

## Waikato - Spring 2015 – Hayward observations on cold sites.

### Summary

In early spring of 2014 many Waikato growers on colder sites experienced severe exudate in their males. Most took an aggressive approach to infection cut-out, but also balanced this with the need to retain vine structure, particularly in organic blocks where growth is more moderate. Spray programmes were stepped up and male vines appeared to recover well. Impacts on productivity were seen due to bud-rot in male and female vines.

These same orchards have experienced significant exudate in males again this year. Infection cut-out has once more been aggressive and pleasingly, regrowth is strong. More emphasis on late season male pruning is now planned, as in hindsight, growers can see the infection points are associated with frosted late season growth. Stronger autumn protective spray programmes are also likely needed.

One Waikato grower is considering removing males altogether from his coldest blocks, with the objective of significantly reducing inoculum. Wet pollination has been trialled to better understand its potential in achieving full pollination of blocks where maintaining males is a challenge.

Pre-flowering girdles have been applied on many Waikato sites this year and bud-rot appears significantly reduced. Artificial pollination has been widely used this spring, due to the year on year level of cut-out in males, reducing on-orchard pollen resources.

Overall, for Hayward orchards in colder parts of the region spring has been tough. On warmer sites PsA-V appears to be low-to-moderate with less leaf spotting than in 2014.



Figure 1: Site1 – A cold Waikato site with high male growth - this showed high levels of PsA infection in early Spring 2015.



Figure 2: Site 1. The male vines had multiple infection points along the leader and buds on high canes were severely infected. Adjacent female canes also showed infection.

## Waikato - Spring 2015 – Hayward observations on cold sites.



Figure 3: Site 2 - Males on this organic site showed infection in August 2015 with blackened buds on high canes.



Figure 4: Site 2. Infection was cut back hard in August, and by October 2015 new growth was beginning to develop.



Figure 5: Site 2 - for some vines removal of infection resulted in little/no remaining male growth. Cankered leaders show previous year's infection challenges. Cut-out did protect adjacent female flower buds from Psa infection. Complete removal of some males was being considered for this block.



Figure 6: Site 3 - This organic site had infection in males in 2014 and again in 2015. Infection was cut back strongly in both years.



Figure 7: The level of cut-out required varied between vines. The aim was to retain all spurs with pollination potential.

## Waikato - Spring 2015 – Hayward observations on cold sites.



Figure 8: Site 3. For some vines, little growth remained following infection removal. Structures were retained as experience showed it was difficult to re-establish leaders.



Figure 9: Site 3. In more sheltered areas males had fewer symptoms with less cut-out required.



Figure 10: Site3 continued. By November 2015, regrowth was strong.



Figure 11: Site 3. New growth on leaders looked particularly promising. Multiple pruning rounds were planned to manage this new growth.

## Waikato - Spring 2015 – Hayward observations on cold sites.



Figure 12: Site 4. For some cold Psa affected sites flower-bud infection was still quite prevalent, despite leaf spot levels being lower than in 2014.



Figure 13: On this organic site buds badly infected with Psa were thinned off prior to pollination to reduce Psa risk at flowering.



Figure 14: Site 5. Repeated graft failure is a further challenge on colder sites as is establishment of new plants.



Figure 15: Site 5. Rework of old vulnerable male varieties was occurring on some of the coldest sites with growers looking to reduce inoculum.