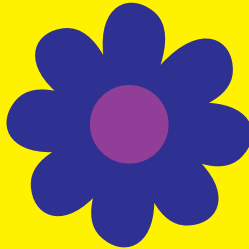
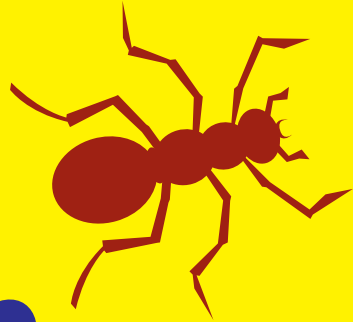


# MANAGE YARD PESTS RESPONSIBLY



# 6



## LANDSCAPING PRINCIPLES FOR FLORIDA-FRIENDLY YARDS

<http://www.nwf.org/backyardwildlifehabitat/createhabitat.cfm>



## MANAGE YARD PESTS RESPONSIBLY

Due to concerns about health, the environment, and **pesticide resistance**, pest control practices once taken for granted are now under scrutiny. Regular preventive pesticide applications are still common for some pests but are often unnecessary. Healthy plants can usually defend against or tolerate pest attacks, while beneficial insects, birds and other natural controls often suppress undesirable insects — which makes the preventive and indiscriminate use of pesticides ill-advised.



Photo by: UF/IFAS

*Weeding by hand is an environmentally friendly pest management practice.*

A better approach to managing pests — **Integrated Pest Management (IPM)** — emphasizes using a combination of environmentally friendly methods that focus on preventing pest problems. What are the basic building blocks of IPM?

- n IPM begins at planting time, with pest-free and pest-resistant plants and a landscape design that encourages natural controls.

### FYN Glossary Box



**Pesticide Resistance:** after repeated applications of a certain pesticide, some pests may adapt to the chemical and are not harmed by it — those individuals that survive then breed and pass the resistance genes to their offspring

**Integrated Pest Management:** a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks



IPM Florida:



- n Keeping your plants healthy is the best defense against pests.
- n Regular scouting, or keeping an eye on your yard's plants, helps detect pest problems early, before significant damage occurs.
- n Plants with aesthetic damage don't necessarily need to be treated. Consider the amount of aesthetic damage you are willing to accept.
- n If you see a pest outbreak, determine if a problem really exists or if natural enemies are already present and are working on your behalf.
- n If pest control proves necessary, try the safest alternatives first, such as handpicking insects or pruning infected parts of a plant. If pesticides become necessary, choose the least harmful materials. The "softest" insecticides on beneficials and other non-target organisms (people, pets and wildlife) include insecticidal soap, horticultural oil, and microbials (e.g., spinosad, abamectin, *Bacillus thuringiensis* 'Kurstaki').
- n Use pesticides only to **spot-treat** affected plants or lawn, not in blanket applications.

## FYN Glossary Box



**Spot-treatment:** application of a pesticide to the problem plant or area, rather than a blanket application or "wall-to-wall" coverage



## Avoiding Pest Problems

The way that you design and maintain your yard either establishes a barrier against pests — or throws out the welcome mat for them.

### Follow these tips to prevent pests:

- n Think before you plant. Each time you place a plant in a spot that's not ideal, you will likely have to protect it from pests. Plants in unfavorable growing conditions (compacted soil, inappropriate pH or light, competition with weeds, etc.) are targets for pests! Choose plants that can tolerate the conditions in your yard.
- n Choose insect- and disease-resistant plant varieties.
- n Go easy on water and fertilizer. Too much can cause excessive growth, making plants vulnerable to some insects and diseases. Encourage healthy growth by applying fertilizer and water only when needed and in moderate amounts.
- n Mowing grass too short and severely pruning trees and shrubs weakens them, inviting pests. Mow to the proper height and prune selectively.
- n Use barriers to block pest entry.



Photo by: Clemson University, www.insectimages.org

*The assassin bug feeds on many different plant pests.*



Photo by: UF/IFAS

*Caterpillar killed with *Bacillus thuringiensis* "Kurstaki."*



Photo by: UF/IFAS

*Ants tending plant hoppers.*



- n Encourage beneficial insects by choosing some plants that provide the nectar needed by adults and by minimizing the use of broad-spectrum pesticides.

