

31) Follow label directions found in the “Storage and Disposal” section for handling empty pesticide containers. The county cooperative extension office or pesticide distributor can provide recycling options or instructions on where to dispose of empty containers. Never reuse empty pesticide containers for any other purpose.

KNOW HOW TO MANAGE PESTICIDE SPILLS.

32) Do everything possible to prevent spills but be prepared in case one occurs. Have a spill kit on the service vehicle at all times. The kit should include enough absorbent material to contain a leak equal to the capacity of all spray tanks on the vehicle. Absorbent material includes items such as cat litter, soil, sand, sawdust, rags, paper towels, or newspaper.

33) Never leave a spill unattended. If a pesticide container tips over, quickly set it upright to keep more pesticide from spilling out. A container that splits open should be placed inside a larger container if one is available. Keep people and pets away from the spill. Make sure you are wearing the proper personal protective equipment (PPE), such as chemical-resistant gloves (not leather or fabric material gloves) and whatever other PPE the label requires.



34) Contain the spill. Liquid spills should be contained with absorbent material. Keep the spill from reaching storm drains and sources of water. Spills of granular and other dry products can be swept up. Spilled granules can be spread on a labeled site according to the product label (if they are not contaminated with other chemicals). Place any material from spill clean-up into a heavy-duty plastic bag for disposal.

35) Check with the manufacturer for advice before discarding spilled material (with or without absorbent) into the trash. The contents of the bag may be considered hazardous waste. Follow state or local guidelines for disposing of the pesticide and any absorbent or contaminated material.

DO YOUR PART TO PREVENT PESTICIDE RESISTANCE.

36) Never rely solely on the use of pesticides for controlling pests. Sanitation, exclusion, and other non-chemical methods reduce the reliance on pesticides and lower the pest infestation when pesticides are needed.

37) Avoid applying pesticides to the same sites on a routine basis.

38) Rotate products with different “group numbers” (signifying the mode/site of action) to control target pests in any given location. Some pesticide labels do not contain the group number, but all pesticides have an assigned group. The group number for every pesticide is available on either the Weed Science Society of America (WSSA) website, the Insecticide Resistance Action Committee (IRAC) website, or the Fungicide Resistance Action Committee (FRAC) website.

CHLORANTRANILIPROLE GROUP 28 INSECTICIDE

39) Consider using premixes of pesticides containing more than one effective mode/site of action where available and appropriate for the various pests you are targeting.

40) Contact the product manufacturer for additional information or if you suspect pesticide resistance. Lack of control of pests normally controlled by a product could indicate a problem with the application or possible resistance.

USE INTEGRATED PEST MANAGEMENT (IPM)

41) Use Integrated Pest Management (IPM), an approach to pest control that focuses on the prevention, suppression, and control of pests by using a combination of methods.

- Make the habitat unfavorable or less favorable for the target pests (insects, diseases, or weeds).
- Exclude the pest wherever possible.
- Monitor the area regularly for pests.
- Consider all appropriate methods of control.

42) Emphasize the role of proper sanitation in reducing pest problems. Recommend that customers:

- Keep areas clean and clear of any spilled or open food and drink.
- Store all foods, such as cereals, bread, and sugar, in pest-proof containers.
- Dispose of garbage promptly, tie garbage bags shut, and place garbage in dumpsters or in trash cans with tight-fitting lids.
- Rinse beverage containers before placing them in recycle containers.



43) Encourage customers to vacuum carpets, upholstery, and mattresses regularly to reduce the numbers of pests such as spiders, fleas, bed bugs, and cockroaches.

44) You and your customers should take steps to keep pests out of structures.



- Repair any torn screens.
- Keep unscreened windows closed, if possible.
- Seal any gaps, cracks, or holes around windows, doors, and foundations.
- Install weather stripping around doors and windows.
- Seal cracks, crevices, and other openings or hiding places within the house.

45) Educate customers on ways that they can modify landscaping to reduce the likelihood of pests infesting areas around the home.

