Title: INFLUENCE OF FERMENTATION TEMPERATURE ON VIABILITY OF YOGHURT CULTURES AND *Lactobacillus paracasei* Lpc-37 USING SOY EXTRACT MEDIUM

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Abstract:

The probiotics are well known for their health benefits, and one of the best ways to consume these micro-organisms is through fermented dairy beverages. Among the probiotic strains, the most used are *Lactobacillus* spp. and *Bifidobacterium* spp. *Lactobacillus paracasei* is known to improve the immunity, the intestinal microbiota and the prevention of gastrointestinal infections. Furthermore, fermentation of soybean extract is a good alternative to enhance the characteristic of bean flavor presented in soybean extract, and provides high quality proteins, fats and carbohydrates presented in soybean, besides contain no cholesterol or lactose. Therefore, it is an inexpensive source of nutrition for lactose-intolerant individuals, vegetarians, and milk-allergy patients. Inoculated soymilk samples were incubated at 37°C and 42°C in a controlled water bath until pH reached 4.5. The acidification activity of each microbial blend (*Streptococcus thermophilus* TA040, *Lactobacillus bulgaricus* LB340 and *Lactobacillus paracasei* LPC-37) was monitored by Cinac system, this equipment verify the changes of pH during the fermentation and calculates the acidification rate. Counts were determined at the beginning of fermentation (D_0), 24 hours after the fermentation was completed (D_1) and after 14 days of storage at 4°C.The time to reach the end of fermentation at 37°C was 38.7% higher than the one that was performed at 42ºC. In both conditions (37°C and 42°C), the average value of viable counts, after D_1, has an improvement of 2 log (8.84 CFU/mL) when compared to D_0. On the other hand, at 42°C, the counts were approximately 15% lower than the cultivations carried out at 37°C. Based on these results, we concluded that the fermentation temperature is very important to maintain the high viability of probiotic bacteria.

Keywords: fermentation, probiotics, *Lactobacillus paracasei*, viability, temperature.

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