

Suntory Global Innovation Center Unravels Mechanism Behind Drought Tolerance in Hops

**— Research findings presented
at the 32nd International Horticultural Congress —**

Tokyo, JAPAN (August 31, 2026) – Suntory Global Innovation Center (SIC), the research and development arm of Suntory Group, is proud to announce that it has succeeded in identifying the genetic basis of drought tolerance in hops. The findings were presented at the 32nd International Horticultural Congress (IHC2026), the world's leading conference on horticultural science, held in Kyoto, Japan from August 23 to 28, 2026.

Hops are an essential ingredient that give beer its characteristic aroma and flavor, yet climate change and other environmental challenges are increasing pressure on hop cultivation. To help secure a sustainable supply of high-quality hops, SIC has conducted hop research with the Hop Research Institute in the Czech Republic since 2010. Building on achievements including [the world's first draft genome sequencing of hops](#) in 2014 and the [elucidation of the hop sex-determination system](#) in 2025, Suntory continues to advance scientific understanding of hops to support resilient cultivation and long-term sustainability.

Under the theme “Development of Drought-Tolerant Hop Varieties and Elucidation of Their Underlying Mechanism,” this research was conducted by Akihito Kano, Shinichiro Yamamura and Yudai Motoyoshi of SIC, jointly with Dr. Vladimír Nesvadba of Hop Research Institute in the Czech Republic.

▼Research Overview

The Czech Republic, renowned for producing high-quality hops, has experienced increasing soil dryness in recent years due to reduced rainfall associated with climate change, leading to reduced hop yields.

Since 2018, SIC has been conducting joint research and development with the Hop Research Institute to develop drought-tolerant hops that support the sustainable cultivation of high-quality hop varieties. By selecting a drought-tolerant hop breeding line and repeatedly crossbreeding them with high-quality hop varieties, the team successfully developed a new drought-tolerant hop variety in November 2024. To further advance the efficient selection of drought-tolerant hops, SIC has also been investigating the genetic mechanism underlying drought tolerance. The new variety is currently undergoing a large-scale field trial (approximately 4.2 hectares) in the Žatec region of the Czech Republic to evaluate the outcomes such as quality and yield.

▼Research Method

Genome analysis was conducted using a segregating population obtained through crossbreeding. Specifically, the researchers combined phenotypic analysis, including yield and plant characteristics under drought conditions, with genome analysis using next-generation sequencing to identify genomic regions associated with drought tolerance. Candidate genes associated with drought tolerance were then selected among these genomic regions and evaluated for their association with the trait.

▼Research Findings

Genome analysis identified a genomic region on chromosome 3 associated with drought tolerance. Further analysis pinpointed HIMYB113 as a candidate gene within this region. Compared with the publicly available hop reference genome, drought-tolerant lines were found to carry multiple single nucleotide polymorphisms (SNPs) in the promoter region of HIMYB113. Plants carrying these genetic variants exhibited significantly greater shoot growth under drought conditions, enabling the efficient selection of drought-tolerant hops at the genetic level.

▼Future Outlook

This research unraveled the mechanism behind drought tolerance in hops. This is expected to accelerate the development of new hop varieties capable of consistently producing high-quality hops under changing environmental conditions associated with climate change.

The findings are also expected to support research on drought stress tolerance and breeding technologies for a wide range of agricultural crops beyond hops.

As an organization responsible for research and technology development aimed at enhancing the value of Suntory Group and driving business growth, SIC will continue to pursue cutting-edge technologies and advance natural sciences in its ongoing quest to create new value for customers.

Find more about Suntory Global Innovation Center [here](#), and follow the latest updates on [LinkedIn](#).

About Suntory Group

As a global leader in the beverage industry, Suntory Group aims to inspire the brilliance of life, by creating rich experiences for people, in harmony with nature. Sustained by the gifts of nature and water, the Group offers a uniquely diverse portfolio of products across more than 80 countries, from award-winning Japanese whiskies Yamazaki and Hibiki, iconic American whiskies Jim Beam and Maker's Mark, canned ready-to-drink -196 (minus one-nine-six), The Premium Malt's beer, Japanese wine Tomi, and the world-famous Château Lagrange. Its brand collection also includes non-alcoholic favorites Orangina, Lucozade, Oasis, BOSS coffee, Suntory Tennensui water, TEA+ Oolong Tea, and V energy drink, as well as popular health and wellness product Sesamin EX.

Founded as a family-owned business in 1899 in Osaka, Japan, Suntory Group has grown into a global company operating throughout the Americas, Europe, Africa, Asia and Oceania, with approximately 40,000 employees worldwide drawn upon the unique blend of Japanese artisanship and global tastes to explore new product categories and markets.

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