

DEVELOPMENT OF LOW COST EDIBLE COATING FOR EXTENDING SHELF LIFE OF GUAVA FRUITS (BANGKOK GIANT)

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Guava is an economically important fruit which occupies a prominent position among fruit crops grown in Sri Lanka. The reported postharvest loss of guava is 46%. Therefore the study was conducted to identify a suitable edible coating treatment to extend the shelf life of fresh fruits. Guava harvested at correct maturity stage and medium size fruits were selected after discarding diseased and damaged fruits. The first experiment was done to discover the best treatment to be used to coat the fruits from six treatment combinations, cassava starch (1%, 2%, 3%) with 1% sunflower oil and rice bran (1%, 2%, 3%) with 1% sunflower oil and 1% bee wax. The treated fruits were stored under ambient condition (28 °C to 30 °C+55%-60% RH) and quality evaluation was done to find the suitable treatment. From the results, the treatment where 2% cassava starch mixed with 1% sunflower oil (T1), and the treatment where 1% rice bran mixed with 1% sunflower oil and 1% bee wax (T2) were selected as the best performed treatments.

The second experiment was done to identify a suitable storage condition for treated fruits. Fruits were coated with T1, T2 and T3 - 2% cassava starch with 1% sunflower oil and 1% bee wax and stored under ambient as well as refrigerated conditions (7°C to 9°C + 55%-60% RH). The results suggested that the coating with T1, T2 and T3 were most effective treatments in retaining the overall quality as it caused minimum changes in fruit firmness, titratable acidity, reducing sugars and total soluble solids. In general all treatments caused significant (P <0.05) decrease in physiological weight loss, fruit firmness and pectin content. Fruits stored at refrigerated condition exhibited better retention of storage life for 24 days.

Key words: Guava fruits (*Psidium guajava* L), Edible coatings, Shelf life extension