

ARE WE PASSING THE GRADE?

ASSESSING MD SCHOOLS' COMPLIANCE WITH
IPM-IN-SCHOOLS LAW



A REPORT BY THE MARYLAND PESTICIDE NETWORK

SEPTEMBER, 2004

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EXECUTIVE SUMMARY

Children are more sensitive to toxic pesticide exposure than any other segment of the population. Pesticide exposure can adversely affect children's neurological, respiratory, immune and endocrine systems, even at low levels. The U.S. Environmental Protection Agency (EPA), the National Academy of Sciences, and the American Public Health Association have voiced concerns about the dangers that pesticides pose to children.

In 1998 and 1999, Maryland passed nationally groundbreaking legislation mandating an Integrated Pest Management, or IPM, program for all Maryland public schools to protect the state's children from exposure to pesticides. The law mandates that "pesticides are only to be considered as an option when non-toxic options are unreasonable or have been exhausted, in order to a) minimize the use of pesticides and b) minimize the risk to human health and the environment associated with pesticide applications." The law also requires universal notification of pesticide applications for elementary school parents/guardians and employees, and notification of middle and high school parents/guardians and employees who sign up to be notified at the beginning of the school year.

After the IPM-in-schools law took effect, the Maryland Department of Agriculture (MDA) created guidelines for implementing the law. The guidelines did not fully comply with the intent and the letter of the state law. Their dissemination to schools sent a conflicting message by deviating from the legal requirements. Consequently, schools that are fully complying with MDA's guidelines in their intent to implement IPM are not in full compliance with the law.

This report – produced by the Maryland Pesticide Network (MPN), a coalition of health, consumer, environmental, labor, and religious organizations in Maryland concerned about the impact of pesticides on public health and the environment – is based on the findings of a survey undertaken to monitor compliance with the IPM-in-Schools law. This survey has been critical in assessing whether schools are complying with the law. Survey conclusions include:

- Deficiencies in implementation of IPM programs in schools include continued use of pesticides as a first response. 8% of responding schools used pesticides as a first response to pest problems.
- 69% of the schools from districts that responded to the survey used pesticides as part of their plan for the year.
- One third of the school districts surveyed claimed to have decreased their pesticide use since implementation of the law.
- Pesticides were not part of the school year plan in 17% of the schools, and 31% of the schools reported that they did not apply pesticides during the school year.
- Schools that successfully implemented IPM programs reduced pesticide use, saved money, and protected their students from exposure to pesticide toxins.
- Parents and school employees in the state are not being educated about the IPM-in-Schools law. They do not know about the law's requirements for middle and high school parents, guardians and employees for registering to be notified about pesticide use.
- Maryland's lawmakers promulgated IPM-in-Schools law to protect children. This protection will never occur unless schools safeguard their buildings and grounds from unnecessary pesticide use.

RECOMMENDATIONS

The Maryland Pesticide Network urges that schools comply with and enforce the IPM-in-schools law. To do so:

- Schools need to educate parents, staff, and school administrators about the potential health hazards of pesticide use and explain the benefits of following an IPM-in-schools program and reducing pesticide use in schools.
- Schools need to establish a viable system for universal notification in elementary schools, and registration for notification in middle and high schools. By creating an easy-to-follow, well-publicized system in each district, schools will properly inform parents, students, and employees about pesticides used in their schools and thereby protect their students and employees from being exposed to pesticides unknowingly.

Maryland's school districts that are failing to implement IPM programs in their schools in accordance with the law are failing to protect their community's health. The state and its schools must work to protect students and employees from unnecessary exposure to toxic pesticides that may cause both acute and long term damaging health effects.

INTRODUCTION

WHY WE NEED IPM IN MARYLAND PUBLIC SCHOOLS

Children are more sensitive to pesticide exposure than any other segment of the population. They take in more pesticides relative to their body weight than adults. Children breathe more, eat more, and have a higher metabolic rate than adults. They also play on floors and lawns where pesticides are commonly applied, and have more frequent hand-to-mouth contact. Because of their developing organs, children are more sensitive to toxic pesticide exposure.

