



Symptoms of Botrytis infection

Viti-note Summary:

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- Growing Season
 - Leaf symptoms
 - Shoot and other green tissue symptoms
 - Flower symptoms
 - Bunch symptoms

Other topics in this Viti-Notes series include:

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Figure 1. Leaf symptoms of Botrytis

Identifying botrytis infection in its various guises is an important step in control. Symptoms observed early in the season indicate that conditions have suited disease development and steps to minimise further development should be taken to reduce botrytis severity at harvest.

Winter

Cane symptoms

Hard black irregularly rounded structures 3-6 mm in diameter known as sclerotia. These are found on dormant canes and on decaying plant matter on the vineyard floor. The presence of sclerotia on canes indicates that botrytis was a problem the previous season and that the disease will threaten the next season's crop when weather conditions are conducive to spore development.

Growing Season

Leaf symptoms

Young leaves exhibit a characteristic V-shaped area of dead tissue spreading towards main veins with yellowing leaf margins. There may be similar symptoms associated with leaf injury, though in this case the 'V-shape' is more irregular. Botrytis growth on leaves indicates the presence of the fungus in the vineyard and provides a source of spores in wet and humid conditions.



Figure 2. Shoot symptoms of Botrytis

Shoot and other green tissue symptoms

On shoots where damage has occurred and become infected, soft brown rotten patches develop. These shoots can become girdled, exhibiting an internal brown discoloration. They ultimately wilt and die above the wound.

Flower symptoms

It is common for individual flowers to become infected at the point where caps abscise, but symptoms are not visible. In these cases, the fungus lies dormant until a later stage in berry development. This is known as latent infection.



Figure 3. Flower symptoms of Botrytis



Figure 4. Bunch symptoms of Botrytis

Bunch symptoms

Infection of bunches causes the most economic loss. Disease can occur on immature berries that have been damaged and infected, potentially causing a green fruit rot. More often, berries are affected later in the season. This might be a primary infection initiated as a result of wet weather, or the renewed activity in wet conditions of a latent infection from flowering. The disease looks like small circular water-soaked spots on maturing berries in late summer and autumn. This appears as indistinct clear patches on red grapes. The skin cracks and slips over the berry pulp if rubbed - this is known as the 'slip skin' stage. Berries become soft and brown after rain or high humidity. In white varieties, one or more berries in the bunch turn a pink-brown colour. Grey-buff coloured velvet-like spore masses appear at the point of cracking on the skin and eventually over the entire area of affected berries and whole bunches. If dry conditions follow infection, berries can dry and shrivel but remain attached in bunches. Other bunch rot fungi may appear within a rotting bunch, including species of the fungal genera *Penicillium* and *Aspergillus*. The spore masses of other bunch rot fungi can be various colours, such as blue-grey or black.

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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

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