

Sake Production Process

While region and ingredients are also important in determining a sake's profile, the production process is perhaps the most important factor. Not only is the toji's meticulous attention necessary during each step to ensure a high quality product, but several key choices along the way will result in drastically different styles of sake. This chart provides an outline of the basic brewing process, as well as an indication of where changes to this basic process yield different styles.

BROWN RICE: There are around 100 strands of sake rice, although only about a dozen are widely used. Each strain has its own unique attributes, both in terms of size and taste. All rice, even the rice we eat, is brown when harvested, only becoming white after polishing.

RICE POLISHING: An extremely important step, polishing removes the harsher elements found on the outer layers of the grain, and leaves only the starches concentrated in the center. The milling percentage also determines the classification of a sake, from futsuu-shu, which has no requirement but is typically milled to about 80% of original size, to daiginjo, which is milled to 50% or less. The more of the grain is milled away, the more complex, delicate and aromatic the resulting sake becomes.

RICE WASHING/SOAKING: As when rice is cooked, sake rice needs to be washed and soaked before it can be used. This is the first of several steps in which water plays an important role.

RICE STEAMING: Again similar to cooking, the rice must also be steamed in order to soften the grains. This steamed rice is then used in several different parts of the production process.

KOJI: Koji is the mash that results when steamed rice is sprinkled with koji-kin, a special kind of mold. As the koji-kin spreads over the rice, it begins to convert the starches found in the rice into sugars.

YEAST STARTER: Also known as shubo, the yeast starter is formed by adding yeast to a mixture of koji and water. After time, the yeast in this mash becomes highly concentrated.

Yamahai/Kimoto: These terms refer to traditional brewing methods in which no lactic acid is used to create the yeast starter. This requires more time and labor, but the result is often an earthier, tangier sake.

FERMENTATION: Finally, the koji and yeast starter are combined with additional steamed rice and water to begin the process known as multiple parallel fermentation. As the koji breaks the starch down, the yeast converts the resulting sugars into alcohol. By controlling the temperature of the mash, the brewers can determine how active the yeast is, and thereby change the profile of the sake. The entire process can take anywhere from about 20 to 40 days.

PRESSING: After the fermentation process is complete, the sake is pressed to separate the liquid from the remaining parts of the rice grains and other solids. A variety of pressing methods are used, from large pumps to more traditional wooden presses.

1ST PASTEURIZATION: Most sake is pasteurized before storage to kill off any remaining bacteria and allow the sake to be stored at higher temperatures.

Nama/Namachozo: Both these types of sake are not pasteurized at this point in order to keep a certain freshness which is lost during heating. They must be kept refrigerated.

STORAGE: At this point the sake is usually left in the brewery for several months before being released. This is typically done in large tanks, although some brewers prefer to bottle age their products.

Koshu: This style of sake is kept in the brewery and aged for about 2 to 5 years. While aging practices differ among breweries, the result is typically a sake with more intense flavors and aromas.

FILTERING: For many sakes, a carbon powder is added and the liquid is then run through a filter, removing unwanted flavor elements and any color the sake might have. However, particularly for higher grade sake, this step sometimes removes some of the desirable elements of the sake as well, and is therefore not performed.

BOTTLING/2ND PASTEURIZATION: Most sake is bottled right before shipping, although as noted before, some sake is also stored in bottle. At this point, it is usually pasteurized again to ensure that the product can withstand shipping conditions.

Nama: As opposed to namachozo, which undergoes the final pasteurization, nama sake is left completely unpasteurized.

