

DEALING WITH DOWNY MILDEW

15 July 2011

HIGH of rainfall throughout the 2010/2011 growing season caused a sustained and devastating downy mildew outbreak in many Australian vineyards.

The Grape and Wine Research and Development Corporation and the Australian Wine Research Institute have reviewed the season via an online survey of grapegrowers, followed by a series of workshops across southeast Australia in June.

77% of surveyed growers describing downy mildew pressure in 2010/2011 as high to extreme.

To minimise the potential impact of downy mildew on the 2012 vintage, growers are urged to consider the learnings from the GWRDC Pest and Disease Debrief sessions.

Dr Peter Magarey, Magarey Plant Pathology, Loxton SA emphasised that spray timing was critical for good downy mildew control – pre-infection fungicide sprays should be done as close as possible before infection; post-infection sprays as soon as possible after infection.

Dr Trevor Wicks, SARDI, Adelaide, SA considered why fungicides didn't provide effective control last season. He suggested control failures could be attributed to fungicide choice, sometimes related to disease misdiagnosis; low dosage, including underdosing in large canopies; poor spray coverage and rapid growth/excessive foliage; variable rainfastness of fungicide applications; and spray timing, which was difficult for many reasons – including wet, windy, or flooded field conditions, mechanical breakdown, and difficulty obtaining contractors and fungicides.

David Braybrook, VitiSolutions, Victoria, considered the IPM aspects of the 2011 downy mildew outbreak. Acknowledging that weather conditions were extremely favourable for the disease, he highlighted that vine canopy, crop and windrow management were also important factors influencing humidity and leaf wetness – and therefore disease severity. Effective management to reduce disease severity included maximising air movement in the vineyard to minimise periods of wetness and humidity, including slashing windrows, trimming vines, pruning hard around posts; and manipulating crop load – to reduce bunch congestion and improve spray penetration.

The Disease

Wet, humid conditions are perfect for downy mildew, which ultimately attacks all green parts of the vine, arresting photosynthesis and preventing fruit from ripening.

It is best recognised by typical circular yellow oilspots on younger leaves; in favourable conditions, white down will develop on the underside of these spots. Oilspots can remain active for about 90 days, maintaining active infection and the ability to spread in suitable conditions for much of the season.

Young bunches are highly susceptible (until berries are at least pea size), so good control of primary infection is important to minimise the risk of explosive secondary infection, which can happen overnight.

After the recent outbreak, vineyard monitoring will be very important this season – looking very carefully within the canopy for telltale oilspots and bunch infection.

Spraying should then be undertaken on the basis of weather and disease risk forecasts – before downy mildew develops.

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Fungicides

Managing downy mildew with sprays requires selection of an appropriate fungicide, and correct application timing and technique.

Pre-infection fungicides (also known as protectants or cover sprays) can protect the vine by preventing infection. They should be applied as close as possible before infection begins, based on forecasts of potential downy mildew events.

Registered pre-infection sprays are likely to do a good job if sprayed correctly. However they only protect the surface on which they are sprayed; fast growth spreads the surface area, leaving unprotected gaps for downy spores. Protection may last only 3-5 days during the fast growth period.

Application must provide adequate chemical and adequate volume for canopy size, with maximum coverage of young bunches and lower leaf surfaces.

Post-infection fungicides (also known as eradicants or curatives) kill the disease inside infected tissue, if applied at the right time. They don't eradicate downy mildew from the vineyard, but have the capacity to kill off downy while it is developing, after infection has occurred. These fungicides are best applied as soon as possible after an infection event, to prevent oilspots developing.

More Information

Disease Diagnosis at GrowCare.com.au

Managing Downy Mildew Fact Sheet (March 2010); *Downy Mildew Questions & Answers* (Dec 2010) by Dr Peter Magarey; and *The GWRDC Pest & Disease Debrief sessions* at GWRDC.com.au



Downy mildew produces golden-yellow, oily spots on leaves, best seen from the tops of leaves. Monitor vines carefully this season and take action at the first signs of infection.

For More Information:

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