

SCALE-UP PRODUCTION OF *SACCHAROMYCES CEREVISIAE* USING *OPUNTIA FICUS-INDICA* AS SUBSTRATE

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This report aimed the determination of biomass production and glucose level on scale-up system using the *Opuntia ficus-indica* as substrate. The liquid extract of *Opuntia ficus-indica*, resulted from grinding and centrifugation, was used as culture medium for yeast growth. The cells were primarily inoculated in YPD medium, washed in saline solution, and then inoculated in palm extract in flasks (0.15L), in bench bioreactor (1 and 4L) in a liquid extract from palm. Samples were collected, in fixed times intervals, for optical density analysis. The sugars consumed in cultured medium were analyzed chromatographically. Highest production of biomass was 220.23 g/L after 6 hours of cultivation using batch 4L bioreactor. Production of biomass for 0.15 and 1L culture medium were 2.863 g/L and 6.325 g/L, respectively. After the fermentation process, the sugars were analyzed in silica gel chromatography from the whole fermentation process. It was observed that in palm extract the main sugars are: glucose, fructose and sucrose. During cultivation, almost all sugars were consumed, and at the end of 9 hours of growth there was little fructose left.

Keywords: *Opuntia ficus-indica*, *Saccharomyces cerevisiae*, scale up and carbon source
Acknowledgements: CNPq, LIKA-UFPE, FINEP.