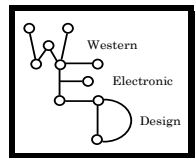




MAGAREY PLANT PATHOLOGY



GrowCare Clare

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Downy Mildew

- **To date there are no confirmed reports** of downy mildew in the Clare Valley for this season. Now is a good time to have a detailed look in your canopy to be sure that there are no oilspots in your vineyard.
- **Weather data from the three** GrowCare weather stations (at Auburn, Sevenhill and Clare North) indicated there was a low risk infection event on 4-7th October in each of these localities. GrowCare calculations suggested that if infection did occur at that time, the primary oilspots would have appeared sometime between the 15th (Auburn) and 17-18th October (Sevenhill and Clare North).
- **Oilspots from primary infection** are hard to find – they are usually found on lower leaves on shoots now hidden in the canopy. However, a review of the GrowCare weather data subsequently indicated a possible series of (marginal) infection events since that time.
- **The rains on 20th–21st October** (ranging from 5-8mm) may have triggered a secondary infection event at the three sites, **if** vineyards were not adequately protected. If these events did occur, oilspots would have appeared on or after 28th October.
- **Coincidentally, further rains on 28th–29th October** (just after the new oilspots might have appeared) brought conditions that were marginally in favour of a second secondary spread of downy mildew. Oilspots from this event (if it occurred) would have shown on or after 6th November.
- **Now, right on that day**, more rains fell (they continued off and on from 6th–9th November). On several of these days, new generation infection events may have been triggered. The conditions were most suitable overnight from 7-8th. If adequate spray cover was not applied in relation to these events, new generation oilspots would have been expected on or after 15th November.
- **And so, the possible series** of downy mildew events continued to unroll. Rains on 19th November began marginally too late in the evening (midnight-1am) for secondary infection to occur. Similarly, the rains of 25th–26th November began too late and it was too cold to induce a secondary infection. Falls of around 8-15mm were recorded with overnight minima around 10-12°C.
- **Possible primary infection.** Given the duration of rain and temperatures, the conditions were marginal for primary infection event from the rains of 25-26th. If this occurred, and there were no existing oilspots in the vineyard, a post-infection spray could be applied on or before Friday 2nd December; or alternatively, a pre-infection cover spray might be considered before the next possible secondary infection period.



Typical Downy Oilspots. If caught out with downy at or near flowering, spraying with metalaxyl twice at an interval of 5-7 days may be the best action if the disease is spreading. But, metalaxyl applied immediately after an infection and before new oilspots appear, is much better. (Photo: Andrew Weeks)

- **Secondary infection is a two-step process.**
 - 1) it needs active oilspots, 4 hrs darkness while the relative humidity exceeds 98% and the temperature is greater than 13°C - this produces the typical fresh white down on the undersides of oilspots; Then...
 - 2) the spores (in the down) need to be dispersed to a drop of water on the underside of the leaves or on green foliage while it is warm enough for long enough. At 15-17°C, as it was early on the morning of 26th, the leaves need to be wet for 3-4 hrs after the spores were produced. Generally, these conditions were not met in the most recent rains.
- **There is risk that some vineyards** may have at least some downy mildew oilspots present at different locations across the region. If so, a number may be showing new generations of oilspots that only recently appeared from rains in the period around 7-8th November.
- As a result, there are three scenarios that might be operational in your vineyards. Check which for the one that fits each block best:
 1. **You may have no oilspots.** If so, there can be no spread of downy from the most recent rain event. **Action:** Make sure that you have monitored carefully for oilspots and that you remain alert to future rain events. However, now that the season is progressing through flowering, the risk from downy mildew will soon lessen swiftly as berries grow toward pea-size and the older leaves hardened-off. At around pea-size, (EL 31), the bunches and the older foliage become more resistant to downy and the risk of risk of crop loss from any future downy this season, lessens. **In summary:** you need do nothing for downy as a result of the recent rains but **remain vigilant and look for any new generation oilspots** that might appear in 6-10 days time (this will only occur if you had a few stray oilspots that have gone unnoticed till now).

2. **You may find active oilspots but you have sprayed in the last 5 days either with a pre-infection fungicide such copper or with a metalaxyl-based product that contained a pre-infection fungicide.**

Action: Although you may see fresh white down on the undersides of the oilspots, the canopy will, in the main, be protected from any recent new infection.

