

Title Reducing enzymatic browning of fresh-cut persimmon cv. 'Rojo Brillante' by antioxidant application

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Keyword fresh-cut persimmons; enzymatic browning; antioxidants

Abstract

Persimmon fruit cv. 'Rojo Brillante' is an astringent variety. Application of high CO₂ levels is effective in removing the astringency, while maintaining firmness. This makes it possible to market the fruit as a fresh-cut commodity. However, the commercial success is limited mainly due to enzymatic browning. The objective of this work was to study the effect of antioxidant type and content reducing enzymatic browning of fresh-cut persimmon cv. 'Rojo Brillante'. Persimmon pieces were dipped into the antioxidant solutions, packed in trays covered with perforated polypropylene films and stored 7 days at 5°C. Sodium ascorbate (AA), citric acid (CA), peracetic acid (PA), calcium chloride (CaCl₂), cysteine (Cys), and 4-hexylresorcinol (4-HR) were tested as antioxidants at 3 different concentrations. Concentrations were selected from preliminary work performed in persimmon extracts. Color (CIE L*a*b*) and visual quality were measured during storage. Cys and AA were the most effective antioxidants reducing browning; whereas 4-HR and PA induced tissue damage. Application of AA or Cys at 125 mM extended the limit of commercialization up to 5 days, whereas the control was considered inedible after 1 day of storage.