Let's all toast Hyogo!

-The Center of Production of Sake and Sake-brewing Rice-6

Essence of Tradition

Skills and Efforts to Enhance the Capabilities of Mold

Exploring the Science of an Exquisite World

In the Nada Gogo district a number of breweries are grouped together to and brew sake using riverbed water that flows down from the Rokko Mountains (Nada and Higashinada Wards, Kobe City; Nishinomiya City). Here in the nation's largest sake production site, where one-fourth of Japan's sake is produced, large-scale automatic equipment and air-conditioners enable mass production throughout the year, however, with that said, traditional sake production methods are also used. The relevant methods, however, do require greater care and efforts than local-specific brewing processes.

"The rice provides Kenbishi with a strong taste and clear umami. Our principal policy is to continue providing this sake as it has found favor for a number of years now." Masataka Shirakashi (aged 39) the Managing Director of Kenbishi Sake Brewing Co., Ltd. (Higashinada Ward, Kobe), explained the motto underlying their company, which continues to brew sake for about 500 years now. The company doesn't have an advertising department. The money received from customers for its products are used to procure the necessary ingredients and in the efforts to make the sake as required. The main ingredient is the best brand sake-brewing rice, Yamada Nishiki produced in Hyogo. The company uses a method of preparation referred to as "Yamahai," which is a traditional process in which advantage is taken of natural microorganisms.

Kenbishi Sake Brewing does not produce sake throughout the year but only in winter time, thereby taking advantage of the cold temperatures. This method is referred to as "Kanzukuri." Eighty workers flock to the brewery from all over the country in October and remain there for about half a year.

The workers start the day by steaming the rice at 2 a.m. They stated that the rice must be steamed at that time because of the subsequent processes. The steamed rice is then cooled down using the wind from the Rokko Mountains, and which is then left for the microorganisms to activate.

Sake brewing requires lactic acid from lactic acid bacteria that kills various forms of bacteria, as well as Koji mold that decomposes rice into sugar and other compounds, and also sake yeast which produces alcohol from the sugar above.

Sake brewers currently mainly use "Sokujo-zukuri," a method in which lactic acid is used directly and the intermediate processes omitted. However, with "Yamahai-jikomi," Kenbishi's method of preparation, they wait for natural occurring lactic acid bacteria to develop and facilitate the fermentation process using only the sake yeast that has been present in the brewery for such a long time. The process takes 40 days, which is more than twice time Sokujo-zukuri requires.

They use a variety of wooden tools in the preparation process.

"We prefer wooden tools because they provide the best environment for microorganisms in terms of changes in temperature and other factors. Everything revolves around creating robust Koji mold and sake yeast," emphasized Kazuhiko Takenami (aged 39), a Quality Control Office staff member.

Kiku-Masamune Sake Brewing Co., Ltd. (Higashinada Ward, Kobe), which was founded more than 350 years ago, strictly observes a sake production method using "Kimoto" (special sake yeast) that was established during the Edo era in the Nada area.

Kazuhiko Takenami checking the quality of freshly extracted sake (Kenbishi Sake Brewing Co., Ltd., in Higashinada Ward, Kobe).

As with the Yamahai method, natural lactic acid bacteria is used but also a process referred to as "Yamaoroshi," in which the steamed rice is carefully ground. Workers from other breweries that produce sake all year round together with the Kimoto producing workers during winter time, i.e. Kanzukuri period.

"Vigorous yeast remains active until the sake brewing process has completed. There are no dead yeast cells, so the resulting sake contains less unfavorable flavors," said Toshinari Takahashi (aged 47), the Manager of the Production Control Group.

With the Yamaoroshi process they use traditional shallow wooden buckets called "Hangiri Oke." This

Kanzukuri season has finished and Hangiri Oke or shallow wooden buckets are being stored away after having the astringent juice of persimmons applied to them as part of their maintenance. They are essential in producing Kimoto
(Kiku-Masamune Sake Brewing Co., Ltd. in Higashinada Ward, Kobe)

wooden tool serves as a habitat for natural lactic acid bacteria that then make the environment suitable for the growth of yeast. Kiku-Masamune also carefully selects sake casks because they symbolize a wood culture. In the situation nowadays where the number of suppliers who specialize in making sake casks has been decreasing, the company endeavors to ensure the succession of wood tool production techniques by employing three craftsmen.

Their predecessors in Nada produced high-quality sake via use of the features of wood without actually knowing about the existence of microorganisms. Manager Takahashi admires their wisdom. The deeper he studies the science of their Kimoto-type sake production method, the greater clarity he gains of the exquisiteness and profundity of the sake production technique to extract sake tastes from rice and the capabilities of the various microorganisms, which also keeps him motivated to explore the world of sake production even more.

