

Title Effect of initial hermetic sealing on quality of 'Kyoho' grapes during storage
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Abstract

Experiments of initial hermetic sealing using high barrier film were carried out on 'Kyoho' grapes (*Vitis vinifera* L. × *V. Labrusca* L. cv. Kyoho) in the 2008 and 2009 fruit seasons, to investigate their potential to enhance quality and extend storage life of the fruit. In the 2008 season, grapes were packaged in high barrier film bags for 1, 2, 3, 4 and 5 weeks, and a modified atmosphere (MA) of low oxygen and high carbon dioxide was formed after sealing. After packaging, fruit were removed from bags and stored in air for up to 90 d at 0 °C. In the 2009 season, grapes were packaged in perforated bags, or in high barrier film bags for 2 weeks and subsequently perforated bags to avoid further anoxia and excessive CO₂ accumulation. After treatment, fruit were stored for up to 90 d at 0 °C, followed by shelf-life at 20 °C for 7 d. Non-packaging air storage was used as a control in both seasons. Fruit quality attributes including soluble solids, titratable acidity, stem browning, berry drop and decay incidence were measured. The results indicated that short-term initial MAP (≤2 weeks) had potential for improving appearance of bunches and maintaining the quality of berries during long-term storage, and significantly reduced quality deterioration. Stems were greener and berry drop and decay incidence were more effectively controlled when fruit were sealed in high barrier film bags for 2 weeks and the bags were subsequently perforated.