Scientific literature shows that pesticide exposure can adversely affect children's neurological, respiratory, immune, and endocrine systems, even at low levels. Several pesticides (such as pyrethrins, pyrethroids, organophosphates, and carbamates) are also known to cause or exacerbate asthma symptoms. The U.S. Environmental Protection Agency, the National Academy of Sciences, and the American Public Health Association have voiced concerns about the danger that pesticides pose to children.

WHAT IS IPM?

Integrated Pest Management (IPM) is a pest management system of prevention, monitoring and control that eliminates or mitigates economic and health damage caused by pests while minimizing the use of pesticides and their associated health risks. IPM does this through a combination of practices such as site or pest inspections, pest population monitoring, and evaluating the need for pest control. Pest control methods include sanitation, structural repairs, mechanical and living biological controls, other non-chemical methods, and, only when nontoxic options are shown to be unreasonable or have been exhausted, least toxic pesticides may be considered. A strong IPM policy is one of the best ways to eliminate or greatly minimize children's exposure to pesticides at school.

Education in the form of workshops, training sessions, and written materials is an essential component of an IPM program for everyone from administrators, teachers, maintenance personnel, cafeteria staff and nurses to parents and students. Regular monitoring, record keeping, and evaluation are also necessary to guarantee a successful IPM.

MARYLAND'S SCHOOL IPM REQUIREMENTS

In 1998, Maryland passed nationally groundbreaking legislation mandating an IPM-in-Schools program for all public school buildings in the state. In 1999, additional legislation was passed mandating IPM for public school grounds. Until the 1998 and 1999 IPM-in-Schools legislation, students and employees in Maryland public schools were unknowingly exposed to pesticides used indoors and on school grounds. Pesticides were often used preventively and as the primary line of defense. The IPM in Schools law was the first in the nation to deal with pesticides in schools as a public health issue. The law mandates that

“pesticides are only to be considered as an option when non-toxic options are unreasonable or have been exhausted, in order to a) minimize the use of pesticides and b) minimize the risk to human health and the environment associated with pesticide applications.” The law also mandates including potential adverse health effects from exposure to the pesticide being used in notices provided to parents/guardians and employees prior to applications and after emergency applications of pesticides.

MARYLAND'S SCHOOL PESTICIDE USE NOTIFICATION REQUIREMENTS

Beginning of the School Year Notice: Parent/Guardian and employee notification is required of pesticides that may be used during the year for elementary, middle, and high schools. This notification explains the school's IPM program and provides a list of pesticides that may be used during the year, as well as other contact information details and notification registration instruction for middle and high school students and employees. Universal notification in Maryland elementary schools is mandatory.

24 Hour Notification: Except in the case of emergency pesticide applications, parent/guardian and employee notification is required at least 24 hours in advance of indoor pesticide applications, excluding bait stations. Emergency pesticide application is defined as “a sudden need to mitigate or eliminate a pest which threatens the health or safety of a student or staff member.” Notification must be provided within 24-hours after an emergency application

Space Spraying Notification: At least one week prior to the space spraying of a pesticide, universal notification must be provided for elementary, middle, and high school parents and employees.

Aspects of notification: The notification is to include the common name of the pesticide applied, the location of the application, the date and time of the application, a brief description of the potential adverse effects of the pesticide based upon the material safety data sheet of the pesticide to be applied, and the following statement from the U.S. EPA's Office of Pesticide Programs: “Where possible, persons who are potentially more sensitive such as pregnant women and infants (less than two years old) should avoid unnecessary pesticide exposure.”

Notification in Elementary, Middle, and High Schools: While notification is universal for parents and employees in elementary schools, registering for notification is required for employees and parents/guardians of students in middle and high schools. The school must notify parents and employees at the beginning of the school year in middle and high schools that they need to register to be notified of pesticide applications.

