

# Winter protection from Psa

“the way to avoid disease is to avoid disease”

- Remove infection that has crept in through the season – sooner rather than later....

Psa harbouring in infected material continues to multiply through winter and frosts which cause tissue damage, will help spread these infections through the plant. REMEMBER sprays cannot reach these Psa populations!

Cut-out is the remedy and the sooner the better. Cutting 40cm back from the last point of infection and protecting wounds safeguards the plant. We also know Psa can survive in cut-out material for more than 18 weeks (through winter and into Spring). Disposing of this infected material outside of the orchard is “a must” according to growers most successful in controlling Psa spread.

In blocks/areas more affected by Psa, consider using a dedicated team to remove infection ahead of the main pruning gang. Cutting out infected canes/leaders and/or scions, reduces accidental spread of Psa via tools as the removal team can stay highly focused on sanitising between cuts. Often affected canes are more easily seen when leaves are still on.

Look for: collapsed fruiting canes, infection moving back down strung canes, infected girdles, young plants and suckers that have become infected, dieback in males.



# Spray protection through winter



“target cover throughout winter and make sure you cover your target”

- Establish a base protectant (two cover sprays in opposite directions) and maintain this cover throughout winter.

Copper on kiwifruit canes is highly resistant to rain wash-off but canopies are a difficult target and impossible to cover with a single spray. An ongoing program is needed to protect leaf scars, pruning cuts, cracked canes and damage from hail and/or frost. Protect wounds before high risk weather.

Good spray coverage to dense areas of a kiwifruit canopy or to canes high above the canopy is impossible. Poor coverage risks products being applied at below label rates. This may help drive product resistance.

Address cluttered males and leader zones, reduce canopy height, separate male and female vines to support spray coverage. Testing with water sensitive papers confirms whether spray is hitting the target.

Higher rates of copper can be used without risk of phytotoxicity so winter provides a chance to drive Psa populations down. Check nozzles are also set up to protect young plants, suckers and new grafts as these are often overlooked. Super-spreaders will improve spray droplet retention and help reach hard-to-wet areas.

