

# HIGHLIGHTING *Japan*

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JAPANESE RAMEN AND  
ITS GLOBAL EXPANSION

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## THEME FOR NOVEMBER:

## Japanese Ramen and Its Global Expansion

Japanese ramen is very diverse. Flavors range from soy sauce, to miso, salt, or *tonkotsu* (pork bone), and there are regional differences in noodle thickness and local specialty ingredients used. Today, ramen restaurants are also opening one after another in other countries. This month’s *Highlighting Japan* features an interview with an expert on the science behind ramen’s great taste, introductions of four local ramen varieties—Kitakata Ramen, Toyama Black Ramen, Onomichi Ramen, and Hakata Ramen. Furthermore, it also features an article on the inventor of instant noodles, a look at a ramen restaurant that has expand overseas, and ramen tours that are popular with visitors from overseas to Japan.



On the cover: Finest Kitakata Ramen “SUGOI”, a ramen dish designed for the visitors from overseas. The centerpiece is the roasted beef slices, which are made from rare Fukushima Aizu beef.

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## FEATURES

# Japanese Ramen and Its Global Expansion

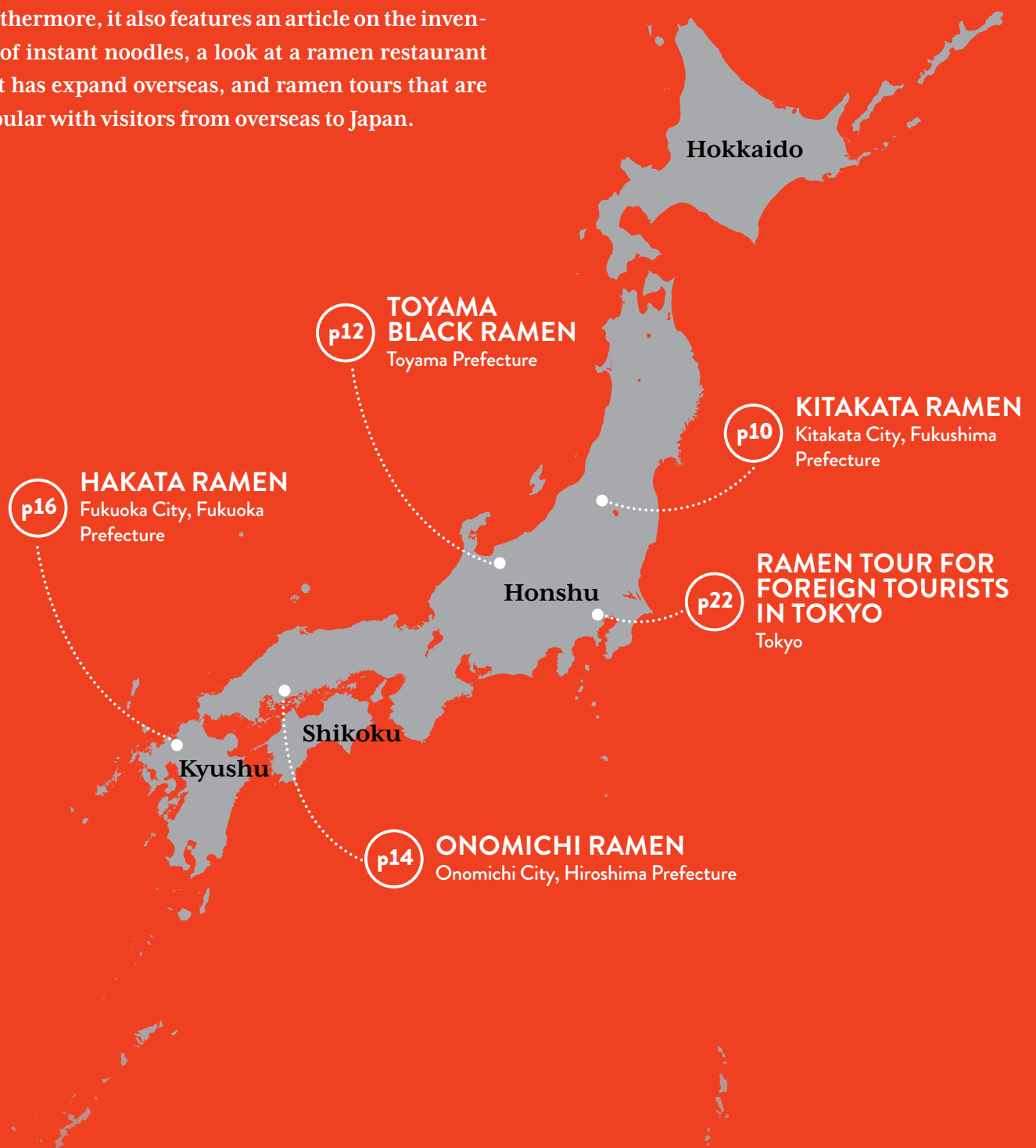


Above left: An example of Onomichi Ramen   Above right: A bowl of Toyama Black Ramen

Below left: One of ICHIRAN's ramen restaurants overseas, with many attracting long lines of customers.

Below right: A selection of the items available at a curry ramen restaurant visited during the ramen tour for foreign Tourists in Tokyo.

**J**apanese ramen is very diverse. Flavors range from soy sauce, to miso, salt, or *tonkotsu* (pork bone), and there are regional differences in noodle thickness and local specialty ingredients used. Today, ramen restaurants are also opening one after another in other countries. This month's *Highlighting Japan* features an interview with an expert on the science behind ramen's great taste, introductions of four local ramen varieties—Kitakata Ramen, Toyama Black Ramen, Onomichi Ramen, and Hakata Ramen. Furthermore, it also features an article on the inventor of instant noodles, a look at a ramen restaurant that has expand overseas, and ramen tours that are popular with visitors from overseas to Japan.



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# Scientifically Breaking Down What Makes Japanese Ramen So Delicious

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Japanese ramen has been enjoying increasing popularity among visitors to Japan from other countries. Ramen in Japan comes in a diverse range of varieties, with main styles including *shoyu*, *miso*, *shio*, and *tonkotsu* (Please refer to the table on page 8), as well as noodles of varying thicknesses, regional variations featuring special local ingredients, and more. Around 18,000 ramen restaurants<sup>1</sup> are found in Japan, and over the last 15 years or so, more and more ramen restaurants have been opening up overseas, as well. What secrets have made ramen such a worldwide sensation? We interviewed YONEMITSU Muneaki, a professor in the Faculty of Life Science at Kyushu Sangyo University who conducts research on *tonkotsu*



## YONEMITSU Muneaki

Worked as a technical expert for a food manufacturer for 34 years, engaging in development, manufacturing, quality control, sales, and marketing of processed foods in Japan and overseas. Professor in the Department of Life Science, Faculty of Life Science, at Kyushu Sangyo University since 2017. Specializing in processed foods, he conducts research on themes including clarifying the scientific basis of the deliciousness of Kyushu *tonkotsu* ramen.

ramen, to gain more insights from a scientific perspective.

Recently, Japanese ramen has been enjoying widespread popularity even overseas. Could you start by sharing some insights into what makes this dish so delicious from a scientific perspective?

One basic factor in what makes foods appealing to people is balance, and this is not limited to ramen alone. For example, the level of salt concentration that makes food taste good to people tends to fall in the same general range. No matter what type of food, if the concentration is not within that range, it will tend not to taste good. This can be traced to the salt concentration of the cells that make up the human body,



Bowl of *tonkotsu* ramen





Savory *tare* (or *kaeshi*) sauce is combined with a *dashi* broth before boiled noodles are added to prepare a bowl of ramen.

which is about 0.9%. At around that level, foods have an appealing flavor. Incidentally, salt concentrations of about 0.9% are also the same for saline solutions used for cleaning contact lenses, for example, and isotonic sports drinks. Having this same level of concentration also makes them easier for the body to absorb.

Other components of human flavor include amino acids such as peptides and saccharides. These elements are also essential to our bodies. Eating sweet things must give people a pleasant feeling because, as living beings, we have evolved through experience to sense that eating foods with sugar content gives us energy. This pleasant feeling serves as the motivation to eat foods that contain saccharides.

Umami, one element said to be a particular key to appealing flavor, is related to glutamic acid, one of the main amino acids of protein. As it is a nutrient necessary for creating muscle in living things, it gives people a pleasant feeling when they eat foods containing it.

These are some of the mechanisms that make foods appealing to people, and they do not tend to vary depending on people's ethnicities or the regions where they live. With the umami-rich flavor ramen has from



its *dashi* broth and its salt concentration that feels just right, it is actually not so surprising that it has been accepted to such a degree worldwide. Different countries and regions do have their own food cultures, however, and I think ramen's status as a novel dish not originally found in those particular cuisines can also give it a special appeal.

#### **What makes *tonkotsu* ramen, the focus of your own research, unique compared to other types of ramen?**

Ramen in Japan falls into several categories including *shoyu* ramen, *miso* ramen, *shio* ramen, and *tonkotsu* ramen. However, that is actually not a precise classification. Fundamentally, the broth the ramen noodles are served in is made from savory sauces made from *tare* — also known as *kaeshi* — and *dashi*. Now, *dashi* corresponds to a type of broth or stock you might know as a *fond*<sup>2</sup> from Western cuisine. Typically, a smaller amount of *tare* might be added to the bowl and *dashi* added to it to create the broth before boiled ramen noodles are added to it. The ratios often vary from one restaurant to another.

