

What is IPM?

Integrated pest management, or IPM, is both a way of thinking and a way of acting in regard to pests. People who practice IPM try to prevent damage from pests or to manage them in ways that reduce risks to the environment and human health. One way to understand IPM is to compare it to non-IPM practices.

IPM Practice	Non-IPM Practice
Ask "Is the invader really a pest?" Identify it	Assume that invader must be controlled
Proactive: look for pests; set lures; exclude pests with barriers	Reactive: use controls after problem is discovered
Multiple tools: sanitation, prevention, proper plant selection, cultivation, biological control	Primary tool: chemical pesticides
When no other methods work, treat visible pests during their most vulnerable stage	Scheduled or "calendar" treatments are possible
Specific pesticides that are least toxic to humans should target pests and conserve beneficials	Broad spectrum pesticides can kill many different kinds of organisms
Spot treatments in specific areas mean less pesticide is applied	Large areas can be sprayed

Benefits of IPM

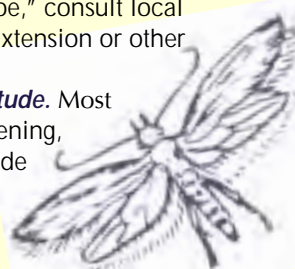
- Reduces the need for pesticides by using several pest management methods;
- Shields the environment from excessive or unnecessary pesticide applications;
- Fosters clean water supplies. Everyone lives in a watershed; if water leaving your home contains pesticides, these can pollute streams, groundwater, or coastal regions.
- Promotes sound structures and healthy plants. Well-maintained homes and lawns better withstand damage from pests.

Practicing IPM



To practice IPM, you don't have to be an expert. This brochure is designed to help get you started with an understanding of insects, weeds, and other pests in and around your home.

- **Be nosy.** Look routinely around your home (indoors and outdoors) and on your lawn, trees, and plants for pests or signs of their activity. Check cabinets and other hard-to-reach places, noting moist areas, which can attract pests. Inspect during the day and at night (when some pests, such as cockroaches and mice, are very active). Examine newly-obtained plants for insects, checking both sides of the leaves.
- **Know what you have.** Identify the intruder, then decide if there is really a problem. Not all insects are pests; for instance, the Western conifer-seed bug, which invades homes in the fall, is harmless. To determine whether you've found a "friend" or "foe," consult local Cornell Cooperative Extension or other resources.
- **Adopt a peaceful attitude.** Most pests aren't life-threatening, and with a calm attitude you can resolve the problem.
- **Manage pests using IPM methods.** Consult the resources listed in this brochure.
- **Follow up.** Check later in those areas around your home where pests were a problem to see if those problems have been resolved.



Further Information

Cornell Cooperative Extension offices:
 <<http://www.cce.cornell.edu/cce-offices.html>>
 Free informational IPM brochures about carpenter ants, cockroaches, mice, and white grubs. Contact the NYS IPM Program.

Klass, C. and D. Karasevicz. 1995. Pest Management Around the Home: Cultural Methods. Misc. Bull. 74. Cornell Cooperative Extension, Ithaca, NY.

Lifton, B. 1991. *Bug Busters: Poison-Free Pest Controls for Your House & Garden*. Avery Pub. Group, Inc., Garden City Park, NY.

Olkowski, W., S. Daar, and H. Olkowski. 1991. *Common-Sense Pest Control*. Taunton Press, Newtown, CT.

Reducing Pesticide Exposure in the Home and Garden. Free from BCERF (Program on Breast Cancer and Environmental Risk Factors); 607-254-2893; <http://www.cfe.cornell.edu/bcerf/>

Weinzierl, R., et al., 1996. *57 Ways to Protect Your Home Environment (and Yourself)*, No. Central Region Exten. Pub. 583, Univ. of Ill. at Urbana-Champaign.

The New York State IPM Program



We encourage people to adopt a sustainable approach to managing pests, using methods that minimize environmental, health, and economic risks. For more information: NYS Integrated Pest Management Program; www.nysipm.cornell.edu NYSAES, Geneva, NY 14456. For additional copies of this brochure (IPM No. 604), contact your local Cooperative Extension office or the NYS IPM Program.

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IPM for Homes



How to use
 integrated pest management
 to *uninvite* residential pests

Cornell
 Cooperative
 Extension



IPM Inside Your Home

- **Be neat.** Keep your home clean. Wipe up spills; don't leave pet food exposed for long periods; remove clutter that could be breeding grounds for pests.
- **Prevent access.** Store dry food, pet food, and bird seed in tightly covered containers; plastic bags don't always exclude pests.
- **Remove enticements,** such as sweet and greasy foods (which attract ants).
- **Control moisture.** Fix leaks and encourage ventilation, as insects often seek wet spots.
- **Erect blockades.** Exclude pests from your living areas with fencing, caulking, and barriers such as door sweeps, netting, and screens.


Pest-Specific IPM Tips

Bats—Bats eat hundreds of insects, including mosquitos, each night. Inspect the exterior of your building for openings larger than 1/4" in height and seal them; light your attic; offer a "bat house" away from areas of human activity; avoid direct contact.

Carpenter ants—Carpenter ants often excavate wet or damaged wood. Fix the problem that is causing the moist wood, then replace damaged wood. Baits specific for carpenter ants are available.

Clothes moths—Clean the clothes before storing; place in tightly closed plastic bags. They feed on untreated fibers, food stains, perspiration, and oils. The oil in cedar will repel, but not necessarily kill, clothes moths.

