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Research abstract

Development And Evaluation of A Low Fat Sour Cream Added With Microencapsulated *Lactobacillus casei*

Beneranda Murúa-Pagola¹, Rocío Sánchez-Alaníz¹, Eduardo Castaño-Tostado¹, Silvia Amaya-Llano^{1*}

¹ Facultad de Química, Universidad Autónoma de Querétaro, Querétaro, Qro. México, CP 76010

Abstract: Probiotic foods offer health benefits because of their live probiotic bacteria content. Although the number of probiotic bacteria that provides health benefits has not been firmly established, levels between 10^9 and 10^9 cfu g⁻¹ have been suggested. Microencapsulation of probiotic bacteria by spray drying is a method to produce a dried powder of bacteria and a carrier, usually a protein and/or a carbohydrate. The aim of this work was to study the effect of the incorporation of microencapsulated probiotics (*Lactobacillus casei* ATCC334) by means of spray drying within a polymeric matrix containing phosphorylated high amylose maize starch and whey protein concentrate (WPC), on the manufacture and quality of low fat sour cream, survival of probiotic microencapsulated and free cells during storage during 28 days at 4°C and during exposition to simulated gastrointestinal conditions after storage were evaluated. Encapsulated cells maintained a higher viability along the intestinal assay compared with free cells, showing the protective effect of microencapsulation. The developed reduced fat sour cream was found to be a good vehicle for incorporating encapsulated *L. casei*, allowing probiotic survival in enough number to maintain its effect as probiotic food (at least 10^6 CFU per gram feed) during 28 storage days at 4 ° C.

Keywords: Probiotics, *L. casei*, microencapsulation, spray drying

Corresponding Author: Silvia Amaya-Llano;
samayal@uaq.mx