

Title Quality and nutraceutical content of blueberries (*Vaccinium corymbosum*) grown at two different altitudes (450 and 650 m above sea level)

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Abstract

The production of blueberry in Italy has been growing in recent decades, in response to consumer interest in fruit rich in bioactive compounds with potential dietary anticarcinogens. The study analyzed ripening indices and antioxidant compounds of two blueberry cultivars ('Brigitta Blue' and 'Duke') grown in Valtellina, Northern Italy during the 2005 and 2006 growing seasons at two different altitudes (450 and 650 m ASL). Fruits were sampled weekly in four classes from mature green to fully ripe berries. Color, total soluble solids, firmness, total phenolics, total anthocyanins, and ascorbic acid were evaluated in blueberries of each ripening class. Greater altitude delayed ripening, color development, and fruit size of 'Duke', and enhanced the ascorbic acid content during the ripening process, without influencing other parameters. 'Brigitta Blue' attained a higher (about 20%) sugar content and fruit size, while 'Duke' showed 50% more total anthocyanins and ascorbic acid, and 25-30% more total phenolics. These traits could be attributed to cultivar and to the earlier ripening of 'Duke.'