

## EFFECT OF GOAT MILK AND FRESH CHEESE MATRIX ON THE SURVIVAL OF *Bifidobacterium animalis* subsp. *lactis* Bb-12 TO SIMULATED GASTROINTESTINAL CONDITIONS

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Food matrix can exert an important role in the survival of probiotic bacteria in the gastrointestinal tract (GIT), which is an important feature for their beneficial effects in the host organism. The resistance of *Bifidobacterium animalis* Bb-12 (Bb-12) to *in vitro* GIT conditions was investigated when the microorganism was added to **i)** caprine fresh cheese matrix, **ii)** fermented goat milk matrix, and **iii)** saline solution. The cheese was produced by incorporation of a lyophilized culture of Bb-12 in goat milk (0,1g/L), and evaluated after 7 days under refrigeration. Goat milk and MRS-cysteine broth were inoculated with lyophilized culture Bb-12 (50mg/L<sup>-1</sup>), and incubated anaerobically at 37°C/18h. Bb-12 was grown overnight in MRS-cysteine broth, centrifuged and the pellet was resuspended in sodium chloride solution (0.85%, m/v). The simulated gastric juice was set at pH 2.29 by use of hydrochloric acid, and added of pepsin (3g/L) and lipase (0.9mg/L). The enteric conditions were simulated with an artificial enteric juice containing bile (10g/L) and pancreatin (1g/L), with pH values of 4.66 and 6.49. Viability of Bb-12 was determined at 0 (T<sub>0</sub>) and after 2h, 4h, and 6h. Initial counts of Bb12 assessed in conditions **i)**, **ii)**, and **iii)** were, respectively, 7.50, 8.11 and 8.93 log CFU/g. The cumulative survival rates determined for Bb-12 at T=6h were 3.42, 4.50 and 2.97 log CFU/g (respectively). Both goat cheese matrix and milk offered protection to Bb12 viable cells and significantly ( $P>0.05$ ) improved its survival, as shown by use of an *in vitro* assay that simulates GIT conditions.