

ABSTRACT

The waste of cassava peel can be used as a potential raw material (as substrate for microbial growth) for microbial bio conversion. Fermentation process using cassava peel substrate also called Solid State Fermentation (SSF). The microbial growth become a key factor for determining the process of SSF. The microbial growth were influenced by substrate nutrient composition (source of carbon and nitrogen, macro and micro nutrient, and C/N ratio). The microbe which were used in the SSF can produce enzyme. This enzyme can catalyze the process of complex compound degradation and protein synthesis.

The objective of this research are : characterize the cassava peel, determine the source vitamin B and nitrogen, determine the optimum value of substrate nutrient using Response Surface Methodology (RSM), and studying the influence of fermentation process in cyanide acid value contained in cassava peel.

Data from research shown that characteristics of cassava peel are : moisture content 4.830 %, ash 5.200 %, fat 1.737 %, and carbohydrate 78.203 %. The source of vitamin B and nitrogen which influence the SSF process each vitamin B₁ and diammonium phosphate. Maximum yield of protein that reached 36.78 %, which resulted from composition of weight of vitamin B₁ 0.0103 %, moisture content 66,9 %, and C/N ratio 15.3. This reseach data also shown that empirical model was same as experimental data. The value of cyanide acid also decreased from 0.024 % to 0,009 % after 5 days fermentation process.

Key word : cassava peel, Solid State Fermentation, Response Surface Methodology