

Safe & Efficient Use of Farm Chemicals



A Companion Guide to DPIWE Code of Practice for Groundspraying

*Edited by A C Bishop
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GENERAL ENQUIRIES

DPIWE 1300 368 550

You can call any Department of Primary Industries, Water and Environment Office from anywhere in the State for the cost of a local call.

Other Contacts

Workplace Standards Tasmania 1300 366 322

St John Ambulance 71 0333

Australian Red Cross 1300 367 428

EMERGENCY ONLY

(Police, Fire, Ambulance)

Dial 000 (Landline Telephone)

Dial 112 (Mobile Telephone)

CONTENTS

1. INTRODUCTION	5
2. BEFORE STARTING SPRAYING	6
3. STORAGE, MIXING AND DISPOSAL OF AGRICULTURAL CHEMICALS	10
4. SPRAY EQUIPMENT & PRACTICE.....	13
5. RECORDS.....	15
6. SAFETY.....	16
7. EMERGENCY SITUATIONS.....	19
8. TRANSPORT	23
DISCLAIMER.....	25

1. INTRODUCTION

The purpose of this booklet is to provide information for the safe effective application of agricultural chemicals for growers, contractors, and their employees. It highlights the user's responsibility to ensure that spray application and agricultural chemicals do not move beyond the target area, ensuring that high quality clean food is produced in Tasmania. This guide has been produced by a working group representing the Tasmanian Farmers and Graziers Association (TFGA), Tasmanian Agricultural Productivity Group (TAPG), Department of Primary Industries, Water and Environment (DPIWE) and the Agricultural Ground Sprayers Associations of Tasmania (AGSAT). Based on the knowledge available at time of publication, this information may need to be varied in the light of new knowledge in the future. Chemical users need to be aware of, and comply with, legislation such as:

- The Agricultural and Veterinary Chemicals (Control of Use) Act 1995
- The Dangerous Goods Act 1998
- The Environmental Management and Pollution Control Act 1994
- The Poisons Act 1971
- The Workplace Health and Safety Act 1995

This booklet is a companion publication to the Agricultural, Silvicultural and Veterinary Chemicals Council (ASCHEM) Code of Practice for Ground Spraying (issue date February 2001) and the information contained within this booklet should be used in conjunction with the Code. It is advisable that any person applying agricultural sprays should obtain a copy of the Code and familiarise themselves with it.

2. BEFORE STARTING SPRAYING

First, establish if the problem is caused by a pest. Poor nutrition, waterlogging, etc could produce similar symptoms. The problem could be caused by a combination of factors. You need to identify the weed, insect, fungus, parasite or other pest, and determine if it is present at a level which is likely to cause economic damage. Commercial diagnostic services can be used to assist in the identification process.

Consider all possible control methods:

- mechanical eg ploughing, hoeing, inter-row weeding
- cultural eg hygiene strategies, crop rotations
- biological eg predator release
- chemical eg herbicides, fungicides, insecticides

Ideally, chemical controls should only be used if other options are unavailable. If a chemical control is to be used, choose the agricultural chemical that will do the job and be least toxic to the operator, beneficial insects including bees, and the environment.

The agricultural chemical must be registered for the intended use, or be permitted for any intended off-label use, and should not be prohibited for the intended use or application method.

Off-label uses include using chemical products:

- in crops or against pests, diseases or weeds not listed on labels
- at rates or frequency of application different to those on labels
- by an application method not specified or specifically prohibited on labels
- applying a different withholding period to that specified on the label

Permits for off-label use can be obtained from the National Registration Authority for Agricultural and Veterinary Chemicals (www.nra.gov.au).

Use of chemicals contrary to label or permit instructions could result in unacceptable health risks (unacceptable residues), environmental problems, crop damage or rejection of the crop by customers. The chemical manufacturer's warranty is only valid if all the label instructions are followed.

Label instructions must be strictly followed or the user may be liable for damages or breach of law.

Before some specific agricultural chemical products can be used, permits for their use are required eg the herbicide 2,4-D may not be used from 15th September to 15th April without an Agricultural Spraying Permit from the Registrar of Chemical Products. There is usually advice on labels if specific restrictions apply to the use of chemical products.

2.1 Training and accreditation

It is desirable that anyone who uses agricultural chemicals should undertake a recognised chemical application course eg ChemCert Accreditation Course. Persons or businesses involved in contract spraying for a fee or reward must hold a Commercial Operators Licence. Anyone who applies chemical products for a licensed Commercial Operator must have a Certificate of Competency that is relevant to the type of work they perform. Further details can be obtained from the DPIWE Chemical Management Unit (1300 368 550).

