

STABILITY OF A MIXED TROPICAL FRUIT JUICE WITH FUNCTIONAL PROPERTIES

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Abstract

The preparation of a tropical fruit juice rich in antioxidants compounds and vitamin C, made with camu-camu, acerola and acai juices, is a way to increase the acceptability of these, improving the nutritional and functional characteristics, as well as add value to the product. However, the processing must ensure quality and microbiological safety during the shelf life. The objective of this study was to evaluate the stability of mixed tropical fruit juice during shelf life. We developed a mixed tropical fruit juice - acai (5%), acerola (10%), yellow mombin (5%), cashew (5%), camu-camu (5%) and pineapple juice (20%), water (43%) and sugar (7%) - with a high content of bioactive compounds, especially phenolic compounds and ascorbic acid, to obtain the antioxidant capacity around 1500 µM Trolox equivalent in a 200 mL serving. The tropical juice was pasteurized (90 °C/60 s), hot filled in 200 mL glass bottles and stored under refrigeration (4 °C ± 1.5 °C). This study evaluated the microbiological stability (yeasts and molds, total coliforms, *Escherichia coli* and *Salmonella* spp.), sensory (overall acceptability), antioxidant capacity (ABTS method) and vitamin C of the product every 45 days for a period of 225 days. The filamentous fungi and yeasts ranged from <10 to 2.7 x 10⁷ CFU.mL⁻¹ and the presence of total coliforms, *E. coli* and *Salmonella* spp. not been found in the juice, indicating that the heat treatment and the hot-fill process was efficient to control pathogens and reduce spoilage microorganisms, and meet the standards of hygiene control established by law. The juice was well accepted by consumers throughout the storage period, with an average of hedonic values ranging from 6.0 (like slightly) to 7.0 (liked). The product also showed good stability of the antioxidant capacity (9.5 µM Trolox/g), despite having a slight reduction (22%) in the content of vitamin C. The heat treatment and hot-fill were effective for the preservation of the mixed tropical fruit juice with functional properties for 225 days, controlling pathogens and spoilage microorganisms reduction, while preserving their functional characteristics and sensory acceptance.

Keywords: Functional food, microbiological safety, sensory analysis.