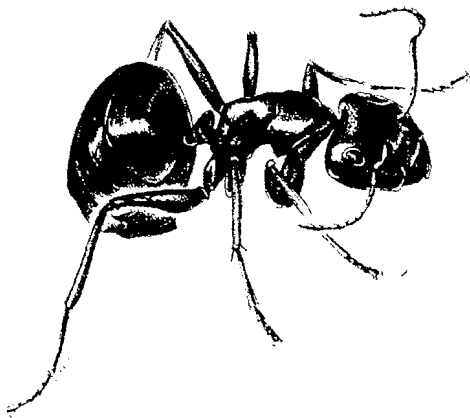




**GUIDELINES FOR  
INTEGRATED PEST  
MANAGEMENT (IPM)  
IN SCHOOLS**



MARYLAND  
DEPARTMENT OF AGRICULTURE

# ERRATA SHEET AND IMPORTANT NOTICE CONCERNING IPM TRAINING MANUALS AND INFORMATION SHEETS

## BACKGROUND

Legislation was enacted in 1997 mandating that Maryland Public Schools (Grades K-12) develop and implement Integrated Pest Management (IPM) plans for managing pests in public schools. The legislation also mandated schools to develop and implement methods for providing notification to parents and or guardians, as well as, school staff of pesticide use in school buildings. In 1999, this legislation was expanded to require public schools to develop and implement IPM plans and notification of pesticide use on school grounds.

In an effort to assist schools in the initial development and implementation of IPM plans and notification and posting formats, the Maryland Department of Agriculture (MDA) produced several manuals and contracted with the University of Maryland to write four additional manuals. These documents were intended for use by the schools for information and guidance. The documents were never intended to supplant the IPM and notification law and regulations but rather to facilitate implementation of the law. However, there are statements in these documents that incorrectly state the requirements of the law. The Department does not have the funds to republish the manuals and therefore has disseminated this errata sheet to all public school systems in Maryland to ensure that all schools are complying with the law.

**Please note that the IPM in School manuals contain additional statements or information other than the examples listed below that do not uniformly incorporate and provide detail of the statutory mandate of Maryland's IPM and notification of pesticide use in public school buildings or on school grounds law and regulations. Therefore, if you are reading these manuals for training/guidance purposes or when performing pest control services, make sure you adhere to the definition of Integrated Pest Management found in Maryland's Integrated Pest Management and Notification of Pesticide Use in a Public School Building or on School Grounds law and regulations. For more information or questions, please contact the Maryland Department of Agriculture's Pesticide Regulation Section at 410-841-5710**

## ERRATA SHEET

### PLEASE NOTE AND BE AWARE OF THE FOLLOWING:

1. The IPM in Schools manuals produced by MDA and the University of Maryland contain statements that incorrectly state that IPM is an alternative to pesticide application. An example of such a statement can be found in the Preface of the *Integrated Pest Management in Schools: IPM Training Manual*, where it states "Integrated Pest Management (IPM) is an alternative to pesticide use." This statement is incorrect. **IPM is not an alternative** in Maryland's Public Schools (Grades K-12); **it is the required method** of pest control under Maryland's IPM- in-Schools law and regulations."

2. The IPM in Schools manuals produced by MDA and the University of Maryland contain statements that fail to uniformly affirm the statutory mandate that pesticides be used only when “nontoxic options are unreasonable or have been exhausted.” Examples of statements that fail to affirm the statutory mandate can be found 1) on page 6 of the manual entitled *Guidelines for Integrated Pest Management in Schools*, where it states “Pesticides are a component of an IPM program...” 2) on App. A, page 7 on the manual entitled *Contracting Guidelines for IPM Services in Maryland Public Schools* where it states “A broad definition of IPM is a pest control program that... incorporates different methods of pest control such as...and pesticides, when warranted...” and 3) in same manual on p. 17 where it states that “Pesticides play a limited, but important role in and IPM program.” These statements do not reflect the statutory mandate that pesticides may be used only when nontoxic options are unreasonable or have been exhausted. In fact implementing an IPM program with a proper focus on pest prevention may result in a pest management program that does not include the use of any pesticides.
3. The IPM in Schools manuals produced by MDA and the University of Maryland contain some language that fails to provide the correct notice requirements mandated by the IPM-in-Schools law and regulations. An example of such a statement can be found on page 8 of the manuals entitled *Guideline for Integrated Pest Management (IPM) in Schools*, which states “A voluntary registry of individuals with medical problems or conditions who could be adversely affected by exposure to pesticides shall be maintained at the school health or administrative offices, as well as by the contact person.” **Prior notification is not a voluntary option for schools, nor is it limited to individuals with medical problems or conditions.** Both the law and regulations regarding IPM and Notification in public schools buildings and on school grounds **mandate notification** to all parents, guardians and school staff for elementary schools. Middle and High schools may choose to either notify all parents, guardians and staff members or establish a list of parents, guardians and staff members who wish to be notified of pesticide use. The law requires that all parents, guardians and staff be informed of the notification list so they can opt-in.
4. The IPM in Schools manuals produced by MDA and the University of Maryland contain confusing statements regarding a school’s legal obligations. An example of such a statement can be found on page 4 of the manual entitled *Contracting Guidelines for IPM Services in Maryland Public Schools*. The statement reads “In addition, the Governor’s Pesticide Advisory Council has issued the following policy statement regarding IPM in schools...” This statement references a Council that no longer exists and a policy that is not in law or regulation

