

SPRAY DRIFT AWARENESS

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Introduction

Grape vine growth and development is well under way with most varieties having completed flowering and fruit set, and are now entering the period of berry development and bunch closure. This is also a period where preventative agrochemicals are applied to provide residual activity for the prevention of diseases such as botrytis. The timing of these phenological events will vary with variety, region and climate.

At this time of year it is also important to keep an eye on potentially harmful pests such as Light Brown Apple Moth as they enter their second generation. Constant monitoring and use of agrochemicals for prevention and control of pests and disease come with strong reminders to agrochemical users to be aware of the risks associated with spray application such as spray drift.

The risks associated with the use of agrochemicals are a direct result of their chemical property. Every chemical is unique by the way in which it interacts with living things, and as such are not equally hazardous. For example, an insecticide can be highly toxic to insects yet much less toxic to mammals or aquatic life. Similarly, a fungicide or herbicide can strongly affect its target pest but might have little effect on people. It should be recognised that there are some pesticides that have very low toxicity to non-target organisms, and some may break down rapidly in the environment, and do not accumulate in animal bodies. Generally these are of lesser concern than those which are highly toxic to people and other organisms.

It is important to remember that not all pesticides are the same.

This emphasises it is critical for all agrochemical users to check product labels before spraying for warnings relating to off-target damage such as that to other crops, insects and aquatic life. The use of agrochemicals not only poses spray drift implications but some can leach into water tables, killing aquatic species.

There are a number of options (biological, cultural and chemical) that farmers/viticulturists can employ to control pests and diseases. In terms of chemical control for insects, there are less toxic products available and one should consider the timing of spraying so that it does not coincide when beneficial insects are foraging.

IT IS BEST PRACTICE TO NOTIFY YOUR NEIGHBOURS OF YOUR INTENTIONS TO SPRAY WELL BEFORE THE EVENT, AS WELL AS ASSESSING WEATHER CONDITIONS.

Fungicide Resistance

Resistance management is the responsibility of every agrochemical user. If the same fungicide is used repeatedly against a particular pest, then resistance to that fungicide may eventually occur. It is not necessarily the repeated use of a certified chemical that can lead to resistance, but also chemicals of the same activity group.

Resistance management is best practised by alternating fungicides of a different activity group which have different modes of action. CropLife Australia has developed a Fungicide Resistance Management Strategy whereby all fungicides have been classified by activity group, which appears as a number or letter and number code on the fungicide product label.

The AWRI website www.awri.com.au contains a full list of 'Agrochemicals registered for use in Australian viticulture', and their resistance management activity groups. The tables listed on page 2 are CropLife strategies for the major diseases of Botrytis, Downy Mildew and Powdery Mildew. CropLife changed the activity group codes for fungicides in 2009 to bring them

in line with international codes. None of the groupings have changed; they have simply been assigned a new code. The new activity codes and their corresponding old (pre 2009) activity group codes are provided until all product labels have been updated.



GREY MOULD (BOTRYTIS BUNCH ROT)

Fungicide Activity Group(s)	Resistance management strategy
<p>Group 1 = A (methyl benzimidazoles carbamates)</p> <p>Group 2 = B (dicarboximide)</p> <p>Group 9 = I (anilinopyrimidine), and combinations of Group 9 = I and Group 12 = L (phenylpyrroles)</p> <p>Group 17 = J (hydroxylanilide)</p> <p>Group 7 = G (carboxamide)</p> <p>Note: the new code is the number and the old code is the letter.</p>	<ol style="list-style-type: none"> 1 If three or fewer bunch rot sprays are applied in a season, use no more than one spray from the same fungicide group during the season, for any Group 1, 2 or 9 (including combinations with Group 12), Group 17 or 7 fungicides. 2 If four or more bunch rot sprays are applied in a season, use no more than two sprays from the same fungicide group during the season, for any Group 1, 2 or 9 (including combinations with Group 12), Group 17 or 7 fungicides 3 DO NOT apply more than two consecutive sprays from the same fungicide group, for any Group 1, 2 or 9 (including combinations with Group 12), or Group 17 fungicides, including from the end of one season to the start of the following season. 4 DO NOT apply two consecutive sprays of Group 7 fungicides, including from the end of one season to the start of the following season. 5 Late season fungicide treatments should be applied before Botrytis infection reaches unacceptably high levels in the vineyard.



