Work to keep vines safe

Best practice farm-gate hygiene is one of the most important weapons in the biosecurity armory. In this issue, Vinehealth Australia provides a timely update on farm-gate hygiene topics.

Harvester image courtesy Vinehealth Australia

Vintage border crossings under the microscope

We know there is significant movement into South Australia of wine related machinery and equipment during vintage. But just how much is moved?

To gain a clear understanding, Biosecurity SA (PIRSA) recorded incoming wine-related machinery and equipment during the months of February and March 2018. Biosecurity SA officers also checked for compliance with state Plant Quarantine Standards. Statistics were recorded at Yamba and Pinnaroo quarantine stations during the reporting period.

At Yamba, more than 2,000 trucks carrying grape bins were recorded coming into SA, with approximately 30% of these full. Approximately 930 wine tankers entered the state as well as nine trucks carrying machinery (six of which were harvesters).

Some issues with poor bin cleanliness were noted and rectified prior to leaving the quarantine site and the consignor notified.

At Pinnaroo, more than 150 trucks carrying grape bins were recorded coming into SA, with more than half of these full. Again, a few trucks were ordered to clean plant debris out of empty bins or the truck tray before proceeding.

Manager Plant Health & Food Standards at PIRSA Biosecurity SA, Geoff Raven said ensuring cross border transport is in compliance with South Australia's biosecurity rules and regulations is a vital step in ensuring the State remains phylloxera free.

"Interstate transport movements are one of the easiest ways for phylloxera and other plant pests to spread," he said.

"It is why our quarantine stations, which are strategically placed at major entry points into the state, are

Agisting sheep courtesy Vinehealth Australia

an important first shield in protecting South Australia's grape and wine industries."

It is important to note that winegrape movement into SA is only permitted from Phylloxera Exclusion Zones interstate and under certification.

"While it was pleasing to see general adherence to biosecurity requirements, continued work is required to ensure ongoing strict compliance with state quarantine requirements," said Suzanne McLoughlin, Vinehealth Australia Technical Manager.

"We're planning additional focus on carrier and winery farm-gate hygiene prior to next vintage and also continuing discussions regarding deterrents for non-compliance with state regulations."

Sheep agistment tips

If you're considering making your vineyard available for others to run sheep, understanding associated biosecurity risks when entering into an agistment agreement can avoid a pest, disease or weed being inadvertently moved onto your vineyard.

Before entering into an agistment agreement:

- Obtain the agistment history of the sheep. If they have been in vineyards in a Phylloxera Infested Zone (PIZ) or Phylloxera Risk Zone (PRZ), do not accept them for agistment in a vineyard in a Phylloxera Exclusion Zone (PEZ). It is not recommended that sheep are moved between vineyards located in a PIZ, between a PIZ and PRZ, or between vineyards located in a PRZ.
- To minimise the risk of weed transfer to your vineyard, ask if the sheep have been on a previous property with problematic weeds. Requesting sheep to be shorn prior to entry to your vineyard is preferable.
- Ensure you advise the potential agistee of any harmful weeds on your property.
- Ensure you advise the potential agistee of any re-entry periods for grazing that apply (these might be from chemicals already applied before the agistment period, or chemical applications planned during the sheep occupancy).
- Determine whether you need to request a 'National Sheep Health Declaration' (http://www.farmbiosecurity.com.au/wp-content/uploads/2012/10/Sheep-Health-Declaration_Digital.pdf) from the potential agistee, if it applies for sheep movements within your state or for sheep being moved into your state that originate from another state.

Upon signing of the agistment agreement:

- Ensure you have sighted the National Sheep Health Declaration (see above).
- Discuss the sheep transport truck with the agistee. Query if the truck has been near vine rows in a PIZ or PRZ within the last 21 days. If this is the case, disallow this truck to transport the sheep onto your vineyard if it is in a PEZ.
- Communicate to the agistee that the sheep truck must be clean of soil and plant material upon arrival at your vineyard.

