



Effect of temperature, pH, and growth requirements on probiotic production isolated from dogs

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Abstract : The aim of this study was to develop specific probiotic strains of canine origin and to investigate the effect of growth requirement on its viability then microencapsulate the identified probiotic microorganisms *L. plantarum* and *L. paracasei* using skimmed milk as a wall material by the spray drying technique using inlet and outlet temperature of 120°C and 80°C, respectively, drying air flow rate 85.0% of suction fan controller. The spraying system consisted of a two fluid nozzle composed of an internal tip with an opening 0.7 mm in diameter and external ring with an opening of 1.5 mm in diameter, then evaluate the tolerance of these microorganisms in the free and microencapsulated forms to pepsin (pH adjusted to 2) and oxgall bile salt 0.3 % regarding to measuring the moisture content of the two produced microencapsulated product and observing the viability and stability of probiotic bacteria during storage at 4°C, 25°C for 60 days for each temperature. Both micro-encapsulated microorganisms were showed high encapsulation yield reached to 92.59% and 93.3 % after exposure to spray drying with moisture content of 3.4% & 3.45% for *L. paracasei* and *L. plantarum*, respectively leading to maintaining cell viability during storage till 60 days at either -4°C & 25°C. Also both microencapsulated microorganisms can tolerate acidic condition at pH2 and bile salt 0.3% than free cells. Trial for studying the effect of growth requirement was carried by using tryptone soya agar and showed high count for both microorganisms as it contain nutritious substance favoured for the growth of lactobacillus organisms.

Keywords : Probiotic, Canine, Spraydryer, Temperature, pH, Microencapsulation.

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