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## **Code of practice**

For the use of agricultural and  
veterinary chemicals in  
Western Australia

February 2005

Department of Agriculture Western Australia,  
3 Baron-Hay Court, South Perth WA 6151

**3<sup>rd</sup> Edition**



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The Code of Practice has been endorsed by the following organisations:

- The Western Australian Farmers Federation (Inc)
- The Pastoralists and Graziers Association of Western Australia (Inc)
- The Agricultural Crop Sprayers Association of WA (Inc)
- ChemCert WA (Inc)

## Feedback

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## Code of practice

For the use of agricultural and veterinary  
chemicals in Western Australia

# Foreword

Agricultural and veterinary chemicals are a critically important input to modern farming systems. There is, however an increasing responsibility on the spray operator and his supervisor to use them with utmost safety. An effective way of providing the “rules” of safe chemical use is through a Code of Practice, the concept of which arose because of the increase in new and emerging agricultural industries and their impact on traditional uses of agricultural chemicals.

The Third Edition of the Code of Practice is a Department of Agriculture publication. It has been developed for all agricultural and other industries where chemicals are used.

It is the result of a number of comments and suggestions for improvement received by the author since the Code was first released in October 2001. It is not markedly different to previous editions, however it contains some updating of the legislation in Section 1.3. The Code of Practice continues to complement the ChemCert and other training courses in safe chemical use, which many growers have completed.

This publication is a valuable and practical information resource, which has been well received by growers and other chemical users. I believe it continues to make a significant contribution to safe chemical use and I commend it to all users of agricultural and veterinary chemicals.



Ian Longson  
Director General  
DEPARTMENT OF AGRICULTURE

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## 1. Introduction

Agricultural and Veterinary chemicals are valuable management tools which, when used responsibly, contribute significantly to the production of safe, high quality food and fibre in Western Australia. However, their misuse can have adverse effects on people, animals, crops and the environment, and can also lead to trade problems with our overseas customers.

This Code of Practice provides practical guidance for the safe, responsible and effective use of agricultural and veterinary chemicals. If the provisions of this Code are followed by every agricultural and veterinary chemical user, then community health, occupational health, environmental, residue and drift problems will be minimised.

The Code does not cover the use of Prescription Animal Remedies, or fertilisers.

### 1.1 Objective

The objective of the Code of Practice is to provide practical guidance for the safe and responsible use of agricultural and veterinary chemicals.

### 1.2 Scope

The Code of Practice is aimed at all users of chemicals in agricultural and veterinary industries. While agricultural use is the primary focus of the Code, it can also be the basis for safe and responsible chemical use by the wider community, as it covers the occupational and environmental health issues involved in chemical use.

Most chemical users on farms will find that compliance with the Code will mean that there is less chance of their actions causing drift damage to a neighbour, or conversely, of their property being damaged by drift from a neighbour's use of chemicals. However, there will be growers whose neighbour's particularly sensitive enterprises are at greater risk of severe damage from spray drift. These growers should explore the possibility of developing a more formal agreement with their neighbours to further reduce the risk of damage.

### 1.3 Relevant legislation and standards

There are Commonwealth and State laws that provide controls over various aspects of agricultural and veterinary chemical use. Chemical users should be familiar with them, and comply with their provisions.



Those provisions of the Code which are enforceable under existing Commonwealth or State law, are indicated in this document by the surrounding 'tinted box'. The specific legislation is indicated by the number in brackets (Act-).

It is important to remember that legislative requirements always override the provisions of a Code of Practice, as a Code is a voluntary document. Compliance with a Code of Practice cannot be enforced by law, except where the Code has been incorporated into legislation by reference. In addition, your common law duty of care will also take precedence.

The Acts and Regulations described below are currently in force. However, users of this Code must be aware that these and other related pieces of legislation may change in the future. Future editions of the Code of Practice will reflect any legislative changes that occur.

Some of the Code's provisions are already legal requirements overseas, particularly in Europe and the United States of America. Therefore, any or all of the provisions of this Code may be included in Australian legislation in the future, and therefore will be enforceable.

## Commonwealth Legislation

### *Agricultural and Veterinary Chemicals Code Act 1994 (Act 1)*

This Act is administered by the Australian Pesticides and Veterinary Medicines Authority (APVMA) in Canberra, and controls the import, manufacture, registration, packaging, labelling, distribution and retail sale of agricultural and veterinary chemicals in Australia.

It does not have powers to control the use of agricultural and veterinary chemicals, which is covered by State legislation as described below.

## State Legislation

### *Administered by the Department of Agriculture*

#### *Aerial Spraying Control Act 1966 (Act 2)*

This Act controls the aerial spraying of agricultural chemicals by requiring the pilot to hold a Chemical Rating Certificate, and by prohibiting the aerial application of chemicals in certain prescribed areas. The Act also requires the aerial operator to hold insurance to a prescribed level against aerial spraying damage claims.

#### *Agriculture and Related Resources (Spraying Restrictions) Regulations 1979 (Act 3)*

These regulations prohibit the spraying, storage and transport of certain herbicides (such as 2,4-D) in prescribed areas without approval from the Department of Agriculture. They only apply to commercial grapevine and tomato crops.

#### *Agricultural Produce (Chemical Residues) Act 1983 (Act 4)*

This Act provides the means of controlling the movement of agricultural produce, contaminated with residues of agricultural chemicals, before it leaves the farm. Offences are committed when a quarantine or direction notice, or other requirement under the Act, is not complied with.

### *Administered by the Department of Health*

#### *Health (Pesticides) Regulations 1956 (Act 6)*

These regulations control the use and disposal of agricultural chemicals in Western Australia. They make it illegal to use an unregistered chemical, or a registered chemical at a higher than label rate, unless the APVMA has issued a permit to cover the off-label use of that chemical. The regulations also license Pest Control Operators, and Fumigators.

