

**TITLE:** PERFORMANCE OF DIFFERENT PROBIOTIC STRAINS IN NONDAIRY BEVERAGE OF CASHEW NUT

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**ABSTRACT:**

Many probiotic cultures are available for application in food matrix aiming the development of new functional products. Embrapa Agroindústria Tropical has been developing a nondairy beverage from cashew nut for people who cannot or do not want to consume lactose. This product is a sugar added water soluble extract that resemble milk in appearance. Before applying a probiotic in a new food matrix is necessary to evaluate if cell viability is maintained during its shelf life. This occurs because cell viability is important for cell functionality, which is highly affected by food composition. In this work three commercial probiotic strains - *Bifidobacterium animalis* BB-12® (Christian Hansen), *Lactobacillus acidophilus* Howaru® Dophilus (Danisco) and *Lactobacillus plantarum* Lyofast SP-1 (Sacco) were inoculated ( $10^8$  CFU/mL) in the cashew nut beverage and cell viability was measured by lactic acid count in MRS (Man, Rogosa and Sharpe) agar (37°C/48h in anaerobiosis) during 30 days of storage at 4°C. The cashew nut beverage without inoculum was used as a control sample. The cashew nut beverage used in the test presented pH of 6.49 ( $\pm 0.00$ ) and proximate composition was 11.49% ( $\pm 0.08$ ) total solids, 0.26% ( $\pm 0.00$ ) ashes, 1.83% ( $\pm 0.03$ ) proteins, 3.97% ( $\pm 0.07$ ) lipids and 5.43 % ( $\pm 0.12$ ) total carbohydrates. Viable lactic acid bacteria counts did not vary over 30 days of analysis, since at time zero they were  $5.35 \times 10^8$  CFU/mL for BB-12,  $1.49 \times 10^8$  CFU/mL for *Lactobacillus acidophilus* and  $1.12 \times 10^8$  CFU/mL for *L. plantarum*; and after 30 days they were  $1.89 \times 10^8$  CFU/mL for BB-12,  $1.94 \times 10^8$  CFU/mL for *L. acidophilus* and  $1.68 \times 10^8$  CFU/mL for *L. plantarum*. No lactic acid bacteria count was detect in the control sample. Taking in account that all the probiotics tested remained viable at  $10^8$  CFU/mL during the storage time, it can be concluded that all of them can be incorporated into the cashew nut beverage. Thus considering that *Bifidobacterium animalis* BB-12 has many clinical tests that show its beneficial effect on human health, this probiotic culture had been chosen for further tests with the cashew nut beverage.

**Keywords:** *Bifidobacterium*, *Lactobacillus*, nut milk, probiotic culture

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