

ABSTRACT

Zahro', Fatimatuz. 2014. **Isolation and Identification of Lactic Acid Bacteria Origin of Fermentation Purple Passion Fruit (*Passiflora edulis* var. Sims) As Producer Exopolysaccharide**. Thesis. Department of Biology, State Islamic University Maulana Malik Ibrahim Malang
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Keywords : Lactic Acid Bacteria, Purple Passion Fruit (*Passiflora edulis* var. Sims.), Exopolysaccharide

Lactic acid bacteria are bacteria that are beneficial to health by improving the balance of intestinal microflora. Lactic acid bacteria can be isolated from fruits and vegetables, including purple Passion fruit (*Passiflora edulis* var. Sims). In addition to functioning as an antioxidant, purple passion fruit contains energy and some essential vitamins such as vitamin C, A, B1, B2 and vitamin B3. Several types of LAB can synthesize exopolysaccharide (EPS), which is a polysaccharide polymer that is secreted by microbes out of the cell. Physico-chemical characteristics similar to polysaccharides of the plant so widely applied in the food industry as a thickener improving texture, viscosity and rheological properties of the product. EPS has many health effects. The purpose of this research was to obtain lactic acid bacteria of purple passion fruit fermented as producing exopolysaccharide.

This research was conducted accordance with the qualitative descriptive of lactic acid bacteria from fermented purple passion fruit as producing exopolysaccharide. The fermentation process is done naturally for 72 hours. Samples were then diluted stratified using peptone water and plating is done with pour plate method. Each different colonies was purified by the streak plate method. Obtained 3 isolates, namely T1, T2 and T3. Then do the characterization of LAB with gram staining and endospores along with catalase test. LAB isolates were then identified using *Microbact 12B*. Followed by crude exopolysaccharide test by centrifugation 5000 rpm at 4° C for 30 minutes. Supernatant added technical acetone and centrifuged. Pellets were dissolved in distilled water and 80% trichloroacetic acid to obtain a crude weight of EPS.

The results showed the presence of lactic acid bacteria fermented purple passion fruit origin of the genus *Lactobacillus*, namely of species is *Lactobacillus bulgaricus* and *Lactobacillus heterohiochii*. Exopolysaccharide production obtained is 1790-2183 mg / L. EPS production obtained higher than commercial LAB isolates of *Lactobacillus casei* which produces EPS of 1470 mg / L.