

Ripening affects the physicochemical properties, phytochemicals and antioxidant capacities of two blueberry cultivars

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Abstract

Ripening of fruit can lead to changes in quality parameters in blueberries. The objective was to determine the effect of ripening on taste and phytochemicals of two blueberry cultivars. Blueberry fruits of Bluecrop and Northblue cultivars were divided into five ripening stages. Taste profiles, phytochemicals and antioxidant activities of blueberry fruit were evaluated. During ripening, sweetness, sourness and astringency showed a great response. Fruit color significantly changed from green to blue-purple, with anthocyanins, proanthocyanidins, flavonoids and polyphenol compounds significantly altered. The contents of delphinidin-type and malvidin-type anthocyanins, which are closely associated with blue-purple color, increased from first to fifth stage of maturity. Changes on antioxidant activity during ripening were similar to total anthocyanins. Regardless of maturity stage, Northblue cultivar displayed higher concentrations of phytochemicals and antioxidant activity. This study showed how ripening can alter taste and phytochemicals in blueberry, which can help guide the industry for optimum conditions during harvesting.