Title Effects of postharvest treatments and film packaging on quality of 'Haden 2H' mangoes

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Abstract

Brazil is one of the ten mango world producers and the second exporter country of this tropical fruit. Mango fresh fruits are perishable and the main problems are fruit overripening and disease development. Chitosan, derived from chitin, is biodegradable and ecofriendly besides exhibits antimicrobial properties. Essential oil of *Eucalyptus citriodora* also shows antimicrobial activity. It is useful as an alternative to replace chemical control in postharvest. In the present research the effects of postharvest treatments (hot water, chitosan coating and oil emulsion) and modified atmosphere on quality of 'Haden 2H' mango fruits were studied. Mangoes in LDPE bags with and without potassium permanganate absorber were stored at 12°C and 90% RH. Quality parameters (TSS, pH, acidity, firmness, pulp and skin color) and losses (weight and rots) were evaluated. Control fruits (with no plastic film) were not influenced by postharvest treatments. Weight loss was reduced seven times in packed mangoes compared to control mangoes. The absorber did not improve mango quality. However, the fruits remained firm in polyethylene and decay incidence was completely controlled for up to 26 days of refrigerated storage for mangoes with chitosan or combined treatment (hot water followed by chitosan). Chemical variables for treatments and packing using Principal Components analysis showed 3 groups of ripening evolution: slower, similar and faster than the control.