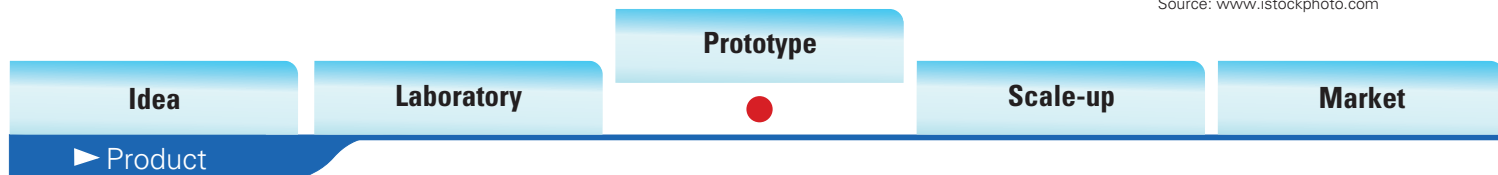


YEAST FOR ETHANOL PRODUCTION UNDER STRESS CONDITIONS

“Greater alcohol productivity, shorter processing time, and higher resistance to contamination”



Source: www.istockphoto.com



Description

This technology involves genetically modified yeast for ethanol production under stress conditions. This yeast optimizes the fermentation process without requiring nutritional supplementation and provides optimal performance in the production of fuel alcohol.

Benefits

- Higher ethanol productivity;
- Two-fold shorter production time;
- Greater resistance to contamination;
- Higher viability during successive production cycles;
- Does not require nutritional supplementation.

Problem

The fermentation process to obtain alcohol can be impaired by high temperatures, high concentrations of ethanol, and lack of suitable nutritional supplementation. Moreover, wild yeasts can contaminate and impair the process or even stop a production line.

Market potential

The industrial applications of yeasts used for alcohol fermentation are in the production of fuel ethanol, breads, cachaça, animal feed (dry inactive yeast), as probiotic agents (regulation of intestinal flora of animals), and inverted syrups, liquors and creams. The main focus of this technology is the fuel ethanol market. Brazil's 2008-2009 sugarcane crop yielded 569 million tons of sugarcane and more than 26 million cubic meters of ethanol. The international market presented a significant growth in the global production of ethanol, increasing from approximately 28 million m³ in 2000 to 96.8 million m³ in 2010, of which approximately 75% was used as fuel. On a global scale, this is still considered an incipient market, thus allowing for greater flexibility in innovation and in the adoption of new technologies.

(Ministry of Agriculture, Livestock and Supply – MAPA; National Petroleum Agency – ANP; Brazilian Sugarcane Industry Association – UNICA; Goiás Agriculture and Livestock Federation – FAEG).

Proposed solution

The technology consists of a yeast which, compared to commercial yeasts used in fuel alcohol plants, presents greater resistance to high temperatures, greater viability during successive production cycles, and a better chance of competing with wild yeasts and bacterial contaminants – all this without requiring nutritional supplementation.

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