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Keio University

**Sake Project to Inherit the Sake from an Old Brewery Destroyed by
Earthquake to Develop a New Brewery
—Keio University Collaborates with Local Sake Breweries and Fukushima
University on Food Chain Demonstration Research from Production to Sales—**

The Centre for Finance, Technology and Economics at Keio (FinTEK) (Director: Teruo Nakatsuma) and the Center for Social Innovation in Market Design (SIMDI) (Director: Morimitsu Kurino), both affiliated with the Institute of Economic Studies, the Faculty of Economics, Keio University, the Institute of Brewing and Fermentation (Director: Tsukasa Matsuda) at Fukushima University and Kinsuisho Sake Brewery Co. Ltd. will start a food chain verification study that covers the process from brewing to sales, in which sake from a damaged brewery will be used to brew aged sake at a new brewery. This will allow them to inherit the history and spirit of the old brewery and promote sales by adding one-of-a-kind value to the sake.

1. Background of Research

When a sake brewery is devastated by a large-scale disaster and has to relocate, it is vitally important to know how to pass on the history and spirit of the old brewery to the new one. Kinsuisho Sake Brewery was founded in 1895 and was the only sake brewery in Fukushima City, the capital of Fukushima Prefecture. Although the brewery had a long history, after it collapsed due to the 2022 Fukushima earthquake, it was relocated to Arai, Fukushima City.

In this project, we will start a food chain verification study that covers brewing to sales, in which sake from a damaged brewery will be used to brew aged sake at the new brewery. This will allow us to inherit the history and spirit of the old brewery and promote sales by adding one-of-a-kind value to the sake.

2. Content of Research and Future Developments

In this project, sake produced at the old brewery will be used to brew sake at the new brewery. Keio University will develop the demonstration of the sales of aged sake. FinTEK and Kinsuisho will develop the first digital asset of aged sake by using NFTs ⁽¹⁾. In addition, SIMDI will develop a sales platform based on auction theory and establish a system to sell the aged sake at a fair price.

Fukushima University will carry out research on brewing. In order to preserve the quality of sake from the old brewery, the team will work with Kinsuisho to produce *ginjo* style aged sake using a *ginjo* yeast that does not easily form *hineka* (old aroma) ⁽²⁾ even after storage. Sake made with this yeast⁽³⁾ is expected to be an aged sake that does not deteriorate easily even after storage.

3. Special Notes

1) NFT

Non-Fungible Token, a mechanism that uses blockchain technology. In this project, NFTs can guarantee that the aged sake is a unique asset. NFTs are considered effective for managing and distributing items such as aged sake that are stored for long periods of time.

2) *Hineka*

The term used to refer to the entire range of aroma components that increase with the storage of sake, but nowadays, among the aromas that increase with ageing, the favorable aroma is referred to as maturing aroma, while the undesirable deteriorated smell is called *senko*. Old aroma is a serious problem of *ginjo* sake and matured sake, as it greatly impairs the quality of the finished product.

3) This project will use yeasts that are less likely to produce old aroma when matured sake is stored. This yeast was developed through joint research by the National Institute of Brewing Science and Nippon Mori Co. In addition to being effective in controlling deteriorating odors caused during distribution, etc., it is also thought to be effective in the production of matured sake. Professor Tsutomu Fujii of the Faculty of Food and Agricultural Sciences, Fukushima University is involved in the project, and the *ginjo* yeast was distributed on a trial basis by the Japan Brewers Association earlier this year.

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