

# ARE WE PASSING THE GRADE?

MARYLAND DEPARTMENT OF AGRICULTURE'S  
FAILURE TO COMPLY WITH THE  
INTEGRATED PEST MANAGEMENT-IN-SCHOOLS LAW



A REPORT BY THE MARYLAND PESTICIDE NETWORK

SEPTEMBER, 2004



# TABLE OF CONTENTS

MPN's EXECUTIVE SUMMARY .....	2
MPN'S REVIEW OF MDA BULLETIN 364 -CONTRACTING GUIDELINES FOR IPM SERVICES IN MARYLAND PUBLIC SCHOOLS .....	5
I. DEFINITION OF INTEGRATED PEST MANAGEMENT IPM	
Preface. ....	5
Introduction to IPM in Schools .....	5
General Contract Components and Sample Language .....	6
Pest Control .....	7
Glossary .....	9
Appendices .....	9
II. NOTIFICATION	
Introduction to IPM in Schools .....	11
Additional Considerations .....	11
Appendices .....	11
III. EPA STATEMENT	
Appendices .....	13
IV. EXEMPTIONS	
Appendices .....	13
MPN'S REVIEW OF IPM TRAINING MANUAL .....	14
I. DEFINITION OF INTEGRATED PEST MANAGEMENT (IPM)	
Preface .....	14
Chapter One: Why Integrated Pest Management .....	14
Chapter Two: Monitoring Pests .....	15
Chapter Five: Using Pesticides in IPM .....	15
Chapter Seven: Summary and Conclusions. ....	16
Appendices .....	17
II. NOTIFICATION	
Chapter Three: Education and Notification .....	18
Chapter Five: Using Pesticides in IPM .....	18
Chapter Six: Keeping Records and Evaluating Results .....	19
III. EPA STATEMENT	
Chapter Five: Using Pesticides in IPM .....	19
MPN'S APPENDIX: MARYLAND IPM-IN-SCHOOLS LAW .....	20

# EXECUTIVE SUMMARY

## BACKGROUND

Concerns about exposure of children, parents, and staff to pesticides in public school buildings and on public school grounds led to Maryland lawmakers passing nationally groundbreaking legislation in 1998 and 1999 that mandated the use of Integrated Pest Management (IPM) – as defined in the law – for pest control both indoors and on school grounds. The law also mandates that students, parents and employees be notified of pesticide applications. IPM is a pest management approach that focuses on prevention or suppression of pest problems by relying on a combination of practices including occupant education; monitoring of pest populations; site inspections; assessing the need for pest control; structural, mechanical, cultural and biological controls; and pest control practices such as sanitation and other non-chemical tactics that eliminate or greatly reduce the use of pesticides. According to Maryland statute, pesticides are only used in an IPM program, “when all non-toxic means are unreasonable or have been exhausted.”

The urgent need to eliminate or at least drastically reduce children’s exposure to pesticides has been underscored by:

- Former US EPA Administrator Christie Todd Whitman’s statement that “childhood exposure to pesticides is an environmental health risk facing children today.”
- The National Parents and Teachers Association 1992 resolution urging the adoption of school IPM programs to eliminate the environmental health hazards caused by pesticide use in and around schools and child care centers.
- The American Medical Association’s Council on Scientific Affairs statement that, “Particular uncertainty exists regarding the long-term health effects of low-dose pesticide exposure...Considering these data gaps, it is prudent...to limit pesticide exposures...and to use the least toxic chemical pesticide or non-chemical alternative.”
- The 1999 National School Boards Association along with the National League of Cities and Youth Crime Watch of America stated that “potentially dangerous pesticides” are one of the “10 critical threats” jeopardizing “the health and safety and future of America’s children.”

Pesticides can cause serious health effects in children, including cancer, nervous system injury, lung damage, asthma, reproductive dysfunction, and possibly dysfunction of the endocrine and immune systems. Because many of the symptoms of pesticide exposure – from asthma to difficulty in concentration – are common in school children and can have other causes, pesticide-related illnesses often go unreported and unrecognized. In 1993, the National Research Council found that pesticide testing prior to [US Environmental Protection Agency] registration [of the pesticide]... did not adequately measure the impacts of these chemicals on infants and children,” a U.S. Environmental Protection Agency (EPA) report states. Under the 1996 Food Quality Protection Act, the EPA is required to review the health effects of all pesticides on infants and children, a task that will take years to complete.

Fetuses, infants, and children are at greater risk of adverse health effects from pesticide exposures because of their physical vulnerability during growth and development. Babies and children have more exposure to pesticides because:

- Children eat, drink and breathe more in proportion to body weight than do adults.
- Children play where pesticides are commonly applied, such as floors and lawns.
- Children have frequent hand-to-mouth contact.
- Children are more vulnerable to toxic chemicals in the air than adults because their lungs are not fully developed, and they have faster breathing rates because they are generally more active.

Adverse health effects such as dizziness, nausea, respiratory problems, headaches, rashes and mental disorientation may appear even when a pesticide is applied according to label directions.

## **MARYLAND PUBLIC SCHOOLS' NON-COMPLIANCE WITH IPM-IN-SCHOOLS LAW**

Following the passage of the IPM-in-Schools law, the Maryland Department of Agriculture (MDA) published eight manuals – partly funded by the US EPA, to help schools implement the law. According to the Maryland Attorney General's office, the manuals are not fully in compliance with Maryland law. Consequently, public schools that follow the manuals' guidance are likely to be out of compliance with the law.

The Maryland Pesticide Network (MPN)'s review of MDA guidelines finds they do not reflect the intent or the language of the IPM-in-Schools law.

### **ATTORNEY GENERAL'S LETTER OF ADVICE**

MPN contacted State Senator Brian Frosh, the sponsor of the 1999 legislation, due to concerns regarding MDA's modification of the definition of IPM from statute to regulation, and because of concerns over whether MDA's guidelines for schools on implementing the law were in compliance with the law. In response to MPN's concerns, Senator Frosh requested an Attorney General's Letter of Advice on the matter. The Letter of Advice provided by Chief Counsel McDonald on November 7, 2002 to Senator Frosh underscored MPN's concerns. Chief Counsel McDonald recommended that at the next available opportunity MDA amend its regulations to track the statutory definition precisely and also to revise the published guidelines to comply with the intent and language of the law. The recommendations included:

#### **1. INCLUDE THE STATUTORY DEFINITION OF IPM**

The Attorney General's Letter of Advice stated that the change in language from statute to regulation in defining IPM was confusing and misleading.

##### ***Definition of IPM in law:***

*Md. Agric. Code Ann., §5-208.1*

(a) (6) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and, when nontoxic options are unreasonable or have been exhausted, pesticides in order to:

- (i) Minimize the use of pesticides; and
- (ii) Minimize the risk to human health and the environment associated with pesticide applications.

##### ***Definition of IPM in MDA regulations:***

*COMAR 15.05.02 - Department of Agriculture "Regulations Pertaining to Integrated Pest Management and Notification of Pesticide Use in a Public School."*

.02 (7) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and pesticides, when nontoxic options are unreasonable or have been exhausted, in order to minimize the use of pesticides and minimize the risk to human health and the environment associated with pesticide applications. The Maryland Department of Agriculture did promptly amend its regulations to track the statutory definition following the issuance of this Letter of Advice. It has not to date amended the definition in its manuals.

*By rewording the definition of IPM in their regulations from the definition in the law, MDA for all intents and purposes maintains pest control in the schools as practiced prior to passage of the IPM-in-Schools law.*

## **2. CLARIFY INTENT OF THE LAW**

“Ensure that references to the use of pesticides ‘as warranted’ or ‘the judicious use of pesticides’ clearly reference the statutory condition that this means only after other ‘nontoxic options are unreasonable or have been exhausted...the assertion that it would be a ‘false assumption’ to believe that IPM is a non-chemical approach to pest management is potentially misleading. It is true that IPM contemplates the use of pesticides in some circumstances. However, as defined by the legislature and the Department’s own regulations, IPM incorporates a strong preference for a non-chemical approach. Similarly, the use of the word ‘warranted’ as the condition for pesticide use at schools can be misleading if a training manual seldom otherwise refers to the statutory precondition for pesticide application – or refers to it only in the context of the potentially confusing COMAR version of the definition...Apparently, the application of pesticides [prior to the advent of IPM] was deemed ‘warranted’ on a routine basis...It is clear that IPM was intended to change that practice. If the term ‘warranted’ is used without clear reference to the statutory conditions, a school official might be misled to believe that the decision whether or not to apply pesticides is left to the official’s unfettered judgment whether the application is ‘warranted.’ Given that the statute clearly defines the circumstances in which pesticide use is warranted, a manual should indicate what those circumstances are.” (AG November 7, 2002 letter)

## **3. REVISE THE NOTIFICATION SECTION OF THE MANUALS**

“...an accurate summary of the notification requirements...would be extremely useful for the local officials who must implement the IPM law. However a training manual fails in its purpose if a reader cannot rely on it to accurately summarize the relevant law and regulations.” (AG November 7, 2002 letter)

## **4. PROVIDE NEW SAMPLE NOTICES THAT COMPLY WITH THE LAW**

The uses of sample Minnesota notices that bare little or no relation to Maryland statute is deemed confusing and misleading. “...The sample Minnesota notices bear little or no relation to the Maryland statute. Their inclusion in the manual is confusing at best and very likely misleading to someone who relies on the manual without checking it against the statutory and regulatory text.” (AG November 7, 2002 letter)

This MPN report provides a page-by-page review of two of the eight published manuals that provide guidelines for implementing the IPM-in-Schools law. They are representative of the numerous errors and misleading information in all eight manuals. This report includes specific line-by-line references that are of concern to the MPN, relevant excerpts from the November 7, 2002 Attorney General’s Chief Counsel’s Letter of Advice and the MPN’s recommendations. This report may not include all the errors and misleading information that exist in the manuals reviewed. However, MPN believes it is representative of the errors and misleading information in the two manuals.

