

#6: Manage Yard Pests Responsibly

CREATE AN EFFECTIVE DEFENSE AGAINST PESTS WHILE MINIMIZING YOUR IMPACT ON THE ENVIRONMENT

Pest management in the home landscape once relied heavily on the use of chemicals. Today that is changing because of concerns for human health and environmental safety. Scientists now recommend using Integrated Pest Management (IPM), a strategy that helps gardeners prevent and manage pest problems with as few chemicals as possible. IPM emphasizes smart planning, proper maintenance, and natural or low-toxicity controls in ensuring plants stay healthy and resist insect and disease infestation.

AVOIDING PEST PROBLEMS

The way that you plant and maintain your yard either discourages pests or throws out the welcome mat for them. Follow these tips to prevent pests:

- **Think before you plant.** Plants in locations not suited to them may be stressed and thus more susceptible to pests.
- **Start early.** IPM begins at planting time, with the selection of plants that are pest-free and pest-resistant.
- **Keep your plants healthy.** Using appropriate amounts of water and fertilizer is the best defense against pests.
- **Conduct regular scouting.** Keep an eye on your yard's plants to detect pest problems early, before significant damage occurs.
- **Go easy on water and fertilizer.** Too much of either can cause excessive growth, making plants vulnerable to some insects and diseases. Encourage healthy growth by applying fertilizer and water only when they're needed and in moderate amounts.
- **Mow to the proper height and prune selectively.** Mowing grass too short and severely pruning trees and shrubs weakens them, potentially inviting problems.
- **Encourage beneficial insects.** Learn to recognize the insects in your garden that help manage pests and let them continue their good work! The pictures below are beneficial insects.



Assassin bug.



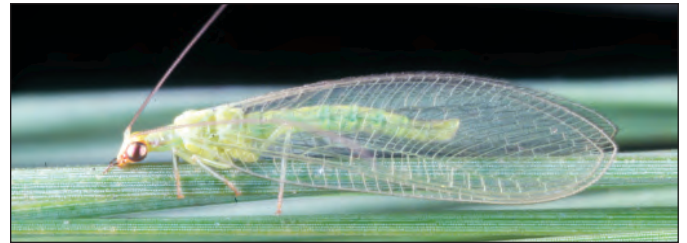
Green lynx spider.



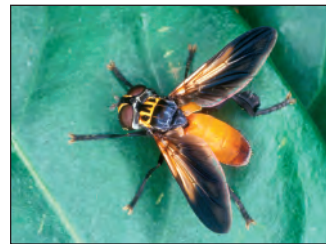
Ladybug.



Big-eyed bug.



Green lacewing.



Parasitic fly.



Parasitic wasp.

DETECTING PEST PROBLEMS

Inspecting plants frequently helps detect pest problems early. You can give plants the once-over anytime you water by hand, mow, or do other outdoor chores. Set aside a time twice or more each week to walk through your yard and look at plants. Some small insects complete their life cycles in one week, so a weekly wander through the yard may not be frequent enough.

Common plant pests in Florida include aphids, mealybugs, scales, whiteflies, thrips, plant-feeding mites, caterpillars, and chinch bugs. Often you will spot evidence of a pest's activity before you see the insect itself. If you see chewed or deformed leaves, sooty mold, many ants scurrying up and down plant stems, or discolored "trails" on leaves, you are likely to find a pest lurking somewhere.

Detecting small insects and mites can be difficult. One method that works well is to flick the leaves of small branches against a sheet of white paper. Use a ten-power (10X) magnifying glass to search for movement or

evidence of pests. Chinch bugs can be collected from lawn thatch using a shop vacuum.

Look on the branches and on both the upper- and under-sides of leaves for pests that attach to the plant, such as scales and whitefly nymphs. Sooty mold on leaves is a tell-tale clue to an infestation by what are known as piercing-sucking insects (aphids are one example). These pests pierce the plant with sharp mouthparts and suck the sap. Some piercing-sucking insects secrete a sugary substance called honeydew, on which the black-colored sooty mold fungus grows. Sooty mold doesn't injure a plant directly, but it does block sunlight from leaves, reducing photosynthesis. Ants also signal the potential presence of pests, since they feed on honeydew and often protect the insects that produce it.

If you see plant damage but few pests, beneficial insects may already be working on your behalf. These may include lady beetles (commonly called ladybugs) and their larvae, lacewings and their larvae, assassin bugs, spiders, parasitic wasps, and parasitic flies (syrphid or hoverfly larvae and tachinid flies).



Removing by hand and tolerating minor insect damage are responsible ways to manage pests.

Tolerate some insect damage and leaf disease on plants. No one can maintain an insect- and disease-free landscape, and a little damage will not hurt your plants. Remember, in order to have the “good guys,” such as ladybugs, there must be some “bad guys,” or pests, for them to feed on. If a pest problem persists, take a sample of the damaged plant and pest to your county Extension office for identification and suggestions on how to use IPM techniques.

