

Kikkoman's quarterly intercultural forum for the exchange of ideas on food

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THE JAPANESE TABLE

## Food Byways: The Many Paths of Soy Sauce

by Masami Ishii

*Our current Feature series traces Japan's traditional food byways, and how various foods were originally transported and distributed throughout the country. In this final installment, we take a look at how soy sauce developed in Japan and traveled to the world.*



# Food Byways: The Many Paths of Soy Sauce

## From East Asia to Japan

Soy sauce is an all-purpose seasoning, well suited for use in simmered, grilled and even uncooked dishes. This seasoning incorporates all five basic tastes: sweet, sour, salty, bitter and umami. Its appealing rich, reddish-brown color and pleasant aroma enhance Japanese cuisine's wide range of dishes. Japanese restaurants often refer to soy sauce as *murasaki* (literally, "purple"), a term that at one time carried connotations of cool and trendy.

East Asia has a long tradition of preserving food ingredients in salt to make fermented seasonings; among these were *kokubishio*, made from grains such as rice and barley or beans. Japanese *shoyu*, or soy sauce, was refined and produced from that tradition. The origins of soy sauce arose when people began to use the liquid that accumulated on the surface of miso; subsequently, soy sauce production methods were developed. The first appearance of the term *shoyu* in a Japanese text can be found in the *Bunmeibon Setsuyoshu*, a Japanese-language dictionary written in the late fifteenth century.

## From Kansai to Kanto

By the sixteenth century, soy sauce was manufactured throughout Kansai, the region that today includes Osaka, Hyogo and Wakayama. At that time, a dark variety of soy sauce called *koikuchi* was made, but in the latter half of the seventeenth century, a light color type was developed in the Tatsuno area of Hyogo Prefecture. This light color soy sauce was known as *usukuchi*, and was introduced in Kyoto: this is the soy sauce that contributed significantly to the development

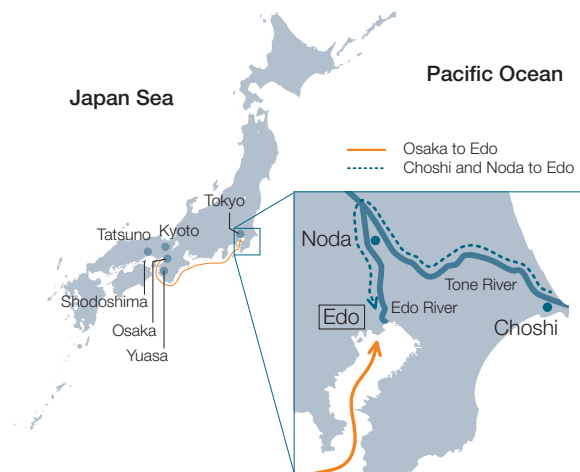
of the unique, refined flavors of Kyoto cuisine. It was only later in the early nineteenth century that Shodoshima, an island in the Inland Sea known for soy sauce production, shipped its first supplies of soy sauce to Osaka.

During the seventeenth century, soy sauce production, influenced by Kansai culture, began to make its way eastward toward the Kanto plain, the region surrounding Edo (now Tokyo). The Kansai area, which had more advanced manufacturing technology than Edo, produced much of the soy sauce at that time, and until the first half of the eighteenth century, soy sauce from the Kansai area was referred to as *kudari-joyu*—soy sauce that had been "shipped down" from Osaka to Edo on cargo ships called *tarukaisen* to accommodate the demand in Edo.

By the mid-eighteenth century, soy sauce makers in cities such as Choshi and Noda, located along Kanto's Tone River, competed for a greater share of the market by utilizing the convenience of river transport. These two cities became major soy sauce production centers, and gradually Kanto came to surpass Kansai in soy sauce production.

## From Traditional to Modern

At the onset of the twentieth century, soy sauce manufacturers in Noda, some 30 kilometers northeast of Tokyo, began to look beyond intuitive production methods based on experience, and started to introduce modern scientific brewing technologies. They planned to expand their marketing efforts with an eye on consumers in Tokyo, where the population was flourishing.



The various paths of soy sauce



*Dainihon Bussan-zue* by Utagawa Hiroshige III. This print depicts the process of making soy sauce at Kikkoman during the nineteenth century. Courtesy Kikkoman Institute for International Food Culture

No Image Available

Soy sauce manufacturers in Noda quickly joined forces, and in 1917 they founded the Noda Shoyu Co., Ltd., the forerunner of Kikkoman Corporation. On a huge site of more than 132,000 square meters, they built 19 production plants, making possible the production of more than 36 million liters of soy sauce annually; this massive enterprise accounted for eight percent of all soy sauce made in Japan. Initially, the company produced a number of soy sauce brands, but the Kikkoman brand was considered to be of the highest quality, so the company eventually united all its brands under the single name “Kikkoman.”

