Evaluation of Fermentation Conditions by Candidatropicalis for Xylitol Production from Sago Trunk Cortex.

ABSTRACT

Xylitol production from sago trunk cortex hydrolysate using Candida tropicalis was evaluated in shake flasks and a bioreactor. The fermentation and kinetic behaviours of this microorganism were investigated using sago trunk cortex hydrolysate and commercial xylose as substrate. Results obtained for sago trunk hydrolysate were close to the commercial xylose with xylitol yield of 0.82 gg-1 and productivity of 0.39 gL-1h-1. The maximum specific growth rate, μmax for sago trunk cortex was higher (0.24 h-1) compared to commercial xylose (0.17 h-1). The bioreactor study showed an increase of about 6% (w/v) of xylitol concentration and 10% (v/v) of volumetric productivity when compared to the results obtained under the shake flasks, keeping xylitol yield above 0.8 g g-1.

Keyword: Xylose; Xylitol; Sago trunk cortex; Candida tropicalis