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PII: S0023-6438(17)30845-9

DOI: 10.1016/j.lwt.2017.11.026

Reference: YFSTL 6655

To appear in: *LWT - Food Science and Technology*

Received Date: 19 July 2017

Revised Date: 9 October 2017

Accepted Date: 11 November 2017

Please cite this article as: Silva, K.C.G., Cezarino, E.C., Michelon, M., Sato, A.C.K., Symbiotic microencapsulation to enhance *Lactobacillus acidophilus* survival, *LWT - Food Science and Technology* (2017), doi: 10.1016/j.lwt.2017.11.026.

# Symbiotic microencapsulation to enhance *Lactobacillus acidophilus* survival

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## Abstract

*Lactobacillus acidophilus* was microencapsulated in alginate-gelatin (AG) and alginate-gelatin-fructooligosaccharides (AGF) microbeads by external gelation, with the purpose of increasing the viability of the probiotic culture when exposed to gastrointestinal tract (GIT) and during storage when added to yogurt. The microencapsulation provided greater protection of cells when exposed to simulated GIT. Moreover the addition of fructooligosaccharide (FOS) to the matrix promoted the formation of a more interconnected network, which contributed to better protection of cells and controlled delivery. Microencapsulation process proved to not affect cell viability. Microbeads AG and AGF improved probiotic survival during the storage in yogurt compared to free *L. acidophilus* (FLA). This study showed that symbiotic microencapsulation provided greater viability of *L. acidophilus* during the storage in yogurt and in GIT, as well as providing functional characteristics of yogurt with added of AGF microbeads.