

ABSTRACT

Mudawamah, Umi R. 2012. **The Influence of Variations in The Concentration of Tape Yeast and Time of Fermentation Time on Bioethanol Levels of Potato Peels (*Solanum tuberosum* L.)**. Thesis. Biology Departement Faculty of Science and Technology of State Islamic University Maulana Malik Ibrahim of Malang. Advisor (I): Ir. Liliek Harianie A.R, M.P. (II) Ach. Nashichuddin, M.A.

Keywords: tape yeast, fermentation, bioethanol, and potato peels.

Scarcity in fuel oil (BBM) in Indonesia, due to the increasing needs of society while the availability of oil reserves is continuing decreased. The alternative products that are likely to substitute one of them is bioethanol fuel. One example of the raw materials of bioethanol which is expected at this time is waste which is still not optimally utilized by humans, for example potato peels. Potato peels contain lots of starch, cellulose, hemicellulose, lignin and sugar. This research aim at: (1) Determining the influence of variations in the concentration of yeast tape on levels of bioethanol from potato peels. (2) Determining the influence of the time of fermentation using yeast tape on levels of bioethanol from potato peels. (3) Knowing the interaction between variations in the tape yeast concentration and time of fermentation toward bioethanol levels of potato peels.

This research was done in June to November in the biology and chemistry laboratory Faculty of Science and Technology of State Islamic University Maulana Malik Ibrahim of Malang. Type of this research is experimental by using Randomized Design Group (RAK) of factorial pattern consisting of two factors with three replications. The first factor is the concentration of tape yeast covering the tape yeast concentration of 3%, 4% and 5%. The second factor is the time of fermentation which are 2, 4, 6, 8 days. The data obtained were analyzed by using ANAVA and the next test was by using Duncan Range Test (UJD) significance level of 5%.

The research results show that there is influence of variations in the concentration of tape yeast and time of fermentation on levels of bioethanol. The highest levels of bioethanol were obtained from the addition of a concentration of tape yeast 5% and 4 days of fermentation time on average 2,21%, with an average of 0,0183% it reduction in sugar content and pH 3,73. While the average levels of bioethanol which are lowest were obtained from concentration of tape yeast 3% and 2 days of fermentation time that is 1,11%, with an average of 0,0179% of reduction in sugar content and pH 3,87.