

**TITLE:** EVALUATION OF ALCOHOL FERMENTATION PARAMETERS OF YEAST FROM SUGARCANE ETHANOL PROCESSES IN THE USE OF ETHANOL FROM CORN.

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## **Abstract**

Currently, the process of ethanol production from sugar cane and corn raw materials, is done via fermentation using *Saccharomyces cerevisiae* yeasts. In Brazil, ethanol made from corn is starting to be employed, and most of the plants that are being used after 2010, are in a new conception, where the solids derived from the milling of corn are separated previously, allowing a fermentation very similar to the process with the sugar cane. Considering the new technology of ethanol production from corn, where there is a greater use and exposure of the starch contained in the grain besides the separation of the solids being carried out before fermentation, we asked whether there is a possibility of recycling the yeasts, making it economically more feasible than the process currently employed. Today, one of the biggest costs of fermenting corn is the propagation of yeast and the yeast recycle would allow the use of operational techniques and knowledge already used in sugarcane processes, where the yeast is already set and accustomed to recycle and variations in temperature, osmotic stress, pH, high ethanol production, tolerance to infections and tolerance to high levels of ethanol. The first objective of the present work was to carry out an extensive literature revision to evaluate, according to the data already published, if yeast already used in sugarcane processes in Brazil are good candidates for reuse in the fermentation process of corn. Next, we plan to test and verify if parameters of cell viability, ethanol production and ethanol tolerance would be affected or not during the industrial process of corn ethanol production. Data available shows that due to new technological advances we now have the possibility of a fermentation with a liquid corn must, without suspended solids, which may in the future be important for the yeast recycling process. In summary, based on data from the literature we hypothesized that yeast used on sugar cane process can be reutilized in corn fermentation, providing a simple and cost effective method of corn derived ethanol.

**Key words:** Corn. Yeast. Fermentation. Ethanol.

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