



Pest Control in the School Environment: Adopting Integrated Pest Management



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As a mother, I understand the importance of a healthy school environment in which to educate our children. As an environmentalist, I understand the need to eliminate the unnecessary use of any toxic chemical. The use of integrated pest management (IPM) in and around school buildings addresses both of these concerns while preparing our children to become tomorrow's environmental stewards. This booklet will provide you with a general understanding of IPM principles, so that you may make an informed decision about pest control in your neighborhood schools. As EPA's Administrator, I encourage all schools to reduce the use of pesticides by adopting integrated pest management.

Carol Browner

Administrator

Environmental Protection Agency

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What is Integrated Pest Management?

IPM is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interactions with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. IPM programs take advantage of all pest management options possibly including, but not limited to, the judicious use of pesticides.

Understanding pest needs is essential to implementing IPM effectively. Pests seek habitats that provide basic needs such as air, moisture, food, and shelter. Pest populations can be prevented or controlled by creating inhospitable environments, by removing some of the basic elements pests need to survive, or by simply blocking their access into buildings. Pests may also be managed by other methods such as traps, vacuums, or pesticides. An understanding of what pests need in order to survive is essential before action is taken.

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Establishing an IPM Program for Schools

An efficient IPM program can be integrated with the school's existing pest management plan and other school management activities. School management activities such as preventive maintenance, janitorial practices, landscaping, occupant education, and staff training are all part of an IPM program. The following steps are required to develop an IPM decision network:

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An efficient IPM program can be integrated with the school's existing pest management plan and other school management activities.

Step 1:

Develop an official IPM policy statement. This useful first step in making the transition from a conventional pesticide program to an IPM program goes beyond simply stating a commitment to support and implement an IPM approach. It acts as a guide for the pest manager to use in developing a specific IPM program.

Step 2:

Designate pest management roles for occupants, pest management personnel, and key-decision-makers; assure good communications among them; and educate or train the people involved in their respective roles.

Step 3:

Set pest management objectives for the site(s). For every site, pest management objectives will differ. The type of pest management sought should be outlined.

Step 4:

Inspect site(s) and identify and monitor pest populations for potential problems.

Step 5:

Set action thresholds. These are the levels of pest populations or site environmental conditions that require remedial action.

Step 6:

Apply IPM strategies to control pests. These include redesigning and repairing structures, improving sanitation, employing pest-resistant plant varieties, establishing watering and mowing practices, and applying pesticides judiciously.

Step 7:

Evaluate results to determine if pest management objectives are reached, and keep written records of all aspects of the program.



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Apply IPM strategies to
control pests.



Step 1

Developing an Official Policy Statement for School Pest Management

A policy statement for school pest management should state the intent of the school administration to implement an IPM program. It should briefly provide guidance on what specifically is expected—the incorporation of existing services into an IPM program and the

education and involvement of students, staff, and pest manager. The model policy assessment in figure 1 is provided as an example and may be modified in any way by schools to reflect site-specific needs or intent.

Figure 1
Model Policy Statement

School Pest Management Policy Statement

Structural and landscape pests can pose significant problems to people, property, and the environment. Pesticides can also pose risks to people, property, and the environment. It is therefore the policy of this School District to incorporate Integrated Pest Management (IPM) procedures for control of structural and landscape pests.

Pests

Pests are populations of living organisms (animals, plants, or microorganisms) that interfere with use of

the school site for human purposes. Strategies for managing pest populations will be influenced by the pest species and whether that species poses a threat to people, property, or the environment.

Pest Management

Approved pest management plans should be developed for the site and should include any proposed pest management measures.

Pests will be managed to:

- Reduce any potential human health hazard or to protect against a significant threat to public safety.

