

## Impact of inulin and fructooligosaccharides on the probiotics resistance in *petit-suisse* cheese submitted to simulated gastrointestinal conditions

**Marina Padilha**

*University of Sao Paulo, Brazil*

### Abstract

It is expected that probiotics added in food present ability to resist processing and storage, as well as survive the gastrointestinal (GI) barriers. Particularly, prebiotic ingredients appear to influence the probiotics survival through the gastrointestinal tract. The aim of this study was to evaluate the effect of a prebiotic mixture over the probiotic survival in strawberry *petit-suisse* cheese under *in vitro* gastrointestinal simulated resistance assay. Two trials of *petit-suisse* cheese were evaluated: PC- with the ABT culture, containing *Lactobacillus acidophilus* LA5, *Bifidobacterium animalis* subsp. *lactis* BB12 and *Streptococcus thermophilus* as starter culture and SC- with the ABT culture and the prebiotics inulin (7.5%) and fructooligosaccharide (2.5%). The products were stored at 4 °C and survival *in vitro* assays were performed weekly for 28 days. For SC, a higher LA5 population stability during the shelf-life and a higher BB12 *in vitro* survival up to 14 days of storage ( $p < 0.05$ ) were observed. BB-12 presented mean survival rates decreasing from 88.0% (day 1) to 59.6% (day 28) in SC and from 80.0% (day 1) to 59.8% (day 28) in PC. In contrast, for LA5, the mean survival rates decreased from 49.1% (day 1) to 36.8% (day 28) in SC and from 61.6% (day 1) to 39.2% (day 28) in PC, which presented higher survival rate on days 1 and 14 ( $p < 0.05$ ). The results suggest a protective effect of supplementation with prebiotics regarding the BB12 survival in GI conditions. Nevertheless, this effect should be evaluated for each strain, once this protection might be selective.

### Biography

Marina Padilha studied Nutrition and Metabolism at the University of São Paulo (USP), Brazil. She has completed her post-graduate in Pediatric Nutrition at 2011 from University of Campinas (UNICAMP), Brazil. Currently, she is concluding her Master in Science at the Program of Biochemical and Pharmaceutical Technology (USP) with emphasis on probiotics and synbiotic *petit-suisse*, technological and sensory analysis, gastrointestinal *in vitro* tests and culture dependent and independent methods for probiotics enumeration.