

Original article

An integrated strategy to control post-harvest decay of Embul banana by combining essential oils with modified atmosphere packaging

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Summary Mature Embul (*Musa*, AAB) bananas were treated with emulsions of either cinnamon bark or leaf (*Cinnamomum zeylanicum*) or clove (*Syzygium aromaticum*) oils to control post-harvest diseases, packed under modified atmosphere (MA) using low-density polyethylene (0.075 mm, LDPE) bags, and stored in a cold room (14 ± 1 °C, 90% RH) or at ambient temperature (28 ± 2 °C). The effects of the essential oils on post-harvest diseases; physico-chemical properties and organoleptic properties were determined and compared with controls and bananas treated with benomyl. Treatments with cinnamon bark and leaf oils controlled crown rot, whereas clove oil treatment did not affect crown rot development. Treatment with emulsions of cinnamon oils combined with MA packaging can be recommended as a safe, cost-effective method for extending the storage life of Embul bananas up to 21 days in a cold room and 14 days at 28 ± 2 °C without affecting the organoleptic and physico-chemical properties.

Keywords Fungal pathogens, fungicides, storage.