IDENTIFICATION OF FERMENTATIVE BIOHYDROGEN FROM MICROBIAL MIXED CULTURE USING VARIATION CONCENTRATION OF SUCROSE AS SUBSTRATE

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Abstract

This study aims to identify biohydrogen of mixed culture fermentation process using a variety of concentrations of sucrose as a substrate. Fermentation using a batch system that lasts for 33 hours (concentration of 1% and 3%) and 64 hours at a concentration of 2%. Fermentation conditions set at pH 5-6, temperature 40°C and sampled every 2 hours. Qualitative analysis using Hydrogen Sensor indicate a hydrogen gas, followed by quantitative analysis using GC so we get a percentage of hydrogen at a concentration of 1%, 2% and 3% is 11.37%; 13.57% and 18.53%. Cumulative volume of hydrogen obtained from the total volume of biogas at a concentration of 1%, 2% 3% is 39.75 mL; 63.78 mL and 157.50 mL, respectively.

Keywords : Biohydrogen, mixed culture, fermentation, sucrose, Hydrogen Sensor, GC