#### *Poisons Act 1964 (Act 7)*

The Poisons Act provides for the classification of substances into poison Schedules, which have different levels of control of supply and use based on risk to human safety. Some Schedules require specific licences to sell and use them. The Act also provides labelling and packaging controls over poisons and supply and storage controls over Prescription Animal Remedies.



***Administered by the Department of Industry and Resources******Explosives and Dangerous Goods Act 1961, and Regulations 1992 (Act 8)***

This Act controls the storage of dangerous goods (including some agricultural chemicals), and determines the requirements for storage licensing. Most farms will be exempt from licensing.

***Dangerous Goods (Transport) Act 1998 and Regulations 1999 (Act 9)***

This Act controls the transport of dangerous goods (including some agricultural chemicals) by road or rail. While farmers would not normally transport sufficient quantities of chemical by road to be concerned with this legislation, they are required to carry in the cab a manifest of any quantity of dangerous goods in the vehicle.

***Administered by the Department of Consumer and Employment Protection******Occupational Safety and Health Act 1984 (Act 10)***

This legislation establishes the general duty of care of employers, employees and self-employed persons, the details of which are in the Regulations.

***Occupational Safety and Health Regulations 1996 (Act 11)***

These regulations provide for the definition and safe use of hazardous substances. It also prescribes actions in relation to the provision and uses of Material Safety Data Sheets (MSDS), maintaining chemical registers and the labelling of chemicals. Other requirements include the conduct of risk assessments, health surveillance (organophosphate insecticides), workplace monitoring, and keeping certain records.

***Administered by the Department of Environment******Environmental Protection Act 1986 (Act 12)***

Under this Act any person can refer an incident involving alleged pollution by an agricultural chemical to the Department of Environment, who may either assess it internally, or refer it to the EPA for a formal assessment.

**Australian Standards (AS)**

Australian Standards are non-statutory documents produced by Standards Australia. However, if the Standard is prescribed by regulation, then compliance with it is mandatory.

The Standard most relevant to this Code of Practice is AS 2507-1998, 'The Storage and Handling of Agricultural and Veterinary Chemicals'.

The objective of this Standard is to provide requirements and recommendations for the storage and handling of agricultural and veterinary chemicals, which may be classified under legislation as hazardous substances, dangerous goods or scheduled poisons.

The provisions of this Standard, which form the basis for much of this Code of Practice, are not prescribed by specific regulations and are therefore not mandatory, but compliance with them is likely to satisfy your duty of care obligations.

There are many other Australian Standards that are relevant to various parts of this Code of Practice. For further information, contact Standards Australia on telephone 1300 654 646.

## 1.4 Definitions

### *Agricultural chemical/chemical*

A chemical that is defined as an Agricultural Chemical Product and is registered as such by the APVMA. In general it refers to Herbicides, Insecticides, Fungicides and similar chemicals. It does not include Veterinary Chemicals or Fertilisers.

### *APVMA*

Australian Pesticides and Veterinary Medicines Authority

### *Hazardous substance*

A substance that is prescribed as such under Occupational Safety and Health Regulations. The Material Safety Data Sheet will state whether the substance is a Hazardous Substance.

### *Integrated Pest Management*

Integrated Pest Management (IPM) is a way of coordinating non-chemical and chemical methods to make pest control more effective.

### *Material Safety Data Sheet (MSDS)*

Material Safety Data Sheet - This provides a summary of the characteristics and safe use, storage, transportation and disposal requirements of each substance (prescribed under Occupational Safety and Health Act) and which is required to be supplied to each user of the chemical upon request.

### *Minor use*

The use of an agricultural or veterinary chemical that is considered by the manufacturer to be too small to justify the cost of obtaining registration from the APVMA.

### *Minor storage*

A chemical store which contains quantities of chemicals not greater than those described in Section 2 of the Australian Standard 2507-1998, The Storage and Handling of Agricultural and Veterinary Chemicals.

### *Neighbour*

A person whose property adjoins another, or is close enough to be directly and adversely affected by a specified nuisance such as odour, noise, dust, smoke, fumes, excessive light or spray drift emanating from the person's property.

### *Off label*

The use of a chemical that is not described on the registered label.

### *Permit*

An approval to use an agricultural or veterinary chemical for an off-label use or purpose that would otherwise be prohibited by appropriate laws of the Commonwealth or Western Australia. A permit is issued by the APVMA.

### *Placarding*

The fixing of a label, for example, an Emergency Information Panel, to a bulk container, a vehicle carrying dangerous goods, or a chemical store.

### *Prescription Animal Remedy*

Veterinary medicines available only from veterinarians or pharmacists on veterinary prescription. Prescription Animal remedies are included in Schedule 4 of the Standards for Scheduling of Drugs and Poisons. Their safe use is not covered by the Code of Practice.

### *Property*

Includes land, and the plants, animals and structures on that land.

### *Registration*

The process of evaluation and approval by the APVMA, to which all agricultural and veterinary chemicals are subject prior to their sale to the end-user. The process includes approval of the label.

### *Risk assessment and management*

A formal process of identifying the hazard of an activity, assessing the risk and describing management plans which will minimise the risk.

### *Sensitive crop*

A non-target crop, agricultural product or animal (including aquacultural ponds), that would be significantly harmed by exposure to agricultural or veterinary chemicals used nearby.

### *Sensitive area*

A non-target area, possibly of agricultural, environmental or community significance, that would be significantly harmed by exposure to agricultural or veterinary chemicals used nearby.

### *Veterinary chemical*

A chemical that is defined as a Veterinary Chemical Product and is registered as such by the APVMA. It includes parasiticides and chemicals and other animal treatments. The use of the term in this Code excludes Prescription Animal Remedies.