## **CONCLUSION**

MDA’s Training Manuals are out of compliance with the IPM-In-Schools law. Consequently, Maryland public schools are likely to be out of compliance with the law by following the present guidelines.

## **RECOMMENDATION**

Because there are so many errors starting with the inside cover definition of IPM in each of the manuals, the manuals should be recalled for immediate line-by-line correction and reprinting. MDA has stated that they do not have the funds to reprint the manuals. As an emergency first response, the corrected manuals should be immediately made available on the MDA Website and a letter sent to all school districts alerting them to the errors and the corrected on-line manuals. MDA should immediately alert US EPA about the problem and request additional funding for editing and reprinting the manuals.

# REVIEW OF BULLETIN 364 CONTRACTING GUIDELINES FOR IPM SERVICES IN MARYLAND PUBLIC SCHOOLS

(one of eight manuals that comprise MDA's guidelines)

*Specific references to statements in the Contracting Guidelines manual, the Attorney General's Letter of Advice and Maryland Pesticide Network concerns and recommendations follow.*

## I. DEFINITION OF INTEGRATED PEST MANAGEMENT (IPM)

### ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 3):

"...the Department has no authority to change a definition that defines the subject matter of the statute and regulations. The legislative history of AG §5-208.1 indicates that the Legislature carefully considered the wording of this part of the definition...I understand that the Department disclaims any intention to modify the definition of Integrated Pest Management but has not provided any specific reason why the wording of the regulation differs from statutory language. Thus in my view, COMAR definition must be read to be identical with the statutory definition..."

### ATTORNEY GENERAL'S RECOMMENDATION (PAGE 5):

"Thus I recommend, at the next available opportunity, the Department revise the manuals to include the statutory definition of IPM...and take care to ensure that references to the use of pesticides 'as warranted' as part of IPM clearly reference the statutory condition that other nontoxic means are unreasonable or have been exhausted."

*The following references instances in the "Contracting Guidelines" which differ from the legal definition of IPM concerning use of pesticides: "When nontoxic options are unreasonable or have been exhausted..." Key words in these references have been underlined for the purposes of this report.*

## PREFACE

### PAGE 1

"In some cases MDA regulations are provided and must be followed when developing IPM programs. In other cases, language and examples are only suggestions and not mandatory requirements. These materials can be copied or revised to suit the needs and resources of your school district. These guidelines were developed from several sources and should be used in conjunction with current Maryland Department of Agriculture (MDA) Regulations (Appendix A) governing IPM programs in schools."

**MPN Concern:** The preface is misleading. It can be construed as giving sanction to revise the IPM definition and protocol as outlined in the law to suit the paradigm of the pest control manager of the school district.

**MPN Recommendation:** The preface should specify and clearly state what is required by law rather than referring to regulations in an appendix. The law in fact mandates specific language and information that must be included in notification and specific requirements for conducting an IPM program which cannot be revised.

—000—

## INTRODUCTION TO IPM IN SCHOOLS

### PAGE 3 - DEFINITION OF IPM USED IN THIS INTRODUCTION:

COMAR 15.05.02 - Department of Agriculture Regulations Pertaining to Integrated Pest Management and Notification of Pesticide Use in a Public School.

.02 (7) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and pesticides, when nontoxic options are unreasonable or have been exhausted, in order to minimize the use of pesticides and minimize the risk to human health and the environment associated with pesticide applications."

### CONTRAST WITH DEFINITION IN STATUTE: MD. AGRIC. CODE ANN., §5-208.1

(a) (6) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and, when nontoxic options are unreasonable or have been exhausted, pesticides in order to:

- (i) Minimize the use of pesticides; and
- (ii) Minimize the risk to human health and the environment associated with pesticide applications.

**MPN Concern:** Definition for IPM taken from MDA Regulations COMAR 15.05.02 differs from Md. Agric. Code Ann., §5-208.1. Because the manuals still reflect MDA's rewording of the definition of IPM in their original regulations from the definition in the law, the manuals infer that the use of pesticides in the schools is equal to non-toxic practices, rather than as a strategy of last resort, which the wording in law clearly reflects.

**MPN Recommendation:** All similar misrepresentations of the law's definition of IPM should be corrected in all eight manuals as recommended by the Attorney General's Letter of Advice.

—000—

### PAGE 3 - INTRODUCTION TO IPM IN SCHOOLS

"...Many individuals are under the false assumption that IPM represents a nonchemical approach to pest management."

#### ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 4):

"...the assertion that it would be a 'false assumption' to believe that IPM is a nonchemical approach to pest management is potentially misleading. It is true that IPM contemplates the use of pesticides in some circumstances. However, as defined by the legislature and the Department's own regulations, IPM incorporates a strong preference for a non-chemical approach."

**MPN Concern:** This statement does not reflect current law, It suggests that IPM represents a chemical approach and therefore undermines the law's definition of IPM especially as it immediately follows the misleading COMAR definition that differs from the definition in statute.

**MPN Recommendation:** The Department should delete this statement, and all similar statements in the eight manuals. Only the definition in statute should be used.

—000—

### PAGE 3 - INTRODUCTION TO IPM IN SCHOOLS

"...IPM employs a combination of tactics that include structural modifications, sanitation, inspections and monitoring, use of traps, and the judicious use of pesticides when necessary."

#### ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 4-5):

"...The words "judicious," "warranted" or "warranted in accordance with law" could be appropriate shorthand methods of referring to the statutory requisite, if the reference is clear from context...However, as defined by the legislature and the Department's own regulations, IPM incorporates a strong preference for a non-chemical approach. Similarly, the use of the word "warranted" as the condition for pesticide use at schools can be misleading if a training manual seldom otherwise refers to the statutory precondition for pesticide application – or refers to it only in the context of the potentially confusing COMAR version of the definition...Apparently, the application of pesticides [prior to the advent of IPM] was deemed "warranted" on a routine basis...It is clear that IPM was intended to change that practice. If the term "warranted is used without clear reference to the statutory conditions, a school official might be misled to believe that the decision whether or not to apply pesticides is left

to the official's unfettered judgment whether the application is "warranted." Given that the statute clearly defines the circumstances in which pesticide use is warranted, a manual should indicate what those circumstances are."

**MPN Concern:** The law does not state "judicious use when necessary." Such phrases as "warranted and "judicious use" is language frequently used by the pest control industry when claiming that pesticides are an important part of an IPM program. Such phrases do not reflect the intent of the law when not immediately qualified by its meaning in this law – that they only be used when "all non-toxic means are unreasonable or have been exhausted." The intent of the law is that pesticides be used only as a last option.

**MPN Recommendation:** Such language should be replaced with the language in statute or language that clearly reflects that pesticides are to be used as a last effort and are not equal to non-toxic technologies.

—000—

### GENERAL CONTRACT COMPONENTS AND SAMPLE LANGUAGE:

#### PAGES 5 – BACKGROUND-STRUCTURAL SAMPLE.

"Pesticides should be applied only when nonchemical methods have proven ineffective or are impractical, and only in areas of known infestation."

#### PAGE 6 - BACKGROUND-GROUNDS SAMPLE

"Pesticides should be applied only when nonchemical methods have proved ineffective or are impractical and only in areas of known infestation."

**MPN Concern:** The law does not state that pesticides be used when non-toxic action are "impractical" or "ineffective." The language in law is stronger in suggesting that pesticides only be used when non-toxic means are unreasonable or have been exhausted." These two words – "impractical" instead of "unreasonable" and "ineffective" instead of "exhausted" – are used throughout the manuals. "Impractical" for example, can be construed to mean that it is impractical for a pest control operator to come out to a school, initially to use non-toxic techniques for a pest problem, and then come back a second time to determine its effectiveness and whether further treatment is needed. He may determine it is more "practical" due to use of time and cost, to just come out once and use a pesticide initially – knowing it will work – rather than trying non-toxic methods as a first line of defense. The intent of the law's language of "unreasonable" and "exhausted" was to underscore that only if non-toxic means don't work – for example despite the use of several usually effective non-toxic technologies, or the knowledge that they are known not to work – and a serious infestation that threatens health and safety continues to be a problem, then and only then should pesticides be considered to "minimize risk to human health and the environment."



**MPN Recommendation:** While there is no requirement that the manuals repeat from statute verbatim “when non-toxic options are unreasonable or have been exhausted,” each time references are made to pesticide use “when nonchemical methods have proven ineffective or are impractical” a different message is relayed. The language in the law was a compromise agreed to by legislators and diverse stakeholders. Given that the legislative history of the law indicates that the Legislature carefully considered the language in the law as a result of years of negotiations, the language of the law should be the consistent wording in all the manuals.

—000—

## PEST CONTROL

*The following excerpts from this section of the manual contradict the IPM-in-Schools law. MDA did not ensure that statements extracted from other documents and used in the guidelines accurately reflect Maryland law. This also includes documents referenced or included as an Appendix and Glossary.*

### PAGE 16 - A. NONCHEMICAL CONTROL METHODS.

“...the use of non-chemical pest control methods is an emerging area in urban pest management that may be limited in its availability and application to pest problems. The school district is aware that nonchemical control methods may not always be practical or feasible, because of the scope or location of the pest problem, cost, interruption of routine school activities, and aesthetic issues regarding the building (i.e., landscaping and building design characteristics, etc.).”

**MPN Concern:** The first sentence in this paragraph is a false and misleading statement. It also does not reflect statute. Schools around the country are successfully using non-chemical forms of pest control. These school districts and schools hire pest management companies (such as Praxis, EnviroSafe, Bio-Logical Pest Management and Get Set, Inc.) that rely on biological control methods and non-toxic options rather than pesticides in their IPM programs. Examples of schools using a non-toxic IPM program include 350 schools that have been treated by Get Set Inc. in Michigan and Ohio<sup>1</sup> and, Radnor Township School District in Pennsylvania where they adopted a “natural” pesticide program in which schools use only non-toxic methods of pest control.

The second sentence interprets the law as allowing for use of pesticides based on such issues as scope, location, or cost rather than as the law states, “When non-toxic means are unreasonable or have been exhausted.” If the intent of the law was to allow pest control operators to decide if use of a pesticide was “practical,” it would not have included the phrase “when all non-toxic means... have been exhausted,” in order to minimize the use of pesticides and minimize the risk to human health and the environment associated with pesticide applications.

**MPN Recommendation:** Instead of inferring that pesticides are a necessary part of a pest management strategy, information on schools in Maryland and around the country that are successfully only using non-chemical pest control methods (as well as those using pesticides only as a last resort) could be highlighted to underscore the feasibility of non-reliance on chemical technologies. Non-toxic options include habitat modification, proper sanitation, pest-proofing waste disposal, structural maintenance, screens, the use of pheromone and sticky traps, caulking, door strips, vacuuming, and lawn and landscape maintenance that includes flame and manual weeding, and sealing sidewalk cracks.

—000—

### PAGES 17 – B. PESTICIDE CONTROL METHODS.

“Pesticide use plays a limited, but important, role in an IPM program. The decision to use pesticides is based on information obtained from inspections, monitoring and use of action thresholds.”

**MPN Concern:** The statement underscores the need for pesticides in an IPM program. Pesticides do not play an important role in IPM. In fact, pesticides are considered a last option if included at all in an IPM program. Many schools have instituted chemical-free IPM programs around the country. As stated in the law the intent of the law is to “minimize the use of pesticides and minimize the risk to human health...associated with pesticides. Action thresholds are important for defining when an action should take place. Action thresholds are necessary for establishing the need for an action, but that action should first be a non-chemical action. Pesticides are to be used only after the primary IPM tools as defined in law have been used and have been exhausted or deemed unreasonable.

**MPN Recommendation:** In order to reflect the intent of the law, examples of school districts in Maryland and around the country that successfully use non-chemical pest control and those that use pesticides as a last resort only should be cited to underscore the feasibility of non-reliance on chemical technologies.

—000—

### PAGE 17 - PESTICIDE CONTROL METHODS - STRUCTURAL SAMPLE.

“The following shall be used as thresholds for the initiation of control actions in the school building:

1. An average of two cockroaches per trap within an area during each service interval.
2. One mouse or rat dropping per room.
3. One rat burrow or runway in outside areas of the school building.
4. Any stinging insect nest within reach from the ground.
5. Reoccurring problems with other pests, e.g., flies, spiders, or stored product pests, that cannot be resolved using nonchemical techniques.”

<sup>1</sup> Get Set Inc. book on company's IPM non-toxic program: [www.thebestcontrol.com/bestcont](http://www.thebestcontrol.com/bestcont)”

**MPN Concern:** While these are reasonable action thresholds for action, the context in which this statement is made on page 17 is a paragraph discussing pesticide applications, therefore suggesting that if these action thresholds are reached the treatment should be pesticide applications.

**MPN Recommendation:** The manual should clarify, when outlining action thresholds that the first step is to assess the appropriate non-chemical, non-toxic technologies.

—000—

**PAGE 18 – PESTICIDE CONTROL METHODS -  
STRUCTURAL SAMPLE.**

“The Contractor shall minimize the use of and potential exposure to pesticides wherever possible. For example:

- Use non-chemical control methods and materials.
- Use crack and crevice or bait application of pesticides in pest harborage areas.”

**MPN Concern:** The law does not state, “minimize the use of ...pesticides wherever possible.” It delineates non-chemical controls in its definition of IPM and separates out pesticides as an option only after the statement, “and when non-toxic options are unreasonable or have been exhausted.” While the recommendations rightly puts non-chemical control methods at the top of the list, there is no mention here that: 1) this is priority; the first step that should be taken in accordance with the law, 2) going beyond this step means non-chemical controls have been exhausted, haven’t worked or are shown to be unreasonable, and 3) the threat to human health requires taking the risk of potentially exposing students and staff to pesticide residues, even though the law states that its intent is to minimize this exposure.

**MPN Recommendation:** The language should clearly reflect the intent of the law. For example, it could be changed to, “The Contractor shall use all non-chemical options first to treat a pest problem in order to minimize the use of pesticides and minimize the risk to human health associated with pesticide exposures. Generally speaking, reasonable non-toxic methods do exist for all pest problems. However, in the event of an unusual situation, where several known non-toxic alternatives have all failed to address a specific problem, or due to unusual circumstances in regard to the pest problem that makes it impossible to use non-toxic alternatives, then and only then should a least-toxic pesticide be considered, and only if there is a true threat to human health.”

—000—

**PAGE 18 – PESTICIDE CONTROL METHODS -  
STRUCTURAL SAMPLE.**

Pesticide space sprays (including fogs, mists, and ultra-low volume applications) will be restricted to unique situation when no alternative measures are practical or effective.

**MPN Concern:** The language used, “...when no alternative measures are practical,” in contrast to the language in statute, “...when non-toxic options are unreasonable or have been exhausted...,” does not make clear that this option can only be considered after non-toxic alternatives have been tried and exhausted with unsuccessful results or that all non-toxic options are clearly unreasonable. It also does not make clear that prior to considering space spraying, least-toxic pesticides should be tried after non-toxic measures have failed.

**MPN Recommendation:** Clarification is needed that space spraying should only be considered if there is a clear threat to human health that absolutely cannot be treated in any other way.

—000—

**PAGE 18 - PESTICIDE CONTROL METHODS-  
GROUNDS SAMPLE.**

“A contingency plan for performing pesticide applications on school grounds should be part of the Pest Management Plan and Service Schedule. Thresholds for pests of landscape plants are generally lacking. However, several studies indicate that insect and mite pests cause noticeable aesthetic injury to plants when approximately 10 percent of the plant is affected. Treatments should be considered when 10 percent of a plant’s foliage is removed or discolored, or if the pest has the potential to kill the plant, as is the case with some boring and scale insects.”

**MPN Concern:** Given the context of this statement in the first sentence, the word “treatments” connotes pesticide application as a primary effort. There is no mention of using non-chemical techniques to deal with the problem described in this paragraph, such as beneficial insects, traps, and pruning. As the intent of the law is to protect students and employees from unnecessary exposure to pesticides, the use of toxic pesticides for aesthetic purposes should be questioned: Are the potential risks and exposure to children worth using pesticides to save a plant when non-toxic means have not worked?

**MPN Recommendations:** Non-chemical options should be delineated in this paragraph and everywhere a pest problem is discussed to encourage and underscore the use of non-toxic options, especially for aesthetic purposes. Such options include the repair of cracks and crevices in sidewalks, parking lots, and playgrounds; mulching; flame and manual weeding, change in mowing heights or in fertilization and irrigation practices and biological agents to reduce weeds. Removal of pest-prone plants and replacing them with pest-resistant plants should be considered as the best option in order to protect school occupants from unnecessary exposure to pesticides.

—000—

## GLOSSARY

**MPN Recommendation:** *MPN's overall recommendation is that MDA ensure that statements extracted from other documents and used in the guidelines accurately reflect Maryland law. This also includes documents referenced or included as an Appendix.*

### PAGE 26 - ACTION THRESHOLD (ACTION LEVEL).

"The number of pests or level of pest damage that triggers a control action. For an explanation of action thresholds see Maryland Department of Agriculture, Action Thresholds and School IPM Programs. Pesticide Regulation Section, Annapolis, MD.

**MPN Concern:** The manual referred to in this definition does not clarify that when an action threshold has been attained the pest control operator must use non-toxic options unless they are unreasonable or have been exhausted.

**MPN Recommendation:** When addressing action thresholds in the manuals, clarifying statements should include the use of non-toxic options as the first response.

### PAGE 27 - INTEGRATED PEST MANAGEMENT (IPM):

The Maryland Department of Agriculture has defined IPM as a "managed pest control program in which methods are integrated and used to keep pests from causing economic, health-related, or aesthetic injury through the utilization of site or pest inspections, pest population monitoring, evaluating the need for control, and use of one or more pest control methods including sanitation, structural repair, nonchemical methods, and pesticides, when nontoxic options are unreasonable or have been exhausted, in order to minimize the use of pesticides and minimize the risk to human health and the environment associated with pesticide applications."

**MPN Concern:** This definition is not in compliance with the definition of IPM in law.

**MPN Recommendation:** The definition of IPM in all the manuals should be the exact definition as written in law, which clearly separates pesticides as the last option after "and when nontoxic options are unreasonable or have been exhausted."

—000—

## APPENDICES

*MPN's overall recommendation is that MDA make sure that statements extracted from other documents and used in the guidelines accurately reflect Maryland Law. This also includes documents referenced or included as an Appendix.*

### APPENDIX A - SYNOPSIS OF THE MARYLAND PESTICIDE APPLICATORS LAW AND REGULATIONS. PESTICIDE INFORMATION LEAFLET No. 35. MARYLAND COOPERATIVE EXTENSION.

#### MANAGEMENT AND NOTIFICATION REQUIREMENTS FOR PESTICIDE APPLICATIONS TO PUBLIC SCHOOL GROUNDS

"A broad definition of IPM is a pest control program that (a) utilizes inspections and (b) incorporates different methods of pest control such as sanitation, structural repairs, and other non-chemical methods, and pesticides when warranted, to (c) keep pests from causing economic, health related or aesthetic damage."

**MPN Concern:** This definition of IPM contradicts the definition in law.

**MPN Recommendation:** This statement and all other such statements should be replaced with the correct definition.

—000—

### APPENDIX H - SPECIAL PESTICIDE USE REQUEST II. PESTS: B.

"List specific pests and reason for application: Has a pest population reached the action threshold...?"

**MPN Concern:** This form does not ask what non-toxic means have been attempted and exhausted or deemed unreasonable and why, prior to the decision to use a pesticide. It only asks whether the pest population has reached an action threshold and therefore implies the need for pesticide use if an action threshold has been reached.

**MPN Recommendation:** Revise the form to include the questions that reflect the guidelines of the law. Questions that must be added are, "What steps were taken to treat the problem with non-chemical options? What were the results of these method(s)? Did you try more than one non-chemical option (assuming more than one non-chemical treatment exists)?"

—000—

**APPENDIX I - INTEGRATED PEST MANAGEMENT PROGRAM,  
CONTRACT GUIDE SPECIFICATION**

**PAGE 2 -**

**1. GENERAL DESCRIPTION OF PROGRAM:**

"...IPM is a process for achieving long-term, environmentally sound pest suppression and prevention through the use of a wide variety of technological and management practices. Control strategies in an IPM program include:

- Structural and procedural modifications to reduce food, water, harborage, and access used by pests.
- Pesticide compounds, formulations, and application methods that present the lowest potential hazard to humans and the environment.
- Non-pesticide technologies such as trapping and monitoring devices.
- Coordination among facilities management programs that have a bearing on the pest control effort."

**MPN Concern:** Not only are pesticides included here as an equal control strategy to non-pesticide technologies methods in an IPM program, but it is listed as a strategy prior to non-pesticide technologies. This statement contradicts the definition in law, which clearly separates pesticides out as an option only after all other strategies can be shown to be unreasonable or have been exhausted.

**MPN Recommendation:** Pesticides should be listed last with a statement clarifying that this option is only to be considered as a last effort.

—000—

**PAGE 6 -**

**9. USE OF PESTICIDES. C. APPLICATION BY NEED:**

"Pesticide application shall be according to need and not by schedule. As a general rule, application of pesticides in any inside or outside area shall not occur unless visual inspection of monitoring devices indicate the presence of pests in that specific area. Requests for preventive pesticide treatments in areas where surveillance indicates a potential insect or rodent infestation will be evaluated by the COR [Contracting Officer's Representative] on a case-by-case basis. Written approval must be granted by the COR prior to any preventive pesticide application."

**MPN Concern:** IPM does not provide for preventive pesticide treatments. In an IPM program, non-toxic measures are used to prevent infestations, and pesticides are only considered after non-toxic measures have been unsuccessful in dealing with a pest problem or are clearly unreasonable. There is no mention here about non-toxic means when monitoring devices indicate a presence of pests. This statement provides directions for getting permission to use pesticides preventively.

**MPN Recommendation:** All references in the manuals to the use of pesticides indoors as a preventive strategy should be deleted.

—000—

**APPENDIX J - SAMPLE CONTRACT, INTEGRATED PEST  
MANAGEMENT (IPM) FOR SCHOOL GROUNDS**

**PAGE 1 - BACKGROUND**

"The basis of the...school district IPM services is the regular monitoring for the presence of pests in the landscape, turf and surrounding grounds of the school building, and when necessary to implement appropriate control measures. The goal of the IPM program is to provide effective, long-term pest control, while minimizing the use of pesticides...Pesticides should be applied only when nonchemical methods have proven ineffective or are impractical, and only in areas of known infestation."

**MPN Concern:** The intent of the law was not just to minimize the use of pesticides. It was also to shift the primary focus to non-chemical pest management strategies so that pesticides will only be considered as a last effort after all non-toxic options are unreasonable or have been exhausted. "Exhausted" means using all available non-toxic means. "Proven ineffective" can be interpreted as just one failed attempt with a non-toxic method. Again, "impractical" for example, can be construed to mean that a pest control operator may need to come out to the site an additional time if only because he may not have the non-toxic alternative tools with him.

**MPN Recommendation:** Manuals should use the language of the law, which was carefully crafted as compromise language between all stakeholders. All stakeholders agreed to this language with the understanding that the intent of the law was that pesticides should only be considered as the last option. The language in the manuals "waters down" the language in the law.

—000—

**PAGE 6 - PESTICIDE CONTROL METHODS (THIS ENTIRE SECTION IS INCLUDED IN THE GUIDELINES ON PAGE 18-19 - PESTICIDE CONTROL METHODS-GROUNDS SAMPLE.)**

"A contingency plan for performing pesticide applications on school grounds should be part of the Pest Management Plan and Service Schedule...Thresholds for pests of landscape plants are generally lacking. However, several studies indicate that insect and mite pests cause noticeable aesthetic injury to plants when approximately 10 percent of the plant is affected. Treatments should be considered when 10 percent of a plant's foliage is removed or discolored, or if the pest has the potential to kill the plant, as is the case with some boring and scale insects. (See page 18 of the Guidelines Pesticide Control Methods - Grounds Sample.)"

**MPN Concern:** Given the context of this statement, the word 'treatments' in this statement connotes pesticide application. There is no mention of using a non-toxic method, such as beneficial insects, but appears to suggest using pesticides when 10% of the plant is effected.

**MPN Recommendations:** Non – chemical options as the first consideration and action should be delineated in this paragraph and everywhere else where a pest problem is discussed. Especially when the pest problem does not endanger health, but rather is an aesthetic issue, it is not reasonable to expose students and employees to pesticide residues when alternative measures are available including replacing the infected plant if need be.

—000—

## **APPENDIX K - REQUEST FOR PROPOSAL FOR INTEGRATED PEST MANAGEMENT PROGRAM SERVICES - CARROLL COUNTY PUBLIC SCHOOLS**

### **PAGE 19 - J. PESTICIDE PRODUCTS AND USE**

2.d) "Pesticide space sprays (including fogs, mists, and ultra-low volume applications) will be restricted to unique situations when no alternative measures are practical."

**MPN Concern:** As space spraying is considered the most serious of pesticide exposures, Maryland law requires universal notification of all students and staff prior to such an application. The language used, "...when no alternative measures are practical," in contrast to the language in statute, "...when non-toxic options are unreasonable or have been exhausted..." does not make clear that this option can only be considered after non-toxic alternatives have been tried and exhausted with unsuccessful results or that all non-toxic options are clearly unreasonable. It also does not make clear that prior to considering space spraying, least-toxic pesticides should be tried after non-toxic measures have failed. The intent of the law is based on the understanding that the cure (pesticides) can pose a far greater threat to public health than the disease (weeds, ants, cockroaches) and that non-toxic alternatives do exist. There is no reference in the law to "practical." This is another example of the consistent use of the word "practical" to replace wording in the law.

**MPN Recommendation:** Clarification is needed that space spraying should only be considered if there is a clear threat to human health that absolutely cannot be treated in any other way.

—000—

## **II. NOTIFICATION**

*This section references instances in the "Contracting guidelines" which differ from the law regarding notification.*

### **ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 7):**

"In my view, an accurate summary of the notification requirements...would be extremely useful for the local officials who must implement the IPM law...a training manual fails in its purpose if a reader cannot rely on it to accurately summarize the relevant law and regulations."

### **ATTORNEY GENERAL'S RECOMMENDATION (PAGE 7):**

"Thus, I recommend that, at the next available opportu-

nity, the Department revise the notification section of this manual...[to] comply with the requirements of the Maryland IPM law."

## **INTRODUCTION TO IPM IN SCHOOLS**

### **PAGE 4 - CONTRACTING DEVELOPMENT AND THE BIDDING PROCESS**

#6. "Require record keeping to document pest sightings, pest control procedures and any communications to students and staff members regarding IPM or pesticide use."

**MPN Concern:** This statement does not include parent or guardian along with students and staff.

**MPN Recommendation:** Include all sub-populations mandated to be notified by law in all references to groups to be notified. *This recommendation also refers to all the following citations where sub-populations that must be notified have been omitted.*

—000—

### **PAGES 4-5 - INTEGRATED PEST MANAGEMENT (IPM) POLICY FOR THE STATE OF MARYLAND:**

"...State legislation also requires student and staff notification of pesticide applications made on all school buildings and property by the 2000-2001 school year."

**MPN Concern:** Again, this statement does not include parent or guardian, who by law must be universally notified in elementary schools and according to registry in the middle and high schools. This error is repeated in the following sections:

Page 11 - H. Record Keeping

Page 12 - Record Keeping-Structural (cont.)

Page 12 - Record Keeping-Grounds Sample

"...communications to students and staff."

—000—

## **ADDITIONAL CONSIDERATIONS**

### **PAGE 21 - A. NOTIFICATION.**

"At the beginning of the school year the State of Maryland requires school districts to provide students with an explanation of the school district's IPM system, a list of common names of any pesticides or bait stations that may be used in the school building, and the address and telephone number of contact persons."

**MPN Concern:** School districts are required to notify students, parents or guardians and all staff of the IPM system, not just students. The law requires that this notice include the name of the contact person. This statement did not include the word [name] in brackets. As required by law, this statement also does not include information on how to review the Material Safety Data Sheet and product labels, or how to get on the notification list (middle school/high school).

—000—

**PAGE 22 - NOTIFICATION - STRUCTURAL SAMPLE:**

"Although each school district is ultimately responsible for student notification of pesticide use and for sending notification home with students, the contractor will be responsible for satisfying all legal requirements for posting." (This statement is taken from page 8 of Appendix J - Sample Contract, Integrated Pest Management (IPM) for School Grounds- Notification.)

**MPN Concern:** This statement does not include notification of staff.

**PAGE 22 - NOTIFICATION - GROUNDS SAMPLE:**

"Although each school district is ultimately responsible for student notification of pesticide use and for sending notification home with students, the contractor will be responsible for satisfying all legal requirements for posting." (This statement is taken from page 8 of Appendix J - Sample Contract, Integrated Pest Management (IPM) for School Grounds- Notification.)

**MPN Concern:** This statement does not include notification of staff.

—000—

**APPENDICES**

**APPENDIX G - MODEL PESTICIDE NOTICES**

**MODEL PESTICIDE NOTICE #1 - GENERAL NOTICE FOR PARENTS OR GUARDIANS**

**MODEL PESTICIDE NOTICE #2 - INDIVIDUAL NOTICE FOR PARENT OR GUARDIAN**

**MODEL PESTICIDE NOTICE #3 - GENERAL NOTICE FOR SCHOOL EMPLOYEES**

**MPN Concern:** The above sample notifications come from Minnesota and do not comply with Maryland law.

Maryland schools that follow these recommendation would be out of compliance with Maryland law.

**MPN Recommendation:** Create sample notices that are in compliance with the law.

—000—

**APPENDIX I - INTEGRATED PEST MANAGEMENT PROGRAM CONTRACT GUIDE SPECIFICATIONS (1999 REVISION)**

**PAGE 6: 10. INSECT CONTROL.**

B. Application of Insecticides to Cracks and Crevices: "As a general rule, the Contractor shall apply all insecticides as 'crack and crevice' treatments only, defined in this contract as treatments in which the formulated insecticide is not visible to a bystander during or after the application process."

**PAGE 6: 10. INSECT CONTROL.**

C. Application of Insecticides to Exposed Surfaces or as Space Sprays: "Application of insecticides to exposed surfaces or as space sprays ('fogging') shall be restricted

to exceptional circumstances where no alternative measures are practical. The Contractor shall obtain approval of the COR prior to any application of insecticide to an exposed surface or any space spray treatment. No surface application or space spray shall be made while tenant personnel are present. The Contractor shall take all necessary precautions to ensure tenant and employee safety, and all necessary steps to ensure the containment of the pesticide to the site of application."

**MPN Concern:** There is nothing in this appendix to indicate notification requirements as set forth in Maryland law when pesticides/insecticides are used. While it is the task of the school district and not the contractor to notify students, parents, guardians and staff, it is the mandated task of the contractor to post notices of pesticide applications in the school. The contractor must be notified of this requirement and the specifics that must be included in such notification.

**MPN Recommendation:** The General Guidelines should be rewritten to include the notification requirements, as the contractor will need to provide the school with information for the school's notification of parents, guardians, students and employees. Contractors need to be clear about what is required of them in their postings.

—000—

**APPENDIX J- SAMPLE CONTRACT- INTEGRATED PEST MANAGEMENT (IPM) FOR SCHOOL GROUNDS**

**PAGE 4 - RECORD KEEPING (CONT.)**

"Clear and concise records shall [include]...communications with students and staff."

**MPN Concerns:** This statement does not include communications with parents or guardians as required by law.

—000—

**PAGE 8 - NOTIFICATION**

"Although each school district is ultimately responsible for student notification of pesticide use and for sending notification home with students, the contractor will be responsible for satisfying all legal requirements for posting." (This statement is also found on page 22 of the Guidelines under Notification - Structural Sample and Notification - Grounds Sample.)

**MPN Concern:** The notification procedure as outlined here does not include staff as is required by law.

—000—

### III. U.S. EPA STATEMENT

*This section pertains to instances where the EPA statement is misquoted or not quoted at all. The law requires that the US EPA Office of Pesticide Programs statement be quoted verbatim in all notifications as follows:*

"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 two years old), should avoid any unnecessary pesticide exposure."

#### APPENDICES

##### APPENDIX A – SYNOPSIS OF THE MARYLAND PESTICIDE APPLICATORS LAW AND REGULATIONS (PESTICIDE INFORMATION LEAFLET NO. 35)

###### PAGE 7:

"The information to be provided to the above individuals includes (Fifth bullet)

- A statement that EPA recommends that persons who are potentially more sensitive should avoid any unnecessary pesticide exposure."

**MPN Concern:** It is required by law to include the exact US EPA statement as written in the law, in all notification. The statement must read: "Where possible, persons who are potentially more sensitive such as pregnant women and infants (less than two years old) should avoid unnecessary pesticide exposure." Given that pesticide exposure is potentially more serious for pregnant teachers and mothers that spend time in the school buildings and student's younger siblings who often accompany a parent picking up the older sibling, this omission is even more serious. While this statement is not all inclusive of what constitutes "sensitive populations," it does provide two important examples that are relevant to the school environment.

**MPN Recommendation:** Ensure that all references to the EPA statement include the statement verbatim.

—000—

#### APPENDIX A - PAGE 8:

##### FIRST BULLET:

"A sign or notice...must include the following:  
The statement, "Caution - Pesticide Application";  
Common name of pesticide applied;  
Location and date of pesticide application;  
Contact person for additional information, including information of potential adverse effects."

**MPN Concern:** This does not include EPA warning on sign as required by law.

**MPN Recommendation:** All references to the EPA statement should include the statement verbatim as required by law.

—000—

### PART IV. EXEMPTIONS

#### PAGE 25 – [MANUAL] CONCLUSION:

"IPM strategies that can not be implemented immediately because of budget constraints should be considered in the school district's long-term plans."

**MPN Concern:** The IPM-in-Schools law does not allow for exemptions regarding implementation of the law. There is no wording in the law that allows schools to defer using non-chemical interventions because of budget constraints. This statement contradicts the law and allows a school district to decide that they cannot implement the law and may continue using a pesticide-intensive or pesticide-dominant pest management program as they had prior to the law's passage.

**MPN Recommendation:** This statement and all such statements in all the manuals should be deleted.

—000—

# REVIEW OF MDA MANUAL INTEGRATED PEST MANAGEMENT IN SCHOOLS IPM TRAINING MANUAL

*Specific references to statements in the IPM Training Manual, the Attorney General's Letter of Advice and Maryland Pesticide Network concerns and recommendations follow. The IPM Training Manual was originally printed in September 1995. Although MDA reprinted this manual in 1998 and 1999, revisions reflective of the IPM-in-Schools law were not fully incorporated.*

## I. DEFINITION OF INTEGRATED PEST MANAGEMENT (IPM)

### ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 3):

"...the Department has no authority to change a definition that defines the subject matter of the statute and regulations. The legislative history of AG §5-208.1 indicates that the Legislature carefully considered the wording of this part of the definition...I understand that the Department disclaims any intention to modify the definition of Integrated Pest Management but has not provided any specific reason why the wording of the regulation differs from statutory language. Thus in my view, COMAR definition must be read to be identical with the statutory definition..."

### ATTORNEY GENERAL'S RECOMMENDATION (PAGE 5):

"Thus I recommend, at the next available opportunity, the Department revise the manuals to include the statutory definition of IPM...and take care to ensure that references to the use of pesticides 'as warranted' as part of IPM clearly reference the statutory condition that other non-toxic means are unreasonable or have been exhausted."

*The following manual review, references instances in the IPM Training Manual which differ from the legal definition of IPM (as defined in the IPM-in-Schools law) concerning use of pesticides. The law states that pesticides are to be considered "when nontoxic options are unreasonable or have been exhausted..." Key words in these references have been underlined for the purposes of this report.*

### MD. AGRIC. CODE ANN., §5-208.1

(a) (6) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and, when nontoxic options are unreasonable or have been exhausted, pesticides in order to:

- (i) Minimize the use of pesticides; and
- (ii) Minimize the risk to human health and the environment associated with pesticide applications."

## CHAPTER ONE: WHY INTEGRATED PEST MANAGEMENT (IPM).

### PREFACE

#### PAGE II -

"...The Governor's Pesticide Council has issued the following policy statement regarding IPM in Schools: "Pest control in schools must protect the health and safety of children and staff, minimize damage to structures and personal property, and improve the quality of the education environment by avoiding the annoyance or disruption of work and learning that can be caused by insects, rodents, or other pests. To meet these goals, the Governor's Pesticide Council recommends that public school facilities adopt and implement an integrated pest management (IPM) strategy to control pests in schools."

#### PAGE 1 - REDUCING PESTICIDE EXPOSURE

##### PARAGRAPH 4:

"The Governor's Pesticide Council of the State of Maryland recommends using Integrated Pest Management, called IPM for short, to reduce the risks that school children will be exposed to pesticides"

**MPN Concern:** This "policy statement", issued in April 1995, was included in the first 1995 printing of this manual prior to the passage of the IPM-in-Schools law. The Governor's Pesticide Council's recommendation is no longer relevant given existing law. This statement is not in compliance with the IPM-in-Schools law, which mandates, not recommends, IPM and specifically defines the parameters of how IPM is to be implemented.

**MPN Recommendation:** The manuals must clearly state that IPM is mandatory in all Maryland public schools. All similar misrepresentations of the law's definition of IPM should be corrected in all eight manuals.

—000—

#### PAGE 1 - REDUCING PESTICIDE EXPOSURE

##### PARAGRAPH 1:

"Pesticides are regularly applied in and around schools..."

##### PARAGRAPH 2:

"Pest control programs in many schools depend on a regular schedule of insecticide treatments. Hallways, bathrooms, locker rooms, and cafeterias may be sprayed, fogged, or dusted with insecticides every month. Classrooms and other rooms where pests have been reported may also be treated, even if the pests cannot be found and the source of the pests is not known."



**MPN Concern:** Maryland law no longer allows for schools to depend on a regular schedule of indoor pesticide treatments. A key aspect of IPM is preventive, non-toxic practices. It is not part of IPM (as defined by state law) to use pesticides as a first line of defense and to treat a problem where no pests are found.

**MPN Recommendation:** All language pertaining to scheduled indoor pesticide applications should be deleted from the manuals. The manuals should highlight preventive practices.

—000—

## PAGE 2 - WHAT IS IPM?

“Priority is given to nonchemical pest management techniques, particularly those that can prevent a recurrence of the problem...Pesticides are used when necessary but only in a way that minimizes potential exposure to people and the environment...”

**MPN Concern:** This statement does not accurately reflect that pesticides are only to be used after nontoxic options are deemed unreasonable or have been exhausted, nor does it accurately reflect that the reason to minimize potential exposures is to minimize the risk to human health.

**MPN Recommendation:** All statements about pesticide usage should clearly reference the requirements of the law; that they are only to be used when non-toxic options are unreasonable or have been exhausted to minimize the use of pesticides; and to minimize the risk to human health and the environment associated with pesticide applications.

—000—

## CHAPTER TWO: MONITORING PESTS

### PAGE 2-3 - A TYPICAL IPM SERVICE VISIT

#### PARAGRAPH 4:

“For each pest problem, you would make a decision about what control tactics to use given the identity of the pest, the extend of the problem and the sensitivity of the site. You would try to use nonchemical pest management tactics, whenever possible...You might decide that a pesticide application was necessary.”

**MPN Concern:** This language is misleading. It appears to give the choice to the pest control operator without clarifying that the law requires that he/she assess using non-toxic means first. Otherwise an operator may decide that a pesticide application is necessary because it will take him/her less time than, for example, vacuuming to remove cockroaches, or caulking openings around pipes. The law protects students and employees from unnecessary exposures by requiring that non-toxic options be used first unless there are clear and justifiable reasons for deciding that such options are unreasonable. Deciding a pesticide appli-

cation is necessary as a measure of first defense is allowable only if it is shown that non-toxic means have been used and have not worked, or that using non-toxic means in the situation is unreasonable. Non-toxic options include habitat modification, proper sanitation, pest-proofing waste disposal, structural maintenance, screens, traps such as pheromone traps and sticky traps, caulking, door strips, vacuuming and lawn and landscape maintenance such as flame and manual weeding and sealing sidewalk cracks.

**MPN Recommendation:** While this chapter offers examples of non-toxic pest control, it does not clearly state that the law requires the first line of defense to be non-toxic options, unless they can be shown to be unreasonable. The manuals need to clearly guide the reader through the steps of assessing what non-toxic means may be appropriate for the problem and highlight that pesticides only be considered as the last option, as well as what does and doesn't qualify as “unreasonable” in regard to implementing a non-toxic action first.

—000—

#### PAGE 4- ACTION THRESHOLDS, PARAGRAPH #4:

“Different levels of a pest may generate different control actions. For example, if you find 3 cockroaches in a storage room, you might place a couple of cockroach bait stations. But if you find 30 cockroaches, you might require that the storeroom be extensively cleaned, treated with additional insecticides, and all crack and crevices carefully caulked.”

**MPN Concern:** This paragraph suggests a bait station, not a non-toxic, non-chemical action, as a first line of defense for a low-level cockroach problem. For a larger problem, the suggestion is a combination of non-toxic actions such as caulking and cleaning along with additional pesticide application. This recommendation is contrary to IPM as defined in law, where the first line of defense might be cleaning and caulking and other non-toxic means of pest control, and then allow for a period of time to assess the effectiveness of this effort, before even considering the use of pesticides, be they bait stations or any other chemical intervention.

**MPN Recommendation:** Delete this statement and all other similar statements that can be interpreted as suggesting the use of pesticides as a first line of defense.

—000—

## CHAPTER FIVE: USING PESTICIDES IN IPM

### PAGE 18 -

“Pesticides may be used in school IPM programs. However, they should not be applied automatically or on a schedule, but only when justified against identified pests. What is important, use them in ways that minimize risk to people, particularly to children.”

**MPN Concern:** The law does not suggest that pesticides be used “only when justified against pests.” This is misleading as a pest control operator may believe that pesticides are always justified as a first line of defense for a cockroach, ant, or other pest problem. If the term “justified” is meant to relay that pesticides be used only when non-toxic means have been exhausted, or because using non-toxic options can be shown to be unreasonable, then the term must be defined so that it does not misguide the reader. Otherwise, such a statement undermines the intent of the law. Also, the emphasis here is on using pesticides in a responsible way rather than limiting the use of pesticides as outlined in the law.

**MPN Recommendation:** Such statements should be revised to clearly state that pesticides may be used in school IPM programs only as the last effort in order to protect students and employees from unnecessary exposure to protect human health.

—000—

**PAGE 18 -**

“This chapter presents some guidelines to help you use pesticides in schools...”

**MPN Concern:** The introduction to this chapter, “Using Pesticides in IPM,” does not state at what point pesticides may be considered. The intent of the law was that they would only be considered as a last line of defense. While the chapter addresses some of the concerns about pesticides and health, and suggests choosing low toxicity insecticides and formulations, it does not put the use of pesticides in schools in context of the law and does not outline when they might be considered as an action.

**MPN Recommendation:** Include complete information regarding the parameters of when pesticides may be considered according to the law.

**PAGE 25: GENERAL GUIDELINES FOR USING PESTICIDES IN SCHOOLS:**

“Don’t apply pesticides when school children are occupying a room or area. Don’t apply pesticides in classrooms, hallways, cafeterias and other common areas during school hours. Choose pesticides that pose the least risk to people, particularly children...”

**MPN Concern:** This end-of-chapter summary on using pesticides in schools makes no mention of when pesticides can be considered according to law.

**MPN Recommendation:** Whenever information is provided in the manuals on the use of pesticides in schools, as in this summary, the parameters regarding when pesticides may be considered and used as outlined in law should be included or referenced.

—000—

**CHAPTER SEVEN: SUMMARY AND CONCLUSIONS**

**PAGE 29-30:**

“...Pesticides are used when necessary...”

**” PAGE 29-30:**

“Integrated pest management, or IPM, is a system of controlling pests that does not depend on automatic application of pesticides...Priority is given to nonchemical pest management techniques, particularly those that can prevent a recurrence of the problem.

Pesticides are used when necessary but only in a way that minimizes potential exposure to people and the environment...”

**MPN Concern:** This is a misleading statement as it does not reference that “necessary” means only after non-toxic means have failed or they are clearly an unreasonable option, in order to minimize unnecessary exposure. Pesticide use could be interpreted by a pest control operator as “necessary” because he/she doesn’t want to spend the time using a more time-consuming non-toxic approach or because he/she is used to spraying pesticides as a first line of defense, and therefore feels it is “necessary.”

**MPN Recommendation:** When, such terms as “necessary” are used in regard to pesticide usage, language that is different from the language in law, the term should clearly reference how the law defines when pesticides may be used.

—000—

**PAGE 31:**

“When a pest problem requires action, look first to those methods not requiring the use of pesticides. Pest control practices such as trapping, caulking, power washing and vacuuming are control measures that can be used with a high degree of safety. Ideally you should concentrate first on those methods that work over the long term, or that prevent pests in the first place; methods such as pest proofing (exclusion) or operational changes that improve sanitation.”

**MPN Concern:** While this statement rightly recommends using non-toxic means as a first line of defense, it suggests that “ideally” you should concentrate on non-toxic long-term methods of control rather than clarifying that concentrating on non-toxic methods is mandatory and not ideal.

**MPN Recommendation:** Clarify that the law requires the pest control operator to look first to methods not requiring use of pesticides.

—000—

**PAGE 31:**

“Often, nonchemical measures are combined for the most effective results, and sometimes used together with limited pesticide application.”

**MPN Concern:** This statement is unclear. The definition of IPM in law was specifically written to clearly set pesticides apart from non-toxic means as an option.

**MPN Recommendation:** This statement should be replaced with the wording in law or with wording that clearly reflects the intent of the law that non-toxic options and pesticides are not considered equal options.

—000—

**PAGE 31:**

“Pesticides may be used in school IPM programs. However they should not be applied automatically or on a schedule, but only when justified against identified pests...”

**MPN Concern:** This statement misleads the reader by a) not qualifying what criteria must be met for pesticides to be considered as an option and b) suggesting that having pests are justification alone for pesticide use.

**MPN Recommendation:** This statement and all such statements should be replaced with the wording in law or with wording that clearly reflects the intent of the law.

—000—

**APPENDICES**

**APPENDIX A: GLOSSARY**

**PAGE 32 -**

“integrated pest management IPM; a planned pest control program in which a combination of compatible methods are used to control a pest. Rather than relying solely on pesticides, IPM emphasizes monitoring and non-chemical methods such as sanitation, pest proofing and trapping. Pesticides are used carefully, when needed, to keep exposure to a minimum.”

**MPN Concern:** The law does not state that pesticides are to be used when needed. This statement suggests that IPM means first and foremost not solely relying on pesticides, making pesticides a prominent aspect of IPM rather than clarifying that it should be the last option.

**MPN Recommendation:** This statement should be replaced with the wording in law or with wording that clearly reflects the intent of the law that non-toxic options and pesticides are not considered as equal options.

—000—

**SUMMARY OF MPN’S CONCERNS**

**REGARDING SECTION I:**

The previous selected statements from the manual underscore the manual’s non-compliance with the intent of the law as well as the language of the law. The manual encourages the use of pesticides as “needed,” “necessary” and as “justified,” and as playing an important role in an IPM program. According to Maryland law, pesticides are considered the last option in an IPM program in order to minimize the use of pesticides and to minimize the risk to human health and the environment associated with pesticide applications.

Schools around the country have successfully instituted chemical-free IPM programs, demonstrating that pesticides are not a necessary part of pest-control. Action thresholds are important for defining when an action should take place. Action thresholds are necessary for establishing the need for an action, but that action should first be a non-chemical action.

**MPN Recommendation:** In order to be in alignment with the intent of the law, the manuals should cite examples of school districts in Maryland and around the country that are successfully using only non-chemical pest control methods, as well as those that rarely use pesticides and only least-toxic pesticides as a last resort, to underscore the feasibility of non-reliance on chemical technologies.

—000—

**APPENDIX C: REFERENCES, RESOURCES, AND CONTACTS**  
**PAGE 54-55**

**MPN Concern:** The books and manuals listed in this section date from 1983 - 1993 predating the enactment of the legislation in 1998 and 1999.

**MPN Recommendation:** These materials should be carefully examined for compliance with Maryland law. The periodicals should also be examined for compliance with Maryland law.

—000—

## II. NOTIFICATION

*This section references instances in the "IPM Training Manual" which differ from the law regarding notification.*

### ATTORNEY GENERAL'S 11/7/02 LETTER (PAGE 7):

"In my view, an accurate summary of the notification requirements...would be extremely useful for the local officials who must implement the IPM law...a training manual fails in its purpose if a reader cannot rely on it to accurately summarize the relevant law and regulations."

### ATTORNEY GENERAL'S RECOMMENDATION (PAGE 7):

"Thus, I recommend that, at the next available opportunity, the Department revise the notification section of this manual...[to] comply with the requirements of the Maryland IPM law."

—000—

## CHAPTER THREE: EDUCATION AND NOTIFICATION

**Overall MPN Concern:** There is little mention in the manual regarding notification requirements as outlined in law, and that which is included is incomplete and misleading.

### PAGE 10 – 11 NOTIFICATION AND POSTING

#### PARAGRAPH 1:

"Schools have differing policies on notification. They may require that notices be posted, in advance, at the school entrance, lobby, and area to be treated. Some schools also send notices home to those parents who wish to be informed before pesticide application. A school may have a registry of students and staff who are sensitive to pesticides. These people must be notified before pesticides are applied."

**MPN Concern:** This paragraph implies that notification is optional for schools as are their modes of notification. However, notification for elementary and secondary schools is mandatory and clearly defined in the law; universal notification in elementary schools and a registry in the middle and high schools.

**MPN Recommendation:** The manuals must replace all such inaccurate statements regarding notification requirements and provide clear information on mandated requirements.

—000—

### PAGE 11 NOTIFICATION AND POSTING

#### PARAGRAPH 2:

"After treatment, reduce the risk of exposure to those who may not be aware...Maintain a set of product labels and material safety data sheets (MSDS) for all pesticides used. File at least one set in the logbook along with telephone numbers of poison control centers and emergency personnel. This information should be available to any individual upon request."

**MPN Concern:** School districts are required to notify students, parents or guardians and all staff of the school's IPM program at the beginning of the school year. The law requires that this notice include the name of the contact person and information on how to review the Material Safety Data Sheet and product labels, or how to get on the notification list (middle school/high school). This statement does not properly state notification requirements as mandated by law.

**MPN Recommendation:** Replace all ambiguous and misinformation on notification with accurate guidelines on notification requirements.

—000—

## CHAPTER FIVE: USING PESTICIDES IN IPM

### PAGE 18 –19:

"These two documents, [the pesticide label](#) and [the MSDS](#), are the primary sources for information on pesticide toxicity and how to use pesticides safely. [Copies should be kept in each logbook.](#)"

**MPN Concern:** School districts are required to notify students, parents or guardians and all staff of the IPM system at the beginning of the school year. The law requires that this notice include the name of the contact person and information on how to review the Material Safety Data Sheet and product labels, and how to get on the notification list (middle school/high school). Information from the pesticide label and the MSDS sheet are mandated to be used as primary sources of information for notification to be sent to parents and employees, not for logbook information. In fact these notices must include not only potential adverse effects of the pesticides used from these references, but notification is also mandated to include the US EPA statement that, "Whenever possible, sensitive populations such as children (under the age of two) and pregnant women should avoid unnecessary exposures to pesticides."

**MPN Recommendation:** Guidelines for notification must be outlined clearly and according to the law.

### PAGE 18 - 19 -

"Sometimes a pesticide with high volatility is a good choice: when doing space treatments (fogging) for example..."

—000—

### PAGE 22 - FOGGING:

"If you must 'fog' or treat accessible surfaces, reduce the risk of exposure to students and staff. Warn them where you have treated and what you have treated with, and inform them when they may reenter an area or begin using a room...Use written warnings (door hangers, notices, instructions, etc.) when possible particularly when people might enter an area unaware of your treatment."

**MPN Concern:** There is no reference in these passages concerning the universal notification requirements as set forth in Maryland Law providing for notification to all parents/guardians and employees in the school when space treatments (fogging) are used. Because of the toxicity of such a treatment, one-week notification is required prior to space spraying.

**MPN Recommendation:** This section should be rewritten to include the requirement of universal notification of parents, guardians, students and employees as defined in law.

—000—

**PAGE 25:**

**“GENERAL GUIDELINES FOR USING PESTICIDES IN SCHOOLS:**  
Follow notification and posting guidelines set by the school.”

**MPN Concern:** This statement contradicts Maryland law. Notification and posting requirements are not set by the school but by law.

**MPN Recommendation:** This section should be rewritten to include notification requirements for notifying parents, guardians, students and employees as defined in law.

—000—

**CHAPTER SIX: KEEPING RECORDS AND  
EVALUATING RESULTS**

**PAGE 25 - 26: COMMUNICATION**

**MPN Concern:** This section does not contain any information on notification requirements.

**MPN Recommendation:** This section should include the requirement of notification of parents, guardians, students and employees as defined in law.

—000—

**III. EPA STATEMENT**

**CHAPTER FIVE: USING PESTICIDES IN IPM**

**PAGE 18 –**

“Children are especially susceptible to certain pesticides.”

**MPN Concern:** Especially in this chapter on pesticide use, information regarding notification requirements when pesticides are used in the schools should be included. While the chapter starts out generally discussing potential adverse effects from exposure, and states that children are especially susceptible, it does not take the opportunity to explain that parents/guardians and employees are mandated to be notified, universally in elementary schools and through a registry in middle and high schools. Also, notification is mandated to include the US EPA statement that, “Where possible, persons who are potentially more sensitive such as pregnant women and infants (less than two years old) should avoid any unnecessary pesticide exposure,” along with information on potential adverse health effects from the Material Safety Data Sheet.

**MPN Recommendation:** Notification requirements, including the EPA statement verbatim as required by law, should be clearly included in all appropriate chapters.

—000—

# MPN APPENDIX: MARYLAND IPM-IN-SCHOOLS LAW

## ARTICLE - AGRICULTURE § 5-208.1.

- (a) (1) In this section, the following words have the meanings indicated.
- (2) "Contact person" means an individual knowledgeable about integrated pest management and designated by a county board to act under subsection (e) of this section.
- (3) "County board" has the meaning stated in § 1-101 of the Education Article.
- (4) "Crack and crevice treatment" means the application of small amounts of a pesticide in a building into openings such as those commonly found at expansion joints, between levels of construction, and between equipment and floors.
- (5) "Emergency" means a sudden need to mitigate or eliminate a pest which threatens the health or safety of a student or staff member.
- (6) "Integrated pest management" means a managed pest control program in which methods are integrated and used to keep pests from causing economic, health related, or aesthetic injury through 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, nonchemical methods, and, when nontoxic options are unreasonable or have been exhausted, pesticides in order to:
- (i) Minimize the use of pesticides; and
- (ii) Minimize the risk to human health and the environment associated with pesticide applications.
- (7) "Pesticide" does not include:
- (i) An antimicrobial agent, such as a disinfectant, sanitizer, or deodorizer, used for cleaning purposes; or
- (ii) Any bait station.
- (8) "School" means a public school in the public elementary and secondary system of the State.
- (9) (i) "Space spraying" means application of a pesticide by discharge into the air throughout an area.
- (ii) "Space spraying" does not include crack and crevice treatment.
- (10) (i) "Staff member" means an employee of a school system.
- (ii) "Staff member" includes administrators, teachers, and other support personnel.
- (iii) "Staff member" does not include:
1. A registered employee or applicator certified by the Department; or
2. A person assisting in the application of a pesticide.
- (11) "Universal notification" means written notice by a school to all parents, guardians, and staff members.
- (b) This section applies to pesticide application in a school building or on school grounds.
- (c) (1) The Department shall develop uniform standards and criteria for implementing integrated pest management systems in schools.
- (2) The Department shall develop uniform standards and criteria for implementing integrated pest management for school grounds by March 15, 2001.
- (d) (1) A county board shall develop and implement in its schools an integrated pest management system approved by the Secretary.
- (2) On or before the beginning of the 2001 school year, a county board shall develop and implement an integrated pest management system for school grounds approved by the Secretary.
- (e) (1) A county board shall designate a contact person.
- (2) The contact person shall:
- (i) Act as a contact for inquiries about the integrated pest management system; and
- (ii) Maintain material safety data sheets and labels for all pesticides which may be used in the school district of the county board.
- (f) (1) At the beginning of each school year, a school shall include notice of the school's integrated pest management system in the school calendar or other universal notification.
- (2) The notice shall include:
- (i) A statement that explains the school's integrated pest management system and lists any pesticide or bait station that may be used in a school building or on school grounds as part of the integrated pest management system;
- (ii) The name, address, and telephone number of the contact person;
- (iii) A statement that the contact person maintains the product label or material safety data sheet of each pesticide or bait station that may be used by the school in buildings and on school grounds, that the label or data sheet is available for review by a parent, guardian, staff member, or student attending the school, and that the contact person is available to parents, guardians, and staff members for information and comment; and
- (iv) Instructions for including a parent, guardian, or staff member on a pesticide notification list under subsection (g) of this section.
- (g) (1) At the start of each school year, a school shall develop a pesticide notification list containing each staff member, and parent or guardian of a student attending the school, who requests in writing prior notification of a pesticide application made in the school building or on school grounds during the school year.

- (2) The school shall keep the pesticide notification list current and shall add additional names on written request by a staff member, or by the parent or guardian of a student attending the school.
- (3) The school shall make the pesticide notification list available to the Department on request.
- (h) After the start of each school year, a school shall provide the written information required under subsection (f)(2) of this section to a newly employed staff member or the parent or guardian of a student newly enrolled during the school year.
- (i) (1) Except as provided in paragraph (3) of this subsection, at least 24 hours before a pesticide is applied in a school building or on school grounds, the school shall provide to each parent, guardian, and staff member on the pesticide notification list the:
- (i) Common name of the pesticide;
  - (ii) Location of the application;
  - (iii) Planned date and time of application; and
  - (iv) United States Environmental Protection Agency warning that pregnant women should reduce or eliminate exposure to all pesticides.
- (2) The school may provide prior notification, required under paragraph (1) of this subsection, by:
- (i) Written notice sent home with the student or provided to the staff member;
  - (ii) Telephone call;
  - (iii) Direct contact; or
  - (iv) Written notice mailed at least 3 days prior to the application.
- (3) In the case of a pesticide application at an elementary school, at least 24 hours before the pesticide is applied in a school building or on school grounds, the school shall provide to each parent or guardian, and staff member:
- (i) The common name of the pesticide;
  - (ii) The location of the application;
  - (iii) The planned date and time of application;
  - (iv) 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 two years old), should avoid any unnecessary pesticide exposure.'"; and
  - (v) A brief description of potential adverse effects based upon the material safety data sheet of the pesticides to be applied.
- (4) Each school system shall develop an appropriate means of in-school notification to students and staff members before a pesticide is applied in a school building or on school grounds of a middle school or high school.
- (5) (i) For application on school grounds, the notice of planned date and time of application required under this subsection may specify that weather conditions or other extenuating circumstances may cause the actual date of application to be postponed to a later date or dates.
- (ii) If the actual date of application is more than 14 days later than the planned date provided in the notice, notice of the application required under this subsection shall be reissued.
- (j) (1) Subject to subsection (k) of this section, a school that intends to use space spraying in a school building shall provide written notice at least 1 week beforehand by universal notification.
- (2) The notice shall be on a separate paper sheet at least 8 1/2 inches by 11 inches in size and shall contain:
- (i) A common name of the pesticide to be used;
  - (ii) A location of the space spraying;
  - (iii) A planned date and time of space spraying;
  - (iv) 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 two years old), should avoid any unnecessary pesticide exposure.'";
  - (v) If the pesticide is not addressed in the notice sent at the beginning of the school year, a brief description of the pesticide to be applied;
  - (vi) A brief description of potential adverse effects based upon the material safety data sheet of the pesticides to be applied; and
  - (vii) The name and telephone number of the county designated contact person.
- (k) (1) A pesticide may be applied in a school building or on school grounds without prior notification only if an emergency pest situation exists
- (2) Except as provided in paragraph (5) of this subsection, within 24 hours after an emergency pesticide application in a school building or on school grounds, or on the next school day, the school shall notify each parent, guardian, and staff member on the pesticide notification list that a pesticide was applied for emergency pest control.
- (3) The notification required under paragraph (2) of this subsection shall include the:
- (i) Common name of the pesticide applied;
  - (ii) Approximate location of the application;
  - (iii) Date of application; and
  - (iv) Reason for the emergency application.
- (4) Notification under this subsection may be made by:
- (i) Telephone call;
  - (ii) Direct contact; or
  - (iii) Written notice sent home with the student or provided to the staff member.

(5) In the case of an emergency pesticide application at an elementary school, within 24 hours after an emergency pesticide application in a school building or on school grounds, or on the next school day, the school shall provide to each parent, guardian, and staff member:

- (i) The common name of the pesticide;
- (ii) The location of the application;
- (iii) The date and time of application;
- (iv) 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 two years old), should avoid any unnecessary pesticide exposure.";

(v) A brief description of potential adverse effects based upon the material safety data sheet of the pesticides applied.

- (l) Each school system shall develop appropriate means of in-school notification before a bait station is used in a school building. The means may include a sign posted on the door of the room in which the bait station is placed.



# MARYLAND PESTICIDE NETWORK

[www.mdpestnet.org](http://www.mdpestnet.org) \* [info@mdpestnet.org](mailto:info@mdpestnet.org) \* Phone (410) 849-3909

## MEMBER ORGANIZATIONS

American Academy of Pediatrics - Maryland Chapter, AFL-CIO- Maryland, American Lung Association of Maryland, Inc., Assateague Coastal Trust, Audubon Naturalist Society, Baltimore Physicians for Social Responsibility, Beyond Pesticides, Chemical Sensitivity Disorders Association, Chesapeake Bay Foundation, Clean Up Coalition, Federated Garden Clubs of Maryland, Leukemia and Lymphoma Society – Maryland Chapter, Maryland Association of School Health Nurses, Maryland Clean Water Action, Multiple Chemical Sensitivity Resource and Referral, Maryland Interfaith Coalition for the Environment, Maryland League of Women Voters, Maryland Nurses Association, Maryland Organic Food and Farmers Association, Parent Teacher Association, Howard County (Maryland), Maryland Public Interest Research Group, Maryland State Teachers Association, Rachel Carson Council, Sierra Club – Maryland Chapter.

Executive Director  
Ruth Berlin, LCSW-C,

Program Directors  
Carolyn Roeding and Toni Nunes, M.A.

Public Health Policy Advisor  
Lynn Goldman, M.D., M.P.H

Legal Advisor  
Judith Billage, Esq.

Urban Integrated Pest Management Advisor  
Alan Cohen, B.S.

THE MARYLAND PESTICIDE NETWORK  
WOULD LIKE TO THANK  
THE BELDON FUND,  
THE WALLACE GENETIC FUND AND  
THE CS FUND  
FOR THEIR GENEROUS SUPPORT  
THAT MADE THIS REPORT AND MPN'S  
ASSOCIATED PROGRAM ACTIVITIES  
POSSIBLE.



# MARYLAND PESTICIDE NETWORK

[www.mdpestnet.org](http://www.mdpestnet.org) • [info@mdpestnet.org](mailto:info@mdpestnet.org) • (410) 849-3909



Printed on 100% PCW recycled paper