

# The History of Shoyu (Soy Sauce) 2

A Story of Shoyu

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In the previous issue of *FOOD CULTURE*, I referred to the use of *hishio* or *sho* (primitive soy sauce) and its role in people's lives during the Heian period (794-1185). I would like to look further into the role of *sho* during this time, primarily by examining the *Engishiki*.

The *Engishiki* was a set of governmental codes that set forth the detailed implementation of duties to be carried out by government officials. Its compilation began by order of the Emperor Daigo in 905 (the fifth year of Engi) and was completed in 927. It is one of the most important sources of information on the diets of people during the Heian period.

## Abolition of the *Hishio-no-Tsukasa*; Establishment of the *Sho-in*

According to the *Daizen-jo*, contained in the *Engishiki*, one of the many gods worshipped in the *Daizen-shiki*, the department in charge of cooking and serving at the Imperial Court, was the *Sho-in-Takabe-no-kami-ichiza*. In other words, there was a *Sho-in*, or section in charge of *sho*, in the *Daizen-shiki* and a god called *Takabe-no-kami* was worshipped there. About fifty years after the *Engishiki* was completed, Taka-akira Minamoto noted in his book of etiquette, the *Saikyuki*, that the *sho* section was an annex positioned to the west of the *Daizen-shiki*. So when was the *sho* section established?

In the era of the Emperor Heizei (806-810), there was large-scale restructuring of the central government, including changes in staff sizes. The *Hako-suemono-shi*, the section in charge of tableware, was merged into the *Daizen-shiki*, where two sets of supervisory positions were abolished by order of the Emperor on January 20, 808. One was the *Hishio-no-tsukasa*, consisting of two officials in charge of the

manufacture of fermented foods including *sho* and *miso*; the other was the *Kudamono-no-tsukasa*, which also comprised two officials, in charge of cooking and serving fruit and rice cakes.

The new system seems to have created a number of problems. On July 26 of that same year, the *Daijokan*, the supreme office of national administration (the equivalent of today's cabinet), reported to the emperor that the *Daizen-shiki* had been short of labor since it had merged with the tableware section and the *sho* and confectionery officials had been dismissed. Workloads had remained the same after the restructuring even though staff sizes had been reduced. The *Daijokan* asked the emperor for two more officials for the *Daizen-shiki*. In response, two officials were added to the *Daizen-shiki* in August, and four more officials were added the next year. In June of 835, the *Daizen-shiki* was granted two more officials. After the new officials were added, they must have decided to build a separate factory to manufacture seasonings such as *sho*.

We cannot be certain when the *sho* section annex was built; however, the *Sandai-Jitsuroku*, an official history, reports a fire in the *sho* section on September 25, 882. On the other hand, the *Hishio-no-tsukasa* was abolished in 808, as mentioned previously, and the staff size of the seasoning section ceased to expand in 835. Thus we can be certain that the annex was completed in the middle of the ninth century. In 969, a government order was issued in which the deputy minister of the *Daizen-shiki*, called the *Daizen-no-suke*, was appointed full-time supervisor of the *sho* section. The *sho* section caught fire again in 1127. As these records all indicate, the *sho* section maintained its position as a key source of *sho* during the Heian period.

## Sho Section and Manufacture of Sho

The *Daizen-ge* in the *Engishiki* lists annual production volumes for various foods. For *sho*, the annual production was 150 *koku*.<sup>1</sup> Another 65 *koku* of *ten-sho* was made as well (one *koku* is about 72 liters).<sup>2</sup> *Sho* soybeans, the major ingredient of *sho*, are mentioned in the *Daizen-ge* as follows:<sup>3</sup> "Upon arrival, check the quantities of *sho* soybeans and the like acquired in exchange for rice raised in the fields of local governments. Then store the beans and report the findings to the Imperial Household Ministry. Officials in charge shall be called to check and collect the quantities of their respective portions. Refer to the *Minbu-shiki* for details on the amount of the portions for offerings."

As this regulation shows, a type of soybean known as the *sho* soybean was collected from all over the country. The *Minbu-shiki*, a code for the office of national finance, tells us that twelve provinces including Oumi (present-day Shiga Prefecture) were ordered to offer *sho* soybeans as a "miscellaneous trading item." A total of 327 *koku* of *sho* soybeans was offered annually, with another 85 *koku* offered every three years (28.3 *koku* per year).<sup>4</sup> In total then, about 355 *koku* of *sho* soybeans was offered annually to the imperial court.