TREATING PEST PROBLEMS

IPM is the best strategy for dealing with pest management, and it relies on the use of chemicals only as a last resort. Check out these IPM techniques.

- **Remove affected leaves or plant parts.** When pests are heavily concentrated on a plant, you can often reduce or eliminate the problem by simply removing the affected leaves or stems.
- **Pick insects off by hand.** This easy step can often defeat infestations of large, slow-moving pests. Dispose of any captured insects so they do not return to feed again. Try one of these methods:
 - Drop pests into soapy water or isopropyl alcohol.
 - Place them in the freezer overnight (in a baggy or plastic container).
 - Crush them and put them in your household trash.
- **Look for beneficials.** If you see a pest outbreak, determine if it's being managed by natural enemies already present. Many beneficial insects prey on pests, and harming them will just help the pests.
- **Don't treat by default.** Plants with aesthetic damage don't necessarily need to be treated. Consider the amount of damage you're willing to accept. Remember that there will always be insects in any healthy landscape, and don't worry about minor damage.
- **Start with low-impact techniques.** Always try the safest alternatives first, such as handpicking insects or pruning affected parts of a plant. If pesticide use does become necessary, choose products that are the least harmful to people, pets, and wildlife. These products include insecticidal soap, horticultural oil, botanicals (e.g., pyrethrum, neem, and rotenone), microbials (e.g., spinosad, abamectin, and *Bacillus thuringiensis* 'Kurstaki'), and entomopathogenic nematodes (small worms that kill insects).
- **Avoid using broad-spectrum insecticides.** They're not selective, meaning they also kill beneficials. Instead, choose targeted products, which are designed to harm only specific pests. For example, products that contain an extract of the bacterium *Bacillus thuringiensis* 'Kurstaki' are used to manage caterpillars without affecting other organisms.
- **Spot-treat only.** Use pesticides to treat only the affected areas of a plant or lawn. Never use blanket applications to treat problems.
- **Read and follow all label instructions.** Be careful and remember that the label is the law!

- **Apply pesticides during the cooler part of the day.** Heat combined with soaps, horticultural oils, and other pesticides can injure plants.
- **Use products only on recommended plants.** Always read the label to find out which plants a product can be applied on and which plants are sensitive to the product. If you're unsure about applying a product to a plant, test it on a small area of the plant first. Check for leaf burn in the tested area after one to two days. Phytotoxicity, or chemical injury, often looks like a burn on the edge of leaves.

For more information about specific yard pests, diagnosing pest problems, and controlling pests, visit <http://ipm.ifas.ufl.edu>.

COMMON LANDSCAPE PESTS AND THEIR MANAGEMENT

Certain pests are considered “key,” in that they cause the vast majority of landscape problems. Here is a list of ten common causes of lawn and garden damage.

1. APHIDS

Winged or wingless pear-shaped bodies may be green, yellow, black, red, or multi-colored. Typically found on new growth. Damaged leaves appear yellow, twisted, or distorted; ants (which nurture aphids) or sooty mold may also be present.



Green peach aphids.

Natural Enemies

Lady beetle (ladybug) adults and larvae, lacewing larvae, syrphid fly larvae, parasitic wasps.

Other Controls

Prune infested plant parts or forcefully spray them with water to dislodge the insects. Apply insecticidal soaps or horticultural oils.

2. CATERPILLARS

These are the larvae of butterflies and moths. They chew on foliage, creating skeletonized, notched, or ragged leaves. Watch for greenish fecal pellets on leaves or below plants.



Caterpillar.

Natural Enemies

Wasps, predatory stink bugs, big-eyed bugs, birds, lizards.

Other Controls

Remove by hand (use pliers to remove stinging caterpillars), apply *Bacillus thuringiensis* ‘Kurstaki’ (most effective when caterpillars are small).

Note: Most caterpillars only feed on specific host plants. Remember that if you want butterflies you will need to tolerate caterpillar feeding activity.

3. CHINCH BUGS

Chinch bugs only feed on St. Augustinegrass, often in stressed areas in full sun or near pavement. Adults are 1/5-inch long, black with white patches on wings. Young nymphs are smaller, reddish, and have a white stripe across their backs. Injured turf yellows and dies.



Chinch bug.

Natural Enemies

Big-eyed bugs, earwigs, and a species of parasitic wasp.

Other Controls

Fertilize correctly. Maintain St. Augustinegrass at height of 3 inches in sun and 4 inches in shade. Spot-treat infestations with insecticides labeled for chinch bugs.

4. MEALYBUGS

White, soft-bodied insects $\frac{1}{16}$ - to $\frac{1}{8}$ -inch long. Bodies and egg masses covered by powdery white wax. Attack leaves, twigs, and roots. Sooty mold or ants may also be present.



Mealybug.

Natural Enemies

Lady beetles, lacewing larvae.

Other Controls

Spray with horticultural oil or insecticidal soap. If that fails, apply a systemic insecticide (i.e., imidacloprid) to the root system. Soil systemics may take several weeks to work.

