Title The effects of controlled atmosphere storage on maintaining freshness of grapes 'Kyoho'

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Abstract

Grapes var. 'Kyoho' were harvested from a farm in Cheonan/S-Korea in 2008. After grading, 400-600g samples of fruit were sealed in 7L acrylic containers and stored at 0-0.5°C for 60 days. During storage, the containers were supplied with one of four atmospheres; air, 2%CO_2 + 3%O_2, 5%CO_2 + 3%O_2, or 10%CO_2 + 3%O_2 all with 90-95% relative humidity. Weight loss was most rapid in the control fruit. An atmosphere containing 5%CO_2 + 3%O_2 reduced water loss and fruit softening. Respiration and ethylene production were lowest for fruit stored in 5%CO_2 + 3%O_2 followed by 10%CO_2 + 3%O_2 > 2%CO_2 + 3%O_2 and air in ascending order. Total soluble solids and titratable acidity were maintained in fruit stored in 5%CO_2 + 3%O_2 and 10%CO_2 + 3%O_2. The 5%CO_2 + 3% O_2 was found to be most effective in protecting product quality from spoilage and berry drop.