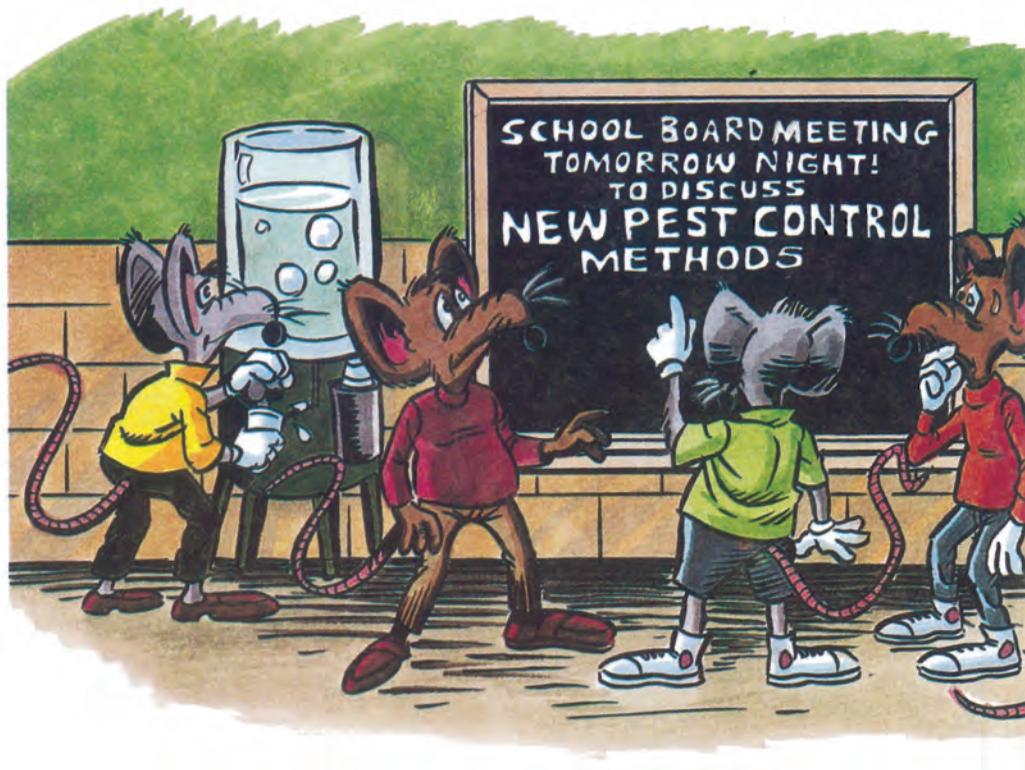
- Prevent loss of or damage to school structures or property.
- Prevent pests from spreading into the community, or to plant and animal populations beyond the site.
- Enhance the quality of life for students, staff, and others.

Integrated Pest Management Procedures

IPM procedures will determine when to control pests and whether to use mechanical, physical, chemical, cultural, or biological means. IPM practitioners depend on current, comprehensive information on the pest and its environment and the best available pest control



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Notices will be posted
in designated areas at
school and sent home
to parents who wish to
be informed of
upcoming pesticide
applications.





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Prevention and reduction of pest infestation at the school site depends on whether or not students and staff clean up leftovers, food in lockers, gum under desks, paper, clutter, etc.



under desks, paper clutter, etc., or perform proper maintenance. In addition, because people at the school site may observe the presence of pests, they should report any evidence of pest activity.

Other actions may be required of students and staff or undertaken by them, depending on their interest in the site and the pest management system. The more occupants “buy in” to this, the better the pest management system will work.

Parents’ Special Roles

Parents have the most responsibility for their children, and they are their children’s natural advocates. Thus, parents can bring the need to reduce dependence on pesticides to the attention of school personnel, and they can assist greatly in the transition to an IPM program.

Parents’ first school pest management responsibility is to learn about IPM

practices and follow them at home so that pests are not carried to school in notebooks, lunch boxes, clothing, or the children’s hair. Second, parents should be aware of the current pest management practices in their children’s schools. The schools should welcome questions by the parents and encourage the parents to seek information. Visible interest and concern on the parents’ part is a valuable resource and stimulus for the implementation of a school IPM program. Parents may express their views to the school superintendent, School Board, school district management, and the school’s Parent Teacher Associations (PTA). Parents may participate on IPM advisory or oversight committees with school and government management.