In-School Notification: Signs or notices are to be posted in the room or area of the pesticide application, and either at the school entrance or in a central school location accessible to parents/guardians, students, and staff. This notice includes the statement “Caution—Pesticide Application,” the common name of the pesticide applied, the location and date of the application, contact information, and information regarding potential adverse health effects of exposure to the pesticide being used.

Certified Applicator Requirement: Only certified applicators or registered employees working under the supervision of certified applicators can apply pesticides in school buildings or on school grounds.

PROBLEMS WITH MARYLAND’S IPM REGULATIONS AND IMPLEMENTATION GUIDELINES

Confusing Guidelines: Following passage of the IPM-in-Schools law, the Maryland Department of Agriculture

(MDA) created and/or reprinted eight manuals containing guidelines for schools’ implementation of the law. In November 2002, the Maryland Attorney General provided a letter of advice on the guidelines’ compliance with Maryland law at the request of State Senator Brian Frosh, the primary sponsor of the 1999 law. The letter of advice stated that MDA regulations and guidelines were not in compliance with the intent of the state law and that they should be corrected at the first available opportunity. Their dissemination to schools sent a conflicting message because they deviated from state law requirements. MDA guidelines redefine IPM from its definition in law and recommend using pesticides “as warranted,” “as necessary,” “when justified against identified pests” rather than as the last option. As a result, many schools are not conforming to Maryland IPM-in-Schools law due to their reliance on the faulty guidelines sent out by MDA.

SURVEY

METHODOLOGY

Maryland Pesticide Network, a coalition of health, consumer, environmental, labor, and religious organizations in Maryland concerned about the impact of pesticides on public health and the environment, was instrumental in the passage of the landmark IPM-in-Schools law. MPN received funding to conduct a two-year survey to assess implementation of the law. These surveys were developed with input from state and national experts as well as input from the Maryland Board of Education and the Maryland Department of Agriculture.

Six surveys were distributed over a two year period, including a 2003 round of surveys for parents/guardians, teachers and school IPM managers regarding indoor pesticide use to assess implementation in the 2001-2002 school year, and a 2004 round of surveys for parents/guardians, teachers, and school IPM managers dealing with outdoor pesticide use on school grounds to assess implementation in the 2002-2003 school year. The surveys requested information about the school’s IPM program and pest control actions taken during the year, as well as how staff, students and parents/guardians were educated about the IPM program and notification processes in the schools. They inquired about which pesticide alternatives were being used to decrease reliance on pesticides, and how much schools had reduced pesticide use in the years since the IPM-in-Schools law went into

effect. MPN received survey responses from every school district in the state. Over 230 surveys were collected and analyzed to determine the level of compliance with the IPM-in-Schools law in Maryland public schools and to create this report.

All uncited factual information herein comes from the results of the MPN surveys from 2003 and 2004.

SURVEY RESULTS

Because MPN received survey responses from every school district in the state, this report is reflective of how the IPM-in-Schools law was implemented during the 2001-2002 and 2002-2003 school years. A total of 80% of school district managers responded to the 2002 survey and 50% of school district managers responded to the 2003 survey. Parent and teacher survey responses included districts for which responses were not obtained from the districts’ pest control managers. While all districts were represented in the survey responses, due to a modest

response rate from parent and employee representatives in the schools and gaps in survey responses, the numbers collected from the surveys do not represent a complete picture of the implementation of the IPM-in-Schools law in Maryland public schools. However, the numbers do serve to effectively point to trends, successes, and failures in IPM-in-Schools law compliance.



Pesticide-in-schools Improvements: At least 1,310 parents/guardians have registered for special notification from the schools that responded. Eight schools claimed to have decreased their pesticide use since implementation of the law. The level of pesticide use in these schools fell anywhere from 1% to 90% by district. Pesticides were not a part of the school year plan in 17% of responding schools, and 31% of the schools reported that they did not apply any pesticides during the school year. These successes indicate that some schools are following the law and consequently reducing and even eliminating pesticide use.