This *tare* sauce is a primary element in determin-

## Classification of Ramen and Types of Tare and Stock

Types of Ramen	Main Ingredients of Tare	Broth-Making Method	
		Main Ingredients	Pork bones, pork, chicken bones, whole chicken, seafood, vegetables, etc.
<i>Tonkotsu</i> ramen	Soy sauce, miso paste, salt	Broth Characteristics	<b>Not cloudy (Clear)</b> <b>Simmered gently</b>
<i>Shoyu</i> ramen	Soy sauce		
<i>Miso</i> ramen	Miso paste		<b>Cloudy</b> <b>Boiled at high heat</b>
<i>Shio</i> ramen	Salt		

Materials: Provided by Prof. YONEMITSU

Only *tonkotsu* ramen is defined by the characteristics of its *dashi*

ing the flavor of the ramen, from soy sauce-based *shoyu* to *miso* or *shio*. Classifications like *shoyu* ramen, *miso* ramen and *shio* ramen are based on the type of this main ingredient, the *tare*. *Tonkotsu* ramen, on the other hand, is defined by its *dashi* broth which is typically cloudy, made by boiling pork bones — *tonkotsu* in Japanese — at high heat. I will explain more about this, but this type of ramen is not defined by the type of *tare* sauce used.

### Only *tonkotsu* ramen is named after the characteristic of its *dashi* broth, right?

Yes. The *shoyu* ramen and *miso* ramen styles most commonly found in the Kanto region typically feature clear broth bases that are gradually simmered at low heats to prevent cloudiness. *Tonkotsu* ramen, on the other hand, features a broth base that is boiled hard. This makes a cloudy broth through emulsification: creating a stable mixture of the liquid and fats and oils contained in pork bones or chicken bones. This process brings the flavor to the forefront, giving *tonkotsu* ramen its characteristic richness and flavorful, one of the key points to what makes it taste so appealing.

Methods of preparing *tonkotsu* ramen vary from one restaurant to another, from the parts of bones used to the way broth is extracted from them, to how the foamy layer of scum that develops on top of the boiling broth is dealt with. These factors all affect the flavor and style of the broth. Another factor is whether thin noodles that easily absorb the flavor of the broth are used or flatter noodles that provide richer enjoyment of their texture. This will affect the flavor as



Thin noodles are considered to absorb and carry the flavor of the broth well.

well. Still another factor is whether the *tonkotsu* broth is combined with soy sauce-based *shoyu* *tare* or *miso*. All of these factors and combinations can completely change the overall flavor. There are limitless variations to enjoy.

**So, with *tonkotsu* ramen, it seems that individual restaurants are choosing what they consider to be the best combinations of various factors: the parts of bones used in making the broth, the thickness of the noodles, the type of *tare* sauce, and so on. Is there anything like a formula or principle that applies to this?**

In having conversations with chefs who are actually preparing ramen, I find that they have all found the best solutions for their individual restaurants drawing on their years of experience and intuition. However, as a researcher, I would like to scientifically clarify this combination so that it can be explained clearly.



**I understand you have also been involved in developing types of instant noodles outside Japan in the past. What kinds of ramen did you find appealed to people in those other countries?**

In the past, I worked as a technical expert for a Japanese food manufacturer establishing operations and developing types of instant noodles in countries including Poland, Thailand, and Peru. In Poland, for instance, I researched what type of broth was most commonly enjoyed in the country. That turned out to be a broth made with mushrooms and tomatoes, so we developed instant noodles with a broth base featuring that flavor. Originally, many exchange students from Vietnam went to study in Poland as part of the Comecon<sup>3</sup> economic policy, and they brought a lot of instant noodles with them. Polish people came into contact with instant noodles through them, and it came to be a common, widespread item that way.

**Backgrounds like that must have made it easier for Japanese ramen restaurants to expand overseas, as well.**

Yes, true. There were already Japanese ramen restaurants around when I was in Europe in the early 2000s. These restaurants, however, tended to have local management, rather than Japanese. I remember that later when ramen restaurants opened in major Western cities including New York and London, their popularity really increased. Considering this series of events, I would suggest that ramen has gradually increased in worldwide popularity since shortly after 2000, rather than saying that a ramen boom has taken off all of a sudden more recently.

**What are some ways you think ramen and its popularity might evolve further in the future, both in Japan and overseas?**

While I do think we can certainly expect the Japanese dish of ramen to continue becoming more widespread around the world, I also wonder if we might start to see more new types of ramen matched to the food cul-




Photo: Kyushu Jangara

Bowl of vegan ramen, a variation of Kyushu *tonkotsu* ramen<sup>6</sup>

tures of various other countries. In areas where *halal*<sup>4</sup> dietary restrictions are observed, for example, ramen that is *tonkotsu*-flavored but not made from pork bones is becoming more common. I think we might see more and more new versions like this, such as ramen suitable for vegans<sup>5</sup> and styles based on regional cuisines.

**So, it seems that ramen might take on different forms as food cultures become increasingly diverse. Could you finish up by sharing how our readers from outside Japan might get even more enjoyment out of Japanese ramen?**

As I just mentioned earlier, different countries have different food cultures. One major difference between Japan and other countries is the presence of a “slurping” culture. Making sound when slurping up noodles has been considered bad manners in Western cultures. When you slurp ramen noodles, sipping in the broth together with the noodles in this way, however, the delicious flavor of the dish really spreads in your mouth. I want to recommend trying not to be shy about it. Go ahead and slurp your ramen like this. I can tell you that, when you could do this, a whole new frontier of flavor will open up for you, unlike anything you have experienced before. 

1. The number of “ramen restaurants” under “Service Industries B, Tabulation of Individual Industries” in the 2016 Economic Census for Business Activity

2. In French cuisine, a broth or stock made from ingredients such as veal bones and muscles. Used as a foundation for sauces and stews.

3. Abbreviation of the Council for Mutual Economic Assistance, an international organization established in 1949 with the aim of promoting economic cooperation between the Soviet Union and socialist countries in Eastern Europe. Members included countries from other parts of the world as well, such as Mongolia, Cuba, and Vietnam. Comecon dissolved following the collapse of

the Soviet Union.

4. Guidelines concerning all aspects of life for Muslims. In terms of dietary restrictions, foods and drinks including pork and alcohol are forbidden.

5. People who follow a completely vegetarian and dairy-free diet, avoiding all types of animal-derived foods.

6. A version of ramen re-creating the flavor of *tonkotsu* broth using only plant-based ingredients. In place of the grilled pork that typically tops the dish, vegan meat made primarily from soybeans is used.

# Kitakata Ramen: A Local Ramen That Is Considered One of Japan's “Three Great Ramen”

Kitakata City in Fukushima Prefecture, in the Tohoku region of Japan, has long been known as a ramen town. Kitakata Ramen has a history of around 100 years of the local cuisine, it is considered one of Japan's “Three Great Ramen,”<sup>1</sup> along with the ramen of Sapporo and Hakata, and is famous all over Japan. We asked HAYAKAWA Naoki of the Kitakata Ramen Section of Kitakata City Hall about the origin of Kitakata Ramen and its characteristics.

(Text: MOROHASHI Kumiko)

“The origin of Kitakata Ramen dates back to around 1930. At the time, there weren't any ramen restaurants in the city, but it is said that things got started when Pan Qinxing, who was born in Zhejiang Province, China, started selling ramen as *shina soba* (Chinese noodle dish) from a *yatai* (street stand)<sup>2</sup> in 1927.”

Pan didn't keep his noodles and broth recipe a secret, so the recipe spread, and the number of ramen

restaurants slowly grew, starting with two restaurants that opened in 1945 after the Second World War ended. Nowadays there are about 90 restaurants that offers ramen in Kitakata City. They include the restaurant started by Pan, other restaurants that have preserved their taste for over 60 years, and restaurants that have put English menus on their websites, making it fun for tourists to explore and find the ones that suit their tastes.



A bowl of Kitakata Ramen

Photo: Ramen Ippai



Finest Kitakata Ramen "SUGOI", a ramen dish designed for the visitors from overseas. The centerpiece is the roasted beef slices, which are made from rare Fukushima Aizu beef.

Kitakata Ramen "SUGOI" (it means "Amazing!" in Japanese), a ramen dish designed for the visitors from overseas that is packed with local food products, and is now offered at some restaurants.

"The concept of Finest Kitakata Ramen "SUGOI" is a dish that you can't prepare or enjoy anywhere else but here. The noodles are made from 100% Japanese wheat. The

centerpiece is the roasted beef slices, which are made from rare Fukushima Aizu beef. All of the tableware uses locally produced lacquerware, such as Aizu ware. You can take the lacquered chopsticks home as a souvenir. So, when you come to Kitakata, please enjoy a bowl of 'Finest.' 7

HAYAKAWA explained the characteristics of Kitakata Ramen.

"The first distinctive feature of Kitakata Ramen is the noodles, which are called *hirauchi jukusei takasui-men*, (literally "aged flat noodles with lots of water"). The noodles are thick, and about 4 mm wide, and because their water content is higher than most noodles, they are allowed to sit for a long period of time after manufacturing, making them broad, curly, and firm. However, the broth is basically soy sauce-based, but the color and flavor vary widely from restaurant to restaurant. Furthermore, the source of Kitakata's water, which is one of the keys to the delicious broth here, contains a large proportion of Tsugamine mountain stream water,<sup>3</sup> which has super soft water, and was selected as one of the 100 'Famous Waters of the Heisei Period.'<sup>4</sup> This is said to be one of the reasons of its delicious taste."

In fact, from the olden days, Kitakata has had an *asa-ra* (morning ramen) culture, with people eating at ramen restaurants in the morning.

"There are different theories to the origin of *asa-ra*. One is that it started when workers at a three-shift factory in the city would stop by to eat after their late shift. Another is that, in the winter, to show appreciation to migratory workers, *dekasegi*<sup>5</sup> (or seasonal workers) returning home on the night train, and to encourage them to warm up their cold bodies. In this way, ramen has been a familiar food for so long to the people of the city."

Recently, Kitakata City Hall has taken the lead in launching initiatives with foreign tourists in mind. Since February 2024, it has been developing Finest

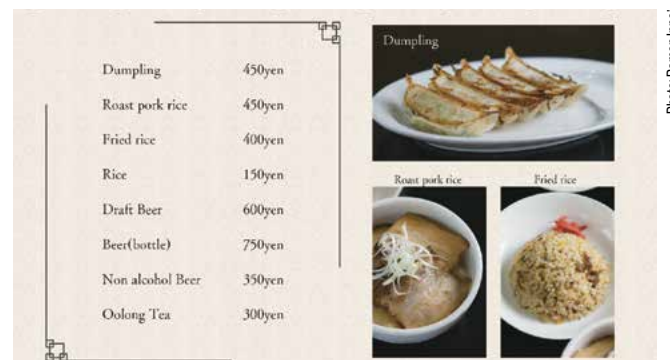


Photo: Ramen Ipppei

Above: An English language webpage of a ramen restaurant. These sites are popular with visitors to Japan who understand English.

