

ABSTRACT

THE EFFECT OF L TYPE METHACRYLIC ACID COPOLYMER CONTENT ON THE PHYSICAL CHARACTERISTICS OF *Lactobacillus casei* MICROPARTICLES (MADE BY SPRAY DRYING METHOD WITH INLET TEMPERATURE OF 120 °C)

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The microencapsulation aims to protect drugs, reduce degradation of drug compounds and to provide pulsatile release effects. One of the active ingredients that require microencapsulation methods is probiotics that have no acid-resistant properties, while the target release is commonly in the intestine. The objective of this study was to compare the effect of L type methacrylic acid copolymer as matrix (0,5%; 0,75%, dan 1,0%) on the physical characteristics of probiotic microparticles made by spray drying method with inlet temperature of 120 °C. The results indicated that the particle size was increased and moisture content was decreased with the increasing of matrix level. Through SEM examination, it could be seen that the morphology of microparticles produced from this study had no spherical form, there was basin, but not porous. In addition, FT-IR examination was performed in this study to determine the formation of hydrogen bonds in the three formulas characterized by shifting of wavenumber in C = O ester and OH hydroxyl groups. The results of FT-IR indicated a decrease in the wavenumber of the C = O esteric acid and OH hydroxyl groups on the third formula of microparticles when compared with the L type methacrylic acid copolymer before it was encapsulated.

Keyword: microencapsulation, probiotic, microparticles, L type methacrylic acid copolymer, Spray Drying, *Lactobacillus casei*, physical characteristic