

Molecular Characterization of Selected Yeasts Used in the Production of Higher Quality “Cachaça”.

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In Brazil, cachaça (the sugar cane spirit) is a beverage produced by distillation of fermented sugar-cane juice. The national production is estimated to be 1.3 billion liters per year and a big effort has been made to improve the quality of the product. In this context, our lab reported the development of a methodology to identify and to differentiate yeast cells with appropriated characteristics to be used as starter in the production of cachaça. (Vicente, M.A. *et al. Int. J. Food. Microbiol.* 108: 51-59, 2006; Oliveira V.A. *et al. Appl Environ Microbiol.* 74(3): 693-701, 2008). The identification and strain characterization of the yeasts are also of great importance for the fermentation processes since the quality of beverages, such as cachaça, is also a consequence of the diversity and the composition of microorganisms and their dynamics and frequency of appearance. In this study, we used different methodologies aiming the molecular characterization of four presumed *Saccharomyces cerevisiae* strains used as starter in the production of higher quality “cachaça”. Such strains were characterized by using ITS-PCR, RFLP, RAPD-PCR, COX-PCR and SSR analysis. We obtained the same restriction digestion pattern of the 850 bp ITS-PCR product by using the enzymes HinfI, HaeIII and CfoI, indicating that all strains are at the specie level *Saccharomyces cerevisiae*. The polymorphism among the strains was established using RAPD-PCR and COX-PCR, correlating the absence or presence of peculiar bands in each of them. Moreover, by analyzing the number and length (in base pairs) of alleles for six microsatellite loci (ScAAT1 to ScAAT6), we observed that this technique is a promising tool to distinguish yeast strains since allowed us a faster and safer strain differentiation in comparison to the former techniques.

Palavras Chave: *Cachaça*, *Saccharomyces cerevisiae*, *SSR*, *PCR*, *Yeast*

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