Cockroaches—Eliminate harborages (stacks of cardboard, paper bags, and clutter in warm, moist locations); empty garbage frequently, in the evening (roaches feed at night); keep drawers, counters, stovetops scrupulously clean; store food in refrigerator instead of on the counter; empty refrigerator defrost pan often; use roach traps and replace when full.


 **Fleas**—Vacuum regularly and place contents outdoors in a trash receptacle. Treat the animal, preferably by a veterinarian. Insect growth regulators, available in some flea control formulations, prevent fleas from maturing to adults. Remember that "flea bombs" are specific to fleas, not all pests.

Flies—Fix screens; eliminate breeding areas (garbage, grass piles); hang fly paper.

Indianmeal moth—Keep nuts, dried fruits, flour and other cereal products in glass or plastic containers with tightly closing lids. "Pantry pest" pheromone traps catch only males.

Mice—Close all openings in foundation that are larger than 1/4" in diameter; use a snap trap or glue board; keep an energetic cat as a pet.

Mosquitoes—Prevent water from accumulating in low spots in the yard, old trees, garbage cans, pool covers, gutters, tires, sandbox toys, and potted plant saucers. Replace bird bath water every few days; keep window and door screens tight and in place until winter.

 **Spiders**—Scoop them into a container and escort them outside, or use a fly swatter. Most spiders are beneficial, killing such insects as flies.

Termites—Know the difference between termites and carpenter ants. Termites have thick waists and straight antennae; ants have thin, piched waists and "bent elbow" antennae. The best controls are designing homes to exclude termites, reducing moisture, and hiring a professional to use baits and other methods; almost no home remedies exist.

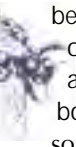
IPM Outside Your Home


- **Focus on structural issues.** Check for dry rot; identify poor drainage around the foundation and leaking faucets or pipes that create excess moisture, promoting pest problems.

Pest-Specific IPM Tips

Asian longhorned beetle—This beetle kills maple, elm, horsechestnut, poplar, birch,

willow, and mimosa, primarily on Long Island. Capture the 1-inch beetles (look for long, black-and-white banded antennae), place in a plastic jar, and freeze. Report to 1-800-554-4501, ext. 72087.

 **Carpenter bees**—Carpenter bees are gentle, beneficial pollinators. Keep trim wood painted or varnished; fill holes with putty in the fall and repaint or varnish; replace tunneled boards when they are no longer structurally sound.

 **Paper wasps**—Paper wasps control many caterpillars, aphids, and other pests; they sting primarily when defending their nest. Knock down nests early in the season and scrape away attachment sites. Use a stick, broom, or strong stream of water. Check weekly; repeat the process if necessary.

Tree squirrels—Keep trees and shrubs trimmed back ten or more feet from the roof. Replace rotting or damaged woodwork. Use metal, not plastic, roof and soffet vents. Store garbage in covered metal trash cans.

IPM for Lawn, Landscape, Garden

- **Grow pest-resistant plants, shrubs, and trees.** For example, plant disease-resistant vegetable seed or try Kousa dogwood instead of flowering dogwood. Choices should be well suited to soil and climate.
- **Avoid injury to tree trunks** (from mowers, weed whackers) that enable pests to gain footholds; lay mulch at tree bases.
- **Destroy diseased plant materials,** and clean up plant debris at the season's end.
- **To combat weeds,** maintain an adequately fertilized lawn; hand dig weeds; spot-treat.
- **Use selective pesticides.** Insecticidal soaps are effective against aphids, mealybugs, whiteflies, scale, and some other pests. *Bacillus thuringiensis* or "Bt" is a bacterium that kills leaf-eating caterpillars and other specific insects; it is sold in garden stores.

- **Grow healthy plants.** Pay attention to organic matter, watering, and other conditions for healthy plants. Don't grow closely related plants (e.g., tomatoes, peppers, eggplant) in the same location each year. Rotation prevents insect infestations, decreases the spread of diseases, and lessens the depletion of soil nutrients.
- **Encourage beneficial insects**—which kill pests—by growing large, showy composite flowers for them to land on and feed (such as Queen Anne's lace, daisies, fennel, dill) and by limiting pesticide applications.

Pest-Specific IPM Tips


Cabbage looper and cabbageworm—Hand pick; encourage paper wasps and birds, which kill them; apply Bt.

Aphids—Wash off with a strong jet of water.

Grubs—Tolerate up to 10 per square foot (peel back one square foot of lawn to check). Try parasitic nematodes or milky spore disease, a bacterium that may reduce Japanese beetle grub populations when used with other management tactics. (It is most effective in specific areas of the state.)

Japanese Beetles—(adult form of grub). Knock from plants into a bucket of soapy water. Japanese beetle traps may actually *increase* the number of beetles in your yard; entire regions might be protected with perimeter traps set every 200 feet.

Moles—Understand that they eat grubs, which become Japanese beetles and other pests. Remove with mechanical mole traps or reduce your grub populations.

 **Ticks**—Keep grassy areas mowed. Wear light-colored clothing that is tucked into socks at ankles; check yourself regularly, when outside and then at home. For ticks to transmit diseases, they must attach and feed for many hours.

Weeds—Put lawn weeds at a disadvantage by cutting grass blades no shorter than 3". In the garden, lay cardboard or mulch on pathways, and mulch between plants.