

The Tohoku Region and Soy Sauce Alternatives

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1. Where Mixed Soy Sauces Are Mainstream

The Japanese Agricultural Standards allow for the use of amino acid solution, obtained by decomposing soy protein with hydrochloric acid, as an auxiliary substance in soy sauce brewing. The stage at which amino acid solution is added determines the name of the production method: when added to the *moromi* mash prior to fermentation and aging, the method is defined as *kongo jozo* (mixed fermenting method); when added to the raw soy sauce (*kiage*), it is called *kongo* (mixture method). Soy sauce made without amino acid solution is called *honjozo* (regular fermenting method).

A 2017 survey of 19 soy sauce manufacturers in the six prefectures of Tohoku in northeastern Japan, revealed that *kongo* soy sauce accounted for more than 60% of production volumes at most manufacturers, and 80% or more at some makers in each prefecture. Notably, in Aomori, Iwate, Akita and Yamagata prefectures, several makers were producing between 98% and 100% *kongo* soy sauce. According to a report by Otomo et al. (FOOD CULTURE No. 26, 2016), levulinic acid (indicating acid-hydrolyzed vegetable protein) was detected in soy sauces from the Hokuriku, Tohoku, Chugoku, and Kyushu regions, where *kongo* soy sauce is typically favored, and the results of this survey show Tohoku once again as a region where *kongo* soy sauce predominates.

Among the 19 soy sauce makers in the Tohoku region surveyed this time, just one company exclusively produces *honjozo* soy sauce, a second company produces 98%, and another produces 80% through this regular fermenting method. Underlining these high numbers is the proportion of out-of-prefecture shipments by these makers, between 60 and 70%, mainly to areas predominantly using *honjozo* soy sauce.

According to a 1951 company history of Ajinomoto Co., Inc., *Ajinomoto Enkakushi*, sales of amino acid solutions by Ajinomoto were already in place around 1933, but it was in the postwar period that nationwide production of soy sauce mixed with amino acid solutions took off, when

there was a shortage of the necessary raw materials. We heard that Yamakano Brewing Co., Ltd. in the Miyagi Prefecture city of Tome, which prospered through the shipping of grains on Kitakami River during the Edo period, manufactured mixed soy sauce using homemade amino acid solution until about 1965. When the patent for Kikkoman's *shinshiki-ni-go* soy sauce manufacturing method was released in 1948, the industry was able to efficiently produce highly flavorful soy sauce at low cost via *kongo jozo* (including *shinshiki jozo*) and *kongo* soy sauce production methods, thereby surviving the era of raw material shortages. Today, major manufacturers have stopped producing *kongo jozo* and *kongo* soy sauces in favor of *honjozo* soy sauce, for food safety reasons and a preference for genuine products. However, the lack of funds at Tohoku soy sauce makers prevents them from switching all their facilities to *honjozo* soy sauce production. This, coupled with the fact that there is still a need to provide for consumers who became accustomed to mixed soy sauce products, is why we believe *kongo* soy sauce remains the key product in the region today.

Like Tohoku, soy sauces in the Kyushu region are predominantly *kongo* soy sauces, and they tend to be very sweet with added sweeteners. While Tohoku soy sauces also typically contain sweeteners, it is just enough to achieve mild saltiness, not sweetness like in Kyushu. However, sweet soy sauce is preferred in fishing towns in



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The once-thriving Tome Elementary School Building preserved as cultural property



Yamakano Brewing Co., Ltd.

the coastal areas of Iwate and Miyagi prefectures, and soy sauces sold there are sweeter than in inland areas. The above-mentioned Yamakano Brewing Co., Ltd. started producing sweet soy sauce favored by fishermen at the request of relatives who were owners of fishing vessels in Kesenuma, a fishing port in Miyagi Prefecture. I learned that they used their connections with fishing vessel owners to sell the sweet soy sauce along the coast.



Sweet soy sauce favored by fishermen (Photo provided by Yamakano Brewing Co., Ltd.)

I was also told that the soy sauce in Kamaishi City, Iwate Prefecture, took on sweeter flavor owing to the transfer of a Nippon Steel plant employee from Kyushu. But the soy sauce maker in Kamaishi was established before Kyushu soy sauce became sweet, so I believe this theory to be incorrect. Instead, it is more likely that sweet soy sauce came to Kamaishi with the many migrants from Toyama Prefecture, and spread along the coastal areas of Iwate Prefecture from there.