DOWNY MILDEW

Fungicide Activity Group(s)	Resistance management strategy
<p>Group 4 = D (phenylamide)</p> <p>Group 11* = K (quinone outside inhibitor)</p> <p>Group 40 = X (dimethomorph)</p> <p>Note: the new code is the number and the old code is the letter.</p>	<ol style="list-style-type: none"> 1 Start disease control sprays when the vine shoots are approximately 20 cm long and continue spraying at intervals of 7-21 days using a protectant or non-phenylamide fungicide. 2 When conditions favour disease development, apply two consecutive sprays of a Group 4 product. DO NOT apply more than two consecutive sprays of a Group 4 product. DO NOT apply more than four sprays of a Group 4 product per season. 3 DO NOT apply more than three sprays per season of Group 11* fungicides. If two or three consecutive applications of Group 11* fungicides are used, then they must be followed by at least the same number of applications of fungicide(s) from a different group(s), before a Group 11* fungicide is used again, either in the current or following season. 4 DO NOT apply more than three consecutive sprays of a Group 40 fungicide, and no more than a total of six sprays per season.

*A restriction of two applications per season for powdery mildew control in grapevines is now recommended by the CropLife Fungicide Resistance Management Review Group. A similar recommendation for the application of strobilurin sprays for downy mildew control is under review by this group.

POWDERY MILDEW

Fungicide Activity Group(s)	Resistance management strategy
<p>Group 3 = C (DMI)</p> <p>Group 5 = E (amine)</p> <p>Group 11 = K (quinone outside inhibitor)</p> <p>Group 13 = M (quinoline)</p> <p>Note: the new code is the number and the old code is the letter.</p>	<ol style="list-style-type: none"> 1 DO NOT apply more than two consecutive sprays of a Group 3 fungicide. DO NOT apply more than three Group 3 sprays per season. DO NOT use Group 3 fungicides curatively. 2 DO NOT apply more than two consecutive sprays of a Group 5 fungicide. DO NOT apply more than three Group 5 sprays per season. 3 DO NOT apply more than two sprays per season of Group 11 fungicides. If two consecutive applications of Group 11 fungicides are used, then they must be alternated with a fungicide from a different activity group. 4 DO NOT apply more than two consecutive sprays of a Group 13 fungicide. DO NOT apply more than three Group 13 sprays per season.

registered chemicals

Governments around the world set 'maximum residue limits' (MRL's) as to the amount of fungicide, insecticide or herbicide legally allowed in food such as grapes and wine. These MRL's can vary internationally and domestically, and are set at levels which are unlikely to be exceeded if the agrochemical is used in accordance with the label. To ensure wine meets these requirements, restrictions on the use of certain chemicals (or avoidance of use) is necessary. Wineries will often apply restrictions on use (commonly referred to as 'with-holding periods' or WHP's) in addition to mandatory label instructions, specifically in relation to the number of days the chemical can be applied before harvest.

PRIOR TO SPRAYING

IT IS IMPORTANT TO CHECK WITH YOUR WINERY REGARDING THEIR CHEMICAL RECOMMENDATION. THIS MAY DIFFER FROM THE AWRI RECOMMENDATIONS DEPENDING ON WHETHER YOUR GRAPES ARE GOING TO BE USED FOR DOMESTIC OR EXPORT PRODUCTS.