It is the employer's responsibility to ensure the operator has an adequate understanding of :

- the pest
- the equipment
- the application method
- all safety information on the label

Further information can be obtained from the Material Safety Data Sheets (MSDS) for each chemical. These are available from the manufacturer or reseller. Where an employee is applying chemicals, an MSDS must be available on request. Visit www.msds.com.au for more details on MSD sheets.

2.2 The agricultural chemical product label

Read the whole label before using a chemical product including:

- safety directions and first aid instructions
- restraints on use
- withholding periods
- crops and situations that the chemical may be used on
- pests (insects, diseases, weeds, etc) which the chemical is registered to control
- application rates
- storage and disposal instructions
- method of application
- specific warnings relating to the protection of crops, livestock, the environment, etc
- manufacture and use by dates

DO NOT use the product if it is unlabelled or if there is any doubt as to the identity of the chemical. If the label is damaged or obscured get a new label from the reseller or company representative.

2.3 Spray drift control - check conditions

It is the users responsibility to ensure that the chemical stays in the target area. The user has a legal obligation to avoid causing an “adverse effect” through spray drift

Extra caution should be shown:

- when there is an inversion layer in the atmosphere
- in windy conditions
- when conditions are hot and dry
- in very still conditions

DO NOT apply chemicals when there is a possibility of off-target drift and spraying is close to or up wind of sensitive areas such as:

- schools
- water supplies
- urban areas
- sensitive crops
- beehives

Shelter belts or buffer zones between the target and sensitive areas are desirable.

2.4 Notification

Notifying directly adjoining neighbours will assist in avoiding misunderstandings. It is desirable to notify neighbours so they can move bees, turn-off water tanks, or take other action as deemed appropriate.

3. STORAGE, MIXING AND DISPOSAL OF AGRICULTURAL CHEMICALS

3.1 Storage

Storage must comply with the requirements of the *Dangerous Goods Act 1998* and the *Dangerous Goods Regulations 1998*. The regulations detail the dangerous goods licensing exemption limits. The amount of a chemical that can be held in storage without licence (minor storage) will depend on its classification. The *Workplace Health and Safety Regulations 1998* require that a register of hazardous substances must be kept and maintained at the storage area and that it must be readily available to any employee who may be exposed to a hazardous substance.

Further information on chemical storage is included in the Safety Bulletin 30 "Chemical Safety in the Rural Industry" available from Workplace Standards Tasmania (Telephone 1300 366 322) or from Workplace Standards Tasmania web site (www.wsa.tas.gov.au).

3.2 Mixing

Read and follow the instructions on the product label.

Mixing should be carried out in a well-ventilated area with adequate lighting. The area should be tidy so that it does not provide any hazards that may result in slipping or tripping.

There should be a convenient personal wash down facility on the mixing site and a ready supply of clean water for personal washing on the spray unit or otherwise constantly available.

Use appropriate safety equipment and protective clothing to the standard shown on the label.

Agricultural chemical products must not be decanted into another container.

Steps should be taken to reduce the risk of chemical spills and contamination of waterways by:

- Not mixing within 50 metres of a waterway and avoiding pumping directly from the waterway to the spray tank. Use a separate tank.
- Avoiding overflow of spray tank.
- When immersing a water pipe into the spray tank, ensure it is fitted with a non-return valve.
- Triple rinse empty containers and drain contents into the spray tank.

3.3 Disposal of empty containers

Follow the label instructions for disposal of chemical containers.

All containers should be emptied, triple rinsed or power rinsed and punctured before disposal. Disposal methods in order of preference are:

- If the container is recyclable, return to reseller.
- Deliver the container to your local Council's drumMUSTER collection site or other commercially acceptable container disposal program.
- Dispose of at an approved municipal tip (contact your local Council or DPIWE).

3.4 Disposal of rinsings and washdown water

Rinse and wash down water should not be allowed to drain into ground water, storm drains or water supplies. For more details, see Clause 12 of ASCHEM Code of Practice for Ground Spraying.

3.5 Disposal of concentrate (undiluted) chemicals

Concentrated chemicals should be used for their intended purpose and should not be overstocked so as to avoid old, unwanted and possibly de-registered product in the future.

Concentrated chemicals should never be disposed of on-farm and should only be disposed of in a manner that is acceptable to DPIWE such as the Chemcollect

Program (a free, one off only collection program for unwanted farm chemicals), or the ChemClear Program which will be introduced after Chemcollect has been completed.

