



“Gheorghe Asachi” Technical University of Iasi, Romania



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EVALUATION OF THE CAPACITIES OF ASSIMILATION AND FERMENTATION OF SEVERAL YEASTS STRAINS ISOLATED FROM EXOTIC FRUITS FROM THE BRAZILIAN SAVANNAH

J. Zanoni Camargo¹, F. Avelino Gonçães², I. Chiarelli Perdomo³, G. Graciano Fonseca⁴

¹Facet, Ufgd, Dourados, Brasileiro; ²Ufrn, Ufrn, Natal, Brasileiro; ³Fcba/bioingegneria, Ufgd/polimi, Dourados/Milano, Brasileiro; ⁴Faeng, Ufgd, Dourados, Brasileiro

Abstract

Brazilian savannah is since long time recognized as a region with a high microbial biodiversity. However it has been only marginally studied for biotechnological purposes. The aim of this work was to isolate yeasts from different Brazilian exotic fruits and evaluate their capacity to assimilate and ferment several substrates. The samples were obtained from several fruits of different tree species found in the Brazilian savannah. They were diluted in 10 mL of NaCl solution and inoculated in Petri dishes containing YPD medium added of erythromycin (32 µg/ml). The isolated yeasts were analyzed for their ability to assimilate and ferment glucose, fructose, sucrose, lactose, starch, cellobiose, mannitol, galactose, maltose, raffinose and xylose, besides their ability to assimilate nitrate, grow on YPD medium containing 10% NaCl, 50% glucose or 37 °C. Samples were considered positive for fermentation when there was gas production and positive for assimilation when the presence of microbial biomass was detected, by the tube's turbidity, for each enumerated condition. Experiments were performed in duplicate and growth and/or fermentation analyzed after 24, 48, 72, 96 and 120 h. It was possible to obtain 44 yeast strains isolates, predominantly from samples of cherry of Rio Grande (*Eugenia involucrata*), jatobá (*Hymenaea courbaril*), and uvaia (*Eugenia pyriformis*). It was observed that 73.3% of the isolates were able to assimilate glucose after 24 h and 100% after 120 h. On the other hand, only 22.2% could ferment glucose after 24 h. After 120 h this number increased to 48.8%. In general, the selected isolates showed greater ability to ferment glucose, fructose and sucrose, lower ability to ferment maltose and lactose. None of them was able to ferment xylose, but 16 of them were able to assimilate this sugar. The isolated 28 was able to ferment starch. Isolates 42 and 43 showed the ability to ferment lactose. Isolate 42 presented also an interesting ability of growth in glucose at the concentration of 50 %. Both strains were isolated from pequi (*Caryocar brasiliense*). A more detailed study of these isolates is important to better evaluate their biotechnological potential.