Below: Kitakata City has continued to launch initiatives themed around ramen to bring the community together, including Ramen Day in 2024. Pictured is the ribbon-cutting ceremony commemorating the establishment of Ramen Day.



Photo: Kitakata City Hall Kitakata Ramen Section

1. In general, the media, etc., often indicate that the "Three Great Ramen" are: Kitakata Ramen from Kitakata City, Fukushima Prefecture; Sapporo Ramen from Sapporo City, Hokkaido; and Hakata Ramen from the Hakata district of Fukuoka City.
2. A mobile shop or food stalls with a roof and a stand (counter) for doing business on the street or in a square.
3. Mountain stream water that flows into the Mountain Tsugamine in Aizu (elevation: 1,541 m). There is a virgin Japanese beech forest in the surrounding area, which is highly regarded for its water quantity and quality, as well its scenery.
4. The 100 springs, rivers, and groundwaters selected by the Ministry of the Environment in 2008 for their particularly clear water.
5. Workers who leave their original place of residence to work in another location for a set period of time.



# Toyama Black Ramen: Makes an Impressive

Toyama Black Ramen's black color broth makes quite an impression. This local ramen is one of the more popular among ramen lovers across Japan. We asked KURIHARA Kiyoshi, chairman of the Toyama Black Traditions Association, about the history and characteristics of Toyama Black Ramen.

(Text: MOROHASHI Kumiko)



A bowl of Toyama Black Ramen

**T**oyama Prefecture is located in north-central Honshu Island, facing the Sea of Japan. According to KURIHARA, who presides over the Toyama Black Ramen Traditions Association in Toyama City, the prefecture's major city, the local ramen, "Toyama Black Ramen," was born around 1947.

"Toyama Black Ramen originated at a restaurant called Nishicho Taiki. It is said that it was created after the end of World War II, when they made black ramen with thickened soy sauce in order to provide salt content for manual laborers. It got so popular that legend has it that 1,000 people lined up for it at a local festival. This led to a rapid increase in the number of ramen restaurants that serve black ramen. Later, around 2000, when a reporter from a Tokyo TV station came to Toyama and introduced the black ramen as 'Toyama Black,' it became known as 'Toyama Black Ramen.'"

KURIHARA, who runs a ramen restaurant himself, says that the original black ramen and the Toyama Black Ramen of today leave quite different impressions.

"As the name suggests, Toyama Black Ramen is marked by its black broth. You get the black color by using soy sauce that's been simmered for a long time. Originally, the broth was as salty as it looked. But now, many ramen restaurants are cutting back on salt content to make the broth easier to drink."

Toyama Black Ramen is one of the most popular among Japan's many local ramen

varieties. KURIHARA says he and his team's aggressive promotion of Toyama Black Ramen has been successful.

"With Toyama Black Ramen, we actively took part in ramen theme parks and product exhibitions in various regions and expanded our business across Japan. Our Ramen Iroha won first place at the Tokyo Ramen Show, which began in 2009 and is one of Japan's largest ramen events. Then, after we were first place in sales five times, we got a lot of press coverage, and I think these in particular helped increase name recognition. Such promotions have helped us brand Toyama Black Ramen, which is now also highly regarded locally."



A bowl of Toyama Black Ramen



Photo: Yamazaki Baking Co., Ltd.

“Toyama Black Ramen Lunch Pack,” was released in 2023. It’s a kind of bread with Toyama Black Ramen flavored.

KURIHARA and his colleagues established the Toyama Black Ramen Traditions Association to promote Toyama Black Ramen as a local brand, and pouring their energy into local revitalization activities.

“At the Association, we are working to get Toyama Black Ramen officially recognized by the prefectural government as a recommended brand. Another interesting activity we took part in was the release of “Toyama Black Ramen Lunch Pack,” a kind of bread produced in collaboration with Yamazaki Baking Co., Ltd. The Lunch Pack series is made up of prepared food sandwiched between two squares of bread, and it is a standard product that has been on the market in Japan for over 40 years. Our contribution to this series consists of bread that has short noodles flavored with Black Ramen in it. Due to strong sales, a relaunch plan is in place.

Along with increases in tourism and inbound demand, each restaurant selling Toyama Black Ramen are beginning to attract more customers.

“We are also intensifying our approach to foreign tourists by using social media to share information and by making English and Chinese menus. Recently, we have had an increase in the number of customers from Europe and the U.S.A. Everyone thinks “salty” when they see the black broth, but many people say they find it lightly seasoned when they actually eat it.”

For first-time Toyama Black Ramen customers, some ramen restaurants offer a “soup-wari” so that they can soften the broth to their liking.


“They say there are currently more than 60 ramen restaurants in Toyama Prefecture that serve Toyama Black Ramen. Each ramen restaurant has its own taste and flavor, so please find the place of your choice and enjoy it.” 



Photo: Toyama Black Ramen Traditions Association

A long line in front of the Toyama Black Ramen booth at the 2009 Tokyo Ramen Show



Photo: Gutsuini EBISUKO

A bowl of Toyama Black Ramen



# “Onomichi Ramen” Full of the Flavors of Seafood from the Seto Inland Sea

Onomichi City, Hiroshima Prefecture, is a warm climate port town facing the Seto Inland Sea. It is located about 80 kilometers east of Hiroshima City, where the G7 summit meeting was held in May 2023. Onomichi Ramen is a signature dish that represents the city of Onomichi.

(Text: MOROHASHI Kumiko)



An example of Onomichi Ramen

Onomichi City, Hiroshima Prefecture, has many specialty products that thrive in the warm climate, such as hassaku citrus fruits and locally grown lemons. Onomichi Ramen is a local specialty ramen that was developed in this port town that was once known for its bustling shipbuilding industry. According to TAKATSUKI Yuriko of the

Onomichi Tourism Association, ramen has a 90-year history here.

“In the 1930s, when ramen was just beginning to spread throughout Japan, Onomichi ramen featured a cloudy white broth made from beef and pork stock. Onomichi was a shipbuilding town, and before and during the Second World War, people from China also





An example of Onomichi Ramen

Photo: Onomichi Tourism Association



A sample of Onomichi Ramen's mail-order products

Photo: Onomichi Noodle Ichibankan



Some restaurants have long lines at lunchtime.

Photo: Onomichi Ramen Maruboshi

worked in the shipbuilding industry. After the war, as the shipbuilding industry declined, portable Chinese noodle stalls began to appear, including Shukaen, which was established around 1947 and later became a forerunner of today's Onomichi Ramen. The owner, Zhu Ajun, created a unique Chinese noodle dish that combined a soy sauce-flavored broth with stir-fried pork back fat and homemade flat noodles, which became very popular. It is said that this flavor spread to other restaurants in Onomichi, eventually becoming known as Onomichi Ramen."

In the 1990s, a delicacy manufacturer released souvenir Onomichi Ramen, which became a hit, selling 2 million servings in one year. This led to the Onomichi Ramen name becoming well-known throughout the country.

Onomichi Ramen today is characterized by a seafood broth with a generous amount of pork back fat. The noodles are typically medium-thin and flat. Toppings include classic Japanese ramen ingredients like green onions, chashu pork<sup>1</sup>, and bamboo shoots<sup>2</sup>.

In recent years, many restaurants have put special effort into the seafood used for the broth.

"The Seto Inland Sea is known for its shallow water,

allowing sunlight to reach a broad area of the seafloor. This environment fosters an abundance of phytoplankton, which in turn supports zooplankton and small fish. Many restaurants use small sea bream and other small fish in their soup stock as a secret ingredient.

There is also a unique restaurant that originally sold Onomichi Ramen exclusively through mail order. The delicious taste became so popular that it actually opened its own specialty restaurant.

And many of the restaurants are loved by the locals. The more popular a restaurant is, the more regular customers come to them"

Onomichi Ramen has a rich soy sauce flavor and a mellow seafood taste. The nostalgic flavor makes you want to keep sipping the broth.

The broth and noodle styles vary for Onomichi Ramen depending on the restaurant's individuality. Since the portions are smaller than other regional ramen, you can try to compare multiple bowls from different restaurants. ㊦

1. Refers to seasoned pork dishes. In Japanese ramen, it commonly refers to pork that is grilled and braised.

2. A processed food made by lactic acid fermentation of bamboo shoots, also known as Sinachiku.



## FEATURES



An example of Hakata ramen.

# Hakata Ramen: Featuring a Rich and Creamy Tonkotsu Broth

Kyushu, in the southwest of the Japanese archipelago, is home to Fukuoka Prefecture in its northern part. Since ancient times, Fukuoka has developed as a key transportation hub connecting Kyushu and Honshu. Hakata Ramen is known for its origins in Fukuoka. In recent years, the global expansion of Hakata ramen restaurants has made its creamy, white tonkotsu (pork bone) broth<sup>1</sup> one of the most well-known representations of ramen abroad. We spoke with a person promoting tourism for Fukuoka City to learn more.

(Text: TANAKA Nozomi)



**F**ukuoka City, the central city of Fukuoka Prefecture, is often referred to as the gateway to Kyushu. It serves not only as a key transportation hub but also as a center of commerce. Hakata<sup>2</sup>, located on the right bank of the Nakagawa River flowing through the city, is the name of a district, and it is used in the names of one of the city's stations, festivals, and even the local ramen, known as Hakata ramen. This ramen is typically associated with a creamy, white tonkotsu broth combined with extremely thin, straight noodles. However, according to the person promoting

tourism in Fukuoka City, while the origin of the name is unclear, with various theories about its roots, it is widely believed that the ramen made with tonkotsu broth originated in ramen restaurants in Kurume City<sup>3</sup>, located in the southwestern part of Fukuoka Prefecture, and then spread to various regions of Kyushu, where unique variations of tonkotsu ramen were created in each area.