5. MOLE CRICKETS

Velvety brown, $\frac{1}{2}$ inch long, feed on turfgrass and vegetable roots. Flattened front legs adapted for burrowing. Mole crickets affect all grasses, but prefer bahiagrass and bermudagrass. Injured turf may be spongy and thinning, with $\frac{3}{4}$ inch, round holes that are signs of tunneling. Infestation usually occurs in the same area each year. Test for infestation by flushing area with soapy water (1–2 tablespoons soap in a gallon of water). Crickets will surface within 3–5 minutes if present.



Mole crickets.

Natural Enemies

Parasitic wasp (*Larra bicolor*), red-eyed fly (*Ormia depleta*), insect-parasitic nematodes (*Steinernema scapterisci*), and birds.

Other Controls

For chronic infestation, consider replacing turf with trees, shrubs, or groundcovers. If necessary, spot-treat infestations in May or June with insecticides labeled for mole cricket control.

6. PLANT-FEEDING MITES

Tiny ($\frac{1}{32}$ -inch) red, yellow, or green with oval bodies. Some spin loose webs on foliage. Mites reproduce rapidly in hot weather. Injuries to plants look like light-colored dots, giving leaves a dull, gray-green, speckled appearance.



Texas citrus mite.

Natural Enemies

Lady beetles, predatory mites.

Other Controls

Spray undersides of foliage with water, then alternate with soap and oils if necessary.

7. SCALES

Vary in size, shape, and color. Soft scales and armored scales are the most common. Soft scales produce honeydew (sugary secretion), which promotes sooty mold and attracts ants. The armored scale body is hidden under a waxy covering. Mature scales are stationary and feed on leaves, twigs, stems, and fruit. “Crawlers” (the immature, mobile stage) are the most vulnerable life stage and, therefore, easiest to control.



Green scales.

Natural Enemies

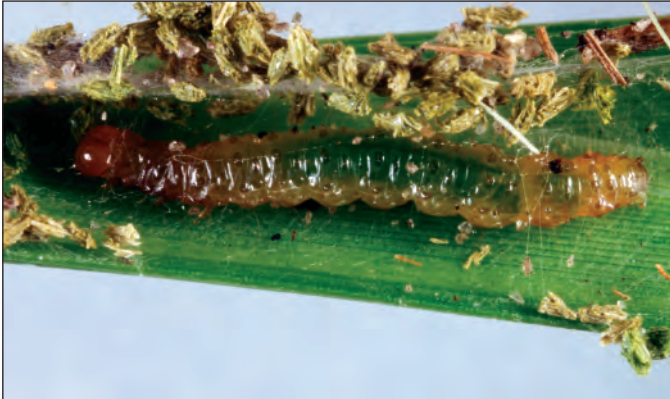
Lady beetles, parasitic wasps.

Other Controls

Scrape scales off plant tissue. See other controls for mealybugs.

8. SOD WEBWORMS

Gray-green caterpillars with brown spots on each segment. These lawn-damaging pests chew on grass blades, causing short, ragged patches in the lawn. They feed at night and hide by day. A soap flush may verify their presence.



Sod webworms.

Natural Enemies

Spiders and numerous other beneficials that live in lawns.

Control

Apply products containing *Bacillus thuringiensis*.

9. THRIPS

Tiny ($\frac{1}{32}$ -inch) winged insects that scar leaves, buds, and flower petals to drink sap from wounds. Injured plant may be dull gray with curling, distorted leaves or browning flowers.



Thrips.

Natural Enemies

Predaceous thrips, predatory mites.

Other Controls

Apply horticultural oils and/or insecticidal soaps.

10. WHITEFLIES

Adults look like tiny white moths on plants. They take flight when leaves are disturbed. Eggs are on leaf undersides. Nymphs (the stage of whitefly that feeds on plants) are oval, flat, transparent-to-greenish in color, and may look like scales. They are stationary and are located on undersides of leaves. Ants or sooty mold may be present.



Citrus whitefly.

Natural Enemies

Fungi (most effective in humid weather), parasitic wasps, lady beetles.

Other Controls

Spray with insecticidal soap. Follow with horticultural oils, if necessary. Be aware that several species are resistant to insecticides.

PLANT DISEASES

Many organisms, including viruses, fungi, and bacteria, can cause diseases in plants. Diseases can be specific to certain plants, but identifying them can still be extremely difficult. Often, home gardeners mistake environmental or maintenance problems for diseases. For example, Spanish moss, lichens, and ball moss are not parasites that should be killed or removed; they are merely harmless plants themselves. Another common misdiagnosis in coastal areas is mistaking saltwater damage for disease. Irrigating plants with salty well water can cause yellowing around the edges of leaves and leaf-drop starting from the bottom part of the plant's canopy.

When a plant does have a disease, the problem may be merely cosmetic rather than truly damaging to the plant. Examples are minor leaf spots or other damage to select leaves. Such minor aesthetic concerns are no cause for alarm or treatment. There are serious diseases, however, that can damage or kill plants they affect. Examples are mushroom root rot on landscape plants,