



PURDUE PESTICIDE PROGRAMS

Purdue University Cooperative Extension Service

PESTICIDES AND THE HOME, LAWN, AND GARDEN

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Think Before Using Pesticides

Pesticides should be your last defense against pests!

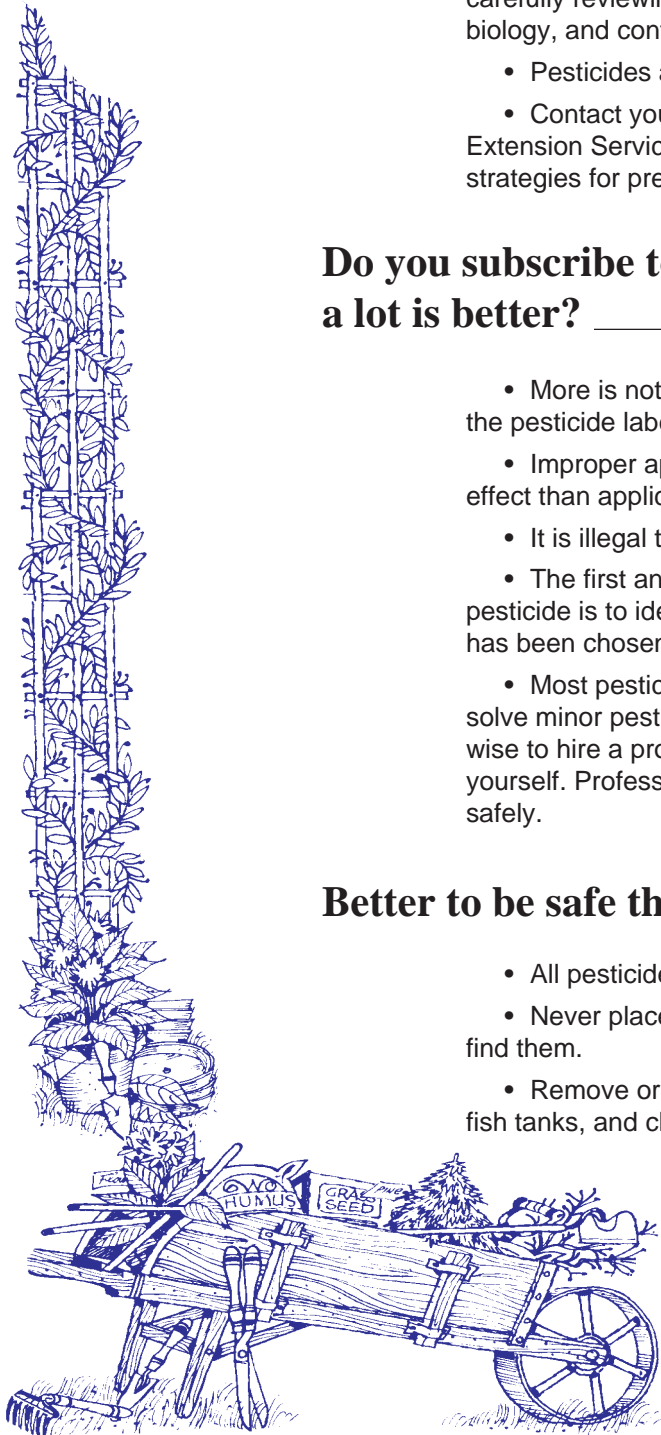
- Learn more about the pests you are attempting to control by carefully reviewing publications which discuss pest identification, biology, and control strategies.
- Pesticides are not always an appropriate choice.
- Contact your county office of the Purdue University Cooperative Extension Service for information on problem identification and strategies for prevention and control.

Do you subscribe to the notion that if a little is good, a lot is better?

- More is not better *or* legal: Apply only at the rates specified on the pesticide label.
- Improper application rates may have a substantially different effect than applications made at rates specified by the pesticide label.
- It is illegal to use pesticides in violation of label instructions.
- The first and most important step in selecting and using any pesticide is to identify the pest correctly; once an appropriate product has been chosen, read the entire pesticide label.
- Most pesticides manufactured for home use are designed to solve minor pest problems. If the pest problem is severe, it might be wise to hire a professional pest control service in lieu of tackling it yourself. Professionals are trained to solve pest problems quickly and safely.

Better to be safe than sorry!

