

Title Postharvest quality and disease control of Australian strawberries
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Abstract

Strawberries are a crop that highly valued for their sweet taste and aroma. However, strawberries are often grown for yield and minimum losses during marketing, resulting in compromises regarding flavour and aroma. This research examines the quality of strawberries currently marketed in Australia, including imported strawberries. There was a very large variation in flavour and aroma between growers and also a smaller variation between districts. Harvesting of immature strawberries with poorer flavour was a problem for some growers. To permit production of strawberries that are grown for flavour and also of cultivars with higher flavour but shorter storage life, a range of postharvest disease controls were tested. The postharvest treatments especially examined Generally Regarded As Safe (GRAS) treatments such as sanitisers, hot water and modified atmospheres. The best control of postharvest rots was found to be with the fungicide iprodione (Rovral®), hot water (50°C for 1 minute), hot water with iodine (15 ppm) and modified atmosphere using the CALM system. The CALM (Control Atmosphere Longlife Module) is an adaptation of a successful system developed for storage of chestnuts that is being adapted for storage of strawberries. Some treatments previously reported as having considerable potential, such as longer term heat treatment (48°C for 20 minutes) and calcium chloride, were found to cause high levels of phytotoxic damage. For growers surveyed, significantly lower levels of postharvest rots were found for hydroponic grown strawberries than field grown strawberries. These results suggest that there is considerable potential for improving postharvest handling of strawberries enabling production of cultivars and maturities that maximise flavour and aroma.