

Production of Acetone-Butanol-Ethanol from Hydrolyzate of Arenga (*Arenga pinnata*) Starch Using Different scales of Bioreactor

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ABSTRAK

The acetone-butanol-ethanol (ABE) production by the utilization of *Clostridium acetonytylicum* with different carbon sources has been extensively studied. Substrates obtained from starchy materials are normally easier to prepare rather than those derived from lignocellulotic materials. This study reports the use of Arenga starch hydrolyzate or the production of ABE using different scale of self-made bioreactors (1-, 10-, 20-, and 100-1). The experiment showed that *C. acetobutylicum* P262 grew well on arenga starch hydrolyzate, giving about 15.58 to 17.96 g/l solvent during 72 to 96 h fermentation. Increasing the bioreactor scale from 1-to 10-, 20-, and 100-1 increased the fermentation time of 72, 84, and 96 h, respectively, but slightly decreased the ABE production.

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