

ABSTRACT

THE USE OF BACKSLOP CULTURE OF ASPERGILLUS NIGER TO IMPROVE THE BIODEGRADABILITY OF ONGGOK FOR BIOGAS

By

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The purposes of this experiment were to obtain the optimum concentration of backslop culture in the mix of onggok and biogas waste water to produce the highest S-COD value and to know the content of changes of SCOD, pH, TSS, and TS. The fermentation of Onggok using Backslop culture *Aspergillus Niger* using two factors that are concentration of Backslop culture 0%, 20%, 30% and 40% and fermentation time 0, 1, 3 and 5 days. The results showed that the culture concentration of backslop and long-optimum fermentation that resulted in a total of soluble chemical oxygen demand (S-COD) is the highest concentration treatment of Reslop *Aspergillus Niger* 30% with the duration of fermentation 3 Day with the value 6924.5 mg/L. Back-slopping fermentation, it produces soluble chemical oxygen demand (S-COD) value which continues to increase while pH, total suspended solid

(TSS), and total solid (TS) continue to decline until the duration of fermentation 5 days.

Keywords: *Aspergillus niger*, biogas, pretreatment of onggok, soluble chemical oxygen demand, tapioca industrial

ABSTRAK

PENINGKATAN BIODEGRADABILITAS ONGGOK UNTUK PRODUKSI BIOGAS MENGGUNAKAN KULTUR BACKSLOP *Aspergillus Niger*

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Tujuan penelitian ini adalah mendapatkan konsentrasi kultur backslop optimum pada campuran onggok dan air effluent biogas untuk menghasilkan nilai S-COD tertinggi dan mengetahui kandungan perubahan SCOD, pH, TSS, dan TS. Fermentasi onggok menggunakan kultur backslop *Aspergillus niger* menggunakan dua faktor yaitu konsentrasi kultur backslop 0%, 20%, 30% dan 40% dan lama fermentasi 0, 1, 3 dan 5 hari. Hasil penelitian menunjukkan bahwa konsentrasi kultur backslop dan lama fermentasi optimum yang menghasilkan total soluble chemical oxygen demand (S-COD) tertinggi yaitu perlakuan konsentrasi kultur backslop *Aspergillus niger* 30% dengan lama fermentasi 3 hari dengan nilai sebesar 6924,5 mg/L. Fermentasi onggok dengan kultur backslop menghasilkan nilai soluble chemical oxygen demand (S-COD) yang terus mengalami peningkatan sedangkan pH, total suspended solid

(TSS), dan total solid (TS) terus mengalami penurunan hingga lama fermentasi 5 hari.

Kata Kunci : *Aspergillus niger*, Biogas, Pretreatment onggok, Soluble Chemical Oxygen Demand (SCOD), Industri Tapioka.