ABSTRACT

EFFECT OF INLET TEMPERATURE ON VIABILITY *Lactobacillus casei* DURING MICROPARTICLE

Evana Nirasmara

Microencapsulation using suitable technique and matric was efficient methods to protect probiotic from extreme condition and keep probiotic active through the gastrointestineal tract and release then in their target organ. *Lactobacillus casei* was made into microparticle using combination of methacrylic acid copolymer L type and methacrylic acid copolymer S type (1:1) by spray drying method with three different *inlet* temperature. Selection of *inlet* temperature based on minimum film temperature of methacrylic acid copolymer more than 100 ^{o}C and transition glass temperature less than 150 ^{o}C for methacrylic acid copolymer L type and 160 ^{o}C for methacrylic acid copolymer S type. Three different *inlet* temperature were 100 °C, 120 °C, and 140 °C. Other parameter of spray drying was controlled, outlate temperature was between 70 ^{o}C – 79 ^{o}C, diameter of noozle 4 mm, pump speed 32% and feed flow rate 10 ml/minutes. Protection test was performed in all condition of inlet temperature. The result showed that viability of *Lactobacillus casei* on microparticle probiotic increased with increasing inlet temperature but statistically, no significant difference showed between each inlet temperature other temperature ($p>0,05$). The conclution of this study is increasing inlet temperature of 100 °C, 120 °C, and 140 °C has no difference on viability of *Lactobacillus casei* on microparticle probiotic using combination of methacrylic acid copolymer L type and methacrylic acid copolymer S type (1:1) by spray drying method.

Keyword : Microparticle, inlet temperature, protection, viability, spray drying, microencapsulation, probiotic, *Lactobacillus casei*.