

Enzymatic hydrolysis of sugarcane bagasse on glucose production

ABSTRACT

Currently, renewable energy is in the frontline to substitute fossil fuels in the transportation sector in order to tackle the increasing energy demand. Bioethanol emerged as a potential option in replacing transportation fuels of gasoline. Sugarcane bagasse is one promising biomass wastes, which can be utilized as feedstock in second generation bioethanol production. Optimal conditions required for a cost-efficient bioethanol fuel process from sugarcane bagasse. Thus, this study aims to optimize the enzymatic hydrolysis of sugarcane bagasse which is a vital step for bioethanol production. Thus, in this study, sugarcane bagasse were treated using dilute acid treatment before use as substrate for bioethanol production. The optimum combination of two different enzyme for maximum production of glucose was screened. The result shows that the highest glucose production is 8.282 ± 0.06 mg/mL with the combination ratio of 1:4. Overall, this result can be further used as a guide in optimization in the fermentation of bioethanol.