Bioethanol Fermentation from Pineapple Peel using Tapai Yeast (Saccharomyces Cerevisiae) with Time and Concentration Variation

Dedy Eko Rahmanto, S.TP., M.Si as a minithesis counselor

Nur Alizah
Study Program of Renewable Energy Engineering
Majoring of Engineering

ABSTRACT

Research on bioethanol production is widely developed because it has good potential and development opportunities. Pineapple peel (*Ananas comocus L Merr*) at wet state contains 81.72% water, 17.53% carbohydrates, 4.41% protein, 13.65% sugar reduction, 20.87% wet fiber. The high carbohydrate content of pineapple peel makes it possible to utilize non-food waste as an alternative raw material for bioethanol production. To become bioethanol pineapple peel through hydrolysis using H_2SO_4 1M, then the fermentation process using the help of tapai yeast *Saccharomyces cereviceae*. In this study the fermentation process is done by adding variations in the concentration of tapai yeast by 1%; 1.5%; 2% and variations in the length of fermentation time of 3, 4, and 5 days and the volume of substrate as much as 100 ml. The best concentration of tape yeast is 1.5% with bioethanol content produced by 42% with a long fermentation time of 4 days, brix value (11%), and volume of ethanol distillation (24.5 ml). In addition, the yield obtained after distillation from the process of making bioethanol pineapple peel juice ranged between 15.83% - 24.5%.

***Keywords**: bioethanol, fermentation, pineapple peel, tapai yeast.*