

Abstract:

Mature-green arazá (*Eugenia stipitata*) fruit were stored in air, or in macro-perforated and non-perforated low-density polyethylene (LDPE 38 μm) film bags at 7 or 10 °C to test the effects of modified atmosphere (MA) packaging on fruit color development. Atmosphere was attained either passively or actively within non-perforated bags; actively modified packages were filled with 2% CO_2 and 21% O_2 at the time of sealing. Storage times were 15 d for treatments at 10 °C or fruit stored unpackaged at 7 °C, and 20 or 25 days for fruit stored in macro-perforated or non-perforated bags at 7 °C, respectively. Fruit from all treatments were kept for a shelf-life period of 3 d at 20 °C in open bags. Steady state atmospheres were not reached in non-perforated bags. Atmospheres in active or passive bags at both temperatures were always above 6% O_2 and below 9% CO_2 . Respiration showed a maximum value after 10 d in air at 10 °C ($1880 \text{ mg CO}_2 \times \text{kg}^{-1} \cdot \text{h}^{-1}$) or after 6 days at 7 °C ($3500 \text{ mg CO}_2 \times \text{kg}^{-1} \cdot \text{h}^{-1}$). Only arazá fruit held at 7 °C in air or in macro-perforated bags showed chilling injury symptoms (skin scald, inhibition of color development and increased susceptibility to anthracnose during shelf-life period). MA treatments significantly reduced weight loss and extended fruit storage life particularly in non-perforated bags. Color changes during ripening were characterized by decreased hue angle and increased chroma and lightness values. As expected, color changes were more noticeable at higher temperatures. Lightness increased linearly during storage and the shelf-life periods. Chroma values increased during storage in macro-perforated bags at 7 °C compared with fruit stored unpackaged in air. After 15 days at 10 °C, either active or passive MA packaging delayed fruit color development as measured by higher hue angle values.