2. Regions That Substitute with Tsuyu or Dashi Shoyu

Among soy sauce makers visited this time, a total of four Tohoku companies – two in Fukushima, one in Yamagata, and one in Miyagi – released *tsuyu* soup base sauces or *dashi shoyu* combined stock and soy sauce seasoning products in the period from 1960 to 1989. All have grown into core products for the companies. Many soy sauce makers said such sauces are frequently used instead of soy sauce in the Tohoku region. In Akita Prefecture, Yamagata Prefecture and the northern part of Miyagi Prefecture, we heard that simmered dishes are seasoned with *tsuyu* or *dashi shoyu*. With a bottle containing soy sauce, sweeteners and dashi all-in-one, I believe the ease of use has led to the spread of such products as substitutes for soy sauce. In 1979, Touhoku Shoyu Corporation in Daisen City, Akita Prefecture, launched an all-purpose *tsuyu* product called “Banno Tsuyu - Ajidouraku no



Touhoku Shoyu Corporation



Ajidouraku no Sato (Photo provided by Touhoku Shoyu Corporation)

Sato”. From around 1985 when people started using this product instead of soy sauce, sales of similar products including “Shiki no tsuyu” by Uchiike Jozo Co., Ltd. in Fukushima City and “Aji Maruju” (*dashi shoyu*) from The Maruju Soysauce & Seasoning Corp., in Yamagata City, also increased, turning the products into top sellers.

I had heard that the most common containers for *tsuyu* and *dashi shoyu* in the Tohoku region are 1.8-liter plastic bottles. And when I visited supermarkets in Akita and Miyagi prefectures, I saw rows of 1.8-liter plastic bottles of soy sauce sold alongside *tsuyu* and *dashi shoyu* of the same size. It made me realize that people really do substitute these mixed seasonings for soy sauce in Tohoku, and that, in general, the sense of seasoning is different to that in the Kanto region. I was also told that many families in Tohoku purchase their preferred seasoning sauces in cases of 1.8-liter plastic bottles and send the flavor of home to family members living far away in areas such as Tokyo.

Though in a different category to *tsuyu* and *dashi shoyu*, a *yakiniku* (grilled meat) sauce called “Stamina Gen Tare” that was released in 1965 by Kamikita Nosan Kako Co., Ltd. in Towada, Aomori Prefecture, boasts the third largest sales nationwide. The convenience of the sauce



1.8L plastic bottles on shelves at a supermarket (Tome City, Miyagi Prefecture)



Kamikita Nosan Kako Co., Ltd.

means that in Aomori Prefecture, it is apparently used for seasoning all kinds of dishes other than grilled meat, showing strong commonality with the aforementioned case of *tsuyu* and *dashi shoyu* as a substitute for soy sauce in the Tohoku region.

The predecessor of Kamikita Nosan Kako Co., Ltd. was the Fujisaka Sheep Agricultural Cooperative, established in 1951. Changes in the textile industry in the postwar period led business leaders to determine that the sheep business alone would not be profitable, and they made the unique move of commencing soy sauce manufacturing by acquiring the Sanbongi factory from the Aomori



“Stamina Gen Tare” (above) and the bottling room (below) (Photos provided by Kamikita Nosan Kako Co., Ltd.)

Prefecture Rural Industry and Agricultural Cooperative Association. “Stamina Gen Tare” was apparently developed and sold on the idea that it would encourage consumption of the meat of locally raised sheep from the former sheep cooperative. Because Kamikita Nosan Kako Co., Ltd. produces soy sauce mainly for grilled meat seasoning, its *kongo* soy sauce is said to have more subtle flavor than the products of other soy sauce makers.

Asari Sasuke Shoten Co., Ltd. in Kazuno City, Akita Prefecture, switched from soy sauce wholesaling to brewing in order to supply miners and their families at



Asari Sasuke Shoten Co., Ltd. (Photo provided by Asari Sasuke Shoten Co., Ltd.)



Office buildings in early Showa period (Photo provided by Asari Sasuke Shoten Co., Ltd.)

the nearby Osarizawa and Kosaka mines. Capitalizing on the characteristics of local Akita soy sauce, the company’s key product is Hinai-Jidori Soup (a type of *tsuyu* soup base for hotpot dishes), which combines *honjozo* soy sauce with stock extracted from the meat and bones of local Akita Hinai chicken. We see that the culture in the Tohoku region of using *tsuyu* as a seasoning has clearly taken root here too.



“Hinai-Jidori Soup” (Photo provided by Asari Sasuke Shoten Co., Ltd.)

3. Japan’s First Cooperative Kiage Production Facility

Collaboration in the soy sauce industry was encouraged through the enactment in 1963 of the Small and Medium Enterprise Modernization Promotion Law, and the Fukushima Prefecture Soy Sauce Brewery Cooperative created in Nihonmatsu City in 1964 represented the first step nationwide in that direction. This was followed in the Tohoku region by the establishment of cooperative factories in Miyagi and Iwate prefectures, but both have since been dissolved.



