the processing is

expensive, the price of processed products_tends to be high. But Hokuei's policy is to use tuna efficiently and reduce scraps that get thrown away as much as possible.

Correct defrosting method

Hokuei produces and sells a variety of frozen tuna products. These include simple sushi sets in which the ingredients are just placed on top of sushi rice; sashimi assortments; and New Year's sushi beautifully arranged in lacquered boxes. In the case of all these products, once they are defrosted at home, they can be eaten immediately as is.





I asked whether Hokuei recommended any particular defrosting method to avoid the tasty treat being ruined in the process of defrosting. In the case of tuna for sashimi, basically, I was told, if it is just left as is in the fridge for six to eight hours, the tuna will defrost well. In the case of frozen tuna blocks in vacuum packages, it is necessary to put them in a fridge after opening them and letting some air in. If the tuna blocks are defrosted without getting air, the meat will blacken. Also, caution is necessary because if you try to defrost fresh fish quickly at normal temperature, the meat will shrink. Because the fish is frozen before rigor mortis, if you defrost it too quickly, rigor mortis will then begin, and the taste and texture will deteriorate. To eat fresh tuna deliciously, it is better to slowly defrost it over time, without hurrying.

Following Russia's invasion of Ukraine last year, the world situation became unstable. Fuel prices rocketed, the weak yen advanced, and consumer prices have continued to rise too. The Toyosu Fish Market was no exception, and at the end of last year tuna prices reached a record high. Amid this state of affairs, last year the Hokuei Group sent a financial donation to Ukraine as humanitarian support. Hokuei President Kentaro Hirose firmly believes that the business can only prosper if peace prevails.



Mr. Kentaro Hirose, President, Hokuei Group



Mr. Ken Saito, Managing Director

Going forward, high-class tuna may perhaps fall out of our reach. But as long as we have the chance to eat tuna, we should do so heartily, without leaving any scraps, and with gratitude for the perfected high level of quality management maintained from catch to consumption and for the conditions enabling us to sit around the dinner table with peace of mind.

Cooperation:

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