

ABSTRACT

Quality Changes in Fresh-cut Papaya (*Carica papaya* L.) and Mango (*Mangifera indica* L.) During Storage

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Experiments were conducted to investigate the suitability of papaya, cultivars 'Tainung #2' and 'Red Lady', and mango, cultivars 'Julie' and 'Graham', as fresh-cut products and to determine quality changes in fresh-cut fruits of these cultivars during storage.

A hot water treatment of 48-50°C for 20 minutes was found to effectively control fungal rots in papaya cultivars 'Tainung #2' and 'Red Lady'. Both cultivars had acceptable eating quality at the postclimacteric stage after approximately 4-5 days of storage at 22-24°C, which corresponded with 25-40% yellow skin colour, firmness (penetration rate) 4.9-5.1 mm/sec, TSS content 11-12°Brix.

When papaya fruits were sliced, fruits of Red Lady cultivar exhibited a greater wound response with respect to CO₂ and ethylene production rates and development of flesh translucency than those of Tainung #2 cultivar. Accordingly, Tainung #2 fruit had a longer shelf-life (6 days) than Red Lady

fruit (4 days) when stored at 5°C and 10°C. Storage at 5°C was recommended for fresh-cut papaya fruit to effectively reduce microbial growth as well as CO₂ and ethylene production rates. Fruits of the Tainung #2 cultivar were found to be more suitable for fresh-cut purposes.

In similar studies with mango fruit (cultivars Julie and Graham), it was found that half-ripe and firm-ripe mango fruit slices of both cultivars held at 5°C and 10°C had a longer shelf-life than that of mature-green mango slices of both cultivars held at the same temperatures. For both cultivars, TSS content was approximately 9-12°Brix in mature-green fruit, 12-14°Brix in half-ripe fruit and 14-17°Brix in firm-ripe fruit. Early development of off-flavour and unacceptable appearance severely limited the use of mature-green mango slices for fresh-cut purposes. Storage at 5°C was recommended for fresh-cut mango fruit to effectively reduce microbial growth, and CO₂ and ethylene production rates. Half-ripe and firm-ripe mango fruit slices of Julie and Graham cultivars were found to be suitable for fresh-cut purposes.

Key words: Renee Allong, Fresh-cut papaya, Fresh-cut mango, storage, postharvest quality, hot water treatment, *Carica papaya* L., *Mangifera indica* L.