

Title Oxygen radical absorbing capacity, anthocyanin and phenolic content of highbush blueberries (*Vaccinium corymbosum* L.) during ripening and storage.

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Abstract

The antioxidant properties of blueberries have been examined only in ripe fruits, although fruits of different maturities are used in processed food products. In this study, highbush blueberry cultivars Bergitta, Bluegold, and Nelson highbush blueberry fruits at different stages of ripeness were examined to characterize the differences in oxygen radical absorbing capacity (ORAC) and the phenolic components responsible for ORAC. Underripe fruits at different stages of maturity were also stored at 20 deg C for up to 8 days to assess changes in ORAC and phenolic content. Anthocyanin content was substantially higher in fruits of more advanced stages of ripeness. In contrast, the phenolic content and ORAC were lower in the riper fruits. Anthocyanins continued to form during storage, although rate of pigment formation declined after about 4 days. Less anthocyanin pigment was formed in less ripe fruits. After 8 days of storage, the anthocyanin content of fruits harvested 5-50% or 50-95% blue exceeded that of ripe fruits. Up to 60% of the total phenolic content could be accounted for by anthocyanins. ORAC was positively correlated with total phenolic content ($R^2=0.78$), but not with anthocyanin content.