Fukushima Soy Sauce Brewing Cooperative



Koji production room (above) and outdoor fermentation tank (below) (Photo provided by Fukushima Soy Sauce Brewing Cooperative)



Kasumigajo Castle, symbol of Nihonmatsu City

The birth of the Fukushima Soy Sauce Brewing Cooperative as a *kiage* raw soy sauce production factory contributed to significant reductions in facility maintenance costs for soy sauce makers in Fukushima Prefecture, and led to improvements and stabilization in the quality of *kiage* produced. As a result, while there were approximately 100 soy sauce makers in Fukushima Prefecture at the time of establishment, 49 remain today even after 55 years. I believe that formation of the cooperative has contributed to the survival of local soy sauce makers and highlighted the regional characteristics of soy sauce in Fukushima Prefecture. In comparison, the number of soy sauce makers in each prefecture of Tohoku in 2017 was 12 in Aomori, 11 in Iwate, 37 in Miyagi, 28 in Akita, and 47 in Yamagata. Nationwide, we see a tendency for the numbers to remain large in prefectures where soy sauce makers elected to collaborate. Fukushima's reputation suffered and its population declined after the 2011 Great East Japan Earthquake and the resulting radioactive leak at Tokyo Electric Power

Table 1. Soy Sauce Brewing Factories in Japan
(red text indicates prefectures with cooperative factories)

| | Number of factories | | Number of factories | | Number of factories |
|-----------|---------------------|----------|---------------------|--------------------|---------------------|
| Hokkaido | 11 | Niigata | 31 | Okayama | 44 |
| Aomori | 12 | Toyama | 22 | Hiroshima | 59 |
| Iwate | 11 | Ishikawa | 48 | Yamaguchi | 39 |
| Miyagi | 37 | Fukui | 28 | Tokushima | 9 |
| Akita | 28 | Gifu | 9 | Kagawa | 45 |
| Yamagata | 47 | Shizuoka | 11 | Ehime | 43 |
| Fukushima | 49 | Aichi | 36 | Kochi | 9 |
| Ibaraki | 19 | Mie | 30 | Fukuoka | 89 |
| Tochigi | 7 | Shiga | 35 | Saga | 23 |
| Gunma | 5 | Kyoto | 17 | Nagasaki | 20 |
| Saitama | 10 | Osaka | 7 | Kumamoto | 39 |
| Chiba | 17 | Hyogo | 35 | Oita | 23 |
| Tokyo | 2 | Nara | 19 | Miyazaki | 17 |
| Kanagawa | 4 | Wakayama | 27 | Kagoshima | 27 |
| Yamanashi | 5 | Tottori | 16 | Okinawa | 1 |
| Nagano | 38 | Shimane | 51 | Japan Total | 1,211 |

(Source: Japan Soy Sauce Association *Soy Sauce Statistics* (2017))

Table 2. Prizes for Fukushima Prefecture Products at the National Soy Sauce Fair

| Date | Event number | Total entries nationwide | Entries from Fukushima | Prizes for Fukushima | Minister of Agriculture, Forestry and Fisheries Award | Food Industry Affairs Bureau Director's Award | Award of Excellence |
|--|--------------|--------------------------|------------------------|----------------------|---|---|--|
| July 2011 | 39 | 254 | 8 | 3 | | | Takasagoya Shoten, Prefectural Soy Sauce Cooperative, Hayashi & Co. |
| (Started study session on sensory evaluation for union members in October 2011) | | | | | | | |
| July 2012 | 40 | 254 | 12 | 3 | | | Hayashi & Co., Prefectural Soy Sauce Cooperative (2 products) |
| July 2013 | 41 | 263 | 13 | 3 | Yamagataya Shoten | | Hayashi & Co., Fukuichi |
| July 2014 | 42 | 252 | 11 | 3 | Yamagataya Shoten | | Yamaboshi Shoyu, Prefectural Soy Sauce Cooperative |
| July 2015 | 43 | 252 | 15 | 1 | | | Neda Shoyu |
| July 2016 | 44 | 247 | 13 | 5 | Yamagataya Shoten Takasagoya Shoten | Yamaboshi Shoten | Hayashi & Co., Hoshi Jozo |
| July 2017 | 45 | 227 | 13 | 5 | Yamagataya Shoten | | Takasagoya Shoten, Uchiike Jozo, Anzai Jozo, Prefectural Soy Sauce Cooperative |

(From Fukushima Soy Sauce Brewing Cooperative internal materials)

Company's Fukushima No. 1 nuclear power plant. Soy sauce shipments fell to half the volumes they had been at their peak. At the call of the Fukushima Soy Sauce Brewing Cooperative, the "Fukushima Soy Sauce Fair" was held, and included study sessions aimed at overturning the damage to manufacturers' reputations by improving soy sauce quality. The positive effects were first felt in 2013, after which Fukushima Prefecture was regularly selected for prizes at a national soy sauce competition. And almost every year since, the Minister of Agriculture, Forestry and Fisheries Award has been bestowed on Fukushima soy sauces (see highlighted column in Table 2).