- O DEVELOP A PLAN TO INCORPORATE IPM STRATEGIES. This includes the development of a managed pest control program in which methods are integrated to include the utilization of site or pest inspections, pest population monitoring, evaluating the need for control, and the use of one or more pest control methods including sanitation, structural repair, remodeling, nonchemical methods, and when nontoxic options are unreasonable or have been exhausted, the judicious use of pesticides.
- O EVALUATE RESULTS AND CONTINUE MONITORING This will assist in the determination if the pest control objectives were reached. Continued monitoring will provide information on the effectiveness of the pest control over an extended period of time. In order to ensure an effective program, written records must be maintained on all aspects of the program.

## **GUIDELINES FOR INTEGRATED PEST MANAGEMENT (IPM) IN SCHOOLS**

The following guidelines establish integrated pest management (IPM) strategies to control pests in or around schools.

### **I. Overview**

- A. The application of pesticides in and around schools to control unwanted pests, such as cockroaches, rats, fleas, ants, landscape pests and weeds. However, pesticides are toxic by nature and the use of them in areas where children are active may raise health concerns on the part of parents and teachers. For this reason, schools may no longer use pest control programs that consist of scheduled insecticide applications.

To improve the level of pest control, and to minimize the potential exposure of school children to pesticides, schools must adopt an integrated pest management (IPM) approach to pest control.

Integrated pest management strategies limit pest problems without applying pesticides on a regular basis. IPM uses regular inspections to determine if and when treatment is necessary, and then employs a variety of environmentally sound techniques to limit pests over the long term. The goal of IPM is to keep pest numbers low enough to make them essentially non-detectable. Pesticides, when applied, are applied when nontoxic options are unreasonable or have been exhausted.

### **II. Program Components**

- A. Typically, IPM programs include the following components:
  - 1. **Monitoring and Action Thresholds** - Checking for pests, damage, or other evidence of infestation enables selection of pest control procedures.
  - 2. **Safetv** - Incorporation of various pest control techniques will minimize the impact on occupants and other nontarget organisms.

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# DEVELOPING AN INTEGRATED PEST MANAGEMENT PROGRAM

School administrators and other individuals responsible for maintaining school buildings and grounds need to become aware of the various types of management options that are available for the control of pest problems. The public has become increasingly concerned about the environmental and health risks associated with the use of pesticides in conventional pest control programs, especially in areas where children are involved. They want to know that accurate and reliable information is being used before any action is taken to control pest problems within the school environment.

Serious consequences can result if pesticides are misused in the school environment. In addition, school boards and administrators could face potential liability suits if the best and most current information is not utilized when making pest management decisions. However, if the pest problems are not properly controlled they could result in liability and health problems.

