

TITLE: EVALUATION OF HEMICELLULOSIC HYDROLYZATE PRODUCTION USING YEASTS ISOLATED FROM DIFFERENT SUBSTRATES IN BRAZIL AND MEXICO

AUTHORS: REIS, K.C.^a; ARRIZON, J.^b; AMAYA-DELGADO, L.^b; SILVA, C.F.^a; GSCHAEDLER, A.^b; SCHWAN, R.F.^a

INSTITUTION: ^a DEPARTMENT OF BIOLOGY, FEDERAL UNIVERSITY OF LAVRAS, LAVRAS, MG, BRAZIL; ^b RESEARCH CENTER AND ASSISTANCE IN TECHNOLOGY AND DESIGN OF THE STATE OF JALISCO, A.C., NORMALISTAS AVENUE # 800, COL. COLINAS DE LA NORMAL, 44270 GUADALAJARA, JALISCO, MEXICO.

ABSTRACT:

Xylitol is a polyol with interesting applications such as incorporation into food, non-cariogenic agent, clinical use and pharmaceutical among others, being possible to obtain from hemicellulosic hydrolyzate. The hemicellulosic residue, when disposed in nature, can cause environmental problems. The use of the residue as substrate to microorganisms for the xylitol production could be an alternative instead conventional process. For that, yeasts should be able to assimilate xylose. This work was select yeasts of different origins assimilating xylose with potential production of xylitol in laboratory scale in solid and liquid media. Thirty-eight yeasts were used in growth in solid medium, and 14 were selected for the fermentation stage. In the kinetic parameters, the maximum growth rate (μ_{max}) and conversion factor (Y_x/s) were determined for *Candida parapsilosis* and *Candida glabrata* strains, which presented the best results. The values of μ_{max} were 0.0116 and 0.01h⁻¹, and *C. parapsilosis* presented the highest value. The Y_x/s , for *C. parapsilosis* and *C. glabrata* strains was 0.047 and 0.035gg⁻¹, respectively. In the production of xylitol, *C. glabrata* showed a yield of 0.89gL⁻¹. These results indicated that these strains showed xylose assimilation capacity and conversion to xylitol, but more advanced studies should be done, such as the optimization of the process, in order to obtain optimum xylitol production conditions.

Key Words: Xylitol, D-Xylose, Growth Rate, Conversion Factor

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