Of this quantity, 350 *koku* was used by the *Daizen-shiki* (the *Daizen-ge* indicates that 300 was used to make 150 *koku* of *sho*;<sup>5</sup> and 50 to make 50 *koku* of *miso*)<sup>6</sup>, with another 2.5 *koku* used by the *Naizen-shi*, the section in charge of cooking and serving for the imperial family.<sup>7</sup> Total consumption came to 352.5 *koku*, almost equal to the volume supplied from all over the country.

The tribute of *sho* soybeans from the provinces seems to have been dried in the sun before being processed. Reports (*Kamon-shiki* in the *Engishiki*) tell us that six straw mats were prepared annually "to dry *sho* and *miso* soybeans" in the *kamon-ryo*, the department of ceremonial arrangements and cleaning. To produce *sho*, the *sho* soybeans were mixed with *kome koji* (malted rice), glutinous rice, wheat, sake and salt. The yield for *sho*, relative to all ingredients used, was 29 percent. (Glutinous rice for employees was not used. We do not know whether water was added.)

## Sho and Sai-sho

The *Engishiki* often refers to *sai-sho* as well as *sho*. It tells us how to make *sho*, but we cannot determine the recipe for *sai-sho* from it. Investigating the relationship between the two, I found the following facts in the *Daizen-shiki* and



The proper positioning of *shi-su* (four condiments) on the table, as depicted in *odaiban-sueyo-ezu*, in the *Chu-ji-ruiki*, dating from the late Kamakura period.

the *Naizen-shiki*:

1. When *sho* and *sai-sho* appear in the same record, *sho* always appears first. *Sho* seems to have been offered to those of higher rank, while *sai-sho* seems to have been provided for those of lower rank.
2. It is suggested that *sho* was used for a range of foods, including fresh vegetables, rice crackers, delicacies, seaweed, pickles, soup and thin twisted noodles.<sup>8</sup> *Sai-sho* was used only for making pickles.
3. Most *sai-sho* was for pickling, reportedly used with *sho* for all pickles, including *sho-zuke-uri* (melon pickles with *sho* seasoning) and *sho-nasu* (eggplant pickles with *sho* seasoning). *Sho*, however, is cited in only two records as being used together with *sai-sho* in pickles offered to the imperial family. *Sai-sho* thus seems to have been indispensable for seasoning pickles, while *sho* was added only in special cases.
4. The *Daizen-ge* also reports that *sai-sho* was used as a sauce for making pickles with seafood such as abalone.
5. The consumption of *sai-sho* by the *Naizen-shi* was very limited. Most of this consumption was for pickles.

*Sho* was made from selected ingredients for court use in accordance with the General Instructions and Recipes in the *Engishiki*. It must have been considered a precious liquid seasoning, since it was used for people of higher rank and for various purposes, including the preparation of pickles. The annual yield of *sho*, 150 *koku*, is almost equivalent to 27 kiloliters in the present metric system. The daily consumption comes to only about 30 liters. The dregs of *sho* were recycled to make *ten-sho*.<sup>9</sup>

*Sai-sho* means "*sho* still containing dregs." The simplest hypothesis is that liquid *sho* was made from *sai-sho* and that *ten-sho* was a kind of by-product made from *sho* dregs, just like the second-*tamari* of today. However, the truth may not be so simple. Most of the *sho-daizu* (300 *koku*) collected from all over Japan was used to make *sho* according to the recipe for the imperial family. The resulting *sho* amounted to 150 *koku*, or one-half that of the ingredient *sho-daizu*, which makes it difficult to hypothesize that *sho* was produced from *sai-sho*. Secondly, the *Engishiki* indicates that an enormous amount of *sai-sho* was consumed and that it was for uses (i.e. pickles) other than those of *sho*.