- Keep mulch, leaf litter, and other vegetation 10-12 inches away from the house foundation.
- Use inorganic ground cover, such as gravel, in place of mulch close to the foundation.
- Remove old mulch before applying new mulch.
- Keep trees and shrubs pruned so that they are at least 10-12 inches away from the structure.

46) Remind customers of other things they can do to make their homes less prone to pest problems.

- Eliminate clutter that can harbor pests.
- Stack lumber, firewood, bricks, and stones away from structures and off the ground.
- Keep basements, crawl spaces, and foundations dry and reduce moisture in areas prone to high humidity.
- Eliminate standing water, deteriorating wood, and other insect and pathogen attractants.

47) Instruct your lawn-care customers on proper mowing, fertilization, and irrigation to maintain a healthy, competitive lawn, which will help avoid many



pest problems. Mulching under plants will prevent or minimize weed emergence.

48) Help customers avoid future pest problems by helping them identify pests and signs of their presence.

49) Record what and when treatments are done. States differ in the time required to keep service records and what information to retain, so make sure you know your state's specific requirements.

FIRST AND FOREMOST, BE A GOOD STEWARD.

50) When pesticides are needed, use them in a manner that minimizes the risk of harm to the environment, including people, pets, and wildlife.

Many factors affect the impact of pesticides on people and the environment. Although the government, industry, and extension provide regulations, labels, and educational outreach to promote judicious use and good stewardship, success depends on the personal knowledge and diligence of pest management professionals and others who handle pesticides.

There are excellent pesticide stewardship resources available through your Extension Service and the Pesticide Safety Education Program in your state.

The Center for Integrated Pest Management's (CIPM) Pesticide Environmental Stewardship website (PES) covers a wide variety of pesticide stewardship topics for those who apply, sell, store, or dispose of pesticides and provides advice for anyone who has questions about pesticides.

Your role as a PMP is critical in controlling pests that destroy property, contaminate food, transmit disease, and cause allergic or asthmatic reactions. It should be done with the utmost attention to proper and safe pesticide use. Thank you for being a good steward!

50 Ways to Treat Your Pesticide



Pest Management Professional Edition

For commercial, licensed, or certified applicators and technicians under their supervision



Always read and follow label directions before buying or using a pesticide. Follow all appropriate federal, state, and local regulations. Fumigants are not addressed in this brochure.

NC STATE
EXTENSION



This publication can be downloaded from the following websites:

North Carolina State University
pesticidesafety.ces.ncsu.edu

Syngenta Stewardship
syngenta-us.com/practicing-stewardship

Pesticide Environmental Stewardship (PES)
pesticidestewardship.org

Pest management professionals (PMPs) provide a valuable service to homeowners, business owners, schools, and others. Pests cause a wide range of problems in and around structures. As a PMP, your role is critical, not only in managing pest problems, but in using all appropriate pesticide stewardship practices and providing valuable information to clients on how to prevent or minimize future pest infestations.

Whether you’re working with an insecticide, fungicide, or herbicide, MAKE SURE YOU KNOW THE BASICS.

ASSESS THE PEST PROBLEM AND CHOOSE THE RIGHT PESTICIDE



1) Identify the target pest(s). A complex of pests is often difficult to control and may require more than one active ingredient or application.

2) Choose the correct pesticide. The applicator is responsible for controlling the target pest(s), even if advice is sought from the company or land-grant university. In most cases, it is legal to use a pesticide against a pest not listed on the label, as long as the area to be treated, such as in and around schools, is labeled. If attempts to control one or more of the pests fail, determine the reason for the failure before reapplying any pesticide.

3) Read the label before you use the product. **The label is the law.** You are legally obligated to read and follow the entire label except any use directions pertaining to target sites that you are not planning to treat (e.g., if you are only treating inside houses, you don’t need to read the use directions for treating lawns). Make sure that the product is labeled for application to the intended target site. If you don’t understand any portion of the label, do not apply the product until it has been explained to you. Contact the distributor or the pesticide manufacturer for help in understanding the label.

4) Treat the “Directions for Use” and the rest of the label information as equally important. Carefully review the signal word, precautionary statements, emergency first aid measures, use restrictions and precautions, etc. Supplies needed for emergency first aid (e.g., water to rinse eyes) must be readily available.

