fact sheet № 1

EUTYPA DIEBACK

IDENTIFICATION & DISEASE CYCLE

WHAT IS EUTYPA?

Eutypa dieback is caused by the fungus *Eutypa lata* and is one of the major trunk diseases of grapevines. Eutypa occurs worldwide in wine regions that exceed an annual rainfall of 350mm. In Australia, eutypa was first detected in the 1930s and is now widespread. Grapevines can become infected by eutypa through fresh cuts such as those made during pruning or reworking, causing a significant impact on the productivity and profitability of grape growing. The fungus grows slowly, causing stunted shoots and eventually the demise of affected vines.



WHAT DOES IT LOOK LIKE?

Symptoms

- Eutypa dieback is most obvious in spring when shoots are 30 to 70cm long or EL 12 – 17. Inspections after this timeframe can be more difficult as canopy growth often conceals symptoms, especially shoots showing mild symptoms.
- Shoots appear stunted and the leaves yellow, often becoming cupped and tattered around the edges. Eutypa often affects only one cordon of an infected vine.
- Foliar symptoms usually develop within 3-8 years of infection, although they can appear earlier on reworked vines if infected wood is not completely removed.





- Bunches on stunted shoots ripen unevenly, are small and in severe cases shrivel and die.
- Cross-sections of cordons with stunted shoots reveal dark brown, wedge-shaped zones of dead wood.
- These zones can be traced back to cankers, which are sunken dead areas on the outside of cordons and trunks.



Susceptible grape varieties

- All varieties can show foliar symptoms. In South Australia, eutypa dieback is most pronounced in Shiraz, Cabernet Sauvignon and Grenache. The varieties Riesling and Merlot are less susceptible to the disease.

Damage and loss

- Yield losses are related to the severity of foliar symptoms, with losses up to 1500kg/ha reported in severely affected red wine varieties.
- The symptom of uneven ripening can reduce wine quality.
- Vineyard productivity is also affected by increased production costs and decreased vineyard longevity.



Outcome

- Many years after infection, cordons begin to die and vines are killed when cankers girdle the trunk.

HOW DOES IT SPREAD?

Infection

- Spores are generally released following at least 2mm of rain or overhead irrigation.
- Spread by wind or splashed rain, spores need to land on a fresh, wet cut to cause infection.
- Carried by wind, spores can travel long distances, reportedly up to 50km.





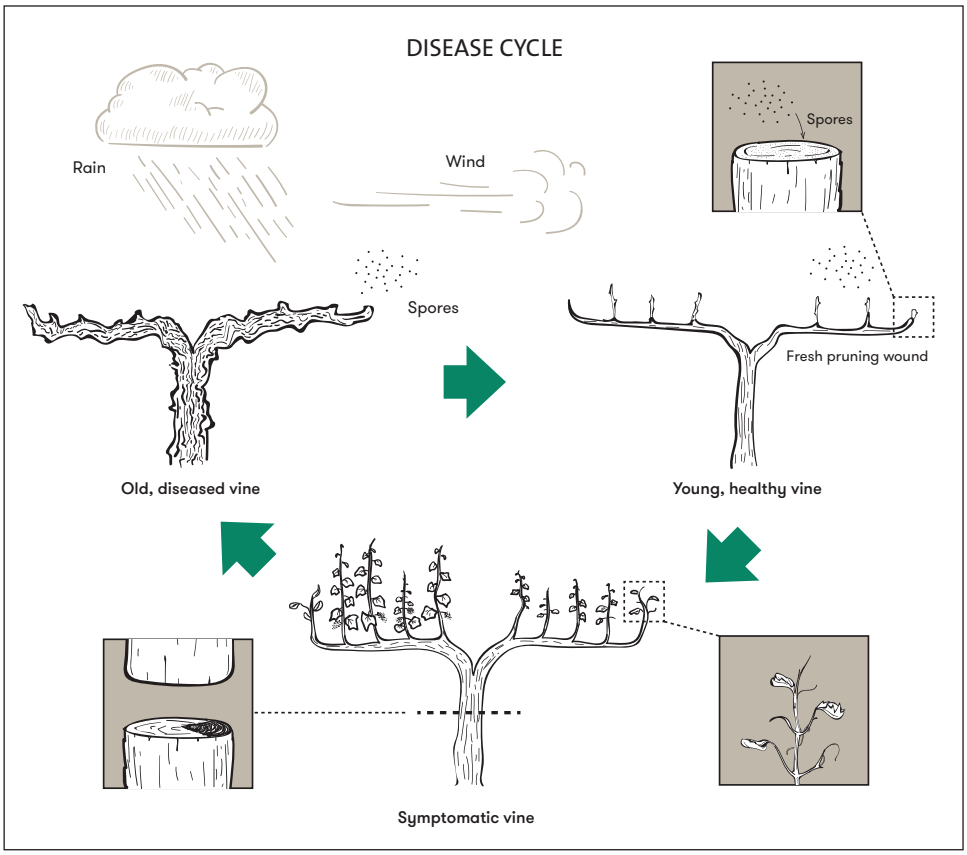
"Cabernet Sauvignon and Shiraz varieties are most susceptible to eutypa in the Clare Valley and I've probably seen more infection in Shiraz than Cabernet. As for Riesling, we are seeing some eutypa at spur positions, but not whole arms infected like we see in Shiraz."

Susceptibility

- Wounds are most susceptible immediately after pruning and can remain susceptible for up to 4 weeks.
- Wounds are less susceptible in late winter and spring, when wounds heal more rapidly due to warmer temperatures. Sap flow at this time can also flush spores from the vascular tissue.
- Larger wounds are more vulnerable to infection as they have a greater surface area and take longer to heal.
- Older vines with more wounds provide a greater surface area for infection.

Disease cycle

- After many years, eutypa produces masses of pimple-like fruiting bodies on areas of dead wood, known as stroma. When wet, the stroma releases spores within 1 – 2 hours, and can continue throughout a rainfall period and then for up to 36 hours after rain stops.
- If blown or splashed onto open wounds, the spores are sucked into the exposed water conducting vessels.
- Leaf and shoot symptoms appear several years later above an infection point.
- Toxins produced by the fungus cause foliar symptoms.
- Eutypa slowly grows in the wood towards the trunk, moving up to 50mm a year away from each infection point.
- The fungus affects the vine's vascular tissue, reducing the transport of water and nutrients to foliage.



Alternative hosts

- Eutypa dieback can infect 88 plant species ranging from commercial tree crops to common garden ornamentals.
- Old, neglected orchards commonly carry the disease and pose the greatest risk to vineyards.
- It has not been recorded on native Australian plants.

What other research or information is available?

Eutypa Dieback factsheets and other resources http://research.wineaustralia.com/resource_categories/eutypa-dieback/

Agrochemicals registered for use in Australian Viticulture http://www.awri.com.au/industry_support/viticulture/agrochemicals/agrochemical_booklet/

Wine Australia for Australian Wine

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Supported by Wine Australia's Regional Program

PRINTED JUNE 2016