

If Pesticides Are Used

Chemical controls should be applied only when the pest is present or if weather conditions are favorable for the outbreak of a regularly occurring disease (e.g. scab on apple). Spraying should not be set by the calendar. Schedule treatments to be the most effective and least disruptive to naturally existing pest predators. Be sure to use proper safety equipment and procedures as directed on the label.

Choose the Right Chemical

Seek advice when in doubt about a problem. Choose the least toxic alternative: pyrethrins, insecticidal soap, horticultural oils, rotenone and biologicals, *Bacillus thuringiensis (B.t.)* and milky spore. Buy only what you need for one season. Some pest control products lose their effectiveness sitting on the shelf. Some will require specific storage conditions.

Check the Label

Reread the label each time you use the pesticide. Make sure the pest and plant or site is listed. Labels change and newer restrictions could have been added.

Mix Correctly

Do not guess when mixing. Measure and follow the label recommendations carefully, mixing only the amount that you will use that day. Do not add more than is required. It can damage the plant or harm people and the environment.

Prepare for Spills

Clean up spills right away. Your chemical storage area should have a non-porous floor to facilitate cleaning spills. It should not have a drain. Set up a barrier, such as cat litter, to contain spills. Do not flush spilled materials down a drain. Carefully sweep up spilled powders and dusts. Scrub wood, cement or tile surfaces with a small amount of water and activated charcoal. Place all contaminated material in a plastic bag, seal and dispose of it properly on a household hazardous waste collection day.

Apply Properly

Read and follow all safety precautions on the label. Do not apply pesticides when:

- it is windy or raining
- there is a possibility pesticides will enter a stream, lake or drain
- the temperature is above 85° F.

Leftover Pesticide Mix

Use it all as directed on the label. Never pour onto the ground or down a drain.

Unused Pesticide Concentrate

Use the pesticide as directed on the label. Record how much was actually needed for future reference. Do not pour unused portions down a drain. If the pesticide is no longer effective or wanted, dispose of it at the next household hazardous waste event or consider donating it to a friend or neighbor.

Safe Storage

Store all pesticides in their original, properly labeled containers. Keep pesticides on secure strong shelves, in a locked cabinet, away from heat and moisture. Always keep pesticides away from children and pets.

Empty Container Disposal

Triple rinse empty containers and use the rinse water for the spray. Read the label for proper disposal instructions.



INTEGRATED PEST MANAGEMENT



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***A Guide to Reasonable and
Responsible Pest Control***

Integrated Pest Management

Pests are organisms that harm gardens and landscapes. Many people think of insects when they think of pests, but fungi, bacteria, viruses, weeds, rodents and other animals can be as troublesome. They compete with us for food, injure plants and are a general annoyance. Pests can often be controlled without undue damage to the environment. A totally pest-free garden, though seemingly desirable, would be expensive and unattainable. A more reasonable plan should be to keep pest populations within a tolerable level, a concept known as **Integrated Pest Management** or **IPM**. A low level of pests must survive in order to maintain a population of their natural enemies.

Know the Garden

Do you know what is going on in your garden? Inspect the plants for insect and disease damage. Find out what is living on the underside of the leaves. What creatures can be found under the cover of darkness? Many insects, such as ladybugs and praying mantises, are beneficial. Only a relatively small number of species are harmful. Plants can tolerate some insect damage without significant loss to yield or aesthetics. Good gardening is based on understanding nature's interactions. At the first sight of an insect, weed or disease, stay calm. **Do not run for the sprayer or duster.** Find out if it actually is a pest. If so, use the least toxic method of control, i.e. pull the weed, remove the diseased leaf or squash the harmful insect. The more often garden chemicals are used, the greater the risk of endangering our health and the environment.

By looking at the pest problem realistically, it is possible to save money by buying fewer pesticides, addressing only what needs to be controlled, and introducing fewer chemicals into the environment.

Sound Gardening Prevents Problems

Make the garden a healthy place for preferred plants and an undesirable place for pests. Select appropriate species or varieties that are insect and/or disease resistant. Provide proper moisture levels to maintain plant health and in turn, conserve water. Maintain proper fertility and pH levels by having the soil tested and applying only the nutrients needed. Soil amended with compost or other types of organic matter will help retain fertilizer. Rotate various groups of plants, where practical, to reduce insect and disease problems.

Keep the garden free of debris (dead plants, discarded bricks or boards, and brush piles) to limit hiding places for insects and slugs. Time planting to avoid known insects or pests. Encourage the build up of beneficial insects and mites. Properly identify the problem before control measures are activated. Estimate the potential damage and decide whether it is necessary to control insects and mites. If given a chance, perhaps natural predators will take over. Select the least toxic chemical approach to control the problem. Observe and record the results of any activity taken. **Remember, a decision not to spray is an action taken.**

Non-Toxic Control Measures

Insects



Prune out heavily infested parts of the plant. This method is often used against localized infestations of scale insects.



Cover crops with screening, floating or framed row covers, etc. to prevent insects from migrating from nearby areas. The covers must be removed when insect-pollinated crops come into flower.



Insect traps can be used. Follow instructions for critical density per crop.



Wash insects and mites off with a stream of water.



Hand pick insects and slugs and squash egg masses.

Diseases



Prune out heavily infested parts of the plant. This method is often used against localized infestations of scale insects.



Cover crops with screening, floating or framed row covers, etc. to prevent insects from migrating from nearby areas. The covers must be removed when insect-pollinated crops come into flower.



Insect traps can be used. Follow instructions for critical density per crop.



Wash insects and mites off with a stream of water.



Hand pick insects and slugs and squash egg masses.

Slugs



Use shallow containers of beer to monitor for slugs.



Provide some hiding places (overturned pots, boards, burlap), check them frequently and kill slugs found there.

Weeds



Use mulches to prevent weed germination.



Hand weed and/or cultivate weekly.

Pesticides

Pesticides (insecticides, miticides, herbicides, etc.) are chemicals used to control pests. If used improperly, they can have an impact beyond their intended target. The continuous accumulation and combination of small amounts of toxic substances can create problems. If misused, small quantities of toxic chemicals can cause environmental disruption. A pest population can become resistant to pesticides when only one or two products are used repeatedly against a specific pest. **Synthetic chemical pesticides should be the last defense to control a pest after other forms of control have been exhausted.**