



Spray drift

Damage to grapevines caused by herbicides drifting onto vineyards from sprays conducted on nearby properties occurs occasionally in Australia. Queries about this issue, commonly known as ‘spray drift’, are received from time to time by the AWRI helpdesk. This column provides answers to some of the more common questions about this topic.



Effects of simulated 2,4-D drift on trial vines at Charles Sturt University. Picture courtesy of Gerhard Rossouw

I’m seeing some odd leaf symptoms on my grapevines and I think they have been subjected to off-target spray drift. What should I do?

Grapevines are very sensitive to some herbicides, even at low levels of exposure, but leaf distortion can result from many factors including nutrient deficiency/toxicity, trunk diseases, insect damage and viruses. If you see unusual symptoms on grapevines and are unsure of the cause, you can send pictures of the leaves and canopy to the AWRI helpdesk for assistance. If the symptoms are suspected to be from a chemical drift incident, it should be reported to the appropriate authority in your region, so they can investigate the extent of the damage, advise on the possible causes and take further action. Agricultural chemical users have a legal obligation to ensure that the chemicals they apply stay within the target area. It is an offence

if a spray results in injury to plants or stock outside the target area or causes contamination of agricultural produce.

Is there a national body to report a spray drift incident to?

Responsibility for addressing incidents of off-target spray drift lies with each state and territory government. The table below provides phone numbers for the relevant organisation in each state or territory. Further details are also provided on the Australian Pesticides and Veterinary Medicines Authority website, but if you are in any doubt, please contact the AWRI helpdesk for assistance.

Will I find out who is responsible for the drift?

It may be possible to identify where the spray came from and the applicator, but in some weather conditions droplets from chemical sprays can travel many

kilometres before landing, so identifying the source is not always possible.

If I think I have been affected by spray drift, should I test my leaves for agrochemical residue?

In circumstances where the spray drift was noticed at the time, and the applicator is known, it may be useful to test grape leaves for chemical residues to confirm that spray drift has occurred. In this case you are testing only for those herbicides that were used in the spray mix. In situations where the applicator and chemicals involved are not known, trying to identify the herbicide through grapevine tissue testing can be costly and is not recommended. Even if you have a strong suspicion of what has caused the damage, the effort spent on testing leaves during the growing season is better spent on testing grapes at harvest or testing the finished wine.

State or territory	Who to contact in case of spray drift
Australian Capital Territory	Environment Protection Authority – 132 281
New South Wales	Environment Protection Authority – 131 555
Queensland	Biosecurity Queensland – 132 523
South Australia	Biosecurity SA – 1300 799 684
Tasmania	AgVet Chemicals Program – 03 6777 2133
Victoria	Agriculture Victoria – 136 186
Western Australia	Department of Health – 08 9222 4222

Should I test the grapes or the wine?

To confirm the presence of an active constituent, testing of the final wine is more useful than testing the fruit. This is primarily because the fermentation process is known to affect chemical residues and once the wine is finished the product is largely homogenous.

If grape residue testing is required, a grape sample should be collected that is indicative of the whole vineyard, and not just the portion of the vineyard where symptoms were more visibly obvious. Drift across a block is unlikely to be uniform, and a sample taken just from the affected area will not give a true indication of the overall residue level in the fruit. In addition, as residue levels in fruit can change as the season progresses due to chemical degradation, movement within the vine and dilution as fruit expands, the sample should be taken as close to harvest as possible. The AWRI can assist in helping estimate the transfer of residues from grapes to wine if there is data available for the particular active constituent, but because herbicides are not applied to grapevines, this is not always the case.

If my vines have been affected by spray drift, will the grape buyer reject my fruit?

After the incident is reported to the relevant authority, that authority's assessment will help the grape buyer in deciding whether residue testing is required to confirm that the fruit is fit for purpose. It would be expected that each spray drift incident is assessed individually, and a decision taken based on the advice from the investigation and any residue testing results.

Will the vines survive?

Grapevines are known to recover

from herbicide drift and still produce ripe grapes, but the recovery depends on the age of the vine, the severity of the drift event and the herbicides involved. Young vines are more susceptible than established vines and sometimes do not recover after herbicide damage. Avoiding putting affected vines through water stress can help in their recovery.

Is research being done to better understand off-target herbicide damage?

An investigation into the impact on grapevines of four common herbicides began in spring 2017 at Charles Sturt University. The research will monitor and describe the development of leaf, shoot and bunch injuries in grapevines in response to exposure to four herbicides commonly used in broadacre weed control (2,4-D, MCPA, dicamba and glyphosate) as the season progresses towards grape maturity. The effects of the herbicides on grapevine canopy function, metabolic pathways, fruit composition, carbohydrate reserves and incidence of bud necrosis will be assessed. The study will promote understanding of the underlying physiological and metabolic implications of specific herbicide exposures on grapevines.

For further information about spray drift or any other technical matter, please contact the AWRI helpdesk on (08) 8313 6600 or email helpdesk@awri.com.au.



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