Commentary on the Survey into Regional Characteristics of Soy Sauce and Contributing Factors

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Diverse Regional Characteristics

It is generally known that soy sauce is currently classified into *koikuchi* (common), *usukuchi* (light colored), *tamari* (tamari), *saishikomi* (refermented), and *shiro* (extra-light colored), and it is understood how these soy sauce varieties are distributed. It is also widely recognized that soy sauce in Kyushu is sweeter than in other regions, and that *usukuchi* soy sauce is saltier than *koikuchi* soy sauce.
In the current project, we conducted an interview-based survey of soy sauce history and the actual conditions of soy sauce production in individual regions in Japan, followed by discussions on the collected data. We came to realize that the regional characteristics of soy sauce are more diverse than is generally known, and that the formation of preferences in soy sauce has not been uniform between regions. This issue reports on only some of the regions surveyed. It will be necessary to yet further investigate the processes driving the formation of regional characteristics.
By tracing the history of soy sauce production and distribution, we believed we would be able to surmise the background of preferences in soy sauce rooted in each region. However, it was not that simple. The production methods differed between regions even in the same period, and we had to consider which soy sauce was introduced to which region, how the production methods of soy sauce changed and how soy sauce itself developed and changed in the region where it was introduced. In addition, there are few historical materials to be found in the regions we studied, so it was necessary to make inferences by piecing various bits of evidence together. The reports for this issue reflect this difficulty.

Regional Characteristics of Soy Sauce in the Edo Period (1603–1868)

Yoshu Fushi, published in 1686, describes the geography, history, culture and products of Yamashiro Province (the southern part of present-day Kyoto Prefecture). Their soy sauce was made from soy beans and barley, and extracted by pressing the *moromi* mash in cloth bags. The book also introduces tamari, which was made from the liquid that seeped out from miso, and comments that it was sweeter than soy sauce. Soy sauce made from barley would have had less umami. These two varieties are believed to have coexisted, as the book explains they were both produced by sake breweries in Sakai under the name of Sakai Soy Sauce.
Gorui Nichiyo Ryori-sho, a cookbook published in Kyoto in 1689 (roughly the same period as *Yoshu Fushi*), contains a soy sauce recipe made by mixing soy beans (18 L), barley (18 L) and wheat (5.4 L). It instructs the reader to add rice porridge (1.8 L of rice with 14.4 L of water) after 50 days. The book also has a tamari recipe, which is made by mixing roasted and milled wheat with soy beans and barley, then adding dark miso and koji after roughly 60 days.
Hitomi Hitsudai was an herbalist who lived in Edo (present-day Tokyo). In his book, *Honcho Shokkan* (1670), he introduced several soy sauce production methods, including a method that uses 18 L each of soy beans and barley as ingredients and includes a long bamboo basket that is inserted into the barrel to scoop out soy sauce, and a method of producing "sweet soy sauce" from 1.8 L of soy beans and 18 L of barley, which he describes as pleasantly sweet.
It is generally believed that the production of *usukuchi* soy sauce was established in 1666. However, *Shoyu Shikomi-no Hikae* (1822), which is a historical record of Tatsuno soy sauce (present-day Tatsuno City in Hyogo Prefecture) compiled much later, introduces a method that uses equal parts of soy beans and wheat, adds the broth left over from cooking soy beans (the broth is called "*ame*") when mixing the koji with brine, and adds rice porridge or *amazake* (a sweet fermented rice drink) before pressing *moromi*. *Shinsen Hocho Kakehashi*, a cookbook published in Osaka in 1803, introduces a method using soy beans and wheat, and adding malted rice instead of adding sake lees, *ame* or the like, before pressing. This is because the latter makes soy sauce that is pleasantly sweet but prone to molding. This recipe is similar to the aforementioned method for *usukuchi* soy sauce.
As seen above, soy sauce production methods were not uniform even in the same period. Production methods underwent continuous changes aimed at achieving better quality and taste.

