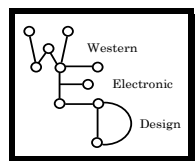




MAGAREY PLANT PATHOLOGY



GrowCare Clare

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2011/12 Volume 2 Issue 1

GrowCare Clare 2011/12

- **Season 2011/12 is underway** and so is GrowCare Clare. The Clare Region Winegrowers Association is delivering this as another service paid by your levy.
- You have received this message because your name is on the CRWGA GrowCare list from last season. If you are happy to continue receiving these messages, do nothing, and they will be delivered. If you wish to discontinue this, please advise CRWGA.
- If you know others who might like to receive GC Clare for this season, please pass this message on. Ask them to advise CRWGA.

Season 2011/12

- **Budburst has now occurred** in many vineyards. Shoots on early varieties like Chardonnay vary from 15-30cm (EL13-15) whereas shoots on Riesling are 5-10cm (EL10-12) and most Cabernet Sauvignon are 2-5cm (EL9-10).
- The season started relatively dry and cool-cold but the recent wet weather has lingered with high humidity.

Powdery Mildew

- **The recent weather conditions** have suited powdery mildew. The low temperatures of a week or two ago were not as favourable but the temperatures and high relative humidity (RH) of recent days were more suited.
- Powdery grows best at 20-28°C. Spores develop in dry weather over a range of temperatures but 2-3 times more develop when the relative humidity is high (RH >40%).
- **Powdery mildew has an epi-season** (season of epidemic) that extends over two growing seasons. This means that inoculum (spores) from uncontrolled disease last season carries over into this season.
- As budburst and early season shoot growth develops, buds infected last season produce diseased shoots known as '**flag shoots**' – they 'flag' where powdery will be starting in your vineyard this season.
- **Spores from flagshoots** initially spread the disease in a radius of foliage 30-50 cm diameter. This area gradually expands unless well-timed sprays are applied.
- **The first 40 days from budburst** are critical in the development of the disease. The success of your controls in the next few weeks will have a major influence on the disease status of your crop at vintage this season AND the amount of powdery mildew that will carry over in your vineyard to next season.
- **Shoots 3-5cm in length (EL 7-9)** provide a sufficient target to be worth spraying and this is the ideal time to begin spraying for powdery though it might vary with the design of your canopy and the configuration and effectiveness of your spray machinery.

- **Good control requires good spray coverage.** Take time to ensure that your sprayer is well calibrated. This will give you opportunity to achieve good disease control. Without it, you are unlikely to succeed with powdery.
- **Any of the registered powdery mildew fungicides** are effective though sulphur just after budburst will help control mites and it is a low-cost option.



***Flag shoots** are produced from buds diseased from last season. They often appear about 2 weeks after healthy buds open and produce spores that spread the disease in early-season. Good control of powdery now, provides a good platform for healthy crops later.*

(Photo: RW Emmett, DPI Vic)

General Pointers in Controlling Powdery Mildew - 2011/12

Some points to consider in managing powdery mildew this season include:

- **Fungicides:** Check your resources for this season to secure your supply of fungicide and other products for your vineyard. Allow flexibility to handle the wettest season.
- **Calibrate Vineyard Spray Equipment:** Effective spray coverage is even more critical for powdery mildew control than downy. Ensure best possible spray coverage with least loss from off-target residues by checking spray pump outputs and spray head/nozzle configurations. This is especially relevant for early season sprays.
- **Spray Strategy:** Choose the ground you want to fight for. Decide if you want to continue spraying many times each season to control the disease. If not, take the first opportunity this season to attack powdery mildew in your vineyard. This gives you the best chance to reduce inoculum loads with fewest sprays so that you can 'do it better' next season with fewer sprays.
- **Not your neighbour.** Remember that you inherit the inoculum you allowed to develop in your vineyard last season. Infected buds that develop flag shoots early this season were diseased early last season(s). Cleistothecia developed where you allowed disease severity to increase on the foliage mid to late last season. You bred your own inoculum. So, the good news is that you have the responsibility for your own inoculum, it's not your neighbour's fault. As a result, the blessing is that you

have opportunity to control powdery well, no matter what your neighbour does. This is because the powdery mildew spores don't travel more than 60-80 metres from an unsprayed vineyard in the first 80 days. Choose your spraying strategy to ensure your own success!