For more information on disposal contact: DPIWE 1300 368 550 or (03) 6233 6518, also visit the DrumMuster web site (www.drummuster.com.au) or the Chemcollect web site

(www.dpiwe.tas.gov.au/env/chemcollect.html)

4. SPRAY EQUIPMENT & PRACTICE

4.1 Maintenance

Spray equipment should be maintained to the manufacturer's specification. Before spraying, checks should be carried out on:

- nozzles for wear, damage, blockage and correct type
- hoses for cracking, kinks and leaks
- filters for blockage

4.2 Calibration

The sprayer should be calibrated regularly to ensure correct application rate. The calibrations should ensure that the correct amount of chemical is applied for the type and arrangement of equipment and travel speed. Marking should be carried out to avoid missed strips and double doses.

For Information on methods of calibration refer DPIWE (1300 368 550) or visit the ChemCert web site (<http://farrer.riv.csu.edu.au/chemcert/>).

4.3 Spray drift

Check conditions during spraying, stop if adverse conditions arise (see Section 2.3).

4.4 Cleaning of sprayer after use

Follow label instructions. If in doubt contact the reseller or the company.

Decontamination procedures should be followed where recommended.

Where no other directions are given it is desirable to:

- Flush clean water through the equipment with nozzles removed so dirt is rinsed out of lines. Follow advice given in section 3.4 and Clause 12 of ASCHEM Code of Practice for Ground Spraying on the disposal of rinsings and washdown water.
- Regularly clean exterior of spray equipment.

- Remove nozzles and filters, wash and replace.
- Never leave spray material in spray unit.

5. RECORDS

A spray diary must be kept of:

- spraying (paddock identification, weather conditions, chemical used, crop growth stage, pest, operator, safety equipment)
- calibration (date, rate, settings, calibrator)
- maintenance (date, replacement of nozzles, etc)
- accidents (fire, spills, poisoning, etc) as required by the workplace health and safety act 1995

For any enterprise that is participating in any type of quality assurance (QA) or accreditation scheme such records are essential.

6. SAFETY

Protective clothing should always be worn as recommended on the label when mixing and applying chemicals. It is the employer's responsibility to supply protective clothing and ensure that it is used and maintained.

When use of a respirator is specified, its use and manufacture should comply with Australian Standards 1715-1994 and 1716-1994.

When preparing and mixing spray, protective clothing should be worn. Include at least:

- washable or disposable overalls
- rubber or pvc gloves
- pvc apron
- washable hat
- rubber boots
- face shield

When applying agricultural chemicals, protective clothing should be worn. Include at least:

- washable hats
- rubber boots
- washable or disposable overalls

Remember:

- Clothing and equipment should be checked and cleaned after use every day.
- Damaged safety equipment should be replaced immediately.
- Washing should be carried out separately from normal household washing.

- When any clothing is contaminated by concentrate it must be disposed of safely.

6.1 Safe practices

- NEVER eat, drink or smoke when using agricultural chemicals.
- NEVER touch a contaminated item to face or mouth and never rub eyes while wearing contaminated gloves.
- NEVER blow through hoses or nozzles to clear them and never suck on a hose to start a siphon.
- NEVER store agricultural chemicals in unlabelled containers or transfer to any non-original containers such as soft drink bottles.
- ALWAYS wash hands and skin exposed to chemicals immediately. At least 15 litres of clean water, soap and a towel should be carried whenever spraying.

Use equipment that minimises contact with chemical such as metering pumps, self cleaning filters, chemical inductors and electronic spray controllers.

Spraying should be avoided when a person is showing symptoms of heat stress, headaches, colds, bronchitis or gastric upsets. These may mask the early signs of poisoning. Heat stress can increase risk of poisoning.

If symptoms of poisoning occur, spraying should cease immediately and medical advice be sought.

For the safe use of tractor cabs:

- Contaminated clothing or equipment should not be taken into the cabin.
- Filters should be changed regularly.
- Tractor cabs with no appropriate pesticide filters do not provide protection from chemical vapour. Personal protective equipment should be worn as advised by label.

Spray should be kept down wind of the operator. If it is not possible, a respirator and hood should be worn in addition to normal protective clothing.

6.2 Preventing accidents to children

- NEVER allow children to be present when spraying or mixing chemicals.
- NEVER keep chemicals in containers similar to food containers.
- ALWAYS keep agricultural chemicals in locked storage and out of reach of children.

6.3 Environment

Take care to avoid spraying on or near environmentally sensitive areas such as:

- native flora and fauna
- waterways
- non target plants and animals
- browsing and foraging bees

Check the product label for any appropriate warnings.

