

ISOLATION, TOLERANCE INDUCTION AND FERMENTATION PERFORMANCE  
ANALYSIS OF *SACCHAROMYCES CEREVISIAE* STRAINS FROM ESPIRITO  
SANTO STATE DISTILLERIES.

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Cachaça, the most traditional beverage in Brazil, is obtained by sugarcane juice fermented must distillation. *Saccharomyces cerevisiae* is the main organism responsible for sugar decomposition to ethanol and carbon dioxide in the fermentation vats. Our goal was to select yeast strains with higher fermentative efficiency through induction of multi-stress resistance by hydrostatic pressure pretreatment. Moreover, we analyzed the fermentation temperature influence on the yeast strains. Samples were collected from 6 distilleries and 20 strains were isolated. During the fermentative process, samples were collected and analyzed for sugar consumption, ethanol production and titratable acidity. After those analysis, 5 strains were selected. For all analyzed strains, better results were observed at 35 °C at which all strains showed higher and faster ethanol production; while at 20 °C fermentation was much slower. The 5 selected strains were submitted to a hydrostatic pressure treatment of 50 MPa and incubated at room pressure prior to fermentation. This treatment led to an increased fermentation capacity. The results obtained in this work clearly show that the best approach for high quality cachaça production is a local selection of yeast strain and from this to induce stress resistance.

Supported by: CAPES, CNPq, FAPES and FINEP.

Key words: yeast, cachaça, stress