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HARVEST MATURITY AND STORAGE PERIOD OF HASS AVOCADO INFLUENCE THE EFFECTIVENESS OF 1-METHYLCYCLOPROPENE

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The effectiveness of 1-Methylcyclopropene (1-MCP) was evaluated on Hass Avocado harvested from a single orchard at 13%, 15.9% and 18% of oil content and treated with 200 ppb of 1-MCP (Smartfresh 0,14%). A separated experiment was performance with 200, 400 and 800 ppb of 1MCP on fruit with 20% of oil at the end of the harvest season. The treatments were compared with fruit without 1-MCP application and evaluated after 20 and 35 days of storage at 7°C or 5°C. The firmness and skin color evolution of the fruit were followed during shelf life at 15°C and the days to achieved the ready to eat stage (Firmness < 10 Newtons and 100% of fruit on black skin) were calculated. Control fruit harvested at 13, 15.9 and 18% of oil and stored for 20 days at 7°C reached the ready to eat stage at 14, 8 and 4 days respectively otherwise 21, 19 and 14 days were necessary for the treated fruit. In the case of fruit stored for 35 days, the control fruit ripened after 8, 4 and 4 days compared with 15, 12 and 10 days for the same maturity stages. The shelf life of fruit harvested with 20% oil and stored for 20 days at 5°C was increased from 4 to 8 and 12 days with 200 ppb and 400 or 800 ppb of 1-MCP respectively. No difference in the time to reach the ripening stage was obtained among 1-MCP concentrations after 35 days of storage, in that case control fruit required 4 days to ripe instead of 8 days of treated fruit. The results demonstrated that delay of ripeness of 1-MCP is influenced by the maturity stage and storage period of the fruit.