Upon arrival of the sheep truck at your vineyard:

- Verify that the truck is clean of soil and plant material upon entry to your vineyard.
- As you would for other visitors to your site, require the truck driver to sign in via your visitor record book and answer questions about where the truck has been (in terms of phylloxera management zones) in the last 21 days and where the driver has been within the same timeframe.
- When loading/unloading the sheep, ensure the truck is parked on a hardstand area, not down vine rows.
- Limit unnecessary movement of the driver down your vine rows.
- Retain agistment records for the entry and exit of sheep to your vineyard.

Upon exit of the sheep truck from your vineyard:

- Ensure the truck is clean of soil and plant material.

As well as considering the biosecurity aspect of sheep agistment, other factors such as fencing, animal health and access to water should be addressed as part of the agistment agreement.

60 seconds for safe shoes reminder

Grape phylloxera usually spreads from vineyard to vineyard via human pathways, including footwear, clothing, grape-picking bins, machinery and equipment, soil, grapes, grape foliage

Footwear disinfestation courtesy Vinehealth Australia

and planting material (Deretic et al. 2003). First instar nymphs are the most dispersive stage, usually involved in infestations.

Management of grape phylloxera in Australia is through strict quarantine regulations and procedures to disinfest and clean items used in the production of grapes to minimise the risk of spread to non-infested vineyards.

Last year, research undertaken by Clarke et al. (2017) showed that a 60 second disinfestation treatment in a 2% sodium hypochlorite solution was required to produce a 100% mortality across six key strains of grape phylloxera.

The current National Phylloxera Management Protocol (NPMP) was written prior to our current understanding of phylloxera strains in Australia. It's now known that there are 83 endemic phylloxera strains. It's important to consider the differences in susceptibility of these phylloxera strains to disinfestation treatments in our NPMP, with protocols designed to ensure 100% mortality of all phylloxera strains.

Studies undertaken by Clarke et al. (2017) resulted in changes to our disinfestation protocol for footwear and small hand tools. This work used the NPMP disinfestation recommendation of 2% sodium hypochlorite for 30 seconds followed by water rinse as the 'control', to investigate the survival of first instars of six grape phylloxera strains, G1, G4, G7, G19, G20 and G30, following immersion in four concentrations (0%, 2%, 3%, 4%) of sodium hypochlorite for 30, 40 and 60 seconds.

The objectives of this trial were to:

1. Identify the optimal sodium hypochlorite concentration and duration required to achieve 100% first instar mortality for the six genetically distinct grape phylloxera strains tested; and
2. Establish the interaction between first instar survival and a water rinse treatment following sodium hypochlorite treatments.

This work found:

- Differences in strain susceptibility to disinfestation treatments;
- Minimal mortality in water for all three time periods;
- As sodium hypochlorite concentration was increased in conjunction with a rinse, almost all strains survived irrespective of the sodium hypochlorite concentration;
- 'No rinse' treatments showed significantly higher mortality rates across all grape phylloxera strains, irrespective of the length of the treatment;
- At a 2% strength sodium hypochlorite with no rinse, a 60 second treatment was required to demonstrate 100% mortality across the 6 strains of phylloxera tested. This was not achieved when treatment duration was either 30 or 40 seconds in length.

These findings underline the importance of carrying out footwear and small hand tool disinfestation in a 2% sodium hypochlorite solution for 60 seconds, without a water rinse thereafter, to ensure effective disinfestation.

Refer to the Vinehealth Australia website to view the current Footwear and Small Hand Tool Disinfestation Protocol at

http://vinehealth.com.au/wp-content/uploads/2016/01/Vinehealth-Footwear-and-Small-Hand-Tools-Disinfestation-Protocol-White-A3.pdf

Been overseas? Let's talk

It's common to visit vineyards in other countries when you work in the wine industry, or an allied industry. But are you aware of the risk this can pose to our industry? Do you consider biosecurity when travelling back into Australia? Does your company include biosecurity information in travel documents?

