

Title Preharvest application of Harvista, 1-Methycyclopropene (1-MCP), to control fruit drop of apples, and its effects on postharvest quality

Author C.B. Watkins, H. James, J.F. Nock, N. Reed and R.L. Oakes

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Abstract

Application of 1-MCP to maintain quality of horticultural produce, especially apples, is now well established. In this paper, we report the results of 1-MCP application to apple trees in the field as a commercial formulation known as Harvista, which received Environmental Protection Agency registration in 2008. The effects of Harvista on fruit drop and on the maturity and quality of fruit at harvest and after storage has been studied using Gala, McIntosh, Empire, Delicious, Jonagold and Honeycrisp over two years. The results show that responses among cultivars can vary depending on the normal levels of preharvest drop, but overall, Harvista markedly delays fruit drop. Depending on the cultivar, Harvista results in lower internal ethylene concentrations, firmness and starch indices. These effects can be maintained during air and controlled atmosphere storage, but the persistence of these effects are related to harvest maturity.