Title Maximizing antioxidants in fruits

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Abstract

Fruits contain high levels of antioxidant compounds, such as carotenoids, flavonoids, vitamins, and phenols. These antioxidants are capable of performing a number of functions including free radical scavengers, peroxide decomposers, singlet and triplet oxygen quenchers, enzyme inhibitors, and synergists. Antioxidants can also delay or prevent the oxidation of lipids or other molecules by inhibiting the initiation or propagation of oxidizing chain reactions. Preharvest conditions such as climate, temperature, light intensity, soil type, compost mulching, fertilization, increasing carbon dioxide concentration in the atmosphere, and application of naturally occurring compounds, all can affect the antioxidant content and antioxidant activity of the harvested fruits. Other factors affecting antioxidant activities including crop genotype variation and maturity, culture practices, postharvest handling and storage will be presented. Strategies to maximize antioxidants in fruits such as improving selection criteria among different horticultural cultivars, improving preharvest conditions and postharvest handling, and using tissue culture and genetic engineering to modify nutrient quality will also be presented.