

**PROSES DELIGNIFIKASI DENGAN METODE *ALKALINE-ACID*  
*PRETREATMENT* PADA PEMBUATAN BIOETANOL DARI  
JERAMI PADI**

**DELIGNIFICATION BY USING ALKALINE-ACID PRETREATMENT ON  
BIOETHANOL PRODUCTION FROM RICE STRAW**

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**ABSTRACT**

Rice straw as agricultural waste contains cellulose that potentially to produce ethanol. However, it has lignin content that will inhibit the enzyme in converting glucose into ethanol. In this research, pretreatment steps aim to release and breakdown lignin in rice straw. Pretreatment was conducted in two phases, alkaline pretreatment using NaOH (1%,2%,3%,4%,and 5%) and acid pretreatment using 1% H<sub>2</sub>SO<sub>4</sub> with various heating time (30, 60, 90, 120 and 150 minutes) and used for ethanol production by means of Simultaneous Saccharification and Fermentation (SSF) with cellulose enzyme and *Saccharomyces Cerevisiae*. The results showed that higher NaOH concentration using on alkaline pretreatment and longer heating time on acid pretreatment made morbe degraded lignin content. The highest ethanol content produced was 48.38% from delignification treatment with NaOH concentration of 5% and acid pretreatment time of 150 minutes.

**Keywords:** rice straw, pretreatment, Simultaneous Saccharification and Fermentation (SSF), ethanol