DEVELOPMENT OF A PROBIOTIC JUICE OF PASSION FRUIT MIXED WITH YAM: PHYSICOCHEMICAL AND MICROBIOLOGICAL EVALUATION


Consumer trends with respect to food choice are changing due to the increasing awareness of the link between diet and health. This study aimed to evaluate the physicochemical and microbiological characteristics of passion fruit juice mixed with yam fermented by Lactobacillus rhamnosus. The lyophilized culture was activated in the mixed juice, which was fermented by 72 hours/36 °C. The control juice was not added of probiotic culture. Analyses of pH, total acidity, °Brix and viability of L. rhamnosus at 0, 24, 48 and 72 hours after inoculation was determined. Also these analyses were carried out once a week, totaling 28 days of storage at 4 °C. Compared to control, there was reduction of pH and increase of total acidity in the mixed fermented juice, being its initial pH of 4.42 and 3.29 after fourth week at 4 °C. Besides, the total acidity increased from 0.491% to 1.410% of citric acid. We observed that the °Brix of fermented juice decreased from 14.70 to 14.13 after 28 days of storage. The viability of L. rhamnosus after inoculation in the sterilized juice was 5.73 log CFU.mL⁻¹, reaching 8.80 log CFU.mL⁻¹ after 72 hours of fermentation. However, after the third and fourth week of storage, count reduced to 6.5 and 4.8 log CFU.mL⁻¹, respectively, which indicated that this juice can be considered probiotic and potentially functional until the third week of storage, once it contains up to 6.0 log CFU.mL⁻¹ of L. rhamnosus.

Key-words: Probiotic, fermented juice, passion fruit, non-dairy, functional food.