Application of a new wax containing ethanol as a method to remove persimmon astringency during cold storage

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Abstract

Nowadays the treatment based on applying high CO_2 concentrations to fruit is the main method used in astringent persimmon prior to being commercialized, but it can cause quality problems for fruit during cold storage. The aim of this study was to evaluate the effectiveness of a recently patented astringency removal method based on applying a new wax whose formulation includes ethanol before commercial packaging. During two seasons, three treatments were evaluated in cv. Rojo Brillante and Triumph: (1) CO_2- standard treatment; (2) waxed and packed in plastic film according to the patented method; (3) packed in plastic film without any treatment. During a third season, the new method's effectiveness in removing astringency was evaluated under industrial conditions. After treatments fruit was stored at 0 °C for 15, 21 and 30 days before being transferred at 20 °C to simulate a 5-days shelf-life. All the fruit treated with the new wax completely lost astringency after 30 days at 0 °C, and commercial firmness was maintained. At the end of the storage, fruit quality was substantially higher in fruit submitted to the new treatment. CO_2-treated fruit, manifested internal browning after 30 storage days and shelf-life, while this disorder was not detected in waxed fruit.