The Pest Manager

In a pest management system, the pest manager is the person who observes and evaluates the site, or directs others to do so, and decides what needs to be done to achieve the site pest management



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objectives. The pest manager could be the school principal, the custodian, a designated faculty member or an individual under contract to the school system. The pest manager designs a pest management system that takes into account potential liability, applicator and occupant safety, costs, effectiveness, time required, and customer or occupant satisfaction.

The pest manager draws on knowledge gained through prior training and uses information on the site, the pest and its biology, occupant health and concerns, appropriate control measures, and expected results. The pest manager also performs the necessary pest management actions or directs others in the actions to be taken.

Because the pest manager usually has the responsibility of keeping both the occupants and school administrators informed, he or she has the greatest need for available information about the site, pest, and appropriate pest management methods.

The system for the site must achieve the goals within the limitations posed by safety, time, money, and available materials. Pest managers monitor the site and the pest population to determine if actions taken are successful and must keep accurate records of the amount and location of any pesticides used and dates of each application.

Decision-Makers

Generally, persons who authorize the pest management program and control the money for pest management are people involved in the direct management or administration of the school or schools, such as a superintendent or assistant superintendent of schools. However, a person indirectly involved with the site may become a pest management decision-maker, e.g., the health department inspector. On other occasions, the purchasing agent or contracting officer for a school system or district may be a major decision-maker for a school site.



Extension Services have the expertise to meet most IPM training needs. Needed training materials that are not already available can be developed jointly between the School District and the Extension Service.)

Education is a vital component of pest management. Many schools across the United States have incorporated environmental issues into their curricula. Science classes might include discussions and activities to learn more about the fascinating and diverse roles of insects, plants, rodents, and birds in our world. Most are harmless, and many—e.g., some spiders, predatory mites, centipedes, and

certain beetles—are actually beneficial in controlling pest populations. If good sanitation is practiced, the population of these beneficial insects can be kept at tolerable levels.

All staff at the school should learn about the basic concepts of IPM and how these principles are being applied in their particular school. Staff and students need to understand how their own behavior helps alleviate or contributes to pest problems. School staff should encourage the Parent Teacher Associations, student organizations, and other school-affiliated groups to participate in the IPM program.

Step 3

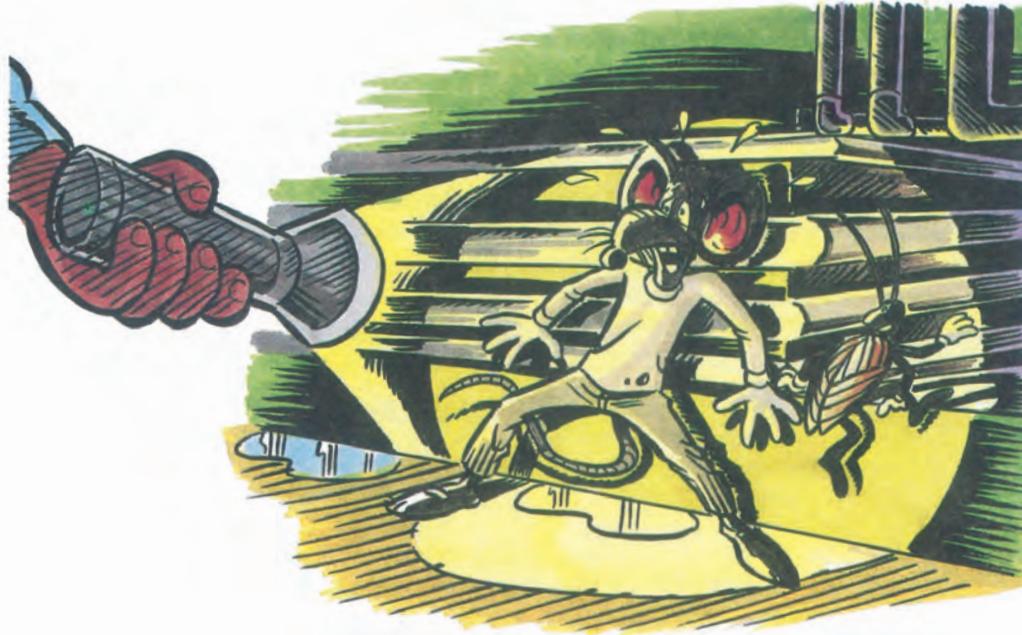
Setting Pest Management Objectives for School Buildings and Other Sites

