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## SELECTION OF WILD STRAINS TOLERANT TO STRESS FACTORS

The production of ethanol using the yeast *Saccharomyces cerevisiae* in bioethanol industry is growing due to energy demand. The yield of fermentation depends on the ability of yeast to deal with stress factors that occur during the process, such as high temperature, high ethanol concentration and flocculation. Therefore, the use of tolerant yeast strains to these factors can increase ethanol yield and reduce production costs. The objective of this work was to select yeast strains resistant to stress factors that occurred during fermentation of a harvest. In this way, two samples of approximately two liters of stock were collected from the tank and from the fermentation vat at the beginning and end of the harvest in a sugarcane plant located in countryside of São Paulo state. The samples were inoculated in YEPD medium for isolation and then yeasts were identified by classical methods and molecular by PCR. Afterwards, they were selected and were performed tests for resistance to high temperatures (25°C, 40°C, 42°C, 44°C e 46°C), ethanol tolerance (10% v/v), ability to flocculate and to produce hydrogen sulfide and fermentation tests by zymogram using sucrose, glucose and galactose. The total sampling resulted in 28 isolates of *S. cerevisiae* (5 from the beginning of the process and 23 from the end); 21.5% of them were tolerant until to 42°C and belonged to the end of the process. Among the thermotolerant, 83.3% were tolerant to 10% ethanol and efficiently fermented the three sugars. The appearance of wild strains during the process of a full harvest, as well the selection caused by stress factors can provide interesting strains.

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