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INTERVIEW

“We are fascinated by the art of Japanese koji fermentation”

Interview with Caroline Kulangara, founder of *Brauerei Ferment*

[Brauerei Ferment](#), established in Basel in 2018, specializes in traditional Japanese koji fermentation techniques. The brewery's primary product is 'koike shoyu', a light soy sauce crafted from high-quality Swiss organic ingredients, including whole soybeans and roasted wheat. For this edition of our newsletter, we interviewed Ms. Caroline Kulangara, the founder of *Brauerei Ferment*.



Caroline Kulangara founded *Brauerei Ferment* in 2018 © *Brauerei Ferment*

What inspired you to start producing Japanese-style fermented products in Switzerland?

Japanese fermentation heavily relies on noble mold called *Aspergillus oryzae*. Koji produces powerful enzymes that break down proteins and starches, creating complex flavors. This fermentation method is crucial for many Japanese fermented foods like miso, soy sauce, sake, amasake, shochu, shio koji and mirin. We are fascinated by the art of Japanese koji fermentation, and the exquisite products derived from it. Our primary products include two distinct varieties of kioko shoyu (usukuchi shoyu and koikuchi shoyu). [Kioko shoyu refers to a traditional Japanese soy sauce that is fermented in wooden barrels made from cedar wood.](#) This method of production has become rare, with only about 1% of Japanese soy sauce being made accordingly. The term 'kioko' translates to 'wooden vessel', highlighting the unique fermentation process that contributes to the complex flavor profile of the resulting product. Our inspiration was led by the unique

flavor profile of traditional brewed kioko shoyu, where saltiness, sweetness, acidity, and bitterness harmonize beautifully with its rich umami essence. As a microbiologist, I was particularly fascinated by the traditional kioko shoyu brewing process. This method involves the interplay of various microorganisms, including molds, bacteria, and yeasts. The complex microbial ecosystem that develops during the fermentation process is not only scientifically intriguing but also crucial for creating the deep, nuanced flavors characteristic of traditionally brewed soy sauce.

What sets your Swiss-made soy sauce apart from imported Japanese soy sauce?

Japanese kioko shoyu represents only a small fraction of Japan's soy sauce exports. As a result, it is not widely available in Switzerland. However, our goal is to deliver a product that matches the exceptional taste quality of authentic Japanese kioko shoyu. For clients living in Switzerland is important to emphasize that our kioko shoyu are brewed from carefully selected bio-certified Swiss ingredients. Great research performed by

Agroscope (Switzerland's center for agricultural research) for over 40 years focused on developing soybean varieties specifically adapted to Swiss growing conditions. The varieties of Swiss soybeans used are high in protein, low in fat and low quantities of lipooxygenases that my contribute to an unpleasant taste due to oxidation of fatty acids. It's important to note that *Agroscope* achieved these improvements through conventional crossing techniques, not genetic modification. The excellent quality of Swiss soybeans allows us to brew from the whole soybean. If producers cannot source this high-quality soybean, they resort to brewing with defatted soybean flour. The removal of various components from the soybean results in a less complex flavor profile in the final product. A Japanese soy sauce brewer once remarked: "A good soy sauce you only produce from the 8th generation onwards." This statement highlights a profound truth: It is not only the craftsmanship skills that shapes high-quality soy sauce, but rather the microbiological history embedded within the kioko. *Brauerei*

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INTERVIEW



An example of a soy sauce produced by Brauerei Ferment © Brauerei Ferment

Ferment is still in the early stage of this microbial journey.

Some of our readers might not know what ‘shio koji’ and ‘rice koji’ are. Could you explain the process of making them and how they can be used in daily cooking?

Beside our *kioke shoyu* we produce small amount of fresh rice koji and shio koji. Rice koji is steamed rice that has been inoculated with the mold *Aspergillus oryzae*. For this product, we use a different strain of *Aspergillus oryzae* compared to the strain used for our *kioke shoyu*. The fresh rice koji can be used for homemade miso, shio koji and *amasake* production. Shio koji is rice koji immersed in salt water, and enzymes are released from the mold into the solution. This resulting product is rich in starch-degrading and protein-degrading enzymes. These enzymes can be utilized to modify textures, tenderize meat, and serve as a pickling agent for vegetables.

What products are the most successful?

Our *kioke shoyu* (*usukuchi shoyu* and *koikuchi shoyu*) are the most successful products. Soy sauce is a well-established

ingredient in Swiss households and gastronomy. Additionally, there is a growing interest in shio koji and rice koji, particularly within the Swiss culinary scene.