## Responsibility for the safe use of chemicals

The Code of Practice has been prepared on the basis that the individual must take responsibility for the safe use of chemicals.

For the purposes of the Code, everybody involved in the use of these chemicals is referred to as either an 'Owner/Manager' or an 'Operator', and this part of the Code has been structured to reflect this separation of responsibility. In some cases, the same person will assume both roles, in which case both sections of this part will apply.

## 2. Responsibilities of the Owner/Manager

The following activities are the main responsibility of the Owner/Manager.

### 2.1 Duty of care



- Be responsible for the safety of your employees, contractors and neighbours, the general public and the environment, before, during and after chemicals are used. This responsibility is at two levels:
  - A statutory responsibility under current Commonwealth and State legislation.
  - A common law 'duty of care' to ensure that no harm is done to yourself, any other person, or their property. (See also points under 2.7 management of spray drift.)
- Do not allow an employee or contractor to undertake a task that you know to be illegal or unsafe.
- Ensure that your employees are properly informed, instructed, trained and supervised in the safe use of chemicals. Section 5 provides details of suitable courses in the safe use of agricultural chemicals.

### 2.2 Choice and purchase of chemicals



- Decide whether a chemical is needed to correct the problem, and/or whether other (non-chemical) methods should be used. In any case, Integrated Pest Management (IPM) methods that combine a number of management practices with judicious chemical use should be employed. You may need to discuss this with a consultant before making a decision.
- If chemical control is the best option, choose a chemical that is registered for your purposes, or for which there is a current Permit in place allowing its use. (Act 1)
- The chemical container must be fully labelled. (Act 1)
- Do not allow the use of an unlabelled or partially labelled chemical until a replacement label has been obtained. (Act 6)
- When you have the choice of alternative registered or permitted chemicals, choose the least toxic and most environmentally safe chemical or formulation that will achieve cost-effective control. However, chemical use should be consistent with best resistance-management practice that will involve rotation of different groups. Under some circumstances, more toxic chemicals will be required to achieve effective rotational strategies.
- Purchase your chemicals only from resellers that hold appropriate licences under the Poisons Act, and the Dangerous Goods Act, and preferably, the chemical industry AgSafe Accreditation Program.

- Do not purchase or accept chemicals from clearing sales unless the chemical is in the original container, clearly unopened (i.e. sealed), properly labelled and is sold by an authorised reseller. You must be satisfied that the chemical is still registered and in a useable condition.



- It is illegal to sell and use unregistered chemicals. (Act 6)

- Purchase chemicals in recyclable or refillable containers wherever possible.
- Do not purchase more chemicals than you will need for the foreseeable future. Large purchases of a supply intended to last for several years to take advantage of a 'special' are rarely cost-effective. The conditions under which you store your chemicals are likely to be inferior to those of the reseller, and may reduce the effectiveness of the product. In addition, registered uses and limitations may change leading you to rely on an 'old' label. You may also end up exceeding any expiry dates on the label.

## 2.3 Transport



- Check that the quantities of dangerous goods you carry on public roads do not require you to comply with other provisions of the Dangerous Goods (Transport) (Road and Rail) Regulations 1999, as set out in the Australian Dangerous Goods Code, such as the placarding of vehicles, personal protective equipment, and public liability insurance requirements. (Act 9)

- If you transport packaged chemicals (those which are dangerous goods) on public roads, in any quantity, you must carry shipping documentation in a prominent position in the cab, describing the dangerous goods which are on board. (Act 9)

- The dangerous goods must be safely and securely stowed on the vehicle. (Act 9)

- Do not transport chemicals in the cabin of the vehicle, or on any vehicle containing food, feedstuffs or fertiliser.

- The various issues surrounding the transport of dangerous goods are complex, and it is outside the scope of this Code to attempt to provide more details. If you believe that the quantities of dangerous goods that you wish to transport require them to comply with these provisions, you should seek advice from the Explosives and Dangerous Goods Division of the Department of Industry and Resources on telephone (08) 9222 3333, or from your consultant.

## 2.4 Storage

- Check the volume of your chemicals in storage to determine whether or not your store needs to be licensed under the Explosives and Dangerous Goods Act 1961. Farming properties are exempt from licensing provided the property size exceeds 4 hectares, the dangerous goods stored are for use on the premises for farming purposes, are not for re-sale, and the appropriate storage factors are not exceeded.

The 'storage factor' is calculated from the class of dangerous goods and the quantity in storage. It is outside the scope of this Code to define it further. If you believe that they may require to be licensed, based on the type and quantity of chemicals they need to store, you should seek advice from the Explosives and Dangerous Goods Division on telephone (08) 9222 3333, or from your consultant.

- In all cases, store your chemicals according to the Australian Standard 2507-1998, 'The Storage and Handling of Agricultural and Veterinary Chemicals'.
- If you store only a small quantity of chemicals, the 'Minor Storage' conditions (of AS 2507) should be followed. A brief summary of these requirements includes:
  - an impervious floor;
  - containment (of a spill) of at least the capacity of the largest package, plus 25 per cent of the total volume of the stored products;
  - good ventilation;
  - separation distances from other buildings, watercourses or drains;
  - secured doors and windows to prevent unauthorised access;
  - appropriate signage at the entrance;
  - segregation of incompatible chemicals;
  - access to running water, first aid and other facilities required by the MSDS.
- If you store larger quantities of chemicals, you should ensure that, in addition to the above, you have the following:
  - Prescribed separation distances from other buildings, watercourses, and the property boundary;
  - Segregation of different chemical groups (herbicides, insecticides, fertilisers, etc.), and, if applicable, different classes of Dangerous Goods, within the store;
  - Racks and shelves that are secure, impervious and chemically resistant;
  - A safety shower and eyewash;
  - Placarding, emergency services manifest, emergency procedures and fire fighting equipment.



