ABSTRACT

Sulfiyah.2014. **The influence of variation bread yeast amount** *(Saccharomyces cerevisiae)* **and Fermentation Long of glucose from Cellulose Hydrolysis of Robust sugar cane waste with Rough Enzyme from mixture of** *Trichoderma* **sp mold.,** *Gliocladium* **sp***,* **and** *Botrytis* **sp on ethanol levels.** Thesis. Biology Department, Science and Technology Faculty, Maulana Malik Ibrahim State Islamic University of Malang. Supervisor I: Dr. Hj. UlfaUtami, M.Si. Supervisor II: Dr. H. Ahmad Barizi, M.A.

Keywords : Bread yeast amount *(Saccharomyces cerevisiae),* fermentation long, bioetanol, rough enzyme from mixture of *Trichoderma* sp mold., *Gliocladium* sp*,* and *Botrytis* sp and ethanol levels.

Bioetanol is a commodity that required at the present and the future, and the production will increase significantly in due to the abundance of raw materials that can be used, one of them is sugar canerobust. Sugar canerobust is other production result from the milking process, from one industry can be generated 35%-40% from sugar cane weight that be kibbled. Robust of sugarcane contains cellulose, hemicellulose, and lignin. In this research, hydrolysis process on biotenol making used enzyme from mold,i.e. mixture of *Trichoderma* sp*, Gliocladium* sp, and *Botrytis* sp because it can produce selulase enzyme with a ratio of clear zone to 9,13 cm and produce enzyme activity to 31.57 U/mL. The fermentation of glucose that using bread yeast is to change into bioetanol. The factors which affect infermentation process are: temperature, pH, long fermentation, oxygen concentration, concentration of substrate and concentration of enzyme, type of microbes, and the concentration of ethanol. This research aims to know the influence of bread yeast amount*,* long fermentation and interaction yeast bread amount, and long fermentation on ethanol levels on glucose fermentation as the results of cellulose hydrolysis of sugar cane robust waste with rough enzyme robust of selulase from mixturing mold of *Trichoderma* sp, *Gliocladium* sp, and *Botrytis* sp.

The type of this research is experimental studies by using *Rancangan Acak Lengkap (RAL) in* factorial pattern spesificly two factors. The first factor is the number of bread yeast variations which consists of 3 levels i.e. 1 g, 2 g, and 3 g. The second factor is variation of long fermentation that consists of three levels: 4 days, 6 days and 8 days. Each factors made repetition as much as 3 times. The Data obtained were analyzed using *Analysis Of Variance* (ANOVA). If treatment has real effect on parameters then continued with *Test Duncan Multiple Test* (DMRT).

The results of reseach showed that (1) amount of bread yeast has effect on ethanol levelin fermentation of glucose process from hydrolysis of cellulose sugarcane robust waste by using rough enzyme of cellulose from mixturing *Trichoderma* sp, *Gliocladium* sp, and *Botrytis* sp mould. The highest levels of ethanol is obtained from the addition of bread yeast in 3 g, i.e. 50,94%. (2) long fermentation has effect on ethanol levels on glucose fermentation as results of hydrolysis of cellulose sugarcane robust waste by using rough enzyme of cellulase from mixturing *Trichoderma* sp, *Gliocladium* sp, and *Botrytis* sp mould. The highest level of ethanol obtained from long fermentation during 8 days, i.e. 47,04%. (3) The interaction of bread yeast amount and long fermentation has effect on ethanol level fermentation of glucose process from hydrolysis of cellulose sugarcane robust waste by using rough enzyme of cellulase from mixturing*Trichoderma* sp, *Gliocladium* sp, and *Botrytis* sp mouldon all treatments. The highest levels of ethanol obtained from the addition of bread yeastnumber in 3 g and long fermentation during 8 days, i.e. 55,33%.