

Title Temporal changes in taste- and health-related compounds during postharvest ripening of Sri Lankan mango fruit (*Mangifer indica* L.)

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Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Mango; ripening; biochemical compound

Abstract

The taste preference and health benefits of ripe mango fruit predominantly depend on biochemical changes during postharvest ripening. Therefore, understanding the variation of biochemical compounds (sugars, organic acids, total titratable acidity (TTA), total soluble solids (TSS), flavonoids, total phenolics and total carotenoids) during ripening may help to optimise the ripening period. Sri Lankan mango cvs. Karutha Colomban, Malgova and Willard fruits were ripened at 32°C for 4 days and both peel and pulp sample analysed. Sucrose (65-85% in pulp and 40-50% in peel) and citric acid (88.5% in pulp and 60% in peel) were the main components in total sugar and organic acid compositions, respectively. The increase in sugar and decrease in organic acids during ripening increased the sugar/acid ratio. Ascorbic acid was significantly higher in cv. Willard and dominated in peel samples. Total phenolics decreased during ripening and were about ten-fold higher in peel than pulp. A significant increase was observed in total carotenoids during ripening and cvs. Karutha Colomban and Willard had about two-fold higher concentration than cv. Malgova. Mango cv. Willard had significantly higher concentration of flavonoids than other cultivars, mangiferin was the dominant flavonoid in cultivars tested followed by quercetin 3-O galactoside and quercetin 3-O glucoside.