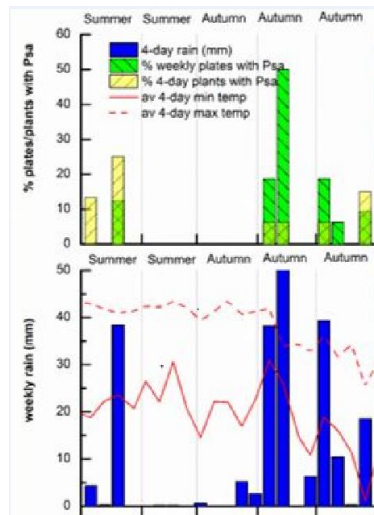


Managing Psa-V Risk through Autumn 2016

Autumn is a high risk period for Psa. Understanding the risks and taking timely action will influence the level of infection seen next spring.

What are the risks?

- **Infection activity is higher through Autumn due to colder, wetter weather conditions.** Agar traps placed in orchards catch more Psa, and more trap plants become infected as temperatures drop and rainfall increases. A protective spray program re-establishing copper cover before weather conditions change is high priority. Protect young tissue and young plants – these are most vulnerable.



- **Girdling** can add risk if plants are stressed or too young, girdles are too deep, work is carried out in high risk weather, or tools are not cleaned. Supervise teams closely.
- **Plant wounding due to wind** creates entry points for Psa. Lowering strung canopies in exposed blocks before the arrival of autumn storms reduces risk.
- **Cold in autumn** seems to correlate with increased Psa severity in Spring. Autumn frosts damage unhardened tissue and leaves. Italian research (Scortichini) showed leaves water-soaked through frost are up to five times more vulnerable to Psa infection. Although the definition of “cold” is not yet known it is thought the severity of the frost is more important than the duration. Multiple frosts create greater risk. Anecdotally temperatures lower than around minus 2 degrees increase Psa symptoms in Spring. Tracking temperature microclimates and matching these with symptom expression may help growers with decisions on frost protection through autumn/early winter. Data-loggers placed in orchard are worth consideration.

Canopy work to remove soft late season growth in frost-prone areas and male pruning rounds to reduce high points should be completed in March/April.

- **Leaf stalks and leaf scars provide entry points** for Psa. Research shows applying copper and actigard immediately after harvest and maintaining a protective program through leaf-fall is important in reducing Spring symptoms. Application timings are important. Minimise leaf-drop sprays to keep copper budgets within range. Apply these to a different block each year to manage soil impacts.
- **Infection spread via plant material and tools.** Transfer of pest and disease via plant material remains the highest biosecurity risk for any orchard. The Sapere Research Group recommended “*growers should not be blasé about hygiene practices even if they have Psa-V. A new pest may arrive and through lack of hygiene practice will be enabled to spread long distances before detection*”. Make sure harvest hygiene procedures are followed. Plan collection of budwood for winter grafting (including sufficient for re-grafting) from clean sources. Similarly consider options for nursery plants - KPCS plants are tested and certified free of disease.

Building orchard resilience to Psa is an ongoing process- autumn planning does make a difference!

Best practice for managing Psa-V through autumn



Canopy Management

- Keep canopies open to support spray penetration.
- Regularly monitor and remove infected material to reduce Psa inoculum build-up.
- Prune and girdle in low risk weather. Maintain tool hygiene and apply protectants.
- Prune late growth and trim males to remove soft tissue which is susceptible to frost and Psa.
- Consider lowering strung canes before high-risk autumn weather.
- Plan removal of highly susceptible varieties.

Pre Harvest Sprays

- Maintain spray cover throughout autumn targeting high risk weather and pruning rounds.
- Use summer rates of copper. Apply in good drying conditions to minimise risk of phytotoxicity and fruit staining.
- Avoid applying coppers just prior to heavy rain
- Ensure adequate time between coppers and other sprays (oils, seaweed, fruit stain removal products)
- On non-producing blocks apply copper and Actigard™ 4-7 days prior to bringing canes down off strings. Avoid spray drift to fruiting blocks.



Post Harvest Sprays

- Immediately after picking apply copper and Actigard™ to protect fruit stalks. Add adjuvants to improve coverage.
- If canopy condition allows, apply a second Actigard™ 3 weeks later to extend protection into winter (maximum 4 applications per season).
- Continue applying copper through leaf-fall to protect leaf scars.

Do not use high risk chemicals if there is any chance of drift onto fruiting vines. Ensure spray tanks are thoroughly cleaned after use.

Harvest hygiene and plant material

- Limit access to your orchard-essential vehicles only.
- Provide designated parking areas and wash-down facilities with water access and suitable sanitisers.
- Advise contractors and staff of your harvest hygiene standards.
 - Ensure all equipment coming on-orchard is clear of plant material.
 - Ensure clothing especially headwear and footwear is clear of plant material.
- Identify orchard areas with Psa-V symptoms to supervisors and pick least infected blocks first.
- Collect clean budwood for re-grafting and source plants from the cleanest source (eg KPCS plants)

