

Pesticide free coating for papaya (*Carica papaya* 'Eksotika II')

ABSTRACT

Mature green stage (Index 2) papaya (*Carica papaya* L. 'Eksotika II') fruits were treated either with 2.5% calcium chloride infiltration, 0.75% chitosan coating, calcium infiltration at 2.5% then subsequently chitosan coating at 0.75% or with distilled water as the control. The fruits were then stored at $13\pm 1^{\circ}\text{C}$ for up to five weeks. Calcium infiltration was effective in maintaining the firmness and weight loss of the fruits. Firmness was 2.7 fold higher than the control and water loss was about 3% less. However, the chitosan coating had less effect on maintaining firmness (only 1.7 fold higher firmness) but had more effect in preventing weight loss resulting in 5.6% less weight loss. The chitosan coating treatment markedly slowed the ripening of papaya as shown by their reduced weight loss, delayed changes in their external colour (which is normally closely correlated with the internal colour) and other quality aspects. However, when calcium infiltration was combined with chitosan coating, this treatment further extended the storage life up to five weeks with better retention of fruits firmness and water loss control compared to the single treatments.

Keyword: Chitosan; Calcium chloride; Shelf life; Fruit quality