INTEGRATED PEST MANAGEMENT (IPM) IN THE HOME LANDSCAPE

By Vickie Wallace and Alyssa Siegel-Miles
UConn Extension, August 2016

There are many pests in the landscape. Weeds, insects, diseases, and wildlife can all cause frustration for those trying to establish or maintain lawns, vegetable gardens, or ornamental plants in the home landscape.

WHAT IS IPM?

Integrated Pest Management (IPM) is an **effective, environmentally friendly, and cost-efficient** approach to pest control. It has been used successfully by farmers and agricultural producers for many years. Homeowners can adopt IPM principles to reduce pest problems in their own landscapes.

The goal of IPM is to **eradicate a pest using effective and safe practices with a minimal risk to human health and the environment.** IPM strategies combine a general and accurate knowledge of the pest and its life cycle with multiple tactics that prevent or reduce pest damage. Strategies include:

- Use of management practices that focus on long term plant health.
- Monitor for and correctly identify potential pests.
- Combine cultural, biological, mechanical, and physical methods of control for greater effectiveness. Use of chemical controls (pesticides) are recommended only as a last resort.

WHAT IS A PEST?

Pests are weeds, insects, microscopic organisms (ie. bacteria, fungi, virus), or animals that damage, interfere with, or affect the health of desirable plants.

Pests include organisms that negatively impact plant health. Not all insects, bacteria, and fungi are pests. Many are beneficial and they support the health of the ecosystem.

Often, poor plant health is due to injury or stress in the environment, not living organisms. If the plant is stressed or in decline, it may be due to improper, or the lack of, cultural practices. Consider these examples of common sources of stress:

- A shade-loving plant placed in a hot, sunny area
- A plant watered too much or too little
- Soil compacted from too much foot or car traffic that prevents healthy root growth
- Injury to a tree trunk caused by maintenance equipment

Even when the problem is caused by an insect, a microorganism, or an animal pest, the root cause of the problem may be from poor plant selection, improper planting, or incorrect maintenance practices. When plants are healthy, they often can tolerate a certain population of pests.

HOW CAN YOU USE IPM?

STEP 1: KEEP A HEALTHY LANDSCAPE.

Maintaining healthy plants in the landscape is key to preventing pests from becoming a problem. Proper cultural practices are an integral part of an IPM approach. These practices include:

- **Assess the site** to make sure plants in the landscape receive the proper amount of sunlight, water, and nutrients.
- **Get a soil test** to understand the soil's health and nutrient composition. Contact the Cooperative Extension within your state for more information.
- Based on soil test results**, improve the soil health** by adding organic matter or other amendments.
- **Right plant, Right place.** Select plants that best fit the landscape site and intended level of maintenance. Be observant about the existing landscape. Are there plants that perform well in one location but not another? Consider drought tolerant plants if you have little time to water. Choose sun-loving plants in an area that receives more than 6 hours of sun a day. In a consistently wet area, select plants that thrive in moist soils.
- Place plants together that have similar growing requirements.

- Select **disease resistant plants** whenever possible.
- Keep the landscape as weed free as possible by planting densely and using groundcover plants or by using bark mulch or newspaper and straw.
- Mow or cut down weeds before they flower and produce seed.
- Rotate crops and use companion plants in a vegetable garden.
- Keep plants away from the foundation of house and downspouts.

When plants are healthy, they can protect themselves from many pests. Often, when a plant is stressed or not healthy, a pest can cause further decline of the plant's overall health.

STEP 2: MONITOR AND CORRECTLY IDENTIFY PESTS IN THE LANDSCAPE.

Perform regular plant inspections. Check plants for poor growth or injury, and scout regularly for signs of pest damage. When you see a decline in plant health, try to determine the root cause of the problem as you address the immediate issue. For example, a plant may be attacked by a fungus due to improper cultural practices, such as overwatering.

Lily Leaf Beetle and its feeding damage evident on a lily plant.

Correct identification is critical to solving a problem in the landscape. Remember that many insects and micro-organisms are not pests. When plant damage is observed, take note of any visible pests, how many there are, and what kind of damage is evident. The damage is often easier to detect than the pest itself. Notice where exactly the plant is damaged – leaves, roots, new or old growth, top or bottom of the plant, top or bottom of the leaf. Contact your local Cooperative Extension for pest ID support.

The presence of a few pests and a small amount of damage can usually be tolerated. When the number of pests goes beyond the point that their damage can be tolerated, further action may be needed.

STEP 3: DETERMINE THE IPM CONTROL STRATEGIES NEEDED.

Conditions that promote plant health may make the environment unfavorable to insect pests or diseases. Multiple IPM strategies may be used in combination for best results. Look to all non-chemical approaches before using a pesticide (synthetic or organic).

- **Cultural control:** correct watering, proper pruning and mowing, improving soil health and fertility, reducing weeds, relocating or replacing an unhealthy plant.
- **Biological control:** the use of natural enemies (insects or microorganisms) to control pests. Many common pests have naturally occurring predators, parasites, pathogens, and competitors. For example, ladybugs eat aphids or Tiphia parasitic wasps kill Japanese beetle grubs.
- **Mechanical and physical controls:** physical removal of pests (handpicking), hand-pulling or tilling of weeds, or barrier materials to kill or block pests. For example, traps for rodents, mulch for weeds, and row covers for vegetable gardens. Sanitation practices include bagging and throwing away diseased or pest-infested plants and not allowing weeds to produce fruit and mature seed.
- **Chemical control (synthetic or organic pesticides):** As a last resort, use the safest and least toxic pesticide possible (synthetic or organic) to reduce the risk to human health, beneficial and non-target insects and animals, and the environment. Always read the label, follow established guidelines, and contact your local Extension service for assistance.