Title	Responses of early-season apple cultivars, 'Seokwang' and 'Sunhong', to 1-MCP treatment
	and storage temperatures
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Citation	Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-
	19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords 1-MCP; apple; ethylene; firmness

Abstract

Effects of 1-methylcyclopropene (1-MCP) on the storage potential were evaluated on 'Seokwang' and 'Sunhong' apple (Malus domestica L.) cultivars bred in Korea. Fruit were harvested at commercial maturity in August, 2005 and treated with 1000 ppb 1-MCP for 20 h at 0 or 20°C. Following 1-MCP treatment, 'Seokwang' apple were stored at 0 and 10°C for 5 weeks, whereas 'Sunhong' apples were stored at 0, 10°C, and ambient temperature for 6 weeks. Physiological and quality changes were observed and compared to those in control fruits that were non-treated and stored at 0°C. 1-MCP treatment effectively reduced ethylene production in both cultivars. In 1-MCP-treated apples, ethylene production at 10°C was less than that in control apples stored at 0°C. In contrast, the effects of 1-MCP on respiration rates were different between cultivars. In 'Sunhong' apples, 1-MCP strongly reduced respiration resulting in lower respiration rates at 10°C and ambient temperature than those in control fruits at 0°C, while in 'Seokwang' apples, despite 1-MCP treatment, respiration rates were higher at 10°C than those in control apples at 0°C. Among quality attributes measured, flesh firmness and juice acidity were maintained following 1-MCP treatment. There was no significant effect of MCP on soluble solids concentration. 'Sunhong' applies with treated MCP stored in ambient for 3 weeks were developed to internal browning disorder. 1-MCP applied at 20°C appeared to induce storage disorders when fruit was maintained at the higher temperatures after treatment. The results suggest that physiological responsiveness to 1-MCP treatment differed between cultivars and influenced ripening-related events.