



# BEYOND PESTICIDES

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## What Is Integrated Pest Management (IPM)?

Integrated Pest Management (IPM) is a program of prevention, monitoring, and control that offers the opportunity to eliminate or drastically reduce the use of pesticides and minimize the toxicity of and exposure to any products that are used. IPM does this by utilizing a variety of methods and techniques, including cultural, biological, and structural strategies, to control a multitude of pest problems. IPM is a term with many different definitions and methods of implementation. IPM can be interpreted to mean virtually anything the practitioner wants it to mean. Beware of chemical-dependent programs masquerading as IPM.

Those who argue that IPM requires the ability to spray pesticides immediately after identifying a pest problem are not describing IPM. Conventional pest control tends to ignore the causes of pest infestations and instead rely on scheduled pesticide applications. Pesticides are often temporary fixes, ineffective over the long term. Least-toxic control products are a major growth area, and new materials and devices are increasingly available in the marketplace.

### The Six IPM Program Essentials

- **Monitoring.** This includes regular site inspections and trapping to determine the infestation levels and types of pests at each site.
- **Record Keeping.** A record-keeping system is essential to establish trends and patterns in pest outbreaks. Information recorded at every inspection or treatment should include pest identification, population size, distribution, recommendations for future prevention, and complete information on the treatment action.
- **Action Levels.** Pests are difficult to completely eradicate. An action level is the population size that requires remedial action for human-health, economic, or aesthetic reasons.
- **Prevention.** Preventive measures must be incorporated into the existing structures and designs for new structures. Prevention is and should be the primary means of pest control in an IPM program.
- **Tactics Criteria.** Under IPM, chemicals should be used as a last resort only, but when used, the least-toxic materials should be chosen and applied to minimize exposure to humans and all non-target organisms.
- **Evaluation.** A regular evaluation program is essential to determine the success of the pest-management strategies.

### Integrated Pest Management (as defined by Beyond Pesticides/NCAMP)

IPM is a pest-management system that

- (a) eliminates or mitigates economic and health damage caused by pests;
- (b) minimizes the use of pesticides and the risk to human health and the environment associated with pesticide applications; and
- (c) uses integrated methods, site- or pest inspections, pest-population monitoring, an evaluation of the need for pest control, and one or more pest-control methods, including sanitation, structural repairs, mechanical and living biological controls, other non-chemical methods, and, if these options are unreasonable and have been exhausted, least-toxic pesticides.

## How to Implement an IPM Program

- **Decision-Making Process.** Create an IPM decision-making process that draws on accurate, timely information to make pest-prevention and management decisions. Determine the needs of the site and set “action thresholds,” i.e., levels of pest populations at which remedial action is necessary. This will vary depending on the site: what type of structure it is, who is using it, and how it is being used. For instance, a cafeteria will need a higher level of pest protection than an equipment room. This decision should be made with someone knowledgeable about the target pests and the risks of pesticides to be used, not someone who has a financial interest in selling a toxic pesticide product.
- **Monitoring.** Implement a monitoring program designed to provide accurate, timely information on pest activity, to establish whether there is in fact a pest problem, and to identify its causes. Implement a schedule and a plan for monitoring pest populations and the success of pest-control efforts. This will help determine acceptable pest-population levels, effective reduction measures, and breach of the action threshold. The best way to monitor for many pests, like cockroaches, is with sticky traps. They should be placed throughout the site at many different levels. Set the traps for 24 hours and then record your results. The traps should be used on a regular schedule.
- **Pest-Prevention Practices.** Use practices that eliminate the need for hazardous pesticides—changing the conditions to prevent problems, including occupant education, careful cleaning, pest-proof waste disposal, and structural maintenance. Know what conditions the pest requires: food, water, and habitat. Reduce or eliminate the sources of food and water. For instance, always clean up food and food areas; place food in airtight, sealed containers; dispose of food and food packaging in sealed garbage containers; repair leaky pipes and faucets; caulk up cracks and crevices; and eliminate clutter whenever possible. Remember that it can take some time for these methods to be effective.
- **Mechanical, Biological, and Least-Toxic Controls.** If all other methods have failed and monitoring shows that your pest population is still above your action thresholds, use mechanical methods, such as sticky traps, and biological controls like pheromones and parasitic insects. Then, and only then, should you consider spot treatment with least-toxic pesticides. You must weigh the risks associated with the use of a pesticide against the problems caused by the pest. Consider your options carefully, being mindful not to blindly jump at a solution that may have risks without first collecting the facts. If you must use a pesticide, you should choose the least-toxic pesticide available. Remember, all pesticides are poisons designed to kill; they should be handled carefully, with respect, and according to their labels.

### Least-Toxic Pesticides (as defined by Beyond Pesticides/NCAMP)

Least-toxic pesticides include

- (a) boric acid and disodium octobrate tetrahydrate;
- (b) silica gels;
- (c) diatomaceous earth;
- (d) nonvolatile insect and rodent baits in tamper-resistant containers or for crack and crevice treatment only;
- (e) microbe-based pesticides;
- (f) pesticides made with essential oils (not including pyrethrums) without toxic synergists; and
- (g) materials for which the inert ingredients are nontoxic and disclosed.

The term “least-toxic pesticides” does not include a pesticide that

- (a) is determined by the EPA to be a possible, probable, or known carcinogen, mutagen, teratogen, reproductive toxin, developmental neurotoxin, endocrine disruptor, or immune-system toxin; or
- (b) is in EPA's toxicity category I or II. Nor does the term include any pesticide application using a broadcast spray, dust, tenting, fogging, or baseboard spray.