Accepted Manuscript

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PII: S0023-6438(15)30256-5

DOI: 10.1016/j.lwt.2015.10.038

Reference: YFSTL 5033

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

Received Date: 22 June 2015

Revised Date: 8 September 2015

Accepted Date: 15 October 2015

Please cite this article as: Lemes, A.C., Pavón, Y., Lazzaroni, S., Rozycki, S., Brandelli, A., Kalil, S.J., A new milk-clotting enzyme produced by *Bacillus* sp. P45 applied in cream cheese development, *LWT - Food Science and Technology* (2015), doi: 10.1016/j.lwt.2015.10.038.

A new milk-clotting enzyme produced by *Bacillus* sp. P45 applied in cream cheese development

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Abstract

The growing demand for natural coagulants led to an increased necessity for rennet substitutes, promoting a search for new sources of proteases with coagulant properties. The aim of this study was to investigate the application of a bacterial enzyme as a novel milk-clotting protease in the development of cream cheese enriched with chia and quinoa flour. At the concentration of 30 mg/mL, the milk-clotting strength was similar to that observed for commercial chymosin, demonstrating the enzyme ability to catalyze the hydrolysis of milk casein. The cheese developed showed high water retention (≥99.0%) and consequently low syneresis process. The results indicate that the product made using the enzyme showed adequate sanitary conditions and technological characteristics indicated that the product is highly stable and viable.

Keywords: keratinase; proteases; chia; quinoa; cream cheese.