

Title Ethylene scrubbing offers no firmness and scald benefits to 'Golden Delicious,' 'Delicious,' and 'Spartan' apples in low-oxygen storage.

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Abstract

British Columbia-grown 'Golden Delicious', 'Delicious', and 'Spartan' apples are tolerant to a 1.0% O₂ storage atmosphere. These cultivars store well commercially at 0°C in a rapidly established 1.0%-1.5% O₂ + 1.5% CO₂ atmosphere. The observation of a firmness benefit with low-ethylene storage of 'McIntosh' has generated considerable interest in the Pacific Northwest in using ethylene scrubbing to extend the storage life of apples. However, most of the previous low-ethylene storage studies involved flow-through systems, fruit from single orchards, and carefully controlled harvest conditions. Results of such experiments are difficult to apply to large commercial operations where fruit lots vary considerably in maturity and quality.

Ethylene scrubbing is a relatively expensive process. The experiments reported herein evaluated whether removal of ethylene in a rapidly established 1.5% or 0.7% O₂ + 1.5% CO₂ storage atmosphere could improve firmness in 'Golden Delicious', 'Spartan', and 'Delicious', and control scald in 'Delicious' apples from commercial sources.