Title Effect of packaging and cushioning materials on shelf life of custard apple ambient and zero energy cool chamber storage

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Abstract

An investigation was carried out to study the "Effect of packaging and cushioning materials on shelf life of custard apple in ambient and zero energy cool chamber storage" at University Department of Horticulture, Dr. PDKV Akola during 2006. The experiment was laid out in FCRD Design with 10 treatments viz., bamboo basket + Newspaper wrapping, bamboo basket + tissue paper wrapping, bamboo basket + muslin cloth wrapping, wooden crates + newspaper wrapping, wooden crates + tissue paper wrapping, wooden crates + muslin cloth wrapping, cardboard boxes + newspaper wrapping, cardboard boxes + tissue paper wrapping, cardboard boxes + muslin cloth wrapping and control replicated three times with 20 fruits in each replication. The custard apple fruits were stored in two conditions viz., ambient storage and zero energy cool chambers. The rate ofPLW and softening increased with increase in storage temperature and period. The blackening of fruit surface was minimal in zero energy cool chamber up to 6th day of storage. The rate of changes in total soluble solids and acidity and sugars was slow in zero energy cool chambers than storage conditions. The results showed that, the fruits stored in ambient storage had a shelf life of six days only while, nine days at zero energy cool chamber storage after harvest. In order to extend the storage life of the custard apple fruits in zero energy cool chamber the optimum storage temperature 17 to 21 OC and relative humidity 65 to 70 % was observed. Moreover for the development of eating quality of the fruits, this temperature range also found advantageous. For packaging studies the custard apple fruits were packed by using nine packaging and cushioning materials combinations. The total soluble solids, acidity, Sugars and ascorbic acids increased as the fruits ripened and after reaching a maximum peak declined irrespective of the packaging materials under both the storage conditions. While, the tannin content of the fruits showed the decreasing trend after harvest throughout the storage period. The present study revealed that the fruit packed in cardboard boxes + tissue paper and kept in zero energy cool chambers delayed the ripening and fruits were acceptable even on the 9th day of storage.