Abstract

To study the effects of preharvest chilling on low temperature breakdown incidence (LTB) of kiwifruit (*Actinidia deliciosa* [A. Chev.] C.F. Liang and A.R. Ferguson), a mist evaporative cooling system was established in the orchard and the accumulation of temperatures below 10 °C in hours was recorded during fruit maturation. The fruit were harvested at three dates, and soluble solids content (SSC) and firmness were measured at harvest, while LTB incidence was determined following 24-week storage at −0.5 °C. Fruit harvested immature had a high LTB incidence, while late harvested fruit had low disorder incidence. Misted fruit of mid harvest and control fruit of the late harvest accumulated 180 h below 10 °C preharvest, and had significantly reduced LTB, while misted fruit of late harvest did not show any LTB incidence. The use of chilling time, rather than maturation time, as a basis of data analysis of harvest maturity indices (SSC and firmness) and LTB might allow the construction of charts for precise determination of harvest date and prediction of postharvest kiwifruit quality free of LTB.