

Title Postharvest disinfestation of mango (*Mangifera indica* cv. Manila) with controlled atmospheres
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Abstract

Manila mangoes were infested in the tree by allowing fertile *Anastrepha obliqua* female flies to oviposit on fruits contained inside cages. Infested mangoes were exposed to nine different controlled atmospheres (CA) containing combinations of 1, 3, or 5% O₂ and 30, 50, or 70% CO₂. Surviving larvae were enumerated after subjecting the mangoes to CA for 1 to 5 days. Selected compositional and physical parameters (weight loss, pH, titratable acidity, colour, soluble solids, reducing sugars, and texture) were analysed during post-treatment ripening. Fully ripened fruits were also subject to sensory evaluation using a non-structured hedonic scale and a trained panel. CA containing 1% O₂ and either 30 or 50% CO₂ effectively killed all larvae present in treated fruits. These treatments did not alter the composition or sensory characteristics of fully ripened mangoes. However, losses of 20 to 25% of fruits on the basis of sensory acceptability were attributed to the development of "spongy" tissue. CAs containing 70% CO₂ were also effective in disinfestation, but also affected compositional and sensory qualities of the fruits and induced the "spongy" texture defect in 65% of the fruits.