## Identifying Pest Problems

Inspecting plants helps identify pest problems early, before they get out of hand. You can give plants the once-over anytime you water by hand, mow or are tending to other outdoor chores. If you are not in your yard until the weekend, you will need to set aside a time twice or more each week to walk through the 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 and caterpillars. Often you will spot evidence of a pest's activity before you see the insect itself. If you see curled, rolled or deformed leaves, mold on leaves or stems, 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.

For pests that attach to the plant, such as scales and whitefly nymphs, look on the branches and on both the upper and undersides of leaves. Sooty mold on leaves is a telltale 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 feeds and grows. Sooty mold doesn't injure a plant directly, but it does block sunlight from leaves,



Photo by: J. Castner, UF Entomology/Nematology.

*This person is scouting for pests by tapping branches over a white sheet of paper.*



reducing **photosynthesis**. Ants also signal the potential presence of pests. Ants 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).

Photo by: Bradley Higbee, Paramount Farming,  
www.insectimages.org



*The big-eyed bug is a beneficial insect often mistaken for a chinch bug.*

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 Extension office for identification and suggestions on how to proceed using IPM techniques.

## Treating Pest Problems

What do you do when you have a pest infestation or a disease outbreak? IPM focuses on using chemicals as a last resort. IPM methods form a first line of defense to deal with problems.

- n When pests are heavily concentrated on a plant, you can often reduce or eliminate the problem simply by removing the affected leaves or plant parts. Crush, burn or compost these infested plant parts to prevent the disease or insect from spreading.

### FYN Glossary Box



**Photosynthesis:** the process that turns light energy into chemical energy in green plants



Woody Bug:



- n For large, slow-moving pests, picking insects off by hand can often defeat the problem. Dispose of any captured insects so they do not return to feed again. Try one of these disposal methods:
  - Drop pests into soapy water or isopropyl alcohol.
  - Place pests in the freezer overnight.
  - Crush them and put them in your household trash.
  
- n Avoid using broad-spectrum pesticides. They are not selective — they also kill beneficial insects and insects that aren't problematic. Safe alternatives to traditional pesticides include insecticidal soaps and horticultural oils, both of which work to reduce populations of sucking insects. Products containing an extract of the bacterium *Bacillus thuringiensis* 'Kurstaki' take care of caterpillars.
  
- n Always treat for specific pests, and only treat the affected plant.
  
- n Read all product labels carefully and follow them accordingly. Remember that the label is the law! Do not attempt to mix your own chemicals or apply homemade recipes unless you have been properly trained to do so.
  
- n It is usually best to apply soaps, oils and other pesticides during the cooler part of the day to avoid injuring plants. Always read the label to find out if any plants are listed as being sensitive to the product. To determine if the product will hurt your plants, apply it to a small portion of a leaf first, and check for leaf burn after 1–2 days. **Phytotoxicity** often looks like a burn on the edge of leaves.

## FYN Glossary Box



**Phytotoxicity:** degree to which a chemical is toxic to (injures) plants; plant sensitivity to a particular chemical, application rate and environmental conditions influence degree of damage that may result from chemical treatment



## Common Landscape Pests and Their Management

**Ants:** Three body segments. Range in size from 1/16"–1/2", depending on species. Most species are not harmful. In the landscape, they do not affect plants but the bite and sting of fire ants and carpenter ants affects people. When ants are present, you may observe mounds, ants in trails and on plants.

**Natural enemies:** Phorid flies (decapitate fire ants), *Thelohania* fire ant disease.

**Other controls:** Bait effectively controls fire ants. Be sure material is dry/fresh. Apply in late afternoon or evening around edges of mound. Do not apply when ground or grass is wet. Do not disturb mound. Store baits in a cool environment.

**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 or sooty mold may also be present.

**Natural enemies:** Lady beetle (ladybug) adults and larvae, lacewing larvae, syrphid fly larvae, parasitic wasps.

**Other controls:** Prune infested plant parts. Apply insecticidal soaps or horticultural oils. Soil drench with product containing imidacloprid.

