



# Psa R&D Industry Presentation Key Points

## When is Psa infecting Hayward buds?

- Early flower buds (two weeks after budbreak) are highly susceptible to Psa in favourable conditions (rainfall and inoculum).
- Psa inoculum that shows symptoms on flower buds and leaves is mainly external.
- Bud rot symptoms take up to two weeks to develop after infection takes place.

## Is Gold3 bud rot a thing?

- Symptoms of Gold3 bud rot different from Hayward bud rot.
- Gold3 bud rot is associated with Psa.
- Psa was first detected on flower buds when the sepals began to separate (four to five weeks after budbreak).
- Symptoms usually appear at the end of October.
- Psa moves from external (sepals) to internal (petals, anthers and ovary) flower parts.

## Frost injury to dormant canes – Psa risk factor, or not?

- Frost damage to dormant canes leading to an increase Psa risk seldom occurs in North Island kiwifruit regions, except perhaps in some cold parts of orchards at high elevation.
- Experiments showed that frost injury to both Hayward and Gold3 dormant canes occurs below  $-6^{\circ}\text{C}$ . At  $-10^{\circ}\text{C}$ , canes were killed outright.
- Psa development resulting from frost injury was similar in both Hayward and Gold3, even though Gold3 is significantly more susceptible to Psa in the absence of frost.
- With climate warming, frosts will generally become less frequent, although occasional extreme weather events could still bring damaging frosts.

## Bounty vs Bruno – what is my risk?

- Gold3 on 'Bounty71' rootstock showed significantly more bud rot compared with Gold3 on 'Bruno'.
- Advantages of 'Bounty71' root stock over 'Bruno':
  - More floral shoots, king flower buds, lateral flowers
  - Early maturity
  - More tolerant to wet soils.
- Management practice is suggested to overcome this bud rot on Gold3– 'Bounty71'.

## GoldFutures

- Ensure young blocks have a comprehensive Psa management programme from the very beginning. If establishing the rootstock in the ground first they must receive a full Psa management programme).
- Tool hygiene is critically important to reduce Psa spread.
- Monitor regularly throughout the season. Adopt the 'cut-it-out' programme and protect wound sites.
- Stringing the canopy fills in gaps created due to Psa and can increase production. Strategic stringing can be adopted on affected vines if growers prefer to prune conventionally.
- Avoid gaps in your Psa spray programme and minimise number of missed moderate and severe Psa infection periods (IP's) – especially between bud break and flowering. Learn to use the KVH Psa risk infection model to support spray decisions.
- Purchase your own sprayer to ensure better responsiveness to forecasted Psa IP's (from the KVH Risk Model).



- Spray copper-based protectants over winter (esp. before and after pruning).
- Postharvest – apply Actigard and copper to canopies with good leaf condition.
- Make necessary site changes to reduce vine stress (e.g. removal of old shelter belt species).

### **What's new (and old) with the Psa Risk Model?**

- The Psa Risk Model on the KVH website uses weather data to identify when Psa infection activity is occurring in the orchard, for previous periods and the coming 10 days.
- Weather data comes from the HortPlus/KVH weather network and from MetService weather forecasts.
- Daily risk predictions identify high risk days to aid timing for copper and other control products and low risk periods suitable for orchard operations like pruning and girdling.
- A new season comparison tool shows how Psa risk this season is tracking compared with previous seasons.
- We are also exploring new ways to make the risk information more useful, such as allowing for cultivar differences and flagging risk levels when a spray should be applied.

### **The Future of Bactericides**

- Drive for removal of KeyStrepto use by 2022.
- Awareness that use of bactericides is being reported publicly by the Ministry for Primary Industries.
- Better understanding of those that are using bactericides as to the 'why' and understanding what other tools or methods are or aren't being used.
- CPPU is status quo while an internal review is being done.

### **Bringing it all together – Psa good practice**

- Assess your orchard risk (environment/plant/Psa presence) to determine “good practice” for your site.
- Include cultural practices in your strategy.
- Start your Spring spray programmes STRONG – have copper protection in place by budbreak.
- Fine tune spray timings to weather and growth stage - the Psa Risk Model forecasts high risk weather.
- Protect through to flowering – products with different modes of action help minimise leafspot and reduce risk of phytotoxicity and resistance developing.