

Title Minimally processing of carambola (*Averhoa carambola* L.)

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Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords browning; polyphenol oxidase; modified atmosphere; low oxygen; star fruit

Abstract

A major attraction of fresh-cut carambola fruit is the star-shape presented after a transverse cut. Susceptibility to browning varied significantly among cultivars. Addition of catechol led to more intense browning in Taen-ma, Fwang Tung, and Golden cultivars. Mature-green fruits had 9 days of shelf-life, have been considered the best maturity stage for fresh-cut production, due to cut resistance, and better colour and appearance. Polystyrene therephlated (PET) trays and polyvinyl chloride (PVC) film did not modify the internal atmosphere allowing fast slices cut surface discoloration. Polyphenol oxidase (PPO) activity was lower when slices were packaged in polyolephyn (PLO) vacuum sealed bags, which reduced discolouration and led to better appearance maintenance for up to 12 days. Ascorbic acid dips (0.5% and 1.0%) reduced PPO activity throughout storage at 4°C, with 1.0% ascorbic acid inducing lowest PPO activity. Low-oxygen atmospheres alone did not affectively prevent either cut surface browning or PPO activity. Shelf-life of minimally processed 'Maha' carambola slices can be effectively extended to 12 days by storage in low-oxygen atmospheres (0.4% oxygen-nitrogen) in combination with 1.0% ascorbic acid treatment. When slices were dipped into solutions containing 1.0% ascorbic acid and stored under lower temperatures, 2.5°C and 5.0°C, slices maintained better colour maintenance, titratable acidity and reducing and total soluble sugars contents and had a shelf-life of 16 days.