Title The effect of 1-MCP on Internal browning incidence of Asian Pear (*Pyrus serotina* Rehd.)

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Abstract

This study was conducted in order to determine the effect of 1-MCP treatment on 'KS_6' Asian pear fruit in relation to internal browning development after long-term storage. Fruit were harvested on the commercial basis and the experiment was a completely randomized design (CRD) with factorial arrangement. Fruit were treated with 0 and 2 $\mu l\ L^{-1}$ 1-MCP. Treated fruit were stored in 0.5°C for 120 days. There was no significant difference between control and treated fruit for fruit ripening and quality parameters at harvest time. 1-MCP treatment delayed ripening and prolonged storage life as indicated by delayed loss of firmness, TA and delayed surface color changes. 1-MCP was not significant affect on SSC levels. Total phonolic compounds increased during over time in fruit flesh but, retarded or delayed in 1-MCP treated fruit. Ascorbic acid concentrations determined from fruit samples taken around of fruit core area were diminished during storage time but, 1-MCP relatively turned down this decreasing rate. Higher catalase activity was observed in 1-MCP treated fruit versus control fruit. However, the effects of 1-MCP on superoxide dismutase activities in fruit flesh were not significant. Polyphenol oxidase activities and internal browning index increased simultaneously but, 1-MCP significantly retarded this increasing rate. Results indicated that internal browning index in 'KS_6' in 1-MCP treated fruit was significantly less than control after l20-day cold storage, although this disorder was not completely controlled.