## 2.5 Occupational Safety and Health



- Obtain and review the safety and health information in the MSDS prior to using each chemical. (Act 10-11)
- If the chemical is classified as a hazardous substance (stated on the MSDS), conduct a risk assessment and implement control methods prior to handling it. (Act 10-11)
- If the hazardous substance poses a significant risk, a written report must be prepared detailing the risk assessment and control methods. (Act 10-11)
- Keep records of the risk assessments. (Act 10-11)
- Ensure that all your chemicals are correctly labelled, and are stored in the original container. (Act 6)

### **For every person under your supervision who is involved with chemical handling and application, ensure that:**

- They have read and understood the label and the Material Safety Data Sheet (MSDS) prior to using each chemical, particularly the first aid and safety directions.



- They have received suitable information, instruction, training and supervision in the safe use of chemicals. Section 6 provides details of suitable courses in the safe use of agricultural chemicals. (Act 10-11)
- Adequate engineering control measures, such as closed-system transfer during mixing, and closed vehicle cabs with filtering systems, are in place, and/or personal protective equipment in good working order is available. (Act 10-11)
- Depending on the other controls in place, the personal protective equipment recommended in the MSDS and on the label is properly fitted and worn on each occasion. (Act 10-11)

- They wash thoroughly with soap and water before eating, drinking and smoking, and at the completion of each job.
- They thoroughly wash their personal protective equipment at the completion of each job, and store it to ensure it does not become contaminated or damaged.
- They report any symptoms of ill health to you during, or immediately after, chemical has been handled.
- You arrange for a medical examination, and if necessary, treatment, as soon as possible after significant chemical exposure has occurred.



- A base-line blood test is conducted before exposure occurs, if they are handling organophosphate or other chemicals that require appropriate health surveillance to be carried out. (Act 10-11)

- The vehicles they are using in applying the chemical contain soap and water for personal washing, a First Aid kit, an eye-wash bottle, and that they are trained in basic First Aid treatment for chemical exposure.
- They are aware of, and can use, the procedure you have set up for communication in the event of an emergency.



- If you engage contract ground applicators, ensure that they hold a current Health Department licence for the chemicals you wish them to apply. This information can be obtained from the Pesticides Safety Section of the Department of Health by telephoning (08) 9383 4244. (Act 6)
- If you wish to have chemicals applied by air, employ only pilots who hold a valid Chemical Rating Certificate. This is currently issued by the Department of Agriculture. Telephone (08) 9368 3815 for information. (Act 2)

## 2.6 Environmental protection

- Do not allow the storage, loading or mixing of chemicals adjacent to, or near, environmentally sensitive areas such as water bodies, bush reserves and wildlife.
- Be aware of the presence of nearby bird and wildlife habitats, including remnant vegetation, wildlife corridors, and nesting sites, and use chemicals cautiously in their vicinity. Special care should be taken with laying pest animal baits.

- Do not allow the application of chemicals if there are reasonable grounds to suspect that environmental damage could result. This includes the use of herbicides over the root zones of sensitive trees.
- Do not allow the contamination of surface water bodies or ground water with spray drift, or with waste chemicals or containers. This is particularly true in designated Public Drinking Water Source Protection Areas where restrictions on the use of certain chemicals may apply. For further information on the Statewide Policy, "Pesticide Use in Public Water Source Protection Areas", contact the Department of Environment on 9278 0300, or on the Department's website (<http://www.environment.wa.gov.au>).
- Ensure that appropriate arrangements and facilities for the proper disposal of waste chemicals and containers are provided. Non-returnable metal and plastic containers over 1 litre/kg content, which have the appropriate sticker, can be disposed of under the **drumMUSTER** program. Consult your reseller or local government for details.



- Dispose of surplus concentrated and diluted chemical (including equipment washings) safely, and in accordance with the Health (Pesticides) Regulations 1956. (Act 6)



- Ensure that recyclable or refillable containers are used wherever possible.
- Install check (or non-return) valves which prevent back-flow when filling spray tanks from surface waters, and in suction lines for chemical irrigation systems which draw directly from surface waters.
- Avoid the application of chemical on to paddocks under flood irrigation, to prevent contamination of water bodies and/or drainage channels. In some situations, the use of vegetation shelter belts and/or drainage filters may be useful.
- Where practicable, ensure that sufficient on-farm storage capacity (including provision for storm run-off) is built to contain chemical-contaminated irrigation tail-water.
- Notify apiarists when beehives are in the vicinity of crops to be sprayed to allow removal of the hives before spraying.
- Ensure that chemical formulations that are safest for bees are used whenever possible.
- Use ground rigs in preference to aerial application to minimise drift, especially when crops and adjacent plants are flowering.

## 2.7 Management of spray drift

Best practice in the use of agricultural chemicals means that you will apply your chemical only on the target area or crop. Minimising or even eliminating off-target impact is one of the most important aspects to consider in the use of agricultural chemicals.

It involves being aware of the factors that contribute to spray drift, such as the suitability and accuracy of your application equipment, wind speed and direction, the presence of inversion layers, and the proximity of sensitive areas or animals and crops. These and other factors should be assessed before and during the spraying operation, and taken into account in your management plans for the operation. You should be prepared to cancel the operation if conditions deteriorate.

The following detailed points may help you to manage your spraying operation so that off-target impact is minimised.

- Prepare a "Sprayplan" for all routine spraying operations, including the identification and mapping of sensitive areas, crops and buildings in the vicinity of your property.





A good way of approaching this is to adopt the concept of a Spray Drift Awareness Zone, as detailed in the Appendix . You are likely to have to do this only once, and then update it as the area or conditions change.

