ABSTRACT

EFFECT OF EUDRAGIT® S-100 CONCENTRATION WITH PHYSICAL CHARACTERISTIC AND *Lactobacillus* casei ENCAPSULATION EFFICIENCY IN MICROPARTICLE

Lina Novitasari

Microencapsulation is a process of enclosing micron-sized particle in a polymeric shell as a physical barrier against stress condisitions. It is suitable for sensitive substances such as probiotic bacteria that are not resistant to acidic environments and high temperatures. Eudragit® S-100 was used as a matrices polymer with the objective of enhancing survival of the probiotic bacteria and keeping them during exposure to the adverse conditions of the gastro-intestinal tract. The aim of this study was to determine effect of Eudragit® S-100 concentration with physical characteristic and *Lactobacillus casei* encapsulation efficiency in microparticle by spray drying method. *Lactobacillus casei* was made into microparticle by spray drying method in 120ºC inlet temperature with three different concentration of Eudragit® S-100. Three different formula were named formula I, formula II, formula III with 0,5%; 1,0%; and 1,5% concentration of Eudragit® S-100. Physical characteristic and encapsulation efficiency test were performed in all formula. The result showed that microparticle morphology have spherical shape and smooth surface only in formula II which contain Eudragit® S-100 concentration 1,0%. Moisture content was decreased with increasing Eudragit® S-100 concentration. The largest particle size of microparticle was obtained by formula II. Encapsulation efficiency of microparticle decreased with increasing Eudragit® S-100 concentration ($p<0,05$). The best encapsulation efficiency was obtained by formula I with a percentage of 67,33% ± 2,87.

Keywords: Microencapsulation, Spray Drying, Eudragit® S-100, Probiotic, *Lactobacillus casei*, Physical Characteristic, Encapsulation Efficiency.