"Sake brewing requires more complicated techniques than wine or beer brewing, thus leaving a lot of space to improve our techniques. The method used to produce Japanese sake is really quite old but also in reality quite novel.

(Kazuyoshi Tsujimoto)

※Head of The Kobe Shimbun Business News Desk

兵庫に乾杯

日本酒と酒米の聖地

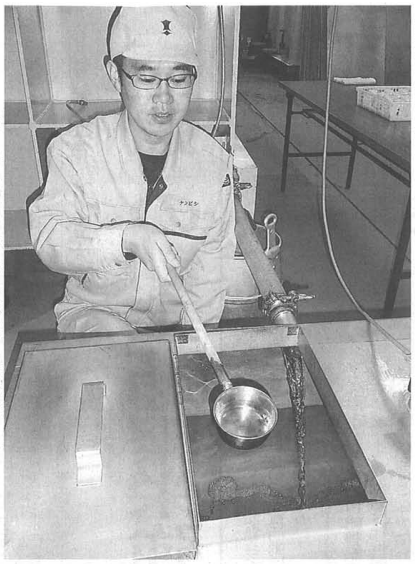
6

伝統の神髄

菌の力引き出す 技と手間

精妙な世界 科学で探究

六甲山系の伏流水で醸す酒蔵の集積地、灘五郷（神戸市灘、東灘区、西宮市）。国内生産量の4分の1を占める全国一の産地は、大型の自動化装置や空調で大量生産を可能にした四季醸造の一方、地酒の蔵よりも手間のかかる伝統的な酒造りの現場でもある。「米の味が溶け込み、うま味のしっかりしているのが剣菱の酒。時門はない。客からの代を超えて飲まれてきた金は、求められる酒にこの酒を提供し続ける必要な原料と手間にかける。原料は最高級の酒造（神戸市東灘区）の白樫政孝専務（39）がみは、自然の微生物の語るのは、500年続力を生かす伝統的な く企業の根幹にある型「山廃」だ。



搾りたての酒の出来具合を確認する武波和彦さん＝神戸市東灘区、剣菱酒造

酒造りは四季醸造を採用せず、冷涼な冬の気候を生かした「寒造り」のみ。10月には80人の蔵人が全国から集まり、約半年間泊まり込む。

1日の作業は午前2時、米を蒸すことから始まる。蒸した米を冷たい六甲おろしで冷やし、その後の微生物の活動のため、最適な時刻という。

日本酒造りには、米を糖などに分解する麹、その糖でアルコールを造る酵母とともに、雑菌を死滅させる乳酸菌の乳酸が要る。

現在は、乳酸そのものを投入して工程を省いた「速醸造り」が主流だが、剣菱の「山廃仕込み」は天然の乳酸菌の増殖を待ち、蔵付きの酵母だけで発酵させる。このため速醸の倍以上の40日間が必要となる。

仕込みには多くの木製道具を使っている。「温度調節などの点で他の材料よりも微生物の環境にいいから。全ては力強い麹と酵母のため」と品質管理室の武波和彦さん（39）は強調する。

創業350年余の菊正宗酒造（同区）は、江戸時代に灘で確立された「生酛」造りを守っている。

天然の乳酸菌を生かすのは山廃と同じだが、蒸した米を丁寧にすりつぶす「山卸」という作業工程がある。寒造りの期間は、四季醸造の蔵で働く社員もこの作業に回る。

寒造りの時期が終わり、柿渋を塗って保管される半切りおけ。生酛造りには欠かせない＝神戸市東灘区、菊正宗酒造

「元気な酵母は酒が完成するまで働いてくれる。酵母の死骸がないので雑味が少ない」と生産管理グループの高橋俊成課長（47）。

山卸では底の浅い「半切りおけ」を使い続ける。この木製道具は、酵母が働きやすい環境をつくる野生の乳酸菌のすみかとなっているからだ。菊正宗は木の文化として酒樽にもこだわっている。専門業者が減少する中、職人を3人雇用して技術の継承に努める。

灘の先人たちは微生物の存在を知らない時代に、木の特性を生かして高品質の酒を醸していた。高橋課長はその知恵に驚く。そして、生酛造りを科学的に分析するほど、米の味やさまざまな微生物の力を引き出す日本酒の精妙な世界とその奥深さを感じ、探究心をかき立てられるという。

「ワインやビールに比べて製造技術が複雑だから、まだまだ技術が発展する余地が大きい。日本酒は古いようで実は新しい」（辻本一好）

神戸新聞 5月7日