

Title Maintaining postharvest quality of ‘Golden Delicious’ apples by 1-methylcyclopropene (1-MCP)

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Abstract

The objectives of this study were to determine the effects of 1-MCP on quality of ‘Golden Delicious’ apples during long term storage. Fruit were pre-treated with 500 ppb 1-MCP for 24 h at 0°C. Fruit were then stored at 0°C with 90% relative humidity for 6 months and followed by 7 days of simulated shelf-life at 20°C. During storage, various chemical and physical analyses (weight loss, soluble solids, titratable acidity, and flesh firmness) of apples were determined at monthly intervals. Skin color changes and respiration rate of apples were also examined. Fruit treated with 1-MCP had higher flesh firmness and titratable acidity (TA) than control fruit during storage and shelf-life. However, there were no significant differences between 1-MCP treated and control fruit in terms of soluble solids concentration and weight loss. At the end of storage, treated fruit were greener than control fruit. Untreated apples reached a climacteric maximum earlier than 1-MCP treated apples. Overall, 1-MCP had a tremendous positive effect on maintaining postharvest quality of ‘Golden Delicious’ apples.