

Effect of strengthening green coconut pulp with proteins on the survival of probiotic lactic bacteria and on the rheological properties of a fermented product

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The growing search for healthier lifestyles has led to a significant increase in the demand for coconut water. The green coconut pulp is edible, however, generally the consumption of the fruit in natura is limited to water, in such a way that the pulp and the husk are discarded. The objective of this work was to study the effect of strengthening green coconut pulp with non-dairy protein on the survival of lactic acid bacteria *Streptococcus thermophilus* and *Lactobacillus delbrueckii* subsp. *bulgaricus*, the probiotic bacteria *Lactobacillus acidophilus* LA-5 and *Bifidobacterium* Bb-12 and the rheological properties of fermented green coconut pulp. For the development of this work, the preparation of green coconut pulp was carried out, followed by heat treatment, addition of 2% lactic ferment containing the bacteria *Streptococcus thermophilus*, *Lactobacillus delbrueckii* subsp. *bulgaricus*, *Lactobacillus acidophilus* LA-5 and *Bifidobacterium* Bb-12, addition of different concentrations of pea protein (2 and 3 %), fermentation and storage at 7 °C for 30 days. Determinations of pH, microbiology, texture, and rheology were carried out. The increase in the protein content in the fermented green coconut pulp promoted a greater amount and a greater survival of the colony-forming units of probiotic bacteria. Statistical analysis of the results obtained in the determination of variations in microbial populations of fermented products during storage at 7 °C for 30 days showed that there was no significant difference ($p > 0.05$) between microorganisms. Therefore, the addition of 2% or 3% of pea protein allowed the survival of the bacteria *Streptococcus thermophilus*, *Lactobacillus delbrueckii* subsp. *bulgaricus*, *Lactobacillus acidophilus* LA-5 and *Bifidobacterium* Bb-12. The addition of different levels of pea protein resulted in a fermented product based on coconut pulp, with a pseudoplastic behavior. From the elaboration conditions employed, it is concluded that it is possible to produce a functional and quality fermented product, with green coconut pulp and non-dairy protein, without emulsifiers and milk.