

ABSTRACT**THE EFFECT OF INLET TEMPERATURE ON
ENCAPSULATION EFFICIENCY OF *Lactobacillus casei*
IN MICROPARTICLE
(Using Combination of Methacrylic Acid Copolymer L-type
and S-type as Matrix and Feed Flow Rate 10 ml/min)**

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Lactobacillus casei is a probiotic that provides health benefit for human being by improving intestinal microbial balance if it's taken as much as $10^6 - 10^9$ cfu/g. Drug delivery system like microparticle is needed to protect *Lactobacillus casei* from gastric condition so it can release the probiotics in intestine. A matrix that is resistance to acid condition and dissolves in base condition is needed to protect *Lactobacillus casei* in the microparticle. The combination of methacrylic acid copolymer L-type and S-type is used as matrix in this research. The aim of this research is to know the effect of inlet temperature to encapsulation efficiency *Lactobacillus casei* in microparticle with a combination of methacrylic acid copolymer L-type and S-type as a matrix. Microparticles were made by spray dry method with inlet temperature 100, 120, and 140 °C and feed flow rate 10 ml/min. The encapsulation efficiency test was done after the microparticles were obtained. The encapsulation efficiency at each inlet temperature were 25,93%; 24,65%; and 25,10%, respectively. The statistic analysis One Way ANOVA was done and the result showed that no significant difference was found on the encapsulation efficiencies of the three inlet temperatures.

Keywords: *Lactobacillus casei*, microparticle, methacrylic acid copolymer L-type, methacrylic acid copolymer S-type, spray dry, encapsulation efficiency