

## ELABORATION OF A FRUIT WINE FROM PITAYA (*Hylocereus undatus*) PULP

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### **Abstract:**

Pitaya (*Hylocereus undatus*) or dragon fruit is native from Mexico, Central and South America. It is considered a highly attractive fruit due to its colors and sweet flavor, it has presented high potential for use in wine production. The aim of this study was to elaborate a fruit wine from pitaya (*Hylocereus undatus*) pulp and analyse the volatile compounds profile present during the process of fermentation. The fermentation to production of pitaya wine was conducted in glass fermenters with a capacity of six liters, at 22°C for 192 hours. Cells of *Saccharomyces cerevisiae* CCMA 0200 (Culture Collection of Agricultural Microbiology) were used as inoculum. Various kinetic parameters, such as the conversion factors of the substrates into ethanol (Yp/s), glycerol (Yg/s), the volumetric productivity of ethanol (Qp), and the fermentation efficiency (Ef) were calculated. The fermentations were monitored daily, samples were withdraw for chromatographic analysis. The number of viable cells in suspension, pH, degree Brix were evaluated. The ethanol levels, in the end of fermentation process was approximately 75,2 g.L<sup>-1</sup> (9,5 °GL). The results obtained from the kinetic parameters (Yp/s), (Yg/s), (Qp) and (Ef) were 0,42 g.g<sup>-1</sup>, 0,05 g.g<sup>-1</sup>, 0,45 g.L<sup>-1</sup>.h<sup>-1</sup> and 81,42%, respectively. Organic acids compounds such as citric (0,17 g.L<sup>-1</sup>), acetic (0,46 g.L<sup>-1</sup>), succinic (5,27 g.L<sup>-1</sup>) were detected. A total of 22 volatile compounds were identified and quantified in the pitaya wine. They were grouped into aldehydes (1), alcohol (1), higher alcohol (5), terpene (1), acetate (1), diether (1), furans (1), acids (5), ketones (1) and ethyl esters (5), which are usually responsible for the flavor found in alcoholic beverages. Thus, pitaya were potential fruit to be used in the production of alcoholic fermented beverages.

**Keywords:** alcoholic fermentation, fruit wine, pitaya, volatile compounds.

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