

Title Modified atmosphere packages and cold storage to maintain quality of 'Douradão' peaches
Author Ligia R. R. de Santana, Benedito C. Benedetti, José M. M. Sigríst, Hélia H. Sato, Claire I. G. L. Sarantópoulos
Citation Abstracts, 10th International Controlled & Modified Atmosphere Research Conference, 4-7 April 2009, Antalya, Turkey. 80 pages.
Keyword Modified atmosphere packaging; respiration rate; ethylene synthesis

Abstract

The objective of this study was to evaluate the effect of active modified atmosphere packaging (MAP) on quality and shelf life of the 'Douradão' peaches. The peaches were harvested at the middle stadium of ripening, packed in trays and placed inside low density polyethylene (LDPE) bags (30, 50, 60 and 75 μm thickness) with active modified atmosphere (gas mixture: 10% CO_2 + 1.5% O_2), The control was made with peaches held in nonwrapped trays. Storage conditions were 28 d at 1 ± 1 °c and $90 \pm 5\%$ relative humidity (RH) followed by 4 d in air at 25 ± 1 °c and $90 \pm 5\%$ RH. Gas concentration (CO_2 and O_2) within packages was monitored during cold storage. After 14, 21 and 28 d of cold conservation, samples were withdrawn from MAP and evaluated on the day of removal and 4th day for weight loss, flesh firmness, soluble solids content (SSC), titratable acidity (TA), juice content, occurrence of woolliness and decay, pectolytic enzymes activities; also, were monitored the respiration rate and ethylene synthesis during 6 ripening days. The results showed that package reduced weight loss and MAP fruit were firmer, while the control did not present marketable conditions at less than 14 days of cold storage. MAP fruit showed lower SSC and no relevant difference on TA, and it also prevented postharvest decay. The MAP inhibited the pectin methylesterase activity, preventing woolliness occurrence of fruits packaged in 50 and 60 μm LDPE films. These fruit had better overall quality than the control and fruit from 30 and μm LDPE packages. A micro atmosphere favorable for fresh peaches was maintained within the 50 and 60 μm packages that were selectively permeable to respiratory gases.