Integrated Pest Management

Integrated Pest Management (IPM) is an environmentally sensitive and effective approach to pest management. IPM employs a combination of common-sense practices to prevent and control pests. These practices include physical, cultural, biological, and chemical techniques. IPM relies heavily on being well informed. Understanding the life cycles of pests and their interaction with the environment are critical keys to success.

The goal of IPM is to prevent, avoid, or reduce pest problems using multiple tactics.

The IPM toolbox includes Cultural practices, Mechanical techniques, Physical applications, Biological controls, and Chemical applications.

IPM Basics:

Knowledge is Key – know your plants and common pest problems
Practice Prevention – stop pests before they are a problem
Monitor the Landscape – scout regularly for plant problems
Know Your Options – consider the costs and benefits of control
Develop a Strategy – incorporate multiple management tools
Evaluate – determine how the controls worked and what you learned

The IPM approach can be applied to both agricultural and non-agricultural settings, such as the home, garden, and workplace. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides. In contrast, *organic* food production applies many of the same concepts as IPM but limits the use of pesticides to those that are produced from natural sources, as opposed to synthetic chemicals. (EPA.gov)

Mechanical and Physical Controls

These tools directly remove or kill pests, or physically keep insect pests from reaching their hosts by means of a barrier or trap. Some methods alter the physical environment to make it unfavorable to pests. Mechanical and physical controls have relatively little impact on natural enemies and other non-target organisms and are compatible with biological controls. They can be rapid and effective and are well suited for the home landscape.

Control measures Include: habitat manipulation, creating barriers, trapping pests, hand removal, and mulching.

Biological Control

Biological control uses natural enemies of pests to suppress or prevent a pest outbreak. Insects, pathogens, and weeds have predators that feed upon them, and/or have diseases that make them weak or die. These are the natural enemies that we take advantage of with biological control.

Natural Enemies: The Three P's

Predators: insects, birds, bats, reptiles, and amphibians
Parasitoids: small insects that develop on or inside a host insect
Pathogens: disease-causing agents

Many people think chemicals do not have a place in IPM. However, when used properly and responsibly, pesticides can fit well into an IPM program. There are many different types of chemical controls, some of which are compatible with IPM. Use pesticides judiciously and select chemistries that have a narrow host range. Many highly selective products are not only safe for non-target, beneficial

insects, but also safer for the environment. Having said this, it is still best to rely on chemical pesticides as a last resort in IPM.

Using Pesticides in IPM:

Properly identify the pest
Treat only primary pests
Use selective chemicals
Spot treat only infested plants or stems
Wear personal protection gear

Resources:

EPA. Integrated Pest Management. Integrated Pest Management (IPM) Principles | US EPA

Integrated Pest Management (IPM) for the Home Landscape Integrated Pest Management (IPM) for the Home Landscape | Oklahoma State University (okstate.edu)

The Integrated Pest Management (IPM) Concept. The Integrated Pest Management (IPM) Concept | USU

Master Gardner's Manual. Oklahoma State University. E-1034