



# Implementing an Integrated Pest Management Program

## Low-cost solutions

Integrated pest management is a systems approach to managing pest organisms at acceptable levels. In order to effectively control pests without relying on the frequent and extensive application of chemicals, a multi-step program needs to be followed.

In the long-term, integrated pest management is less costly than pesticide-based control. Frequent reapplication of pesticides can be expensive. And, pesticide use and storage is often regulated, requiring special training and licensing, as well as unique management systems and storage facilities.

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## What's the Problem?

Implementing an effective municipal-wide integrated pest management program will take time and resources. Success may require the cooperation of a number of departments, programs, and employees. And, resistance to change is a common response when organizations and individuals are asked to do things in a different way, using new or different technologies.

## Developing and Implementing an Integrated Pest Management Program

Generally speaking, there are two distinct phases to developing and implementing an integrated pest management program: the start-up phase and the operational phase. Following is a brief summary to the major steps involved with each phase.

### *Start-up Phase*

There are several steps that can be taken before launching an integrated pest management program that will greatly improve the likelihood of a successful program. This start-up phase of implementation focuses on achieving "buy-in" from the key players, defining the goals and expectations of the IPM program, and identifying who will do what.

#### *Educating key decision-makers*

Having the support of key decision-makers is paramount to a successful program. Because there will likely be a need to devote additional resources to the program during the start-up phase, it is important that key decision-makers understand the potential problems with pesticide-based programs and the alternatives offered by the IPM approach.



## Developing and Implementing an Integrated Pest Management Program (continued)

### IPM Program Components:

- Identification
- Monitoring
- Record-keeping
- Establishing thresholds limits
- Prevention
- Integration of treatment
- Program evaluation

### *Adopting an IPM policy*

The municipal governing body should adopt a clear and concise policy statement that describes how pest control will be conducted. The policy should state the intent to implement an IPM program and provide general guidance on program expectations.

The policy statement could be a short resolution or a comprehensive report including definitions, program goals and expectations, and identifying practices, guidelines, and responsibilities. Regardless of the level of detail included in your policy statement, it needs to clearly state the intent to reduce the reliance on chemical pest controls. The policy statement should also include specific goals to guide pest control decisions. It should also include a statement that the IPM policy also extends to contractors working for the municipality. For a detailed discussion regarding establishing an IPM policy and examples of goals, see *Establishing Integrated Pest Management Policies and Programs: A Guide for Public Agencies*, available online at <http://anrcatalog.ucdavis.edu/pdf/8093.pdf>.

### *Identifying pest management roles and responsibilities*

Once it has been decided that your municipality or agency will implement an integrated pest management program and adopts a pest management policy and guidelines, it is crucial that the roles and responsibilities for carrying out the policy objectives are defined. Only when the respective roles of all the people involved directly or indirectly with pest management in the municipality or agency are identified can effective pest protection be achieved with reduced risk from pesticides. Communication between employees with pest control responsibilities, as well as between departments, is essential to a successful IPM.

It is also necessary to identify training needs as part of understanding the different roles and responsibilities that will be assumed by employees. It may be helpful to assign the coordination of the IPM program to a single Pest Manager who would then be responsible of moving the program into the operational phase, including ensuring that proper training is provided to staff.

### *Operational Phase*

Your municipality or agency might consider starting small in the early stages of implementing an IPM program. Perhaps begin by selecting a single site or agency to implement the IPM program. This will help identify difficulties in moving forward with an IPM program and allow for changes to improve program implementation for other facilities or agencies.

As your municipality or agency begins implementation of the IPM program, there will likely be the need to modify the implementation plan. This may even require revisiting the IPM policy statement and goals.

## Implementing IPM Program Components

Once the scope of your initial IPM program has been determined, the roles and responsibilities of various staff involved have been agreed upon, and staff training needs have been met, the actual implementation should be based on the IPM program components.

