

Title Spring and preharvest sprays of pristine (pyraclostrobin+boscalid) improves quality and storability of sweet cherries

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Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords cherry; Pristine; pyraclostrobin; boscalid; antioxidant

Abstract

Pristine is registered as a fungicide for tree fruit and other crops in the United States. The active compounds are pyraclostrobin ($\approx 33\%$) and boscalid ($\approx 66\%$). However, Pristine also regulates physiological systems of the plant such as decreasing ethylene production and respiration, and increasing antioxidant capacity. We investigated responses of sweet cherries to Pristine application during spring (in-season) and prior to harvest. The objective was to determine the best application time, and whether spring and preharvest sprays interact and affect cherry quality and storability, as determined by changes in fruit size, weight, firmness, fruit quality, stem quality, soluble solids, titratable acidity, mineral, and antioxidant content and capacity. Cherry cv. Lapins trees were treated with Pristine during spring (4 applications) and preharvest (1-2 applications) at 1.0 kg/ha. Fruit treated with different spray programs were harvested at commercial maturity, and stored at 1°C for up to 42 days. Effects of Pristine application on fruit quality and storability were investigated at harvest and after storage. A spring spray program of Pristine mainly decreased respiration rate, increased titratable acidity and extended storage life of cherries. However, a preharvest spray program of Pristine increased anthocyanin, total phenolics content and total antioxidant capacity of fruit and improved the nutritional value. These beneficial effects on fruit quality are in addition to the fungicidal properties of Pristine and make this product particularly useful.