

## Waikato Spring 2015 – Gold3 observations on cold sites

### Summary

A number of Gold3 blocks on cold sites had previously showed exudate symptoms in spring 2014. At that time an aggressive cut-out strategy was adopted. Generally, vines had recovered well and good replacement cane enabled full canopies to be tied down in winter 2015.

However, in early spring 2015 these same orchards have again seen high levels of exudate in both male and female vines. Ongoing cut out has resulted in canopies being reduced for a second year to well below 50% canopy and on some sites, cutting continues.

An interesting observation for one organic Gold3 block that showed minimal infection through winter but high infection levels through spring, was the male vines were almost unaffected by Psa-V. In contrast, female plants were exuding strongly, with many cut back to graft points. This suggested some aspect of management had left the female vines more open to infection. Possibly a high fruit load in 2014 had reduced vine strength or another suggestion was Psa-V may have entered through the winter pruning period. The block was wind chilled, with shelters still developing. More shelter is being considered, and a strengthened autumn spray programme will be followed this year.

Overall, Psa-V expression has been more widespread and more severe on cold sites this spring. On warmer Gold3 sites growers are removing some infection but fruit numbers have been high and crops are looking good.

KVH will continue to work with growers, Zespri and researchers to better understand the factors leading to varying levels of spring Psa-V expression. Particular focus is being placed on better understanding autumn strategies to reduce infection.



Figure 1: Site 1 – Karapiro. In July 2015 this organic 2009-grafted Gold3 block contained a few vines with secondary symptoms on leaders.



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Figure 2: Site 1. Cankers which had ring-barked leaders were cut out and new leaders laid. Canopy fill following winter pruning was >90%



Figure 3: By the end of November 2015 this same block reduced significantly due to Psa. Infection had hit hard through October and was showing no sign of slowing up through November. This pattern of cut-out was very different than for previous years and it was hoped warmer weather would halt Psa progression.



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Figure 4: Site 1. Multiple cutting rounds had already occurred and cane collapse was continuing.



Figure 5: Site 1. Curiously, M91 males within the block had little or no Psa-V symptoms - suggesting some aspect of the female management may have predisposed the Gold3 to Psa infection. Disease entry through winter pruning (vines were pruned late in winter when weather conditions were marginal) was one possibility. Stress due to crop load in the previous season could also have predisposed the females to disease expression.



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Figure 6: Site 2. This site, with 2012-grafted Gold3, reverted back to conventional status following harvest 2015. Management of Psa had been difficult on this cold site and Psa symptoms had accelerated through autumn following a trunk-girdling round where many girdles were applied too deep. Some vines had died as a result.



Figure 7: Cut-out of infection in this orchard had been continuous through spring despite a comprehensive spray programme which included bactericides. Canopy was estimated to have reduced from 85% down to around 30% by early November.



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Figure 8: Site 2. Laterals continuing to collapse leading up to flowering.



Figure 9: Site 2. Red exudate – early Nov 2015



Figure 10: Site 2. Beyond fruit-set cane collapse still continued. The grower was looking to preserve sucker growth for re-grafting next winter. Again, a strong autumn/winter spray programme was planned.