

Title Minimising chilling injury in Italian-grown 'Hort16A' kiwifruit
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Abstract

The yellow-fleshed 'Hort16A' kiwifruit is characterised by a rapid softening after harvest and a susceptibility to chilling injury. Under Italian conditions, a sudden onset of cold weather may occur before the flesh colour change has been completed on the vine, slowing further colour change and resulting in a rapid softening of the fruit on the vine or soon after harvest. The negative effects of these weather conditions may be avoided by harvesting the fruit whilst still green-fleshed and firm, and degreening the fruit off the vine at temperatures above 5°C. However, early harvested fruit are susceptible to chilling injury. To minimise fruit losses after harvest, the degreening procedure needs to result in fruit that are degreened yet sufficiently firm for subsequent handling and storage and with a minimum of chilling injury after storage. In this project, the effect on chilling injury of degreening at 4, 5, 7.5 and 10°C and storage at between -0.8 and 3°C have been investigated for 'Hort16A' fruit harvested with an average flesh colour of about 107°hue. Chilling injury was minimised by degreening at 7.5 or 10°C compared with 4 or 5°C and storage at higher temperatures. In addition to minimising chilling injury, degreening at 7.5 or 10°C resulted in fruit that degreened more rapidly and were firmer at the end of degreening than was achieved by degreening at 4 or 5°C. It is concluded that it is feasible to degreen and store early harvested fruit and this provides a strategy for avoiding conditions that would otherwise result in soft green-fleshed fruit on the vine.