The most notable feature of Hakata ramen is its creamy, white tonkotsu broth, which is created by simmering pork bones over high heat. This process



Photo: Fukuoka City


An example of Hakata ramen served at a food stall.

allows gelatin to dissolve from the bones into the broth, giving it a smooth, creamy texture<sup>1</sup>. In Hakata, the invention of Hakata ramen with tonkotsu broth and flat noodles<sup>4</sup> is said to have occurred in 1946, with the ramen first served at food stalls.

The shift from flat noodles to the thin noodles now considered typical of Hakata ramen seems to have been greatly influenced by the Nagahama<sup>5</sup> ramen that was eaten around the Port of Hakata. To shorten cooking times for the busy workers at the port, thin noodles were used and in smaller portions, allowing people to order extra noodles to add to the broth, a concept known as *kaedama*. This idea, popularized around the Nagahama area, appears to have been passed down to the current style of Hakata ramen.

Additionally, people can order Hakata ramen noodles in a unique way. “A distinctive feature of Hakata ramen is the ability to choose the firmness of the noodles, ranging from soft to firm, based on personal

preference. Local people use regional dialect terms to describe the firmness, from the hardest to the softest, with expressions like *bari-kata* (extra firm), *kata* (firm), and *yawa* (soft). ‘Bari’ is a term in the Hakata dialect used for emphasis,” explains the spokesperson.

One of the highlights of staying in Hakata is experiencing its *yatai* (food stall)<sup>6</sup> culture. “Fukuoka City has been working to preserve its food stall culture as a key tourist attraction. Hakata ramen, a flavor that originated in food stalls, is a part of this tradition. The city is home to about 100 food stalls, many of which serve Hakata ramen. At night, the lights from the stalls brighten the area, and the cozy setting fosters conversations and interactions with locals, capturing the charm of Hakata. Through social media and other channels, the appeal of these food stalls and Hakata ramen is attracting more international tourists to Fukuoka. We encourage you to visit Fukuoka and experience the food stalls and Hakata ramen for yourself.” 

1. See “Scientifically Breaking Down What Makes Japanese Ramen So Delicious”.
2. Hakata remains the name of one of Fukuoka’s central districts following the merge of Hakata and Fukuoka in 1889. Many things, such as the main railway station, port, dolls, textiles, and festivals, are named after Hakata, which is a beloved name among the locals.
3. Located in southwestern Fukuoka Prefecture, about 40 kilometers from Fukuoka City.
4. Noodles with a flat, rectangular shape. They are wider than regular Chinese noodles and have a chewy texture.
5. A coastal area with the Nagahama Fish Market, located near the Hakata Fishing Port.
6. A movable, simple store with a roof, used for food service or selling goods.



Photo: PIXTA

Food stalls lined up along the river and in the bustling streets, where Hakata ramen is commonly served.





Photo: NISSIN FOODS HOLDINGS CO., LTD.

# ANDO Momofuku, the Inventor of Instant Noodles

ANDO Momofuku, who invented the world's first instant noodles, *Chicken Ramen*, in 1958, dedicated his life to creating a new aspect of Japanese food culture. We spoke with ARAKAWA Tomohiro, from the Corporate Communications Division at NISSIN FOODS HOLDINGS, about the 96-year life journey of ANDO, dedicated to the invention and development of instant noodles.

(Text: KUROSAWA Akane)

“ANDO Momofuku was born in 1910. Japan faced a terrible food shortage after the end of the Second World War. The streets were filled with hungry people, and countless numbers collapsed and died from malnutrition. ANDO, who witnessed this horrifying scene, became keenly aware of the importance of food. He realized that in the absence of food, clothing and shelter are useless and there can be no art or culture,” explains ARAKAWA.

“As ANDO was passing by a black market<sup>1</sup> area near Osaka Station one day, he happened to see people form a long line in the cold at a makeshift stall to wait for a bowl of ramen noodles. The sight reminded ANDO of how much Japanese people like noodles and at the same time filled him with conviction that the long line was a sign of enormous hidden demand. This experience became the catalyst for what would later be a groundbreaking invention. Around 10 years later, when ANDO was 47 years old, he recalled the sight of the ramen stall at the black market and decided to create ‘Ramen that can be quickly prepared and eaten at home with only hot water.’ In a shed he built in the backyard of his home, he conducted non-stop development alone for an entire year, without taking a single day of rest and sleeping only four hours a night on average.”

The development process faced two significant challenges: “It must be capable of long-term storage” and “It needs to be quick and easy to prepare.” However, both of these obstacles were unexpectedly

overcome through a moment of inspiration.

“One day ANDO went into the kitchen when his wife was deep-frying tempura and discovered a hint that led to the production technology that became the basis of instant noodles: flash-frying. By frying noodles in hot oil, the moisture in them is forced out by the high-temperature oil, making them nearly completely dehydrated. This process made it possible to store the noodles at room temperature for up to six months. The reduction in moisture helped prevent the growth of bacteria that damages the noodles. Additionally, while invisible to the naked eye, he noticed that the hot water poured over the noodles was absorbed through countless tiny cavities formed during the



Photos: NISSIN FOODS HOLDINGS CO., LTD.

Above: The world's first instant noodles, *Chicken Ramen*. The photo shows the original packaging.

Below: A faithful reproduction of ANDO Momofuku's Work Shed (CUPNOODLES MUSEUM YOKOHAMA)

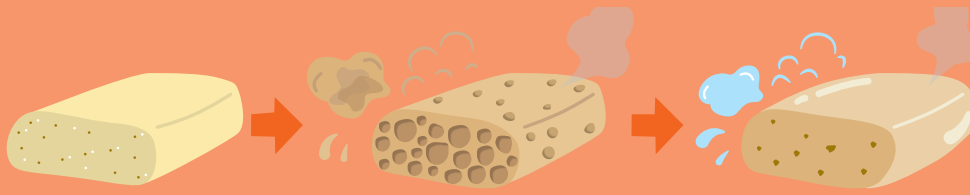


Image of the “flash-frying method.”  
Left: steamed noodle. Middle: noodle after being fried in oil, with moisture removed, forming countless tiny cavities. Right: when boiled water is added, it is absorbed through the cavities, returning the noodles to their original state in a short time.

dehydration process, allowing water to penetrate throughout the noodles and restore them to their original softness. This method was patented and remains the fundamental technique for producing instant noodles to this day.

“In August 1958, *Chicken Ramen*, the world’s first instant noodles, was launched. Since it was ready to eat in just two minutes after adding boiled water, *Chicken Ramen* was inconceivable under the conventional wisdom of the times, and was dubbed ‘magic ramen,’ becoming an immense hit in Japan.

“Even after inventing the first instant noodles, ANDO continued his research, further advancing the development of instant noodles that could be easily enjoyed anywhere.

“ANDO wanted to spread instant noodles worldwide, and in 1966 set out on an inspection tour to Europe and the United States. During a visit with the buyers for a supermarket chain in the United States, he saw the managers in the office



ANDO during his visit to Europe and the United States (back row, center).



Photo: NISSIN FOODS HOLDINGS CO., LTD.


The world’s first version of noodles in a cup, named *Cup Noodles*.

divide up a block of *Chicken Ramen* noodles, place the noodles in paper cups, add boiled water, and begin eating with forks. This made ANDO realize that

unlike in Japan, there were neither *donburi*<sup>2</sup> bowls nor chopsticks available in the United States. He realized that differences in eating habits were the key to making instant noodles a global food. The experience gave him the hint that prompted development of a new product: noodles in a cup that can be eaten with a fork. The new product that resulted was the world’s first version of noodles in a cup, named *Cup Noodles*,

in 1971.”

Instant noodles, born in Japan, has crossed cultural barriers to become a delicious and convenient meal enjoyed worldwide, evolving into a global food staple<sup>3</sup> and firmly establishing itself overseas.

Museums<sup>4</sup> in Ikeda City, Osaka Prefecture, and the City of Yokohama, Kanagawa Prefecture, showcase the history of ANDO’s invention of instant noodles and his lifelong dedication to food innovation until he passed away at 96. Visitors can explore displays on the inspirations behind his discoveries and inventions and even create their own unique *Cup Noodles*. A visit is highly recommended for anyone interested in instant noodles or a fan of ramen. 

Right: An example of an exhibition and attraction at CUPNOODLES MUSEUM YOKOHAMA, where visitors can choose ingredients and soup types to create their own original *Cup Noodles*.

Below: CUPNOODLES MUSEUM OSAKA IKEDA, where the history of instant noodles invention is on display.



Photo: NISSIN FOODS HOLDINGS CO., LTD.

1. Refers to markets in Japan where goods were sold without government control or regulation, particularly during postwar times of chaos.
2. A large, thick, and deep ceramic bowl traditionally used for serving food.
3. According to World Instant Noodles Association (WINA), 120.2 billion servings of instant noodles were sold in 2023, comprising approximately 93.3 billion packets and 26.9 billion cups.
4. CUPNOODLES MUSEUM YOKOHAMA is located in Shinko, Naka-ku, Yokohama City, Kanagawa Prefecture, and CUPNOODLES MUSEUM OSAKA IKEDA is located in Masumi-cho, Ikeda city, Osaka Prefecture.



Tonkotsu ramen, served with the same flavor as ICHIRAN's Japanese locations.



# Japanese Ramen Restaurants Expanding Overseas

Japanese ramen has become increasingly popular overseas. Popular ramen restaurants from Japan have now expanded to various regions across the globe, including the United States, Europe, and Asia. We spoke with public relations staff from a Japanese ramen restaurant that has gained popularity abroad to learn about their details, challenges, and strategy for international expansion. (Text: KUROSAWA Akane)

Originating in Fukuoka, the popular tonkotsu (pork bone) ramen<sup>1</sup> chain ICHIRAN operates 80 directly managed locations across Japan and eight overseas. Its international expansion began in 2007 with the establishment of a local subsidiary aimed at opening a restaurant in New York City, the United States. A press relations staff member from ICHIRAN explained the motivation behind this move.