Liability concerning pest control can be reduced by long term planning and policy development in order to prevent potential problems from occurring. There can be significant cost savings and risk reduction over the long term by utilizing and incorporating the most effective pest control methods available. This can be accomplished through an established Integrated Pest Management (IPM) program. An IPM program can readily be incorporated into the schools existing maintenance and management programs. The following steps need to be addressed and will assist in the development of either in-house, or contracted, programs in establishing an effective IPM program:

- ❑ **DEVELOP AN OFFICIAL IPM POLICY STATEMENT.** This will serve as a guide in the development of an IPM program and assist in the transition from a conventional pest control program to an IPM program.
- ❑ **ASSIGN RESPONSIBILITIES FOR PROGRAM IMPLEMENTATION.** The roles that each party (i.e., decision makers, pest management personnel, and building occupants) will play in the IPM program must be established. This must include the establishment of a good communications system among the various parties along with educating and training them about their respective roles within the IPM program.
- ❑ **SET MANAGEMENT OBJECTIVES.** Every site will be different and as a result pest management objectives could vary from site to site. The level of pest control and the method of pest management to be utilized needs to be outlined.
- ❑ **DEVELOP AN INSPECTION AND MONITORING PROGRAM.** Sites must be inspected in order to determine if a pest problem exists, if a control measure needs to be taken, and if one was used, to assess its effectiveness. As part of this step action thresholds (predetermined pest levels where action will be taken) for various pests.

3. **Education/communication** - All parties must understand basic concepts of the program and the role each plays.
4. **Record Keeping and Reporting** - Provides essential information in determining the effectiveness of pest control procedures.
5. **Non-pesticidal Control**- Incorporates all pest control procedures that prevent pest problems.
6. **Pesticidal Control** – Utilize pesticides when nontoxic options are unreasonable or have been exhausted.
7. **Program Evaluation/Quality Assurance** - Pest control programs must be reviewed to determine effectiveness and to identify aspects requiring modification.

B. Each of the above program components could be used at different times in the course of implementing an IPM program. IPM is a decision making process. Methods to control pests will vary from school to school, and with pest species. Pest control decisions are based upon the information that is collected during inspections or surveys, monitoring, past experiences with other control actions, and the specific needs and expectations of the clientele.

### III. Basic Guidelines For Instituting IPM Procedures in Maryland Public Schools

#### A. Establishing Criteria for IPM Services

1. Each school should formalize in writing the pest control needs and limitations of an IPM program. For example:
  - Need:** The school will evaluate current pest problems and pest control programs in and around school buildings to identify areas where pesticides had used, in order to implement IPM strategies in their place.
  - Limitations:** This program must be conducted under the limitations necessary to meet the expectations of faculty, students, parents and school administration regarding pest control health concerns, personnel/resources and fiscal constraints, while addressing environmental concerns. While it is understood that IPM can not be performed as a low bid operation, the program must be structured so as to provide the optimal balance of pest control, safety and cost.

2. Criteria for an IPM program must be developed with input from personnel from various levels within the school system. One approach is to establish an IPM program committee. The committee, composed of school personnel, should be organized to provide guidance and to oversee development of the IPM program. Committee members could be people representing:

- School administration
- Faculty/teachers
- Staff including housekeeping, maintenance, and food service personnel
- Representatives from the PTA or other groups representing the students' interests
- Pest control firm or school: person performing pest control

#### B. Obtaining IPM Services

1. IPM can be implemented in-house by school employees or by contracting with a licensed pest control business. IPM programs require a higher level of training and judgement by pest control personnel than do standard pest control operations.

- a. **In-House Services:** In-house personnel must be well trained and specifically trained in the principles and concepts of IPM and at least one individual must be certified as a pest control applicator with the Maryland Department of Agriculture.

- b. **Contracted Services:** Professional pest control companies must be able to demonstrate expertise in performing IPM services and have experienced personnel assigned to work at the school. When contracting for pest control services, schools must exercise caution in selecting a contractor to implement an IPM program. Know what services you want, and choose a contractor with the training, experience and equipment to provide those services as part of an IPM program. The Maryland Department of Agriculture has developed a document, "Contracting Guidelines For Integrated Pest Management Services In Maryland Public Schools", that provides background information on selecting a contractor and specifications for developing a contract for a structural Integrated Pest Management program.