- **Identification.** This includes not only using the information collected during the site inspections to identify the target pests, but understanding their life cycle and possible natural enemies. The employee training should have included the use of field manuals and identification keys to ensure the proper identification of both pests and beneficial organisms.
- **Monitoring.** Routine site inspections and trapping is used to determine the types and infestation levels of pests at each site. Monitoring should also include looking for evidence of beneficial organisms and natural enemies. The purpose of monitoring is to understand when and where pests are likely to reach the threshold limits and will require action.
- **Record-Keeping.** Record-keeping is an essential part of an IPM program. It is necessary to establish trends and patterns of pest infestations. Examples of the types of information that should be collected and recorded at every inspection or treatment includes pest identification, estimated population size and distribution, recommendations for future prevention, and complete information on the treatment action taken. The record-keeping system should also include information on any side effects of the treatment, particularly on non-target species, and any complaints or feedback from the public.
- **Thresholds Limits.** Since pests are virtually never eradicated, it is important to establish threshold levels. That is the pest population size or distribution that will trigger a control action for human health, economic, or aesthetic reasons. Also, the time of year relative the pest's life cycle may affect tolerance levels. Threshold levels will vary by pest and site conditions. Therefore, guidelines for setting threshold limits need to be established. Action may be required when:
  - monitoring indicates the pest population will reach the threshold limit without treatment, and
  - environmental conditions or natural predators are not expected to reduce the population before it reaches the threshold limit, and
  - treatment costs and risks are less than the potential damage from the pests.
- **Prevention.** Prevention is a critical means of pest control in any IPM program. Preventive measures may include varying certain procedures or processes as a means of controlling pests. This may include site modifications and landscape design that are less conducive to pest survival, using native species that are pest-tolerate, and cultivation techniques that discourage pest infestation. It may also be necessary to conduct a public education program to explain the purpose of the changes in landscaping on municipal property. Simple signs strategically placed are helpful at reaching the public that use the sites being modified. See the fact sheet, Landscape Design, for a more detailed discussion on incorporating IPM into landscape design.



## Implementing IPM Program Components (con't.)

- **Integration of Treatment.** Under IPM, a variety of treatment methods may be used, either independently or in combination. IPM seeks to identify and use control methods that are effective against the target pest, least disruptive to non-target organisms, and least hazardous to human health and the environment. While IPM does not eliminate the use of chemical pesticides, the least-toxic materials and control methods should be chosen and applied to minimize exposure to humans and all non-target organisms. For example, regular perimeter spraying is commonly used to prevent pests such as ants and beetles from entering buildings. While this strategy may be effective in the short-term, it does not provide a long-term solution and, in fact, may make the situation worse by killing beneficial insects and promoting pesticide resistance. Altering the habitat around the building to make it less suitable for the target pests and minor structure changes, such as caulking and repairing cracks and using baits and traps can provide long-term and less toxic control.
- **Evaluation.** A regular evaluation of program goals and effectiveness is key to determining the success of the pest management strategies and identifying program improvements. An oversight committee, with broad representation (e.g.: employees with IPM responsibilities, pest management expert or toxicologist, worker health advocate, environmental organizations, general public, etc.) should periodically review the IPM program and revisit the municipal policy statement to recommend changes to either the IPM program or the policy.



# Implementing and Integrating Pest Management Program

## Resources

MDA Web IPM page  
[www.michigan.gov/mda/0,1607,7-125-1566\\_2405\\_37164---,00.html](http://www.michigan.gov/mda/0,1607,7-125-1566_2405_37164---,00.html)

Copies of the MDA brochure describing the integrated pest management requirements for public buildings can be downloaded at  
[www.michigan.gov/documents/MDA\\_ipm\\_3937\\_7.pdf](http://www.michigan.gov/documents/MDA_ipm_3937_7.pdf)

New York State Integrated Pest Management Program, Cornell University,  
[www.nysipm.cornell.edu/](http://www.nysipm.cornell.edu/)

*Introduction to Integrated Pest Management (IPM) for "Urban" Landscapes,*  
*IPM Associates. 1996. [www.members.efn.org/~ipmpa/ipmintro.html](http://www.members.efn.org/~ipmpa/ipmintro.html)*

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