RIPENING CHARACTERISTICS OF SOME TROPICAL FRUITS TREATED WITH COMMERCIAL WAX

K.P.G.A. NANAYAKKARA
Research officer
Central Agricultural research Institute
Gannoruwa

Bettiamba (*Mangifera indica* L), Guava (*Psedium guajava*), Papaya (*Carica papaya*) and Water melon (*Cucumis melo*) are popular and economically important fruits in the local fresh fruit market and for export. A small proportion of the production of these fruits are used for canning and processing.

Shortening of post harvest shelf life of these fruits due to evaporation of water, respiration, ethylene production and fungus infection is a serious problem faced by farmers, traders, canneries, exporters, etc. Application of a fungicide in conjunction with cleaning, brushing or dipping in wax is a standard practice to extend the shelf life of fruits in shipment or air cargo.

To study the effects of fungicide treatment and wax dip on the ripening characteristics and shelf life of the above fruits, a laboratory study was carried out in May 1986 at Central Agricultural Research Institute. Mature fresh fruits were obtained from Regional Agricultural Research Centre, Angunakolepelessa.

Three sets of fruits consisting of randomly selected 10 fruits each of all 4 species were subjected to the following treatments.

1 Control - no treatments
2 Dipping in 0.05% Benomyl solution at 52°C for 5 minutes
3 Dipping in 0.05% Benomyl solution at 52°C for 5 minutes and then dipping in commercial wax emulsion

All the fruits were then stored in paper cartons used for export of fruits at room temperature (30°C ± 2°C).

The observations made are summarised in Table 1.

The results indicate that the ripening characteristics of mango, guava, papaw and

water melon can be delayed by fungicide and wax treatment.

The wax treatment with fungicide could be used with the following objectives,

1 for cosmetic effect - to maintain the natural peel colour and thereby enhance the attractiveness of the fruits;
2 to maintain quality - to minimize dehydration and shrivelling;
3 to extend the post harvest life by modifying the natural respiration and ripening process; and
4 to control the spoilage caused by the microbes.

Table 1: Ripening characteristics of some (local) Fruits.

Crop	Days from harvest to eating ripe stage			Shelf Life (days)			Skin colour rating			Cumulative moisture loss after 01 week			Soft rot rating			Softening Index		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1. Mango	6.2	7.6	8.2	8.3	10	14.6	5.0	5.4	5.1	14.6	12.0	8.1	2.8	1.6	1.2	3.9	4.5	5.3
2. Guava	6.6	7.0	8.5	9.3	12.4	16.5	3.2	3.6	3.3	14.2	12.5	8.6	1.6	0.9	1.0	3.8	4.7	6.2
3. Papaw	4.2	5.0	6.6	6.1	7.9	9.6	6.2	7.3	7.4	16.2	14.0	10.4	3.0	2.9	2.1	2.5	2.9	3.2
4. Water Melon	6.6	7.0	7.5	9.3	12.4	16.5	3.2	3.6	3.3	14.2	12.5	8.6	1.6	0.9	1.0	3.8	4.7	6.2

(A) Control Fruit (B) Hot benomyl dip (C) Hot benomyl dip plus waxing

KEY :

* Each value is a mean of 10 fruits
* Eating ripe was measured by finger pressure
* Skin colour - 6 point scale;
  1 = dark green 2 = light green 3 = greenish yellow/green
  4 = light yellow 5 = yellow 6 = dark yellow

* Soft-rot rating; 6 point scale
  1 = nil 2 = 5-10% of the skin affected 3 = 10-25% of the skin affected
  4 = 25-40% of the skin affected 5= 40-60% (Severe) 6 = more than 60%

* Softening Index; 6 point scale
  1 = nil 2 = 5-10% 3 = 10-25%
  4 = 25-40% 5= 40-60% 6 = more than 60%