GrowCare Barossa

Brought to you by the Barossa Grape & Wine Association

This message was posted **by 5pm on Friday 17 October 2014** and will be updated as necessary for best management of vineyard issues.

2014/15 V2 # 2

Frost Damage

Unfortunately Barossa vineyards have been frosted again - and on the same day as last season…

- Temperatures at the GrowCare weather stations (AWS) at height 1.5m at Ebenezer were, for example, on Tuesday 14 October 2014, <2°C for 1 hour; and on 15 October, <2°C for 7 hours and <1°C for 4 hours.
- On 16 October, the temperature dropped to <2°C for 3 hours.
- The lowest temperature at Ebenezer was -0.2°C – it was <0°C for about 20 minutes, just after 5am on 15 October.
- Lyndoch was nearly as cold and the AWS at Gomersal & Craneford were not quite so cold.
- By comparison, last season, at the same AWS at Ebenezer, the temperature on 15 October 2013, was also <1°C for 4 hours.
- So, this shows that the frost this week was effectively the same depth as last season and because of this, the management actions that worked last year are likely to apply for this season too.
- Like last season, some varieties and vineyards were more affected than others. For instance, vines with tall grass in the vine-row radiate heat more quickly than a fallowed vineyard and so were more frost-prone than a mowed vineyard or a cultivated patch.
- Vines at or near flowering are very susceptible to frost damage and many vines were at this stage and suffered accordingly.
- GrowCare monitors have reported patchy effects of the frost across the districts from Ebenezer to Lyndoch and up into Eden Valley.
- Reports to date suggest that the damage was patchy in vineyards too. Some vines were spared while others showed burnt bunches.

Management Options

- In the main, the best action is to observe.

For the Frost-damaged Foliage

- Like last season, the cost-effectiveness of any spring pruning treatment is highly doubtful. New shoot growth will appear in 10-14 days after the frost (ie in the next week or so) depending on the vigour of the vines. The roots will supply lots of energy to a reduced canopy and this will produce a surge in new growth from buds on surviving shoots and a new budburst from basal buds on shoots killed by the frost.

Shoots damaged in 2013 with upper leaves, shoot tips and most bunches killed by the frost in the Barossa. Buds from low on the shoots will produce new shoot growth (and a few fruitful buds) in about 10 days. Photo: Nicki Robins.

- On moderately damaged vines, the foliage looks seriously affected now but, like last season, by harvest it will probably prove less than thought. Experience has shown that where bunches do survive, their growth will compensate for the frosted bunches and often yield better than might be supposed at present.
- In these vines, there will also be some new shoots from basal buds and as a result, a delayed second crop. The two stages of maturity may interfere with harvest... but there is no economic treatment that can prevent this.
- To protect against or help to reduce the risk of a future frost, mow the mid-rows and if appropriate, keep the soil suitably wet to retain heat in the soil. With no significant rainfall on the horizon, at the BGWA's recent water management workshop, Dr Mike McCarthy advised growers to mow mid-rows low or spray out to save water in the vineyard soil profiles.
- **With frost fans:** check with your manufacturer that anti-freeze has been added to the diesel in your fan, as diesel freezes when the temperature reaches around 0°C.

Downy Mildew

- When monitoring for frost damage or Light Brown Apple Moth (LBAM), keep a lookout for other diseases – eg downy mildew oilspots. It is remotely possible some may be present following the rains of late September.

LBAM

- Now is the time to monitor for early-instars (young larvae) of LBAM in your vineyard. Levels are likely to be low, of the order of 1-2 grubs/patch.
- Keep an eye out for instars on young leaves, in shoot tips and in flower clusters – especially where LBAM was a problem last season.

LBAM caterpillar. Photo: Andrew Weeks and Nicole Pitman, 'Lightbrown Apple Moth', Fact Sheet No. 4., CCW, Berri, SA.

- The next generation of LBAM are generally expected to show up later – perhaps around EL 31, but control at that time (pea-size, around late November), is difficult to achieve. If in doubt, contact your winery rep for advice on action required, if any.

Monitoring for LBAM

LBAM lifecycle stage	How to monitor	When to monitor	Common threshold*
Egg masses	Inspect the upper side of expanded leaves on 100 shoots	Once first leaves have expanded and then through the season	>3 viable egg masses per 100 shoots
Larvae on shoots	Inspect shoot tips and leaves webbed together on 100 shoots	Throughout the season	>20 larvae on foliage per 100 shoots
Larvae in bunches	Inspect inflorescences and bunches on 100 shoots	From inflorescence development onwards	>10 larvae within bunches per 100 shoots

Source: Andrew Weeks and Nicole Pitman, 'Lightbrown Apple Moth', Fact Sheet No. 4, CCW, Berri, SA.

Powdery Mildew

- **Controls still needed.** The vine canopies are currently developing quickly (where not frosted) and this will continue with the warmer weather forecast for the next few days.
- As the canopy expands, the higher humidity within the denser, more shaded canopy creates conditions more favourable for powdery spores to develop and spread – and makes it harder for sprays to penetrate.
- In unprotected vineyards, the expanding leaves and developing flower clusters are increasingly being exposed to these spores. Further infection of the foliage by powdery at this time, provides inoculum (spores) that risk infecting the fruit at and after flowering.
- Well-applied sprays now will control infection in the foliage and prevent infection of the young berries when they develop after fruit-set.
- It is critical at this time of the season to keep infection within the canopy at a very low level. This provides the best foundation for the production of powdery mildew-free fruit at harvest.
- As the leaf tissue expands, existing spray coverage reduces in effectiveness – the spray droplets are separated as the tissue expands like dots on an expanding balloon. Take care to ensure best spray coverage when spraying for powdery mildew.
- Any registered fungicide is effective against powdery. Sulphur is cheaper than most equivalent products. Though it has no trans-laminar (across the leaf) coverage like the DMI's, it does have volatile activity which helps compensate for reduced spray coverage in dense canopies.
- If using sulphur, apply at the highest recommended rates (600g/100L) in a high volume of water to ensure the best spray coverage and maximum control of powdery mildew while the canopies are still accessible to spray cover.

Snails

- If snails are a problem, it may be worth considering an application of copper with sprays for powdery mildew (and downy if needed).
- While the weather remains dry and temperatures increase, snails are not going to cause problems but if you wish to apply snail baits, consult your winery rep first.

Earwigs

- Although earwigs have caused some problems this season, in the main the early-bursting varieties have now passed a critical stage for damage to occur.
- Sprays to control earwigs are not likely to be needed now in most vineyards.

This message has been prepared by the Barossa Grape &Wine Association in partnership with Magarey Plant Pathology and Western Electronic Design. It will be updated as soon as possible after the next significant rain event.
