

عنوان مقاله:

The production of sugar syrup from the hemicellulose fraction of sugarcane bagasse

محل انتشار:

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خلاصه مقاله:

The dilute acid hydrolysis of the hemicellulosic fraction of sugarcane bagasse leads to the production of a sugar solution, composed mainly of xylose, that can be used for the production of a variety of biotechnological products. In this study, the effect of the type of acid (sulphuric or nitric) and bagasse type (bagasse or bagacillo) used in the dilute acid hydrolysis process on the concentration of xylose in the hemicellulose hydrolyzate and the hydrolysis yield were studied. Statistical analysis of the results with a 22 full factorial design showed that the acid type had significant effect on xylose concentration whereas the bagasse type had significant effect on hydrolysis yield. A tow mathematical regression models were obtained for xylose concentration and hydrolysis yield to predict the effect of bagasse and acid type effect. The determination cofficent($R^2=0.73$ for xylose, $R^2=0.69$ for hydrolysis yield) indicated that 73% of the variability in the xylose concentration and 69% of the variability in the hydrolysis yield can be explained by these models.

کلمات کلیدی:

nitric acid. sulphuric acid. bagasse, bagacillo, dilute acid hydrolysis. Statistical analysis, xylose

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