

Title Effect of 1-methylcyclopropene (1-MCP) on reducing postharvest decay in tomatoes (*Solanum lycopersicum* L.)

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Abstract

1-Methylcyclopropene (1-MCP as SmartFresh™ technology), an ethylene antagonist, was evaluated for affecting postharvest decay caused by *Alternaria alternata*, *Botrytis cinerea*, and *Fusarium* spp. on ‘Quality 23’ and ‘Seminis 35’ tomatoes at green or pink stages. Fruit with natural or artificial infection were subjected to 1-MCP at 0.0 $\mu\text{L L}^{-1}$, 0.6 $\mu\text{L L}^{-1}$ for 12 h, and 1.0 $\mu\text{L L}^{-1}$ for 6 h. After 31–42 d storage, disease incidence and severity of individual diseases in 1-MCP treated fruit was significantly reduced compared with that of the untreated controls, except in one inoculated test for ‘Quality 23’ where severity of *Alternaria* rot in 1.0 $\mu\text{L L}^{-1}$ treated fruit were significantly higher than that of the untreated control. Fruit treated with 1-MCP at 1.0 $\mu\text{L L}^{-1}$ for 6 h also had significantly higher incidence of *Alternaria* rot in the inoculated ‘Quality 23’ and in the non-inoculated ‘Seminis 35’ compared with the fruit treated with 1-MCP at 0.6 $\mu\text{L L}^{-1}$ for 12 h. The results of this study indicate that 1-MCP can reduce postharvest decay within a certain storage period.