Biobutanol Production From Lignocellulosic Biomass

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Butanol, a primary alcohol with a four carbon, is used as solvents for paints, plasticizer, coatings and chemical intermediate. n-Butanol is mainly produced by chemical process named "Oxo Process". Since World War I&II, many researches were tried to produce butanol via bioprocess, ABE Fermentation. The production of acetone-butanol-ethanol (ABE) by clostridium, which is a Gram-positive, obligate anaerobic microorganism, is recently studied for bio-based chemicals and fuels. However, raw material cost is the most critical for the economics. Medium cost usallaly accounts for 65 % of total direct expense. In this study, non-edible biomass such as palm residues was utilized for the production of butanol as a main carbon source to improve economic feasibility. The final ABE titer of palm biomass hydrolysate decreased campared to glucose medium. On the other hand, total ABE yield of palm biomass hydrolysate was enhanced compared to glucose medium. This work was supported by the Energy Efficiency & Resources of the Korea Institute of Energy Technology Evaluation and Planning (KETEP) grant funded by the Korea government Ministry of Knowledge Economy.