

Cooperative effects of pre-harvest calcium and gibberellic acid on tissue calcium content, quality attributes, and in relation to postharvest disorders of late-maturing sweet cherry

Yu Dong, Huanhuan Zhi and Yan Wang

Scientia Horticulturae 246: 123-128. (2019)

Abstract

Six $\text{Ca}(\text{NO}_3)_2$ sprays at 0.3% and 0.6% from pit hardening (PH) to 1 week before harvest (1WBH) most effectively increased Ca uptake in sweet cherry (*Prunus avium*). Low concentration (<0.3%) did not affect the absorption of Ca; high concentration (>1.6%) caused burning of leaf margins. Fruit treated with Ca had greater fruit firmness (FF), soluble solids content (SSC) and titratable acidity (TA) and fewer disorders than untreated fruit while retaining marketable color and size. A single, low concentration of GA_3 combined with Ca sprays enhanced Ca uptake, cracking resistance, and FF without delaying maturation. When Ca plus GA_3 sprays were reduced to four times, Ca uptake was retarded, but had an equal or greater benefit than Ca sprays alone. The 5-d harvest delay in combination-treated fruit did not affect skin color, but these fruit had reduced Ca levels at harvest and displayed stem browning after storage.