Title Effect of antioxidants on browning of custard apple pulp during storage

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Abstract

Custard apple (*Anona squamosa*) is one of the delicious fruits relished by many for table purposes. Pleasant flavor, mild aroma and sweet taste have a universal acceptance. In India, it is naturally grown in the forests and also on the marginal lands on an area of around 1 lakh hectare. Custard apple is the main source of income for the tribal people of south Rajasthan, Andhra Pradesh, Karnataka and Maharashtra states of India. Development of enzymatic browning within an hour of pulp extraction, bitterness, unpleasant repulsive off flavor in the pulp on heating beyond 65°C and presence of gritty cells are problems encountered during processing of fruits. Therefore, it is imperative to develop new technologies so that the products from this delicious fruit can be prepared and marketed. In view of the above problems, an attempt was made to solve the browning problem in custard apple pulp during storage. The pulp was extracted with the scooping method and seeds were separated by tomato pulper. Ten per cent water was also added in the pulp during seed separation for easy removal of seeds. Immediately after pulping, pulp was filled in 250 ml plastic jars and these jars were used for treatment application. Three antioxidants were used with two concentrations. Ascorbic acid (0.2 and 0.5%), potassium meta-bi-sulphite (0.02 and 0.05%) and sodium benzoate (0.02 and 0.05%) were applied alone and in combination. These jars were stored in the freeze at 2-3°C temperature. The data were analyzed in Factorial CRD. Chemical and sensory analysis was done at one month interval for six months. Results showed that no browning was occurred in the treatment ascorbic acid 0.05 per cent with potassium-bi-sulphite 0.05 per cent. However, control showed the browning within half an hour of extraction. It was also found that ascorbic acid decreased with the advancement of storage period. Sensory evaluation showed that bitterness occurred in all the treatment combinations, however, pulp was suitable for squash making even after six months of storage period in ascorbic acid 0.05 per cent with 0.05 per cent potassium meta-bi-sulphite. This paper deals in detail with the browning problem and its solution in custard apple pulp during storage.