Pesticide Use in Schools: A total of 69% of schools from the districts that responded to the survey used pesticides as part of their plan for the year. The survey indicates that 8% of responding schools used pesticides as a first response during the school year. Also, 11% of schools used pesticides as an emergency response, although some of the emergencies cited were problems like termites and cockroaches that do not constitute a “sudden need to mitigate or eliminate a pest which threatens the health or safety of a student or staff member,” as required by the IPM-in-Schools law.

Laxity in the Schools: The results of the survey indicate that the incongruities between the guidelines and the law, and the resulting confusion, appears to have contributed to laxity in Maryland public schools’ implementation of the law. Many schools are not following through with notification requirements and are continuing to use pesticides as a first response.

Lack of Education about IPM Implementation and Pesticide Use: The survey indicates that many parents/guardians and school staff in the state are not aware of the IPM-in-Schools law. The survey results indicate that many elementary school parents/guardians and employees do not know that the law mandates that they receive both beginning of the school year notification about pesticides that may be used, and notification before actual pesticide applications and following emergency applications. Results also indicate that parents/guardians and employees in the middle and high schools are mostly unaware of how to register for pesticide notification. Beginning of the year notification is generally included in calendars where they are not easily seen or other beginning of the year packages where they are easily overlooked because of the amount of material disseminated. Parents/guardians and employees also are not always provided with mandatory information in notices about the potential adverse health effects of the pesticides used.

PTA Presidents and Teacher Representatives

Comments: Many teachers and parents responding to the survey returned comments showing a lack of information and understanding about IPM implementation. One teacher wrote in response to a question about how employees are informed about emergency pesticide applications, “We don’t usually have a clue.” Another state educator wrote, “I have no knowledge about the use of pesticides in or around the

school. No one on my faculty/staff (administrators-custodian) seems to have any knowledge. It was suggested to me that you contact the County Board of Education.” One PTA President pointed out that her lack of knowledge was a strong indication that no parents in the school knew about the IPM program. This parent wrote that, “I had to interview the principal to obtain most of this information; as I did not know much about the pesticide notification program (and if I don’t know, no one else would either).”

Parents and teachers responding to the survey complained that they had to contact the school principal or administrator to obtain the information for the survey because they had never heard of the school IPM program and pesticide notification program, and that many schools simply stated that no IPM program was necessary, as “no pesticides are applied at our school.” Schools cannot assume that because they do not use pesticides that they do not have to implement IPM programs. In fact, in order to prevent the need for pesticides, an IPM program is necessary. The IPM-in-Schools law requires an IPM plan regardless of actual pesticide use, and notification of parents/guardians and teachers of the school’s IPM plan as well as notification prior to pesticide applications and after pesticides are used on an emergency basis. Although decreased pesticide use is commendable, it does not release schools from the obligation of implementing IPM and providing parents/guardians and employees information regarding the IPM program and notification.

There were also reported notification requirement omissions at many of the schools surveyed. One parent wrote, “I do not remember seeing any notification of pest control procedures, chemicals, or any device use—never saw signs posted—even when I worked at [the] school. I know this should be done.” Another parent said that notification was difficult to find: “Beginning of the year notification was on a school calendar, which parents rarely read (I had to look twice to find it—it’s in the section titled ‘environmental concerns.’).” Some parents reported that they had never been notified about anything relating to pesticide use. Another complaint was, “The newsletter went home in English only to a student population which is 50% Hispanic. The parents had no chance to understand or reply in Spanish.” This language barrier prevented proper notice from occurring.

