Title Enzyme activities and pectin breakdown of sapodilla submitted to 1-methylcyclopropene

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Abstract

The objective of this work was to investigate the influence of 1-methylcyclopropene (1-MCP) at 300 nL L^{-1} on activities of cell wall hidrolytic enzymes and pectin breakdown changes which Sapodilla (*Manilkara zapota* cv. Itapirema 31) cell wall undergoes during ripening. Sapodilla were treated with ethylene antagonist 1-MCP at 300 nL L^{-1} for 12 hours and then, stored under a modified atmosphere at 25º C for 23 days. Firmness, total and soluble pectin and cell wall enzymes were monitored during storage. 1-MCP at 300 nL L^{-1} for 12 hours delayed significantly softening of sapodilla for 11 days at 25º C. 1-MCP postharvest treatment affected the activities of cell wall degrading enzymes pectinmethylesterase and polygalacturonase and completely suppressed increases in beta-galactosidase for 8 days, resulting in less pectin solubilization. Beta-galactosidase seems relevant to softening of sapodilla and is probably responsible for modification of both pectin and xyloglucan-cellulose microfibril network.