

History of sake

Learning outcomes

- Knowledge of the history of sake

10.1 Ancient times

If we think of the history of sake as the history of Japanese liquor or of rice-based liquor, the origins go back as far as 2,500 years ago when rice growing became prevalent in Japan.

The oldest written records about Japanese sake are found in third-century Chinese history books. These state that the Japanese have a taste for sake and are in the habit of gathering to drink sake when mourning the dead. There are several stories about sake, some mythical, in the historical records compiled by the imperial court in the eighth century. In the so-called *Fudoki*, which record the history and produce of the provinces in this era, there is reference to sake made using mold, providing insights into how sake made with rice and koji was produced in those days.

The tenth century legal book entitled *Engishiki* records details of ancient sake-making methods. At that time, sake was produced mainly at the imperial court, either to be drunk by the emperor or for ceremonial use.

10.2 Middle ages: Establishment of sake-brewing technology

In the 12th to 15th centuries, sake came to be brewed at Shinto shrines and Buddhist temples, and the techniques of sake brewing in use today were largely developed during this period.

This was when brewers started using lactic acid fermentation, making shubo (seed mash) used to grow yeast, relying on lactic acid to inhibit microbial contamination, and then adding koji, water and steamed rice in mashing stages to the shubo. Hitherto, brewers had used polished rice only for koji production, otherwise using unpolished rice to make sake. During this period, however, they started producing *morohaku* sake, or sake made using polished rice both for the koji rice and the steamed rice added to the mash. The diaries of Buddhist priests in the 15th and 16th centuries record the use of hi-ire (pasteurization) with morohaku sake.

Along with these advances in brewing technology, innovations in woodworking technology enabled construction of large 1,500 liter vats, facilitating mass production of sake. This led to the full-fledged production of sake by specialists not affiliated with temples or shrines in the 16th century (known as the Muromachi period).

10.3 Early modern period: Heyday of *kudarizake*

In the 17th century, during the early Edo Period, the morohaku produced near Osaka in Itami (now Itami City in Hyogo Prefecture) and Ikeda (now Ikeda City

in Osaka Prefecture) found its way into the three major cities of Kyoto, Osaka and Edo (now Tokyo). It became especially popular in Edo, where it was called *kudarizake*. Production of *kudarizake* reached 38,000 kiloliters at the beginning of the 18th century. This is equivalent to annual per-capita consumption of 54 liters among the citizens of Edo, including the samurai. Large amounts of sake were packed in casks and transported by sailboat. At the beginning of the 19th century, vessels transporting sake raced each other to see which could enter Edo port the quickest. Reportedly, they made the journey from the Kobe area to Tokyo in just three to four days, compared to the usual 10 to 30 days in those days.

Eighteenth century sake production involved using about the same amount of polished rice (1.3–2.3 tons) per batch as now and the mashing process was practically the same three-stage mashing process currently used. However, the ratio of added water to polished rice was only around half. This suggests that the people of that era preferred heavy, sweet sake with a high viscosity. The records of the period also indicate that wood ash was added to the moromi to reduce the acidity before filtering and also refer to the addition of spirits made by distilling sakekasu, which corresponds to the current practice of adding alcohol. The amount of spirits added was equivalent to around 10% of the weight of rice, resulting in sake with a high alcohol content that was resistant to spoiling.

The start of the 19th century saw the center of sake production shift from Itami, Ikeda and nearby areas to Nadagogo. (Nadagogo refers to the five areas covered by modern-day Nishinomiya and Kobe cities in Hyogo Prefecture.) The techniques used for making Nada sake featured the use of so-called *miyamizu* (water obtained in Nishinomiya, Hyogo Prefecture), which was discovered around 1850, waterwheel milling and the concentration of sake brewing in the colder part of the year. *Miyamizu* contains large amounts of phosphates and potassium, which promote the proliferation of koji-fungi and yeast, and strengthen moromi fermentation. The shift from foot treadles to waterwheels for rice milling not only increased productivity, but boosted quality by increasing the level of milling (i.e., lowering the *seimai-buai*). At the same time, the concentration of sake production in the winter, when there is less risk of bacterial contamination, facilitated stable production of high-quality sake. Mashing recipes came to resemble those used in modern sake brewing and Nada flourished as the center of Japanese sake brewing, a status it retains to this day.

10.4 Modern period

From around the middle of the 19th century, the arrival in Japan of European scholars heralded the start of scientific research on sake. The German Oskar Korschelt, who landed in Japan in 1868, and the Briton Robert William Atkinson wrote reports expressing amazement at the fact that pasteurization had been practiced by sake brewers in Japan since early times using techniques similar to Pasteur's low-temperature pasteurization. In 1904, the national institute (now the National Research Institute of Brewing) was established and made an important contribution to the development of sake brewing in subsequent years. Notably, the invention in 1909 of *yamahaimoto*, an improved version of the *kimoto* style, and *sokujomoto*, which utilizes lactic acid, contributed to the stabilization and streamlining of sake production, with the result that *sokujomoto* is now the most widely used method of producing *shubo*. Quality appraisal programs were initiated with the aim of raising the level of brewing technology in 1911, the

first national competition (now *Zenkoku Shinshu Kanpyo-kai*, National New Sake Awards) was held, an institution that continues to this day.

Subsequent developments affecting brewing technology included breakthroughs in understanding the science of fermentation, the scientific use of microorganisms, the advent of power-driven rice-milling machines, a shift from wooden vats to enamel tanks, and the bottling of sake for shipment. The period during World War II and the immediate postwar period saw bold changes in production methods, such as the practice of adding alcohol to sake. A wave of modernization in production processes in the 1960s and the introduction of machinery resulted in further streamlining.

More recent trends affecting sake include the notion of "local production for local consumption," as regional areas take another look at the skills and assets they have to offer, leading to the development of new varieties of sake rice and unique types of sake yeast used in fermentation.



Figure 10.1 Sake brewing in the Edo Period (19th century)