“At the time, tonkotsu ramen was not widely known overseas, and it was probably difficult for people abroad to imagine what it tasted like. Even so, our tonkotsu ramen began receiving high praise among foreign tourists visiting Japan, and we increasingly received requests to open a restaurant in the United States in particular.”

However, unexpected problems arose before the restaurant actually opened.

“ICHIRAN does not localize the taste of its ramen to suit local taste, even for overseas restaurants. Instead,

we serve the same flavor as we do in Japan. In addition, the system inside our restaurants is identical to that in Japan. For example, each seat is partitioned to allow customers to focus on eating without worrying about their surroundings, and diners can customize their ramen according to seven points, such as the richness of flavor, level of richness, and inclusion of garlic or green onions. Customers also use a vacancy display board to check for available seats before sitting down.

“Because of these unique systems, we faced a variety of obstacles before opening, including cultural and legal differences between Japan and the U.S. and issues related to ingredient import/export regulations. Resolving these challenges took a lot of time. After addressing them one by one, we opened our first restaurant in 2016, nearly nine years after establishing the local subsidiary. Today, we operate three restaurants in New York City.”





Photo: ICHIRAN

Just like in ICHIRAN's Japanese locations, each seat is partitioned. This shows the restaurant in the Brooklyn district of New York City.

Whether located in areas central to business or tourism, or in locations with many residential neighborhoods nearby, the restaurants experience long lines during peak hours, with more than 50 people sometimes waiting.

"We have received numerous comments, such as: 'The taste here is the same as the ICHIRAN I had in Japan,' 'The atmosphere here is very similar to ICHIRAN in Japan,' and 'I'm happy to be able to eat ICHIRAN ramen here in New York City.' At all our overseas restaurants, the main ingredients—such as the broth and noodles—are sourced locally from the country where the restaurant is located. However, the key elements that define the flavor, like the 'Original Spicy Red Sauce'<sup>2</sup> and 'dashi'<sup>3</sup>, are transported from our manufacturing base in Japan. This careful approach allows us to deliver the same authentic taste as in Japan.

"While some employees are sent from our Japanese headquarters, the majority of our staff at overseas locations are locally hired, ensuring clear communication with customers. Seventeen years after the establishment of our U.S. subsidiary, we are pleased to see our unique taste and systems firmly established and appreciated not only in the U.S. but across many countries worldwide."

While ICHIRAN's future overseas expansion plans remain undecided, there has been a steady stream of requests for new locations from various countries.

The strategies for Japanese ramen restaurants expanding overseas vary widely. Some, like the ramen restaurant introduced here,

offer the same taste and service as in Japan, while others adapt to the local food habits and preferences. Eventually, it may become possible to enjoy the same ramen as in Japan in various parts of the world, while unique ramen cultures, distinct from those in Japan, could also develop. ㊦

1. See "Scientifically Breaking Down What Makes Japanese Ramen So Delicious"
2. A special sauce made by blending over 30 ingredients, with chili pepper as its base.
3. At ICHIRAN, 'dashi' refers to the seasoning sauce that is commonly known as 'kaeshi'



Photo: ICHIRAN

One of ICHIRAN's ramen restaurants overseas, with many attracting long lines of customers.



Photo: ICHIRAN

The ICHIRAN restaurant in the tourist-heavy area of Times Square, Manhattan, New York City.



# Ramen Tour for Foreign Tourists in Tokyo

Various gourmet tours for foreign tourists are held in Japan, and currently, one of the most popular in Tokyo is the ramen tour. We spoke with the organizer to learn more about this popular tour.

(Text: TANAKA Nozomi)



Photo: TOKYO RAMEN TOURS

The ramen tour for foreign tourists in Tokyo is organized by Frank Striegl, an American. Interestingly, Frank was born and raised in Japan. As he became accustomed to ramen as a staple of his daily diet, much like the Japanese, he developed such a love for it that he traveled across Japan to try different varieties. Encouraged by a friend, he decided in 2018 to start this tour to share the deliciousness of ramen with people from around the world.

"I love ramen so much that I eat it almost every day, and not only in Tokyo but also across Japan, I visit ramen restaurants. A friend suggested that I organize a tour for foreign tourists, and I immediately started planning it. So far, about 20,000 people have participated in the tour," explains Frank.

The ramen tour organized by Frank takes partici-

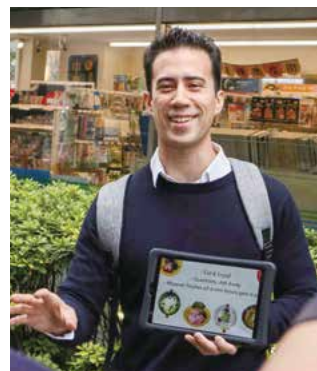


Photo: TOKYO RAMEN TOURS

Above: Frank, the tour organizer, explaining the ramen to the participants.

Right: A scene from the ramen tour—participants chatting at a curry ramen specialty restaurant.



Photo: TOKYO RAMEN TOURS





One of the restaurants on the ramen tour.

Photo: TOKYO RAMEN TOURS

Above: A selection of the items available at a tonkotsu ramen (see “Scientifically Breaking Down What Makes Japanese Ramen So Delicious”) restaurant visited during the ramen tour. The colorful broth, due to the ingredients, is popular for being photogenic.

Below: A selection of the items available at a curry ramen restaurant visited during the ramen tour.



Photo: TOKYO RAMEN TOURS



Photo: TOKYO RAMEN TOURS


pants to popular ramen restaurants around Shibuya Station<sup>1</sup> in Tokyo. With an English-speaking guide, the tour takes about three hours, visiting three restaurants and allowing participants to enjoy up to six bowls of ramen. Specially prepared smaller-sized bowls for the tour enable participants to experience a variety of flavors in a short amount of time.

“Many participants in the tour look forward to trying classic ramen varieties like soy sauce and tonkotsu (pork bone) ramen, which are now popular overseas,” says Frank. “However, at the restaurants we visit, we make sure to offer a variety of ramen types, such as miso ramen and curry ramen. Participants are often surprised by how many different flavors of ramen there are.”

Participants travel to the restaurants by train or on foot. Along the way, the guide makes sure to answer questions from customers while explaining the history and types of ramen. Sometimes, the conversation expands to topics like Japanese food culture or recommended tourist spots, and there are occasions when the tour stops by nearby shrines and temples.

“Many of the participants in the tour already have some knowledge of ramen and are interested in its types and culture. So, I also share more detailed trivia about ramen, such as the theory that the first person to eat ramen in Japan was TOKUGAWA Mitsukuni<sup>2</sup>, the 17th-century lord of the Mito Domain, who is famous as the main character in a Japanese TV drama.”

It is said that there are about 2,000 ramen restaurants in Tokyo<sup>3</sup>. “Many of the participants in my tour are from the United States, and the feedback I often receive is about how delicious the soy sauce, salt, and tantanmen<sup>4</sup> ramen were. In addition to taste, the variety of options available, such as vegetable ramen for vegetarians and Muslim-friendly ramen<sup>5</sup> for those following Islamic dietary laws, is another appeal of Japanese ramen that can accommodate people’s dietary habits,” comments Frank.

In the future, there is an expectation for tours to visit the restaurants popular only among locals and unique ramen restaurants, which are hard to find on individual trips. Frank hopes that this tour will inspire more ramen fans around the world. 

1. A station name in Shibuya City, Tokyo. The Shibuya scramble crossing in front of Shibuya Station is known as the busiest intersection in the world and attracts many tourists.

2. Born in 1628 and passed away in 1700 (with some theories suggesting 1701). He was the second lord of the Mito Domain (based in present-day Mito City, Ibaraki Prefecture). He worked to promote education and, due to his connections with China, even invited Confucian scholars from the Ming dynasty. He is said to have created a noodle dish that became the prototype of ramen. Known as ‘Mito Kōmon’ in Japan, he is famous as the main character in a popular Japanese TV drama.

3. The number of ramen restaurants listed in the NTT Town Pages.

4. A type of Chinese Sichuan cuisine. It consists of boiled noodles topped with a sauce made from soy sauce and chili oil as well as Sichuan peppercorns and minced meat. In Japan, it is typically served with a spicy sesame-flavored broth topped with seasoned ground pork.

5. The concept of businesses understanding the needs of Muslims and providing appropriate services within their capabilities. While ‘halal certification’ ensures full compliance with Islamic law so that all Muslims can use the service with confidence, ‘Muslim-friendly’ refers to accommodations such as ‘pork-free’ or ‘alcohol-free’ options, which partially align with Islamic dietary restrictions.



# Ensuring the Safety of Discharging ALPS Treated Water into the Sea and Expanding Consumption of Fishery Products

ALPS treated water<sup>1</sup> refers to the water that has been purified and treated using the ALPS purification system to remove multiple radioactive materials from inside the buildings of the Tokyo Electric Power Company's (TEPCO) Fukushima Daiichi Nuclear Power Station (NPS). Since August 2023, TEPCO has discharged ten batches of ALPS treated water (as of the end of November 2024), and monitoring results and assessments by the International Atomic Energy Agency (IAEA)<sup>2</sup> have confirmed that the ALPS treated water is being discharged safely. One year has passed since TEPCO began discharging ALPS treated water into the sea, and we present the safety of ALPS treated water and the government's efforts to increase the consumption of fishery products.



Prime Minister ISHIBA Shigeru and Minister of Economy, Trade and Industry MUTO Yoji enjoy lunch boxes prepared with fishery products from the Sanriku-Joban area to promote the Fourth Sanriku Joban Weeks campaign held from October to November 4, 2024, as one of the events of the “Discover the Charms!” Sanriku Joban Mono Network.

Photo: Ministry of Economy, Trade and Industry

## ALPS treated water

ALPS is the acronym for Advanced Liquid Processing System, a multi-nuclide removal system, that removes various radioactive materials. ALPS treated water is water that has been purified and treated until it satisfies safety standards for all radioactive materials other than tritium<sup>3</sup>. For tritium, the water is significantly diluted with seawater before discharge so that it fully satisfies safety standards.

