

IMPROVEMENT OF AN AGAVE JUICE FERMENTATION PROCESS USING *SACCHAROMYCES CEREVISIAE*

<i>Offering Organization:</i>	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
<i>Type of Organization:</i>	Public Research Center
<i>Development Stage:</i>	Commercial Concept Tests
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> – Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
<i>Sector:</i>	Industrial
<i>Area of knowledge:</i>	Tequila Industry
<i>Key words:</i>	Tequila, continuous system , batch processing system , fermentation , agave , <i>Saccharomyces cerevisiae</i>

DETAILED DESCRIPTION:

Problem to be solved:

Currently the fermentation of distilled spirits (tequila, wine, beer, rum, bacanora, mezcal, whisky, vodka, etc.) is mainly accomplished in the traditional way through a system of batch processing. However, in the field of alcohol fermentation, there also exists a system of continuous distillation consisting of introducing a continuous flow of the culture medium into the transforming fermenter, which leads to extracting the fermented medium in a steady fashion. The continuous system is advantageous because it is simple to operate and control during the stationary phase, which facilitates the standardization process and maintains a consistent product quality.

Solution:

This invention relates to a process of fermenting agave juice under a continuous system in order to produce tequila using *Saccharomyces cerevisiae* yeast. In this invention the steps are introduced for fermenting agave juice using high concentrations of sugar under a continuous system, which has not yet been established in the tequila industry.

New and Innovative Aspects:

The use of this process presents several advantages in the agave juice fermentation step: It facilitates standardization, reduces production costs, and increases ethanol yield.

TECHNICAL CHARACTERISTICS:

The "**process of fermenting agave juice utilizing *Saccharomyces cerevisiae***" in a continuous system consists of the following stages :

- Acquisition of the agave juice
- Method of fermentation and propagation
- Prepare pre-inoculum of *Saccharomyces cerevisiae*

- Saccharomyces cerevisiae inoculum
- Inoculation of the fermentation medium
- Fermentation of the agave juice
- Feed the means of fermentation
- Distillation

Main advantages derived from its utilization:

- High conversion efficiency of sugar to ethanol
- High ethanol yield
- Standardization of the fermentation process
- Reduced production costs
- Generation of products within the official Mexican standard NOM006 - SCFI - 2005

Applications:

- Tequila Industry

INTELLECTUAL PROPERTY

- Patent granted in 2014, valid until 2026
- JL/a/2006/000066

ABOUT THE OFFERING ORGANIZATION

Presentation:

El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.

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