

Title Effect of 1-MCP on yellowing, ethylene production, respiratory rate and quality of pear (cv. Early Crisp) during ambient storage

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Abstract

'Early Crisp' pear is one of the most important early Asia pears (*Pyrus bretschneideri* Rehd.) grown in the north of China. The fruit are often purchased because of its green peel, good taste and crispy flesh texture. However, postharvest yellowing of fruit is happened rapidly due to limited use of refrigeration and without effective postharvest treatments. In this study, the pears (cv. Early Crisp) were treated with 1-MCP at 0.5, 1.0 and 1.5 $\mu\text{l.l}^{-1}$ for 12h to control yellowing, ethylene production, respiratory rate and the quality change in fruit. The results showed that 1-MCP effectively maintained the skin green, inhibited yellowing and delayed chlorophyll degradation of fruit. The chemical reduced ethylene production and respiratory rate, delayed the climacteric peak and decreased the peak values. 1-MCP also maintained fruit firmness, content of titratable acidity and soluble solids. Among three concentrations, the treatment at 1.0 $\mu\text{l.l}^{-1}$ 1-MCP showed the best effect. A higher concentration treatment increased the rot of fruit. It is suggested that 1-MCP could control yellowing of pear fruit by suppressing ethylene production and respiratory rate.