

Title Could preharvest applications of 1-mcp improve postharvest life of 'Hayward' kiwifruit?
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Abstract

One of the main postharvest problems in kiwifruit is flesh softening, this process being in part coordinated by ethylene. Therefore, many postharvest strategies have been developed in order to reduce fruit softening, including early harvest, controlled/modified atmosphere storage, ethylene scrubbers and 1-MCP (1-methylcyclopropene) (SmartFreshSM) applications after harvest, being SmartFreshSM extensively used in the last 3 years in Chile. Under Chilean growing conditions the harvest window is quite extend depending on the growing area, going from March to May, which could be affecting the postharvest behavior of the fruit in terms of quality attributes, including firmness among others. During the last three years, a new formulation of 1-MCP has been developed for applying this molecule in preharvest (HarvistaTM Technology), being the objective of this study to evaluate the effect of this molecule during harvest and postharvest of kiwifruit. For the trials we considered two applications times before harvest and two harvest opportunities based on maturity. At harvest no differences were observed for all the attributes evaluated. But for harvest time, an effect in fruit softening was observed during cold storage showing all the fruit applied with 1-MCP a higher firmness compared to control fruit, being this effect more evident in the second harvest. This effect could be explained by the effect of 1-MCP in ethylene production and respiration rate, where lower rates in both parameters were measured in kiwifruits applied with 1-MCP. In other attributes, such as total soluble solids, titratable acidity and physiological disorders, not major differences were observed.