



Botrytis monitoring

Viti-note Summary:

- Presence in bunches before veraison
- Presence in other vine tissues
- Method
- Cautions in interpreting disease presence test results
- Resistance monitoring



Figure 1. Botrytis infection showing irregular shaped dead tissue.

The procedures described here are designed only to detect the presence of *Botrytis cinerea* in the vineyard. These methods cannot be used to predict the severity of botrytis bunch rot at harvest unless the information is combined with other risk factors for botrytis, such as the weather and canopy density from veraison to harvest. Tools for reliably predicting botrytis severity at harvest that incorporate rapid assessment of botrytis latent infection are not yet available.

Presence in bunches before veraison

The presence of botrytis in bunches can be determined prior to veraison by moist incubation. If samples are taken before veraison, bunch samples should be sealed into individual, labelled plastic bags and frozen overnight. This is because berries are initially resistant to botrytis and freezing breaks down cellular tissue, enabling colonisation. Ensure that bunches are not stacked too deeply in the freezer, so that packages in the centre of

the pile freeze completely. After thawing, store at about 20°C for 7-10 days. After this time, visually inspect with the aid of a hand lens or dissecting microscope for fungal growth. Berries with active botrytis will usually develop a characteristic grey-buff mould. Botrytis may be difficult to distinguish from other fungi, so assistance from a diagnostic laboratory may be required.

If seeking to assess the presence of latent infections, bunches should be surface sterilised, to remove botrytis spores from the surface of the plant tissue, by dipping in a weak bleach solution before following the method outlined above.

Presence in other vine tissues

The presence of Botrytis can be assessed at any stage of vine growth, including dormancy. The best results are obtained when a large and representative sample is taken. Canes, shoots, inflorescences or bunches can be sampled.

Other topics in this Viti-Notes series include:

- Botrytis
- Symptoms of Botrytis infection
- Botrytis monitoring
- Managing Botrytis

Method

Collect at least 30 samples from an area of high botrytis risk or where botrytis was present in the previous season. The results will indicate the worst case scenario for the block.

- Keep samples separate from one another.
- Seal samples in separate, labelled plastic bags.
- Freeze any green tissues overnight.
- Moist incubate the samples at 20°C for 7-10 days.
- The growth of a grey-buff mould (fungal spores) may indicate Botrytis or other fungi. If unsure, send samples to a diagnostic laboratory for identification.
- Record the percentage of samples that developed Botrytis spores.

Cautions in interpreting disease presence test results

Results from monitoring for Botrytis presence early in the season may bear no relationship with what happens at harvest:

- If weather conditions are wet at harvest, disease activity can be much higher than the test might have indicated early in the season.
- If weather conditions remain dry at harvest, then there might be no disease activity, even if initial early season testing indicated high rates of infection.

Resistance monitoring

Botrytis is able to develop resistance to a specific chemical activity group when resistance management strategies are not followed. CropLife Australia details a fungicide resistance management strategy on www.croplifeaustralia.org.au

If you suspect chemical resistance, contact a diagnostic laboratory for sampling methods. These will vary depending on the grapevine growth stage.

Acknowledgement

The Australian Wine Research Institute would like to acknowledge:

- Cooperative Research Centre for Viticulture (CRCV) and all involved in the VitiNotes series (1996 - 2006).
- Dr Kathy Evans (University of Tasmania) in the preparation of this document.

Further information

Innovator network factsheets

Botrytis Management by Dr Kathy Evans

<http://www.gwrdc.com.au/webdata/resources/files/BotrytisFactSheet.pdf>

Training

For regional specific training in pest and disease control, the AWRI is running *Research to Practice: Integrated Pest Management for changing viticultural environments*.

Contact

Marcel Essling: rtp@awri.com.au for more information.

Agrochemical information

Agrochemicals registered for use in Australian Viticulture - updated annually.

Visit www.awri.com.au for the latest version.

Useful references

Nicholas, P., Magarey, P.A. and Wachtel, M. (Eds.) 1994 *Diseases and pests*, Grape Production Series 1, Hyde Park Press, Adelaide (a glove box edition of this book is also available).

For images of grapevine symptoms visit www.winetitles.com/diagnosis/index.asp

Product or service information is provided to inform the viticulture sector about available resources and should not be interpreted as an endorsement.



AWRI

www.awri.com.au

