

## Virus testing



### Introduction

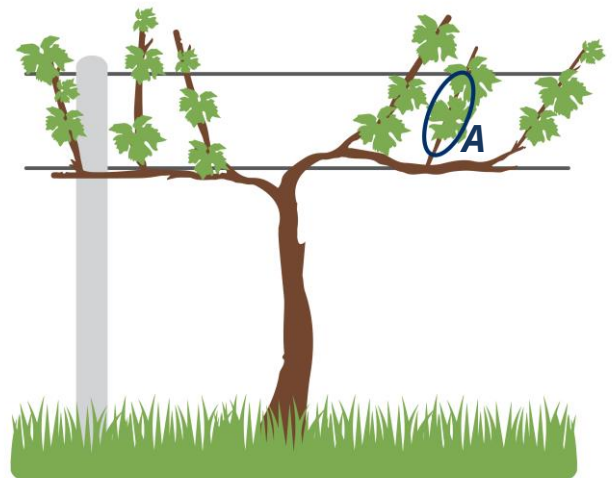
Grapevine viruses can shorten the life of infected grapevines and reduce both the quality and yield of grapes. Several viruses, especially those belonging to 'rugose wood complex', have been associated with graft incompatibility. In some cases, especially in many white grape varieties and non-*vinifera* rootstocks, virus-infected vines do not show symptoms and the virus can spread to susceptible neighbouring vines and vineyards. It is important to test propagation material prior to planting or grafting to avoid the risk of introducing or spreading viruses. Virus testing is also a useful tool to help diagnose poor-performing grapevines and to detect and eliminate infections before they become a serious problem.

### Collection and shipment of samples

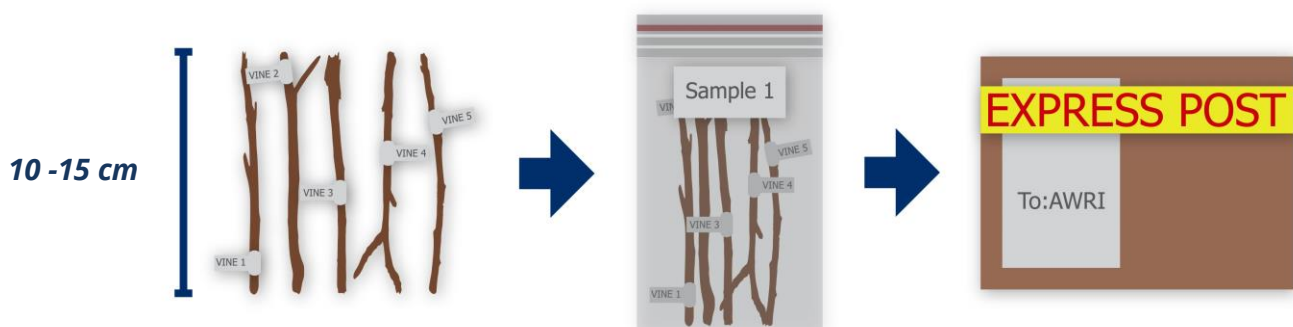
The reason for testing grapevines (see below) determines the best approach for sampling for virus testing. If symptoms have been observed, or are suspected, samples taken directly from the affected vine should be submitted for testing. However, if the grapevines are being tested as a precautionary measure, it is important to ensure that a fair representation of the block is sampled. Vineyard blocks often vary greatly in size and collecting a sample representative of the entire block can be challenging. A minimum of one pooled sample (five vines) per 1,000 vines is recommended to ensure an accurate representation.

## Recommended sampling procedure:

1. The most accurate virus detection is possible when samples are taken in spring, autumn or winter. Avoid sampling in the height of summer or on very hot days, as viruses become less active in hot conditions and virus concentration may be reduced to an undetectable level.
2. Randomly select five vines for every 1,000 vines spread across the block, ensuring an accurate representation of the area tested. Tag the vines so they can be identified later.
3. From each of the five vines, cut one 10-15 cm section from the second node (see adjacent) of a cane (dormant season), or green shoot (in season). Remove the leaves and petioles.
4. Ensure each of the grapevine cuttings are clearly labelled and free of soil deposits and place in a labelled sealable plastic bag. For samples leaving a biosecurity risk area, ensure that samples are double bagged, and the required quarantine standards are met (see below).
5. Send cuttings as soon as possible, ideally within one to two days, to prevent them from drying out.
6. Ensure that samples have all the required documentation (especially if the samples are going interstate) to prevent delays in quarantine. A checklist is provided at the end of this fact sheet with details of required information.



*Graphic showing the ideal sampling location (A) for grapevine virus testing.*



*Correct packaging and shipment of samples*



## Quarantine regulations

To submit samples from outside of South Australia, Plant Health Certificates are required from both the outgoing state and from SA. A valid incoming [South Australian Plant Health Certificate](#) can be found on the AWRI Commercial Services website, and outgoing Plant Health Certificates can be obtained from the local biosecurity authority, or through an accredited certifier. For a list of state and territory quarantine regulators, visit the [Australian Interstate Quarantine website](#).

Please contact the AWRI Virus Testing team for more information regarding samples being shipped internationally, or samples shipped from a *Phylloxera*-infested zone.

## Costs and available analyses

Depending on the reason for the analysis, virus testing can be carried out as either a broad screen for multiple viruses or a single test for a specific virus. The table below shows the costs for the most commonly requested virus tests.

Price per sample in Australian dollars, excluding GST				
No. of samples	Single virus check	Pre-grafting screen		Complete virus screen
		Three viruses	Four viruses*	
1	\$130	\$150	\$170	\$200
2-5	\$102	\$121	\$143	\$190
6-19	\$92	\$98	\$123	\$164
20-49	\$81	\$92	\$118	\$155
50-99	\$72	\$83	\$102	\$134
100-199	\$67	\$73	\$92	\$120

\* Recommended for grafting involving Chardonnay grapevines

For a complete list of services provided, please see the [virus testing price list](#) on the AWRI Commercial Services website.

### Single virus check

This test is used to detect the presence of a specific virus. The single virus check is a useful tool to determine if a problematic virus has been eliminated or to establish the severity of a known infection. Please contact AWRI Commercial Services for a full list of viruses available for single checks.

### Pre-grafting screen

This screen is used to check both existing rootstocks as well as scions for potential infection prior to top-working or grafting. This screen tests for the presence of grapevine leafroll-associated viruses 1



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& 3 as well as grapevine virus A. In cases where Chardonnay grapevines are involved in the grafting process, the four-virus screen is recommended, as it also tests for the presence of grapevine leafroll-associated virus 2 which is associated with graft incompatibility.

## Complete virus screen

A complete screen for the most common viruses that affect grapevines. This screen is recommended for imported samples, as well as a general screen for rootstock suppliers and nurseries.

Complete screen testing list:

- Grapevine leafroll-associated viruses (detecting six virus types: 1, 2, 3, 4/4, 4/6 and 4/9)
- Grapevine rupestris stem pitting-associated virus (GRSPaV)
- Grapevine virus A (GVA)
- Grapevine virus B (GVB)
- Grapevine fleck virus
- Grapevine red blotch virus
- Grapevine Pinot Gris virus

## Checklist

- Signed [AWRI Plant Virus Testing Order Form](#)
- Samples (five canes/shoots per bag)
- Outgoing Plant Health Assurance Certificate Form\*
- Incoming Plant Health Assurance Certificate Form (South Australian)\*

*\* only required for interstate samples*

## Contact

For further information, please contact: AWRI Commercial Services

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