- Ensure that the spray operator has an up-to-date copy of the plan before each spraying operation.
- Where possible, plant and maintain buffer vegetation on downwind edges of paddocks and properties, and adjacent to sensitive areas.
- Regularly notify all your neighbours and others in the locality as appropriate for the district, having regard for:
  - the chemicals to be used and the intended method of application;
  - your plans to minimise spray drift, including the use of appropriate buffer distances,
  - the sensitivity of their crops or enterprises; and
  - the length of notice they may need to put in place risk-minimisation practices, such as moving stock to another paddock.

If your neighbours' enterprises are particularly sensitive to the chemicals you use, you could consider offering to enter into a more formal agreement with them to specify the conditions under which you may and may not apply chemicals.

## 2.8 Minimising residues in agricultural produce

- Ensure that you follow 'Good Agricultural Practice' (GAP) in the use of chemicals on the farm. There are five elements to GAP:
  1. The chemical must be registered (or permitted) for the use.
  2. The rate of application and frequency of use on the label (or Permit) for that use must not be exceeded.
  3. The Withholding Period on the label (or Permit) must be followed.
  4. Other specific directions on the label must be followed, for example, do not allow the application of chemicals to paddocks containing grazing livestock if it is prohibited on the label (or Permit).
  5. Producer industry guidelines for the use of chemicals on export crops or animals (for example, Export Slaughter Intervals) should be observed.

## 2.9 Record keeping



- Maintain up-to-date records of chemical usage and spray operations on the property.
- The following records must be kept, under the Occupational Safety and Health Act 1984:
  - An inventory list/database of all chemicals stored and used.
  - An up-to-date copy of the MSDS for every chemical stored and used.
  - Risk Assessments, Workplace Monitoring or Health surveillance results that are required under legislation. (Act 10)
- The following information should be recorded on a regular basis:
  - Maps of sensitive areas and crops in the vicinity of your property.
  - Calibration records, including weather observations.
  - Any information required by your Quality Assurance Scheme to document your chemical usage.

### 3. Responsibilities of the Spray Operator

The following activities are the main responsibility of the Spray Operator.

#### 3.1 Duty of care

- Be responsible for the safety of your workmates, the general public and the environment, before, during, and after your use of chemicals. This responsibility is at two levels:



- A statutory responsibility under current Commonwealth and State legislation.
- A common law 'duty of care' to ensure that no harm is done to yourself, to any other person, or to their property
- Do not carry out a task that you know to be illegal or unsafe.
- Ensure that you have received proper training in the safe use of chemicals. Section 5 provides details of suitable courses in the safe use of agricultural chemicals.



- If you intend to apply chemicals as a contractor, you will need to hold a current Health Department licence for the chemicals you apply. Contact the Pesticides Safety Section by telephoning (08) 9383 4244. (Act 6)
- If you are aware of any risks to safety for which you have not been adequately trained, or which you consider are not being managed effectively, then do not continue with the task until corrective action has been taken. These should be brought to your supervisor's attention as soon as possible.

#### 3.2 Working with chemicals

##### 3.2.1 Preparation before handling, mixing or applying chemical

- Read, understand, and follow the product label and MSDS before handling, mixing and applying the chemical. If you cannot read it, get someone to read it to you.



- Read and understand any relevant risk assessments that have been developed. (Act 10-11)
- Do not apply chemicals that are not registered or permitted in Western Australia for the intended use. (Act 6)
- Do not exceed the rate or frequency of application as described on the label or Permit. (Act 6)

- Ensure that you are satisfied that your manager's instructions for the work have reasonably covered health and environmental safety risks.
- Check personal protective equipment before use and clean and check it after each day's operations. Store such equipment safely after use to prevent contamination or damage. Replace respirator cartridges according to the manufacturer's instructions.
- Check application equipment regularly for wear, damage and leaks and ensure it is in proper working order according to the equipment manufacturer's specifications.
- Calibrate spraying equipment regularly, with water only, to ensure that the correct application rate of chemical spray mixture is applied. However, be aware that the



addition of the chemical to the water may change the calculated application rate. Monitor output during or after application to be sure that the correct rate is being applied.

- Clean and maintain spray equipment according to the equipment manufacturer's instructions and/or the chemical product label, (which may recommend special cleaning methods).
- Never work alone when applying chemicals in particularly hazardous situations, (e.g. grain fumigation, or applying metham sodium). If this is not possible, ensure that you can quickly contact another person in the event of an emergency, using a mobile telephone or radio. It maybe possible to set up a regular schedule of telephone or radio calls.
- Ensure that you are aware of, and can use, the emergency communication process that your manager has set up. Arrange for the equipment to be periodically checked.

### 3.2.2 *Transport*



- Transport packaged chemicals (those which are dangerous goods) on public roads, only with the correct documentation in a prominent position in the cab, describing the dangerous goods which are on board. (Act 9)
- Stow the chemicals safely and securely on the vehicle. (Act 9)
- If required, comply with other provisions of the Dangerous Goods (Transport) (Road and Rail) Regulations 1999 such as the placarding of vehicles, personal protective equipment, and public liability insurance requirements. (Act 9)

- Do not transport chemicals in the cabin of the vehicle, or on any vehicle containing food, feedstuffs or fertiliser.

### 3.2.3 *Handling chemicals – before and after application*



- Use all appropriate control measures to reduce the risk of exposure, including any that have been developed as part of a risk assessment. (Act 10-11)
- Do not use chemicals that are not provided in the original, correctly labelled container. (Act 6)
- Implement work practices and engineering controls that minimise exposure. (Act 10-11)
- Depending on the extent of these controls, wear appropriate, personal, protective equipment as recommended on the label and the MSDS. ( Act 10-11)
- Never transfer chemical into another container that is not designed for the purpose, or one that is not carrying the correct label (including the batch number). (Act 6)

- Take only sufficient containers of chemical for the day's application, from the store to the site of mixing/loading/application.
- Where practicable, never leave chemicals unattended or unsecured against unauthorised access.
- Return unused chemical product to the store, ensuring that the label and container is undamaged.