Photo by: J.F. Butler, Entomology and Nematology, UF.



Imported fire ants sting and bite, but only the sting causes the painful white pustule.

Photo by: Anne W. Gideon, www.insectimages.org



Oleander aphid with lady beetle larvae predators.



Featured Creatures:



Caterpillars: Larvae of butterflies and moths. Chew on foliage, which creates skeletonized or notched leaves. Watch for greenish fecal pellets on leaves or below plants.

**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).

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

**Natural enemies:** Big-eyed bugs, earwigs, a parasitic wasp.

**Other controls:** Avoid high fertilizer rates. Maintain St. Augustinegrass at height of 3" in sun and 4" in shade. Use chinch bug-resistant grass varieties when available. Spot-treat infestations with insecticides labeled for chinch bugs.



Photo by: J. Castner, Entomology and Nematology, UF.

Chinch bug and damage to turfgrass.

Mealybugs: Soft-bodied insects 1/16"–1/8" long with well-developed legs. Bodies and egg masses covered by powdery white wax. Attack leaves, twigs and roots and leave behind white, mealy wax deposits. Sooty mold or ants may also be present.

**Natural enemies:** Lady beetles, lacewing larvae.



Photo by: J. Castner, Entomology and Nematology, UF.

Longtailed mealybugs feeding on the underside of leaves.



**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. Choose a product that affects only pests that feed on plant sap.

**Mole crickets:** Velvety brown, 1½" 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 ¾"-round holes that are signs of tunneling. Infestation usually occurs in 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.

**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.

**Plant-feeding mites:** Tiny (1/32") red, yellow or green with oval bodies. May have spots. 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.

**Natural enemies:** Lady beetles, predatory mites.

**Other controls:** Flush with water, then alternate with soap and oils if necessary.

**Scales:** Vary in size, shape and color; approximately 1/8" in diameter. Soft scales and armored scales are the most common. Soft scales produce



Photo by: Ken Gray, Oregon State University

*Hemispherical scale immatures (green) and adults (brown).*



honeydew (sugary secretion). The armored scale body is hidden under a waxy scale covering. Mature scales are stationary and feed on leaves, twigs, stems and fruit. Watch for yellow spots (feeding damage) on top of leaves with scale underneath. Ants or sooty mold may be present. "Crawlers" (the immature, mobile stage) are the most vulnerable life stage and, therefore, easiest to control.

**Natural enemies:** Lady beetles, parasitic wasps.

**Other controls:** Scrape scales off plant tissue. See other controls for mealybugs.

Thrips: Tiny (1/32") winged insects that scar leaves, buds and flower petals to drink sap from wounds. Injured plant may be dull gray with curling, distorted leaves.

**Natural enemies:** Predaceous thrips, predatory mites.

**Other controls:** Apply horticultural oils, insecticidal soaps, spinosad spray.

Whiteflies: Adults look like tiny white moths on plants. They take flight when leaves are disturbed. Eggs are on leaf undersides. Nymphs are oval, flat, transparent-to-greenish in color and may look like scales. They are stationary and are located on undersides of leaves. Dead nymphs are dull white; pupae have red eyes. Ants or sooty mold may be present.

**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.



Photo by: Scott Bauer, USDA ARS, www.insectimages.org

*Silverleaf whiteflies.*



## What About Plant Diseases?

Many organisms, including viruses, fungi and bacteria, can cause diseases in plants. Diseases can be quite specific in the plant species they commonly attack, but identifying diseases 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 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.

Photo by: Robert McGovern, UF/IFAS



*Fungal disease on petunia.*

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 woody ornamentals, fire blight on loquat and brown patch on turf. Such diseases can seriously damage the plant's appearance or yield.

Because diseases are difficult to identify, do not assume a disease is in the works just because of a plant's appearance. Use a magnifying glass to look for insect pests that may be causing the damage. Also analyze maintenance practices for causes related to visible symptoms. If you still suspect a disease, contact your county's UF/IFAS Extension office for advice on how to collect and submit plant samples for disease diagnosis and recommendations on the least-toxic methods of treatment.



**Southern Plant Diagnostic Network:**

