

## Characterization of rice straw pretreated by glycerol for the bioethanol production

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Production of bioethanol from lignocellulosic biomass is of strategic importance as alternative energy sources. Rice straw is one of the abundant lignocellulosic waste materials as a potential feedstock. It has high cellulose and hemicelluloses content which can be hydrolyzed into fermentatable sugars. Due to highly crystalline structure of rice straw, cellulose is recalcitrant to enzyme saccharification. Therefore, pretreatment of lignocellulosic biomass is one of the important steps in biofuel production and biorefinery. In this study, rice straw harvested in the Chonnam National University was pretreated using glycerol, byproduct of biodiesel production. The pretreatment of rice straw with mesh size of 20~80 was conducted with wide range of temperatures (130~210 oC) and time (1~24 h). And the pretreated samples were enzymatically hydrolyzed with proper enzymes. The solid recovery was high and the production of fermentable sugars increased with increasing temperature and time. It was shown that the glycerol had a good potential for the pretreatment of rice straw.