

# Use of Immobilized *Candida* Cells on Xylitol Production from Sugarcane Bagasse

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In this study we used the yeast *Candida guilliermondii* FTI 20037 immobilized by entrapment in Ca-alginate beads (2.5–3 mm diameter) for xylitol production from concentrated sugarcane bagasse hemicellulosic hydrolysate in a repeated batch system. The fermentation runs were carried out in 125- and 250-ml Erlenmeyer flasks placed in an orbital shaker at 30 °C and 200 rpm during 72 h, keeping constant the proportion between work volume and flask total volume. According to the results, cell viability was substantially high (98%) in all fermentative cycles. The values of parameters xylitol yield and volumetric productivity increased significantly with the reutilization of the immobilized biocatalysts. The highest values of xylitol final concentration (11.05 g/l), yield factor (0.47 g/g) and volumetric productivity (0.22 g/lh) were obtained in 250-ml Erlenmeyer flasks containing 80 ml of medium plus 20 ml of immobilized biocatalysts. The support used in this study (Ca-alginate) presented stability in the experimental conditions used. The results show that the use of immobilized cells is a promising approach for increasing the xylitol production rates.