The Australian Wine Research Institute

Fact Sheet
VITICULTURE

Grapevine Pinot Gris Virus

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Grapevine Pinot Gris Virus (GPGV) is a virus recently detected in grapevines in Australia.

Grapevine Pinot Gris Virus (GPGV) is a member of the genus *Trichovirus* in the family *Betaflexiviridae*. It is a recent scientific discovery and the origin of the virus is unknown. There are multiple, genetically distinct isolates of GPGV that have been detected in diseased and symptomless grapevines. There is limited information available on links between symptoms and the presence of specific GPGV isolates. This means that the presence of GPGV may not predict symptoms. The full impact of GPVG on vine health is currently unknown and is further complicated by the finding that GPVG is frequently found in mixed infections with other viruses.

GPGV has been reported in China, Croatia, Canada, Georgia, Germany, Italy, France, Korea, Slovenia, Czech Republic, Slovak Republic, Greece, USA and Turkey and has been confirmed in at least 28 wine and table grape varieties including Pinot Gris, Pinot Noir, Traminer, Chardonnay, Merlot, Cabernet Franc, Cabernet Sauvignon, Carmenere and Shiraz.

Damage, symptoms and occurrence

Grapevines infected with GPGV can either show symptoms or be asymptomatic. Symptoms associated with infection include delayed budburst, leaf distortion and mottling, shortened shoot internodes, increased berry acidity and poor yield (reports of up to 80% yield loss). The virus has been associated with economic losses, particularly in the presence of other viruses. The symptoms of GPGV may be confused with early season bud mite damage, cold injury or herbicide damage.

Internationally, GPGV-associated symptoms have been reported in both young and old vineyards (2-50 years) with no relationship between incidence and vine age. Symptoms appear most distinct at the start of the season and are less apparent on late season growth, with infected plants reported to 'recover' after veraison by producing symptomless shoots and leaves. Symptomatic vines cluster and predominantly occur along vineyard rows and sometimes occur across rows which is indicative of spread by slow moving vectors.

GPGV and associated symptoms are more frequently reported in Pinot Gris, Pinot Noir, Pinot Blanc and Traminer than other wine-grape varieties.

Spread

GPGV can be spread through the movement and exchange of infected propagation material and the virus and the disease are graft transmitted. The virus is possibly transmitted by grapeleaf bud and blister mites (*Colomerus vitis*). There is no evidence to support the transmission of the virus mechanically on pruning or harvesting equipment.

Alternative hosts

Common vineyard weeds including Fat Hen (Chenopodium album L.) and White Campion (Silene latifolia subsp. Alba (Mill.) are confirmed hosts of GPGV and express symptoms when infected. For more information on the control of vineyard mites and weeds, refer to the reference list below.

Reporting suspected cases of GPGV

GPGV is an exotic plant pest recently detected in Australia. If symptoms are seen it must be reported promptly to the **Exotic Plant Pest Hotline on 1800 084 881**.

Diagnostics

Virus testing of grapevines is available from Crop Health Services in Victoria and Waite Diagnostics in South Australia.

Crop Health Services
AgriBio Specimen Reception
Main Loading Dock
5 Ring Road,
La Trobe University,
Bundoora, VIC, 3083
Ph: 03 9032 7323
Sample submission form

Waite Diagnostics
University of Adelaide
Waite Main Building, Lab S118
Waite Road, Urrbrae, SA 5064
Ph: 08 8313 7426
Sample submission form

- Send samples, with the appropriate submission form, by Express Post where possible, at the beginning of the week.
- Samples can be sent from any grapegrowing region; however, a plant health certificate is required for samples sent from Phylloxera Infested or Phylloxera Risk Zones. To obtain a plant health certificate in Victoria or to find out further information, contact Victorian Plant Standards on 136 186 or email plant.standards@ecodev.vic.gov.au
- Grapevine samples can also be tested for other viruses and phytoplasmas if required.

When to sample?

- Spring, when symptoms are observed, may be the most reliable time for detection of GPVG. However, grapevines can be tested for GPVG at any time of year.

How to sample?

- Select three to four shoot tips up to 30 cm long from a grapevine. Select symptomatic shoots in preference to symptomless shoots to increase the chance of detection.
- Place all the shoots, with leaves attached, from a single vine into a zip lock bag.
- Label the bag adequately so the sample can be traced back to the original grapevine.
- Ensure samples are dry and kept cool until they can be sent.

What happens if I get a positive test result for GPGV?

- GPVG is currently a notifiable plant pest.
- If a positive result is obtained you will be immediately notified by the laboratory.
- The laboratory is also legally obliged to notify the state biosecurity agency at the same time.
- The state biosecurity agency will work with you to determine what management practices may be required to contain or eradicate the virus to prevent further spread.

What does a positive test result mean?

- A positive result indicates that GPGV was present in the grapevine that was tested.
- Grapevine viruses, including GPGV, may have an impact on fruit production and vine growth, affecting quality and yield.
- Controlling grapeleaf bud and blister mites may prevent further spread of GPGV.
- Removal of alternative weed hosts (Fat Hen and White Campion), which may act as a reservoir of the virus, may prevent further spread of GPGV within vineyards.
- Removal of an infected grapevine may prevent further spread in vineyards where the virus occurs with low incidence.
- The use of virus-tested grapevine material is recommended for establishing new vineyards and replanting or top-working of older vineyards.

Acknowledgement

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Australian Vignerons

Reference and further reading

Targeting sprays for vineyard pests and diseases: https://www.awri.com.au/wp-content/uploads/spray_targeting.pdf

Grapevine pests and their management: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/110998/Grapevine-pests-and-their-management.pdf

Grapevine management guide 2016-17: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0017/302840/grapevine-management-guide-201617.pdf

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Contact

For further information, please contact the AWRI helpdesk

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