Development of a symbiotic goat cream cheese supplemented with inulin and *Lactobacillus acidophilus* in co-culture with *Bifidobacterium animalis*

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Pre and probiotics may be combined in a goat cream cheese is called a symbiotic. The aim of this study was to develop a symbiotic goat cream cheese containing probiotics and inulin, to evaluate the effect on the quality characteristics. Two pilot-scale fresh goat cream cheese-making trials denoted T1 and T2 were performed in triplicate, T1 without the addition of inulin and probiotic bacteria and T2 containing *Lactobacillus acidophilus* LA-5® in co-culture with *Bifidobacterium animalis* BB-12 (0,1 g/L) and inulin(6%). It was evaluated pH, titratable acidity, moisture, fat, protein, ash, water activity, lactose, total carbohydrates and yield. It was also tested staphylococci coagulase positive, salmonella and total and fecal coliforms. Cheeses proved microbiologically safety by the absence of pathogenic microorganisms and coliforms. Due to the addition of inulin the T2 cheese contained lower amounts of lactose (5,55%) and pH (4,28) compared to the T1, respectively, 5,80% and 4,72. The titrable acidity of T2 (0,06%) was higher compared to T1(0,04%). This reduction of lactose, pH and raise of acidity is observed due to the presence of the inulin, which increases bacteria proliferation, promoting a continuous production of acid latic by the degradation of lactose during the metabolism of probiotic and starter bacteria. The yield of T2 (1993 g/10L) was significantly (p< 0,05) compared to T1 (1686 g/10L) which can be assigned to incorporation of the prebiotic. For the other tests was not observed differences (p<0,05) between the trials. The current study shows that was obtained a quality symbiotic goat cheese.