

VOLATILE PROFILING AND SENSORY INTENSITIES IN KIWIFRUIT DURING RIPENING

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Maintenance of desirable flavour during storage of kiwifruit (*Actinidia*) is a focus of our postharvest research. In this study we evaluated commercial *Actinidia* fruit at different ripening stages in the period that corresponded to the typical commercial shelf life for each cultivar. The volatile components from green ‘Hayward’, gold ‘Hort16A’, a new cultivar ‘Hongyang’, and some baby kiwifruit ‘Arguta’ were compared. Results indicated that fruit sensory qualities significantly changed with volatiles as fruit firmness decreased. Gas chromatography-mass spectrometry (GC-MS) data indicated a large amount of straight chain aldehydes and esters were the dominant volatiles for most fruit types. These may have been released from long chain fatty acids through lipoxygenase pathways in the fruit. In particular, the total percentage of (E)-2-hexenal and hexanal, which impart green characteristics, decreased as the fruit softened. Butanoates (fruity) were the main esters in most fruit with exception of ‘Hongyang’. Butanoates significantly increased as fruit firmness decreased and increased to higher levels in the ‘Hort16A’ fruit stored for 6 months than for 3 months. Higher levels of methyl esters and particularly the rates of pentanoate were detected in the ‘Hongyang’ compared to other fruit. Large amounts of terpinolene, myrcene and limonene were detected in most ‘Arguta’ kiwifruit and the amounts increased with fruit softening. Sensory results indicated that with fruit softening, acidity decreased, whilst typical kiwifruit odour and flavour intensity (ethyl butanoate) increased for all fruit. Three month stored fruit had higher sweetness than 6 month stored fruit in both ‘Hayward, and ‘Hort16A’. Overall, some of the changes in volatile content could explain changes in fruit flavour detected by a trained panel, and differences in characteristic flavour of the different cultivars.