Region	Primarily home-brewed soy sauce	Primarily store-bought soy sauce
Tohoku, Hokkaido, Kanto, Chubu	Hokkaido, Iwate (1), Miyagi (2), Yamagata (1), Yamagata (2), Akita, Tokyo, Niigata (1), Niigata (2), Toyama, Yamanashi, Nagano (1), Nagano (2), Nagano (3), Nagano (4), Nagano (5), Shizuoka, Aichi (1), Aichi (5)	Iwate (2), Miyagi (1), Fukushima, Gunma, Gifu (1), Gifu (2), Aichi (2), Aichi (3), Aichi (4)
Kinki, Chugoku, Shikoku, Kyushu, Okinawa	Kyoto (1), Kyoto (2), Nara (2), Shimane (1), Okayama (1), Okayama (2), Okayama (3), Tokushima, Nagasaki (2)	Shiga, Nara (1), Nara (3), Tottori, Shimane (2), Kagawa, Nagasaki (1), Kumamoto, Okinawa

Table 1 Regional characteristics of soy sauce (surveyed from autumn 1941 to spring 1942)

In some prefectures, more than one area was surveyed. (1) to (5) indicate different areas in the same prefecture.
Prepared based on Institute of Folklore Studies, Seijo University, *Nihon no Shoku Bunka*: *Showa Shoki Zenkoku Shokuji Shuzoku no Kiroku* (Food Culture of Japan: Nationwide Record of Dietary Habits in the Early Showa Era), 1990, Iwasaki Bijutsu-sha

Distribution of Soy Sauce in the Edo Period

Until the late Edo period when soy sauce from Noda and Choshi became widely used in the city of Edo, Kansai soy sauce transported from Kyoto and Osaka in the Kansai region prevailed. The Kikkoman Institute for International Food Culture revived the production of soy sauce described in *Bankin Sugiwai-bukuro* published in 1732, and studied the characteristics of soy sauces that were similar to Kansai soy sauce (*FOOD CULTURE* No. 11, 2005). The study revealed that clear Kansai soy sauce, characterized by a short aging period, light color and flavor lacking body and depth, did not satisfy the preferences of people in Edo.
Bankin Sugiwai-bukuro states that the soy sauce of Sakai had good flavor and was commonly seen for sale, that Osaka and Bizen Province (the southeastern part of present-day Okayama Prefecture) offered quality tamari soy sauce, and that the soy sauce of Nagoya and Shinshu-Ueda (currently Ueda in Nagano Prefecture) were also being sold in Edo. In Tatsuno, as well, there are historical materials from the same period that show soy sauce was shipped to Edo (Akira Hasegawa, *Hyogo Shigaku*, 1980). Soy sauce delivered to Edo from regions outside the

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Kanto region may not have been uniform.
Keizai Yoroku, published in 1859 near the end of the Edo period, explains the trend of Kanto soy sauce produced in the Kanto region becoming mainstream, stating that all breweries in Kanto had been increasingly producing good soy sauce. *Bukka Kakiage* (1842) shows that one *ryo* (a currency unit of the time) could buy 4.8 barrels of the finest quality Kansai soy sauce, 5.2 barrels of high quality Kanto soy sauce, 7 barrels of medium quality Kanto soy sauce, or 13 barrels of lower quality Kanto soy sauce, indicating that *koikuchi* soy sauce was spreading in the city of Edo because Kanto soy sauce was less expensive.

Establishment of Names for Soy Sauce Varieties and Their Uses in Modern Times (1868–1945)

The term *usukuchi* appeared first in *Nihon Kaji Chori-ho* (1904) (page 7). Before that, expressions of *iro-usuki* (light-colored soy sauce) and *usu* (light or thin soy sauce) were used. In cookbooks in the Edo period, notations of *usu* in several different kanji were used, and dishes such as deep-fried sea bream simmered in *usu* soy sauce were introduced. *Kan-i Sokusei Wayo Ryori-ho* (1909) defines soy sauce as having only three varieties: tamari, colorless and common. Tamari is thick, sweet and rich in umami, and good for dipping sashimi and for sprinkling on foods, while colorless is used for simmered dishes in which the colors of the ingredients should be maintained, as well as for *namasu* (raw fish and vegetables seasoned in vinegar). From the above, it may be inferred that soy sauce other than tamari (characterized by sweetness) and *usukuchi* soy sauce (characterized by lightness in color) would have been classified as common soy sauce during that period. Thus, *koikuchi* soy sauce would have been recognized as common soy sauce.

