

ABSTRACT**THE EFFECT OF METACRYLIC ACID COPOLIMER L TYPE CONCENTRATION AS MATRIX MICROPARTICLE ON *Lactobacillus casei* ENCAPSULATION EFFICIENCY (Spray Drying Method in 120 °C Inlet Temperature)**

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Microparticles are type of drug delivery systems where the particle size ranges from 1-1000 μm . It is suitable for sensitive substances such as probiotic bacteria that are not resistant to acidic environments and high temperatures. Metacrylic acid copolymer L type was used as a matrix polymer with the objective of enhancing survival of the probiotic bacteria and keeping them during exposure to the adverse conditions of the gastrointestinal tract. The aim of this study was to determine effect of Metacrylic acid copolymer L type concentration with *Lactobacillus casei* encapsulation efficiency in microparticle by spray drying method. *Lactobacillus casei* was made into microparticle by spray drying method in 120 °C inlet temperature with three different concentration of Copolymer metacrylic acid L type. Three different formula were named formula I, formula II, formula III with 0,5%; 0,75%; and 1% concentration of Metacrylic acid copolymer L type. Moisture content was decreased with increasing Metacrylic acid copolymer L type concentration. The largest particle size of microparticle was obtained by formula III. Encapsulation efficiency of microparticle increased with increasing Metacrylic acid copolymer L type concentration ($p < 0,05$). The result showed that the best encapsulation efficiency was obtained by formula III which contain Copolymer metacrylic acid tipe L concentration 1% with a percentage of $92,46 \pm 0,17\%$.

Keywords: Microparticles, Spray drying, Metacrylic acid copolymer L type, probiotic, *Lactobacillus casei*, encapsulation efficiency.