# Integrated Pest Management at Penn State

## What is IPM?

Integrated Pest Management or IPM is a decision-making process that seeks to address pest problems by prevention, emphasizing practices such as sanitation, exclusion, and non-chemical devices/practices. Thus, IPM quite often leads to an overall decrease in the amount and/or specific types of pesticides used while more effectively suppressing pests.  Enhancement of IPM strengthens Penn State’s sustainability initiatives and leads to improved health and safety for both people and the environment.

There are many reasons to use IPM. It is cost-effective, reduces hazards due to pests and pesticides, and is less polluting. Many of these benefits come about through pesticide use reduction, and/or more considered choices of pesticides when needed. Although many pesticides today are much less harmful than those used many years ago, they still are poisons that are meant to kill weeds, insects, fungi, and rodents.  Pesticides can present risks not only to the applicators, but also to people who may come in contact with them on food, inside buildings, on lawns, and on athletic fields. People may be hypersensitive to pesticides, and applications can cause them immediate illness. National-scale studies by the U.S. Centers for Disease Control show that our bodies already carry numerous pesticide residues. Reducing hazardous pesticide use on our campuses can help lessen all types of exposure to these compounds.

IPM strongly relies on preventative actions to *eliminate conditions conducive* to weeds, insects, rodents, and other pests, whenever possible. Once a pest situation has been identified, an IPM approach offers a range of options and tools for pest control including physical, cultural, biological, and chemical – including the judicious use of selected pesticides, if needed. The process begins with full understanding of pest biology and determining which pests pose actionable problems in specific areas. This can be different for different areas, and management zones can be established.  For example, a few weeds in the lawn in a remote area may be tolerable, whereas in a showcase area, they may not be acceptable.  Likewise, identifying one cockroach in an academic building leads to a different “action threshold” than a cockroach in a food service area.

In most areas on our campuses we know what the problem pests are.  Using this knowledge, we can take the first step in implementing IPM – establishing routine inspections and environmental assessments.  The goal is to identify conditions conducive to pests and remedy them *before* pests can colonize and thrive.  For indoor pests, prevention may involve structural changes (e.g., fixing a broken screen, caulking cracks and crevices) or performing better sanitation.  For outdoor pests, prevention begins with selecting resistant plant varieties, ensuring that they receive the proper care (e.g., mowing, watering, pruning, mulching) and to anticipate which pests might appear seasonally. An important part of IPM is to monitor regularly for pest presence in order to “nip them in the bud” and provide clues as to the sources of an infestation.  Actions to control pests can include anything from structural/physical controls to biological controls to least hazardous pesticides.  The goal is to start with prevention, and then if needed, to work up the list, using pesticides only after other means have been exhausted.  In some cases pesticides may be the only means to control a pest, and then it is important to make sure that the timing of the pesticide application considers the life cycle of the pest and that the pesticide used is the least hazardous, most targeted for the situation.

How does Penn State Implement IPM?

Penn State’s goal is to use an IPM approach for any and all pest problems, however a different approach may be required for various areas. For example, the pests encountered inside classroom buildings require very different management tactics than those encountered in agricultural settings. In this way the program allows for the best decisions for the building/area.

In order to assist in the implementation of IPM at all areas, an IPM Committee has been established. This committee is composed of representatives from:

* Environmental Health and Safety
* College of Agricultural Sciences, Entomology Department
* Office of Physical Plant
* Housing
* Food Services
* Hospitality Services
* University Park Campus Pest Management Professional vendors

The IPM Committee meets twice a month during the academic year. The committee reviews pest problem areas, provides solutions, and serves as a clearinghouse for those in the University community who need assistance addressing pest issues.

## What Can I Do to Help?

Everyone at Penn State plays a role in IPM. Here are some things you can do:

* Keep food in closed and sealed containers
* Clean up food spills
* Clean counters in kitchen areas every day
* Ensure that if windows are open, they have screens that are in good condition
* Keep on pathways – walking across lawns creates compaction and adds to weed problems
* Report doors that close improperly or are missing door sweeps (a mouse can fit through an area the diameter of a pencil)
* Ensure that drain traps are not dry (add water periodically)
* Reduce clutter, especially in mechanical rooms
* Make sure water leaks are addressed
* Report pest problems to your building facility coordinator