- All pesticides are poisonous.
- Never place rodent baits where children, pets, or wildlife may find them.
- Remove or cover food, dishes, utensils, pet food, water dishes, fish tanks, and children's toys before spraying pesticides.
- Always keep children and pets away from mixing and application areas.
- Always wear long pants, a long-sleeved shirt, gloves, socks, and shoes when mixing or applying a concentrated pesticide. Read the label for additional advice.
- Wash yourself and your clothes thoroughly with soap and water after each application.



Don't let a child become a poisoning statistic!

- Store all pesticides *out of reach of children* and in their original, labeled containers.
- Before using the product, know what to do in case of an accidental poisoning.
- If you don't understand the emergency procedure instructions on the pesticide label, contact the Indiana Poison Center (800-382-9097) for assistance.
- If someone swallows a pesticide, call a physician, hospital, or local poison control center immediately. Keep the pesticide label or labeled container with you as a reference for the physician.

Reading and Understanding the Pesticide Label

Questions

- Do you know the definition of a pesticide?
- Do you know that many household cleaning products are considered to be pesticides?
- Do you know what an EPA registration number is?
- Do you know the difference between an active ingredient and a brand name?
- Do you know what information is listed on the label?

The U.S. Environmental Protection Agency's *National Home and Garden Pesticide Use Survey* provides meaningful insights into how consumers deal with pest problems, how they manage pesticide products, and to what extent safety precautions are followed when using, storing, and disposing of pesticides in and around the home. The summary of this survey clearly points out a critical need for each of us to increase our safety awareness for purchasing, applying, storing, and disposing of pesticide products. *Pesticides and the Home, Lawn, and Garden*, is designed to help the homeowner become more knowledgeable about using pesticides effectively and with greater safety to the applicator, family members, pets, wildlife, and the environment.



Consider a broader definition of "pesticide." _____



A pesticide is any product that makes a claim to kill or repel pests. Pests include plants or animals that carry disease, damage our landscapes and gardens, or become a nuisance and detract from the quality of life. Some examples of pests include insects, rodents, slugs, birds, rabbits, weeds or brush, mildew, molds, bacteria, and viruses.



Did you know that pesticides not only include typical insect and weed sprays but also bleach, toilet bowl cleaners, disinfectants, humidifier tablets, insect repellents, indoor air foggers, flea collars and shampoos, and many cleaning products normally used in the home?

Understand your pesticide product.

To determine whether or not a product is a pesticide, look for the EPA registration number (e.g., EPA Reg. No. 3120-280) on the container; the number automatically identifies the product as a pesticide. The first set of numbers (3120) identifies the *specific registrant*

(manufacturer), while the second set of numbers (280) identifies the *specific product*; this information might become crucial in the case of a problem with the product. The EPA registration number assigned to a product signifies to the user that all federal requirements for testing have been met and that all of the instructions, directions, and precautions associated with the pesticide collectively comprise the *pesticide label* and become *legal requirements* with which the user must fully comply.



Know what ingredients are in pesticide products. _____

Pesticide products generally are recognized by their advertised brand names, such as Ortho Rose and Floral Dust®, Fertlome Sevin®, D-Con Kills Rats®, and Hi Yield Diazinon®. You should know that every pesticide label must list the total amount of active ingredient (the actual compound that kills or repels the target pest) in the product. The ingredient statement is clearly marked and easily identifiable on the front of the pesticide label.



Labels provide most of the information necessary to answer questions on pesticide application, safety, storage, and disposal. Becoming familiar with the types of information on a typical pesticide label will help improve your understanding of the product. Once you

Make reading the label your first priority.

understand how a pesticide label is organized, it takes only a few minutes to read all of the information found on most pesticide products. When you have doubts about the interpretation of information contained on the label, contact

your local county Extension educator or professionals who can assist you in pest identification; suggest appropriate control tactics; and make recommendations about products, rates, and application methods. Most labels can be divided into three types of information: *product*, *safety*, and *use*. Examples of terminology on labels are listed in the following tables. See if you can locate the various types of information and similar instructions and precautions on the labels of products found in your home.



Product Information

Terminology	Sunniland Rose Dust®	D-Con Kills Rats®
Manufacturer	Sunniland	D-Con
Active ingredient	chlorothalonil	brodifacoum
Active ingredient (%)	20	0.005
Inert ingredient (%)	80	99.995
EPA registration number	9404-12-16	3382-66
EPA establishment number	16-VA-1	3282-OH-1
Formulation	dust	pellets
Classification	insecticide	rodenticide

Safety Information

Terminology	Ortho Weed-B-Gon Weed Killer®	Lysol Disinfectant®
Signal words	caution	warning
Keep out of reach of children	present	present
Route of entry	skin	eyes, skin, mouth
Protective clothing	goggles, long pants, shoes, gloves...	rubber gloves
Practical treatment	Wash skin with soap and water.	If swallowed, drink a large quantity of milk....
Emergency phone	800-457-2022	not indicated
Environmental toxicity statement	toxic to aquatic invertebrates	not indicated
Specific action	Do not apply directly to water....	Do not get into eyes or reuse containers.
Re-entry statement	Do not permit children or pets to enter treated areas until spray has dried.	not indicated

Definitions

Active ingredient. The chemical component of a pesticide formulation that is toxic to the pest.

