

Title Postharvest quality of 'Sonata', 'Honeoye' and 'Polka' strawberries as affected by modified atmosphere packages

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Citation ISHS ActaHorticulturae 945:55-61. 2012.

Keyword *Fragaria × ananassa*; soluble solids; titratable acidity; sensory evaluation; ascorbic acid; anthocyanins; total antioxidant capacity

Abstract

The experiment was undertaken at the Estonian University of Life Sciences in 2008. 'Sonata', 'Honeoye' and 'Polka' strawberries were picked into 250-g perforated plastic punnets, cooled down to 3°C during 24 hours and packed as follows: 1) control – punnets covered with perforated lid (natural atmosphere); 2) 30 µm LDPE bag (low density polyethylene, product of Estiko, Estonia); 3) Xtend strawberry bag (Stepac, Israel). Each treatment consisted of 20 punnets. Strawberries were stored for 12 days at 3±1°C. O₂ and CO₂ content was measured in the packages every day. Fruit soluble solids content (SSC), titratable acidity (TA), ascorbic acid content (AAC), total anthocyanins (ACY) and total antioxidant capacity (TAC) were determined at harvest, after 5 and 12 days of storage. Weight of berries with rots was determined and sensory evaluation in hedonic scale was carried out at the end of experiment. CO₂ content in MA treatments reached up to 4.7%, which was not high enough for suppressing *Botrytis* rot - the amount of spoiled fruits in MA packages was not different from the control. The experiment revealed that only 'Sonata' strawberry was suitable for 12 days storage, since both the appearance and taste was appreciated by the assessors. MA packages were efficient in retaining 'Sonata' SSC/TA after 5 days storage, whereas quality parameters after 12 days of storage were not significantly improved by MA. The main quality loss characteristic of strawberry 'Polka' was loss of attractive appearance, whereas taste scores were almost as good as for 'Sonata'. Both MA packages had positive effect on 'Polka' appearance and LDPE film on SSC/TA and AAC. 'Honeoye' taste after 12-days storage was not appreciated by the evaluators and MA storage did not improve it. However, 'Honeoye' fruit AAC in MA packages was significantly higher than in control punnets.