

Title Changes in bioactive compounds and antioxidant capacity of fresh-cut cashew apple

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Abstract

In this study, ascorbic acid, total polyphenols and proanthocyanidins of fresh-cut cashew apple were quantified. Antioxidant capacity was determined in whole juice and in polyphenols extracts by three methods: 2,2-diphenyl-1-picrylhydrazyl (DPPH), ferric reducing antioxidant power (FRAP) and β -carotene bleaching. Effect of cutting and storage for 24 h at 2 °C, 27 °C and 40 °C on these compounds were also evaluated. Cashew apple presented 163 mg of ascorbic acid per 100 g of fresh weight (FW). Soluble and hydrolysable polyphenols contents were 12.79 mg GAE/100 g FW and 18.53 mg GAE/100 g FW and proanthocyanidins were 9.27 mg/100 g FW. Antioxidant capacity of juice and polyphenols extract was high for DPPH method. Storage temperatures affected bioactive compounds on cut cashew apple. The content of ascorbic acid decreased in all temperatures. Proanthocyanidins were more sensitive to 40 °C than to other temperatures. The content of polyphenols and antioxidant capacity of juice by DPPH assay did not change. However, the reducing power was lower in samples kept at high temperatures. A strong positive correlation between ascorbic acid and FRAP ($r = 0.99$) and a negative correlation between DPPH and FRAP ($r = -0.79$) were observed. No correlations were found between polyphenols and antioxidant capacity indicating the importance of phenolic composition in the extracts. The results confirm the importance of temperature and injury on the quality of cashew apple.