5) Consider what formulation is best suited for the situation. Different formulations (e.g., liquids, aerosols, dusts, foams, or baits) usually have different directions

for use and often have different precautionary statements. Choose a formulation that will not damage treated surfaces and will control pests. For example, while some sites may prohibit pesticide residues, other pest situations require a surface residual to effectively control the pest.



6) Only use pesticides that are currently registered; never use a product whose identity and label information have become illegible.

TRANSPORT AND STORE PESTICIDES PROPERLY

7) Never transport pesticides in the same compartment as passengers or food items. Always transport pesticides in the back of the service vehicle and secure the containers to prevent spills or damage due to sudden starts, stops, and turns. Never leave pesticides (concentrates or diluted) unattended if the back of the service vehicle cannot be locked.

8) Store pesticides and application equipment securely out of the reach of children and pets.

- Read the label to determine any ventilation and/or temperature requirements for the product.
- Do not store larger quantities than necessary.
- Keep the storage cabinet or area locked whenever it is unattended.
- Always maintain updated inventory records.



9) Never transfer a pesticide from its original container to any food, drink, or other container, except to a properly labeled container only to be used by the applicator. If the label from the original container has been damaged and is no longer completely legible, a replacement label must be obtained before using the product.

10) If a pesticide container is damaged, transfer the pesticide to a new one if permitted by state and local regulations. In the absence of more specific state requirements, label the new container with:

- The common or chemical name
- The percentage of each active ingredient
- EPA registration number
- The signal word
- The use classification (Restricted or General Use).

APPLY THE PRODUCT PROPERLY AND RESPONSIBLY.

11) Use the label-required personal protective equipment (PPE), such as gloves, a filtering facepiece respirator, goggles, etc., when handling the pesticide. “Handling” includes mixing, loading, application, and clean-up.



12) Use the lowest recommended labeled rate, as well as the recommended timing and placement, for the targeted pests and their level of infestation. Using lower-than-labeled rates can result in inadequate control and can also promote the development of resistance.

13) Never exceed the maximum application rate allowed by the label. Applying higher-than-labeled rates is illegal and can also increase your cost, the pesticide load in the environment, and the chance of human exposure, and, in some cases, may promote the development of resistance.

EPA DEFINITIONS OF LIQUID SPRAY APPLICATION METHODS

Note that application method can be further defined based on the class of chemicals.

GENERAL SPRAY: Application to broad surfaces, such as walls, floors, and ceilings.

SPACE SPRAY: Dispersal of the product into the air by foggers, misters, aerosol devices, or vapor dispensers for control of flying pests and exposed crawling pests.

SPOT SPRAY: Application to small areas on which pests are likely to occur. These areas may be on floors, walls, bases or undersides of equipment. To limit potential exposure in a commercial food area, a “spot” should not exceed two square feet.

CRACK-AND-CREVICE TREATMENT: Application of small amounts of pesticide into cracks and/or crevices in which pests hide or through which they may enter a building. Such openings commonly occur at expansion joints, between elements of construction and between equipment and floors.

BARRIER TREATMENT: Application around the perimeter of a home designed to stop pests before they enter. Bands or zones, typically 3-feet-wide, are sprayed in two directions: up the wall from the foundation and outward horizontally from the foundation.

14) Use directed applications if they will not reduce the effectiveness of the treatment. Directed applications require less pesticide, reduce the risk of pesticide exposure to people and non-target animals, and increase the likelihood that the pest and product will come in contact. Wherever possible, especially when applying pesticides indoors, replace general and space sprays with spot, crack-and-crevice, and/or barrier treatments.



15) Never spray areas where baits are present or apply baits to areas that have been recently sprayed with an insecticide. Pests will not usually feed on baits that are contaminated with other insecticides, rendering them ineffective.

16) Make sure the pesticide stays in or on the intended site. For example, when applying granular formulations outdoors, make sure any granules that reach walkways, driveways, or other unintended sites are swept back onto the intended site.

