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An Introduction to Integrated Pest Management

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Integrated Pest Management (IPM) is a pest management strategy that utilizes a variety of methods to manage pests in the landscape. It does *not* exclude the use of chemical pesticides, but integrates them with other strategies to manage pests more effectively and efficiently.

The basic principles of IPM:

1. Cultural management
2. Accurately identify the pest or problem
3. Scouting and monitor the landscape
4. Establish thresholds
5. Intervention/prevention

Cultural Management

Preventing pest problems in the first place should be first on every landscaper's mind. Preventing pests protects the environment by reducing pesticide use, and can potentially decrease costs by reducing pesticide use. Plants that are healthy and stress-free are generally pest free. Following the basic rules of Best Management Practices will lead to improved plant health. Some of the steps you can take include:



- Proper watering (quantity and quality)
- Proper fertilizer amounts
- Soil amendments, mulching
- Right plant, right place
- Pruning and mowing correctly
- Correctly installing and establishing plants
- Maintaining equipment and tools

Accurate Identification

Identifying the pest correctly can aid in selecting the best pest management strategy and can help you determine the best timing for application. Resources for accurate identification

- Call your local Extension office at 952-4536. The agent will consult with you over the phone or will meet you in the landscape to diagnose the problem. Samples can be dropped off at the office located at 1455 Treeland Blvd., Palm Bay or 3695 Lake Drive, Cocoa. When collecting samples, do NOT use adhesive tapes or destroy the insects in such a way that the body is harmed or damaged. Our ability to accurately identify the pest is only as good as the

samples we receive. You can also email high quality images of pest problems to lseals@ufl.edu.

-  <http://brevardhorticulture.blogspot.com>
-  Find us on Facebook
- <http://brevard.ifas.ufl.edu> – general information for Brevard County
- <http://creatures.ifas.ufl.edu> – Identification and management strategies for insects
- http://flrec.ifas.ufl.edu/palm_prod/palm_diseases.shtml - identification of palm diseases
- <http://edis.ifas.ufl.edu> – University of Florida Extension publications covering hundreds of landscape-related topics

Scouting and monitoring

Scouting the landscape routinely for pests can provide several benefits including:

- Potential for reduction of pesticide use
- Use of less harmful control measures
- Potential for reduced costs (i.e., fiscal responsibility, increased profits)

Scouting and monitoring tools

- Hand lens-10x or 15x: To use a hand lens, place the lens directly in front of your eye and bring the sample you are examining towards the lens until the object comes into focus.
- Knife - good for cutting into stems or root tissue.
- Pruning shears- for taking samples – disinfest blades between samples to avoid spreading disease.
- A soil sampling tube, spade and/or trowel to sample soil or examine roots
- Plastic bags for samples/indelible marker- individually marking bags with information as the samples are collected makes it easier to keep information straight about what pests were found in particular locations
- Notebook or clipboard with record-keeping sheets. Plastic sheet protectors can be used to protect records and maps. Maps can also be laminated to prolong their useful life.



Establish thresholds

There are two types of IPM thresholds: action and economic.

Action thresholds

An action threshold is the point at which the level of damage or harm to a plant becomes unacceptable. Action thresholds will vary from landscape to landscape (i.e., different areas of a park such as the athletic fields versus fence lines).

Economic thresholds

Economic thresholds are mostly used in agricultural production. Mathematical formulas are used to determine the point where injury levels affect crop yield. For ornamentals, that economic threshold may

be the point where controlling a pest on a specific plant or planting exceeds the cost of replacing the plants.

Intervention or Prevention

Determine if there are preventive or nonchemical methods you can use to reduce the problem. For best results, combine several methods from the following categories:

1. **Prevention:** Prevent pests from invading or building up their populations in the first place. This might include removing the pests' sources of food, water, and shelter, or blocking their access into buildings or plants.
2. **Cultural controls:** Cultural practices are things you can do to discourage pest invasion such as good sanitation, removing debris and infested plant material, proper watering and fertilizing, growing competitive plants, or using pest resistant plants.
3. **Mechanical controls:** Control pests with mechanical devices such as knocking pests off of plants with a spray of water, using barriers and traps, cultivating, soil solarization, or heat treatments.
4. **Biological control:** Biological control is the use of beneficial organisms (called natural enemies) to manage pests. Encourage natural enemies by planting flowering and nectar producing plants and avoiding the use of broad-spectrum pesticides.



If effective nonchemical methods are not available, consider using pesticides.

1. Pesticides can be part of IPM, but use them only as a last resort and only after you have tried other methods.
2. Be sure that your pest problem is serious enough to warrant a pesticide treatment.
3. Always use the least toxic, yet effective, materials available and use them in ways that reduce human and pet exposure and protect the environment.
4. Combine pesticide treatments with other preventive methods to discourage pests from coming back.