- Never leave diluted chemicals in application equipment for longer than is necessary to complete the job, having regard for the quantity, toxicity and stability of the chemical.
- Clean application equipment at a place designated for that purpose, and return it to store.



- Dispose of surplus concentrated and diluted chemical (including equipment washings) safely, and in accordance with the Health (Pesticides) Regulations 1956. (Act 6)

- Observe label restrictions on re-entry to the sprayed crop or area. Erect warning signs if necessary. Where there is no re-entry period stated on the label, it is advisable to stay out of the treated area until the spray deposit has dried. You should, however, note that there are a few chemicals that may continue to release odour for some time after application. Advise visitors to the property of the presence of recently sprayed crops.

### 3.2.4 *Mixing chemicals*



- Use all appropriate control measures to reduce the risk of exposure, including any that have been developed as part of a risk assessment. (Act 10-11)
- Implement work practices and engineering controls that minimise exposure. Depending on the extent of these controls, wear appropriate, personal, protective equipment as recommended on the label and the MSDS. (Act 10-11)

- Mix chemicals only in a well-ventilated area, or out of doors (standing upwind).
- Mix on a surface where spills can be contained, cleaned up and disposed of appropriately.
- Wherever possible, used closed-tank mixing systems to fill application equipment.
- Do not allow children or unauthorised persons near the mixing operation.
- Never eat, drink or smoke when mixing chemicals.
- Ensure that you have clean washing water and soap for personal use when mixing and use it immediately after skin exposure to chemicals and before eating, drinking or smoking.
- Keep a suitable First Aid kit close by.
- Ensure that you have ready access to an eye-wash facility or bottle at all times.
- Ensure that you have ready access to a shower in the event that you are heavily exposed to chemicals.
- Do not 'tank mix' chemicals if the label prohibits or warns against it, or if you are unsure of the impact of the mixture in the spray solution or on the target crop.

### 3.2.5 *Applying chemicals*



- Use all appropriate control measures to reduce the risk of exposure, including any that have been developed as part of a risk assessment. (Act 10-11)
- Implement work practices and engineering controls that minimise exposure. Depending on the extent of these controls, wear appropriate, personal, protective equipment as recommended on the label and the MSDS. Act (10-11)

- Do not allow children or unauthorised persons in the vicinity of chemical applications.
- Never eat, drink or smoke when applying chemicals.
- Ensure that you have clean washing water and soap for personal use when applying chemicals, and use them immediately after skin exposure to chemicals and before eating, drinking or smoking.
- Keep a suitable First Aid kit close by.
- Ensure that you have ready access to an eye-wash facility or bottle at all times.
- Do not clear blocked nozzles by mouth.
- Remove, replace and clean contaminated, personal, protective equipment immediately. Do not wear contaminated clothing in a closed tractor cab.
- Minimise the production of spray drift off the target crop or area (see Section 3.5).

## 3.3 Environmental protection

- Do not store, load or mix chemicals adjacent to, or near, environmentally sensitive areas such as water bodies, bush reserves and wildlife.
- Do not apply chemicals if there are reasonable grounds to suspect that environmental damage could result. This includes the use of herbicides over the root zones of sensitive trees.
- Dispose of waste chemicals and containers using appropriate facilities that are provided by your manager.
- Do not contaminate water bodies or ground water with waste chemicals or containers.

### 3.3.1 *Protecting the aquatic environment – including aquacultural enterprises*

- Prevent chemical drift on to surface waters during application. Check labels for warnings about aquatic species before applying chemicals to paddocks near dams or other water bodies.
- Only use equipment that has check or non-return valves which prevent back-flow when filling spray tanks from surface waters and in suction lines for chemical irrigation systems which draw directly from surface waters.
- Avoid applying chemical on to paddocks under flood irrigation, to prevent contamination of water bodies and/or drainage channels.

### 3.3.2 *Protecting bees*

- When applying chemicals that are relatively toxic to bees, only apply them early in the morning or in the evening when bees are not foraging.
- Check that, when beehives are in the vicinity of crops to be sprayed, the apiarist has been notified, to allow the removal of hives before spraying.
- Use emulsifiable concentrate (EC) and granular formulations (when possible) in preference to wettable powders and micro-encapsulated formulations which are particularly hazardous to bees. (Micro-encapsulated formulations are relatively persistent in the environment and bees often transport the micro-capsules back to the hive along with the pollen).
- Avoid contamination of surface waters where bees may drink.

### 3.3.3 *Protecting birds and mammals*



- Incorporate granule formulations completely beneath the soil, particularly at row ends and machine-filling sites, where spillage may occur.
- Clean up spills immediately.
- Minimise risks to birds from baits, by ensuring that you:
  - do not bait near bird habitats, but if this is unavoidable, use bait stations which prevent access by birds;
  - distribute baits evenly, with no locally high concentrations;
  - do not bait over bare ground or in more open situations, such as near crop perimeters, where birds may see the baits;
  - only bait where pest pressure is high;
  - bait late in the evening when birds have finished feeding;
  - promptly collect and bury rodent carcasses where these occur in open situations.
- Minimise risks to feeding and nesting birds, by ensuring that you:
  - minimise drift into remnant vegetation, wildlife corridors, nesting sites, or other bird habitats;
  - scare birds from feeding in crops which are to be sprayed;
  - spray late in the day when birds have finished feeding; and
  - use only chemicals that have low toxicity to birds when large concentrations of birds are nesting nearby.
- Minimise risks to mammals from exposure to chemicals, by ensuring that you:
  - Heed label warnings and withholding periods before applying chemicals to paddocks containing grazing livestock;
  - Do not allow pets into recently sprayed areas;
  - Only apply chemicals to livestock and pets when the chemicals are registered for such uses.;and
  - Do not allow non-target animals to gain access to areas baited for vermin control.