I have prepared a table of uses and quantities for *sho* and *sai-sho*. The numbers in the table are *sho* quantities consumed per year (unit: *gou*, about 70cc). “*Daizen-shiki-Related*” is the quantity used or provided by the *Daizen-shiki*. “*Naizen-shi-Related*” is the quantity used in the *Naizen-shi*. “Other” refers to quantities not stated in the *Daizen-shiki* (the record), but apparently provided by the *Daizen-shiki* (the office). The total consumption figures are approximate. They include some estimates, unaccountable allowances and temporary consumption (e.g., for the three-year purification period for a daughter of the new emperor before moving to Ise Shrine following the coronation. There were other temporary uses that are impossible to estimate.) In cases where the number of employee counts is obscure, the portion for one person has been adopted. Some cases cannot be included in the data, as quantities remain unknown, though it is clear that some level of use and/or supply must have existed. Based on these factors, actual consumption of *sho* and *sai-sho* might have been higher than the figures in the table.

### What is Sai-sho?

As seen in the table, the total annual consumption of *sho* and *sai-sho* must have been greater than 150 *koku*, the annual yield of *sho*. This fact indicates that *sai-sho* was manufactured through a different process than that used for *sho*. In addition, *sai-sho* was always used when pickles were made. It is also known that it was often provided along with *sho*. And it is impossible to identify *sai-sho* with *ten-sho*.<sup>10</sup>

These facts indicate that *sai-sho* had another use: because *sai-sho* means “*sho* still containing dregs,” it was probably prepared as a fermented seasoning in the *sho-in*, as well as supplied from the market. Here, the question that arises is why there is no reference to the yield or to a recipe for *sai-sho* in the *Engishiki*. It may be necessary to imagine the manufacturing process of *sai-sho* by referring to the General Instructions and Recipes; however, here I present my hypothesis. The government probably set strict criteria for *sho* yields and recipes in order to maintain adequate supply and quality levels for this precious seasoning. Half of the *sho* yield was for the imperial family; that is, they did not feel it necessary to set the same strict criteria for *sai-sho* as for *sho*, since it was produced on a large scale and was accessible on the

market. In any case, the *sho-in* must have manufactured liquid *sho* and unrefined *sai-sho*.

The *Engishiki* specifically delineated *sho* and *sai-sho* so that the government could classify these fermented foods and provide them to workers in accordance with social rank and conventional usage of foods. However, the word *sai-sho* appears only rarely outside the *Engishiki*; it is likely that this usage was not a common one, and that *sho* was a term referring to both refined and unrefined fermented *sho*.

The *Wamyō-sho*, an ancient Chinese-Japanese dictionary, defines *sho* as *tou-kai*. “*Kai*” means *shio-kara*, salted and fermented foods; thus *tou-kai* refers to fermented soybean products. To take another example, in the *Sanboku-kika-shu*, Toshiyori Minamoto’s (1055-1129) anthology prepared during his last years, there is a ballad relating to *sho*. The *Sanboku-kika-shu* is a valuable source of information on colloquial styles of the era. The ballad relates how a priest of the Buddhist monk Jogen’s acquaintance in Nara, catechized another priest, with results that fell short of expectations. Jogen expressed this failure by saying, “They made a catechism of *miso* and *sho*.” The phrase “*miso* and *sho*” is used to suggest a spoilage created by mixing the two together—it is a metaphor that draws on the similarity of the two seasonings.

### The Decline of Liquid Sho

During the Heian period, the *sho* section in the *Daizen-shiki* was producing liquid *sho* as well as unrefined *sho*. However, production of liquid *sho* decreased as the ancient aristocracy declined. The ancient *sho* and the soy sauce that was produced in the sixteenth century differ completely in the amount of wheat used as an ingredient. The *sho* cited in the *Engishiki* contains only five percent wheat (relative to soybeans), while the later form (i.e. soy sauce) contains almost equal amounts of wheat and soybeans. Indeed, this latter recipe is quite similar to those used today. The liquid *sho* used in ancient times seems to resemble today’s *tamari*, from the ingredients used. We know less about the differences in taste.

It is well known that *so*, an ancient Japanese cheese produced throughout the country, disappeared as the aristocracy declined. The same thing seems to have happened to liquid *sho*.<sup>11</sup> Below, I provide some data and associated analyses on the use of liquid *sho* from

### Annual Amount of Sho and Zansho Used according to the Engishiki

(Unit: *Gou*/approx. 180ml)

Section	<i>Sho</i>	<i>Zansho</i>	Total
<i>Daizen-shiki</i>	35,757	49,829	85,586
<i>Naizen-shi</i>	12,896	2,966	15,862
Others	10,341	44,233	54,574
<b>Total</b>	<b>58,994</b>	<b>95,828</b>	<b>154,822</b>

the Heian period to the Kamakura period (1185-1333).