What challenges did you face in adapting traditional Japanese fermentation techniques to the Swiss climate and environment?

We believe there is no necessity to adjust our fermentation process to accommodate the Swiss climate. Our fermentation occurs at the current room temperature, without any heating in winter or cooling in summer.

How do you balance traditional fermentation methods with modern production techniques?

Our brewing process remains traditional in any part of the fermentation process. This process involves a significant amount of handwork ensuring that the microorganisms responsible for fermentation grow under optimal conditions, aerating the koji or stirring of the *moromi* to facilitate gas exchange. We integrated machines already existing in our tradition for certain processes. We utilize a „fermentation interrupter“ - a device typically found in bakeries to control temperature and humidity during mold growth to obtain high koji quality. To obtain our raw sauce, the *moromi* is wrapped in cotton cloth and pressed using a standard fruit press.

How do you see the role of *Brauerei Ferment* in promoting cultural exchange between Switzerland and Japan?

The traditional production of *kioke shoyu* has declined dramatically, now accounting for only about 1% of Japanese soy sauce production. This decline is accompanied by the decline in expertise in *kioke* barrel-making and the decrease in the continuation of this traditional craft among younger generations. In 2011 the *Kioke Craftsmen Revival Project* started, which is an initiative aimed at preserving the traditional method of

brewing soy sauce in wooden barrels. This project was started by Yasuo Yamamoto of Yamaroku Soy Sauce on Shodoshima Island, Kagawa Prefecture. The project aims are to preserve the traditional method of soy sauce production, to ensure the survival of authentic barrel-aged soy sauce for future generations, and to maintain the „memory of taste“. We strongly endorse these objectives and hope that by offering *kioke shoyu* products and by introducing Swiss consumers to the unique and complex flavor profile, explaining the *kioke shoyu* manufacturing process and beautiful craftsmanship, we can help increase awareness and appreciation for this traditional craft and to inspire a new generation of food enthusiasts to explore the rich world of artisanal soy sauce. We hope to raise curiosity and foster a deeper appreciation for Japanese culinary traditions.

Your products can be bought in various different stores throughout Switzerland. How do you select what stores or companies you want to work with?

We deliver to all stores or restaurants interested in our products. Our experience has shown that we primarily attract small stores that emphasize on local products, as well as restaurants committed to local producers.

Are there any plans to expand your product line or distribution in the near future?

We are currently increasing our yearly production of 1200 Liters to 1800 Liters, the newly ordered *kioke* have just arrived! Looking ahead, we plan to expand our range of *kioke shoyu* varieties, which will include *tamari shoyu*, brewed exclusively from soybeans with no wheat added; *shiro shoyu*, featuring a higher ratio of wheat to soybeans, and *saishikomi shoyu*, a double-brewed soy sauce.

Thank you for the interview!

Results of the Federal Vote of 22 September 2024

A [federal vote](#) was held on 22 September 2024 in Switzerland. Votes were held on one initiative and one reform: “*For the future of our nature and our landscape*” (biodiversity initiative) and “*Reform of the occupational pension system*”. Both proposals faced substantial opposition from the electorate and were ultimately rejected.

Biodiversity Initiative

The biodiversity initiative was rejected by 63.03% (voter turnout: 45.20%). The primary goal of the biodiversity initiative was to safeguard nature, landscapes, and urban environments. It called for increased funding and the establishment of more protected areas for biodiversity. Specifically, it sought to hold cantons more accountable for preserving the distinctive characteristics of landscapes, habitats, and local identities. Furthermore, it emphasized the need for stringent protection of the essential elements that define valuable biotopes, landscapes, and urban settings. Both the Federal Council and the Parliament had called on the public to oppose this initiative, since, according to them, it would have restricted the scope of action of the federal government and cantons too much. The campaign against the initiative also highlighted fears that it would negatively

impact food security and hinder business development, particularly in rural areas where economic activities are closely tied to land use.

Reform of the Occupational Pension System

The reform of the occupational pension system was rejected by 67.12% of the vote (voter turnout: 45%). It aimed to implement measures that would ensure a more secure provision of future pensions. Currently, for every CHF 100'000 of retirement capital, the annual pension must be at least CHF 6'800. The reform called for this minimum to be reduced to CHF 6'000. In addition, the insured salary was to increase so that younger generations could save more retirement capital. The pensions paid to people who have already retired would not have been affected by the reform. The Federal Council and Parliament had called on the public to accept the reform. Opposition arose from left-wing parties and trade unions who feared that such changes would lead to lower pensions while requiring higher contributions from workers and employers.

