

Title Variation of reducing and total sugars, total phenolics and anthocyanins in otaheite apple (*Syzygium malaccense*) during three "On Tree" ripening stages

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Abstract

The changes of total and reducing sugars, total phenolics, and anthocyanins in otaheite apple (*Syzygium malaccense*) fruits during "on tree" ripening were assessed. Three ripening stages were considered. Results showed the intensity of the red color was observed during stage 2 and turned to dark-red during the last stage. Reducing sugars increased significantly from stage 2, and varied from 33.02 to 42.03 mg/g fresh weight during stage 1 and 5, respectively. Total sugars also increased progressively and significantly, where a variation from 51.37 mg/g fresh weight at stage 1 to 74.51 mg/g fresh weight at stage 3. Total phenolics varied significantly in both skin and pulp during the ripening stages observed, although the decrease was more significant in the skin. Total phenolics ranged from 120.39 µg/g fresh weight (stage 1) and 99.55 µg/g fresh weight (stage 3), and from 78.45 µg/g fresh weight (stage 1) and 55.17 µg/g fresh weight (stage 3), in the skin and pulp, respectively. On the other hand, anthocyanins increased progressively in the skin but decreased in the pulp during the ripening of the fruit. Anthocyanins varied from 50.45 µg/g fresh weight (stage 1) to 77.12 µg/g fresh weight (stage 3), and from 60.62 µg/g fresh weight (stage 1) to 42.31 µg/g fresh weight (stage 3), in the skin and pulp, respectively. Conclusively, results showed that reducing sugars and total sugars increased significantly during the last two ripening stages of otaheite apple. While total phenolics decreased in both the skin and pulp of the fruit, anthocyanins decreased in pulp but increased in the skin.