Pest management objectives differ from site to site, and these differences must be considered before setting action threshold levels. (See Step 5.) For example, for an athletic field, the objective would be to maintain healthy turf as well as a specific type of playing surface. With ornamental plants, the objective would more likely be to maintain aesthetic value. With buildings or other structures, the main objective might be controlling damage caused by termites. Schools should outline specific objectives in a pest management plan.

Examples of pest management objectives include -

- (1) Manage pests that may occur on school sites to prevent interference with the learning environment of the students.
- (2) Eliminate injury to students, staff, and other occupants.
- (3) Preserve the integrity of the school buildings or structures.
- (4) Provide the safest playing or athletic surfaces possible.



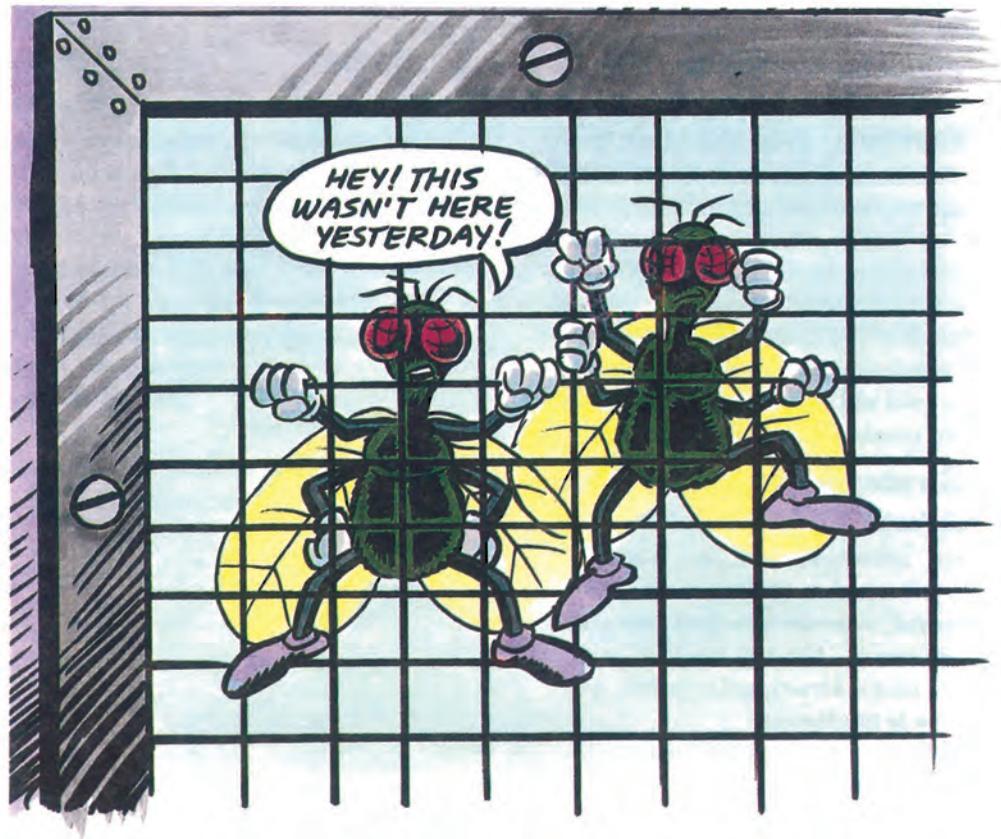


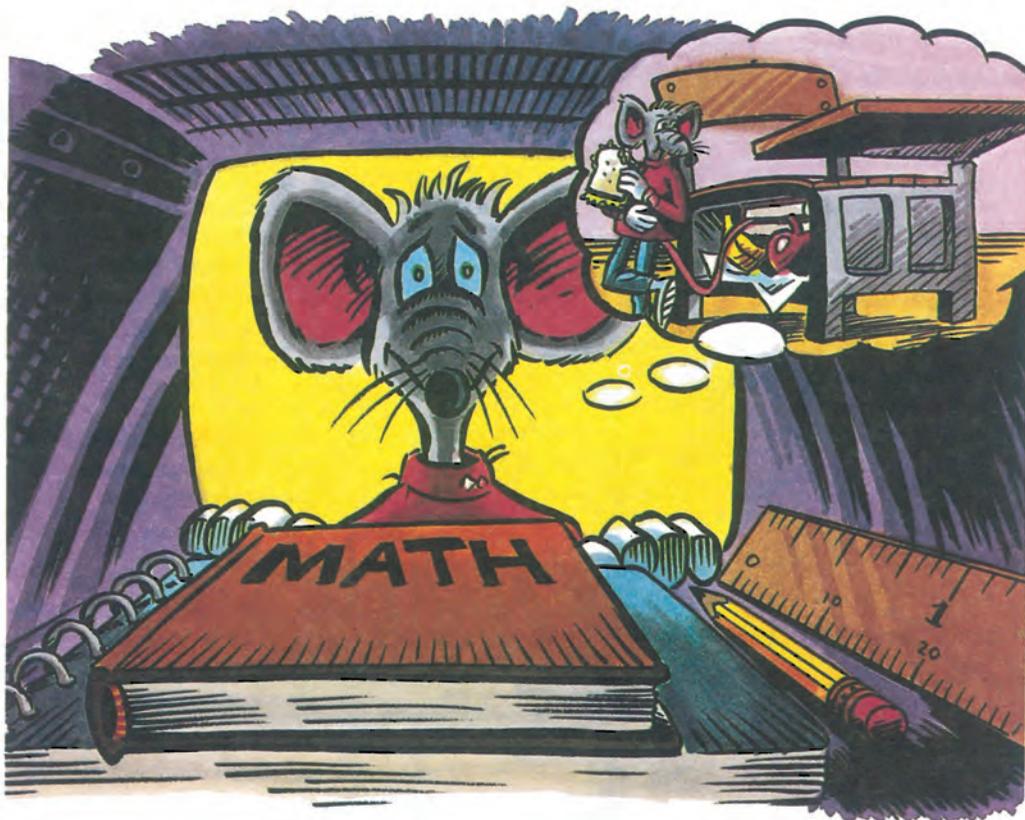
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Once the pest has been identified and the source of its activity pinpointed, habitat modifications—Primarily, exclusion, repair, and sanitation efforts—may greatly the prevalence of the pest



Install or repair
screens.





