

**Title** Use of modified atmosphere to extend shelf life of fresh-cut carambola (*Averrhoa carambola* L. cv. Fwang Tung)

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### Abstract

Fresh-cut fruit products, including carambola (*Averrhoa carambola* L.), have limited marketability due to cut surface browning attributed to phenolic compound oxidation by enzymes, such as polyphenol oxidase (PPO). The objective of this study was to evaluate postharvest changes in carambola slices in three different packages. Carambola fruit (cv. Fwang Tung) were picked from the Estação Experimental de Citricultura de Bebedouro orchard at the mature-green stage. The fruit were washed, dipped in NaOCl solution ( $200 \text{ mg L}^{-1}$  for 5 min), stored overnight at  $10 \text{ }^{\circ}\text{C}$ , then manually sliced into pieces of approximately 1 cm. The slices were rinsed with NaOCl solution at  $20 \text{ mg L}^{-1}$ , drained for 3 min, and packaged in polyethylene terephthalate (PET) trays (Neoform<sup>®</sup> N94); polystyrene trays covered with PVC 0.017 mm (Vitafilm<sup>®</sup>, Goodyear); and vacuum sealed polyolefin bags (PLO, Cryovac<sup>®</sup> PD900). The packages were stored at  $6.8 \text{ }^{\circ}\text{C}$  and 90% RH for 12 d, with samples taken every 4 d. PET trays and PVC film did not significantly modify the internal atmosphere and the high water permeability of PVC led to more rapid slice desiccation. PPO activity was lower when the slices were packaged in PLO vacuum sealed bags, which reduced degreening and led to better appearance maintenance for up to 12 d.