Brand name. The name by which a pesticide is marketed.

Environmental toxicity statement. Precautions for protecting the environment.

EPA establishment number. Identifies the manufacturing location.

EPA registration number. Number that is assigned to a particular registrant's product.

Inert ingredients. Carriers which are not toxic to the target pest.

Practical treatment. How to respond to a human exposure emergency.

Protective clothing. The *minimum* safety equipment that must be worn.

Re-entry statement. Precautions about re-entering treated areas.

Route of entry. Site where pesticides might enter the human body: mouth, skin, eyes, lungs.

Signal words. Indicate acute toxicity to humans: *Danger* means highly toxic; *warning* means moderately toxic; *caution* means slightly toxic.

Specific action. Look for the words *do not* or *avoid*.

Use inconsistent with the label. It is a violation of federal law to use any pesticide product in a manner inconsistent with its label. Use includes everything from purchase to the disposal of the container.

The label is the law!

Use Directions

Terminology	Off Insect Repellent®	Natural Guard Pyrethrum Powder®
Use inconsistent with the label is a violation of federal law.	present	present
Pests controlled	mosquitoes, gnats, fleas....	fleas, ticks....
Sites of application	human skin and clothing	cats and dogs
Application rate	Use enough to cover skin.	Dust thoroughly.
Application method	Hold container 6-8 in. from skin or clothing.	not indicated
Storage	Store away from heat...	not indicated
Disposal	Wrap container, put in trash.	approved waste disposal facility
Spills	not indicated	Stop this spill by repositioning or repairing.

Pesticide Safety Is Your Responsibility

Questions

- Do you know why it is important to always read and follow pesticide label instructions?
- Do you know that some pesticide products require the user to wear special protective clothing?
- Do you know why you must store pesticides under lock?

Pesticide data submitted by manufacturers undergoes intensive review by EPA similar to the Federal Food and Drug Administration review of human medicines. EPA registration numbers are assigned to labels only after each product's active ingredient has been put "under the microscope" and only after scientific tests have been reviewed. The pesticide label is extremely important because this is where we, the users, find specific instructions for using the product safely. Pesticides are developed by manufacturers, registered with the EPA, and marketed and sold to the public with the assumption that users will comply with label directions. A point that can never be overemphasized: *Reading, understanding, and strictly adhering to label instructions will allow for effective pest control without negative health or environmental consequences.*

Follow safety precautions when handling pesticides.

Most pesticides that homeowners use contain very specific instructions for reducing exposure (e.g., avoid contact with eyes or skin); and most labels state the types of clothing that must be worn during the handling, mixing, and application processes. Protective equipment requirements differ from product to product; for instance, whether the product comes ready-to-use or as a concentrate that requires mixing influences the protective clothing requirement assigned. The potential health hazards and the precautions necessary to prevent health injuries differ dramatically between those two types of products.

Ready-to-use sprays and baits are accurately mixed and packaged by the manufacturer to ensure the proper diluted concentration. As such, these diluted products pose very little, if any, risk to the user, provided the products are used according to label directions.

Some products are packaged so that the user handles and mixes a concentrated form of the pesticide. Improper mixing, storage, and disposal of a concentrated pesticide constitutes misuse which can pose serious risks to people, pets, or wildlife. A long-sleeved shirt, long pants, shoes, and chemical resistant gloves are minimal

requirements for reducing exposure to pesticide concentrates or sprays. By covering hands, forearms, and legs, the dermal exposure potential can be reduced by 95 percent. Additionally, it is a good idea to always wear safety glasses when handling pesticides because of the corrosive nature of many of these materials. With your next pesticide purchase, remember to ask the salesperson for chemical resistant gloves and glasses if required by the label. Only by reading the label will you know whether additional protective clothing is needed to adequately safeguard yourself against exposure.

The procedures are simple, and the effects of taking safety precautions pay big dividends in protecting you and your home environment. Any pesticide can pose serious risks to people, pets, or wildlife if not used properly, in a manner consistent with its label.