Parents and teachers also discussed problems with registration processes for parents/guardians and employees who requested it. The state IPM law requires registration for notification procedures in middle and high schools, but many schools failed to provide a method of registry. Some middle and high schools reported that because they have chosen to go beyond the law and notify all parents whenever pesticides are applied, there is no need for special registration processes for parents/guardians and teachers. Parents in some districts complained that even when they tried to register for notification, they never received notice of pesticide applications. Parents wrote, “I don’t remember reading about the registration, called the school and

they weren't sure if it was in the flyer," and "I called the county and asked to be put on the list for notification. I was told to send an e-mail [to the IPM implementation contact], but did not receive notices after that." One school said that parents "don't register" and that instead, "we do post ups." Putting up signs for pesticide applications (other than for bait stations) instead of sending home written notice violates the IPM-in-Schools law's notification requirements.

A final set of complaints dealt with the lack of cooperation in schools. A parent in one district wrote, "[My county's] schools STILL do what they want WHEN they want." Another school, when asked about its pesticide use since the IPM law went into effect, simply ignored the question, writing, "First experience, new to program," despite the fact that the law mandated implementation in 1999 and 2000, respectively. Many of the school district pest control managers said they relied on the Department of Agriculture manuals and their guidance to implement the

law. The school districts that rely on these manuals are conforming to guidelines that are not fully in compliance with state law, and do not meet the regulatory requirements for IPM-in-Schools implementation. One school employee warned the Maryland Pesticide Network that, "I work for [the county] public schools....[a county] report regarding [pesticide use in schools] is both misleading and incorrect. Herbicides applied five times in two years? More like 100 times in two years. Either someone lied to you all or your information is faulty at best. Costs [of the school's pest control program] have risen considerably, numbers of [pesticide] applications have risen as well."

One school district has not reduced the number of schools that use pesticides. One school said that people were reluctant to curb pesticide use. They wrote that, "most staff members only want a quick fix and that means using a pesticide immediately" and that "school personnel want to have pests 'sprayed' or killed immediately."

SCHOOLS IN COMPLIANCE WITH IPM

Anne Arundel County School District: Anne Arundel County School District was awarded an IPM STAR certificate from the IPM Institute of North America in recognition of its comprehensive school pest management program. AACPS is the fourth school system in the country to achieve this recognition. The STAR certification program is operated with funding from the U.S. EPA's Pesticide Environmental Stewardship. Notification for indoor pesticide use included telephone calls to parents at Brock Bridge Elementary School before pesticides were applied. Parents in the district said that they received notification in a variety of forms, including notes sent home in backpacks, newsletter notifications, postings, and phone calls. Pesticides were applied outdoors only for bees in elementary schools. The IPM manager wrote, "Anne Arundel County Public Schools is committed to an overall IPM plan for the entire school system. Athletic Grounds only treats pest and weed problems at the High Schools. No field pesticide use is administered at the elementary or middle school level."¹

Anne Arundel also demonstrated that IPM programs can be cost effective, and can save schools money. A pilot Anne Arundel IPM program successfully reduced pest control costs from \$46,000 to \$14,000 in one year, with notification costs at about \$10,000 a year.²

Montgomery County School District: As described in Safer Schools, a national report published in April 2003,³ "Richard Stack, IPM supervisor for Montgomery County schools, coordinates one of the nation's longest running school IPM programs...He believes that pesticides are 99% unnecessary."³ The IPM crew for these schools removes hornet nests manually, catches rodents in traps instead of relying on pesticides, and uses vacuum cleaners to eliminate small insect pests. School building and cafeteria staff receive annual training regarding the IPM-in-Schools program, and each school is monitored at least twice monthly for pest issues and IPM compliance, a process involving intensive inspection of food service areas, trash rooms, loading docks, and interviews with building services managers. The Montgomery schools program has succeeded largely because of preventive measures taken by the schools, including sanitation, heat treatment, sand blasting, biological management, and pest exclusion. The schools have altered storage practices, storage shelving designs, and food inspection practices in order to prevent pests on school grounds and in school buildings.

Harford County School District: Although there was pesticide use in this school district, Gene Rossmark, the systems mechanic for Harford County schools, uses a wide variety of information including conferences, Pest Management Magazine, and access to consultants and

1. See http://www.ipminstitute.org/IPM_Star/ipmstar_profiles_aa_md.htm for more information about Anne Arundel Schools successful IPM program.

