

### Guidelines

- Orchardists are responsible for ensuring their orchard is monitored for Psa-V symptoms.
- Your packhouse may provide you with a monitoring plan.

### When and how often should I monitor?

- Weekly monitoring is advised, commencing shortly before budburst and continuing throughout the year.
- Ideally, every plant in an orchard should be inspected.
- Spring and autumn are considered the higher risk infection periods.
- As soon as sap flow begins Psa-V symptoms may express in the form of red exudate from pruning wounds and cane joints.
- There tends to be a reduction in symptom expression in summer. Monitoring may therefore be able to be reduced to fortnightly (dependent on location/risk factors).
- Once an infection is detected—particularly in high risk vines, weekly monitoring should be completed and secondary Psa-V symptoms removed.

### Where should I focus in my orchard?

- Focus on high risk plants that will show infection first:
  - Gold is more susceptible than Green.
  - Young vines are more susceptible than older vines.
  - Male vines are generally more susceptible than female vines.
- Focus on high risk areas of your orchard where infection may appear first:
  - Areas near gaps in shelter and exposed to prevailing winds.
  - Edge of blocks where there may be more vehicle movement around the orchard.
  - Areas where vines are under stress, e.g., frost pockets, water-logged areas, and wind prone areas.

### What should I look for?

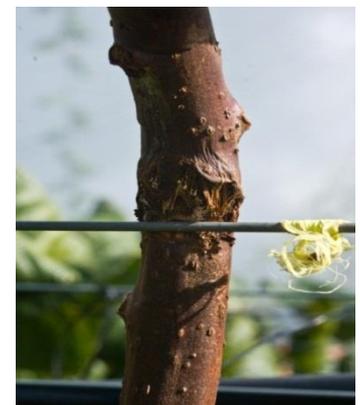
- Psa-V symptoms may differ with time of year and the variety. Before beginning monitoring, familiarise yourself with typical Psa-V symptoms.
- Spring
  - Once there is a canopy, leaf spotting is the most common symptom. Although in more advanced cases, shoot dieback may be evident.
  - The appearance of leaf spot and dieback is often associated with weather events.
  - Leaf spot is not commonly seen in Gold3 and Gold9. In most cases, the first sign of infection in these varieties is shoot or cane dieback.
- Summer
  - Generally, a quieter time for the appearance of symptoms.
  - However, shoot dieback in all Gold varieties appears to increase from late summer to early autumn.
- Autumn
  - Cane dieback is the most common symptoms seen.
  - Young vines rubbing on wires may result in wounds that can provide an entry point for Psa-V.
- Winter
  - The most common symptom in Gold varieties is red exudate in canes or leaders.
  - Similar exudate symptoms can also be seen on Hayward vines (usually first seen in males).



*Leaf spotting*



*Shoot dieback*



*Cane rub on a young GOLD3 vine*

- Cut trunks ready for grafting should be inspected, as they may show exudate if infected.

### Symptom Identification

- Visiting an infected orchard to observe Psa-V symptoms is a good way of educating monitoring staff who need to know what to look for.
- KVH have produced a number of resources to assist in identifying symptoms.
  - KVH fact sheet *Identification of Psa-V symptoms*
  - [Psa-V Symptoms Guide](#)
  - [Psa Symptoms Guide for ZESPRI varieties](#)
  - [KVH Seasonal Management Guides](#) — refer to *Psa-V Yearly Monitoring Guide* on last page.
  - YouTube video on [Psa monitoring and common symptoms](#) demonstration video.
  - [Case study video – managing Hort16A in a Psa environment](#)



Red/orange exudate

### What do I do if I find Psa-V symptoms on my orchard?

- If symptoms are seen, confirm they are typical of Psa-V.
- Check any cane wilting/dieback you observe is not the result of physical damage, e.g., pruning or wind damage.
- Canes affected from Psa-V infection are still firmly attached to the vine. However, dieback can occur anywhere along the cane, it is not limited to the end.
- Mark the area on the orchard where you have seen the symptoms of concern.
- Contact your packhouse Psa manager for confirmation of symptoms.
- Your packhouse may organise sampling for you, or verify if the symptoms are Psa-V if a test is not considered necessary. See KVH [Psa-V Sampling](#).
- If you are not associated with a packhouse, contact KVH directly on 0800 665 825 or [info@kvh.org.nz](mailto:info@kvh.org.nz).
- Absence of obvious symptoms does not necessarily mean absence of Psa-V.
- Regular monitoring should continue, even if no Psa-V symptoms are found.

### Removal of infected vines

- Remove vines with secondary Psa-V symptoms as soon as possible. Refer to KVH's *Vine Removal and Disposal* page on the KVH website [www.kvh.org.nz/vine\\_removal](http://www.kvh.org.nz/vine_removal).

### Testing and results

- Tests are completed by Hill Laboratories. They take approximately 48 hours to complete. If sampling is requested by KVH, the cost of testing will be covered by KVH.
- Sample tests will only show the status of the vines sampled at that point in time. A 'Not Detected' result means there was no bacteria found on the sample taken at that time. It does not necessarily indicate your orchard (or nursery) is Psa-V free.
- Test results, along with a copy of the test, will be emailed to the email address you confirm. This information may come from either KVH or your packhouse Psa manager.
- To follow up on your test results, contact KVH on 0800 665 82, email [info@kvh.org.nz](mailto:info@kvh.org.nz) or contact your packhouse Psa manager.
- Continue to monitor your orchard and note all changes. Contact your packhouse or KVH if you feel you need to be re-tested, or if you find other symptoms.

### Notification to KVH

- Any Psa-V infection on an orchard must be reported to KVH within 48 Hours of identification.
- This notification can be either by one of the labs above, through a test result, or by a visual identification from a suitably qualified person, e.g. a packhouse Psa manager or KVH representative.

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