

Pesticide Use Around the Home and Garden

Pests in the home and garden can cause damage to homes and landscapes, cause health problems, and decrease fruit and vegetable production. The use of pesticides is one option in treating these problems. However, if handled improperly, pesticides can harm our environment.

Pesticides include products that control insects (insecticides), weeds (herbicides), and fungi (fungicides). The ingredients that make these chemicals toxic to pests also can be harmful to people and animals. In some cases, these products also can contaminate water supplies.

This can happen even when pesticides are used according to the label. Water contamination is costly to remedy, and homeowners who use pesticides need to follow some common sense guidelines to avoid these unintended consequences.

BEFORE YOU BUY A PESTICIDE

Pest-free homes and gardens are expensive, impractical, and environmentally unsound. Consider all options to manage pests before choosing a chemical “quick fix.” These include preventative maintenance to your home to keep pests out, changes in cultural practices, biological controls, encouraging natural enemies, less-toxic controls, and allowing low levels of weeds and garden insects to survive. The goal is to have a healthy environment in homes and gardens, not to eliminate 100% of pests.

In some cases, a pesticide may be the best option – if so, consider calling a licensed, professional applicator.

As little as one teaspoon of certain pesticides rinsed down a drain is enough to show up as a pollutant in local streams.



Before purchasing a pesticide, be sure you know the answers to the following questions:

- **What is the problem?** Correct identification and diagnosis are essential to successful control.
- **What are the control options?** Evaluate your options and the need for treatment.
- **Is chemical control the appropriate action?** In some cases, doing nothing may be the best choice.
- **Which pesticide is appropriate for the problem?** No single pesticide can take care of all your pest problems, and some can even induce other pest problems.
- **What is the target area?** This helps to determine exactly how much pesticide is needed and where it needs to be applied. Avoid sidewalks, driveways, and other hard surfaces where runoff could occur. In some cases, only a small portion of the yard or garden needs to be treated. Spot spray weeds rather than treating the entire lawn.
- **When should the pesticide be applied?** Pesticides should be applied at a time when they will be most effective against the pest. In many cases, pests under dormant or inactive conditions may not be susceptible to pesticide treatments.

Ask for help from a local pest control professional or CSU Extension office if you are unsure of the answer to any of these questions.



Refer to the pesticide label for recommended protective clothing and equipment.

BUYING HOME AND GARDEN PESTICIDES

Once you're sure that a pesticide is required, you must determine how much chemical is needed. Know the size of the area you want to treat before buying the chemical. Usually, only a small amount of pesticide is necessary. The product label will provide recommended rates to help you determine how much you need. Many chemicals can now be purchased in ready-to-use spray bottles, eliminating the need for mixing, large containers, and calibrated equipment.

When you go to the store to buy any pesticide:

- **Read the label** at the store and look for information on health and environmental hazards associated with the product. Look for signal words and use the product with the least toxicity.
- Look for **selective or pest-specific pesticides** rather than **broad spectrum** pesticides, which may end up harming non-target plants and insects.
- **Buy only enough pesticide** for the job to avoid storage or disposal of leftover chemical.

MIXING PESTICIDES

Before you actually mix a pesticide for application, test your sprayer with water to make sure it is working properly and is not leaking. Read the label again to determine the amount of chemical you need to mix. Be sure to do any needed calculations before you begin. Then select an area on the lawn or open ground to mix the pesticide.

- **Put on chemical resistant rubber gloves**, a long sleeve shirt, pants, shoes, and socks before opening the package.
- **Do not mix pesticide on a hard surface** or concrete; a grassy area where children do NOT play is usually best.
- **Never mix pesticide with anything besides water**, unless specifically directed to do so by the label.
- **Measure the proper amount** of product as specified on the label. More is NOT better and against the law!
- **Fill the sprayer with 2/3 of the amount of water needed.** Add the correct amount of pesticide. Rinse the measuring container into the sprayer and finish filling the sprayer as directed. Do NOT use this measuring container for anything but pesticide mixing.
- **Mix only the amount needed** for the current job and spray it all out on the treatment area to avoid disposal problems.
- If you empty the pesticide container, **follow the disposal procedure later in this document.**

READING THE PESTICIDE LABEL

Do not rely on your memory when you buy or use a pesticide you have used before. Pesticide labels give you important information on how to effectively, safely, and legally use the product. Critical information to look for on the label includes the following:

Signal Words – These are used to describe the potential hazard or how toxic the product is to humans.

