Title Effects of 1-methylcyclopropene (1-MCP) and modified atmosphere packaging (MAP) on storage life of avocado fruit

Author Mustafa Pekmezci, Mustafa Erkan, Isilay Karasahin, Aliye Demirkol and Huseyin Uslu

Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords post-harvest; fruit quality; shelf-life; flesh firmness; decay incidence

Abstract

The effects of 1-MCP, MAP, and their combination on post-harvest quality of 'Hass' avocados during prolonged storage were studied. Mature avocados were pre-treated with 50 $nl.l^{-1}$ 1-MCP for 12 h at 20°C. After 1-MCP treatment, treated and untreated (control) fruit were packed with commercial modified atmosphere packages (Extend). The fruit were then stored at 6°C with 90% RH for 45 days and subsequent 7 days of simulated shelf-life at 20°C. Fruit firmness (lb), weight loss (%), color changes (L, a, b), and oil content were determined at 15 days intervals. O_2 and CO_2 percentages in MAP and decay incidence (%) of avocados were also monitored during storage and shelf-life condition. Experiment results showed that both MAP and combination of 1-MCP and MAP significantly reduced the weight loss of avocados and flesh firmness of avocados was found to be higher in both these treatments as compared to the control fruit after 45 days storage duration. Lower levels of O_2 and higher levels of CO_2 were found in control fruit than in 1-MCP or MAP treated fruit. Avocados treated with 1-MCP or combination of 1-MCP and MAP were greener than control fruit at the end of storage. 1-MCP also prevented black pigmentation and decay incidence on the peel of avocados.