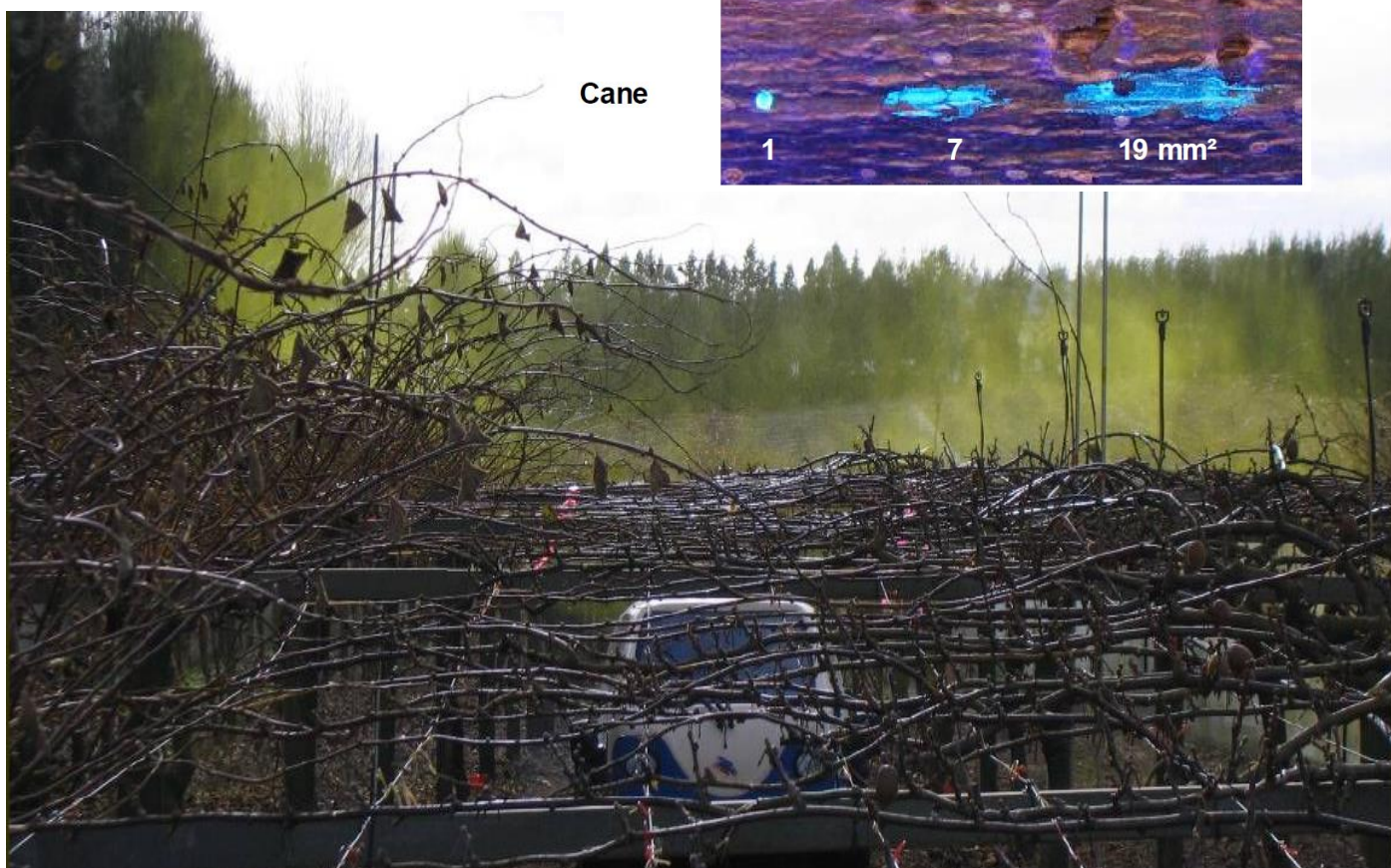
water      Du-Wett      Du-Wett  
                 50 ml/100 L      100 ml/100 L

WSP

2      3      4 mm<sup>2</sup>

Cane

1      7      19 mm<sup>2</sup>



## Environmental improvements

“lots of little right actions”

- Think about reducing risks/impacts of Psa on your site.

Any improvements to the orchard environment which reduce plant stress and in particular wounding can offer huge value across time. Erecting new shelter, additional natural shelter to protect from prevailing winds, covering exposed blocks with netting, adding under-vine shelter or closing off the ends of blocks to reduce wind run can all add to orchard warmth and reduce risk of plant wounding.

Similarly consider how to improve soil structure eg. through compost, or gypsum to break up pans, or improved drainage to avoid water logging. We know Psa loves cold and wet....anything that steps us away from this adds value.

Frosts also add risk in the Psa environment. Consider how drainage of cold air could be improved...perhaps by pruning lower limbs from some areas of the shelter rows? Strategic placement of mobile frost fans? Adding data loggers to better understand risk areas? Improvements are all part of an integrated plan to reduce Psa impacts.



# Orchard biosecurity

- Clean tools, clean budwood, clean plants ...talk about hygiene upfront.

Before pruning and grafting contractors, (or any other contractors) enter your orchard, make sure they know your hygiene protocols and WRITE THESE into your contract.

Don't under-estimate the value of up-front discussions.....or the potential for introduction and spread of infection through poor practice. Everyone plays a role and supervision is the most important job on the orchard!

Sourcing clean plants and clean budwood are also top priority. Both plants and budwood are subject to movement controls. Refer to the KVH website for information or call KVH on 0800 665 825 for details.

Plants should be sourced from KVH registered or KPCS nurseries. Remember to order plants for next year as well. After Oct 2016 only KPCS certified plants can be sold. Growers can still grow up to 1,000 plants for use on their own KPINs.

Budwood must be sourced from KVH registered suppliers. Protocols and movement protocols help protect our industry.

