

Title Postharvest quality of 'Bing' cherries following preharvest treatment with hydrogen cyanamide, calcium ammonium nitrate, or gibberellic acid.

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Abstract

During three consecutive years, 'Bing' sweet cherry (*Prunus avium*) trees were treated during dormancy with the dormancy-manipulating compounds, CH_2N_2 or CaNH_4NO_3 , or were treated with the plant growth regulator GA_3 at straw colour development (salmon, red, mahogany and dark mahogany). Fruits of a range of maturities, based on skin colour, were evaluated for quality following harvest and simulated transit and market storage conditions. At comparable maturities, CH_2N_2 and GA_3 fruits were of similar firmness and were consistently firmer than CaNH_4NO_3 -treated and untreated fruit across years, storage regimes, and maturities. CaNH_4NO_3 and untreated fruits were of similar firmness. CH_2N_2 -treated cherries were larger than fruits of other treatments, but only marginally in terms of variation in fruit size between years. Contraction of fruit diameter occurred after 3 days storage, but ceased thereafter up to 11 days storage. Soluble solids and titratable acidity varied between years, storage regimes, and maturities. Strong interactions of treatment and year concealed possible treatment effects on these indices. GA_3 fruit contained fewer surface pits in one year while CH_2N_2 fruit suffered less shrivel in another. The earlier harvest date for CH_2N_2 fruit often avoided higher field temperatures and the resulting promotion of postharvest shrivel. Pitting and shrivel were more prevalent in stored fruit. Brown stem discoloration developed in storage, occurring most frequently in mature fruits, although methyl bromide-fumigated fruit were particularly susceptible. This disorder was more common in GA_3 fruit during years of high incidence.