Abstract

Calcium is known to be important in many biochemical mechanisms and structures in fruits. In many fruit species a good calcium status improves fruit quality and reduces losses during storage and marketing. In a series of experiment the effect of preharvest calcium applications on postharvest fruit quality and fruit susceptibility to decay have been studied in sweet cherries. Sweet cherry fruits are susceptible to development of cuticular fractures close to optimum harvest date. These fractures make fruit more susceptible to weight loss and fungal attacks. Preharvest foliar applications with calcium reduced the amount of cuticular fractures. In untreated controls, fruit with many cuticular fractures lost more weight during storage than fruits with few fractures. However, in calcium treated fruits there was no difference in weight loss if the fruits had many or few cuticular fractures. This indicates that the cuticular fractures in calcium treated fruits were less severe than in untreated fruits. Calcium treated fruits had higher contents of phenolics and higher antioxidative activity as measured by FRAP-assay. Preharvest foliar applications of calcium reduce postharvest decay in sweet cherries by reducing the amount of cuticular fractures, and the fractures are less severe than in untreated control fruits. Calcium treatment also increased the amount of phenolics in fruit. As these compounds are known to affect germination and growth of fungi, this indicates that this is a third mechanism of the calcium effect in reducing posthavest decay in sweet cherries.