### From Japan to the World

In the early 1900s, Japanese soy sauce



Grilled chicken with teriyaki sauce, whose primary ingredient is soy sauce.

manufacturers expanded their markets overseas, but the largest of these was the U.S., where many Japanese had immigrated. The Second World War interrupted these efforts, but following the war, Kikkoman restarted shipping soy sauce overseas in 1949. A “teriyaki boom” took off in the U.S. and spread to other countries; overseas soy sauce production was to follow.

Kikkoman also began developing recipes to complement local foods. In order to bring about greater awareness of the taste of soy sauce, the company offered opportunities in supermarkets to sample food seasoned or prepared with soy sauce. This helped launch the use of soy sauce in local, traditional and new fusion cuisines. Since then, Japanese cuisine has become increasingly popular around the world, and the overall consumption of soy sauce continues to expand in overseas markets.

There is ongoing appreciation of the merits of Japanese soy sauce as a versatile seasoning, and various innovations have been introduced to meet the changing needs of consumers: for example, choices now include less sodium soy sauce products; smaller bottles, reflecting smaller family sizes;



Kikkoman products sold in a U.S. supermarket

and even a special soy sauce containing dashi stock, which is convenient for cooking. Today, Kikkoman Soy Sauce in its many varieties is sold in over 100 countries around the world: it is a truly international seasoning. ◆

### cover

*Nigiri zushi* is accompanied by soy sauce, often referred to as *murasaki* in restaurants, a word that at one time carried connotations of cool and trendy.

### Author's profile

Masami Ishii was born in 1958. He graduated from Tokyo Gakugei University in 1980 from which he later received his Masters degree in Japanese language education in 1984. Prof. Ishii specializes in Japanese literature and folklore, and he has been teaching at Tokyo Gakugei University since 1993. He has authored many books and publications such as *Tono Monogatari-e-no-Goshotai* (An introduction to tales of Tono) and *Mukashi-banashi-to-Kanko—Kataribe-no-Shozo* (Folktales and travel—a portrait of a storyteller).



# Salt *Koji* and Soy Sauce *Koji*



Clockwise from left: *nabe* hot-pot with salt *koji*; salt *koji*; soy sauce *koji*

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## Traditional *koji* has new appeal

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Many of Japan's fermented foods are made by inoculating steamed grains such as rice or wheat with *koji*, otherwise known as the fungus *Aspergillus oryzae*. Depending upon the grain used, the end result may be rice *koji*, wheat *koji* or bean *koji*.

There are two types of *koji*. The variety used in Japan is *bara koji*, made by growing mold on steamed rice or wheat grain. The second variety is *mochi koji*, made by crushing raw or heated grain and solidifying it by kneading with water and then growing mold on it. Many alcoholic beverages in China, Korea and other east Asian countries are made using *mochi koji*. *Bara koji* is used in making many of Japan's traditional fermented seasonings and foods, including sake, distilled spirits, miso, mirin, soy sauce and various pickles, which are all fermented through the interaction of yeast, lactic acid bacteria and *koji*, and gradually aged.

In recent years, Japan's traditional *koji* has attracted new attention—particularly salt *koji* (*shio koji*) and soy sauce *koji* (*shoyu koji*). Salt *koji*, which can be made at home simply with rice *koji*, salt and water, has become popular as an all-purpose seasoning for various dishes. The method for making it calls

only for mixing rice *koji* and salt, adding water, then keeping the mixture in an airtight container for a week to ten days at room temperature, stirring once a day. Salt *koji* can be stored in a refrigerator for about six months. Soy sauce *koji* is made by adding soy sauce rather than salt to the rice *koji*.

These two types of *koji* have become so popular that many recently published recipe books and food magazines feature them. One reason for this current enthusiasm is that, when salt *koji* or soy sauce *koji* are used to season or marinate meat, or if they are added to a particular dish, its delicious umami flavor is enhanced and meat stays tender even when cooked.

