Spray drift

Introduction to management policy and regulation
Background: why new policy in 2019?

Limitations of previous policy:

• lack of flexibility and ability to adopt Drift Reducing Technologies (DRTs)

• assessment based on worst case scenarios

• no incentive to adopt best practice

• deterrent to including some types of applications when registering products.
Background: timeline

APVMA’s previous approach for addressing the risk of spray drift was implemented March 2010.

Project to develop a new spray drift regulatory framework began in 2013.

Three rounds of consultation:

• September 2015–targeted to ground truth proposal
• December 2017
• November 2018.

Policy implemented 19 July 2019.
Where the policy applies

Spray drift risk assessment NOT required for:

- applications below the surface of soil or water
- nozzles are orientated directly downward and spray is released at a height below the top of the crop canopy
- home garden and domestic pest control use
- outdoor use when applied in a form other than a spray
- post-harvest treatment of agricultural produce
- preparing a poison bait for the control of vertebrate or invertebrate pests
- treatment of fertiliser prior to spreading
- use by single-nozzle application equipment
- use indoors.
Buffer zone principles

Need to know two things:

- how sensitive are the areas being protected to the product (Regulatory Acceptable Levels)
- what is the downwind spray deposition for the relevant application method (Deposition curve).
Sensitive areas

- natural aquatic areas
- vegetation areas
- livestock areas
- bystander areas
- pollinator areas.
Documents and files

- Spray Drift Risk Assessment Manual (SDRAM)
- Spray Drift Risk Assessment Tool (SDRAT)
- Spray Drift Management Tool (SDMT)
- Spray Drift Data Guideline (SDDG)
- Standard scenarios: AGDISP files for boom sprayer, fixed wing and helicopter
- Droplet Size Distributions (DSD)
- DSD converter.

Available to download from apvma.gov.au/node/10796
Overview: Stage 1

Spray Drift Risk Assessment Manual (SDRAM)

Information Packages

Chapter 3.
Regulatory Acceptable Levels (RAL)

Chapter 4.
Deposition Curves
- Standard
- Custom

Chapter 6.
Spray Drift Risk Assessment Tool (SDRAT)

Chapter 5.
Use Instructions

Chapter 7.
SDMT Excel version

SDMT Conditions

Permit

Product Label
SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at www.apvma.gov.au/spraydrift

**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.
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DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.
DO NOT apply by a **boom sprayer** unless the following requirements are met:

- spray droplets not smaller than a COARSE spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see ‘Mandatory buffer zones’ section of the following table titled ‘Buffer zones for boom sprayers’) are observed.

### Buffer zones for **boom sprayers**

<table>
<thead>
<tr>
<th>Application rate</th>
<th>Boom height above the target canopy</th>
<th>Bystander areas</th>
<th>Natural aquatic areas</th>
<th>Pollinator areas</th>
<th>Vegetation areas</th>
<th>Livestock areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to maximum label rate</td>
<td>0.5 m or lower</td>
<td>5 metres</td>
<td>25 metres</td>
<td>Not required</td>
<td>40 metres</td>
<td>Not required</td>
</tr>
<tr>
<td>1.0 m or lower</td>
<td>30 metres</td>
<td>65 metres</td>
<td>Not required</td>
<td>110 metres</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>2100 mL/ha or lower</td>
<td>0.5 m or lower</td>
<td>Not required</td>
<td>10 metres</td>
<td>Not required</td>
<td>30 metres</td>
<td>Not required</td>
</tr>
<tr>
<td>1.0 m or lower</td>
<td>20 metres</td>
<td>40 metres</td>
<td>Not required</td>
<td>65 metres</td>
<td>Not required</td>
<td></td>
</tr>
</tbody>
</table>
Label extract: vertical sprayers

• DO NOT apply by a vertical sprayer unless the following requirements are met:
  • spray is not directed above the target canopy
  • the outside of the sprayer is turned off when turning at the end of rows and when spraying the outer row on each side of the application site
  • for dilute water rates up to the maximum listed for each type of canopy, specified minimum distances between the application site and downwind sensitive areas (see ‘Mandatory buffer zones’ section of the following table titled ‘Buffer zones for boom sprayers’) are observed.
# Buffer zones for vertical sprayers

