NSW GOVERNMENT
Department of Primary Industries
primefact

Grapevine red blotch virus

September 2022, Primefact 17041, first edition

Leonie Martin, Plant Biosecurity Officer, Orange

Introduction

Red blotch disease is caused by a virus known as grapevine red blotch virus (GRBV) or grapevine red blotch-associated virus (GRBaV), a single-stranded circular DNA virus. The virus is a member of the genus *Grablovirus*.

GRBV was first identified by UC-Davis researchers in the Napa Valley, California in 2008 and is present in many of the United States' wine production areas. The virus is also present in countries such as India, South Korea, Italy, Switzerland, Canada, the United States, Mexico, and Argentina.

The virus creates red blotches on the leaves and causes a decreased sugar level in grapes of up to 5° Brix as well as increased acidity.

Symptoms – what to look for?

Reb blotches might start to appear in autumn with irregular red blotches on both foliage (Figure 1) and fruit. Blotches might also appear on the leaf blades at the base of the infected grapevine and over time spread upwards from the base to the top of the canopy. It is important to look for primary and secondary veins on leaves turning red and for red blotches between the interveinal margins.

Red blotch can delay berry ripening, alter berry colour and reduce berry size. It can also affect pH, anthocyanin and tannin levels as well as other phenolic factors that overall reduce the quality and potential market value of wine made from infected grapes.

Figure 1. Grapevine red blotch virus symptoms around the leaf edge and through primary and secondary veins. Photo: Plant Health Australia.

In red grape varieties, the blotches are red, while in white grape varieties, blotches may not appear as dramatic and be pale green to pale yellow.

Is it red blotch or leafroll; what is the difference?

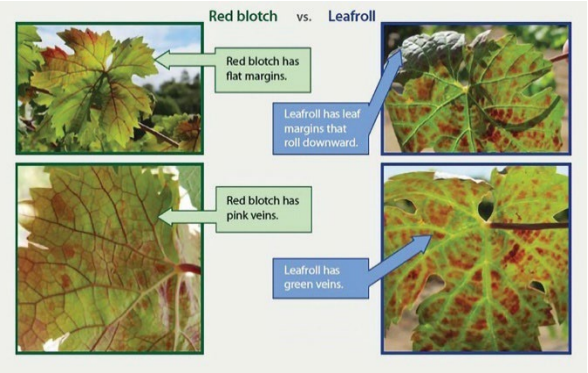

Figure 2. Symptoms of red blotch virus (left) and leafroll (right). Photos: MR Sudarshana, USDA-ARS Davis, CA.

Grapevine red blotch virus has similar symptoms to grapevine leafroll virus, which is why it can easily be overlooked and go undetected.

When comparing red blotch to leafroll, red blotch causes pink to red veins and the leaves remain flat not curled, whereas with leafroll, the symptoms are often more uniform across the leaf blade, the veins remain green and there is a downward rolling of the leaf edge (Figure 2).

Spread

Research indicates the main way the virus spreads is by propagating planting stock or grafting non-infected vines using infected budwood.

Overseas studies indicate that GRBV is known to affect young and mature grapevines, which suggests there is the possibility of a vector.

In Australia, there are no known vectors of GRBV, nor any species of these genera recorded (ABRS 2022).

How to protect your vineyard from grapevine red blotch virus

- ensure you only source certified or high health status plant material from reliable and accredited sources
- frequently check your vineyard for signs of unhealthy grapevines and investigate symptoms closely
- know what common pests and diseases are and remain vigilant in checking for potential new pests and diseases
- keep good records, especially of anything unusual
- ensure all staff and visitors adhere to your biosecurity practices
- if you see anything unusual, report it straight away to the Exotic Plant Pest Hotline.

What do I do if I suspect grapevine red blotch virus?

1. stop all movement to and from the area of the vineyard that is potentially infected until you receive laboratory confirmation
2. ensure staff follow on-farm biosecurity hygiene practices
3. collect leaf samples and send them to the laboratory for testing
4. the test results may come back negative but until then, think about:

- where those particular vines came from and any other tracing information that may be useful
- any interactions between those vines and other vines in the vineyard; were the same stock used in other blocks?
- any information that may assist and limit the potential infection area.

How do I submit a sample?

Please call the laboratory to discuss how to submit your sample on 1800 675 623 or email: laboratory.services@dpi.nsw.gov.au

Laboratory hours are 8:30 am to 4:30 pm Monday to Friday.

Specimens must be packaged correctly to ensure that the plant remains intact. Wrap plant samples in slightly damp newspaper to help maintain freshness. Do not package plant material in plastic bags during summer.

Specimens can be sent by courier mail or delivered in person. The package must contain a sample submission form that can be downloaded here:

Plant Health Diagnostic Service - Specimen Advice Form and be enclosed in a sealed plastic bag.

Send plant Samples to:

Plant Health Diagnostic Service
EMAI, Woodbridge Road
MENANGLE NSW 2568 **or**

Private Bag 4008, NARELLAN NSW 2567.

References

Bettiga LJ. 2015. Assessing grapevine leafroll and red blotch disease impacts in local vineyards. University of California Cooperative Extension, Salinas Valley Agriculture, https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=18900

Sudarshana MR, Perry KL and Fuchs MF 2015. Grapevine red blotch-associated virus, an emerging threat to the grapevine industry. *Phytopathology*, 105, 1026–1032, https://apsjournals.apsnet.org/doi/full/10.1094/PHYTO-12-14-0369-FI

Acknowledgements

This is a collaboration between the NSW Department of Primary Industries and NSW Wine.

Your Reference number PUB22/805