## 3.4 Minimising spray drift

- Ensure that you apply chemicals strictly in accordance with any agreement(s) that exist between your Owner/Manager and any neighbours, or any specific instructions regarding buffer distances and the spraying operation.
- Ensure that you have been given an up-to-date copy of a “Sprayplan” or any maps of the property that shows the location of sensitive areas or crops.

### 3.4.1 *Spraying conditions*

- Observe wind direction, wind speed, temperature and humidity, and check that they are within acceptable limits before spraying takes place. Wind speed should be between about 3 and 15 km/h for most operations. Be aware that spraying when the wind is light and variable, or is dead still, can lead to unpredictable spray drift.
- Monitor and record wind direction, wind speed, temperature and humidity prior to (and if necessary during) every spraying operation. Do not spray when the wind is blowing towards sensitive crops or areas, unless an appropriate vegetation buffer or buffer distance is imposed. If necessary, use an anemometer to accurately measure wind speed.
- Where possible, spray with a crosswind working towards the unsprayed area.
- Be alert to changes in wind direction and be prepared to modify or cancel a spray operation as necessary.
- Where inversions are not likely to occur, spraying should ideally be carried out when temperatures for the day are at their lowest, and when atmospheric conditions are neutral.
- Spraying should not take place when conditions indicate the risk of an inversion. This can be detected by the use of a smoke generator.
- Avoid conditions of high temperature and low humidity for the application of water-based sprays.



### 3.4.2 *Ground application*

- Notify neighbours and erect signs if appropriate, to prevent inadvertent entry into sprayed areas within an unsafe period.
- Set the release height of the boom as low as possible consistent with nozzle specifications and coverage requirements.
- Do not exceed optimum boom height specified by the nozzle manufacturer.
- Spray pressure should be as low as possible, consistent with nozzle specifications and coverage requirements.
- Select nozzles that minimise the number of fine droplets that have the potential to drift, consistent with good coverage of the crop.
- Consider spraying only when the wind is blowing away from the sensitive area. If this is not possible, spray only the upwind section of the area, in order to provide a practicable buffer distance, having regard for the chemical, its formulation, the sensitivity of the adjoining area and the wind speed and direction.

### 3.4.3 *Aerial operation*



- Notify neighbours and erect signs if appropriate, to prevent inadvertent entry into sprayed areas within an unsafe period.
- Do not apply chemicals by aircraft if the label specifically prohibits this method of application.
- Consider spraying only the upwind section of the area in order to provide a practicable buffer distance, having regard for the chemical, its formulation, the sensitivity of the adjoining area and the wind speed and direction.

### 3.4.4 *Airblast operations in orchards*

- Notify neighbours and erect signs if appropriate, to prevent inadvertent entry into sprayed areas within an unsafe period.
- Ensure that airblast sprayers are set up to direct spray into the canopy.
- If you are close to a sensitive area or crop, do not spray the downwind edge of the outer row of an orchard. The outer row of the orchard becomes, in effect, the unsprayed buffer.
- Where possible, use a tractor that has a fully enclosed cab with a filtered ventilation system.

## 3.5 **Minimising residues in agricultural produce**



- Only apply chemicals that are registered for the intended use.
- Do not exceed the registered rate or frequency of application for the use of the chemical.
- Always follow the labelled withholding period (WHP), for the crop being sprayed.
- When treating livestock, or when livestock may have been exposed to spray drift, observe the WHP, and in addition, any industry-based intervals, such as the Export Slaughter Interval before sending the animals to slaughter. In addition, always complete a Vendor Declaration when required to do so.
- Follow other specific directions and prohibitions on the label.
- Do not apply chemicals to paddocks containing grazing livestock, if it is prohibited on the label.

## 3.6 **Recording and reporting**

- Record details of each spraying operation, such as chemicals used, the actual area sprayed, weather conditions, including any changes that have occurred.
- Record and report immediately, any symptoms of ill health during, or shortly after, each spraying event.
- Record any incidents or accidents that occurred during the spraying operation.
- Pass your records to your Manager or Supervisor.



## 4. Further information

- Code of Practice for Farm Chemical Spray Application, June 1999. Available from the Chemical Standards Branch of the Department of Natural Resources and Environment, Victoria.
- Principles of Spray Drift Management, October 1998. Available from NSW Agriculture.
- Code of Practice for the Disposal of Pesticide Residues from Pesticide Spray Applications, July 1994. Available from the Health Department of Western Australia.
- Policy on Pesticide Use in Public Drinking Water Source Protection Areas. This is a draft Department of Environment Document which is available on the following website: [www.environment.wa.gov.au/protect/policy/draft\\_chemicals\\_policy.pdf](http://www.environment.wa.gov.au/protect/policy/draft_chemicals_policy.pdf)
- The Code of Practice for Timber Plantations in Western Australia, 1997. Available from the WA Forest Products Commission.
- Health (Pesticides) Regulations 1956. These and other Acts and Regulations described earlier are available from the State Law Publisher, 10 William Street, Perth, telephone 9321 7688.
- Australian Standard 2507-1998, 'The Storage and Handling of Agricultural and Veterinary Chemicals'. This is available from Standards Australia., 165 Adelaide Terrace, East Perth, telephone 9221 6700.
- Guidance Note for the Assessment of Health Risks arising from the use of Hazardous Substances in the Workplace ( NOHSC ; 3017 (1994))
- National Code of Practice for the Control of Workplace Hazardous Substances.(NOHSC: 3009 (1990))
- Guidelines for Health Surveillance - Organophosphate Pesticides (NOHSC: 7039 (1990))

