

Relationship between precooling, storage temperature and storage duration to the quality characteristics of guava (*Psidium guajava* cv. Kampuchea)

Abstract

The effects of cooling time, storage temperature and storage duration on the guava cv. Kampuchea were determined. The experimental design carried out was RCBD with a factorial arrangement of treatments (4 cooling times x 3 storage temperatures x 6 duration of storage) and three replications with two fruits per each replication. The results indicated that cooling time only effected the browning but it did not significantly effect the visual appearance, skin colour, weight loss and soluble solids concentration. Treatment combinations of storage temperature and storage duration were found to have significant effects on the visual appearance, skin colour, weight loss and soluble solids concentration. However, the treatment did not significantly effect browning. Storage temperature of 10°C resulted slow loss of visual appearance, delayed changes on the skin colour, lowest weight loss, and the lowest changes in soluble solids concentration of fruit. Acceptable visual appearance of the fruit stored at 10°C was up to 3.6 weeks compared to only 1.6 and 1.3 weeks for the fruit stored at 5 and 15°C, respectively. The limit of acceptable L^* , C^* and h_0 changes in this study were 65.33 +3.3, 43.0 +0.5 and 113.83 +2.5, respectively and this colour space values corresponded to pale green fruit. In addition, the fruit stored at 10°C were found to have lowest incident of browning compared to those stored at 5°C, while the fruit stored at 15°C were ripened, developed senescence, shrivelled and freckled. Results of

this research can be used by guava producers in deciding the time level for their precooling and temperature setting for their cold room.