



Wisconsin-Sourced Lager Yeast

WARF: P140088US01

Inventors: Christopher Hittinger, David Peris Navarro, Kayla Sylvester

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing three new strains of *Saccharomyces eubayanus* recently discovered in Wisconsin.

Overview

Beer can be divided into two broad categories: ales and lagers. Ales have been brewed for thousands of years. They are warm fermented (up to 80° F) for as little as three weeks using top-fermenting yeast (i.e., yeast that rises when fermentation is complete).

In contrast, lagers were first brewed in the 15th century when ale yeast hybridized with an unknown species to produce a new strain. The new strain was cold-fermenting, worked slower (six to eight weeks) and stayed on the bottom of the tank. Today, lagers (e.g., Budweiser, Miller lite, Heineken) are the most common beers in the world.

Recently in Argentina, a UW–Madison researcher and colleagues tracked down lager yeast’s unknown parent and described this species as *Saccharomyces eubayanus*. The researchers then set out to find local strains of *S. eubayanus* in Wisconsin.

The Invention

The researchers have now found three new strains of *S. eubayanus* in Wisconsin. They were isolated from an old beech tree stand at Sheboygan Indian Mound Park. The strains were sequenced, and each was found to represent an admixture or mosaic of two Argentinian populations.

Applications

- Lager beer production
- Breeding new hybrid strains

Key Benefits

- First *S. eubayanus* strains to be discovered outside of Argentina
- First *S. eubayanus* strains available for commercial licensing
- Strains may display hybrid vigor and/or unique properties

Stage of Development

The strains were collected and identified in August 2012. They have since been confirmed, genetically analyzed and used to brew beer. They can ferment at 32° F.

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For More Information About the Inventors

- [Christopher Hittinger](#)

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Publications

- Peris D., Sylvester K., Libkind D., Gonçalves P., Sampaio J.P., Alexander W.G. and Hittinger C.T. 2014. Population Structure and Reticulate Evolution of *Saccharomyces Eubayanus* and its Lager-Brewing Hybrids. *Mol. Ecol. Epub Feb 24*: doi: 10.1111/mec.12702
- Libkind D., Hittinger C.T., Valério E., Gonçalves C., Dover J., Johnston M., Gonçalves P. and Sampaio J.P. 2011. Microbe Domestication and the Identification of the Wild Genetic Stock of Lager-Brewing Yeast. *Proc. Natl. Acad. Sci. USA* 108, 14539-14544.

Tech Fields

- [Animals, Agriculture & Food : Food ingredients & additives](#)

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854

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