1. The *Shissei-sho-shou* is a record of annual events in the regent’s family during the late Heian period. It reports that they used *miso*, salt and *nuka* (rice bran) for a soup containing seven vegetables on January 7. Soups are mentioned in the record at that time; however, how they were seasoned remains unknown. It is notable that they did not use *sho*. If liquid *sho* had maintained its position as a seasoning, it would have been used in the soup. No similar examples of *sho* usage appear in the record.
2. The *Chokan-ninen-sakutan-toji-ki* is a record of court ceremonies for the *Sakutan-toji* in 1164, the second year of the *Chokan* era. (The *Sakutan-toji* is the winter solstice that falls on November 1 of the lunar calendar, which occurs every 20 years.) *Shi-su*, a set of four seasonings, used to consist of salt, vinegar, sake and *sho* (in a liquid form). In this record, however, *shi-su* includes “*irori*” instead of *sho*.
3. The *Monshitsu yusoku-sho* is a book of codes and manners primarily for priests in the early Kamakura period. In its description of a “greatest feast,” *shi-su* can be seen on the table. However, *miso* is used instead of *sho* and sake is not included in the set.
4. In the *Chiri-bukuro* (a dictionary dating from the middle Kamakura period), *shi-su* is mentioned as being prepared at the table: it comprises the four condiments of salt, vinegar, sake and *miso*, rather than *sho*.
5. In the *Nichu-reki*, a record from the late Kamakura period, *shi-su* is described as a set of salt, vinegar, sake and *sho*. But during the writer’s day, *shi-su* was simplified, consisting only of salt and vinegar, though the word *shi-su* refers to four kinds of seasoning. The *ika-no mochi-no zu*, an illustration in this book, shows *shi-su* made of four seasonings; however, *sho* is replaced by “*irori*” there.
6. The *Chu-ji-ruiki*, a record of recipes and manners of cooking, reports that the *sho* in *shi-su* was sometimes replaced by *irori*, a broth of soybeans or

bonito.

7. The *Hyotajirui-sho* is a dictionary of meters in Chinese poetry compiled in the late Kamakura period. *Sho* appears here as *aemono*, foods mixed with some seasonings.

As the above list indicates, the use of *sho* as a liquid seasoning gradually disappeared; over time, *sho* evolved into so-called *name-miso*, or a relish form of *miso*.

(Notes)

1. Of 150 *koku*, 75 *koku* was used by the imperial family, while the rest was allotted for miscellaneous use.
2. A *koku* in this era was equivalent to the present 400 *gou*, or about 72 liters (Goichi Sawada, Numerical Research on Daily Home Economy in the Nara Period).
3. In the *Engishiki*, the soybean used in the *sho* recipe is not cited as the “*sho* soybean”; however, based on the fact that the “*sho* soybean” was used to make *sho* during the Nara period (refer to: A Study of Eating Habits in the Nara Period, by Shinryu Sekine), the soybean in the *Engishiki* probably refers to the *sho* soybean.
4. The expression “proceeding after every three years” might be interpreted as proceeding at intervals of three years; that is, once every four years. To meet the need for 350 *koku* of annual supplies, however, extra supplies must have been delivered every three years.
5. The yield of *sho*, relative to the amount of soybeans used, was 50 percent (General Instructions and Recipes in the *Engishiki*).
6. According to the General Instructions and Recipes, the amount of *miso* yielded was equal to that of *sho* soybeans used.
7. In the codes of *Naizen-shi*, “2.5 *koku* of *sho* soybeans” is cited as the requirement for making 10 *koku* of each of two kinds of seafood pickles.
8. In the original record of the *Engishiki*, *sho* appears only in preparations for pickles and thin twisted noodles.
9. *Sai-sho* was used to make *ten-sho*, and was supplied to craftsmen and others.
10. We cannot know how *sai-sho* was provided and used, since there is no specific example on record. Two examples of *ara-bishio* (crude *sho*) appear in the *Daizen-shiki*. It is possible that this is equivalent to *ten-sho*, given its name and usage; however, we should not jump to this conclusion on the basis of such rare examples.
11. The Tax Office Codes list foods offered to priests in local public temples. *Sho* can be seen in the “annual offerings” and “offerings for seasonal feasts.” These local offerings were likely supplied using part of the “taxes” or “offerings” for local public temples.