

EFFECT OF THERMAL AND HIGH PRESSURE PROCESSING ON ANTIOXIDANT CAPACITY, TOTAL PHENOLIC AND VITAMIC CONTENTS OF A MIXED TROPICAL JUICE

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Fruit juices are traditionally submitted to thermal processing in order to ensure product safety. This process, however, can lead to loss of nutritional and sensory quality and, therefore, processes considered non-thermal, such as high pressure processes, become viable alternatives. The present study evaluated the effects of thermal and two different high pressure processing on the antioxidant capacity (AC) and contents of phenolic compound (PC) and vitamin C (VitC) of a tropical cashew, acerola and melon mixed juice and the changes of these variables over the storage period (42 days/4°C). ABTS radical capture method, Folin-Ciocalteu reagent and liquid chromatography were used to determine AC, PC and VitC, respectively. The untreated juice (Control) was submitted to pasteurization (PA) (90 ° C/1 min), high hydrostatic pressure (HHP) (300, 400, 500 MPa, 5 and 10 min) and high pressure homogenization (HPH) (50 and 100 MPa) and the analyzes performed at 0, 14, 28 and 42 days of storage. Results were analyzed by ANOVA and Tukey mean test ($p < 0.05$). Significant differences ($p \leq 0.05$) were observed in the evaluated characteristics. Regarding AC and VitC, the control, HPH and HHP at 500 MPa juices presented satisfactory levels, but the pasteurized juice resulted in the highest values of CA 12.65 mmol Trolox/g and VitC 180.84 mg/100 g. The PC showed significant differences among the processes in the first 14 days of storage, and the best results were found for the HPH juice (248.70 mg of gallic acid/100g sample). In overall, the processes influenced the functional characteristics of the juice, and all processes resulted in adequate functional quality, including the thermally pasteurized juice.