

Title Pre- and post-harvest management to control *Botrytis* storage rot in New Zealand kiwifruit
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Abstract

Storage rot (*Botrytis cinerea*) of 'Hayward' kiwifruit became a serious problem in New Zealand during the 1980s, costing the NZ\$200m industry up to NZ\$10m per year. Disease symptoms develop during 4-8 weeks storage at 0°C. A single rotting fruit in a tray can cause the whole tray to soften prematurely. Control attempts with pre-harvest fungicides led to resistance in *B. cinerea* to dicarboximide and benzimidazole fungicides. *B. cinerea* is only visible in the orchard on flower petals, although it occurs on all plant surfaces, in understory weeds and in necrotic kiwifruit leaves. Infection occurs through the picking wound at harvest. Research into storage rot risk factors revealed a relationship between rot incidence and the incidence of *B. cinerea* on discs of necrotic kiwifruit leaf tissue sampled late in the growing season. From this, a predictive system has been developed that can identify high-risk orchards. The botrytis problem has largely been solved by vine management that avoids dense leaf canopies and thereby avoids necrotic leaf tissue on which *B. cinerea* multiplies. It was also found that the picking wound can be "cured" by storing fruit for 48 hours at ambient temperature before cooling, which greatly reduces rot incidence. Incidence is also reduced by harvesting fruit when they are more mature (>60 Brix), as riper fruit are much less susceptible to botrytis than immature fruit. The botrytis storage rot problem has thus been avoided by a combination of pre-harvest orchard management and post-harvest handling practices, without the need for intervention with fungicides.