Know how to handle pesticide-contaminated clothing.

Always assume that clothing worn while working with pesticides has been contaminated. It should be laundered separately after each use: *Never launder pesticide-contaminated clothing with the family wash.* The longer pesticide-contaminated clothing remains unwashed, the more difficult it is to remove the pesticide. It is best to presoak contaminated clothing in hot water containing a heavy-duty detergent. Start the wash cycle after the presoak water has been drained. Clean the washing machine immediately after the wash cycle by running a complete cycle of new water and detergent through it. Line drying is preferable to machine drying, as it eliminates the potential for dryer contamination.

Prevent accidental poisoning by practicing common sense. _____

All pesticide labels must have **KEEP OUT OF REACH OF CHILDREN** marked clearly on the container. Yet nearly half of all households with children under five years of age have at least one pesticide in an unlocked cabinet within their reach. The kitchen, bathroom, and basement are more likely to house unsecured pesticides than any other areas. Children who had easy access to these materials became part of an unfortunate statistic reported by the Indiana Poison Center. Take the time to properly safeguard your home.

Never transfer any pesticide to soft drink bottles, milk cartons, or other pesticide containers. The pesticide label printed on or attached to the original container is the only sure source to identify a pesticide product quickly during a medical emergency. The time you take in

KEEP PESTICIDES OUT OF REACH OF CHILDREN

keeping pesticides properly secured in original containers—*with labels attached*—might save someone from needless suffering.

The best method to avoid accidental exposure is to strictly follow all precautionary statements on the pesticide label. The pesticide label always contains first aid information for use if an accidental pesticide exposure occurs; if you encounter such a situation, quickly follow those guidelines. List emergency phone numbers on page 12 for use if more help is needed, and have the pesticide label in front of you for locating answers to questions you may be asked about the product.

Understanding Pesticide Disposal _____

Questions _____

- Do you buy ready-to-use products to avoid mixing, simplify application, and reduce storage and disposal needs?
- Do you understand the necessity of buying only what you can readily use to solve your pest problems?

The amount of time committed to pest control in and around the home often governs the kinds and amounts of pesticides homeowners should purchase. Buying more than is needed often results in storage and disposal problems associated with leftover pesticides. For instance, yard enthusiasts get much satisfaction from the aesthetic beauty of a well-maintained landscape around their property. These individuals will devote considerable time looking for early signs of pests in their lawns, vegetable gardens, shrubs, and flowers. Such enthusiasts seldom accumulate unused pesticides because of their experience in knowing which pests to expect in a typical year, which products have worked in the past, and how much of a given product they will need. Those who are less experienced often allow surplus pesticides to accumulate around the home. Pesticides often are relegated to storage shelves because they are difficult to mix and apply, because they are not suitable for the task at hand, or because too much product was purchased. When pesticide use is a necessity, purchase ready-to-use products or concentrates that can be used up within a short period of time.

Reduce pesticide disposal through smart buying.

Most homeowners purchase pesticides with the intent of using them within a reasonable time period. However, surveys have shown that 25 percent of all home-stored pesticides remain on the shelf or under the kitchen sink, unused, for over a year. This ultimately can cause problems. Exposure of products to hot and cold temperatures is a problem associated with leftover pesticides. Most labels stipulate that the product be protected from freezing temperatures—a goal seldom achieved if products are stored in the garage. When pesticide products are exposed to extreme temperature fluctuations, their effectiveness is greatly reduced. Do not store concentrated or ready-to-use pesticides for prolonged periods.

Dispose of pesticides in an environmentally friendly manner.

Unfortunately, some households dispose of leftover pesticide products by dumping them in the household trash or pouring them into the sink, toilet, street, gutter, or sewer, or onto the ground. Such disposal "sites" are unacceptable. Household pesticide product labels generally will indicate that partially filled containers may be wrapped in several layers of newspaper and discarded in the outdoor trash. But for many people this disposal option is neither acceptable nor environmentally sound. Unused pesticides are best disposed of by using the products on the sites indicated on the label. Additionally, discard empty containers in the household trash so that they are not reused.

One should consider the potential disposal of a pesticide prior to purchasing it. Do your part in protecting yourself, your family members, and the environment. Be a responsible pesticide user.

Choosing a Professional Lawn Care or Pest Control Service

Many people, because they lack either the confidence or the time to read and execute label directions properly, choose a commercial business to manage their lawns, shrubs, and home pests. Remember, you are hiring a service because of its professional knowledge relative to controlling pests—which may involve some applications of pesticides. Selecting the best and most professional pest control service requires more than asking about price. Implement the following suggestions before you select a pest control company.

