

ABSTRACT

Mahmudah. 2013. **Effect of Number of Inoculum and Long of Fermentation By *Bacillus mycoides* Against Crude Fiber and Protein fiber Contents of Tapioca by Product (Onggok)**. Thesis. Department of Biology, Faculty of Science and Technology, State Islamic University of Maulana Malik Ibrahim Malang. Supervisors (I): Dr. Hj. Ulfah Utami, M.Si, Supervisors (II): Dr. H. Munirul Abidin, M.Ag

Keyword: Number of Inoculum, Long of Fermentation, *Bacillus mycoides*, Crude Fiber, Crude Protein, Tapioca by-Product (Onggok)

Onggok is a waste of processing cassava into flour tapioca. Starch content in cassava is still very high, potentially as a mixture of animal feed ingredients one of which is poultry. But it is constrained by the high crude fiber content and low levels of crude protein was given poultry monogastric animals that could not secrete the enzyme cellulase. *Bacillus mycoides* was previously known to produce cellulase enzymes with cellulase activity index of 1.25. Fermentation is done to decrease levels of crude fiber and increase crude protein. The purpose of this study was to determine the best interaction between the amount of inoculum and the fermentation time in lower crude fiber and crude protein increase so as to improve the nutritional quality of Tapioca by-product (Onggok).

Research design used a completely randomized design with two treatment factors and 3 replications. The first factor is the amount of inoculum that consisted of 3 treatment levels are 1%, 3% and 5%. The second factor is the length of fermentation which consists of three levels, namely treatment 2 days, 5 days and 8 days. The data analysis using Two Way ANOVA and DMRT test further 5%.

Based on the analysis of variance, the data show that there are significant differences ($P < 0.05$) in the treatment of variations in the amount of inoculum addition, fermentation time and their interaction. Further testing showed that the interaction DMRT best treatment is a variation of the amount of inoculum 5% to 8 days fermentation time can lower crude fiber content of Tapioca by-product (Onggok). 10.24% to 5.52% and increased crude protein content from 1.10% to 9.01 %.