

Title Cell wall biochemistry of sapodilla (*Manilkara zapota*) submitted to 1-methylcyclopropene

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Abstract

Sapodilla (*Manilkara zapota*) is a climacteric fruit that ripens shortly after harvest. Studies on its conservation during storage have been mainly restricted to using low temperatures and modified atmospheres. In this study we investigated the influence of 1-methylcyclopropene (1-MCP) on the physiological and biochemical changes that sapodilla cell wall undergoes during ripening and evaluated its potential to preserve sapodilla fruits at postharvest. Fruits were treated with ethylene antagonist 1-MCP at 300 nL L⁻¹ for 12 h and then stored under a modified atmosphere at 25°C for 23 d. 1-MCP significantly delayed softening of sapodilla for 11 d as a consequence of inhibition of cell wall degrading enzyme activities, and thus 1-MCP-treated fruit exhibited a less extensive solubilization of polyuronides, hemicellulose and of free neutral sugar when compared to control fruit. Results suggest that delayed softening of sapodilla is largely dependent on ethylene production and perception.