Information relating to agrochemicals that can be used in vineyards can be found in the current 'Agrochemicals registered for use in Australian Viticulture' booklet; often referred to as the Dog Book. This is produced by the AWRI, and can be found online at:

www.awri.com.au/agrochemicals

Other relevant information can also be accessed on the AWRI website:

- Online search facility (search for products registered for use on targets not listed in the dog book, such as mealy bugs and earwigs)
- News and notices (latest information/ updates on newly registered and/or deregistered chemicals)
- Maximum residue limits
- Resistance management strategies
- Spray diary information and profroma

reporting chemical trespass incidents

A Chemical Trespass Incident refers to "events where agricultural or veterinary chemicals are used or disposed of in a manner that results in the chemical contaminating land, water, animals or plants outside the target area or causing harm to human health or the environment within or outside of the target area."

If you are subject to a Chemical Trespass Incident, report it immediately to Primary Industries Chemical Trespass Coordinator:

phone. 08 8226 0528

fax. 08 8226 1844

e. PIRSA.ChemicalTrespass@state.sa.gov.au

The following information must be provided when reporting a chemical trespass incident:

- Incident date
- Incident location
- Contact details of chemical user
- How the chemical was applied (plane, airblast sprayer)
- Weather conditions
- Chemical involved
- Effect from incident (health/environment)

chemical training and user awareness courses

Current ChemCert accreditation is required by:

1. The **Australian Pesticides and Veterinary Medicines Authority (APVMA)** (www.apvma.gov.au) for certain restricted chemicals.
2. **PIRSA** for people who use Schedule 7 chemicals.
3. The **SA Department of Health** for people who purchase Schedule 7 chemicals.

The following Registered Training Organisation's (RTO's) deliver ChemCert training in South Australia:

- Smith & Georg
phone. 08 8389 1856
- GrowSmart Training
phone. 08 8582 2270





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acknowledgements & references:

APVMA www.apvma.gov.au

AWRI www.awri.com.au

ChemCert Australia (SA) Incorporated
www.chemcertsa.com.au

Limestone Coast Chemcare Committee

PIRSA www.pir.sa.gov.au

ChemCert Accreditation – National Training
Resource. Third Edition (2009). ChemCert Australia.

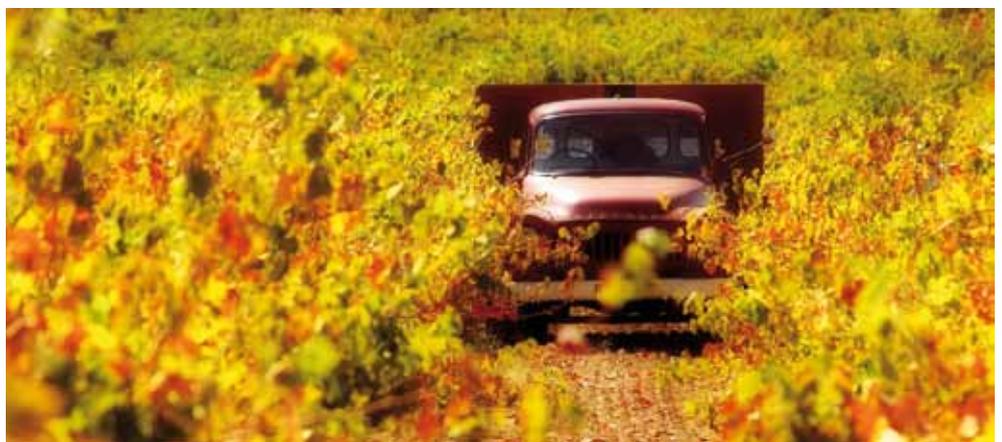
Ohmart C.P., Storm C.P. and Matthiasson S.K.
(2008). Lodi Winegrower's Workbook, 2nd Edition.
Lodi Winegrape Commission, Lodi, CA.

useful links

Chemical user and MRLs:
www.apvma.gov.au/chem_users.php

Chemical Trespass:
www.pir.sa.gov.au/_data/assets/pdf_file/0005/23981/chemtres.pdf

ChemCert Australia (SA) Inc:
www.chemcertsa.com.au



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