Table 1. Pesticide Signal Words

MOST DANGEROUS	SIGNAL WORD	MEANING
↓	DANGER or DANGER-POISON	extremely flammable, corrosive, or highly toxic
	WARNING	moderately toxic
	CAUTION	slightly toxic
SAFEST	no signal word	not hazardous

Precautionary Statement – Describes how the product is hazardous to animals and humans. You will also find measures to use the product safely and a list of protective clothing to wear to reduce exposure. Sometimes this section will include instructions to physicians for proper treatment if an exposure occurs.

Environmental Hazards – Provides information on toxicity to fish and wildlife and contamination potential to surface and groundwater.

Statement of Practical Treatment – Describes emergency first-aid measures. If someone is poisoned, take the pesticide label to the attending physician.

Directions for Use – Tells you what pests the product is registered to control, sites on which the product can be used, in what form the product is applied, how much to use, and when and where to apply the product. Be sure the product you choose is labeled for both the pest and the site you want to treat.

Storage and Disposal – Provides information on how to store the pesticide properly and what to do with any leftover pesticide.

Always read and follow the pesticide label.



COLORADO DEPARTMENT OF AGRICULTURE

Pesticides Program

(303) 869-9056

colorado.gov/pacific/agplants/pesticides

COLORADO DEPARTMENT OF PUBLIC HEALTH AND THE ENVIRONMENT

Household Hazardous Waste Division

(303) 692-3320

colorado.gov/pacific/cdphe/hazwaste

COLORADO STATE UNIVERSITY EXTENSION

Environmental Pesticide Education Program

(970) 491-3947

cepep.agsci.colostate.edu

EPA REGION VIII PESTICIDE OFFICE

(303) 312-6312 or (800) 227-8917

ROCKY MOUNTAIN POISON & DRUG CENTER

(800) 222-1222 or (303) 389-1100

rmpdc.org

NATIONAL PESTICIDE INFORMATION CENTER

(800) 858-7378

npic.orst.edu

APPLYING PESTICIDES

Before spraying, clear all people, pets, toys, pet dishes, and other items out of the area to be treated. Keep everyone away until the spray has dried or for as long as the label directs. It's best to spray in the early morning or late evenings – this will help protect honey bees and other pollinators. If a wind comes up while spraying, stop and finish the job later so that other areas are not affected by pesticide drift.

- Always read and follow label instructions. It is the law.
- Apply pesticide only on the target areas. Do not apply on driveways, sidewalks, or other hard surfaces where water runoff occurs.
- Clean up any spilled chemical right away. Cat litter and “floor dry” work well to clean up spilled liquid concentrate.
- If the label states that the product must be watered in, apply only enough water to completely wet the treated area. Stop watering before it puddles or begins to run off.

CLEANING UP AND DISPOSING OF WASTE

If you have any pesticide mix left over after the job, spray it out on an appropriate area of your lawn or garden. Rinse off all equipment and gloves on the grass or on bare ground if using a grass or broad spectrum herbicide such as glyphosate. Never rinse off or clean pesticide equipment where it can enter into a storm drain or other drain. Don't forget to flush out the hoses and nozzles.

Before you drink, eat, use the toilet, or smoke, wash with soap and water. The clothes worn during spraying should be laundered separately from the household's regular wash.