In summary: you need do nothing for downy as a result of the recent rains but **remain vigilant and look for any new generation oilspots** that might appear in 6-10 days time (this will only occur if you had existing oilspots and if your spray coverage was not complete).

3. **You may have active oilspots but you have NOT sprayed in the last 5 days either with a pre-infection spray such copper or with a metalaxyl-based product that contained a pre-infection fungicide.**

Action: You are at risk of spread from downy mildew secondary infection in the recent rains. You may have a few scattered clumps of oilspots present before the rains of 25th -26th or you may have lots in frequent clumps down the vine row. Either way, it is important to be sure to retain at least 6-8 functional leaves in a zone around each bunch – these are the principal leaves in the food factory that supplies the nutrients for the developing bunch. The best time to apply a metalaxyl spray is immediately after an infection event and before oilspots appear. This will kill off any new infections from the recent rains. Remember that berries become resistant at around pea-size, so that the main risk of any recent infection is to the older leaves.

In summary: (Only if needed) apply a post-infection fungicide as soon as practical and before new generation oilspots appear. **Remain vigilant, look for any new spots** that might be seen in 6-10 days time (if you had primary infection oilspots and if your spray coverage was not complete before the recent rains).

Botrytis

- **The long periods of warmth and leafwetness** in the recent rain events may have led to conditions suitable for Botrytis. The fungus enters grapevine tissue damaged or exposed during capfall or by other factors such as downy infection, LBAM (Light Brown Apple Moth) or hail damage.
- **The disease will grow on** dead leaf and flower tissue, indicating that the conditions have been wet enough and warm enough for long enough.
- **The ‘15:20’ rule of thumb** for Botrytis says that **after capfall**, green tissue at flowering may be infected if the flowers are wet for 15-20 hours at temperatures of 20-15°C. Lower temperatures means that a longer period of wetness was needed.
- **If a suitable protective spray** had not been applied before the wet weather at flowering, consider applying a spray for Botrytis in the next few days. Sprays at 80% capfall are optimal.
- **Many botryticides are protectants** that will protect future wounds from infection more than they will control infection that has already occurred. Captan is an example.

For a comprehensive look at lessons learnt from last season, see [GWRDC pest and disease debrief sessions: What we learnt from the 2010-11 season](#)



Botrytis is a fungus that grows on dead material like old flower parts and other dead vine tissues caught in the developing bunches as pictured here. These spores may lead to bunch rot. (Photo. Andrew Weeks).

Powdery Mildew

- **Powdery mildew will be continuing** to spread at a rapid rate in unsprayed vineyards. It will be creeping within the increasingly shaded canopies and may be developing on young susceptible berries.
- **In unprotected canopies**, the disease will now be spreading from secondary spots that will have developed to near 2-3 m radius around ‘flag shoots’. These secondary spots will be producing millions of new spores every day and being windblown to infect adjacent unsprayed foliage.
- **The recent cloudy, mild and humid weather** has suited the spread of powdery mildew.
- **As a result, powdery is likely to ‘pop up’** in some vineyards in the next three to four weeks. It is actually in these vineyards already. In a real sense, it is ‘lurking in the shadows’, waiting to ‘suddenly appear’!
- **It is getting late to spray** for powdery now because of the significant difficulty in penetrating with an effective spray dose into the dense canopies.
- **If you plan to spray** for powdery [or for downy], if needed, consider hedging the vines before you spray.
- **Now that the canopies have grown**, the canopy that was *on the outside*, is now overshadowed and become the canopy *on the inside* – this is where powdery grows best. So, this is where best to look for it!



What not to find when searching for powdery mildew! These berries, about 3-5mm diam. are showing the powdery infection. It is important to find powdery mildew in your canopy, before withholding periods apply. (Photo. PA Magarey).

GrowCare Clare 2011/12

If you know others who might like to receive GCCLare for this season, please pass this message on. Ask them to advise CRWGA. GrowCare will keep you posted of any change in the risk of disease.

*This message was prepared for
The Clare Region Grape Growers Association by
Magarey Plant Pathology and Western Electronic Design.*