Currently in Australia, we're fortunate not to have many of the diseases and pests that are present in vineyards overseas. This allows us to manage our vineyards in a comparatively clean and green way.

But there are exotic pests and diseases that we need to keep on our radar including *Xylella fastidiosa* (Pierce's Disease). And the New Zealand Winegrower recently reported that more vineyards in Martinborough are succumbing to the destructive grape phylloxera.

With Australia's strong connections to the New Zealand wine industry, this is a stark reminder for those who travel to New Zealand to be vigilant in their biosecurity efforts. In fact, phylloxera is found in the vast majority of grapegrowing countries worldwide.

And while grape phylloxera is an existing biosecurity threat in Australia, it is currently confined to regions in Victoria and New South Wales.

South Australia, Western Australia, Northern Territory and Tasmania are recognised as being free of phylloxera. Queensland wine growing regions are currently categorised as phylloxera risk zones.

And while the movement of vectors that can spread phylloxera from one place to another, including machinery, equipment, grapes and grape products, grapevine propagation material and soil, are tightly controlled between Phylloxera Management Zones in Australia, people movement is not.

To assist with minimising this risk, Vinehealth Australia has created a fact sheet titled 'Employing International Staff' which outlines what you need to communicate to overseas workers. It will also guide your actions upon re-entry into Australia.

"It's important that you are aware of biosecurity risks associated with footwear, clothing and tools, and how to manage and mitigate these risks, particularly when you receive visitors to your vineyards, or when you return from an overseas trip that involved visiting vineyards," said Inca Pearce, CEO of Vinehealth Australia.

You can view the fact sheet here: http://vinehealth.com.au/wp-content/uploads/2017/03/Vinehealth_A4-Fact-Sheet-Employing-International-Staff_FINALlowres.pdf

You can also view Vinehealth Australia's 'Biosecurity Planning for Vineyard Owners Hosting Visitors' fact sheet' for more information: http://vinehealth.com.au/wp-content/uploads/2018/01/Vinehealth_A4-Fact-Sheet-Hosting-Visitors_FINALlowres.pdf

References

1. Clarke, C. W., Wigg, F., Norng, S., and Powell, K. S. (2017). Effectiveness of sodium hypochlorite as a disinfestation treatment against genetically diverse strains of grape phylloxera Daktulosphaira vitifoliae Fitch (Hemiptera: Phylloxeridae). Australian Journal of Grape and Wine Research, 23(2) 1-9.

2. Deretic, J., Powell, K. and Hetherington, S. (2003). Assessing the risk of phylloxera transfer during post-harvest handling of wine grapes. Acta Horticulturae 617, 61–66.

Sign of the times

The popularity of biosecurity signs on offer from Vinehealth Australia is a clear indicator of the commitment shown by growers to minimise biosecurity risk to their greatest assets – their vines.

There are two styles of aluminium signs being sold. The first are modified Plant Health Australia biosecurity signs for non-consumer facing entrances. These signs are used across all plant industries, increasing recognition. Signs ask visitors to respect your property's biosecurity and to contact the manager prior to entering. Mandarin text has been included and reads: 'Without permission, you may not enter'.

The second style of signs on offer is 'Wine Tourism Biosecurity Signage' for consumer-facing areas such as cellar doors. A range of signs invite visitors to learn about Australia's vine story and help protect vines by not walking amongst vineyards.

More than 100 consumer-facing signs and over 80 non-consumer facing signs have been ordered this year and Vinehealth Australia is thrilled with the uptake.

"We congratulate the winery and vineyard owners who have made this commitment to biosecurity. It's a good first step. We encourage all growers to consider ways of protecting their vineyards," said Inca Pearce, CEO of Vinehealth Australia.

For more information on Vinehealth Australia's biosecurity signage, visit www.vinehealth.com.au