1-Methylcyclopropene maintains the postharvest quality of hardy kiwifruit (*Actinidia aruguta*)

Dongying Xu, Fuhui Zhou, Sitong Gu, Ke Feng, Wenzhong Hu, Jing Zhang, Xingsheng Sun, Xiwen Liang and Aili Jiang

Journal of Food Measurement and Characterization 15: 3036–3044. 2021.

Abstract

The storage life of optimum quality in postharvest hardy kiwifruit (*Actinidia aruguta*) is short. The effect of 0.8 μL L^{-1} 1-Methylcyclopropene (1-MCP) on the storage quality of harvested hardy kiwifruit was investigated at temperature of 1 °C for 70 days. The results indicated that 1-MCP treatment maintained the firmness and total soluble solids content of hardy kiwifruit as well as inhibited the respiratory rate and the decrease of vitamin C and glutathione contents. The antioxidant enzymes activity of superoxide dismutase, peroxidase, catalase, and glutathione reductase were enhanced in 1-MCP treatment hardy kiwifruit, meanwhile, 1-MCP treatment induced the radical scavenging capacity (DPPH radical scavenging rate, hydroxyl radical scavenging rate, and superoxide anion scavenging capacity) in fruit during storage. These results demonstrated that hardy kiwifruit with 1-MCP treatment stimulated a series of physiological responses to delay ripening and senescence and improve storage quality. Therefore, 1-MCP treatment could be used to extend the shelf-life of commercially produced hardy kiwifruit.