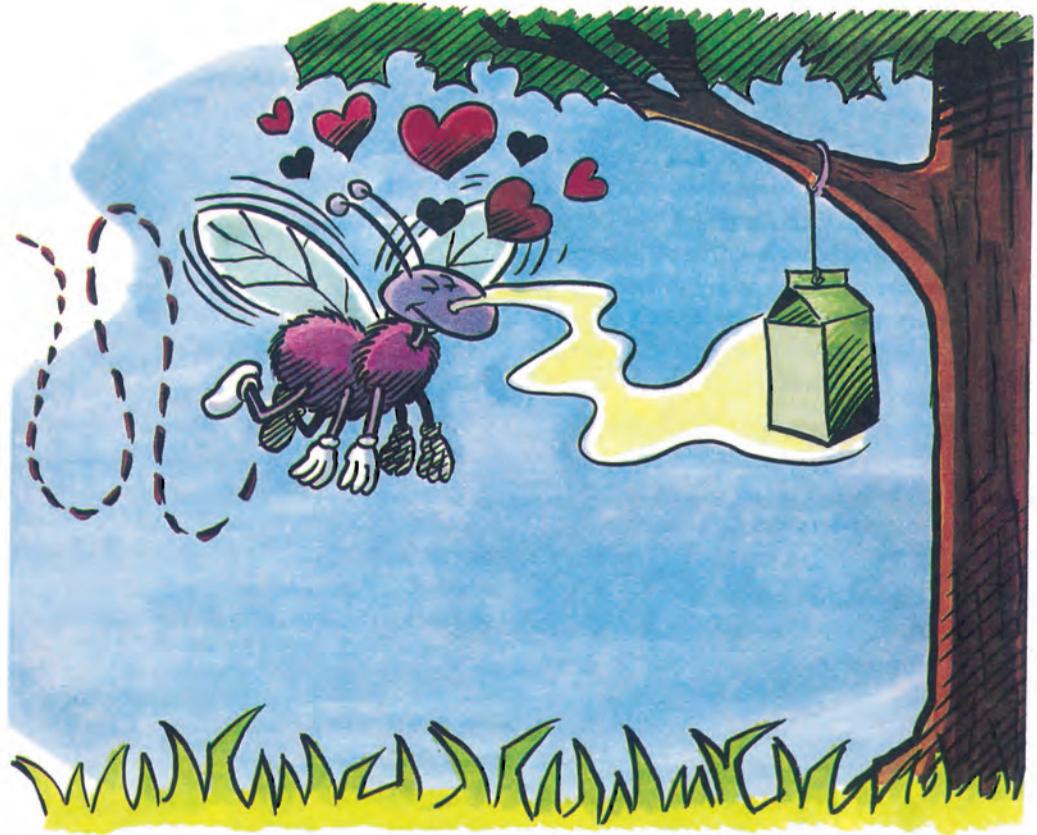


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Raise mowing height
for turf to enhance its
competition with
weeds.





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Use pheromone traps
as a time-saving
technique for
determining the
presence and activity
periods of certain pest
species.

