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# Utilization of local resources in sake brewing and their potential

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## Abstract

This paper focuses on Japanese Sake production. Japanese Sake is made using rice and rice malt as the main ingredients, and undergoes a unique fermentation process known as multiple parallel fermentation, which is unique among brewed alcoholic beverages. Nicolas Baumert (2011) has introduced this as something unique to Japan.

As domestic consumption of sake has fallen sharply, small and medium-sized sake breweries in particular have been taking on new initiatives to survive. For example, there has been a shift to producing high-quality sake. This is shown in the production of "Special Designation Sake". In addition to being particular about the rice used as the raw material, they are pursuing measures such as increasing the rice polishing rate to reduce unpleasant flavors. In recent years, exports of this high-quality sake have also been progressing.

The rice used in sake brewing is called sake-brewing rice. There are about 120 varieties throughout Japan, which have been developed mainly by public testing and research institutes. Unlike wine grapes, rice can be stored for long periods and transported long distances. For these reasons, "Yamada-Nishiki", the most suitable variety for sake production, is used as an industrial ingredient in sake breweries all over the country. On the other hand, there are also many initiatives that emphasize locality, such as using locally grown rice to make high-quality sake. This is similar to terroir in wine, and also extends to maintaining Japan's rural landscape and revitalizing local communities.

In addition, the reuse of rice bran and sake lees generated during sake production, that is, upcycling, is also progressing. Originally, rice bran was used as fertilizer and animal feed, as well as an ingredient in sweets. Sake lees were also used in traditional Japanese meals. However, as lifestyles change and these values are being lost, new value is being added through product development. We will consider the implications that these new trends bring to regional values and the circular economy.

**Keywords:** Japanese Sake, revitalizing local communities, local values, circular economy

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