GrowCare Clare

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MAGAREY PLANT PATHOLOGY

Western Electronic Design

CRWGA

This message was posted on **Monday 21st February** at 3pm.
It will be updated as necessary for best management of the crop near harvest.

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The Wet Weather

- **The recent rainfalls** have been highly conducive to both downy mildew and bunch rots. The rain on the afternoon/evening of Friday11th February and especially, the rain of Friday 18th - Saturday 19th, has triggered disease spread.
- **The rain last Friday-Saturday** came from a slow moving weather system that delivered high rainfall totals to the Clare Valley and, significantly, long periods of leaf and bunch wetness. These were especially favourable for disease.
- **At the GrowCare weather stations** in Seven Hills and Auburn, the falls varied between 47 - 57mm in the period from 6am Friday morning until the early hours of Saturday morning. Leaf wetness continued throughout this period and, even though the relative humidity began to decline from early afternoon, the leaves did not dry until around 5pm that day. Total periods of leaf wetness extended to a massive 32-35 hours and, because bunches dry more slowly, bunch wetness periods were even longer. Moreover, all this occurred while temperatures ranged from 22^{0}C down to 15^{0}C ... plenty warm enough, wet enough and long enough for the bunch rot organisms and for both downy mildew primary and secondary infection.

Downy Mildew Infection

- **The GrowCare disease models** suggested the conditions were very suitable for primary infection to have occurred in unsprayed foliage. Similarly, the wet weather was good for secondary infection and risk of quite extensive spread of downy.

The white down of Downy Mildew developed on the undersides of the yellow oilspots in a massive sporulation event – as part of the secondary infection highly likely during the recent wet weather. (Photo: PA Magarey)

- **For secondary infection** to have occurred, viable oilspots were needed before the rains. For sporulation (the white down on the underside of oilspots), darkness for ≥ 4 hours was needed while relative humidity was ≥98% at temperature ≥13^{0}C. Infection would have occurred in unsprayed foliage if the leaves and foliage were then wet for ≥2-3 hours at 15-20^{0}C; but the foliage was wet for about 10 times longer than needed! So, the conditions were extremely favourable for downy.

Bunch Rots

- **The same story** is true for the many different bunch rot organisms, including the fungi *Botrytis* and *Alternaria*, and the Sour Rot organisms, including a string of fungi eg *Aspergillus, Colletotrichum* and *Penicillium*, and various yeasts and bacteria. The long period of bunch wetness and the relatively warm conditions (15-22^{0}C) during the rain events were also prime for the bunch rots.

Typical Botrytis Bunch Rot on Riesling berries following the recent rains. Extended periods of leaf and bunch wetness at nearly ideal temperatures led to the growth of the buff-coloured fungal spores that have already spread the disease to adjacent berries. New Bunch Rot symptoms will soon appear unless the canopy dries out quickly. (Photo: PA Magarey)

Sour Rot, spreading on Riesling berries. With its diagnostic fermenting/sour smell, if the canopy remains humid and the berries moist, it will continue to expand, rapidly infecting other berries and completely rotting bunches.
(Photo: PA Magarey)

Powdery Mildew

- Powdery mildew infection is still being found inside canopies where spray coverage has not been adequate. This insidious disease has been spreading imperceptibly, stealthily increasing and then appearing rapidly! It has been progressing since early season.

Monitoring:

- **The level of Bunch Rots** in your vineyard will depend on the tightness of bunches and the thickness of the berry skin of the different varieties. Monitor in more detail in varieties nearest to harvest, with the highest sugar levels, the tightest bunches and thinnest skins. Varieties like Riesling are quite susceptible to bunch rot.
- **As the harvest approaches,** spend more time looking for Bunch Rots and Powdery Mildew in the denser canopies and in your vineyard blocks with a history of disease.
- **Also, check for Downy Mildew** oilspots in unsprayed foliage. New generation spots from the rains on Friday-Saturday 18-19th February are likely to appear on young leaves from the end of this week. Note: Berries are resistant to downy at this stage and, though older leaves and bunch stems are still susceptible, they have now gained a reasonable level of tolerance to downy.
- **Look for sporulated oilspots** (ie with the white down on the undersides) since these will give you a guide to the canopy where the new oilspots are most likely to appear where vines were unprotected by spray coverage.

Managing the Diseases

- Factors to consider in deciding if a spray is warranted/permitted at this time of the season include:
- **For downy:**
  - the level of oilspots already present in your vines. – Low levels of downy can be tolerated at this stage;
  - the risk of defoliation of old leaves that feed and ripen the crop. - If new generation oilspots develop too far, the disease pressure it creates can infect the older leaves and may lead to premature leaf fall;
  - the timing of your last spray prior to the rains. – Sprays applied within the seven days before the rain should have prevented significant spread of infection. If so, no additional spray will be needed now;
  - the resistance of your vine canopies. – For example, if much new (susceptible and unprotected) shoot growth has occurred since you last sprayed, it will probably show new oilspots by the weekend. A post-infection spray with Ridomil might be necessary to stop downy building up further. If needed and permitted, spray before Friday. 25th February.
  - the availability of Ridomil (ie metalaxyl related fungicides) and the cost of spraying. – Check the cost:benefit ratio of further sprays for downy in relation to the price offered for your grapes this season
- **For powdery:**
  - the level of disease present now. – Wineries often tolerate very little powdery in leaves and bunches; so,
  - the standards/requirements set by your winery becomes critical. – If necessary, check these closely to avoid rejection of fruit at harvest. If needed and if permitted by withholding periods, spray now at slow speeds with high rates of sulphur in high volumes of water. Don't delay.
- **For bunch rots:**
  - the ripeness of the variety, the closeness to harvest and the associated spray withholding periods, plus the tightness of bunches and tendency of skins to split. – These all determine the risk of bunch rot and the need to spray. Take great care with susceptible varieties in high-risk canopies. Spray if needed; but
  - consider the density/openness of the canopy to allow free flow of air to hasten drying after rain, and to allow penetration of sprays to both sides of the bunches. - Good spray coverage is essential for control of bunch rots but this is often extremely difficult at this time of the season;
  - Check with your winery for the (limited) array of fungicides permitted, depending on the time-to-harvest for each variety. If necessary, apply a suitable fungicide such as Rovral. Note, most wineries will accept a 7-day withhold period.

This message has been prepared by
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