

## **Abstract**

1-Methylcyclopropene (1-MCP), an ethylene action inhibitor, significantly delayed the ripening of the avocado cultivars 'Ettinger', 'Hass' and 'Pinkerton'. Application of 1-MCP at low concentration ( $300 \text{ nl l}^{-1}$ ), prior to the climacteric increase, was effective and delayed the onset of the climacteric peaks of  $\text{CO}_2$  and ethylene production. The delay was associated with reductions in fruit softening and in electrical conductivity (EC), the latter being an indicator of membrane permeability. The 1-MCP-treated 'Ettinger' and 'Pinkerton' avocado fruit maintained a greener peel color because of their lower levels of chlorophyllase activity and less chlorophyll breakdown. Treatment with 1-MCP at  $300 \text{ nl l}^{-1}$  prior to cold storage reduced chilling injury (CI) symptoms that are expressed as mesocarp discoloration and reduced polyphenol oxidase (PPO) and peroxidase (POD) activities in avocados stored at  $5^\circ\text{C}$  for 3.5 weeks. PPO and POD activities were low in harvested fruit and increased significantly during cold storage and shelf life at  $20^\circ\text{C}$ . 1-MCP was effective in reducing pulp browning in all the tested avocado cultivars. Mesocarp discoloration in avocado was found to be correlated with increases in EC values and PPO and POD activities.