7. EMERGENCY SITUATIONS

7.1 Leakages and spills

Standard precautions:

An emergency plan should be prepared to deal with a spill. Emergency Equipment should be available including:

- protective clothing
- soil, sand, vermiculite or commercially available chemical absorbent material
- equipment and material; recommended on the label

Immediate actions:

- If it is a major spill, call the fire brigade.
- Keep bystanders upwind and well away from spill.
- Do not hose down as this will spread the contamination.

Clean up operation:

- Wear full protective clothing including rubber boots, gloves, goggles and respirator.
- Minimise further leakage by altering the position of leaking container or decanting to another container. Return uncontaminated solid chemical to its container.
- Use sand, soil, vermiculite or chemical absorbent material to form a dam around the spill area and thus prevent the chemical from spreading. Use vermiculite, sand or sawdust to soak up the chemical from small spills
- Spread hydrated lime over the spill area and allow to remain in contact for at least one hour.

- Absorb excess liquid with sand, soil, vermiculite or chemical absorbent material. Place all contaminated material in a clearly labelled container and dispose of as specified by DPIWE.

7.2 Fire

Standard precautions:

- An emergency plan should be prepared.
- Practice a fire drill.
- Ensure appropriate warning signs and placarding are in place on chemical stores.
- Store chemicals separately from fuel.
- Keep a dry powder fire extinguisher at the chemical store.
- Obtain advice from your local fire brigade.

When a chemical fire starts:

- Raise the alarm.
- Obtain expert help.
- Move all people upwind.
- Self-contained breathing equipment is essential to fight the fire.
- Attack the fire from up wind or right angles. Never approach the fire from down wind.

To keep toxic run-off to a minimum avoid excessive volumes of water, when fire has been extinguished, treat as a spill.

For further information on leakages, spills and fire contact (in order of priority):

- your local fire brigade
- DPIWE Environment Division (6233 6518)
- chemical label & appropriate chemical manufacturer

7.3 Poisons

<p>IN CASE OF CHEMICAL POISONING RING THE POISONS INFORMATION</p> <p>CENTRE ON:</p> <p>131126</p>

The Poisons Information Centre is a 24 hour, 7 days-a-week service.

To help the Poisons Information Centre assess the situation, establish the:

- name of the chemical or product, if possible take container to the phone
- age of patient
- type of contact (swallowed, inhaled and skin)
- quantity and strength of substance
- time since first contact
- patient's current condition
- treatment already given

Follow first aid instructions on the chemical label and call a doctor.

Remember to do the following:

- The cause of contamination should be removed from the patient by washing and removing contaminated clothing.
- If affected by chemical vapour, move patient to well ventilated area.
- Those helping the victim should avoid contamination.
- Keep a fully stocked First Aid kit available at all times. Include any items that the chemical label recommends in the case of accidents such as an eye glass, atropine tablets and ipecac syrup.
- Keep a supply of fresh water available to wash contaminated skin or eyes. Appropriate First aid kits can be assembled and supplied by St John Ambulance (6271 0333), the Australian Red Cross (6235 6038) or other similar suppliers.

8. TRANSPORT

When transporting chemicals, the following guidelines should apply:

- They must not be transported in the passenger compartment of a vehicle.
- They should not be loaded with food products intended for human or stock consumption.
- The load must be secured.
- Check that bungs and lids are fitted correctly to avoid spillage.

Further information on specific transport requirements can be obtained from the Material Safety Data Sheet (MSDS) for the individual chemical product.

Please note there are licensing requirements by DPIWE if a person is transporting waste chemicals for fee or reward. Contact the Environment Division on 6233 6518 for more details.

9. FURTHER READING & REFERENCES

DPIWE (2001) Code of Practice for Ground Spraying (www.dpiwe.tas.gov.au).

National Chemical User Training Program Handbook, TRITB, P-21. 1995.

Code of Good practice for Agricultural Chemical Spray Application, Agriculture Victoria 1994.

Agrichemical Users Code of Practice Growsafe: New Zealand Agrichemical Education Trust 1991.

Safe Handling of Organochlorine Pesticides on Farms: Brochure which can be obtained from Environment Australia or the Environment Division of DPIWE.

DISCLAIMER

The information in this publication is offered by the Department of Primary Industries, Water and Environment (DPIWE). Whilst all due care has been taken in compiling the information, DPIWE, its officers and employees, and others associated with the compilation of this information take no responsibility for any person relying on the information and disclaims all liability for any errors or omissions in the publications.

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