

Title Variation of reducing and total sugars, total phenolics and anthocyanins in star apple (*Chrysophyllum cainito*) during three "On Tree" ripening stages

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Abstract

The changes of total and reducing sugars, total phenolics, and anthocyanins in star apple (*Chrysophyllum cainito*) fruits during "on tree" ripening were assessed. Three ripening stages were considered. Results showed that fruits start to turn to purple during stage 2 and turned to dark purple during the last stage. Reducing sugars increased progressively during the three stages, and varied from 45.41 to 65.67 mg/g fresh weight. Total sugars also increased progressively and significantly, were a variation from 50.27 mg/g fresh weight at stage 1 to 84.30 mg/g fresh weight at stage 3. Total phenolics decreased slightly in the skin of the fruits, but significantly in the pulps. Total phenolics varied from 154.79 to 144.70 µg/g fresh weight in the skin, and from 149.50 to 116.24 µg/g fresh weight from stage 1 to stage 3 in the pulp, respectively. However, anthocyanins increased progressively and varied from 87.54 µg/g fresh weight to 107.00 µg/g fresh weight in the skin, and from 64.54 to 114.82 µg/g fresh weight in the pulp from stage 1 to stage 3, respectively. Conclusively, results showed that reducing sugars, total sugars, and anthocyanins increased during the three "on tree" ripening of star apple, while total phenolics showed a decrease during the ripening of the fruit.