

TITLE: ETHANOLIC POTENTIAL OF YEAST *kluyveromyces sp.* WITH POSITIVE KILLER FACTOR

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Microbial contamination is one of the main interferences in industrial fermentations, since it leads to a reduction in productivity and fermentative yield. Yeasts with a positive killer factor, such as yeast *Kluyveromyces sp.*, have antagonistic attributes in relation to other microorganisms, and can be used in fermentations. In this context, it was proposed to analyze the ethanolic potential of the yeast *Kluyveromyces sp.* PF41₃ (isolated from fruit pulp). This yeast, expressed killer factor against filamentous fungi in other works^{1,2}. The yeast was maintained in PDA medium at 10 °C. Initially, the growth was carried out in sterile sugarcane juice at 3.2 °Brix to obtain the initial inoculum, for 24 h at 30 °C and then centrifuged for 10 minutes at 4000 g at 10 °C. The fermentation assay was conducted at 30 °C under 100 rpm shaking using sterile and clarified sugarcane juice (must) as substrate (151.6 g L⁻¹ of total reducing sugars). The experiment was run in triplicate in the volume of 250 mL of must in 500 mL Erlenmeyers and inoculated with 1% (m v⁻¹) of yeast. The monitoring of the end of the fermentation was observed by the stability of the CO₂ production measured in analytical balance. The evaluated parameters were cell viability, alcohol content and total residual sugars by ion chromatography. The results were submitted to descriptive statistics of mean and standard deviation. Regarding the fermentation, there was total consumption of sucrose, 95.31% of glucose and 97.70% of fructose. The final viability of the yeasts was 96.39 ± 0.64%. The fermentation had a final alcoholic content of 9.74%. Even with an alcoholic content similar to that of the sugarcane industry (8-10%), the productivity is considered low in relation to the fermentation time, which was around 15 hours, and can be justified by the reduced volume of the inoculum, seen that the mills start the fermentation around 10%. As well as the adaptation of the yeasts to the high levels of sugars, being able to cause osmotic stress and consequently interfering in the productivity. The ethanolic potential is satisfactory for this strain, since it presents antagonistic characteristics that are beneficial for the fermentation and reduction of the contamination, which will be better analyzed in subsequent studies.

KEY WORDS: ethanolic fermentation, biological control, bacterial contamination.

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