

Title Cuticular phenolics and scald development in 'Delicious' apples.
Authors Ju, Z. G.
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Abstract

Influences of fruit maturity, AVG and ethephon preharvest treatments, and storage conditions on cuticular phenolic concentration, alpha -farnesene accumulation and oxidation, and scald development of Delicious apples were studied. Advanced maturity and ethephon treatment increased free phenolics in fruit cuticle at harvest, while AVG treatment caused a reduction. Free cuticular phenolics increased during early storage in ethephon-treated and nontreated fruits but not in AVG-treated apples. Advanced maturity and ethephon did not alter alpha -farnesene accumulation overall, but reduced conjugated triene (CT281) formation and scald development. When stored in a low-ethylene room (<1 micro L.L-1), AVG-treated fruits accumulated very low levels of alpha -farnesene and CT28 and did not develop scald after 6 months at 0 deg C. When stored in a commercial room (ambient ethylene>5 micro L.L-1), the AVG-treated and control fruits accumulated similar amounts of alpha -farnesene and CT281 and developed similar percentages of scald. In general, free phenolic concentrations in fruit cuticle were negatively correlated with CT281 formation and scald development of apples.