

## Integrated Pest Management

The goal of any pest management program is to prevent pests (insect, disease, weeds or others) from damaging or reducing the value of the landscape or lawn. Pest management is not the complete elimination or eradication of a pest, but controlling pest levels before they build up to a point at which they can damage the lawn or landscape.

Integrated Pest Management, or "IPM," is a decision-making process. A process that anticipates and prevents pest activity and infestations by combining different strategies to achieve long-term solutions. When using IPM, pest management decisions are based on need and effectiveness rather than schedules. Although timing may be critical as to when pests may appear or reproduce. The goal of IPM is to solve pest problems in the least toxic manner possible. A key element of IPM is planning. You must anticipate and prepare for pest problems before they occur. This means careful planning, keeping notes, checking environmental conditions, checking cultural practices and more.

IPM can and may include the use of some chemical products. IPM is a strategy that uses various combinations of pest control practices, biological, cultural, and chemicals in a manner to achieve a satisfactory lawn and landscape. IPM is not a single activity, but a process, a combination of activities, that must be carefully thought out ahead of time. A plan developed, and then put into action. Each step of the plan depends upon the given situation, the given pest and all the resources available to you. Environmental and cultural activities greatly affect the process.

Any IPM program should include these components:

- Correct Pest identification
- Pest monitoring, visual inspections
- Determination of the acceptable threshold injury level
- Pest control strategies available
- Accurate record keeping

Correct identification of any pest or pests you find is very important because not all insects you see in your lawn or landscape are pests.

Early detection of pests can mean savings of time and money in managing pests. Early detection allows you more options for managing pests. IPM programs require you to monitor your lawn and landscape for

the presence of both pests and beneficials or natural enemies of pests. Often natural enemies will often take care of pests on their own before they ever become a problem. Landscape crews and lawn care technicians need to be very observant of their properties.

In IPM, one must determine at what level a pest or pests becomes a problem. This is often called the threshold level. This level can be a certain number of insects or weeds in a specific area. It may be a certain amount of feeding damage on plants. Your county extension agent or landscape supplier can help you decide at what level additional control is needed to prevent the pest from causing economic or aesthetic damage. Make sure you weigh all your options. Often time pest levels in the landscape are not at a level that requires chemical activity. Discussion with the homeowner or client is a part of this process.

The next step is to decide what you will do in the way of pest control if you believe that pests will or have gone beyond the threshold level. If there is a significant pest problem, often nonchemical methods may be used to control these pests. Often you can simply remove them or remove the source of the problem. In some situations, if preventive measures or nonchemical ways of controlling pests do not work, you may need to use a chemical product to prevent pests from reaching the threshold level.

Accurate record keeping, dates of infestations, temperature, climatic conditions will allow you to determine from year to year when the pest issue is likely to reoccur.

Control methods include:

**Biological controls-** is the use of natural enemies- predators, parasites, pathogens to control pests and their damage.

**Cultural Controls-**are practices that reduce pest establishment, reproduction, dispersal and survival. Changing irrigation practices might be a method of cultural control.

**Mechanical Controls-** kill a pest directly, blocks pests from entering the site, or makes the environment unsuitable for it. Traps, mulches, are examples in this category.

**Chemical Control-** is the use of pesticides. In IPM, pesticides are only used in combination with other approaches for a more effective program.

Factors affecting IPM decisions include:

- How much investment and time you should spend controlling the pest.
- Environmental conditions and/or cultural conditions
- Whether you are willing to use a pesticide.
- Whether a pesticide is necessary to control your pest.
- Selection of the best pesticide

Again, your local extension agent or landscape supplier can help you with these decisions.

Remember that, IPM includes a combination of pest control methods. Some of the methods that can be used include:

- Plant selection and proper plant placement and installation.
- Physical removal of pests and their residues.
- Biological controls such as the introduction of pest parasites or predators.
- Cultural practices for maintaining health and vigor such as proper watering, fertilizing, pruning or mulching of plants.
- Traditional pesticides and alternative chemicals such as pheromones and insect growth regulators.
- Insecticidal soaps, natural pesticides or organic products

Landscape design and plant selection is critical. Choosing the right plant and putting it in the right spot aids tremendously in reducing your pest problems. There are many plants that have limited pest issues.

Physical removal of pests is easy to do in situations where the pest is in limited population. Manually pulling weeds, or pruning out infested plant parts can be helpful. Make sure to fully remove the problem from the site.

There are many biologicals that are available to control pests. Information is available from your local extension service or landscape supplier.

Best management practices, preferred cultural practices to maintain plant health at peak levels is a key to limiting pest issues. Mowing turf at the proper height, watering correctly, fertilizing, pruning at the right time, all the normal best practices are critical in IPM.

There are many natural products and alternatives to chemical products that might be available. Pheromones, growth regulators, insecticidal soaps are all possibilities.

If you do decide to use chemical products, IPM encourages you to choose the least toxic product. Find out which products will control your pest and use one with the signal word of CAUTION instead of WARNING, if possible. Your local extension service or landscape supplier can help you select the most effective and least toxic product.

As with any program or process, once you have gone thru it, you need to assess how effective the program was, and how you might need to alter it next time if necessary.