

pers, 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.
- **Remove and destroy diseased leaves.**

#### **Insect-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.)

 **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.

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#### **For Further Information**

- New York State Department of Environmental Conservation (DEC). The DEC has a central office in Albany, NY, and nine regional offices located around the State to assist with IPM, pest management, and pesticide regulation matters. Contact the DEC central office, Bureau of Pesticides Management, 518-402-8781, or any of the DEC regional offices.
- Local Cornell Cooperative Extension offices
- Community IPM Program at Cornell, 1-800-635-8356; <<http://www.nysaes.cornell.edu/ipmnet/ny>>

Brochures in this series are available from the NYSDEC central office in Albany, NY, DEC regional offices, Cooperative Extension offices, Soil & Water Conservation Districts, main public libraries, and certain other State and local offices. For a list of brochures in this series, contact the NYSDEC or its website: <<http://www.dec.state.ny.us/>>

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DIVISION OF SOLID & HAZARDOUS MATERIALS  
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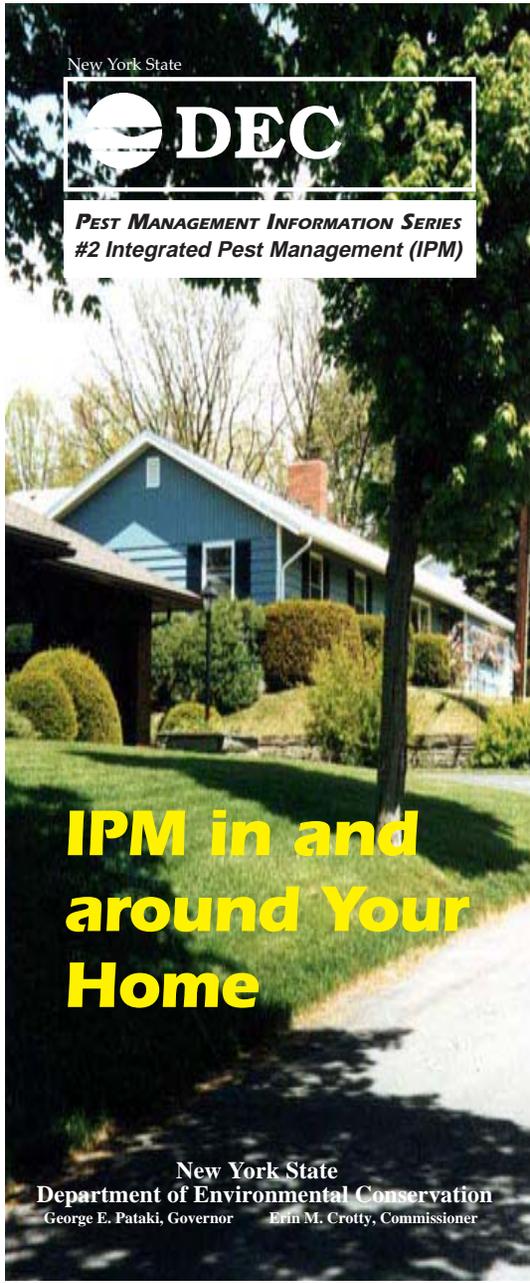
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New York State



**PEST MANAGEMENT INFORMATION SERIES**  
**#2 Integrated Pest Management (IPM)**



**IPM in and  
around Your  
Home**

New York State  
Department of Environmental Conservation  
George E. Pataki, Governor      Erin M. Crotty, Commissioner

## What is IPM?

Integrated pest management (IPM) is a systematic approach to managing pests that focuses on long-term prevention or suppression with minimal impact on human health, the environment, and nontarget organisms. IPM incorporates all reasonable measures to prevent pest problems by properly identifying pests, monitoring population dynamics, and utilizing cultural, physical, biological, or chemical pest population control methods to reduce pests to acceptable levels.

To practice IPM, you need an understanding of insects, weeds, and other pests in and around your home, but you don't have to be an expert. You can begin with the information in this brochure.

## Benefits of Home IPM

- ★ Reduces the need for pesticides by using several pest management methods;
- ★ Balances proper and minimal use of chemical pesticides with the need to manage pests;
- ★ Helps protect the environment from excessive or unnecessary pesticide applications;
- ★ Fosters sound structures and healthy plants. Well-maintained homes and lawns better withstand damage from insects, weeds, and other pests.

## Steps to Implement IPM

- **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. 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.

- **Identify the pest and decide if there is really a problem you need to manage.** Many living organisms we may think of as pests may not be causing any harm. To determine whether you've found a "friend" or "foe," consult Cooperative Extension, other experts, or books. With a calm attitude and some information, you can address the issue.
- **Take action to manage pests using IPM methods.**
- **Check later in those areas around your home where pests were a problem to see if those problems have been resolved.**

## Tips for Managing Pests

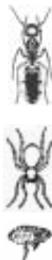
*Below are useful IPM tips for managing some common pests in and around your home or apartment and outside in your lawn and garden.*

### 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 in tightly covered jars.
- **Remove enticements,** such as sweet and greasy foods (which attract ants).
- **Erect blockades.** Exclude pests from your living areas with fencing, caulking, and barriers such as door sweeps, netting, and screens.

### Insect-Specific IPM Tips

- **Carpenter ants**—Carpenter ants often excavate wet or damaged wood. Fix the problem that is causing the moist wood, then replace damaged wood. Obtain a bait specific for carpenter ants.
- **Spiders**—Scoop them into a container and escort them outside, or use a flyswatter. Most spiders are beneficial, killing pesky insects such as houseflies.
- **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.

• **Clothes moths**—Clean the clothes before storing; place in tightly closed plastic bags. They feed on untreated fibers, food stains, perspiration, and oils.

• **Bats**—Bats eat hundreds of insects, including mosquitos, each night. Inspect the exterior of your structure 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.

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

• **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.

• **Indianmeal moth**—Keep nuts, dried fruits, flour and other cereal products in glass or plastic containers with tightly closing lids.

• **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.



## 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.

### Insect-Specific IPM Tips



• **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.



• **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.

## Lawn, Landscape, and 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 trunks** (from mowers, weed whackers) that enable pests to gain footholds.
- **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 alternative pesticides.** Insecticidal soaps are effective against aphids, mealybugs, whiteflies, scale, and some other pests. *Bacillus thuringiensis* or "Bt" is a bacterium that combats leaf-eating caterpillars and other 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, pep-