

Title Volatile characteristics of fresh-cut 'Puk Mai Lie' papaya (*Carica papaya* L.) stored at various temperatures

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Keyword fresh-cut; Puk Mai Lie; papaya; volatile

Abstract

Fresh-cut product causes major tissue disruption, aroma, flavor and texture changes/loss during and after processing. The volatile compounds of the fresh-cut 'Puk Mai Lie' papaya (*Carica papaya* L.) during stored various temperatures were investigated. Fresh-cut papaya were packed on polyethylene terephthalate (PET) rigid packages and sealed with 60 μm P-plusTM film which oxygen and carbon dioxide transmission rates are about 22,500 and 44,000 $\text{cc}/\text{m}^2/\text{day}\cdot\text{atm}$ respectively and then transferred to 10°C for 5 days) and 25°C for 7 days. Types and portions of volatile compounds were monitored using headspace solid phase microextraction/gas chromatography-mass spectrometry (HS-SPME/GC-MS). The most abundant groups of volatile compounds were esters, alcohols, hydrocarbons and terpenoids. Emitted volatiles, including 2-methylbutane, pentane, methyl butanoate, ethyl butanoate, limonene, and benzyl isothiocyanate declined markedly within 3 days after packaging in cold storage. In addition, ethanol and acetaldehyde contents of fresh-cut papaya storage at 5, 5-10 and 10°C were low, but stayed highest in fresh-cut stored at 25°C which developed off-odor on day2. On the other hand, the decrease in volatile production of MAP-stored fresh-cut papaya appears to be independent of respiratory quotient, indicating that atmosphere modifications may affect activities of some key enzymes in the volatile production systems of fresh-cut products.