Title Infiltration of 1-methylcyclopropene under low pressure can reduce the treatment time required to maintain apple and Japanese pear quality during storage

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Abstract

In order to reduce the effective time for 1-methylcyclopropene (1-MCP) treatment of apple and Japanese pear, the effects of infiltrating 1-MCP under low pressure on fruit quality after storage were investigated using two apple ('Jonagold' and 'Fuji') and two Japanese pear ('Shinsei' and 'Shinsui') cultivars. The treatment efficacy tended to increase as the pressure was reduced during 1-MCP injection into the treatment container, but was not influenced by the pressure throughout the treatment. In 'Jonagold' apples, even a 1 min treatment with 1-MCP after depressurization to 20 kPa reduced softening, loss of titratable acidity, and increasing internal ethylene concentration and peel greasiness during 4 weeks of storage at 20 °C. On the other hand, a substantial effect was observed only in treatments lasting for 30 min or longer even though the pressure during 1-MCP injection was reduced to 10 kPa in Japanese pear.