2. Once a decision is made as to how IPM will be implemented, either through in-house personnel, a pest control contractor, pest control consultant, or a combination of these, the school must proceed with formally adopting an IPM program. The IPM program must consist of all of the following components, to a greater or lesser degree, whether in a contract document or in a formalized in-house program. The components include:



a. **Monitoring/Action Thresholds:** The regular surveillance of an area using traps. Visual inspections, and interviews is performed instead of routine pesticide application. Surveys are conducted to locate pest infestations or conditions that contribute to pest infestations. Action thresholds are pest population levels at which some action is taken. Action thresholds will vary with the pest and the location. For example, a hypothetical set of action thresholds for German cockroaches in a school cafeteria might be:

- indicates no additional action is required. The technician continues standard monitoring procedures.
- 1-5 cockroaches observed triggers a series of actions including intensive monitoring and inspection; recommendations for improving sanitation; or use of a localized crack and crevice application of a bait, aerosol, or other pesticide product. Treatment area is reinspected in one week.
- If more than 5 cockroaches are seen, the pest management technician should inform the school administration that more intensive treatments are warranted and schedule the treatment. The technician tries to determine the cause of the infestation, such as sanitation or structural problems, and makes limited corrections and recommends repairs or operational changes. Crack and crevice treatments using a pesticide would be performed in the evening or at other times when students and staff are not present.

b. **Sanitation/Structural Repairs:** Good sanitation and housekeeping practices help to reduce clutter and pest harborage, and make an area less likely to support a pest population. Poor housekeeping practices and structural deficiencies should be documented by the pest management technician along with recommendations for corrective action during each service.

c. **Education/Training:** Teacher, student and staff cooperation is extremely important in correcting personal practices and conditions that contribute to pest problems. Training is conducted on subjects such as pest identification, pest biology, the importance of sanitation, pesticide safety, etc. in order to enlist staff cooperation and improve understanding of IPM practices. The cooperative extension service, pesticide dealers, pest control companies and pest consultants can assist in providing training on the various aspects of IPM.

d. **Record Keeping:** Monitoring data on pests and observations on housekeeping and structural deficiencies are recorded in a notebook. An individual should be designated as a contact person and be responsible for maintaining the notebook. These records are summarized as part of evaluation and training programs. Pest sightings by staff are recorded in the notebook when the pest management technician

is not present. Pesticide labels and application records, Material Safety Data Sheets (MSDS), floor plans and other pertinent information are also kept in each notebook.

e. *Non-Pesticide Control Methods:* Pest control practices, such as trapping, caulking, removal, steam cleaning, and freezing are control methods that can be used with a high degree of safety. Nonchemical methods also include good sanitation and housekeeping practices that help to reduce clutter and pest harborage, and that make an area less likely to support a pest population. Poor housekeeping practices and structural deficiencies are noted in the notebook (see above) by the pest management technician, along with recommendations for corrective action, during each service.

f. *Pesticide Control Methods:* When nontoxic options are unreasonable, based on survey data and observations, or have been exhausted, the pest management technician may need to perform a pesticide treatment. When using a pesticide, formulations such as baits and pastes are the preferred method of treatment because the potential for exposure to school personnel is minimized. Space sprays (fogging) should only be used in unique situations and only after careful consultation with pest management personnel and clientele. Preventive treatments should be avoided, unless there is a special need for them. Guidelines for using pesticides are as follows:

- Pesticides must be applied by, or under the direct supervision of, a certified pesticide applicator.
- Read and follow pesticide label directions.
- Choose the safest pesticide and method of application that will provide adequate control of the pest problem.
- Liquid and dust insecticides should be applied in cracks, crevices, or voids, whenever possible, and not be applied on accessible surfaces.
- Pesticides should not be applied when students are present.
- Treatments should be performed only after pests are verified.
- In general, classrooms, hallways, and common areas should not be treated during school hours.

Medical rooms or infirmaries should not be treated with a pesticide, except in a severe pest infestation. Medical personnel should be advised in advance of any planned application.

- Applications of pesticides to the school environment for the control of ectoparasites, such as head lice, body lice, or crab lice, are not effective and should never be made. These pest problems must be diagnosed and addressed by property trained medical personnel.

- g. **Safety:** IPM eliminates the routine use of pesticides and encourages more permanent non-chemical control practices. This reduces the potential hazard of pesticide exposure to students and staff. Nevertheless, IPM must include a safety component that describes how pesticide exposure will be avoided, and the procedures to be followed in the event of a spill, accident, or emergency.
- h. **Quality Assurance:** Technical oversight is part of an IPM program as it provides an objective evaluation of program activities and effectiveness. IPM programs must be innovative and proactive in analyzing situations and providing recommendations to correct current or potential problems. Without program oversight and technical evaluation input, IPM programs may begin to stagnate and rely on pesticides as the primary solution to pest problems.