2. This cost-saving pilot program has been cited in numerous publications, including Pesticides and You (Vol. 22, No.1, 2002 by Beyond Pesticides), according to the STAR website.

3. This information comes from "Safer Schools: Achieving a Healthy Learning Environment," a report by the School Pesticide Reform Coalition and Beyond Pesticides, April 2003.

technical experts to help him implement the district's IPM program. While there were no survey reports of pesticide use indoors, Harford did choose to use chemicals 20 times during the year surveyed, outdoors on grass and shrubs, cracks and drainage, citing student safety concerns as the reason. However, Harford still claims to use

40% less pesticides overall than they did before the IPM law went into effect. The parent/guardian and teacher surveys indicated that there was notice before pesticide applications in the schools, and parents/guardians and employees were notified of outdoor pesticide use through personal contact and written notice.

CONCLUSION AND RECOMMENDATIONS

The survey indicates that non-compliance with the IPM-in-Schools law occurring in many school districts has rendered implementation of the IPM law significantly ineffective in those districts. However some school districts demonstrated successful compliance. These districts serve as a model for others, showing that IPM compliance can be beneficial and cost effective.

The survey also indicates that the dissemination of IPM information in many schools is not adequately informing parents, guardians and employees about the IPM program implemented in their schools, nor adequately providing mandated disclosure regarding the pesticides used in the schools.

Maryland's lawmakers promulgated IPM-in-Schools law to protect some of our most vulnerable populations – children, pregnant mothers and school employees. Children and developing fetuses are most vulnerable to immune, respiratory, neurological, and endocrine system damages as a result of pesticide exposure. The protection created by the state will never occur unless schools implement the law to safeguard their buildings and grounds from unnecessary pesticide use. By failing to implement IPM systems in their schools, certain Maryland public schools districts are failing to protect the health of their students and school employees and are violating the law. The state's IPM-in-Schools law should be enforced so that being out of compliance results in real consequences. The state and its schools are required to work to protect students and school employees in Maryland from unnecessary exposure to toxic pesticides that can cause acute and long term damaging health effects.



Educating Parents, Staff, and Administration: The surveys clearly indicated that, contrary to the law, many of the parents, staff, and administration in Maryland public schools have not been adequately informed and educated about the IPM-in-Schools law and their requirements. Many parents had no information about pesticide use or registry for notification in their schools, and many of the teachers did not know that the IPM requirements existed. Parents and teachers must be informed about the IPM-in-Schools law and its components for the law to be effective.

Making IPM Implementation a Priority in Maryland Public Schools: To protect students from unnecessary exposures to toxic pesticides, as was the intent of the state's lawmakers in passing the IPM-in-Schools law, Maryland's Department of Agriculture and Maryland public schools must make IPM implementation as defined in the IPM-in-Schools law, a priority. Survey results indicate that, currently, many school districts in the state are violating the law by failing to correctly follow through with IPM as defined in the law, resulting in continued over-use of pesticides in schools and on school grounds and a lack of notification to parents/guardians, students and school employees. The Anne Arundel district has proven that IPM implementation can be cost effective without disrupting school activities and functioning. If Maryland public schools looked to school systems like Anne Arundel as a model of successful IPM implementation, and made the same strides in their pest control programs, Maryland could serve as a model for the rest of the country, as it did in its passage of the groundbreaking IPM-in-Schools law.



Proper Notification for Parents/Guardians, Students and Staff: A major problem blocking implementation of the law in Maryland is lack of pesticide application notification for parents/guardians and employees. Although most school district IPM managers claimed that they sent out notices, many middle and high school parents and teachers knew nothing about registration, or said that registration was difficult or nonexistent. Additionally, many parents did not receive notification at the beginning of the year and did not get notification before emergency or non-emergency pesticide applications. Overall, Maryland public schools

are not doing an adequate job setting up notification and registration programs for pesticide use information as required by law. In order to be in compliance with state law, schools must make their notification more visible in beginning of the year materials, diligently send out notification prior to pesticide application, and make parents and employees in middle and high schools more aware of their rights to register to be notified. These steps will create an easy and uniform system for disseminating pesticide information to parents/guardians students and staff in compliance with state regulations.

