

**Title** Effects of postharvest treatments and modified atmosphere on quality of 'Espada Vermelha' mangoes

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#### **Abstract**

Mango fresh fruits are perishable and the main problems are fruit overripening and disease development. Chitosan is a natural biodegradable compound derived from crustaceous shells. Chitosan has been proved to control numerous postharvest diseases on various horticultural commodities. Essential oil of *Eucalyptus citriodora* also shows antimicrobial activity. Hot water is the most commonly used postharvest treatment to control anthracnose on mangoes. Storage life of mangoes has been extended using modified atmosphere packaging (MAP). The effects of these treatments and modified atmosphere on fruit quality were evaluated. 'Espada Vermelha' mangoes were sealed in PVC packs and PE bags with and without potassium permanganate absorber. Fruits were stored at 12°C and 90% RH. MAP reduced fruit weight loss during storage. Essential oil depreciated mango appearance. Chitosan-treated fruits remained firmer than the others treated mangoes in polyethylene bags with absorber. Chitosan or combined treatment (hot water followed by chitosan coating) completely controlled decay incidence in packed mangoes for 27 days of storage. Chemical variables (TSS, pH, acidity, ratio) for treatments using a Principal Component Analysis showed 4 groups of ripening evolution.