### 3. Personnel

- a. Each school must appoint an individual who has primary responsibility for the IPM program. This person will manage the pest management notebook, meet with the pest management technician, if available, and facilitate the correction of structural and sanitation deficiencies.
- b. All pest management technicians who work in the program must either be certified in the category of pest control that is being performed or be registered with the Maryland Department of Agriculture and be trained in IPM principles and procedures.
- c. The IPM program should be evaluated annually to make necessary program changes and to assess overall effectiveness of the IPM program.

### C. Notification

To address concerns about pesticide use, schools should take the responsibility to incorporate a notification program in order to inform building occupants when there is a possibility that they may be exposed to pesticides. When sound IPM practices are utilized concerns that could be raised by the implementation of a notification program should be minimized. If a notification program is a new practice within the school system, it is important that the new policy be explained to all parties that will be affected by its implementation. It is imperative that information be provided to educate individuals that this program is not the result of increased pesticide usage, but part of an overall program to minimize pesticide usage and, when necessary, use the pesticides in a judicious manner. Except in an emergency situation, pesticides should be applied when only maintenance staff are present and the building is otherwise unoccupied.

Notification can be accomplished by posting notices around the school and sending notices home to those parents who wish to be informed in advance of pesticide applications. Areas that have been treated, or are about to be treated, should be posted to ensure that staff and students are aware of the application.

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### C. Notification

The Regulations pertaining to Maryland's Integrated Pest Management and Notification of pesticide use in a public school building or on school grounds (COMAR 15.05.02) mandate that notification of pesticide applications shall be provided to parents/guardians and school staff. At the beginning of the school year, each school shall provide notice of the school's integrated pest management system in the school calendar or other universal notification. This notice shall include the following information: 1. A statement that explains the school's IPM system; 2. A list of the common name of any pesticide or bait station that may be used in a school building or on school grounds; 3. The name, address, and telephone number of the school IPM contact person; 4. A statement that the contact person maintains the product label and material safety data sheet of each pesticide or bait station used in a school building or on school grounds and that they are available for review by a parent/guardian, staff member, or student attending the school; and 5. Instructions for including a parent/guardian, or staff member on a pesticide notification list. After the beginning of the school year, this same information must be provided to the parent/guardian of any newly enrolled student or newly employed staff member.

Each school that enrolls elementary school students shall notify each parent/guardian of a student attending the school and each staff member at least 24 hours before a pesticide is applied in a school building or on school grounds. In the case of an emergency pest control application, notification must be provided within 24 hours after a pesticide is applied, or on the next school day. The school shall provide notification by a written notice sent home with each student or provided to each staff member. The following information shall be provided in the required notification: 1. Common name of the pesticide applied; 2. Location of the application; 3. Date and time of application; 4. The following language "The Office of Pesticide Programs of the United States Environmental Protection Agency has stated: 'Where possible, persons who potentially are more sensitive, such as

pregnant women and infants (less than 2 years old), should avoid any unnecessary pesticide exposure"; 5. A brief description approved by the Maryland Department of Agriculture, of potential adverse effects, based upon the material safety data sheet of the pesticide applied; and 6. Reason for the emergency application, if applicable.

Each middle school or high school shall notify each parent/guardian and staff member at least 24 hours before a pesticide is applied in a school building or on school grounds. In the case of an emergency pest control application, notification must be provided within 24 hours after a pesticide is applied, or on the next school day. For middle and high schools the schools may establish and maintain a notification list for those parents/guardian and staff members that have requested to be notified prior to a pesticide application in a school building or on school grounds. Alternatively, the school may decide to provide notification to all parents/guardians of students enrolled in the school, as well as, all staff members. The notification required must contain the same information as described above for elementary schools. However, the notification may be provided by a written notice sent home with the student or provided to the staff member or alternatively can be provided by a telephone call; direct contact; or a written notice mailed at least 3 days before the application.

In addition to the notification detailed above, the regulations also contain requirements for Notifications of Space Spraying, In-School Notifications and Posting of Signs when pesticides are applied to school grounds. The detail of the regulatory requirements for these notifications and postings can be found in Sections .07, .08 and .11 of the Regulation.

The school contact person shall be prepared and available to provide more specific information to concerned parents/guardians or other individuals about the school system's IPM program. The contact person should have information readily accessible on how to contact the local Poison Control Center and emergency personnel, if the need should arise. The contact person must also maintain a file of product labels and Material Safety Data Sheets (MSDS) for all the pesticides that could potentially be used as part of the overall pest control program. This information should be made available to any individual upon request.

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