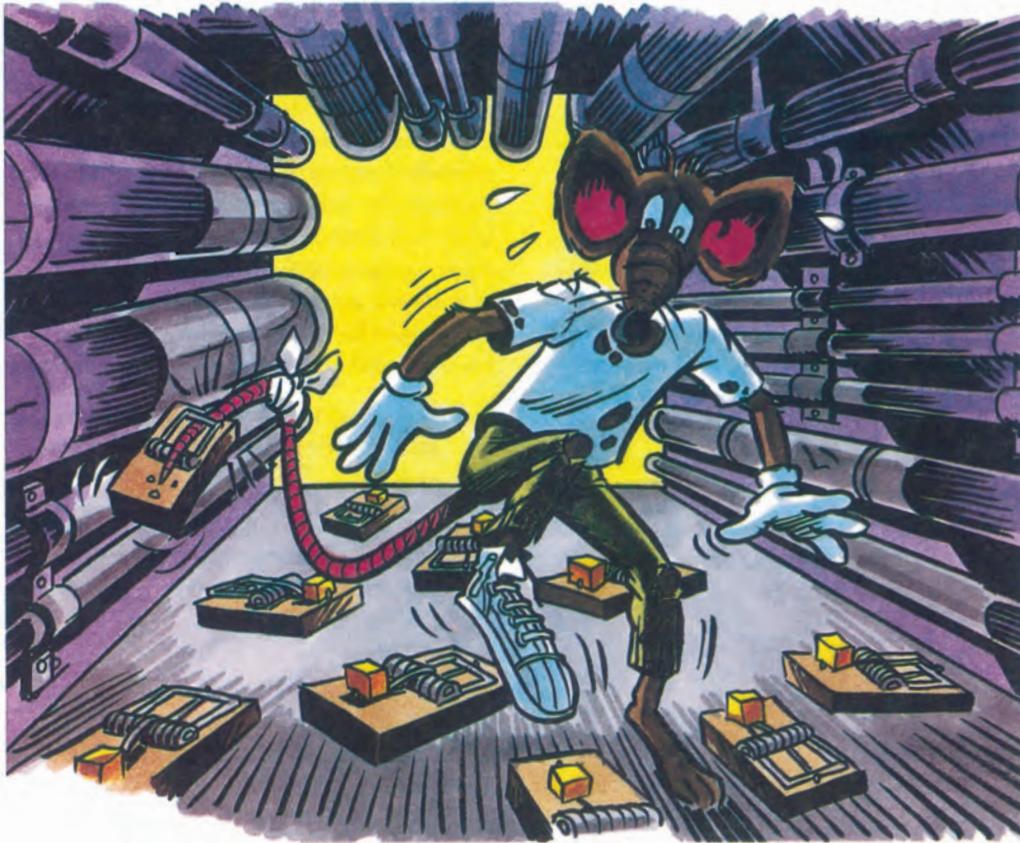




information to concerned parents and others.

A voluntary registry of individuals who could be adversely affected by exposure to pesticides can be kept at the school health or administrative offices. Information on how to contact the local

poison control center and emergency personnel should be kept readily accessible. The school may also wish to consider informing the adjacent community in advance of planned outdoor pesticide applications.



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Capture rodents by
using mechanical or
glue traps



Step 7: **Evaluating Results and Record Keeping**

Successful practice of IPM relies on accurate record keeping. Record keeping allows the school to evaluate the results of practicing IPM to determine if pest management objectives have been met. Keeping accurate records also leads to better decision-making and more efficient procurement. Accurate records of inspecting, identifying, and monitoring activities show changes in the site environment (reduced availability of food, water, or shelter), physical changes (exclusion and repairs), pest population changes (increased or reduced numbers, older or younger pests), or changes in the amount of damage or loss.

