

## Legal responsibilities in use of pesticides

### New South Wales

Jenene Kidston, NSW DPI

The Pesticides Act 1999 is the primary legislative instrument controlling the use of pesticides in NSW and is administered by the Environment Protection Authority (EPA). The underlying principle of the Pesticides Act is that pesticides must only be used for the purpose described on the product label and all the instructions on the label must be followed. Consequently, all label directions must be read by or explained to the user prior to each use of the pesticide.

All pesticide users should take reasonable care to protect their own health and the health of others when using a pesticide. They should also make every reasonable attempt to prevent damage occurring from the use of a pesticide, such as off-target drift onto sensitive areas or harm to endangered and protected species.

A regulation was gazetted in 2009 requiring all commercial pesticide users, i.e. all farmers and spray contractors, to keep records of their pesticide application.

While no set form is required for records they must include the following:

- Full product name;
- Description of the crop or situation;
- Rate of application and quantity applied;
- Description of the equipment used;
- Address of the property, identification of the area treated and order of paddocks treated;
- Date and time of the application (including start and finish);
- Name, address, and contact details of the applicator and of the employer or owner if an employee or contractor is the applicator;
- Estimated wind speed and direction (including any significant changes during application);
- Other weather conditions specified on label as being relevant (e.g. temperature, rainfall, relative humidity);

An example form that captures all the information required by the Pesticides Regulation 2009 is provided on the following page. Notes on how to fill it in, can be downloaded from the NSW DPI website. A self-carbonating record book is available for purchase through the DAFF Qld Dalby and Toowoomba offices and through the NSW DPI SMARTtrain National Support Centre at Yanco.

Records must be made within 24 hours of application, be made in legible English, and kept for 3 years.

The Pesticides Regulation 2009 also requires all commercial pesticide users to be trained in pesticide application.

The training of aerial applicators, pest control operators and fumigators is recognised as satisfying the requirements of the regulation. Apart from these groups, all commercial users must have a prescribed qualification. Only domestic use, such as home gardens, is excluded, provided the pesticide is a specific domestic/home garden product.

Covered by the regulation is pest control by/on:

- Public authorities, e.g. State Rail,

- Golf courses, sporting fields and bowling greens,
- Agricultural, horticultural, aquacultural and forestry operations,
- Businesses, educational institutions, and hospitals.

The minimum prescribed training qualification will be the AQF2 unit of competency, 'Apply chemicals under supervision', although owner-applicators are encouraged to train and be assessed in the two higher AQF3 competencies, 'Prepare and apply chemicals' and 'Transport, handle and store chemicals'.

Growers are recommended to undertake the SMARTtrain course, Chemical Application, or the standard ChemCert course, both of which cover the higher AQF3 competencies. For growers with literacy and/or numeracy problems, the lower level AQF2 competency will provide a minimum qualification that satisfies the Regulation.

### Queensland

Russel Scholl and Darren Fry, DAFF Qld

In Queensland the Chemical Usage (Agricultural and Veterinary) Control Act 1988 (Chem Usage Act) imposes requirements on all users of pesticides similar to those under the NSW Pesticides Act 1999. All chemical users are required to use agricultural chemical products for the crop or situations specified on the approved label instructions or under the conditions of a permit granted by the Australian Pesticides and Veterinary Medicines Authority. Persons using chemicals must also apply agricultural chemical products according to all other label instructions, including any use instructions or restraints that may be listed that relate to droplet size, wind speed and direction, mandatory downwind no-spray zones and other off-target spray drift restriction risk management practices. There are significant penalties imposed on anyone found to have breached the Chemical Usage Act for failing to observe label instructions.

Under the Agricultural Chemicals Distribution Control Act 1966 (ACDC Act) aerial distribution contractors and ground distribution contractors must be licensed. Pilots and ground spray operators working for these contractors must also be licensed. In most instances, agricultural producers applying agricultural chemicals on their own land do not need to hold a licence. However, growers are strongly encouraged to complete chemical application training to improve their skills and knowledge in application technology, handling, storing and transporting chemicals.

Queensland growers are strongly encouraged to keep records of all their chemical applications along the same lines as NSW growers. Growers must keep records of chemical treatment activities where specified on the label instructions or under the conditions of a permit. Workplace health and safety also requires spray records to be maintained. Aerial and ground distribution contractors are required to make records of all their spraying activities and keep these for a minimum of 2 years.

**Additional advice on legal responsibilities in applying pesticides in Qld., Biosecurity Queensland 13 25 23.**

**Refer to [www.mybmp.com.au](http://www.mybmp.com.au) for further information on record keeping associated with spray application.**

### Safe storage, handling, use and disposal of chemicals

A critical part of responsible use of pesticides is their safe storage, transport and handling, as well as appropriate disposal of product that is no longer wanted or able to be used. Many registered pesticides are classified as hazardous chemicals and most of those that are not, still pose some risk to the health of those who use them or are exposed to them. The Work Health and Safety Act and Regulations in each State outline

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the responsibilities of key parties involved in managing health and safety risks associated with workplaces and work activities including specific requirements for workplace which uses, handles, stores or generates hazardous chemicals, including pesticides.

*myBMP* provides guidance on your requirements for handling, storage and application of chemicals, including:

- Record keeping;
- Assessing risks arising from pesticides, petrochemicals and other hazardous chemicals
- Staff training and qualification;
- Development and display of emergency plans and procedures;
- Health surveillance;
- Contractor and neighbourhood communication;
- Use of pesticides in accordance with labels;
- Transport and storage including legal quantities, location, security, and bunding;
- Safety and first aid equipment;

The templates and resources provided may also help to document the farm specific procedures in place to minimise as well as respond in the event of an injury, fire, or spill.

**Contact the Australian Centre for Agricultural Health and Safety on 02 6752 5074 or visit your state WHS authority website to find more information:**

**Workplace Health and Safety QLD**

**WorkCover NSW**

## Recycle chemical containers

Empty chemical containers present a risk to people and the environment. All containers should be triple rinsed or pressure washed during mixing, with the rinsed contents added to the spray tank, and empty containers securely stored. Recycling is possible for properly rinsed metal and plastic containers used for farm chemicals. drumMUSTER is the national program for the collection and recycling of non-returnable crop production and animal health product chemical containers.

The containers when presented at a drumMUSTER receipt site MUST BE: Free of chemical residue with the lids removed. Some stains are acceptable but physical chemical residue is not. Dirt, dust and mould are not reasons for rejection. Inspection of containers at drumMUSTER collection points is necessary to ensure that containers can be safely recycled. There must be no product residue on the inside or the outside of the container, including the thread and cap. Visible residues could be powder, flake, coloured /dark fluid or clear fluid.

Always follow these procedures to ensure your drums are suitable for delivery to a collection centre:

- Triple rinse or pressure rinse your containers immediately after use (residues are more difficult to remove when dry). Pour the rinse water back into the spray tank.
- Thoroughly clean the container thread and outside surfaces with a hose into the spray tank. Rinse all caps separately in a bucket of clean water, and pour the rinsate into the spray tank.
- Inspect the container, particularly the thread and screw neck to ensure all chemical residues have been removed.
- Metal containers should be punctured using a steel rod or crowbar, this should be done by passing it through the neck/ pouring opening and out the base of the container. This also allows the containers to vent and remove any residual odour.

- Allow the containers to drain completely and air dry them (this may take a number of days) to ensure they do not retain any rinse water.
- Store cleaned containers in a sheltered place with caps removed, where they will remain clean and dry until they can be delivered to a drumMUSTER collection centre.

If containers are rejected the user is responsible for ensuring that the container is taken back to the property and cleaned, with all rinsate treated as the same chemical according to the label instructions.

As more resellers turn to using Intermediate Bulk Containers (IBCs), many are still unsure about the right way to return IBCs once they've been used. Agsafe has prepared a quick and easy guide that may assist users on how to send IBCs back for recycling or reuse. [www.drummuster.com.au/containerrecycling/the-abcs-for-your-ibcs/](http://www.drummuster.com.au/containerrecycling/the-abcs-for-your-ibcs/)

**For information on the drumMUSTER program phone 1800 008 707 or contact your local representative:**

<b>Northern NSW</b>	<b>Southern NSW</b>	<b>Queensland</b>
<b>Phil Tucker</b>	<b>Vernon Keighley</b>	<b>Colin Hoey</b>
<b>0427 925 274</b>	<b>0406 745 030</b>	<b>0428 964 576</b>

## Safely dispose of unwanted chemicals

Unwanted rural chemicals may result from – discontinued use of chemicals because of changes in cropping or animal practices, development of newer, more effective or safe chemicals, changes in a chemical's registration through the APVMA and/or banning from use, unknown product, sale of property, inherited product and deceased estates. Any unwanted or unknown chemicals held on farm are potential hazards to people, the environment and the community.

ChemClear is an industry stewardship program which is funded to collect currently registered agricultural and veterinary chemicals at the end of their life cycle, or, when they become surplus. The program is targeted to meet disposal requirements of ag and vet chemical users, and, whilst doing so diverts potential hazardous chemicals from being dumped in landfills, creeks or being inappropriately disposed of in the community.

There are six simple steps in using the program;

1. Take an inventory of any unwanted rural chemicals. The inventory should include all identifiable features of the container including label, manufacturer, expiry date, size of container and the remaining quantity of chemical left in the container.
2. Register the inventory for the next collection in your area. Book on; free-call 1800 008 182 or at; [www.chemclear.com.au](http://www.chemclear.com.au)
3. Continue to store your registered chemicals safely and securely.
4. ChemClear will contact you direct to advise the location for retrieval.
5. Prepare chemicals for delivery to collection site.
6. Deliver chemicals ensuring that transportation is safe. Never place chemicals in the boot of a car or back of a station wagon. Refer to ChemClear website for information about safe transportation.

The cost to use the ChemClear service depends on the chemical to be collected. Group 1 chemicals are collected free of charge under the program. These chemicals are currently registered, or within 2 years of expiry or deregistration, ag and vet chemicals manufactured by companies supporting the Industry Waste Reduction Stewardship initiative. Group 2 chemicals are those chemicals that are no longer registered, unknown, unlabelled, out of date, or mixed ag and vet chemicals. A fee applies for disposal.





## Pesticides and the environment

The cotton industry's guidelines for minimising risk to the environment are another component of *myBMP*.

Most insecticides are toxic to aquatic organisms, bees and birds. Fungicides and herbicides are relatively safe to bees in terms of their active ingredients, but their carriers and surfactants may be toxic. The risks that a particular product poses to the environment are reflected in statements on the label under headings like 'Protecting wildlife, fish, crustacea and the environment'.

### Protecting bees

The cotton growing environment is a high risk environment for bees. Bees are particularly susceptible to many of the insecticides used on cotton farms, such as abamectin, fipronil, indoxacarb and pyrethroids. The productivity of hives can be damaged if bees or the hives are contaminated. Insecticides that are particularly toxic to bees are identified as such with the following special statement on the label:

**Dangerous to bees. DO NOT spray any plants in flower while bees are foraging.**

The IRMS highlights insecticides with label warning about bee safety. The relative toxicities of cotton insecticides to honeybees are listed in Table 3 on pages 8–9.

Table 3 ranks the acute toxicities of products to bees based on LD50 information. The residual toxicity of insecticides, that is, the amount of time the product remains toxic to bees after the time of application, should also be considered when information is available. For the majority of insecticides used in cotton the residual toxicities are unknown. Table 41 summarises the currently available information. ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS.

Bees become more active once the temperature rises above 10-12°C and maximize flight above 18°C. The foraging for pollen and nectar will drop off from 35 degrees as most field bees will be deployed to collect water from the nearest available source. Bees forage within a 2 to 4 km radius of their hive. They may travel up to 7 km in search of pollen and

nectar, though only when nearby pollen and nectar sources are in decline or are of poor quality. Bees collect nectar from extra-floral nectaries (eg under leaves) as well as from cotton flowers so they may forage in cotton crops before, during and after flowering. As well as bees foraging in cotton crops, damage may occur to bees when pesticides drift over hives or over neighbouring vegetation being foraged by bees eg. coolibah.

Coolibah trees (*Eucalyptus microtheca*) are a primary source of nectar and pollen for honey bees. These trees grow on the black soil plains along many of the river courses in the cotton growing areas. Budding and flowering occurs in response to good spring rains. In northern NSW buds appear in November and the trees begin to flower mid-late December finishing about the end of January, budding and flowering times vary by a few weeks in both the southern and central Qld areas. When heavy budding occurs beekeepers may move large numbers of hives into cotton growing areas for honey production.

With good communication and good will, it is possible for apiarists and cotton growers to work together to minimise risks to bees, as both the honey industry and cotton industry are important to regional development.

The pesticide risk to bees can be reduced by:

- Notifying apiarist when beehives are in the vicinity of crops to be sprayed to allow removal of the hives before spraying. Beekeepers require as much notice possible, preferably 48 hours, to move an apiary;
- Inform contract pesticide applicators operating on the property of the locations of apiaries;
- Paying particular attention to windspeed and direction, air temperature and time of day before applying pesticides;
- Using buffer zones as a mechanism to reduce the impact of spray drift or overspray on to non target crops and native vegetation used by foraging bees; and,
- Avoiding drift and contamination of surface waters where bees may drink (see advice on risk management for aquatic organisms).
- Where possible, use EC or granular formulations in preference to wettable powders which are particularly hazardous to bees. Micro-encapsulated formulations such as that used for lambda-cyhalothrin are particularly hazardous to bees because of their persistence in the environment and because bees transport the micro-capsules back to the hive along with the pollen;

### Further information about protecting bees or to contact the owner of bee hives

#### NSW Apiarist Association

Kate McGilvray (Secretary)

info@nswaa.com.au

Phone: 02 6373 1435, Fax: 02 6373 1436

#### Qld Beekeepers Association

Colleen Morris (secretary)

qbainc@bigpond.com

Phone: 07 5465 3682

#### NSW DPI

Doug Somerville, Technical Specialist (Honey Bees)

Ph: 02 4828 6619 Mob: 0427 311 410

doug.somerville@dpi.nsw.gov.au

#### DAFF Qld

Patricia Swift, Apiary officer

Ph: 07 5466 2216

patricia.swift@daff.qld.gov.au

### Protect bees when using Fipronil

#### Refer to label statement:

**'Dangerous to bees. DO NOT apply where bees from managed hives are known to be foraging, and crops, weeds or cover crops are in flower at the time of spraying, or are expected to flower within 28 days (7 days for pastures and sorghum).**

**Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar, if there is any potential for managed bees to be affected by the spray or spray drift. If an area has been sprayed inadvertently, in which the crop, weeds or cover crop were in flower or subsequently came into flower, notify beekeepers in order to keep managed bees out of the area for at least 28 days (7 days for pastures and sorghum) from the time of spraying. Where the owner of managed hives in the vicinity of a crop to be sprayed is not known, contact your State Department of Primary Industries/Agriculture, citing the registration number, for assistance in contacting the owner.'**

## ‘Bee Connected’

Communication between growers and bee keepers is critical in reducing the risk of unintended exposure of bees to any products that may have the potential to negatively impact bee health. BeeConnected is a nation-wide, user-driven smart-phone app and website that enables collaboration between beekeepers, farmers and spray contractors to facilitate best-practice pollinator protection. Growers log the location of their properties through a Google Maps-based platform with GPS capability. Beekeepers can use the same functions to log the present or future locations of their beehives. When a beehive is logged nearby to a farmer’s property, both users are sent automated notifications and are able to chat further about their activities via a secure internal messaging service. CropLife Australia provide BeeConnected to the community free of charge as part of their Pollinator Protection Initiative. **Please note**, this new service from CropLife replaces the ‘Bee Alert’ system that CottonInfo was running.

For more information and to participate in this great service go to: <http://beeconnected.org.au/>

## Protecting the aquatic environment

The risk to aquatic organisms can be managed by:

- Preventing drift into surface waters during application;
- Locating mixing/loading and decontaminating facilities away from surface waters and providing such facilities with bunding and sumps to prevent movement of either concentrate or rinsate into surface waters;
- Installing valves which prevent back-flow when filling spray tanks from surface waters and in suction lines for chemigation systems which draw directly from surface waters;
- Avoiding aerial application of spray on fields during irrigation;
- Building sufficient on-farm storage capacity (including provision for storm run-off) to contain pesticide contaminated tail water from irrigation;
- Spraying in an upstream direction, when it is necessary to spray near surface waters, to reduce the maximum concentration at any one point in the watercourse;
- Using only registered products to control aquatic weeds, e.g. Roundup Bioactive® rather than Roundup®; and,
- Avoiding disposal of used containers in surface waters and on flood plains and river catchments.

## Protecting birds

Organophosphate and carbamate insecticides can be particularly toxic to birds, especially in granular formulations. Insecticidal seed dressings can pose similar risks. Just a few seeds and granules can be lethal. Spillages can be very hazardous as birds can easily ingest a toxic dose from a small area.

Risks to birds from granular products can be managed by:

- Ensuring complete incorporation beneath the soil, particularly at row ends where spillage may occur; and,
- Immediate clean up of spillage, however small.

Bait materials for control of rodents (not registered in cotton, but relevant to crops grown in rotation with cotton) or soil insect pests can also be hazardous to birds, either through direct consumption of the bait or from feeding on bait-affected animals or pests. The risks to birds from baits can be managed by:

- Ensuring even bait distribution, with no locally high concentrations;
- Not baiting over bare ground or in more open situations, such as near crop perimeters, where birds may see the baits;
- Not baiting near bird habitat such as remnant native vegetation;
- Use of bait stations which prevent access by birds, particularly near bird habitat;

- Only baiting where pest pressure is high;
- Baiting late in the evening when birds have finished feeding; and,
- Prompt collection and burial of rodent carcasses where these occur in open situations.

Foliar applied insecticide sprays can also be hazardous to birds, either because of direct contact with the sprayed chemical, or by feeding on sprayed insect pests or crops. Even where birds are not killed, they may be sufficiently affected to make them more vulnerable to predation. Contaminated seed and insects collected from sprayed fields by parent birds can also be lethal to young chicks still in the nest. Risks to feeding and nesting birds can be managed by:

- Minimising drift into remnant vegetation, wildlife corridors, nesting sites, or other bird habitats;
- Actively discouraging birds from feeding in crops which are to be sprayed;

## IMPORTANT: USE OF PESTICIDES

**Pesticides must only be used for the purpose for which they are registered and must not be used in any other situation or in any manner contrary to the directions on the label. Some chemical products have more than one retail name. All retail products containing the same chemical may not be registered for use on the same crops. Registration may also vary between States. Check carefully that the label on the retail product carries information on the crop to be sprayed.**

**This publication is only a guide to the use of pesticides. The correct choice of chemical, selection of rate, and method of application is the responsibility of the user. Pesticides may contaminate the environment. When spraying, care must be taken to avoid spray drift on to adjoining land or waterways.**

**Pesticide residues may accumulate in animals treated with any pesticides or fed any crop product, including crop residues, which have been sprayed with pesticides. In the absence of any specified grazing withholding period(s), grazing of any treated crop is at the owner’s risk. Withholding periods for stock treated with any pesticides or fed on any pesticide treated plant matter must also be observed. Animals which test positive for chemical residues (i.e. with readings which exceed maximum residue limits for certain chemicals) at slaughter will be rejected. Pesticide residues may also contaminate grains, oils and other plant products for human use and consumption. Growers should observe harvest withholding periods on the pesticide label and should not assume that in the absence of a withholding period or after the expiry of a withholding period that the plant products will be free of pesticide residues.**

**Some of the chemical use patterns quoted in this publication are approved under Permits issued by the Australian Pesticides and Veterinary Medicines Authority (APVMA) at the time the publication was prepared. Persons wishing to use a chemical in a manner approved under Permit should obtain a copy of the relevant Permit from the APVMA and must read all the details, conditions and limitations relevant to that Permit, and must comply with the details, conditions and limitations prior to use.**



- Spraying late in the day when birds have finished feeding; and,
- Using only low toxicity chemicals when large concentrations of birds are nesting nearby. The best way to manage any long term adverse environmental risks is to follow the protection statements on labels, minimise spray drift, and to dispose of chemical containers and waste in accordance with label directions and codes of practice.



For more information and to participate in the bee connected service go to:  
<http://beeconnected.org.au/>

**TABLE 41: Cotton insecticides with known residual toxicities to honey bees**

Active Ingredient	Chemical group	Residual toxicity to bees <sup>1</sup>	Comment
clothianidin	neonicotinoids		Residues may remain toxic to bees several days after application.
fipronil	phenyl pyrazole	7 to 28 days	Long residual. See label extract page 145.
clothianidin	neo-nicotinoids		Residue may remain toxic for several days after spraying.
spinosad	spinosyn	1 day	Not hazardous once the spray has dried. Avoid drift onto hives.
betacyfluthrin	synthetic pyrethroid	>1 day	Longer residual expected in Australian conditions.
chlorfenapyr	pyrole		Foraging behaviour could be affected for >2 days
esfenvalerate	synthetic pyrethroid	1 day	
lambda-cyhalothrin	synthetic pyrethroid	>7 days	Micro-encapsulated formulation has longer residual.
carbaryl	carbamate	up to 7 days	
chlorpyrifos	organophosphate	up to 1 day	
dimethoate	organophosphate	up to 3 days	
parathion	organophosphate	1 day	Depending on weather conditions, residual may be 4–6 days <sup>2</sup> .
methidathion	organophosphate	3 days	

Source: Primefact 149, Pesticides – a guide to their effect on honey bees.

<sup>1</sup>Residual toxicity is the amount of time the pesticide remains toxic after application. Data is derived from United States field trials conducted by the University of California (Atkins et al. 1981, Reducing pesticide hazards to honey bees) and Washington State University (Mayer et al. 1999, How to reduce bee poisoning from pesticides) unless otherwise indicated.

<sup>2</sup>United States Environment Protection Agency.

## PESTICIDE APPLICATION RECORD SHEET



NSW DEPARTMENT OF  
PRIMARY INDUSTRIES

Location, Applicator, Date of Application					
Property/holding (residential address):					Date:
Applicator's full name:			Owner (if not applicator):		
Address			Address		
		Phone:			Phone:
Mobile:	Fax:	Email:	Mobile:	Fax:	Email:
Sensitive areas (including distances, buffers):			Comments (including risk control measures for sensitive areas):		
Host/Pest					
Paddock number/name:		Paddock area:		Order of paddocks sprayed:	
Crop/situation:			Type of animals:		
Crop/pasture/variety:			Age/growth stage		
Growth Stage:			Mob/paddock/shed:		
Pest/disease/weed:			Number of animals treated:		
Pest density/incidence: <input type="checkbox"/> Heavy <input type="checkbox"/> Medium <input type="checkbox"/> Light					
Application Data					
Full label product name:			Rate/dose:	Water rate L/ha:	
Permit No:	Expiry date:	Adjuvants:		Total ha:	
Total L or kg:	WHP:	ESI:	Date suitable for sale:		
Equipment type:	Release height:	Speed:	Nozzle type:	Pressure:	
Date last calibrated:	Water quality (pH or description):				
Weather					
<input type="checkbox"/> Showers <input type="checkbox"/> Overcast <input type="checkbox"/> Light cloud <input type="checkbox"/> Clear sky					
Rainfall (24 hours before and after)					
Before:	mm	During:	mm	After:	mm
Time (show time in this column)	Temperature °C	Relative humidity (%)	Wind speed	Direction	Variability
Start:					
Finish:					
Comments:					
* Include brand and capacity, e.g. Teejet AI 11002.					



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The Cotton Pest Management Guide for Cotton 2014 - 15**

**The complete document can be found on the CRDC or myBMP web sites during the 2014-15 Australian cotton season**

[www.crdc.com.au](http://www.crdc.com.au)

or

[www.mybmp.com.au](http://www.mybmp.com.au)

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