

**Production of fermentable sugars using oil palm empty fruit bunch using crude cellulase cocktails from trichoderma asperellum UPM1 and aspergillus fumigatus UPM2 For bioethanol production.**

ABSTRACT

Utilization of oil palm empty fruit bunch (OPEFB) for bioethanol production with crude cellulase cocktails from locally isolated fungi was studied. Enzymatic saccharification of alkaline pretreated OPEFB was done using different cellulase enzyme preparations. Crude cellulase cocktails from *Trichoderma asperellum* UPM1 and *Aspergillus fumigatus* UPM2 produced 8.37 g/L reducing sugars with 0.17 g/g yield. Production of bioethanol from OPEFB hydrolysate using Baker's yeast produced approximately 0.59 g/L ethanol, corresponding to 13.8% of the theoretical yield. High reducing sugars concentration in the final fermentation samples resulted from accumulation of non-fermentable sugars such as xylose and cellobiose that were not consumed by the yeast. The results obtained support the possible utilization of OPEFB biomass for bioethanol production in the future.

**Keyword:** Oil palm empty fruit bunch (OPEFB); Crude cellulase enzymes; Lignocellulosic bioethanol; Locally isolated fungi.