Food manufacturers are jumping on the bandwagon and now sell salt *koji*, soy sauce *koji* and processed foods such as dressings or soups that contain them. Kikkoman, for example, features them in a *nabe* (hot-pot) soup and marinade seasoning. Some snacks such as cookies and potato chips have added salt *koji*, while trendy restaurant menus list meat dishes or salads that have been prepared with it. The appeal of *koji* has gone beyond its traditional roots, as innovative uses in cooking and preparation continue to be discovered. ●



*Hiya-yakko*, chilled tofu with soy sauce *koji*



*Perspectives on  
Japanese cuisine*

*Mochi* is made by pounding steamed glutinous rice using a wooden mortar and mallet in a centuries-old tradition known as *mochi-tsuki* (pounding). It is said that the origins of sticky, rather chewy *mochi* (glutinous rice cakes) can be traced as far back as the Yayoi period (3BC-2BC) in Japan.

*Mochi* is not just delicious; its various forms carry distinctive meanings, and there is a custom of making it on special and festive occasions, when it is not only offered to Shinto deities, but enjoyed among family and friends. To celebrate the New Year, individual households or local communities traditionally pound *mochi* and form it into round, white *kagami-mochi*, which are set out as offerings. These two-tiered rice cakes are regarded as the embodiment of the gods, and it was once

believed that eating them imparted spiritual and regenerative energy. *Mochi* is also served in *zoni* soup on New Year's Day. During *kagami-biraki* on January 11, families break up the *kagami-mochi* offerings into smaller pieces, and eat them to receive the blessings of the gods.

Eating *mochi* is not limited to special occasions, however; it is enjoyed year-round in any number of different ways. Immediately after pounding and forming, *mochi* is soft and can be eaten as, for example, *karami-mochi* by tearing it into bite sizes, and dressing it with grated daikon seasoned with soy sauce. Another popular snack is *isobe-maki*, a delicious treat of grilled *mochi* seasoned with soy sauce and wrapped in Japanese *nori* seaweed. ●



Pounding *mochi* in a wooden mortar with a mallet



From left: *kagami-mochi*; *karami-mochi* with grated daikon; *isobe-maki*

## DELECTABLE JOURNEYS

### Wakayama Sanma Zushi

One of the culinary and seasonal specialties of Wakayama Prefecture is *sanma zushi*, tasty sushi rice topped with *sanma* (saury) that is then lightly pressed. *Sanma zushi* has long been made in the home to enjoy during special occasions, including festivals and the New Year holidays.

Wakayama Prefecture is located on the Kii Peninsula, whose southeast coast faces the Pacific Ocean. The saury from this coast are particularly prized, as the fish have considerable flesh and little extra fat after a vigorous north-to-south autumn migration in the ocean's cold currents down the coast.

To prepare *sanma zushi*, the fish is split open, its meat lightly salted, then pickled in *yuzu* or *daidai* (citrus) juice before being pressed onto the sushi rice.





## ADOBO CHICKEN WITH MIRIN

Adobo is a popular Philippine dish, but it generally uses more garlic, bay leaves and black pepper than called for here. This recipe adds a Japanese flair with mirin, which not only mellows the taste, but also lends *teri*, or shine, for appetizing color and appeal.



◆ Drumsticks

手羽元

Serves 2 622 kcal Protein 35.7 g Fat 30 g (per person)

- 1 large onion, 260 g / 9 oz.
- 2 t vegetable oil
- 10 chicken drumsticks or wings, total 600 g / 20 oz.

### Sauce

- 1 small clove of garlic, crushed or pressed
- 2 bay leaves
- 15 whole black peppercorns
- 6 T Kikkoman Soy Sauce
- 3 T grain vinegar

- 3 T Kikkoman Manjo Mirin
- 2 T sake
- 120 ml (1/2 C) water

**1** Cut onion in half lengthwise and cut into slices 2-3 mm (0.1 in.) thick along the fiber.

**2** Heat vegetable oil in a deep frying pan and sauté the onion over medium heat until soft and transparent.

**3** Add sauce ingredients to the pan; bring to a boil, stirring constantly.

**4** Add chicken and cook, turning the chicken until the surface of the meat turns white.

**5** Lower heat, cover and simmer gently for 12-13 minutes. Turn the chicken two or three times during simmering until a wooden pick can be inserted smoothly into the meat. Remove the chicken and set aside.

**6** Boil the sauce over high heat for 3 minutes until slightly thickened. Return chicken to the pan, mix with the sauce until well coated. Serve with cooked rice.

