

Title Influence of time and concentration of 1-MCP application on the shelf life of pear 'La France' fruit.
Authors Kubo, Y., Hiwasa, K., Owino, W. O., Nakano, R. and Inaba, A.
Citation HortScience Vol: 38 (2003); 1414-1416

Abstract

'La France' pear fruits were exposed to chilling temperature (-1 deg C) for a week to induce ethylene biosynthesis before they were transferred to 20 deg C to allow ripening. On 1, 4, or 7 days after transfer to room temperature, fruits were treated with 20 micro litres 1-MCP/litre for 12 hours. The 1-MCP treatments suppressed ethylene and carbon dioxide production significantly and slowed fruit softening. The shelf life of fruits with desirable firmness treated with 1-MCP on day 4 was twice that of the untreated fruit, with firmness of 1-MCP treated fruit on day 1 being higher than desirable while that of fruit treated on day 7 was lower than desirable. To determine the optimum 1-MCP concentration for treatment, fruits were exposed to 0.01-100 micro litres 1-MCP/litre 3 days after the transfer to 20 deg C. The fruit treated with 1 micro litre 1-MCP/litre and less ripened similarly to untreated fruit, having a shelf life of a week. 1-MCP treatments of 10 and 100 micro litres/litre inhibited ethylene and carbon dioxide production, and delayed fruit softening and occurrence of senescent breakdown. The flesh firmness of these fruits maintained suitable eating quality for more than 3 weeks. Our results indicate that 10 micro litres 1-MCP/litre at 20 deg C for 3 to 4 days after initiation of ripening can extend the shelf life of 'La France' pear fruit.