APPENDIX A



National PTA®

National Parents and Teachers Association
The Use of Pesticides In Schools and Child Care Centers
(Adopted by the 1992 Board of Directors)

Americans use hundreds of millions of pounds of pesticides, herbicides (plant killers), and fungicides each year, for non-agricultural purposes, including in and around schools and child care centers. Pesticides are, by nature, poisons, and exposure — even at low levels — may cause adverse health effects. Our nation’s children, because of a variety of age-related factors, are at increased risk of cancer, neuro-behavioral impairment, and other health problems as a result of their exposure to pesticides. The National PTA is particularly concerned about the use of pesticides in and around schools and child care centers because children are there for much of their young lives.

The National PTA, long an advocate for a healthy environment, supports efforts:

- ▶ at the federal, state, and local levels, to eliminate the environmental health hazards caused by pesticide use in and around schools and child care centers. These efforts will result in cost-savings when use of chemicals controls is reduced; decreased health risks; and safer school and child care center environments.
- ▶ to encourage the integrated pest management approach to managing pests and the environment in schools and child care centers. Expansion of integrated pest management policies in schools and child care centers is an excellent long-term solution for control of pests that will significantly lower children’s exposure to harmful chemicals by using the least hazardous mix of pest control strategies.
- ▶ to retain authority for governmental bodies, at the state and local levels, to regulate the use of pesticides in and around school and child care center buildings. This authority is critical to retaining maximum state and local control over an issue so basic to children’s health and well-being.

APPENDIX B: BENEFITS OF INTEGRATED PEST MANAGEMENT

INTEGRATED PEST MANAGEMENT IN AN URBAN COMMUNITY: A SUCCESSFUL PARTNERSHIP FOR PREVENTION.

Environ Health Perspect 111:1649-1653 (2003). [Online 2 July 2003]

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Abstract

Pesticides, applied in large quantities in urban communities to control cockroaches, pose potential threats to health, especially to children, who have proportionately greater exposures and unique, developmentally determined vulnerabilities. Integrated pest management (IPM) relies on nonchemical tools--cleaning of food residues, removal of potential nutrients, and sealing cracks and crevices. Least toxic pesticides are used sparingly. To evaluate IPM's effectiveness, the Mount Sinai Children's Environmental Health and Disease Prevention Research Center, in partnership with two community health centers in East Harlem, New York City (NY, USA), undertook a prospective intervention trial. Families (n = 131) enrolled when mothers came to the centers for prenatal care. Household cockroach infestation was measured by glue traps at baseline and 6 months afterward. The intervention group received individually tailored IPM education, repairs, least-toxic pest control application, and supplies, with biweekly pest monitoring for 2 months and monthly for 4 months. The control group, residing in East Harlem and demographically and socioeconomically similar to the intervention group, received an injury prevention intervention. The proportion of intervention households with cockroaches declined significantly after 6 months (from 80.5 to 39.0%). Control group levels were essentially unchanged (from 78.1 to 81.3%). The cost, including repairs, of individually tailored IPM was equal to or lower than traditional chemically based pest control. These findings demonstrate that individually tailored IPM can be successful and cost-effective in an urban community. Key words: children's environmental health, cockroach, community intervention trial, integrated pest management, pesticides, urban built environment

AACPS ACHIEVES IPM STAR CERTIFICATION

(from AACPS press release, June 14, 2004)

Anne Arundel County Public Schools (AACPS) was awarded the IPM STAR certificate on June 16, 2004 from the Integrated Pest Management (IPM) Institute of North America in recognition of its comprehensive school pest

management program. AACPS is the fourth school system in the country to achieve this recognition.

