



Note Number: AG1216

Published: October 2005

Updated: September 2008

Off-Target Spray Drift: Uncontrolled, Unnecessary and Unacceptable.

Introduction

There have been great advances in sprayer nozzle, chemical, and adjuvant technology over the past 20 or so years, and modern sprayers bear little resemblance to those of years past.

Then and now

If you are as old as me, you'll remember the ads in the 70's and early 80's for the "Tiki" boom spray, where you got a bronze gear pump, a pressure regulator, a small boom, fittings, and hoses, but you had to supply your own 44 gallon drums and carryall to build the boom spray.

As I said, things have come a long way, to the point where sprayers fitted with satellite navigation systems and real-time displays literally paint a picture of the block and your travel across it as you spray. Fantastic!

Even without the satellite navigation, modern sprayers have accurate monitoring systems, and modern low-drift nozzles work to improve the way sprays are applied.

Canopy sprayers used in horticulture have changed markedly from the basic airblast sprayers of a few years ago. Modern sprayers used in horticulture provide many more options for adjustment, which in one sense potentially increases the chance of something going wrong, but in the hands of competent operators means that the operation of the sprayer can be accurately matched to the job.

With herbicide sprayers in horticulture, one thing that has not changed much, except for the Controlled Droplet Applicator (CDA) sprayers around, is how the chemical gets from the spray nozzle to the target. Many people think the pressure of the sprayer propels the droplets to the target, just like a hose spray when you water the garden, but this is not correct. The pressure the sprayer operates at is not high enough to propel the spray droplets to the target, because the droplets are by and large too small for pressure to have much of an effect on them.

Getting droplets to the target

So how do the herbicide droplets get to the target? The answer is – spray drift! But this spray drift is controlled, and in a more technical sense, the droplets are combed into the target weeds by the turbulence created by the passage of the tractor and boom sprayer over the ground. If this can be combined with a slight breeze this is all the better for ensuring the best possible likelihood of combing the spray droplets into the target quickly and efficiently.

The competency of sprayer operators has also improved in many cases too, and over 50,000 Victorian chemical users have participated in a farm chemical user training course since its inception in the late 80's.

Planning the spray job

When planning a spray job, the sprayer operator must check for susceptible plants, animals and/or land in the vicinity of the target, and put strategies in place to ensure spray does not leave the target area. For example, it may be necessary in some circumstances to leave an unsprayed buffer next to a susceptible crop to ensure off-target spray drift does not occur, and then come back and spray the buffer with a different breeze another day.

It is also important the sprayer operator keeps an eye on the conditions throughout the spraying operation, as it is not uncommon for conditions to change throughout the day, and conditions that may have been acceptable at the start may not be later.

Spray drift legislation

Since 1996, spray drift that causes injurious effect (i.e. damage) to plants or livestock outside the target area has been an offence in Victoria. Since that date, it has also been an offence to cause injurious effect to land outside the target area in circumstances where the spray drift may result in unacceptable chemical contamination of plants or stock grown on that land.

In 2001, further controls were placed over spray drift, making it an offence to undertake agricultural spraying which contaminates any agricultural produce derived from stock or plants outside the target area. These laws aim to protect agricultural produce and strengthen controls that ensure Victoria's reputation as a producer of clean, green agricultural produce is maintained.

Spray drift effects

Competent operators using well maintained, modern equipment, and who apply logical risk management strategies should have little problem controlling spray drift, and in ensuring that the only spray drift that occurs is the controlled form, which combs the spray into the target. What must be avoided is the uncontrolled, unnecessary, and unacceptable form of spray drift that drifts off-target and causes damage to neighbours' plants, stock or land, or which results in unacceptable chemical residues.

Off-target spray drift does not only relate to herbicides killing or harming susceptible plants outside the target area, more and more, the issue of unacceptable chemical residues caused by off-target spray drift is just as important. Residue issues are not just important for domestic markets, they are also important for export markets where the Maximum Residue Limits (MRLs) may be lower than those set for Australia, or in some cases, be non-existent.

Further References

For further information about spray application and spraydrift management contact:

- DPI Chemical Standards website - www.dpi.vic.gov.au/chemicalstandards

- DPI Chemical Standards Officers

North West

Alan Roberts (03) 5430 4416

Dave Rumbold (03) 5430 4806

North East

Steven Field (03) 5824 5532

Jane Rhodes (03) 5833 5234

South West & Port Phillip West

Jo Robinson (03) 5355 0522

Neil Harrison (03) 5336 6616

Gippsland & Port Phillip East

Michael Laity (03) 9785 0191

- Chemical manufacturers
- Chemical resellers and agronomists
- Sprayer and nozzle resellers

Acknowledgements

This Agnote was developed by Alan Roberts, October 2005.

It was reviewed by:

Alan Roberts, September 2007.

Alan Roberts, Farm Services Victoria, September 2008.

ISSN 1329-8062

Published and Authorised by: Department of Primary Industries
1 Spring Street
Melbourne, Victoria

This publication is copyright. No part may be reproduced by any process except in accordance with the provisions of the *Copyright Act 1968*.

This document was provided as a PDF document from the DPI website

For more information about DPI visit the website at www.dpi.vic.gov.au or call the Customer Service Centre on 136 186

The advice provided in this publication is intended as a source of information only. Always read the label before using any of the products mentioned. The State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication