



## Handling Guidelines for Growers



**CROP  
PROTECTION  
INSTITUTE**

## Grower Certification

Grower pesticide safety courses are an essential source of information on correct use of pesticides. Required by some provinces, these courses keep applicators current on new pesticide technology, formulations and application techniques. Growers should be aware of renewal requirements for provincial certification.

### Responsibility

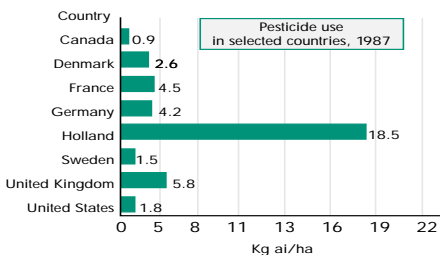
This publication is intended to be used as a guidebook for growers. Users of crop protection products should always follow the directions provided on product labels.

Neither the Crop Protection Institute, its employees, members or agents have made or hereby purport to make any representations, warranties, or covenants with respect to any information contained in this guide. Nor will they be liable for any damage, loss or claims, including those of an incidental or consequential nature. Further this guidebook is not in any way intended to abrogate or derogate from any requirements contained in municipal, provincial or federal by-laws, regulations or legislation.

## Overview

Control of pests is managed through a wide range of activities to reduce weed populations, plant diseases and insect pests. Pesticides, which include herbicides, insecticides, fungicides and rodenticides, are vital to the agricultural industry's efforts to control these pests.

Pesticide use in Canada is lower than in most countries, based on kilograms of active ingredient per hectare.



The Pest Management Regulatory Agency (PMRA) is the single agency under Health Canada which is responsible for pesticide registration in Canada. Before a pesticide can be used in Canada, it must undergo a thorough registration process which includes submission of the results of extensive laboratory and field tests that not only illustrate its effectiveness but also its safety to human health and the environment.

Pesticide manufacturers must submit: extensive toxicology studies; detailed data on anticipated human exposure; data on physical, chemical and environmental properties; the amount, frequency and times of applications; and information on the residue levels on food crops.

Pesticides are available in Canada in solid, liquid and gaseous formulations. The label on pesticide containers provides complete information on the product type, crops and application rates, pests controlled and safe handling of the product.

Members of the Crop Protection Institute are involved in various crop protection technologies, including pesticides.

Pesticide

*Safety*

Handbook

## Role of Pesticides

- Benefits of proper use
- Information about correct use

## Good Stewardship Practices

- Surplus tank mixtures
- Re-entering treated areas
- Keep application records
- Empty container management

## Managing Risk

- How you can be exposed
- Formulations

## Clothing and Handling to Protect

- Routes of exposure during mixing/loading
- Sources of exposure
- Minimizing exposure
- Procedures for mixing/loading
- Safety is in your hands
- How chemical resistant gloves help
- Protecting your eyes
- On hats and aprons
- On using a respirator
- Mixing & Loading Practices
- Exposure to dilute spray solution
- Spray applications
- Avoiding drift during spray applications
- Benefiting from sprayer technology
- Taking care of your spraying equipment
- Water can help
- Laundering work clothing
- Be ready to act quickly

## Storage and Emergency Response

- Protecting our water supply
- If a spill happens
- Fire emergency response plan
- Planning for an emergency
- Emergency response plan
- Being prepared for an on-farm emergency
- Sketch of your farm & immediate surroundings



## Role of pesticides

Simply by reading this book, you are demonstrating your commitment to be a responsible Canadian grower. We all share a responsibility to protect ourselves, our families, our neighbours and the environment during all phases of pesticide handling, use and storage.

The use of crop protection technology in Canada is also based on responsible product stewardship and respect for the health and safety of Canadians and the environment. Within that context, the use of pesticides has helped to double the world's food supply over the past 45 years without increasing the amount of land used for production or sacrificing our valuable wildlife habitats.

Not only is pesticide technology essential to meet the current food supply needs of our growing world population, it is also instrumental in public health in controlling disease and insects. Over the past century, chemicals have played a large role in improving health and society's standard of living.

Improved pesticides will continue to be an important tool of Canadian growers in supplying food to the world. As with all tools, pesticides provide the most benefit when they are used properly and safely.

## Benefits of proper use

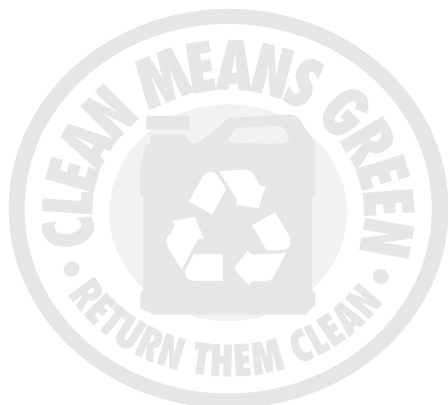
Used safely and effectively, pesticides offer many benefits to Canadians and the environment:

- Aid in the economical production of food;
- Help prevent the spread of weeds, disease and insect pests;
- Contribute to food quality;
- Protect parkland and recreational areas;
- Protect forests.

## Information about correct use

There are many reliable sources of information on the correct use of pesticides:

- Pesticide labels;
- Material safety data sheets (MSDS);
- Federal and provincial publications;
- Pesticide control officials and extension personnel;
- Pesticide suppliers;
- Grower pesticide safety courses.



# Good stewardship practices

## Empty container management

Non-refillable liquid containers should be triple rinsed or pressure rinsed immediately after emptying into a spray tank.

### Triple rinse as follows:

- Drain the container into the spray tank until no drips are visible, or shake the bag into the tank or hopper.
- Fill the empty container  $\frac{1}{4}$  full with water and recap. Shake well for 30 seconds.
- Pour rinsate into application equipment. Drain for 30 seconds after the flow begins to drip.
- Repeat this procedure two more times.

Properly rinsed and cleaned empty pesticide containers should be taken to a container collection depot.

Refillable mini-bulk and bulk containers should be used where possible and returned to your supplier when empty. Don't rinse or put any other chemical in them.

## Container disposal

Correct disposal of pesticide containers is important because residues in unrinsed containers could pose a risk to humans and the environment. Poor disposal practices also waste pesticides.

Rinse water containing residue from a pesticide container need not pose a disposal problem. It can be used on the application site.

## Disposing of concentrate

To avoid unnecessary expense and waste, plan your pesticide requirements carefully in consultation with your supplier. Buy only what you need.

- Check the label for guidance on disposal of concentrates.
- Return unopened containers to your supplier.
- Contact your supplier or the provincial pesticide regulatory authority if you need further information.
- Manage on-farm pesticide inventories carefully. An ongoing build-up of unusable pesticides could become an environmental risk and safety issue on your farm. Unless these products are disposed of in an environmentally acceptable manner today, you could face a future cost liability in the disposal of them.

## Surplus tank mixtures

Avoid mixing surplus spray solutions by accurately measuring the area to be treated, calculating rates and calibrating application equipment.

Follow label directions for using up excess spray mixture.

## Re-entering treated areas

To avoid exposure, wait a period of time before re-entering a treated area without protective equipment.

Re-entry times are listed on the label. If a re-entry time is not listed, it has not been established and you should minimize exposure by remaining out of the treated area until the spray has dried. Provincial re-entry guidelines may be available.

Where required, post signs and make sure that anyone who could enter the treatment area is aware of the re-entry time.

## Keep application records

Records of applications provide a history of pest problems and the control methods used. They are useful for planning future applications. Check with provincial authorities for legal requirements for record keeping.

### What should be included:

- Date and time of application and applicator's name
- Location of application
- Pest, crop and stages of development
- Trade name and PCP number of pesticide
- Rate of application
- Type of application equipment and equipment settings (nozzles, pressure, spacing, speed, boom height)
- Weather conditions

## Empty Container Management

Canada is recognized as a world leader in its empty pesticide container stewardship initiative. Since 1989, the crop protection industry in Canada has contributed more than \$20 million towards this initiative.

Based on its message of Rinse, Return and Recycle, the container program is rapidly moving towards its target of a 90% return rate on empty plastic and metal containers by the year 2000.

Safe end uses are determined for all collected materials. Plastic containers are recycled into such products as agricultural fence posts and curb stops while metal is recycled into reinforcement bars for concrete. The program has achieved impressive results.

Another viable end-use application for empty containers is energy recovery, using the granulated plastic as a supplementary fuel source in facilities such as cement kilns.

More than 800 collection sites are currently in operation across Canada through the cooperation of dealers and municipalities.

Since 1989, more than 17 million empty pesticide containers have been removed from the environment. This includes more than 13 million pounds of plastic and 4 million pounds of metal.

**THANK YOU  
FOR CONTRIBUTING TO THE  
SUCCESS OF THE CONTAINER  
MANAGEMENT PROGRAM**

## Managing risk

Taking a responsible and safe approach when you mix, load or apply pesticides helps to minimize any risk of exposure. This starts by carefully reading the entire pesticide label and being alert to any possible risk to yourself, your family, fellow workers, neighbours and wildlife.

All family members should be involved in ensuring that safe practices are maintained in all activities where farm chemicals are involved.

Understanding the possible potential for personal exposure, allows you to lower the risk. For example, a pesticide could be toxic if ingested but it can be handled safely. By reducing the chances of ingesting any of the pesticide, the risk can be managed safely.

Toxicity is a property of all chemicals. Everything from vitamin A to common salt is toxic at some level, in some form, or by some manner of exposure.

Exposure relates to the way a chemical gets into your system. Dermal exposure relates to the extent to which the body absorbs a chemical through the skin. Oral toxicity is a measurement of what happens if a chemical is swallowed, inhalation toxicity is concerned with breathing the chemical, and eye irritation indicates the potential effects from eye exposure.

Acute toxicity generally describes the potential, immediate effects of a single and short term exposure to a chemical, while chronic toxicity describes the effects from repeated exposures over time.

### Reducing exposure

The label on the chemical product, whether for household or agricultural use, will indicate ways you can protect yourself from exposure.

In addition, modern sprayer technology incorporates safety features designed to minimize exposure. Growers should consult with their suppliers to stay up to date on new equipment and application techniques.

### **Human health**

Risk is primarily affected by the pesticide toxicity and the length of exposure to it. In general terms, risk increases with higher toxicity and longer exposure.

More simply,

Risk = Toxicity x Exposure.

Pesticide toxicity is determined by the nature and concentration of the active ingredient. Some active ingredients are naturally more toxic than others and higher concentrations of the same active ingredient may increase toxicity.

Risk can be minimized by using a less toxic pesticide and/or exposure to it.

### **Poisoning symptoms**

Recognizing poison symptoms helps eliminate exposure and to begin preventative action or first aid procedures.

If anyone on the site is acting or feeling unusual or exhibiting the following poisoning symptoms, consult a doctor or local Poison Control Centre:

- Headache
- Dizziness
- Thirst
- Excessive salivation
- Nausea, stomach cramps, vomiting
- Diarrhea
- Eye irritation, blurring of vision, constriction of pupils
- Skin irritation or burns

- Perspiration
- Weakness, fatigue or exhaustion
- Feeling of constriction in throat and chest, wheezing, coughing
- Rapid or weak pulse
- Trembling, muscle twitching, seizures
- Mental confusion
- Inability to breathe, blue lips or face
- Loss of reflexes, slurred speech, staggering gait
- Restlessness, apprehension, excitability
- Unconsciousness
- Allergic response

Some poisoning symptoms may be vague and can be confused with other common ailments such as flu, excess heat, hangover or food poisoning.

Read the cautionary statement listed on the pesticide label before handling the product. Be aware that acute pesticide poisoning symptoms may appear within a few minutes of exposure or may not be evident for hours.

## How you can be exposed

**What is the potential for exposure when handling, mixing, loading or applying farm chemicals?**

- Exposure to pesticides can come from spills, splashes, vapours, drift or from handling contaminated equipment.
- Chemicals can come in contact with skin from many sources, such as handling, opening and emptying packages, adjusting nozzles, spills or broken hoses.

- Chemicals may enter your mouth from contaminated hands when you eat, drink or smoke, or from splashes.
- Fumes, dust or fine mist accidentally inhaled.

These are a few examples of ways you can be exposed to chemicals. To reduce exposure, get help from a guide - the product label.

### **Required reading: What the label tells you**

The label that appears on every pesticide container serves several purposes:

- It is a legal document that must be followed in order to achieve the proper results.
- It provides directions needed for mixing and application as well as other product information.
- It tells how to protect yourself and the environment.
- It indicates the degree of chemical toxicity.

## **Formulations**

Pesticides are formulated in both liquid, solid and gaseous forms. Pesticides designed to work as gases are fumigants.

Liquid formulations include emulsifiable concentrates, flowables, microencapsulated suspensions, solutions and aerosols.

Solid formulations include dusts, granulars, pellets, soluble granules, soluble powders, baits, tablets, dry flowables and wettable powders.

Some formulations are ready to use, while others may need to be diluted, usually with water. Some products are supplied as powder or gel in a water-soluble bag.

**Remember, always check the label!**

## Clothing and handling to protect

You wouldn't play contact sports or tackle a construction job without wearing protective equipment. The same thinking should apply to the use of farm chemicals.

### Personal protective equipment

- Long-sleeved shirt
- Long pants or coveralls
- Chemical resistant boots or shoes with protective coverings
- Respirator
- Dust mask
- Protective eye equipment
- Chemical resistant gloves
- Chemical resistant apron
- Wide-brimmed waterproof hat

The bottom line:

Using protective equipment according to the label is a sensible and simple way to help manage risk.

### Routes of exposure during mixing/loading

The three major routes are dermal, oral and inhalation.

Although the primary route of dermal exposure is to the hands, a significant amount of exposure can occur to the rest of the body by: permeation of clothing; penetration of seams and clothing closures; gaps around cuffs and collars; and touching the face with contaminated hands.

### Sources of exposure

Aerosols are airborne particles. The particles can be dusts from the dry formulation or droplets from the spray mix. Although they may be invisible to the naked eye, aerosols are always there any time you open a bag, pour product or agitate a spray mix.

Splashes and spills are major sources of exposure caused by accidents or sloppy work practices.

## Contaminated surfaces

During the normal course of work, residues can accumulate on: product bags, knife used to open bags, weighing instruments such as scoop and scales, induction system tanks and hoses, nurse tanks and hoses, water supply hoses, work area surfaces, clothing, face shield, gloves, boots and coveralls.

## Minimizing exposure

This involves the integration of good work practices, avoiding residues and keeping a barrier between your skin and the residues.

## Procedures for mixing/loading

- Pour pesticide into the tank with your body upwind of the operation.
- Pour with the container below face level.
- Cut bag spouts with a sharp knife when using powder formulations. Tearing causes dust and aerosol formulation.
- Keep your work area organized and free of clutter.
- Keep a supply of fresh water available in the mixing/loading area.

## Safety is in your hands

When you think about how you work with pesticides, it isn't surprising that your hands have the greatest exposure level. You open containers with your hands, turn valves and fix nozzles and hoses. Sometimes you clean up spills with your hands.

In fact, exposure studies show that the greatest amount of measurable material can be accumulated on your forearms and hands.

## It is estimated that 70 per cent of skin exposure to pesticides occurs through the hands

Think about how often you touch your face or other parts of your body and how you handle sandwiches, drinking water or tobacco products. Much of the oral chemical exposure comes directly from your hands.

Suitable, clean and properly maintained protective equipment reduces exposure when used properly.

### How chemical resistant gloves help

Unlined, chemical-resistant gloves can't prevent all hand exposure, but gloves do make a big difference. It makes good sense to wear gloves when you handle, mix or apply any farm chemical, or fix sprayer equipment.

#### Here's how to use them:

- Gloves should be long enough to protect your wrists. If working overhead, put your shirt sleeves inside the gloves and turn up the cuff of the gloves to catch material that might run down your arms.
- When you're finished, rinse the gloves thoroughly with clean water before taking them off. Wash your hands after removing the gloves using lots of soap and water.
- Keep gloves in a handy place on the tractor or in the applicator truck. Inspect gloves often, at least daily, filling them with clean water to test for any leaks.
- Wash both the inside and the outside of the gloves after use, and rinse with clean water.

### Protecting your eyes

Eyes are very sensitive to most chemicals. Wear eye protection any time there is a possibility of getting a chemical in your eyes.

- Face shields, chemical goggles or safety glasses offer protection. If you wear regular eyeglasses, use a face shield or goggles that fit tightly over them.

- If the product label indicates that a respirator is required, appropriate eye protection should also be used.
- When mixing liquid pesticide formulations that carry **WARNING** or **DANGER** signal words on the label, always wear eye protection.

## On hats and aprons

Chemicals splashed on your hair and scalp are another source of dermal exposure that can be easily prevented by wearing a hat. Wash your hair and scalp thoroughly after working with pesticides.

When a farm chemical is being applied overhead, a waterproof hat with a wide brim can protect the head and neck area.

Wear a chemical resistant apron when mixing and handling liquid formulations. An apron provides significant protection against spills, container leaks, broken hoses and other unexpected exposures. Make sure the apron is long enough to cover the boot tops but not long enough to cause you to trip. Be careful around power take off equipment with aprons.

## On using a respirator

If the product label specifies that a respirator should be used, then use it.

Several types of respirators are available. Some are built into protective garments that even supply cool air. Most common, however, are cartridge or canister respirators.

A dust mask is not a substitute for a pesticide respirator.

The key to your protection is selecting the right kind of respirator. Make sure that it is approved for pesticide use and fits properly. Keep it clean and change the filters as specified.

The product label indicates measures that should be taken to minimize exposure. It is strongly recommended these measures be followed.

## Mixing & Loading Practices

- Wear clean, long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical-resistant shoes or boots.
- Wear protective eye equipment such as a face shield or safety glasses.
- Wear coveralls or a chemical-resistant apron when pouring from containers.
- For a container larger than 20 litres, use a transfer system that avoids open pouring when transferring the liquid concentrate from the container into the spray tank.

### Here are some safety tips:

- Locate the mixing and loading area as far away as practical from any water source. Follow existing provincial guidelines.
- A mixing and loading area with a curbed concrete pad and runoff containment will contain any spilled chemical or rinsate.
- Install a roof or cover over the area to minimize the potential amount of contaminated water you might have to deal with.
- Use a separate water tank as the water supply.
- When filling the sprayer tank, use an anti-backflow device and an air gap above the tank to prevent contents of the tank from draining back into the water source.
- Keep constant supervision to ensure there are no overflows.
- Follow label directions when mixing and using pesticides.

- It makes good economic and environmental sense to plan ahead and mix the exact amount of spray required for the area. Consider using the line-injection systems that mix only what is used.
- Leftover solution should be applied to the same sprayed field. Application should be carried out away from a well or any surface water.

## Exposure to dilute spray solution

### During application or while repairing or cleaning equipment:

- Wear a long-sleeved shirt, long pants, chemical-resistant gloves, shoes, or boots.
- Rinse your gloves in clean water before removal.
- Proper timing of repairs to equipment helps to minimize exposure. For example, leaks should be repaired when there is only water in the sprayer tank.

## Spray applications

### Take the following precautions during spray applications:

- Avoid direct applications to any body of water.
- Don't contaminate water through spray drift or by filling and cleaning of equipment or disposal of wastes.
- Note the spray volume per hectare that can be safely used, depending on the type of application and the target site.
- Appropriate buffer zones, according to the pesticide label, should be established between treatment areas and aquatic systems or wildlife habitat.
- Always use a calibrated sprayer.

## Avoiding drift during spray applications

Small quantities of spray, which may not be visible, may harm susceptible crops or damage sensitive non-target habitat.

### Here's how to avoid spray drift:

- Use the higher water volume recommended on the label.
- Use only nozzle types and other spray equipment which minimize the production of fine spray drops. Coarse sprays are less likely to drift.
- Apply spray only where there is little or no hazard from drift due to wind. Check the product label for specific information.

## Benefiting from sprayer technology

Here are some examples of how technology can help growers to be responsible users of crop protection products:

- Select the best equipment to do the job. Use nozzles that create the least amount of drift and shrouded sprayers to direct the spray.
- Spray monitors contribute to accuracy and are useful management tools.
- A direct injection sprayer eliminates pesticides from water solution, solves compatibility problems in a tank mix and there is no left-over spray solution. It also allows for more flexible application rates on target weeds and insects.
- A closed-system loading mechanism reduces operator exposure to concentrated chemicals by transferring product directly from the pesticide container into the sprayer tank.
- Fill the sprayer tank to the level required for the area to be sprayed to avoid surplus chemical.

## Taking care of your spraying equipment

A preventative maintenance sprayer program is essential.

Filter and screen all water and chemicals entering the sprayer. Keep all foreign objects out of the sprayer system.

Calibrate the sprayer tank and mark volume increments.

Check the nozzle tips for output and uniformity of the spray pattern.

Calibrate and re-calibrate the sprayer several times during the spraying season. Record pressure, volume and speed after each re-calibration. Information on how to calibrate a sprayer is available in provincial spray guides or from your chemical supplier or government extension representative.

Clean and rinse the sprayer after every use.

## Water can help

Just about the best safety tool when working with pesticides is water

- Keep a tank of clean water available in the field or on your equipment when applying pesticides. Use it for handwashing or for washing yourself in the case of a spill or a splash. If chemicals get on your skin or in your eyes, flush immediately with water!
- When finished working with the pesticide, clean your protective equipment with clean water before storing.
- After spraying, shower with plenty of soap. Wash thoroughly, including under your fingernails.
- Wash your hands before eating, drinking, using tobacco or the toilet.

## Laundering work clothing

- Wear clean work clothes every day. Spilling just a little farm chemical on your clothes today may be insignificant, but wearing the same clothing for several days without laundering prolongs your exposure and increases risk.
- Be sure that children don't handle dirty work clothes. Leaving clothes that may have pesticides on them around the house risks needless chemical exposure to your family.
- Pesticide-contaminated work clothes should never be stored or washed with the "family load" of other clothing.
- After using a farm chemical, wash clothes as soon as possible. Wash clothing twice alone and then run the washing machine through a cycle without clothing to remove any traces of chemical residue.
- Leather shoes and gloves can absorb chemicals and are almost impossible to decontaminate. Chemical resistant boots or chemical resistant shoe covers should be worn during mixing applications and cleanup.
- If a pesticide penetrates clothing, remove the clothing immediately. Then wash thoroughly and put on clean clothing.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with pesticide concentrate.
- Follow the manufacturer's instructions for cleaning personal protective clothing and equipment.
- If no instructions for washables are provided by the manufacturer, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry.

### Fast action can minimize the impact of a pesticide spill or splash

#### Here's what to do:

- If you or someone else is splashed with pesticide, flush the exposed area with water immediately.
- Remove soaked clothing and wash thoroughly. Never put contaminated clothing back on.
- Pesticide labels carry information about first aid. If symptoms of over-exposure occur, see a physician or contact a poison control centre and take the product label with you.
- Know where to get medical help in case of an emergency. Keep the emergency number list provided in this handbook in a handy place. Be sure that everyone understands what to do in case of an accident.

If working at a remote location, plan ahead on how to get help if needed. Let someone know where you are.

## Storage and emergency response

### Safe pesticide storage practices

- Buy only what you need to minimize the amount of pesticides stored.
- Use bulk containers, where possible, to minimize the number of containers.
- Check the product label or ask your supplier about any special handling requirements.
- Store pesticides away from humans, livestock, feed, food, and water sources.
- The storage area should be dry, heated and insulated to protect the stored chemicals. For small quantities of pesticides stored over winter, an insulated and heated cabinet is adequate.
- The floor of the storage area should be sealed and curbed to contain any spills or leaks. There should be no floor drain.
- Only store opened containers on the farm. Return unopened containers to the supplier.
- The storage facility should be away from areas subject to flooding.
- Locate the storage area as far as possible from any water source.
- Follow provincial regulations where applicable.

## **Personal safety in the storage area**

For personal safety, the storage area should contain:

- A locked door, accessible from outdoors only;
- A “Warning: Chemical Storage” sign on all doors;
- Ventilation to the outside;
- Original labelled containers;
- A stock of absorbent material for spills;
- Posted emergency telephone numbers for the ambulance, doctor, hospital, poison control centre, fire department, nearest spills action centre, police and supplier;
- Protective clothing and respiratory equipment nearby;
- An updated list of all stored chemicals. Also keep updated list in another area away from storage (in case of fire).

## **Proper storage**

Before building a storage area, check the design requirements of the provincial pesticide regulatory agency. Also check with your municipality to determine if a building permit is required. Locate your storage area away from dwellings.

## **Knowledge of products**

- Know the quantity and type of product stored.
- Know where chemicals are stored.
- Be aware of any risks associated with storing products.

## **Housekeeping**

- Keep the storage area clean and tidy.
- Clean up spills immediately.

## Protecting our water supply

Using chemicals as efficiently as possible is a positive step toward ensuring safe water supplies.

- Follow the label and use recommended dose rates.
- Take special care with flood-prone crop land by using less persistent products.
- On soils prone to surface runoff, use preplant incorporated products if possible.
- Avoid excessive irrigation following the use of a pesticide to reduce runoff and soil infiltration.

## If a spill happens

If a well is accidentally contaminated with a pesticide, it must be pumped immediately. Don't use the well until the water has tested safe.

Absorbent material such as dry sawdust, soil or kitty litter should be stored close by for immediate cleanup of any spills or container leakages and to prevent movement to the water supply.

## Fire emergency response plan

- Preplan actions in the event of a fire.
- Write down a plan and keep a copy of it in a location in addition to the storage area.
- Review your emergency response plan with the local fire department.
- Do not store chemicals in a maintenance shop. If they must be located in the same building, separate the pesticide area by a fire wall.
- Install proper fire extinguishers.
- Keep proper protective clothing, respiratory and emergency equipment on hand.

## Planning for an emergency

### Crop Protection Institute Member Emergency Numbers

In case of fire, leaky or damaged containers or other emergencies, report at once by telephone to the emergency number of the company. If a company cannot be reached after hours or weekends call:

**CANUTEC (613) 996-6666 (Collect in Canada)**

**CHEMTREC 1-800-424-9300 IN USA & CANADA**

Company	Daytime #	24 Hour #
AgrEvo Canada Inc.	(306) 721-4500	(306) 721-4500
Alberta Wheat Pool	(403) 290-4669	(403) 262-3499
BASF Canada Inc.	(416) 675-3611	(613) 996-6666
Bayer Inc.	(416) 248-0771	(514) 697-5555
Cargill Limited	(204) 947-0141	1-800-567-7455
Ciba Crop Protection	(905) 821-4420	1-800-267-6351
Co-operative Federée de Québec	(514) 858-2667	
Cyanamid Canada Inc.	(905) 470-3600	1-800-454-2673
DowElanco Canada Inc.	(403) 735-8800	(519) 339-3711
DuPont Canada Inc.	(905) 821-5132	(613) 348-3616
Federated Co-operatives Ltd.	(306) 244-3311	(306) 721-5222
Interprovincial Co-operative Ltd.	(204) 233-3461	
ISK Biosciences	(519) 680-1991	(216) 357-7070
Manitoba Pool Elevators	(204) 947-1171	(613) 996-6666
Monsanto Canada Inc. (Ag Group)	(204) 985-1000	(514) 366-5588

<b>Company</b>	<b>Daytime #</b>	<b>24 Hour #</b>
Monsanto Canada Inc. (The Solaris Group)	(905) 507-9628	1-800-668-4877
N.M. Bartlett Inc.	(905) 563-8261	
James Richardson & Sons, Limited	(204) 988-5961	1-800-991-7466
Plant Products Co. Ltd. <i>Nighttime #</i>	(905) 793-7000 (905) 275-1400	
Rhône-Poulenc Canada Inc.	(416) 821-4450	1-800-344-7577
Rohm and Haas Canada Inc.	(416) 287-4444	(613) 996-6666
Sandoz Agro Canada, Inc.	(905) 821-7850	(708) 699-1616
Semico Inc.		1-800-361-9859
Transbas Inc.	(406) 245-4171	1-800-424-9300
Uniroyal Chemicals Ltd.	(519) 669-1671	(519) 744-3060
United Agri Products East	(519) 268-8001	
West	(403) 273-4355	1-800-561-8273
United Farmers of Alberta	(403) 258-4500	1-800-592-5585
United Grain Growers Limited <i>Nighttime #</i>	(204) 944-5411 (204) 233-8402	
Van Waters & Rogers Ltd.	(204) 489-0102	1-800-424-9300
ZENECA Agro	(905) 643-4123	1-800-263-0984

Numbers verified June '95

## Emergency response plan

Location: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Office Phone Number: \_\_\_\_\_

Home Phone Number: \_\_\_\_\_

**FOR CHEMICAL EMERGENCIES INVOLVING SPILLS, LEAKS, FIRES, EXPOSURE, VANDALISM, TORNADOS OR ACCIDENTS, PHONE:**

Fire: \_\_\_\_\_

Police: \_\_\_\_\_

Ambulance: \_\_\_\_\_

Doctor: \_\_\_\_\_

Hospital: \_\_\_\_\_

Poison Control Centre: \_\_\_\_\_

CANUTEC: (613) 996-6666

### The plan

Having an Emergency Response Plan in place will help you to deal with personal or more widespread on-farm emergencies.

Practice response procedures regularly to develop the ability to react efficiently in any emergency

All users of the Emergency Response Plan should be thoroughly familiar with their own role and responsibilities in any emergency situation. They should be familiar with the location and use of emergency equipment and supplies.

## Being prepared for an on-farm emergency

The following guidelines will help you prepare for emergencies which could impact directly on the safety of others on the farm:

Consider the following questions:

- a) Is the immediate risk small or large?
- b) Should an attempt be made to handle the emergency locally?
- c) Who calls for assistance from the local fire department, ambulance, police etc.
- d) Who calls the Ministry of Environment? Tel:
- e) If injuries occur, who contacts the hospital and immediate family?

An evaluation of the seriousness of the emergency must be made quickly, in order to bring sufficient and appropriate resources into action to deal with it, yet to avoid serious over-reaction. It is better to over-react than to fall short in response.

Your evaluation should be made on the basis of:

**Severity** – the nature, size, and extent of the problem

**Urgency** – whether it has the potential to escalate quickly

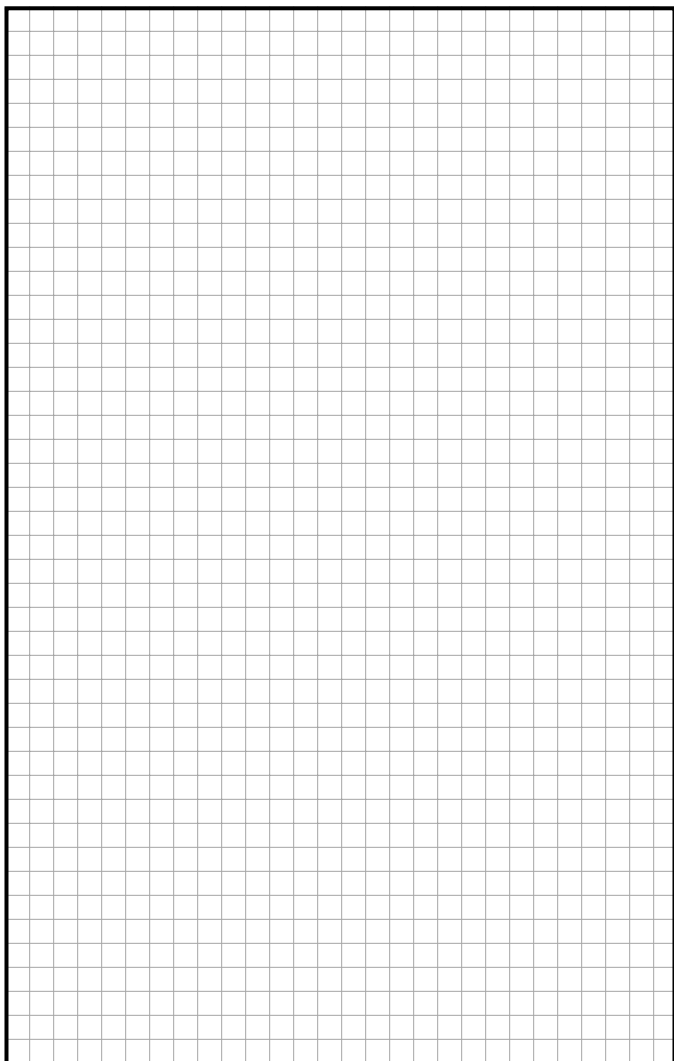
**Threat** – whether the effects and the risk of damage might become significant

**Impact** – the effects to people, the environment and property

- The fire department is the normal first line of response to all emergencies including fires and spills.
- What first aid equipment is available on the farm?
- A spill, regardless of size, must be contained so the clean-up and decontamination process can begin.
- Would a vehicle (pick-up truck) be available during an emergency to pick up supplies, carry messages or evacuate people?

## Sketch of your farm & immediate surroundings

Draw map showing the property site and immediate surroundings. Show outline of buildings, type of construction, permanent interior walls, building openings, and major fixed equipment. Provide elevation views if more than one storey. Locate all fixed outside equipment. Show access routes and approximate distances to important buildings. Select a suitable scale and identify areas of the facility committed to pesticides and flammables. Indicate North direction with an arrow.









## Pesticide glossary

**Calibration:** Measuring and adjusting the output and working rate of application equipment to achieve accurate dose rates for pesticides.

**Concentrates:** The forms in which pesticides are usually sold, mostly requiring dilution before use. Emulsifiable concentrates are liquids which form emulsions upon dilution. Suspension concentrates form suspensions.

**Contamination:** Undesired presence of a pesticide.

**Dilution:** The addition of water (usually) to reduce the concentration of pesticide before application.

**Dose rate:** The amount of pesticide recommended to be used on a given area of crop and expressed in litres or kilograms per hectare. Indicated on the label.

**Grazing and Pre-harvesting interval:** The period of time which must elapse between the application of a pesticide and the harvesting of a crop or grazing by livestock, to ensure that pesticide residues on the crop are within acceptable limits.

**Protective clothing:** Clothing selected or designed to protect the wearer against contamination. To be worn, as recommended, when handling, mixing and applying pesticides.

**Re-entry period:** The time which must elapse after pesticide treatment of a crop or an area before it is advisable for people to re-enter the treated area.

**Spray mixture:** Pesticide concentrate diluted with water and used for spraying crops.

**ULV sprays:** Ultra low volume spray usually applied undiluted with special equipment.

## What is the Crop Protection Institute?

The Institute is a non-profit trade association of manufacturers, formulators and distributors of pest control products in Canada. It is involved in all aspects of industry-wide and public education, communication, legislation and regulation appropriate to protecting Canada's crops and green spaces.

The Institute is committed to the safe manufacture, transport, storage and use of agricultural chemicals and the environmentally sound management of empty pesticide containers.



**CROP  
PROTECTION  
INSTITUTE**

21 Four Seasons Place, Suite 627, Etobicoke, Ontario, Canada M9B 6J8

Tel: (416) 622-9771 Fax: (416) 622-6764