A complete and accurate pest management log should be maintained for each property and kept in the office of the pest manager or property manager. Pesticide use records should also be maintained to meet any requirements of the state regulatory agency, School Board, and applicable local regulations. The log book should contain the following items:

- A copy of the Pest Management Plan and service schedule for the property.
- A copy of the current EPA-registered label and the current MSDS for each pesticide product used on school property.



Evaluating the Costs

Preliminary indications from IPM programs in school systems suggest that long-term costs of IPM may be less than a conventional pest control program that relies solely on the use of pesticides. However, the long-term labor costs for IPM may be higher than those for conventional pesticide treatments. The labor costs may be offset by reduced expenditures for materials.

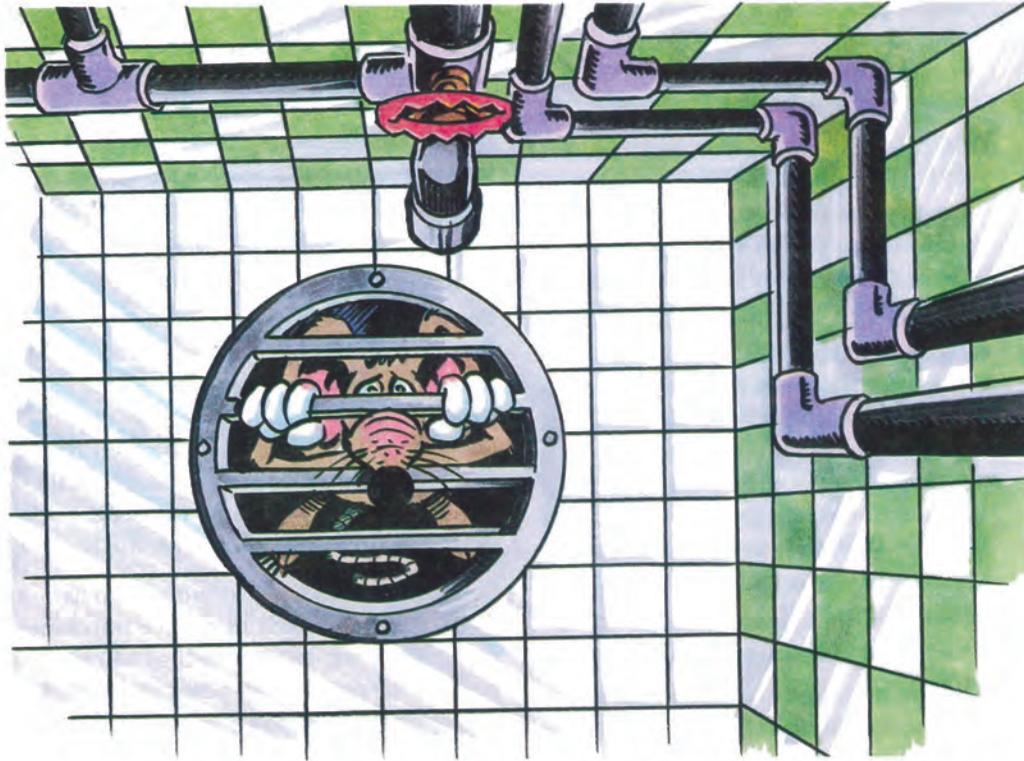
Whether an IPM program raises or lowers costs depends in part on the nature of the current housekeeping, maintenance, and pest management operations. The costs of implementing an IPM program can also depend on whether the pest management services are contracted, performed in-house, or both. To fit the IPM program into the existing budgetary framework, school administrators must consider what additional and redistributed expenditures are involved. As with