IPM STAR certification is a rigorous process that includes an on-site inspection by an independent professional trained in IPM. The inspector examines the history of pest problems, the condition of buildings and grounds, as well as any pesticides used in the past three years. Schools must have an IPM policy and plan in place to guide administrators and staff as they respond to pest issues, including preventing and avoiding problems before they occur.

The certification program is operated with funding from the U.S. Environmental Protection Agency's (EPA) Pesticide Environmental Stewardship Program through the National Foundation for IPM Education. The EPA officially recognized the AACPS Division on Operations and Maintenance on June 16, 2004 in Annapolis, MD.

INTEGRATED PEST CONTROL FOR IMMEDIATE RELEASE

Integrated Pest Management More Effective Than Conventional Pest Control, Independent of Sanitation Practices

ATLANTA and BLACKSBURG, Va., July 15, 2004 - A recent study by Atlanta-based pest management company Orkin, Inc. and Virginia Polytechnic Institute and State University (Virginia Tech) found that Integrated Pest Management (IPM) is far more effective in controlling cockroach populations than conventional spray-based methods over a one-year period, regardless of sanitation practices.

IPM is the method by which many highly pest-sensitive environments such as food processors, hospitals, hotels, restaurants and schools prevent pests. It combines multiple pest management practices, starting with non-chemical methods, to bring about pest prevention and suppression in an environmentally sound manner. Unlike prior studies, this study compared IPM and conventional pest control methods without altering sanitation practices in the test site.

Carried out jointly in 2003 and published in the April 2004 issue of the *Journal of Economic Entomology*, the study was conducted at a low-income housing development in Eastern Virginia.

"Any pest expert can tell you that it is difficult to control pests in this type of facility, particularly cockroaches," said Dr. Dini Miller, a professor in the Department of Entomology at Virginia Tech and co-author of the study.

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“We chose this setting because we knew any differences in the effectiveness of the two methods would be obvious within a couple of months.”

The team selected 100 units with the highest cockroach populations. Fifty of these units were treated with conventional pest control methods for one year. The other 50 were treated with IPM-based procedures for the same period. During this time, neither group of residents was asked to alter their sanitation practices in any way.

The conventional units received liquid and dust pesticide treatments applied in the primary rooms of concern. The liquid application was repeated monthly and the dust replaced as needed.

In the IPM units, technicians used vacuums equipped with HEPA filters in areas that obviously harbored cockroaches to remove the insects and the organic debris that served as their food source. The units were then treated using non-volatile, least-toxic methods such as cockroach baits

and insect growth regulators (IGRs). The bait material was placed in areas where roaches populated and the IGRs were applied underneath kitchen cabinets. The technicians replaced the IGRs every three months.

“By the end of the study, the technicians using IPM-based procedures had almost completely eradicated the roach population in their units,” said Frank Meek, technical director for Orkin and co-author of the study. “In fact, by the end of the sixth month, 40 of the 50 units had trap counts so low that they were placed on an every-other-month service frequency.”

As for the conventionally treated units, the number of cockroaches caught in the traps never dropped significantly, despite monthly service. “Our results are proof of IPM's superior effectiveness, even when sanitation practices are variable,” Meek added. “The message is clear to the thousands of businesses that have yet to implement strict IPM principles to prevent pests - the old 'spray and pray' approach is simply outdated.”

ABOUT MARYLAND PESTICIDE NETWORK (MPN)

The Maryland Pesticide Network (MPN) is a grassroots coalition of organizations in Maryland dedicated to protecting health and the environment from the hazards of pesticides and promoting solutions for healthy living. Founded in 1994, MPN's diverse membership includes health care provider, consumer, environmental, parent, labor, agricultural, and religious organizations.

The impact of pesticide use is a complex issue about which we will never have perfect knowledge. Therefore, the coalition's work is based on the precautionary principle, that "When an activity raises threats of harm to human health or their environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."

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