

Title Effect of 1-methylcyclopropene on 'Rocha' pears stored under normal atmosphere conditions
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Citation ISHS Acta Horticulturae 800:1041-1046 . 2008.
Keywords 1-MCP; postharvest; *Pyrus communis*; ripening

Abstract

The effects of 1-methylcyclopropene (1-MCP) on pears depend mainly on the cultivar, fruit maturity before application, concentration applied and storage duration. Favourable and unfavourable aspects of 1-MCP treatments for pears have been reported. The degree of response of 1-MCP treatments on the ripening of 'Rocha' pears during a cold storage period of seven months was evaluated throughout three growing seasons. 24 hours after harvest the fruits were treated with 100, 200 and 300 ppb of 1-MCP for 24 h at 0°C, and were stored under normal atmospheric conditions at 0°C and 90–95% RH. Fruit samples were removed from storage periodically and pulp firmness, skin colour, soluble solids content (SSC) and titratable acidity (TA) were evaluated, immediately and after a shelf-life period of 7 days. The results suggested that 1-MCP treatment delayed the loss of pulp firmness and yellowing during the cold storage period. However the efficacy of 1-MCP on the inhibition of the quality 'attributes' development was affected by the concentration of 1-MCP and the pears maturity stage before the treatment. Pears with a Streif index greater than 0.09 were sensitive to 200 and 300 ppb of 1-MCP. The longer the storage period, the greater were the differences detected between treated and untreated fruits. Ripening during the shelf life period proceeded similarly to that of untreated fruits, but 300 ppb treated fruits had higher pulp firmness and TA and were greener. This concentration seems to be the most appropriate, though sensory analysis should be assessed to confirm it.