Recipe by Michiko Yamamoto



## PAN-SEARED *BURI* YELLOWTAIL TERIYAKI



◆ *Buri*

**Serves 4** 369 kcal Protein 22.5 g Fat 20.6 g (per person)

- 1 T vegetable oil
- 4 *buri* (yellowtail) fillets, 100 g / 3.5 oz. each

### Teriyaki sauce

- 3 T Kikkoman Soy Sauce
- 3 T Kikkoman Manjo Mirin
- 3 T sake
- 2 t sugar

- 8 T grated daikon, lightly squeezed to remove extra liquid
- Kikkoman Soy Sauce to taste

**1** Heat the vegetable oil in a frying pan over medium heat and sear the fish fillets on both sides until golden brown.

**2** Turn off the heat. Move the fillets to one side of the pan, and wipe up excess fat and oil using a paper towel\*; add teriyaki sauce and cook the fillets over medium heat until a wooden pick can be inserted smoothly into the fillet. Shake the pan gently to coat the fish with teriyaki sauce.

**3** Place each grilled fillet on an individual plate. Garnish with grated daikon and serve hot. Add a little soy sauce to the grated daikon, if desired.

\**Buri* (yellowtail) teriyaki is generally grilled. Using a frying pan makes this recipe quick and easy. Removal of excess fat will yield a better flavor.

1 C (U.S. cup) = approx. 240 ml; 1 T=15 ml; 1 t=5 ml

Recipe by Kikkoman Corporation



# Years of Soy Sauce Research Behind Kikkoman's New Product



Mamechikara-Soybean Peptide Soy Sauce

In September 2013, Kikkoman released "Mamechikara-Soybean Peptide Soy Sauce," a product developed as a result of the company's continuous research into the properties of soy sauce. It is the first soy sauce in Japan to be granted approval as Food for Specified Health Uses (FOSHU).

The soy sauce brewing procedure is an extremely complex and carefully balanced process of making *koji* (mold), fermentation and maturation. Mamechikara is based on a soybean peptide\* produced during the soy sauce brewing process which alleviates the activity of certain enzymes that raise blood pressure. In the normal brewing method, most soybean peptides are fully converted into amino acids,

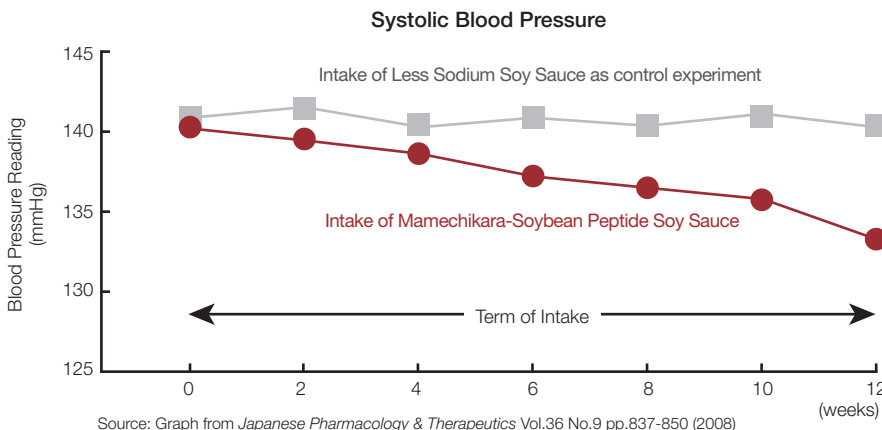
and are barely present in regular soy sauce products. In its development of Mamechikara, Kikkoman for years studied the brewing conditions that would achieve high soybean peptide content and the correct balance of the enzyme action of *koji* while still maintaining the taste of Kikkoman Soy Sauce.

Kikkoman conducted studies, not only of soy sauce as a product itself, but also on its traits and functions during the brewing process. Through trial and error, working onsite at its brewery, Kikkoman was able to achieve large-scale production of the soybean peptide. Kikkoman has now finally brought Mamechikara to the market. Mamechikara, when substituted for

regular soy sauce, has been shown to help moderate the enzymes which raise blood pressure, and is being targeted at individuals with blood pressure concerns.

FOSHU refers to food products that have been approved to indicate their potential to achieve specific health purposes when used in the daily diet. Only those products proven in effectiveness and safety, and which have undergone government inspection and approval, are permitted to bear the FOSHU seal.

Soy sauce is one of Japan's traditional seasonings, and has long been an essential element in the country's unique food culture. Working with innovative technology in response to contemporary needs, Kikkoman continuously researches soy sauce and its properties to uncover its potential. Through ongoing research, development and production, the company aims to deliver new value-added products while enriching the lives of consumers in the fields of both food and health. ◆



\* Soybean peptide: Chain of several amino acids, obtained from breaking down soybean protein using the effects of *koji*.