VACUUM IMPREGNATION OF PROBIOTIC SOLUTION IN FUJI APPLES

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The consumers’ demand for healthier foods is directing the research for new products, such as enriched with probiotics. The most used probiotics microorganisms belong to *Bifidobacterium* and *Lactobacillus* groups. Among the technologies used for food processing, vacuum impregnation process allows the introduction of solutes in porous foods. In this process the food is immersed in a solution containing the solute and subjected to a vacuum condition and subsequently restored to atmospheric pressure. The aim of this work was to develop apple slice with probiotic properties using vacuum impregnation process. Firstly it was developed an impregnation solution with fermented milk containing *Bifidobacterium animalis* ssp culture and mixed with commercial apple juice. The equipment used for vacuum impregnation consists of a desiccator coupled to a vacuum pump, where the apple slices, peeled and cut, were immersed in the probiotic solution subjected to vacuum pressure (t1) and then submitted to the atmospheric pressure (t2). The stability of the product was studied during storage at 10ºC. It was experimentally verified that the best solution was a mixture of fermented milk and apple juice (30% (v/v)), obtaining a high level of bacteria ($10^{10}$ cfu/mL). After the impregnation process there was an initial count of $10^8$ cfu/g of apple, which allows it to set as a probiotic product. There was a reduction in bacterial count from day 7 of storage ($10^5$ cfu/g), thus it is necessary to study other storage conditions to which the probiotic bacterium keep their stability.