

Title Volatile production by 'Golden Delicious' apples is affected by preharvest application of aminoethoxyvinylglycine

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Abstract

The effect of AVG application on the quality and volatile production of 'Golden Delicious' apples, grown in Chihuahua Mexico, was evaluated. AVG (125 g AVG/ha) was applied on apple trees four weeks before harvesting. Apples were harvested 176 days after full bloom and stored at 8 °C for 35 d. Quality parameters and volatile compounds were periodically evaluated. AVG application retarded color changes, and preserved acidity of apples during storage. Ethylene synthesis was also delayed by AVG. Control apples presented higher total soluble solids content than AVG-treated apples at the end of cold storage. Volatile production was affected by AVG application, especially in the case of esters and alcohols, which presented 59% and 33% lower values in AVG-treated apples at the end of storage. A higher concentration of aldehydes was observed at harvest time in AVG-treated apples; however, no difference was observed between treatments during storage. Higher correlations between ethylene production and aldehydes and alcohols were found in control apples (0.98, and 0.98, respectively), than in AVG-treated apples (0.6 and 0.90, respectively). AVG application on 'Golden Delicious' apples conferred a variety of benefits, such as delaying maturation, maintaining color, and reducing changes in acidity and total soluble solids. However, AVG treatment negatively affects the production of some volatile compounds.