Title Modified atmosphere packaging for extending the storage life of 'Fuyu' persimmon

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Abstract

Persimmon production in Brazil is concentrated from February to June. The large amount of this fruit available in the market influences its price during this period. This study was carried out to evaluate the effect of different packaging plastic materials on extending the storage life of 'Fuyu' persimmons kept under refrigeration. 'Fuyu' persimmon fruits were harvested on the mature-green stage and enclosed in groups of three (750 ± 30 g) in different packaging materials: 58-μm multilayer polyolephynic film (PO); 50-μm low density polyethylene film (LDPE) and 38-μm microperforated PO. Unpacked fruit stored in corrugated cardboard boxes were used as control. Fruit were stored at 1 ± 1 °C/90 ± 5% RH for 90 d. Every 7 d, five replicates of each treatment were evaluated for headspace gas composition (O_2, CO_2) and then transferred to 25 ± 1 °C/70 ± 5% RH for five more days. Then they were evaluated as to headspace gas composition (O_2, CO_2, acetaldehyde and ethanol), firmness, weight loss, skin and flesh color, total soluble solids, titratable acidity, pH, decay, discoloration and sensory attributes. The gas composition in the steady-state established in the 58-μm PO and 50-μm LDPE films extended the storage period up to 84 d at 1 °C plus 5 d at 25 °C differing significantly ($P \leq 0.05$) from the control fruit as well as from those in the 38-μm microperforated PO, which were stored for 21 and 28 d, respectively. Off-flavors were not detected by sensory analysis. These results suggest that the 58-μm PO and 50-μm LDPE films are suitable for atmosphere modification and packaging of 'Fuyu' persimmon fruit stored under refrigeration with an additional period of time at ambient temperature.