- **Know Your 'Enemy':** Be familiar with powdery mildew symptoms and the conditions that favour infection and spread. Powdery mildew is a 'dry' weather disease that begins early season and spreads slowly. It increases insidiously, surprising many by its apparent sudden appearance early in the new calendar year – but it has been developing since bud burst.
- Powdery mildew is a disease of shaded canopies with poor penetration of light (UV kills powdery mildew), poor air flow (double the number of spores are produced at high humidity) and inefficient spray coverage (it is difficult to adequately spray the foliage inside dense canopies).
- **Build on the 'epi-season' concept.** Since the epidemic season of the powdery mildew fungus develops over two growing seasons, apply fungicides early this season both to control the disease this season and reduce carry-over inoculum (infected buds and cleistothecia) for the next. Reducing inoculum loads means fewer sprays are necessary for successful control next season.
- **Control the disease on the foliage early season** for more successful control of the disease on fruit.

Downy Mildew

- **The rains of 27-29th September** brought wet conditions that were either not long enough or were too cold to trigger downy mildew primary infection.
- **Primary infection requires** enough rain to wet the soil for 16 or more hours while temperatures are at least 8°-10°C. This triggers the germination of oospores that carry the disease from one season to the next. But, the temperatures in the September rains were often down to 5°-6°C, too cold for downy.
- **The rains from 4-6th October** were different. They lasted longer and the temperature averaged 13°-15°C. Assessment of weather data suggests that the conditions were likely to have favoured germination of oospores and that these would have released their zoospores. This second spore type, once released, swim in the soil water before being splashed to the foliage. There they cause primary infection if the foliage is warm and wet enough for long enough.
- **In the last few days**, although calm misty conditions kept the foliage wet for up to 30hrs at mild temperatures, there were few rain showers after the 16th hour to splash these spores to the vine.
- **Despite this, there is a low risk** that primary infection occurred in unprotected vineyards. The lack of good rainfall to splash spores to the canopy raises doubt about this risk though.
- **Any green shoot tissue is susceptible** to downy though shoots 3-5cm (EL 9) provide a bigger target for downy spores than shoots at earlier stages of growth. The risk of downy on shoots less than EL 9 is minimal.
- **Vines at EL 10 or bigger** are at some risk from downy from this infection event. However, if you applied a suitable protective fungicide such as copper or mancozeb

in the last 5-7 days, the sprayed growth will be protected. Note however, that any expanded leaf surface or new growth since spraying will be at risk.

- **If vines were unprotected** prior to the rain, it may be worth considering an application of a post-infection fungicide in the next few days. If infection has occurred, oilspots are due to appear in around 13 days *ie* from around 20th October onwards. If you elect to use a post-infection spray, apply this sometime before this and preferably, in the next few days.
- **An alternative to applying** a post-infection fungicide is to include a pre-infection fungicide in your next application for powdery mildew. This would protect the canopy from any spread of downy if the oilspots developed in vineyards that were unprotected before the Oct 4-6th rain event.
- **Downy mildew cannot** spread in secondary infection until oilspots appear in the canopy. If they develop, watch for warm humid nights with leaves wet in the morning. These conditions favour secondary infection. Monitor weather forecasts to be alerted to the possibility of a secondary infection event and if possible, apply a protective fungicide just before the wet conditions occur.
- **The rains forecast** in the next few days are unlikely to favour downy mildew.

General Pointers in Controlling Downy Mildew - 2011/12

Some points to consider in managing downy mildew this season include:

- **Fungicides:** As for powdery mildew, check your access to this season's supply of fungicide for control of downy.
- **Calibrate Vineyard Spray Equipment:** Check spray nozzles and calibration to ensure best possible spray coverage is achieved with least loss from off-target residues, especially in early season. Remember that downy mildew invades through the lower leaf surface; this is the most difficult to spray effectively. Be ready to adjust spray volumes as the canopy develops during the season.
- **Spray Strategy:** Decide on your preferred approach to managing downy mildew in your vineyard. Prepare for one of the following: a pre-infection (preventative) strategy; a post-infection (curative) strategy; or a combination of both.
- For the pre-infection strategy you will need:
 - 1). ready access to detailed weather forecasts that enable you to decide if a weather event will bring suitably wet conditions; and;
 - 2). capacity to spray individual vineyard blocks at short time intervals as close as possible before that event, even if a succession of rain events follow.
- For the post-infection strategy you will need:
 - 1). ready access to interpretations of vineyard weather data to know if a rain event just past, and will it have induced an infection event; and;
 - 2). capacity to access and spray your vineyard as soon as possible after the rain event and before oilspots appear. This is easiest on sandy soils.

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