

**Title** Effect of 1-methylcyclopropene on quality attributes of 'Caldesi 2000' white-flesh nectarine during cold storage

**Author** G. Pantelidis and M. Vasilakakis

**Citation** ISHS Acta Horticulturae 884:605-610.2010.

**Keywords** *Prunus persica*, ethylene; respiration, softening; phenols; anthocyanins; antioxidants; peel

#### **Abstract**

The effect of postharvest treatment of 'Caldesi 2000' nectarine with 5 µl/L 1-methylcyclopropene (1-MCP, Rohm & Haas Co., Smartfresh 0.14% technology) after several durations of cold storage was studied. Treated with 1-MCP and non- treated (control) fruits were stored at 0°C for 0, 1, 2, 3 or 4 weeks and then held at 20°C for 5 days (shelf-life). Application of 1-MCP resulted in decreased ethylene production after 1, 2 and 3 weeks of cold storage, however, after 4 weeks of cold storage treated fruits produced significantly increased amounts of ethylene. Application of 1-MCP resulted in increased amounts of CO<sub>2</sub> production only in non-cold treated fruits. Application of 1-MCP delayed fruit softening during the first 2 weeks of storage, however, after 3 or 4 weeks of cold storage and 5 days at 20°C there were no differences between treatments. Soluble solids content, after 2 weeks of cold storage, was higher in control than treated fruits, however, after 3 or 4 weeks storage SSC was higher in 1-MCP than in non-treated fruits. Titratable acidity was always significantly higher in 1-MCP treated fruits. Application of 1-MCP resulted in increased amounts of red coloration in the peel of the fruit after 1 week of cold storage. Total anthocyanin content of the peel was 9-35% (1st-4th week, respectively) higher in 1-MCP treated than control fruits. Total phenol content and antioxidant activity of the peel were 4 to 20% higher in 1-MCP treated than control fruits after 1, 2 or 3 weeks of cold storage, however, there were no differences between treatments after 4 weeks of cold storage.