- Make sure the service has met all legal and educational requirements that give them the *privilege* to service your home. Ask to see the following credentials: a valid Indiana pesticide certification number, a state license, and proof of financial responsibility (insurance). The Office of the Indiana State Chemist (765-494-1492) can quickly verify this information.

- Check with the local chamber of commerce regarding the firm's past work performance.
- Ask plenty of questions! Ask for local referrals and affiliations with professional trade associations. Your pest control service company should be willing to explain company policies and give detailed explanations of its methods and solutions for controlling pests. If you don't understand the answers, ask for them to be repeated until you do. Answers to your questions should give you a good indication of the present and future reliability, expertise, and commitment of the company.
- Expect your pest management professional to provide you with answers to a wide assortment of pesticide-related topics such as personal safety and environmental impact, as well as standard and alternative insect, weed, and disease control tactics.
- Ask for pesticide labels when interviewing company representatives. Many answers to your questions will be found in the label instructions. Beware of companies whose representatives answer questions contrary to the instructions, directions, or precautions contained on the label.
- Selection of the company should not be made hastily. Take a few days to reflect on what you heard and to read the documentation supplied by the companies. Once a company has been selected, your loyalty should be based on a strong professional commitment toward effective, safe, and friendly pest control service.

Additional Pesticide Information for the Home

Provided below is a list of reference materials and telephone numbers that will assist you in answering questions that may arise during the purchase, use, storage, and disposal of pesticides in and around the home. Always remember that the safe use of pesticides is dependent upon reading the pesticide label, understanding the information, and precisely following all directions.

Telephone Numbers

- Indiana Poison Center, (800) 382-9097
- Purdue University
 - Contact the Purdue University Cooperative Extension Service by calling (888) 398-4636; ask for the number of your county Extension educator.
 - Purdue Pesticide Programs, (765) 494-4566
 - Purdue Center for Urban and Industrial Pest Management, (765) 494-4564
 - Purdue Plant and Pest Diagnostic Laboratory, (765) 494-7071
- Office of the Indiana State Chemist, (765) 494-1492
- U.S. Environmental Protection Agency, Region 5, (312) 886-5220

Purdue University Cooperative Extension Service Publications and Videotape

Publication listings and the video listed below are available at the county offices of the Purdue University Cooperative Extension Service and at the Media Distribution Center; call toll free, (888) 398-4636.

- *Read the Label* (V-HO-14)
 - Part 1, Selecting a Pesticide for Home Use
 - Part 2, Pesticide Safety for the Home

Purdue University Cooperative Extension Service Newsletter

- *Down the Garden Path*. This newsletter presents timely information on various aspects of pest control for the home and lawn: diseases of lawn and garden plants, and how to manage them; horticultural topics; questions from subscribers, with specialists' replies, etc. For subscription information, contact the Purdue University Plant and Pest Diagnostic Laboratory, 915 W. State Street, West Lafayette, IN 47907-2045; call (765) 494-7071.

Purdue University Cooperative Extension Service Special Programs

- Indiana Master Gardener Volunteer Educator Program. Contact Master Gardener State Coordinator, Purdue University, 625 Agricultural Mall Drive, West Lafayette, IN 47907-2010 [call (765) 494-1311], or your county Extension educator. The Master Gardener program, conducted locally through participating county Extension offices, provides an intensive education in horticultural principles to those with an interest in gardening. Interns are schooled in such subjects as plant and soil science, plant problem diagnosis, pesticide safety, and vegetable, flower, fruit, and landscape gardening. After completing their training, interns must volunteer one hour of community education for each hour of training provided.
- Purdue Plant and Pest Diagnostic Laboratory. Contact the director, Purdue University Plant and Pest Diagnostic Laboratory, 915 W State Street, West Lafayette, IN 47907-2045; call (765) 494-7071. The Purdue University Plant and Pest Diagnostic Laboratory has experts from five disciplines available for determining what your plant- or pest-related problems may be. The sample submission form is available from your local Extension office.

Emergency Phone Numbers

Copy and Post

- 4 Hospital _____
- 4 Physician _____
- 4 Ambulance _____
- 4 Local Police _____
- 4 State Police _____
- 4 Fire _____
- 4 Emergency: 911 (if available) _____
- 4 Indiana Poison Center: (800) 382-9097

**KEEP PESTICIDES OUT
OF REACH OF CHILDREN**

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