Changes in Preferences in Regional Soy Sauce: From Home-Brewed to Store-Bought

Let's take a look at some examples of home-brewed soy sauce in Fukui Prefecture from materials collected via interviews in the Taisho (1912–1926) and early Showa (1926–1989) eras. In Sakai-cho, where soy sauce was mostly home brewed, 36 L of soy beans and 18 L of wheat were mixed with soy sauce koji spores purchased at a soy sauce brewery. After one year the resulting *moromi* mash was poured into cotton bags and pressed. Following the pressing, the extract was heated and then coarse sugar was added. This process makes the first-press soy sauce. This was used for sashimi dipping and to season boiled vegetables. In the Echizen Coast area, 18 L of soy beans and 36 L of barley were mixed with store-bought soy sauce koji spores, and pressed after about ten days. This soy sauce would have been light-colored, as it was stated that soup with *iwanori* (rupicolous laver) was "seasoned lightly with soy sauce." In the hilly and mountainous areas of Wakasa, 18 L of soy beans and 18 L of wheat were mixed with soy sauce koji spores and pressed after 5 to 6 months to extract the first-press soy sauce. This soy sauce was light-colored and very tasty, and used only for very special occasions. Even within the same prefecture of Fukui, the proportions of ingredients used and production periods varied between areas, so colors and taste would have varied as well.
In Toyama Prefecture, soy sauce was regarded as a luxury in some areas, where it was bought for use in dishes served up for special religious occasions or the like. Meanwhile in the Himi Nadaura Coast region, home-brewed soy sauce made from soy beans, malted rice and wheat was indispensable in daily meals. These examples suggest that the effects of home-brewed soy sauce on preferences would have to be considered by examining various regions.
According to a nationwide survey of dietary habits conducted in 1941, which included whether soy sauce was primarily home brewed or bought at stores (Table 1), soy sauce was home brewed in relatively more regions in eastern Japan than in western Japan. In Okayama Prefecture, the trend gradually shifted from home brewed to store bought, and then shifted back again to home brewed. In Gifu and Shimane Prefectures, the prefectural governments provided subsidies to encourage home-brewed soy sauce in the early Showa era, and similar encouragement was seen in Fukui Prefecture (page 14). In 1942, soy sauce was placed under rationing, with a coupon system. At that time, increasing varieties of home-brewed soy sauce were produced, which may have affected the formation of preferences. Even in modern times, soy sauce was a luxury used only in dishes for guests or for festive or ritual occasions in many areas. In these areas, the broth left over from cooking soy beans was used rather abundantly in making miso to extract tamari, which was used along with miso for everyday meals.
After World War II, research into soy sauce production technologies increased, along with studies of koji production. This led to innovations in koji production, ingredient processing, mixing, heating and pressing facilities, resulting in the improvement and stabilization of soy sauce quality. As a result, commercially produced soy sauce became readily available at affordable prices, and home-brewed soy sauce was gradually phased out to be replaced by the store-bought version.
It seems to be after 1950, when society regained a certain level of stability after World War II ended, that store-bought soy sauce became mainstream nationwide and commonly used in daily meals. We would like to continue our study, as new preferences in soy sauce would have been added in individual regions from that point, and may have led to the formation of current regional preferences.

Dainihon Bussan Zue: *Shimosa-no-kuni Shoyu Seizo no Zu* (Picture of Soy Sauce Production in Shimosa Province), 1877, Tokyo Kasei Gakuin University Library