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### **Abstract**

Microencapsulation technology by using suitable matrices is one of the newest and highly efficient methods to increase viability of probiotic bacteria. *Lactobacillus* spp. in fermented skim milk was made into microparticle by spray drying in 110°C inlet temperature with four different concentration of HPMC K100LV (formula I, II, III, IV) as a matrix. The formula II, III, and IV were used HPMC K100LV 0,1%, 0,2%, and 0,3% respectively, while the formula I was used as control without HPMC K100LV addition. Physical characteristic evaluation and viability test were performed in all formula.

The result showed that microparticle morphology in all formula has spherical shape with different roughness surface. The particle size and moisture content of the microparticle increase with increasing HPMC K100LV. In order to observe the viability of *Lactobacillus* spp. in all formula, the viability test was performed in two different conditions, under spray drying process (1) and artificial pH of gastrointestinal tract (2). The result showed that the higher the HPMC K100LV concentration, the higher the viability of *Lactobacillus* spp. in the microparticle with spray drying process. The highest viability under spray drying process was  $92,46 \pm 0,16\%$ , obtained by formula IV. This viability was significant different with other formula ( $p > 0,05$ ). On the other hand, the increasing viability of *Lactobacillus* spp. in microparticle under artificial pH of gastrointestinal tract conditions has not showed as well as increasing HPMC K100LV concentration of the microparticle. The highest viability under pH GI tract conditions was  $74,84 \pm 0,98\%$ , obtained by formula III, which significant different with other formula ( $p > 0,05$ ).

Keyword : HPMC, K100LV, *Lactobacillus*, spp, microencapsulation, probiotic, spray, dry,

### **Daftar Pustaka :**

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