## Assessment of Safety Aspects by the IAEA

The IAEA has established a field office on the premises of TEPCO's Fukushima Daiichi NPS, where IAEA staff are stationed to witness and independently monitor the discharge of ALPS treated water. The IAEA has also continued its review since the start of the discharge of ALPS treated water into the sea, and the report the IAEA published in July 2024 clearly states that it did not identify anything that is inconsistent with the requirements in the relevant international safety standards.

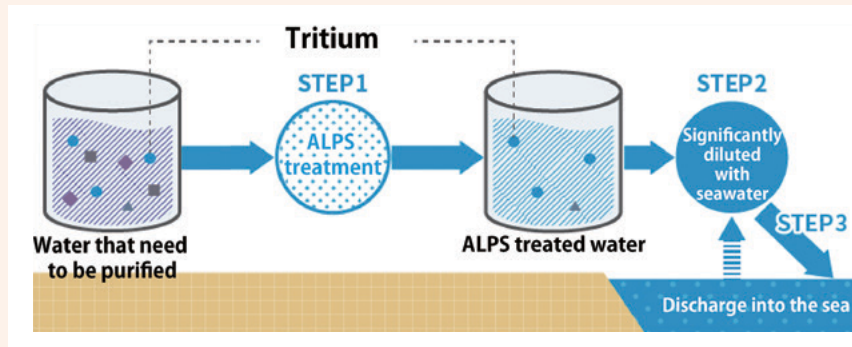
A side event titled “Reconstruction and Recommissioning in Fukushima” at the 68th General Conference of the IAEA held in September 2024 focused on decommissioning work and reconstruction in Fukushima, with presentations on the current

status of decommissioning at TEPCO's Fukushima Daiichi NPS and the IAEA's activities relating to the discharge of ALPS treated water into the sea, informing the international community about the safety of the discharge of ALPS treated water into the sea.

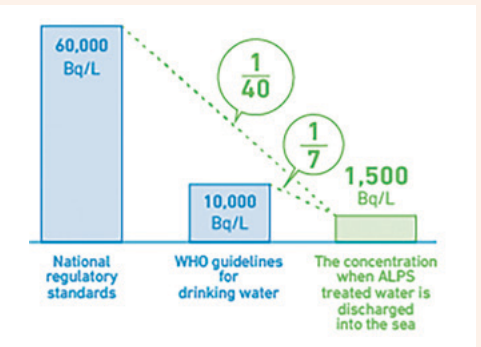
## Monitoring results

TEPCO, the Nuclear Regulation Authority, the Ministry of the Environment, the Fisheries Agency of the Japanese government, and other relevant organizations continue to conduct monitoring to confirm that there are no significant changes in the concentration of radioactive materials in seawater and fish in Fukushima and neighboring prefectures before and after the discharge of ALPS treated water into the sea. The sampling and monitoring methods and analytical capabilities of the organizations conducting the monitoring have been evaluated by the IAEA as appropriate with a continued high level of accuracy and competence. Monitoring results to date have confirmed that ALPS treated water is discharged into the sea in a safe manner. Monitoring results can be viewed at any time on the Overacting Radiation-monitoring data Browsing System in the coastal ocean of Japan (ORBS) page. (<https://www.monitororbs.jp/en/>).

## Purification process



## Comparison of tritium concentrations



The tritium concentration after dilution with seawater is less than 1/40 of the safety standard determined by the Japanese government (or approximately 1/7 of the WHO standards for drinking water), and the annual total amount of tritium discharged into the sea is managed appropriately to remain below the operational target value (22 trillion becquerels per year) set during the operation of TEPCO's Fukushima Daiichi NPS. Therefore, there is no concern about the impact on human health or the environment.



Then-Minister of Economy, Trade and Industry SAITO Ken attended a food tasting event held on August 8, 2024, as part of the “Gohiiki” Sanriku Joban Campaign to promote the appeal of fishery products from the Sanriku-Joban area.

Photo: Ministry of Economy, Trade and Industry

## Efforts to expand consumption of Japanese fishery products

There have been no reports of significant declines in the prices of fishery products or other reputational effects caused by negative rumors domestically, except for the impact of import restriction measures imposed by some countries and regions. Even so, the Japanese government is promoting the safety and security of fishery products based on scientific evidence, such as the results of the aforementioned monitoring, both domestically and internationally in efforts to expand consumption. In particular, in order to diversify export sales channels for Japanese fishery products, the government is providing support by reaching out to overseas markets through global media and promotional events, inviting buyers,

participating in exhibitions and arranging business meetings, and utilizing cross-border e-commerce. On the domestic front, the government is working to promote the appeal and increase the consumption of fishery products from the Sanriku-Joban area through initiatives such as the “Gohiiki” Sanriku Joban Campaign<sup>4</sup> and the “Discover the Charms!” Sanriku Joban Mono Network<sup>5</sup>.

## Future policy

The discharge of ALPS treated water into the sea will be conducted for many years. At the Inter-Ministerial Councils<sup>6</sup> held in August 2024, the Japanese government confirmed its future policy of (1) ensuring safety and efforts to explain and disseminate information; (2) preventing adverse impacts on reputation and supporting the continuation of livelihoods; and (3) continuously pursuing future technologies.



Tasting promotion of Japanese fishery products by famous local chefs at Seafood Expo Asia 2024(Singapore), one of Asia's largest fishery products trade fairs. (Left: tasting demonstration, right: cooking demonstration by Eric Neo, President of Singapore Chefs' Association)

Photo: Japan External Trade Organization

1. See “Ensuring the Safety of Discharging ALPS Treated Water into the Sea,” in HIGHLIGHTING Japan, October 2022 edition ([https://www.gov-online.go.jp/eng/publicity/book/hlj/html/202210/202210\\_09\\_en.html](https://www.gov-online.go.jp/eng/publicity/book/hlj/html/202210/202210_09_en.html)), and “Discharge into the Sea of ALPS Treated Water from Fukushima Daiichi Nuclear Power Station” in HIGHLIGHTING Japan, September 2023 edition ([https://www.gov-online.go.jp/eng/publicity/book/hlj/html/202309/202309\\_08\\_en.html](https://www.gov-online.go.jp/eng/publicity/book/hlj/html/202309/202309_08_en.html)).

2. An international organization that promotes international cooperation relating to nuclear energy under the auspices of the United Nations (UN).

3. Tritium (H-3) is a relative of hydrogen and a radioactive material that is broadly present in the natural environment. It is contained in tap water, rainwater and also in our bodies.

4. A campaign to promote sales of fishery products from Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba prefectures in cooperation with retail and distribution companies.

5. A project to expand the consumption of fishery products from Aomori, Iwate, Miyagi, Fukushima, Ibaraki, and Chiba prefectures by inviting broad participation from industry, local governments throughout Japan, and government agencies, and by connecting sellers and buyers of fishery products.

6. The 7th Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues and the 7th Inter-Ministerial Council for Steady Implementation of the Basic Policy on handling ALPS Treated Water. See (Japanese only) [https://www.kantei.go.jp/jp/singi/hairo\\_osensui/alps\\_shorisui/dai7/index.html](https://www.kantei.go.jp/jp/singi/hairo_osensui/alps_shorisui/dai7/index.html)

This article was written with the consent of the Ministry of Economy, Trade and Industry and on the basis of publicly available data from the Ministry.



# IMMUNE SYSTEM

## “*L. LACTIS* STRAIN PLASMA” ACTIVATE IMMUNE SYSTEM LEADER CELLS

Photo: PIXTA

The human body’s immune system fights off bacteria, viruses, and other pathogens that invade the body from the outside. A team of researchers at the KIRIN Group, a beverage manufacturer, has become the first in the world to discover and report on lactic acid bacteria that activate immune system leader cells, effectively boosting the immune system as a whole. This article presents the beneficial properties of lactic bacteria called “*L. lactis* strain Plasma (LC-Plasma).”

### FUKUDA Mitsuhiro

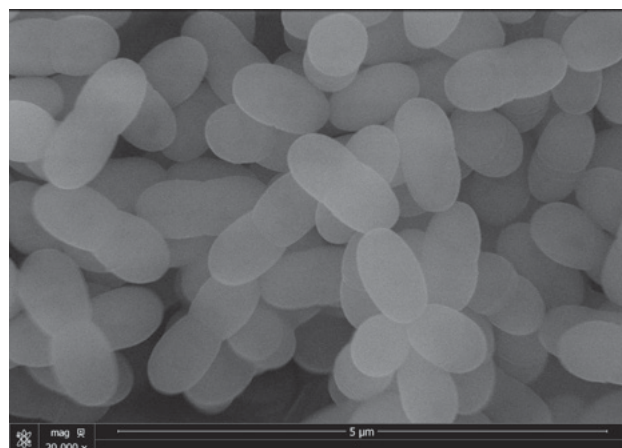
Various infectious diseases have impacted the world and caused human suffering since ancient times. Taking effective action against the bacteria and viruses that cause such infectious diseases is one of the challenges facing humanity. Some antibiotics and antiviral drugs are effective, but they cannot deal with all pathogens. On the other hand, the human body is equipped with an immune system in which immune cells fight pathogenic bacteria or viruses that invade the body, and defend against infection. There is a type of specialized immune cell called the plasmacytoid dendritic cell (pDC) that effectively act as immune cell leaders, directing their many subordinate immune cells into action. Lactic acid bacteria have long been known to

activate immune cells, but the prevailing theory was that their effect was limited to only some immune cells.

However, a team of researchers at the KIRIN Group turned their attention to the power of lactic acid bacteria, which are known to have numerous health-promoting benefits, such as activating immune function and improving the intestinal environment. Specifically, they reasoned that if the effect of lactic acid bacteria could directly activate pDC as the leaders of immune cells in the human body, it might be possible to prevent infec-

tious diseases effectively. Based on this premise, they began research in 2008 to overturn the established theory.