## 5. Useful Websites

Agriculture Fisheries and Forestry Australia . . . . .	<a href="http://www.affa.gov.au">http://www.affa.gov.au</a>
Analytical Reference Laboratory (WA) Pty Ltd . . . . .	<a href="http://www.arllwa.gov.au">http://www.arllwa.gov.au</a>
Australian Sites - various . . . . .	<a href="http://www.rurainet.com.au/agriweb/index.html">http://www.rurainet.com.au/agriweb/index.html</a>
Avcare . . . . .	<a href="http://www.avcare.org.au">http://www.avcare.org.au</a>
ChemCert Australia . . . . .	<a href="http://chemcert.org.au">chemcert.org.au</a>
Chemistry Centre WA . . . . .	<a href="http://www.ccwa.wa.gov.au">http://www.ccwa.wa.gov.au</a>
Department of Agriculture of WA . . . . .	<a href="http://www.agric.wa.gov.au">http://www.agric.wa.gov.au</a>
DrumMUSTER . . . . .	<a href="http://www.drummuster.com.au">http://www.drummuster.com.au</a>
Environment Australia Online . . . . .	<a href="http://www.erin.gov.au">http://www.erin.gov.au</a>
Department of Health of WA . . . . .	<a href="http://www.health.wa.gov.au">http://www.health.wa.gov.au</a>
InFINDER . . . . .	<a href="http://www.pir.sa.gov.au">http://www.pir.sa.gov.au</a> and type infinder in the search engine
Infopest . . . . .	<a href="http://www.pir.sa.gov.au">http://www.pir.sa.gov.au</a> and type infopest in the search engine
Kondinin Group . . . . .	<a href="http://www.kondinin.com.au">http://www.kondinin.com.au</a>
MSDSs . . . . .	<a href="http://www.msds.com">http://www.msds.com</a>
National Registration Authority . . . . .	<a href="http://www.nra.gov.au">http://www.nra.gov.au</a>
Department of Consumer Employment and Protection . . . . .	<a href="http://www.safetyline.wa.gov.au">http://www.safetyline.wa.gov.au</a>
Department of Industry and Resources . . . . .	<a href="http://www.doir.wa.gov.au">http://www.doir.wa.gov.au</a>

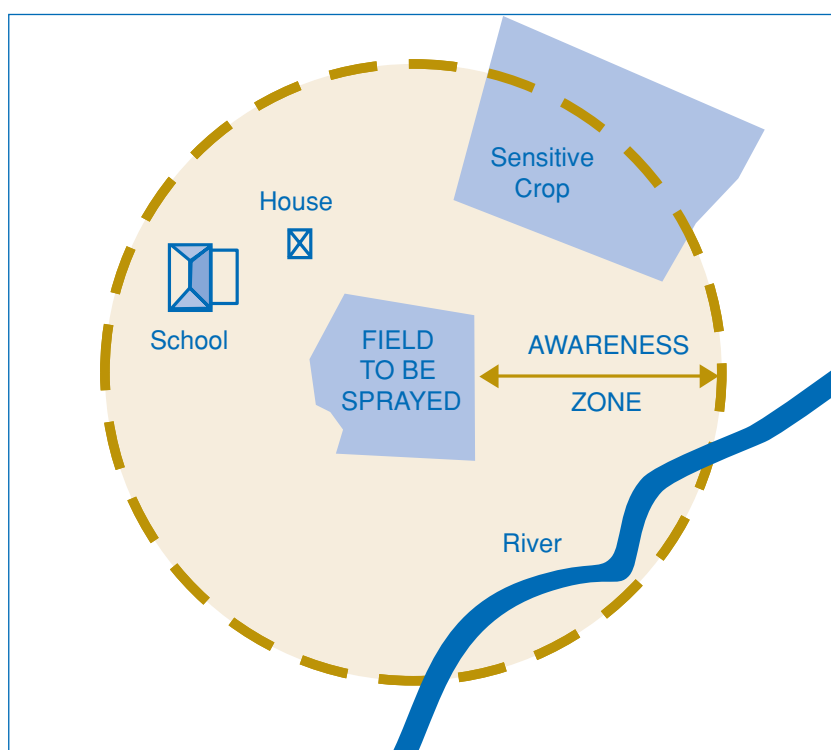
## 6. Training providers and courses

- ChemCert WA Inc. Provides basic and advanced courses in the safe use of agricultural chemicals, and courses to enable crop-spraying contractors to be licensed. Contact Terry O'Beirne, ChemCert Executive Officer on telephone (08) 9341 5325.

## 7. Appendix

### SPRAY DRIFT AWARENESS ZONES

- A Spray Drift Awareness Zone (SDAZ) is a means of identifying and mapping all potentially sensitive areas around each paddock to be treated with chemicals. It is, in effect, a method of conducting a spray drift risk assessment for your property.
- Bear in mind that each part of the property to be treated will have a slightly different SDAZ as the focus of the Zone shifts from paddock to paddock across the property.
- Under most circumstances, the awareness zone for ground spraying could extend up to 1 kilometre from the paddock to be treated. For aerial application, it is likely to extend well beyond that distance.
- The SDAZs should take into account all buildings, crops or areas outside the paddock to be sprayed that may be potentially sensitive to spray drift, e.g.. schools, dwellings, wetlands, aquaculture ponds, organic farms, etc.
- However, remember that the SDAZ is an awareness zone. It does not necessarily mean that spray drift damage will always occur within that zone, depending on the sensitivity of the crop or area, the weather and application conditions at the time of spraying, and the size of the zone. Also, the presence of any physical or vegetative buffers downwind of the spraying operation will reduce the risk of damage.



Awareness zone establishment and sensitive area identification.



