

Title Anthocyanins and hydroxycinnamic acids of Lambert Compact cherries (*Prunus avium* L.) after cold storage and 1-methylcyclopropene treatment

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Abstract

Sweet cherries cv. Lambert Compact were treated with 1-methylcyclopropene (1-MCP) at 0, 180 and 360 nL/L for 2 h at 25 °C and then stored at 2–4 °C in refrigerator. Their quality was measured after 12 days of storage in terms of the contents of total and individual anthocyanins and hydroxycinnamic acids, occurrence of rot, and colour change. Colour change was monitored at three day intervals during storage in the CIE L^* , a^* , b^* colour space. 1-MCP did not retard colour change. The contents of total and individual anthocyanins and hydroxycinnamic acids showed no correlation with the colour behaviour of the cherries. All cherries lost their initial shiny red colour on storage, regardless of the treatment. 1-MCP reduced sweet cherry rot at the highest concentration used (360 nL/L) – only 6% were rotten after 12 days in the refrigerator. This differed significantly ($P < 0.05$) from untreated fruits and those treated with 180 nL/L 1-MCP which resulted on average in 14 and 20% rot (not statistically different $P < 0.05$), respectively. The occurrence of rot was shown to be correlated with anthocyanin accumulation, ($R = 0.62$, $P < 0.10$). The profile of individual anthocyanins and hydroxycinnamic acids in sweet cherry was not affected neither by cold storage nor 1-MCP treatment.