MAGAREY PLANT PATHOLOGY

GrowCare Clare

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CRWGA

This message was posted on **Monday 17th 2011** at 11am.
It will be updated as necessary for best management of downy mildew.

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Downy Mildew Infection:

- **The rains from** Tuesday 11th through to Thursday evening 13th January induced periods of high humidity and leafwetness at overnight temperatures which favoured secondary infection throughout the district.
- **The rainfalls varied** from 13 to 20mm at the GrowCare weather stations but at each site, the length of rainfall (between 10 to 14 hours) was insufficient to induce primary infection.
- **For secondary infection** to have occurred, there needs to have been viable oilspots present before the rains and then 1) sporulation and 2) infection.
- **For sporulation** (seen as the white down on the underside of oilspots), we need darkness for ≥ 4 hours;
  - Relative humidity ≥ 98%; at
  - Temperature ≥13^{0}C.
- **Infection will follow** if the leaves and foliage are wet for 2-3 hours at 15-20^{0}C.

Monitoring:

- **It pays to be** sure that the conditions in your vineyard were suitable for secondary infection. To do this, search the canopy for oilspots and look on the undersides for the typical white down.

Fresh white down (sporulation) on the underside of downy mildew oilspots. This is likely to be showing in many vineyards after last week's rains. It indicates that the first and critical step has occurred in secondary infection, but it does not prove secondary infection has occurred – see text above. (Photo: Warren Burgess)

- **In unprotected vineyards**, where secondary infection is likely to have occurred, new generation oilspots are likely to be seen, especially on young leaves, from Wednesday 19th January onwards.

Management:

- The grapevine canopy has now gained a lot of resistance to downy. The berries are mostly resistant and the berry stems and the lower leaves, though still susceptible, have gained a measure of resistance. When older leaves are infected by downy, they show the classical tapestry pattern (mosaic) of downy mildew, as distinct from the circular oilspots on younger leaves.

Typical tapestry (or mosaic) symptom of downy mildew infection of older leaves. The tiny veinlets (tertiary veins) become resistant and limit the expansion of downy mildew oilspots. On susceptible young leaves, the oilspots are circular and increase rapidly in size whereas on older leaves they are angular in shape and small in size. (Photo: Peter Magarey)

- Because of this age-related (ontogenic) resistance, the primary aim of managing downy now is not so much to protect the bunches but to be sure that sufficient leaves are maintained as food factories to supply the developing bunches with the resources they need. There is risk of defoliation if new generation oilspots from this week's rains are allowed to develop too far.
- Many vineyards will have received a number of pre-infection sprays eg with copper or mancozeb. These will be still providing a measure of protection inside the canopy despite the heavy rains. If your last spray was

applied with sufficient spray quality and coverage within 5-7 days prior to the recent rains, the canopy would have been adequately protected from downy secondary infection and no further spray will be needed at present.

- If not, there are at least two courses of action, assuming that you have viable oilspots in your vineyard:
  - You may consider that a) it is now too difficult to achieve effective cover of the bunches; b) that earlier sprays have provided adequate protective cover in the canopy; and/or c) that the resistance in leaves and bunches offers acceptable protection, so, do nothing for downy now; or
  - Apply a post-infection spray as soon as possible (if you can source any!?). This option gives best protection of the 'food factory' leaves for the bunches.

Powdery Mildew

- Powdery mildew infection is being found inside canopies where spray coverage has not been adequate. In these cases, powdery has been progressing since early season.

Powdery mildew infection develops best in shaded parts of the canopy. The typical grey-white spore mat develops on both sides of leaves and on young berries left unprotected. Given with holding periods, the time to control powdery is fast fading. It pays to check inside your vineyard canopies now.
(Photo: Peter Magarey)

- If powdery is present in your vines, apply a registered spray as soon as possible and if necessary, use slower than usual ground speed and higher rates of water to maximise spray coverage – and if needed, consult your winery to discuss best spray options.

Botrytis and Other Bunch Rots

- The long wet periods within the canopy last week have favoured development of bunch rots and have potential to trigger significant crop loss, especially given the relatively high levels of inoculum that has developed to date.
- Monitor the bunches for split berries and bunch rots. If necessary, apply a suitable fungicide such as Rovral. Note, most wineries will accept a 7-day withhold period.

The long wet periods from last week's ran falls favoured the bunch rotting organisms. Botrytis is one of these. This fungus grows best within spit berries after veraison and once the berries have 'sugared up'. It breaks down the cells within the berries and develops a buff coloured spore growth on the outside.
(Photo: Peter Magarey)

Spraying

- Spraying effectively for either mildews or for bunch rot is very difficult now. Be sure to look closely inside the canopy for powdery and bunch rots. If needed, trim back the vines to allow free flow of air through the canopy and penetration of fungicide sprays.
- A 30-day withholding period applies for a number of useful fungicides but note, the harvest date this year is delayed by about 2 weeks compared to last season. Ask your winery for details in this regard.

For specific information on the mildews and other diseases of grapes and weather and rainfall forecasts, radar images etc, go to www.GrowCare.com.au. This site remains under development but has some useful information.

This message has been prepared by
Clare Region Grape Growers Association,
Magarey Plant Pathology, and
Western Electronic Design.

GrowCare Clare will be updated
as soon as possible when appropriate or
after the next rain event.
