

ABSTRACT

PROFILE OF FERMENTED TAPIOCA AS A MODIFIED STARCH USING MIX INOCULUM

Saccharomyces cerevisiae AND *Lactobacillus plantarum*

By

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Cassava (*Manihot esculenta*) is one of commodities that has economic value, but food processing of cassava is still dominated by tapioca production. Tapioca has some obstacles if used as ingredient in food industries and also non food. Modification of starch was done to improve basic characteristic of natural starch, so that can increase its using in food processing and produce food product with a good characteristic. The aim of this research were to find chemical exchange of substrat during fermentation of tapioca producing, and to find the effect of physicochemical characteristic of tapioca that fermented by *Saccharomyces cerevisiae* and *Lactobacillus plantarum*.

The treatment consisted of two factors. The first factor was addition of inoculums , that consisted of without addition (control) (I₁), and addition of mix inoculums *Saccharomyces cerevisiae* (1 g) and *Lactobacillus plantarum* (10⁸ cell/mL in 1 kg cassava) (I₂) and the second factor was time of fermentation consisted of 24 hour (L₁), 48 hour (L₂), 72 hour (L₃), 96 hour (L₄), 120 hour (L₅), 144 hour (L₆), and 168 hour (L₇). The treatment was redudancied in three times and the data was

analyzed by averaging and finding the median then the data was served in graphic and analyzed descriptively.

The result showed that *Saccharomyces cerevisiae* and *Lactobacillus plantarum* could grow together in tapioca suspense as mix inoculums but the growth of *Saccharomyces cerevisiae* was more dominant than *Lactobacillus plantarum*. The addition of *Lactobacillus plantarum* did not give the effect of microflora during fermentation. The mix inoculums addition of *Saccharomyces cerevisiae* and *Lactobacillus plantarum* could change physicochemical characteristic of tapioca. It could increase starch substance, amilopectin substance, water substance, protein substance, and decrease amylose substance, it also degradated granula structure of tapioca. Longer fermentation time of tapioca could decrease pH and total reducing sugar, and increase total acid in this tapioca suspense.

Key words : Tapioca, Inoculum, *Saccharomyces cerevisiae*,
Lactobacillus plantarum, Fermentation