Short Communication

Analysis of enzymolysis process kinetics and estimation of the resource conversion efficiency to corn cobs with alkali soaking, water and acid steam explosion pretreatments

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Abstract

This short communication analyzed enzymolysis kinetics and estimated the resource conversion efficiency of corn cobs. Three pretreatments were applied, and enzymatic hydrolysis was performed to obtain solid residues. The enzymolysis process was fit to a modified logistic formula. The kinetics of enzymolysis were similar for all pretreatments, and all kinetics fit the modified logistic formula. Resource conversion efficiency and saccharification efficiency were estimated for the following pretreatments: 69% and 86% for acid steam explosion, 59% and 73% for alkali soaking, 41% and 51% for water steam explosion, respectively. It can be concluded that pretreatment has a minor effect on the enzymolysis process of corn cobs and a greater effect on saccharification efficiency or resource conversion efficiency.

Keywords: corn cob, pretreatments, enzymolysis and saccharification, logistic formula, resource conversion efficiency

1. Introduction

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