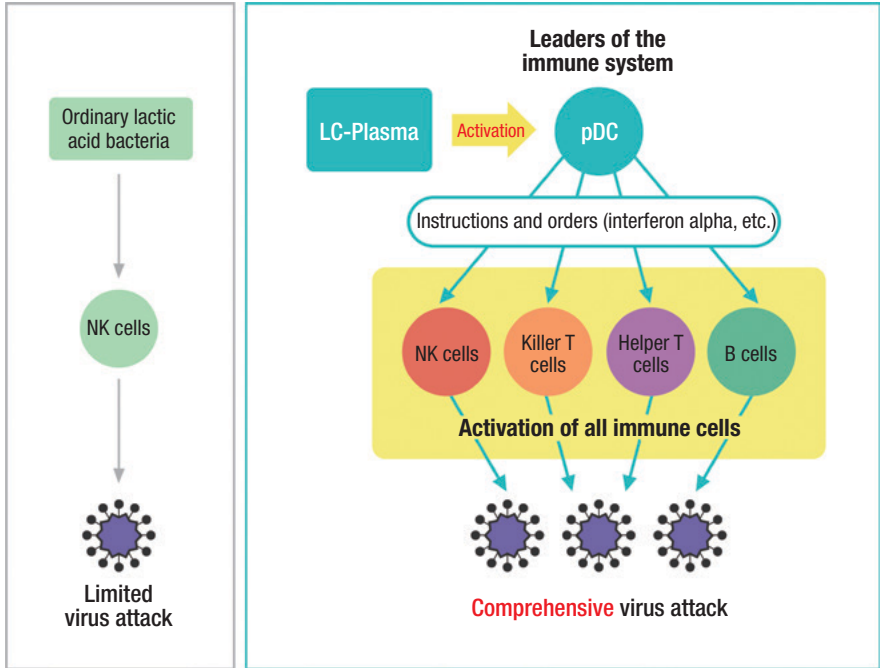
The research team conducted a series of experiments in which more than 100 strains of lactic acid bacteria were added to isolated<sup>1</sup> pDC to



*L. lactis* strain Plasma (LC-Plasma)

Photo: KIRIN

Difference in the effect of common and LC-Plasma on human immune cells (four types, antiviral effect)



- NK cells: Kill a wide range of abnormal cells
- Killer T cells: Kill virus-infected cells
- B cells: Produce antibodies against viruses
- Helper T cells: Assist the work of killer T cells and B cells

Material provided by KIRIN

meticulously examine whether and how much interferon alpha<sup>2</sup> was produced<sup>3</sup> by the action of the bacteria. Then, in 2010, they discovered LC-Plasma that promote high production of interferon alpha. For this discovery and the successful commercialization of food products containing LC-Plasma, the research team received the 2024 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology.

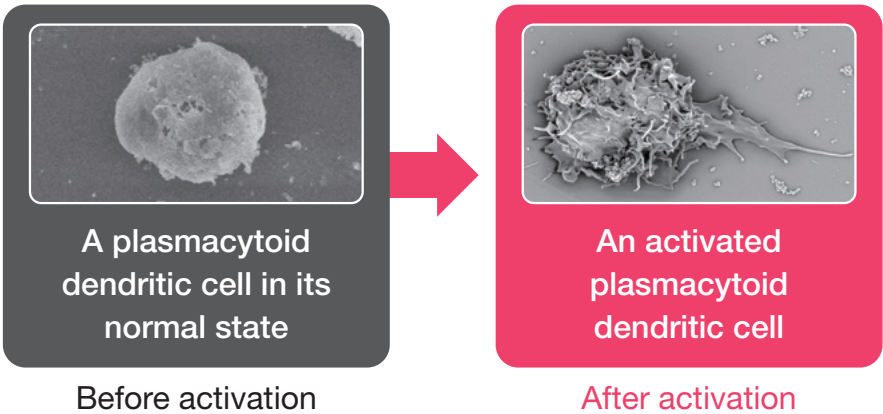
LC-Plasma have one remarkable characteristic that differentiates them from other lactic acid bacteria. While other lactic acid bacteria have almost no immune-enhancing effect unless they reach the large intestine alive after oral ingestion, LC-Plasma, whether alive or not, act directly on pDC and stimulate the production of interferon alpha when absorbed in the small intestine. This makes it

much easier to produce foods containing LC-Plasma. In other words, because the effect can be obtained without live bacteria, LC-Plasma can be added to a wide range of foods at room temperature, without the need

for storage at low temperatures, as is the case with yogurt, a typical example of conventional lactic acid bacteria food. As a result, the KIRIN Group and its partner companies have added LC-Plasma to a variety of products such as teas, vegetable juices and other beverages, and dietary supplements, and have already launched 59 products (as of November 2024) on the market. In addition to eliminating the need for temperature control, production is relatively inexpensive, making it possible to expand into developing countries afflicted with infectious diseases. The company has already begun full-scale business development of LC-Plasma-added foods in Vietnam and other countries.

The effect of LC-Plasma is also attracting a great deal of attention from the standpoint of preventive medicine. As the birthrate declines and the population ages, it is essential to block the pathogens of infectious and other diseases by boosting natural immunity in order to extend healthy life expectancy. Great hopes are placed on the power of LC-Plasma to help curb the burden of medical costs and realize a society with a healthy and long life expectancy.

pDC activation triggered by the addition of LC-Plasma



Adding plasma lactic acid bacteria to pDC triggers their activation. As evidence of this, and as suggested by the name “dendritic,” which literally means “branching like a tree,” pDC develop tree-like protrusions (photo on the right).

Material provided by KIRIN

1. Isolation is a process that involves separating of specific cells, genes, proteins, etc., from living organisms or biological tissues.  
2. A type of glycoprotein that is produced within an organism’s immune cells and has been recognized for its effect in the inhibition of viral replication.  
3. Production is the process of synthesis and generation of substances in cells.





## From Maiko to Influencer: The Charm of Kyoto's Gokagai, Five Traditional Entertainment Districts

Meet MOE, an influencer who promotes Japanese home cooking to the world under the name Kimono Mom. In this month's issue, we asked MOE to talk about the charm of Kyoto's *Gokagai*.<sup>1</sup>

### Kimono Mom

The characteristic *maiko* look features a glorious kimono, hair ornaments, and thick-soled footwear called *okobo*. (This is MOE when she was a *maiko*.)

Photo: MOE

The name I use, Kimono Mom, actually symbolizes the path I have taken. These days, I introduce Japanese home cooking as an influencer, but I used to spend my days as a *maiko* (apprentice *geiko*) and *geiko*<sup>2</sup> in Kyoto. Those experiences are deeply rooted in my life, and they have made me who I am today.

Kyoto's *Gokagai*—the five traditional entertainment districts of Gion Kobu, Miyagawa cho, Pontocho, Kamishichiken and Gion Higashi—are where *maiko* and *geiko* keep their traditions

alive. This is where young *maiko* go through strict training to become fully qualified *geiko*. The traditions and customs handed down through this process are the fruits of the hard work done behind the scenes in this glamorous atmosphere.

Each of the accessories worn by *maiko* and *geiko* has its own meaning. For example, the *kanzashi* hairpin of a *maiko* is different for each season. Its design symbolizes her growth and development, and is a way to remind her customers of the changing seasons. Each kimono she wears, from

the colors and patterns to the materials used, signifies good fortune and has its own story to tell—about the four seasons, or the New Year holiday, or another special time or occasion. Such careful attention to detail embodies the traditional Japanese sense of beauty.

On the other hand, although the life of a *maiko* may seem glamorous, there are also hidden hardships. One is the custom of sleeping on a *takamakura*<sup>3</sup> (high pillow) to maintain the unique *nihongami* (traditional Japanese hair-style).<sup>4</sup> I remember the first time I





## MOE (Kimono Mom)

An influencer who promotes Japanese home cooking to the world. After retiring from her work as a *maiko* and *geiko* in a Kyoto's *kagai*, traditional entertainment district, she launched her YouTube channel "Kimono Mom" in February 2020. Her videos mix in English and include introducing Japanese home cooking while wearing a kimono.



*Maiko* walking in a *kagai* district of Kyoto.

Photo: MOE



The *kanzashi* (hairpin) on the head changes depending on the season. In the photo is a special one that is worn during the Gion Festival. (This is also MOE when she was a *maiko*.)

Photo: MOE



*Geiko* masters a variety of traditional performing arts, including dances and playing the *tsuzumi*<sup>5</sup>, traditional Japanese percussion instrument. Here, MOE is playing the *tsuzumi*.

Photo: MOE

slept on a *takamakura*, my topknot kept falling apart, and I had to redo it many times. Even so, as I gradually accustomed myself to it, I learned patience and attention to detail. I eventually gained confidence through each of these daily experiences—the confidence that supports me today.

These strict rules and customs refined many facets of my character, and in the processes I felt a kind of sense of accomplishment. The etiquette, patience, and lovely manners I learned through these experiences have been of great help to me in my current activities.

I think Japanese traditional culture is very attractive to people from other countries. My own experiences have made me aware of Japan's beauty and depth of culture. I hope to continue sharing this wonderful culture with the world.

1. General term for the five traditional entertainment districts where *ochaya* (establishments where *geiko* and *maiko* entertain their customers with dance, song, *ozashiki* asobi (traditional Japanese party games), and others) are concentrated. Kyoto's five traditional *kagai* are as mentioned in the text.
2. *Geiko* are the women who carry on traditional entertainment (see 1.) based in Kyoto's *Gokagai*. *Geiko* apprentices are called *maiko*.
3. A type of pillow used to prevent the *nihongami* from falling apart. A typical example is the *hakomakura* (box-shaped high pillow).
4. A general term for female hairstyles worn in Japan for centuries. Most involve tying the hair into a bun to form a topknot on top of the head.
5. Its hollow body is lined with leather, and struck it to make a sound. Also called *ko*.





Roasted sweet potatoes (*yaki-imo*) (left) and sweet potato *yokan*, a confectionery that offers a unique texture (right)

Photos: ISHIZAWA Yoji

# Italian Food Writer Recommends the Best Gourmet Food in Japan: Enchanted by the Magical Vegetable Sweet Potato

Italian Massimiliano Sgai has attracted attention in Japan and overseas for his articles and books on Japanese cuisine. We interviewed him about the appeal of sweet potato, a delicious ingredient, and Japanese cuisine using it, which he would like to recommend to visitors from overseas.