<table>
<thead>
<tr>
<th>Type of target canopy and dilute water rate</th>
<th>Bystander areas</th>
<th>Natural aquatic areas</th>
<th>Pollinator areas</th>
<th>Vegetation areas</th>
<th>Livestock areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 metres tall and smaller, maximum dilute water rate of 1000 L/ha</td>
<td>Not required</td>
<td>10 metres</td>
<td>10 metres</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>Taller than 2 metres (not fully foliated), maximum dilute water rate of 4000 L/ha</td>
<td>Not required</td>
<td>55 metres</td>
<td>40 metres</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>Taller than 2 metres (fully foliated), maximum dilute water rate of 4000 L/ha</td>
<td>Not required</td>
<td>45 metres</td>
<td>30 metres</td>
<td>Not required</td>
<td>Not required</td>
</tr>
</tbody>
</table>
DO NOT apply by a aircraft unless the following requirements are met:

• spray droplets not smaller than a COARSE spray droplet size category

• for maximum release height above the target canopy of 3 metres or 25 per cent of wingspan or 25 per cent of rotor diameter, whichever is the greatest, minimum distances between the application site and downwind sensitive areas (see ‘Mandatory buffer zones’ section of the following table titled ‘Buffer zones for boom sprayers’) are observed.
### Buffer zones for **aircraft**

<table>
<thead>
<tr>
<th>Type of aircraft</th>
<th>Bystander areas</th>
<th>Natural aquatic areas</th>
<th>Pollinator areas</th>
<th>Vegetation areas</th>
<th>Livestock areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed-wing</td>
<td>5 metres</td>
<td>35 metres</td>
<td>Not required</td>
<td>40 metres</td>
<td>Not required</td>
</tr>
<tr>
<td>Helicopter</td>
<td>30 metres</td>
<td>65 metres</td>
<td>Not required</td>
<td>110 metres</td>
<td>Not required</td>
</tr>
</tbody>
</table>
Main changes in new policy

- clearer guidelines on how regulatory acceptable levels and buffer distances are calculated in spray drift risk assessment manuals
- clearer and more consistent labelling instructions
- new buffer guidelines for bystander areas, pollinators, natural aquatic areas, vegetation areas and livestock areas
- use of the AgDISP model to determine standard downwind deposition curves for boom sprayers and aircraft
- use of European drift data for downwind deposition curves for vertical sprayers
- the development of a set of tools to generate buffer and label instructions.
Temperature Inversions

Label

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

Definitions (apvma.gov.au/node/51381)

‘Surface temperature inversions’ occur when air temperature increases with height from the ground surface, which is the opposite of what normally happens (ie the temperature profile is 'inverted'). This results in a layer of cool, still air being trapped below warmer air. In surface temperature inversion conditions airborne pesticides can concentrate near the surface and unpredictable winds can move droplets away from the target area. The direction and distance which the droplets will move becomes unpredictable.

A surface temperature inversion is likely to be present if: …

When application occurs in an area not covered by recognised inversion monitoring weather stations, all the surface temperature inversion conditions are regarded as hazardous and the above definition will always apply.
Overview: Stage 1

Spray Drift Risk Assessment Manual (SDRAM)

General information and overview – Chapter 1 and 2.

Chapter 3.
Regulatory Acceptable Levels (RAL)

Chapter 4.
Deposition Curves
• Standard
• Custom

Chapter 5.
Use Instructions

Chapter 6.
Spray Drift Risk Assessment Tool (SDRAT)

Chapter 7.
SDMT Excel version

SDMT Conditions

Permit

Information Packages

Applicants

APVMA

Product Label
Overview: Stage 2

Spray Drift Risk Assessment Manual (SDRAM)

General information and overview – Chapter 1 and 2.

Stage 1
- Regulatory Acceptable Levels (RAL)
  - Chapter 3.
- Deposition Curves
  - Standard
  - Custom
  - Chapter 4.
- Spray Drift Risk Assessment Tool (SDRAT)
  - Chapter 6.
- Use Instructions
  - Chapter 5.
- Product Label

Stage 2
- User Specific details
- Spray Drift Management Tool (SDMT) Web version
- SDMT Conditions

Information Packages
Applicants
APVMA
Applicators
Conclusions

• advantages of the proposed framework
• scientifically justifiable deposit curves
• clearer guidelines on RALs used to establish buffer zones
• simplified and consistent label statements
• quicker assessment by APVMA through use of SDRAT
• increased flexibility for end users (SDMT)
• encourages drift reducing technology (DRT).
Chemical Review
Chemical Review at the APVMA

1: Nomination
2: Prioritisation
   - apvma.gov.au/node/10851
3: Scoping and work plan
4: Notice of reconsideration
   - information can be required from stakeholders
5: Assessment
   - safety, trade, efficacy and labelling criteria
6: Draft regulatory measure
7: Consultation
   - statutory three month period for public submissions related to draft regulatory measure
8: Regulatory decision
9: Implementation.
APVMA began reconsideration of 2,4-D in 2003

- concerns over toxicological, occupational health and safety and environmental issues.

