Microbiological evaluation of probiotic goat cheese

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Goat milk and its products are considered high nutritional value foods, and the addition of probiotic cultures is a strategy to improve the health benefits to consumers, thus increasing the potential of adding value and stimulating the sector production. This study aimed to produce a “Boursin” type probiotic goat cheese employing two different probiotic cultures, and to evaluate their microbiological characteristics during the estimated shelf life. Three cheese formulations were produced, as follows: cheese with no probiotic culture – control (T1), cheese with added *Bifidobacterium animalis subsp. lactis* - BB12 (T2) and cheese with added *Lactobacillus rhamnosus* - LRB (T3). Microbiological analyses were carried out to investigate the viability of the probiotic cultures, coliform and *Escherichia coli* counts, and the presence of Salmonella spp. The T2 cheese reached *Bifidobacterium animalis* average counts of 9.21, 8.69, 8.73, 7.98, 6.45 and 6.53 log CFU/g at 0, 7, 14, 21, 28 and 35 days of storage, respectively. Results for the T3 cheese revealed average counts of *Lactobacillus rhamnosus* of 8.60, 8.32, 8.33, 8.39, 8.47, and 8.21 log CFU/g at the same storage times. It was found that coliform count of 3.0×10^1, 6.0×10^1 and 4.0×10^1 CFU/g (estimated) at 7 days of storage for T1, T2 and T3, respectively. Counts $< 1 \times 10^1$ CFU/g was found for the other investigated times for all samples. *Salmonella spp.* was not detected in any of the analysed samples. The results demonstrate that the "Boursin" type goat cheese is a promising matrix for incorporating probiotics, since viable populations as high as 10^8 CFU/g were found up to 35 days of storage for both cultures, being considered a potentially functional food according to the Brazilian legislation. Further studies are recommended to identify more appropriate probiotic culture to be applied, taking into account the goat cheese sensory properties.