Sources: [admin.ch](#)

動向

SITUATION

Highlights from the 2024 Top 100 Swiss Start-Up Awards

The 14th edition of the *Top 100 Swiss Start-up Awards* were held in Lausanne on 4 September 2024, showcasing Switzerland's most promising start-ups according to a 100-person jury consisting of experts and start-up investors. The EPFL spin-off *DePoly* was crowned as the winner of the night, followed by *Corintis* and *Yokoy Group*.

The podium places in the TOP 100 come from three distinct sectors: cleantech, engineering, and fintech. *DePoly* is addressing the plastic waste crisis with a patented technology that converts this waste into new raw materials. The company is currently building an industrial demonstration plant in Lower Valais. In second place, *Corintis*, also an EPFL spin-

off, has developed a semiconductor cooling system, which is crucial in managing the increasing heat challenges affecting data centers, particularly those intensified by AI applications. Its goal is to put forward a comprehensive chip-cooling solution by next year (2025), which would allow for parallel implementation of chip and cooling design. Its financial position has also been boosted thanks to securing a significant number of orders recently. *Yokoy Group*, ranked third, assists large companies in reducing costs through intelligent expense management solutions. The Zurich-based company has rapidly established itself as a leader in the industry, boasting over 500 clients and an impressive annual growth rate of 280%, mak-

ing it the second-fastest growing start-up in Central Europe. The company is particularly adept at navigating complex regulatory frameworks.

Overall, there were 16 cleantech startups, 15 biotech and engineering start-ups, 14 ICT start-ups and 13 start-ups in medtech represented in the Top 100, highlighting the diversity of in Switzerland's start-up ecosystem. 40 start-ups were listed for the first time this year. This year's Top 100 Swiss Start-up Awards were organized by *Venturelab* in collaboration with *UBS*, *SLX Swiss Exchange*, and *Swiss Venture Club*.

Sources: [Top 100 Swiss Start-Ups](#); [swisstrade](#); [startupticker.ch](#)

行事

EVENT

Tokyo-based Start-Up Sakana AI Gets Major Investment Boost by US Chipmaker Nvidia

革新

INNOVATION

The Tokyo-based start-up *Sakana AI*, which was founded by researchers from *Google*, announced on 4 September 2024 that it has raised funds totalling 20 billion yen for the business development stage, known as “Series A”, from multiple investors, including US computing infrastructure giant *Nvidia*, which made the largest contribution.

Growing geopolitical tensions are undoubtedly fueling interest in *Sakana AI*. This unusual partnership between a Japanese AI firm and a major US chipmaker underscores the intensifying global race to develop cutting-edge generative AI technologies. Founded in July 2023 by former *Google* researchers, *Sakana AI* had previously raised approximately 4.5 billion yen in January 2024 from prominent investors including *NTT*, *Sony Group*, and *Coursera*. With the latest funding round, led by *New Enterprise Associates*, *Khosla Ventures*, and *Lux Capital*, *Sakana AI*'s valuation has now surpassed the \$1.1 billion unicorn threshold, making it one of the fastest Japanese start-ups to achieve this significant milestone.

The collaboration with *Nvidia* will focus on several key areas. The companies plan to devise new techniques for more efficient foundation model development, leveraging *Nvidia*'s advanced GPU technologies. Additionally, *Sakana AI* will assist in establishing data centers in Japan, ensuring that the country maintains a competitive edge in AI development using *Nvidia*'s latest solutions. Furthermore, the partnership aims to elevate the profile of Japan's AI community by organizing events, hackathons, and outreach programs at universities.

As geopolitical risks escalate, particularly between the USA and China, Japan, a country that relies almost entirely on energy imports, seems to be even more motivated to strengthen its own AI ecosystem by exploring more energy-efficient ways to catch up in AI.

Sources: [The Japan Times](#); [Nikkei](#); [sakana.ai](#)

Agenda

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AGENDA

✓ Stay tuned!

JETRO is a government-related organization that works to promote mutual trade and investment between Japan and the rest of the world. Originally established in 1958 to promote Japanese exports abroad, JETRO's core focus in the 21st century has shifted toward promoting foreign direct investment into Japan and helping small to medium size Japanese firms maximize their global export potential.

The JETRO Switzerland Newsletter can also be viewed and/or downloaded online: <http://www.jetro.go.jp/switzerland/newsletter>

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