

**PENGARUH VARIASI WAKTU FERMENTASI LIMBAH
MEDIA TANAM JAMUR TIRAM (*Pleurotus ostreatus*) UNTUK
PRODUKSI BIOETANOL MELALUI METODE
*SIMULTANEOUS SACCHARIFICATION AND
FERMENTATION (SSF)***

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh variasi waktu fermentasi pada pembuatan bioetanol dari limbah media tanam jamur tiram (*Pleurotus ostreatus*) terhadap kadar bioetanol yang dihasilkan. Penelitian ini dilakukan dengan menggunakan metode *Simultaneous Saccharification and Fermentation (SSF)*.

Enzim selulase yang digunakan dalam proses hidrolisis selulosa limbah media tanam jamur dikondisikan pada pH 5,6. Proses perendaman limbah media tanam dilakukan dengan menggunakan 10 gram limbah media tanam jamur tiram dan 25 mL pH bufer asetat 5,6 selama 24 jam. Setelah perendaman dilanjutkan proses *SSF* dengan 4 gram ragi *Saccharomyces cerevisiae*, 10 gram ammonium sulfat $(\text{NH}_4)_2\text{SO}_4$, 10 gram magnesium sulfat heptahidrat $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, dan 100 mL akuades dengan menggunakan variasi waktu fermentasi 1 hari, 2 hari, 3 hari, 4 hari, dan 5 hari. Hasil *SSF* dianalisis dengan spektrofotometer UV-Visible untuk mengetahui kadar bioetanol yang dihasilkan. Hasil penelitian menunjukkan bahwa kadar bioetanol terbesar terdapat pada perlakuan variasi waktu fermentasi 5 hari dengan konsentrasi bioetanol 0,2402%

Kata kunci : bioetanol, limbah media tanam jamur tiram, *simultaneous saccharification and fermentation (SSF)*

**THE EFFECT OF VARIES TIME FERMENTATION IN
BIOETHANOL PRODUCTION ON OYSTER MUSHROOM'S
(*Pleurotus ostreatus*) GROWING MEDIA WASTE USING
SIMULTANEOUS SACCHARIFICATION AND
FERMENTATION (SSF)**

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ABSTRACT

This research was aimed to identify the effect of varies time fermentation in bioethanol production from oyster mushroom's (*Pleurotus ostreatus*) growing media waste and identify the highest yield of bioethanol. The research was carried out using Simultaneous Saccharification and Fermentation (SSF). The cellulase enzym from oyster mushroom's growing media waste were placed at pH 5.6. Extraction process was carried out using 10 grams oyster mushroom's growing media waste and 25 mL acetate buffer pH 5.6 for 24 hours. After the extraction process then the SSF process using 4 grams of *Saccharomyces cerevisiae* yeast, 10 grams ammonium sulfate $(\text{NH}_4)_2\text{SO}_4$, 10 grams magnesium sulfate heptahydrate $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, and 100 mL aquadest in varies times for 1 day, 2 days, 3 days, 4 days and 5 days. The results of SSF was collected and analyzed using spectrophotometer UV-Visible to identify the level bioethanol production. The result of this research showed that the highest yield of bioethanol of SSF was about 5 days with 0.2402% bioethanol production.

Keywords : bioethanol, oyster mushroom's growing media waste, simultaneous saccharification and fermentation (SSF)