Simultaneous Cultivation and Wastewater Treatment of Cyanobacteria in Beer Wastewater for Biodiesel Production

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Our previous research have shown that utilization of mixture of untreated and anaerobic treated beer wastewater produced better biomass and lipid accumulation of Synechocystis sp. PCC6803; compared to the separate use of each beer wastewater. In this study, the effect of changes in pH during cultivation process was studied. pH was chosen to be monitored due to its relation to the formation of important substances that significantly affect the biomass production. This effect of pH became more complicated when there was an interaction between cyanobacteria and native bacteria in the wastewater. During the experiment; biomass production, pH, and nutrient removal ability were observed. In addition, lipid accumulation and settling ability of harvested cyanobacteria biomass at the end of cultivation period were also determined. Through this research, we have gained important findings that necessarily needed for further development.