

CULTURAL EFFECTS ON FRUIT QUALITY

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The avocado grown most commonly in New Zealand is the dark skinned variety, 'Hass'. Fungal rots are one of the most important factors which have a detrimental effect on post-harvest fruit quality, and in this variety are usually only apparent when the consumer cuts the fruit open preparatory to eating.

Rot fungi have been shown to infect fruit in the orchard throughout the season, become latent, then resume growth as the fruit begin to ripen postharvest and antifungal chemicals in the skin begin to break down (Prusky et al., 1983). Infection may also take place at flowering, and probably at harvest (Everett et al., 1999). Infection in the packing line is also possible. Therefore the avocado should be protected from infection in the orchard, harvested with minimal handling damage, then packed, stored and ripened in optimal conditions. This is to maintain a constant and additive improvement to the quality of the avocado fruit, small increments that together result in a large improvement in quality.

Although rot levels can be minimized by correct postharvest handling, such as optimized storage temperatures, ripening temperatures (Hopkirk et al., 1994), and cool chain management (Everett and Korsten, 1998) recent work has shown that there is considerable variation in rot levels in fruit from different orchards (Everett and Cutting, 1999). Therefore cultural practices in the orchard could also have an influence on the numbers of rots in fruit observed postharvest. Those fruit with the least rot potential are most likely to come out of postharvest treatments and into the hands of the consumers with least rots.

It was shown that the orchard factor which affected rot levels the most was the number of fungicides that were applied. Also having an effect was the depth of avocado litter as mulch, aeration of the canopy, and infection by *Phytophthora* (Everett, 1999). A number of other factors could also be involved, such as soil type, altitude, rainfall, temperature, leaf wetness, humidity, nutrition, and even variation in seedling rootstocks used by New Zealand growers.

Research for the future should investigate those cultural factors already identified as decreasing rots in more detail. In addition, further orchard factors will be incorporated into the study for analysis.

References

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