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# Effect of Different Microbial Strains on Biological Pretreatment of Sugarcane Bagasse for Enzymatic Hydrolysis

**Authors :** Achiraya Jiraprasertwong, Erdogan Gulari, Sumaeth Chavadej

**Abstract :** Among agricultural residues, sugarcane bagasse is one of the most convincing raw materials for the production of bioethanol due to its availability, and low cost through enzymatic hydrolysis and yeast fermentation. A pretreatment step is needed to enhance the enzymatic step. In this study, sugarcane bagasse (SCB), one of the most abundant agricultural residues in Thailand, was pretreated biologically with various microorganisms of white-rot fungus—Phanerochaete sordid (SK 7), Cellulomonas sp. (TISTR 784), and strain A 002 (Bacillus subtilis isolated from Thai higher termites). All samples with various microbial pretreatments were further hydrolyzed enzymatically by a commercial enzyme obtained from Aspergillus niger. The results showed that the pretreatment with the white-rot fungus gave the highest glucose concentration around two-fold higher when compared with the others.

**Keywords :** sugarcane bagasse, microorganisms, pretreatment, enzymatic hydrolysis
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