

EVALUATION OF CACHAÇA QUALITY PRODUCED BY MIXED INOCULUM OF YEAST

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Cachaça is a typical and exclusive designation of sugar cane spirit produced in Brazil, with alcohol content of 38% to 48% v/v 20°C. The cachaça usually has additional sensory qualities mainly due to the volatile metabolites produced during the fermentation process. Several studies have been developed on the influence of non-Saccharomyces yeasts in the final quality of some beverages. The objective of this study was to evaluate the efficiency of using a co-culture of yeast in the fermentation of sugar cane juice to produce cachaça. The yeast *Meyerozyma caribbica* CCMA 0198 and *Saccharomyces cerevisiae* CA11 were inoculated in co-culture at final concentrations of 10^7 and 10^8 cells/ml, respectively. *Saccharomyces cerevisiae* was used in pure culture as a control. The fermentation was conducted in vats containing 15L of 16°Brix sugar cane juice. Three consecutive batches with cell recycling were performed in duplicate, and sugar cane juice was distilled at the end of batch. The cachaça produced were subjected to GC-MS analysis, for the determination of volatile compounds. The cachaça produced by the mixed inoculum *M. caribbica* and *S. cerevisiae* showed a higher concentration of volatile compounds associated with good sensory descriptors; these compounds include ethyl esters (117.57 µg/L), such as 2-phenylethyl acetate, ethyl octanoate and ethyl hexanoate, associated with "fruity", "green apple", "apple", "sweet" and others descriptors; and monoterpenic alcohols (3.16 µg/L). Non-Saccharomyces yeasts are known as producers of β-glucosidase, which transforms inactive forms of compounds, including monoterpenic alcohols and some esters into their active aromatic forms, improving the sensory qualities of the beverage. Because of this, higher concentrations of monoterpenic compounds were expected in the cachaça produced by the mixed inoculum. The differences between the cachaça produced using *S. cerevisiae* and mixed inoculum of *S. cerevisiae* and *M. caribbica* can be attributed to the fermentation process, since the distillation process did not affect the final quality of the beverage. Based on the results of this study it is concluded that co-inoculation of *S. cerevisiae* and *M. caribbica* positively influenced the final quality of cachaça, mainly due to the compounds identified by GC-MS.

Key words: Cachaça; Non-Saccharomyces; Co-inoculation.

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