

Kajian Awal Produksi Aseton-Butanol-Etanol secara Sinambung dari Substrat Hidrolisis Tandem Kelapa Sawit (*Elaeis guineensis*, JACQ) dalam Bioreaktor Unggun Diam

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ABSTRAK

The acetone-butanol-ethanol (ABE) has become one of the prospective alternatives, in order to handle empty fruit bunches of oil palm (EFBO) accumulation, and self supply of the organic solvent for Indonesian industries consumption. Because of its intrinsic compounds, the effective hydrolysis method of EFBO will determine the feasible hydrolyzate for ABE fermentation. In this study, the hydrolysis of EFBO was carried out in two stages. Dignification was carried out by using the method of acid hydrolysis on the sugar production from empty fruit bunches of oil palm. Which selled the particles of EFBO (60 mesh) by NaOH 1 N for two hours, followed by autoclaving (121°C, 15 minutes) and enzymatic hydrolysis by cellulose for 72 hour under pH 4.8. during hatch fermentation, using 13.89 g/l fermentable sugar of EFBO hydrolyzate and 6.11 g/l glucose, the mmax was found at 0.202 hour, while using 60 g/l sucrose the mmax found was 0.079 hour. The continuous fermentation of EFBO hydrolyzate (adjusted to 40 g/l fermentable sugar) was carried out using packed bed bioreactor and silica gel matrices in three dilution rates (0.05, 0.10, 0.15 hour). After the steady state (maintained for at least three retention times), the high productivity of ABE (1.57 g/l hour) was shown at a dilution rate of 0.15 hour.

Mangunwidjaja, D., E. Gumbira Sa'id dan E. Wibowo. 1994. Kajian Awal Produksi Aseton-Butanol-Etanol secara Sinambung dari Substrat Hidrolisis Tandem Kosong Kelapa Sawit (*Elaeis guineensis*, JACQ) dalam Bioreaktor Unggun Diam. RUT I, J. Teknol. Ind. Pert., 4 (2): 57-66. Di dalam Kumpulan Abstrak Proyek Riset Unggulan Terpadu. Kantor Menteri Negara Riset dan Teknologi, 2000. Jakarta