

Skipping vineyard sprays in dry years

Q. My neighbour seems to spray a lot less frequently than I do and doesn't seem to have problems with disease. Given that the weather forecast for this season predicts dry conditions, can I cut some sprays from my schedule to save time and money and still manage my disease issues?

A. It makes sense that if the weather is going to be predominantly dry, those pathogens that rely on moisture for infection and spread should not be a big threat. However, a strategy that does not routinely protect vines from key diseases relies on a good understanding of those diseases and the conditions that suit infection so that action can be taken when necessary. To reduce the risk associated with such a strategy, more time needs to be spent monitoring in the vineyard than is required when following a more typical calendar spray program.

POWDERY MILDEW

Powdery mildew does not need wet weather for development and spread so it is not recommended that any powdery mildew preventative sprays are missed, especially early in the season. Sprays for this disease should begin shortly after budburst to slow disease spread. In the first 40 days of growth, it is recommended that at least three sprays are applied. If good spray coverage is achieved inside and outside the canopy by E-L stage 31 (berries pea-size, ~7 mm diameter) it may be possible to rely on monitoring for disease to determine if further sprays are needed. It is critical that the monitoring is done by someone with experience of powdery mildew symptoms as this disease can be difficult to spot in the early stages. Extra vigilance is needed when conditions are overcast and the focus should be on the dense parts of the canopy where the disease is most likely to be found (Figure 1).

DOWNY MILDEW

Downy mildew is a wet weather pathogen and in some situations may be a candidate for withholding sprays until required. The conditions suitable for primary and secondary infection events are quite specific and need to be well understood. As seven-day weather forecasts are provided by the Bureau of Meteorology through the MetEye service, warnings are commonly available. If the forecast indicates that an infection event is coming, options include applying a protective spray before the event or waiting until an infection event has been confirmed and then using a post-infection spray. This is a riskier strategy than routinely applying a protectant. It relies on being able to spray at short notice and have the protectant or eradicant chemicals applied over a few days. If it is not possible to get full spray coverage within four to five days after an infection event, this strategy should not be considered.

BOTRYTIS

The damage that Botrytis can cause is largely a function of weather, but other risk factors such as varietal susceptibility and likelihood of insect damage to bunches should also be taken into account when making spray decisions. If the history of a site indicates low Botrytis pressure, it may be feasible to hold off spraying for this disease if the season is predominantly a dry one. Scouting for symptoms of infection should take place preferentially in those varieties that have tight bunches and in parts of the vineyard with limited airflow and higher humidity. If Botrytis has been an issue in previously dry years, sprays at flowering and pre-bunch closure are most important.



Figure 1. Powdery mildew found inside the canopy on unprotected bunches

Cultural practices aimed at minimising damage to bunches and promoting airflow in the canopy can also reduce disease pressure.

WHAT ABOUT RESISTANCE?

It should be noted that except in the case of multi-site activity groups such as elemental sulfur, most chemical manufacturers do not recommend the use of their products against active disease infections but prefer them to be used preventatively. This is because the risk of resistance developing against an active constituent is much greater if large numbers of a new disease generation are exposed to a chemical. Resistance risk is also increased when doses that are too high or too low are applied to the population, so it is important to follow label directions regarding application rates.

MAKING THE MOST OF THE SPRAYS THAT ARE APPLIED

When reducing the number of spray passes across a season, it is critical that every spray is optimised. This means paying attention to spray timing and being careful to hit the correct target. The chemical treatment chosen and the technique used to apply it are also important. Factors such as the amount of water and air volume used to deliver the chemical, the spray direction and nozzle selection for droplet size can all influence whether a spray is effective or not. When deciding to leave certain sprays out of a program, it is worth considering that most of the cost of spraying is in fuel, labour and machinery. As such, if spraying for powdery mildew anyway, the cost of adding a protective downy mildew application may be relatively low and worthwhile for the peace of mind it brings.

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