Part 1: environmental risk assessment of High Volatile Ester (HVE) forms of 2,4-D

- 2,4-D HVE active constituents, products and labels cancelled on 21 August 2013—unacceptable environmental risks (WA permits).

Part 2: OHS, toxicological and environmental risk assessments of all 2,4-D forms not in part 1.

- proposed decisions published 24 October 2019.
Proposed decisions of the 2,4-D Chemical Review

• vary and affirm 2,4-D actives, products and labels
• impose a new condition for active constituent approval limiting Dioxin (or Dioxin equivalent) impurities to less than one part per billion
• require updated safety directions and first aid instructions
• impose new timing and application restrictions to protect the environment from runoff in certain circumstances
  • pre-emergence peanuts, pastures, sugarcane, turf and dry-land cropping.
Proposed decisions of the 2,4-D Chemical Review

• impose new spray drift restraints to protect sensitive crops and native vegetation, and aquatic areas
  • mandatory no-spray buffer zones and spray droplets Very Coarse or larger
• public consultation is open until 31 January 2020
  • apvma.gov.au/node/56521
• suspension and permits issued 1 October 2019 continue to apply until the final decision is published.
Proposed cancellation of Group 22b home garden products

- Group 22b products contain 80 g 2,4-D/L as the DMA/DEA salt + 336 g/L mecoprop + 40 g/L dicamba for Home Garden use

- combination of active constituents requires Personal Protective Equipment unsuitable for home garden (non-professional) users.
2,4-D HVE formulations

- 2006—proposed cancellation of 2,4-D HVE, use allowed under permit
- 2013—cancelled selected active constituent approvals, product registrations and label approvals
- currently two products are approved for use in WA under permit and subject to the states Agriculture and Related Resources Protection (Spraying Restrictions) Regulations 1979.
Compliance and Monitoring
National Registration Scheme

Point of Sale

APVMA
- Registration and Permits
- Chemical Review
- Manufacturing Licensing
- Compliance (supply of products)

Australian Government Legislation

STATES & TERRITORIES
- Control of Use
- Record keeping
- Licensing and training
- Compliance (use of products)

State Government Legislation *plus mirror legislation*

Intergovernmental agreement
APVMA Annual Compliance Plan

APVMA 2019–20 Compliance Plan

Partnering with international, federal and state regulators to deter and detect non-compliance in the agvet chemical sector.

Our strategy is to enforce the agvet legislation to achieve regulatory outcomes.

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**Education**

1. Information Campaigns
   - Complying with APVMA issued notices and directions and providing correct information.

2. Manufacturer, wholesale, and toll manufacture obligations and responsibilities.

3. Information for users of pool chemicals, and how to ensure your supplier is compliant.

4. Education on listed, reserved, and excluded products.

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**Engagement & Monitoring**

1. Participation in international initiatives, e.g. Europol Operation Silver Axe and Operation Pangaea.

2. Engagement with industry, the regulated community, peak bodies and stakeholders.

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**Enforcement**

1. Enforcing the Legislation
   - The APVMA is more likely to take enforcement action in cases of:
     - Serious or repeated non-compliance
     - Conduct posing or resulting in serious risk to the health or safety of humans, animals, or the environment.

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**SCIENCE**

**RISK**

**LEGISLATION**

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1. Misleading information
   - The APVMA will take enforcement action where evidence exists of:
     - Failure to comply with an APVMA issued notice or direction
     - False or misleading information being provided to the APVMA.

2. Fit and proper person
   - Audits of a selection of holders of permits and manufacturing licences to ensure sustainability.
Compliance and Monitoring

APVMA does:

- monitor labelling
- educate and engage
- test formulations
- audit records and manufacturing
- recall products
- monitor import and export
- take enforcement action.
Compliance and Monitoring (cont)

States and Territories do:

- investigate spray drift.

You can:

- report adverse experiences
- retain samples
- have your say.
How can you help?

Report adverse experiences

- Email: aerp@apvma.gov.au

Report suspected non-compliance

- Email: compliance@apvma.gov.au