## Massimiliano Sgai

When I first came to Japan in 2002, I was amazed by the unique Japanese food culture. The one product that surprised and impressed me the most was actually *satsuma-imo* (sweet potato).<sup>1</sup> I have never encountered such a rich and profound vegetable, and I wish that more people overseas could enjoy sweet potato dishes, which are still little known even as Japanese cuisine has spread around the world. I believe that by experiencing its appeal through all five senses, they will be able to enjoy Japanese food culture and come to love Japan even more. This time I will share with you the reason I fell in love with sweet potatoes and the best gourmet dishes that can be prepared with them.

First of all, let's forget that sweet potatoes are vegetables. There are countless ways to cook sweet potatoes, but whether they are used in

Western or Japanese confectionery, home cooking or fine Japanese cuisine, a dish that takes advantage of their natural sweetness will leave you feeling satisfied and a moment of peace. For example, sweet potato tempura<sup>2</sup> has an irresistible crisp and crunchy texture, and its sweetness is doubled when it is eaten hot. Sprinkled with salt or dipped in tempura sauce called *tentsuyu*,<sup>3</sup> it tastes and feels unforgettable. Another simple yet profoundly Japanese dish that you should try is *satsuma-imo takikomi gohan*<sup>4</sup> (sweet potato rice). It is a wonder how white rice and sweet potatoes, simply cooked together, can create such a rich and nutritious flavor experience. The sweetness of the potato takes on a different form no matter what it is paired with.

If you have a chance to visit the Hokuriku region,<sup>5</sup> I recommend that you try a variety of sweet potato called Gorojima Kintoki,<sup>6</sup> which is part of the Kaga-Yasai brand of indigenous vegetables.<sup>7</sup> Compared to other sweet

potato varieties, it is characterized by a tender texture and deep sweetness and flavor. When cooked, its refined sweet taste is even more pronounced, making it twice as enjoyable in any dish. Follow the local tradition of enjoying *metta-jiru*, a specialty found nowhere else in Japan, and you will take home memories to cherish.



Sweet potato tempura. It has a crisp and crunchy texture and is served with salt or *tentsuyu* (bottom photo).

Photos: ISHIZAWA Yoji



## Massimiliano Sgai

Originally from Italy, Massimiliano Sgai now lives in Kanazawa City, Ishikawa Prefecture. He graduated from the Department of Japanese Language at the Graduate School of Letters of the University of Turin, and moved to Japan in 2007. After gaining experience as a Japanese-Italian interpreter, he went on to work as a food and lifestyle writer. He is the author of the book, *Italia-jin Massi ga Buttonda, Nihon no Kami-gurume* ("Japan's Divine Culinary Treats That Astonished the Italian, Massi") (KADOKAWA), as well as a number of magazine articles and serialized columns. He writes about the fascinating differences between Italian and Japanese culture, the appeal of Japanese food, and delicious food arrangements from an Italian's point of view. His long-selling series *The Complete Guide to Saizeriya* (note) has over 1.5 million page views. Currently, he is involved in a variety of activities ranging from writing serialized columns and essays to planning and copywriting.



*Metta-jiru* is a type of rich and hearty *ton-jiru*<sup>8</sup> prepared with various root vegetables, such as sweet potatoes, daikon radish, and carrots. The term "Japanese cuisine" is often used, but this kind of unique regional cuisine "*kyodo cuisine*"<sup>9</sup> that is rooted in each and every region of the country is also very deep and diverse.

For those with a sweet tooth, I recommend not only traditional Japanese confectionery made with sweet potatoes, but also bread, cakes, doughnuts, ice cream, and other treats. For a taste of Japanese food culture while traveling, try a steaming hot *yaki-imo*.<sup>10</sup> As a gift, I recommend the sweet potato *yokan*.<sup>11</sup> Its texture is uniquely Japanese sweets, and the sweetness of the potato is sure to fill you with a sense of happiness. Both sweet potato cakes and candied sweet potatoes (in Japanese, it is called "*Daigakuimo*") can be enjoyed for their distinct textures, and they look so different from each other that you may not even realize that they are made with the same main ingredient: sweet potatoes. There are

also sweet potato-filled breads and pastries, and sweet potato chips. You might think that some of these foods originated overseas, but even here it is possible to find exquisite Japanese gourmet foods.

The Japanese sweet potato is a magical vegetable that can be prepared in an infinite number of ways and served in a variety of dishes. The combination of such a magical vegetable with the creativity of the Japanese results in delicious dishes that

deserve to be called "the best." If you ever visit Japan, be sure to try various sweet potato dishes.



Rice cooked with sweet potatoes

Photos: Massimiliano Sgai



Gorojima Kintoki sweet potatoes produced in Kanazawa City, Ishikawa Prefecture (left), and the fields where they are grown (right)

Photos: Massimiliano Sgai



Also recommended are Western-style desserts and pastries made with sweet potatoes (from left to right: sweet potato ice cream, sweet potato pancakes, sweet potato bread).

Photos: Massimiliano Sgai

1. A vine with edible tuberous roots. Native to tropical America, it was introduced to Japan in around the 17th century. After that, in the 18th century, its cultivation spread rapidly throughout the nation, and from the 20th century onwards, full-scale breeding improvements were made, and it has continued to grow to this day.
2. Tempura is a traditional Japanese dish of seafood or vegetables coated in a flour-based batter and deep-fried in oil.
3. *Tentsuyu* is a dipping sauce that complements tempura. It is prepared by simmering three basic ingredients: soy sauce, *mirin* (sweet cooking rice wine), and *dashi* (soup stock).
4. *Takikomi gohan* is a dish made by cooking rice with ingredients such as seafood, meat, and wild vegetables. Generally, sweet potato rice is made by mixing rice with sweet potatoes diced into 1 to 2 cm pieces with the skin on, and cooking them together. It is seasoned with condiments such as soy sauce and salt.
5. A region on the coast of the Sea of Japan in central Honshu, comprising the four prefectures of Ishikawa, Fukui, Toyama, and Niigata.
6. Gorojima Kintoki sweet potato is one of the Kaga-Yasai indigenous vegetables. It is cultivated in Kanazawa City, Ishikawa Prefecture, and is characterized by its intense sweetness. It is said that cultivation began during the Genroku period (1688 to 1704).
7. The Kaga-Yasai brand of indigenous vegetables includes produce cultivated mainly in Kanazawa City, Ishikawa Prefecture, which has been certified as brand vegetables by the Kanazawa City Agricultural Produce Branding Association.
8. *Tonjiru*, a traditional Japanese home-style dish, is a soup made with pork and vegetables, and flavored with miso, etc. Miso is a condiment made by steaming soybeans and other ingredients and fermenting them with salt, etc.
9. A type of cuisine that is unique to a particular region and uses local products as ingredients.
10. Roasted sweet potatoes. Stone-roasted sweet potatoes, which are prepared by heating stones from underneath and cooking the potatoes on the top of the stones, are particularly well known.
11. A type of traditional Japanese confectionery prepared by steaming and mashing sweet potatoes and adding sugar.



## “Long Sword (Tachi)” Bearing Yasuie’s Inscription



National Treasure “Long Sword (Tachi)” Bearing Yasuie’s Inscription (length of blade: 77.3 cm)  
Photo: ColBase (<https://colbase.nich.go.jp/>)

**T**his Long Sword (Tachi), a National Treasure, is said to have been made in the 12th century by Yasuie, a swordsmith from the end of the Heian period (late 8th century to late 12th century). It is unique in that it was definitely made by Yasuie.

The inscription on this sword resembles that of Yasutsuna<sup>1</sup>, not only in style but also in the position of the carving. In the history of Japanese swords, “The Chugoku region (the westernmost part of Japan’s main island, Honshu) is blessed with rich deposits of high-quality iron. [...] The smiths working in the areas of Bizen (present-day southeastern Okayama Prefecture) and Hoki (modern western Tottori Prefecture) are especially well known.”<sup>2</sup>

This long sword, inscribed by Yasuie, is characterized by its slender body with a strong curve near the *tsuka*<sup>3</sup>, a fine *itame* pattern<sup>4</sup> on the surface of the *jigane*<sup>5</sup>, and a *hamon*<sup>6</sup> with small, irregular patterns. This sword was passed down through the Kuroda family, the lords of the Fukuoka domain, and is currently housed in the Kyoto National Museum.



The inscription, “安家” (Yasuie), is visible on the Long Sword (Tachi)

Photo: ColBase (<https://colbase.nich.go.jp/>)

1. Yasutsuna: a renowned swordsmith famous for crafting the Dojikiri Yasutsuna See HIGHLIGHTING Japan, May 2024 edition:  
[https://www.gov-online.go.jp/hlj/en/may\\_2024/may\\_2024-12.html](https://www.gov-online.go.jp/hlj/en/may_2024/may_2024-12.html)

2. e-Museum (quote in Japanese version only)  
[https://emuseum.nich.go.jp/detail?langId=en&webView=&content\\_base\\_id=101114&content\\_part\\_id=0&content\\_pict\\_id=0](https://emuseum.nich.go.jp/detail?langId=en&webView=&content_base_id=101114&content_part_id=0&content_pict_id=0)  
<About terminology used in the quoted passages>

Chugoku region: located in western Honshu, Japan, this region includes the five prefectures of Tottori, Shimane, Okayama, Hiroshima, and Yamaguchi and is bordered by the Sea of Japan to the north and the Seto Inland Sea to the south.

3. *tsuka*: the grip of a sword, also called *e* in Japanese

4. *itame* pattern: a pattern that appears on the *jigane*, resembling wood grain with flowing annual rings

5. *jigane*: Japanese swords are strengthened and made resilient by folding and forging the steel. This process creates surface patterns on the blade, known as *jihada* (iron skin), and the underlying blade material is called *jigane*.

6. *hamon*: the pattern along the blade edge of Japanese swords, which varies by school and swordsmith

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