Title Development of Shellac Coating for Extending Shelf-life of Mangosteen and Lime (CV. Pan)
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Abstract

A shellac-based fruit coating formula, "Lab-A" developed in the laboratory of Chulalongkorn University was tested on mangosteen and lime (CV. Pan) in comparison with a commercialized coating formula, Teva. After spray-coated solutions of each formula on mangosteens (20 ml./kg) and limes (30 ml./kg), the fruits were stored at either room (30±5°C and 28±2°C; 70±5%RH) or optimum storage temperatures (13±1°C and 10±1°C; 86±2%RH). Physical, chemical, and eating qualities of the coated fruits were evaluated comparing with those of the non-coated fruits ("control"). The fruits coated with Lab-A showed superior qualities to those coated with Teva and control respectively. Coating mangosteens and limes with Lab-A preserved qualities of the fruits for 28 and 56 days at optimum temperature which were 14 and 41 days longer than those at room temperature. Coating was not only improved gloss and appearance to mangosteens but also delayed calyx wrinkle and reduced weight loss, pericarp's softening, respiration rate and ethylene production without off-flavour sensation. Coating limes with either Lab-A or Teva delayed browning symptom on the skin, improved gloss and total appearances, and reduced weight loss compared with the control. Limes stored at room temperature lost less weight than those stored at 10±1°C. In additions, coating film of Teva on limes was found to flaked off during storage while this was not observed in coating with Lab-A.