GrowCare Barossa

Brought to you by the Barossa Grape & Wine Association

This message was posted **by 12 pm Saturday 14th September 2013** and will be updated as necessary for best management of vineyard

2013/14 V1 # 1

Welcome to *GrowCare Barossa*!

GrowCare Barossa is the new 'free-to-air' e-mail service brought to you by the Barossa Grape & Wine Association (BGWA). It is intended to keep you up-to-date with the changes in best management options for the diseases and pests in your vineyard, especially downy and powdery mildew.

It will be sent to you as and when there is risk of a downy mildew primary or secondary infection event, or another disease or pest issue. It will include options for the management of diseases and pests, other vineyard management information and, where relevant, regional news.

The service is provided in partnership with Magarey Plant Pathology and Western Electronic Design (WED) who provide a similar service for grapegrowers of the Riverland and other regions.

Weather Stations

The BGWA recently purchased and installed four South Australian-made ***Model T MetStations*** (weather stations - AWS) manufactured by WED. These have been placed across the district at sites in Craneford, Lyndoch, Gomersal and Ebenezer. Another South Australian weather station, made by MEA, was available for us to use at the Nuriootpa Research Centre.

These weather stations are providing data on rainfall, temperature, relative humidity and leafwetness at intervals of 10 minutes. The data is automatically transferred via the web to a computer system that graphs and stores the data. This data is available in almost real-time so that we can get swift access to what is happening with the vineyard micro-climate on a moment-to-moment basis. This allows us to regularly and accurately assess the risk of downy mildew. The data will be reviewed and interpreted by a specialist. If a risk of infection occurs, an alert will be signalled and we will send you a new GrowCare Message to advise you of this.

Recent Rain Event Creates Risk of Downy

The table below shows that in the sites at Craneford and Lyndoch, the rain from Thursday 12 September to Friday 13 September triggered a low **risk of downy mildew**. While we had no access to the data at Gomersal, the data from the other two stations indicate there was not a risk of primary infection there.

The rain event was characterised by isolated rainfalls toward the end of the wet period. The timing of these was critical to determine if the conditions were wet for long enough for infection to occur. At the two sites with low risk, the conditions were marginally in favour of downy mildew infection.

The rule-of-thumb 10:10:24 is a guide to whether primary infection has occurred but the detailed steps outlined in the table below give a much better guide. Judge in your vineyard how the conditions compared with those at your nearest AWS. If you received a rainfall mid-morning on Friday 13th, this may have been sufficient to tip the conditions in favour of an infection. In all AWS sites, temperature at that time was not a limiting factor.

Management Options

Downy mildew is a 'green' disease and needs green foliage to infect. Vineyards prior to budburst were at no risk of downy (or powdery) mildew. If your vines were sprayed with a downy pre-infection fungicide prior to the rain, there is little risk of infection and you need take no further action at this time.

GrowCare Barossa Weather Stations: Thurs 12th - Fri 13th September 2013 - Primary Infection

District	Rain (mm)	Soil wet & warm enough to begin germinating oospores	Soil wet & warm for 16 hrs to release zoospores	Soil wet & warm enough for zoospores to survive	Rainfall to splash zoospores to leaves	Foliage wet & warm enough to infect leaves	Risk of Primary Infection
Craneford	10.6	+	just +	+	+	just +	Low
Lyndoch	14.6	+	+	+	+	just +	Low
Gomersal	No data	-	-	-	-	-	-
Nuriootpa	15.4	+	+	+	+	-	No
Ebenezer	17.8	+	+	+	-	-	No
		(+) = condition satisfied		(-) = condition not satisfied			

If your vines were not adequately protected by a downy mildew fungicide before the rain, and your vineyard was 'at risk' of a primary infection, you may expect 1-2 oilspots every 50m of vine row in the next 7-10 days, ie. sometime around 23 September.

The shorter the foliage the lesser the target size for the spores to hit the foliage during the 'splash' phase of infection – when the zoospores in a tiny droplet of water are splashed into the air layer above the soil and carried by air-currents to the undersides of leaves. Some vineyards are at 10cm shoot growth at present, so these will, if unprotected, have been a larger target and be more at risk than vines just at bud-burst.

So, what if primary infection has occurred?

Maybe do nothing! A few oilspots in a vineyard will of themselves cause no crop loss. However, they may be important if you leave your foliage unprotected and a rain event after 23 September were to favour secondary infection (ie. by inducing a warm humid night with leaves wet in the morning). In this circumstance you will be at risk of secondary infection spreading downy rapidly from leaf to leaf and leaf to bunch.

Do I Need to Spray?

If your vines were unprotected and there was a moderate to high risk of a primary infection event from the recent rains, one option is to apply a post-infection fungicide such as metalaxyl (one of the Ridomil group) as soon as possible before the 23rd (ie. before Monday week). An alternative worth considering is to withhold spraying for downy at present and inspect your vines closely for oilspots at or after 23 September. Given the low risk of downy at most GrowCare AWS sites, many vineyards will not have been infected. If oilspots do appear, be sure to apply a suitable pre-infection (protectant) spray as close as possible before the next rain event that might induce secondary infection. This will protect your new foliage.

A help to find oilspots is to mark the growing tip of shoots that were exposed to this rain – a marking pen or a piece of coloured tape will do, but do it now! When surveying, look closely at the leaves below the marked tips. Leaves growing after the recent rains will not show oilspots from this event.

For those interested in reading more about the conditions that favour downy and management options, a simple fact sheet is available at:

http://www.gwrdc.com.au/webdata/resources/files/DownyMildewFactShee.pdf

Powdery Mildew

Once budburst is underway, it is time to consider first sprays against powdery. Infection usually starts from buds infected early last season. These produce 'flag shoots' - shoots that emerge with the disease already on the leaves and spreading spores.

Cleistothecia are the other form of overwintering but it is likely that most have discharged their spores with the late winter rains when there was no green shoot growth to infect.

The season of powdery mildew's epidemic, its 'epi-season' consists of two growing seasons. We are now entering the epi-season for 2013/14 and 2014/15. As a result, what we do early this season will have a big effect on how much inoculum we allow to carry over into next season. Equally, effective control early this season reduces the disease levels this season and fewer sprays will be needed both this season and next.

The first 40 days from budburst is critical for control of powdery mildew this season. What you achieve in the first six weeks will determine the level of control you achieve this year and the ease with which you can control it next season.

Begin spraying for powdery when shoots reach 3-5cm length (EL 7-9). For early blocks, this time is past! Any of the registered fungicides for powdery mildew are effective, although sulphur (at 600g/100L) just after budburst will help control mites and is a low-cost alternative.

Correct spray timing with good coverage is the best way to control powdery mildew. Be sure to check the configuration and effectiveness of your spray machinery and adjust your spray swath to fit the foliage.

If you wish to read more about the background to the 'epi-season' and 'lag phase' approach to controlling powdery mildew, an easy-read fact sheet is available at:

http://www.gwrdc.com.au/webdata/resources/files/PowderyMildewFactShee.pdf

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This message has been prepared by the Barossa Grape & Wine Association in partnership with Magarey Plant Pathology and Western Electronic Design.
It will be updated as soon as possible after the next significant rain event.