any program, insufficient resources will jeopardize the success of IPM.

Potential Added Costs

Initiating an IPM program may require repair and maintenance activities to prevent pest entry and to eliminate sources of shelter, food, and moisture. Examples of these one-time expenses that may result in future budgetary savings include—

- Improving waste management by moving trash or garbage containers away from school buildings to reduce the opportunity for pest invasion. This cost is a one-time expense that will result in fewer pest problems and reduce the need for other pest control procedures.
- Installing physical barriers such as air curtains over the outside entrances to kitchens to reduce flying



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- Place flood drains to prevent pests from using pipes as pathways. Keep areas as dry as possible by removing standing water and water damaged or wet materials



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Successful practice of
IPM relies on accurate
record keeping

insect problems. This is also a one-time cost and results in fewer flying insect problems and a savings in years to come.

- Stepping up structural maintenance to correct such situations as leaky pipes. This effort reduces future maintenance problems, prevents pest problems, and saves money in the long term.
- Training and/or certifying staff in IPM. The amount of information necessary to implement IPM is greater than that required for conventional pest control. As a consequence, training or certifying staff in IPM will probably increase costs.
- Re-landscaping the area adjacent to buildings to discourage pests.

In the long term, these repair and maintenance activities will reduce overall costs of the pest control operation, as well as other maintenance and operating

budgets. Whether these costs are actually budgeted as a pest control expense or under some other budgetary category depends on the budgetary format of the school system. School systems with an active maintenance and repair program may be able to absorb these activities within the current budget.

Procurement

Successful practice of IPM relies on accurate record keeping, which leads to more efficient procurement. As the IPM program progresses, predictable events and pest control needs will be identified. Close consultation with the pest management specialist is essential for good decisions on purchases within the budget.

Some non-pesticide products, such as traps, can be stocked to reduce purchases in future years, but few savings can be realized by purchasing pesticides in bulk. It is probably best to keep no more than a 60-day pesticide inventory to assure product freshness and to avoid limiting



IPM programs use current, comprehensive information on the life cycles of pests and their interactions with the environment.

Use of an outside pest control firm may increase costs but eliminate the need to hire and train personnel and store pesticides. The contract should specify the use of IPM principles and practices in meeting pest management objectives.

When choosing a pest control firm, contact your local Better Business Bureaus or state regulatory agencies for information about whether they have received complaints about a pest control company. State regulatory agencies can also provide information on pesticide applicator certification.

The pest management services contract should include IPM specifications. Contracts should be written to provide expected results. Pest management objectives specific to the site should be jointly developed, agreed upon, and written into the contract. Any special health concerns (such as those for children, or for individuals with allergies, etc.) should be noted and reflected in the pesticides that can be utilized, or excluded from use.





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