To dispose of empty pesticide containers:

1. Fill the empty container half full with water and carefully shake to rinse.
2. Empty the rinse water into the sprayer. Repeat and rinse two more times.
3. Use the rinse water to make up your last batch of spray. Do not pour it down a house drain or storm drain.
4. Puncture the bottom of the container if it is plastic or metal, then wrap it in newspaper and throw it in the trash. **Do not burn or recycle pesticide containers**

STORING AND DISPOSING OF PESTICIDES

One of the most compelling reasons not to apply lawn and garden chemicals yourself is the problem of storing or disposing of unwanted pesticide. Improper disposal of pesticides is illegal and can have severe water quality and environmental impacts.

Sloppy storage practices are also dangerous. Children or pets that get into stored pesticides can be seriously harmed.

To store pesticide properly:

- Keep pesticides in a locked, labeled, weather- proof cabinet away from the living area. Keep gloves and measuring utensils locked up also to prevent their use for other purposes.
- Keep all chemicals tightly sealed in their original containers with original labels.
- Do not allow powder or granular products to get wet or liquid products to freeze. This may ruin the products and lead to disposal problems.

The best way to get rid of a pesticide is to use it as intended. If you have extra product, try giving it to a neighbor or friend who needs it. There are many options available to help you legally dispose of waste pesticide. Watch your paper for information on hazardous waste collection programs or call your local CSU Extension office, city or county health department, or wastewater treatment plant for details on pesticide recovery/disposal programs. More information on county disposal programs is available through the Colorado Department of Agriculture at colorado.gov/ag/pw.

If you cannot find a public or private disposal option, never resort to dumping pesticides down the drain, in the garbage, or down the storm drain. Instead look for an appropriate location to apply the remaining pesticide according to the label.

SIMPLE THINGS YOU CAN DO TO PROTECT WATER QUALITY

- Question the need for pesticide. There may be a better choice.
- Accept a certain amount of pests or weeds as part of the natural balance.
- Consider using a licensed, professional applicator instead of applying chemicals yourself.
- Follow all label directions for storing and mixing of pesticides and for disposing of empty containers.
- Use only the amount of chemical specified by the label – more is NOT better! It is a violation of federal law to use a chemical in a manner inconsistent with its labeling.
- Mix only the amount of pesticide that will be used for the current job.
- Take the time and care not to get any pesticide on sidewalks, driveways, or other hard surfaces.
- Store pesticides in a locked cabinet in their original containers with labels intact, visible, and legible.
- Never pour leftover spray mix or pesticide down a house drain or storm drain.

Improper disposal of pesticides is illegal and can contaminate water supplies.



SIMPLE THINGS YOU CAN DO TO PROTECT POLLINATORS WHEN USING PESTICIDES

- Be aware that native pollinators such as bumblebees live in natural areas and may be exposed to pesticides during application.
- Read and follow ALL label directions carefully so the proper rate is applied and re-applying is avoided.
- Not all pesticide products bear the icon so read the label to see if the pesticide should NOT be used on pre-bloom or blooming plants.
- If blooming plants require a pesticide application to control a pest, remove the blooms before applying to protect pollinators and avoid a label violation. If blooming plants are in an area that is to be treated, cover the blooming plants before making the application.



- Try to choose chemicals that are effective against the pest but have less residual activity, if possible.
- Read the ENVIRONMENTAL HAZARDS section of the label to determine if special precautions must be taken to protect pollinators. Look for the bee hazard icon on labels of certain insecticides to see the precautions for using the pesticides.
- Do not apply pesticides when pollinators are actively foraging in the treatment area. Try to make applications in the early morning or just before dusk when pollinators are less active.
- Do not spray when it is windy to avoid the pesticide drifting to unintended areas.
- Learn whether there are beehives in the area by checking the voluntary sensitive site registry, FieldWatch, at <https://co.driftwatch.org/>. You may wish to inform neighboring beekeepers of your pesticide application plan so they can relocate their bees, cover their hive, or confine the bees.



COLORADO STATE UNIVERSITY EXTENSION

For more information on protecting water quality and the environment around your home, please see the other Homeowner's Guides:

XCM-219, Household Water Conservation

XCM-221, Alternative Pest Management for the Lawn and Garden

XCM-222, Fertilizing Your Lawn and Garden

XCM-223, Protecting Water Quality and the Environment

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