Title	Mandarin flavor and aroma volatile composition are strongly influenced by holding temperature
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Abstract

Mandarins are popular with consumers but are prone to the development of off-flavor during storage. Following packing the fruit typically are exposed to periods of both cold and warm temperatures as the fruit move from the packing house to the point of sale and then to the consumer. In order to better understand the impact of warm temperatures on flavor 'W. Murcott' mandarins stored continuously at 5°C were compared using a sensory panel with fruit that had been stored at 20°C for either 1 or 2 weeks following 0, 2 or 4 wk at 5°C. In addition, the fruit were evaluated for standard quality parameters as well as aroma volatile concentration. The experiment was conducted at two different times during the season. Sensory results indicated that fruit held continuously at 5 °C maintained flavor quality while storage for 1 or more weeks at 20°C acted to cause considerable flavor loss. The degree of flavor loss at 20 °C increased as prior storage time at 5°C became greater. Fruit stored at 20°C had lower acidity than that stored at 5°C. In addition, much higher concentrations of alcohols, esters and aldehydes were found to have accumulated in the fruit stored at 20°C in comparison to that held at 5°C. The changes in aroma volatile concentration were likely responsible for the off-flavors that were the primary flavor problems noted by the panelists. This study suggests that maintaining mandarins at 5°C until purchased by the consumer could be an effective way to lessen or prevent postharvest flavor loss.