17) Never apply pesticides outdoors when wind can cause drift problems. Pesticides can drift as spray, vapor, or dust. Although almost all sprays contain some small droplets that may drift, aerosol, mist, and fogging applications are particularly prone to drift. Pesticide drift can contaminate or damage objects outdoors such as toys, swimming pools, grills, fish ponds, and bird baths, particularly when treating above-ground surfaces. Drift is also a concern indoors.



Make sure to turn off any fans or air-handling systems so that the pesticide does not move into other rooms or contaminate the ductwork. Both outdoors and indoors, cover or remove objects that should not be contacted before applying the pesticide. Remove pets and their food from areas to be treated.

18) Observe all use restrictions or precautions designed to prevent human exposure. The length of time that humans and pets must avoid a treated area depends on the product and may be specified on the label. If no information is on the label, keep humans and pets out of the treated area until all surfaces are dry. Make sure that the customer understands all contact restrictions and re-entry requirements.

19) Avoid drift into sensitive areas, which are sites or organisms that are particularly vulnerable to harmful

effects from pesticides. Sensitive areas may be nearby edible plants (e.g., vegetables, herbs, and/or fruit trees), ornamental trees and shrubs, pollinator habitats, or other wildlife areas.

20) Follow any maximum wind speeds and minimum distances to non-target sites for outdoor spray applications given on the pesticide label. If not specified on the label, use sound judgment and common sense. Ultimately, drift management at the time of application is the responsibility of PMPs and their technicians.



customer’s property prevents downwind movement, but less application flexibility if sensitive areas are close. One effective way to avoid drift is formulation selection; granular and bait formulations eliminate the potential for pesticide drift.

22) Use flexible buffers if there are sensitive areas downwind and no permanent physical buffer exists. A flexible buffer is a purposely untreated portion of the landscape large enough to minimize the chance of drift, water runoff, and/or soil erosion moving pesticides off-target. The size and location of flexible buffers must be determined on an application-by-application basis.

23) Determine the proper size of flexible buffers. The flexible buffer may be very small when other drift reduction techniques are sufficient and environmental conditions do not promote runoff. In other instances, the flexible buffer must be large, so the best option may simply be to delay the treatment until conditions are less likely to result in off-target movement.

24) Observe the condition of the land before applying pesticides outside the structure. Some products should not be applied to areas that are prone to flooding or tidal activity or to areas where vegetation is sparse or absent or the land is sloped. Pesticide applied to those areas can end up in runoff that moves into storm drains, ditches, and ponds, and may reach lakes, streams and other water bodies. Never spray when the ground is saturated or frozen to minimize the chance of water runoff.



25) Take steps to avoid contaminating ground water.

- Avoid soil injections of pesticides when ground water is close to the surface.
- Be careful when treating near wells and cisterns.

- When filling your spray tank, use a backflow preventer to keep pesticides from back-siphoning into the water source.

26) Keep pesticide application equipment in good working condition and calibrate as needed to ensure accurate application of the pesticide. Replace worn/damaged parts before a problem occurs. The application equipment manufacturer and/or pesticide distributor can provide standard calculations and guidance on calibrating your equipment.

27) Unless they are an obvious threat to people and pets, protect bees and other insect pollinators when treating outdoors.



- Observe all label precautions and directions for use relative to pollinators.
- When you use a pesticide that has pollinator precautions, make sure you know the proximity of pollinator habitat and blooming plants.

- If possible, choose a pesticide formulation and application method that are less hazardous to pollinators but will still control the target pest(s), e.g., a granular, soil-applied product.
- If the label is not more specific, avoid treating flowering plants and apply the pesticide early in the morning, late afternoon, or at night, when insect pollinators are least likely to be active.

BE DILIGENT ABOUT CLEANUP AND DISPOSAL.

28) Wash clothing worn during pesticide application separately from other laundry before reuse.

29) Never prepare more spray solution than needed. If excess spray solution exists, apply it to a labeled site, if possible, following label instructions.

30) Do not dispose of excess, unwanted, or expired pesticide or spray solution down the drain; into open waterways, gutters, storm drains, or sewers; or in the trash. When possible, apply excess diluted spray to a labeled site or check the label for other proper disposal procedures. Ask your county cooperative extension office or state pesticide regulatory agency for advice.