

RED HOOK CENTRAL SCHOOL DISTRICT

POLICY # 8141

Red Hook Central School District

Integrated Pest Management (IPM) Plan

Definition – What is IPM?

IPM is the process for managing, preventing, and suppressing pests with minimal impact on human health, the environment and non-target organism (Thurnau 3). The use of pesticides is considered a last resort and must be the least toxic available.

Required Components of the Plan

The IPM plan must contain the following key component: Pest identification, preventative actions, tolerance threshold levels, monitoring, response actions, public notification, education, and the Pesticide Neighbor Notification Law, and record keeping.

Pest Identification

Pests that may impact the comfort, health, and safety of building occupants include:

- Ants
- Bats
- Rodents
- Carpenter Bees
- Human Lice
- Cockroaches
- Houseflies
- Stinging Pests
- Ticks

In addition, turf grass insects may impede the successful maintenance of the numerous athletic and playfields throughout the district. These pests include:

- White Grubs
- Japanese Beetle
- Masked Chafers
- May/June Beetles
- Black Turf grass Ataenius and Aphodius Grassarius
- Green June Beetle
- Armyworms

- Sod Webworm
- Bluegrass Billbug and Hunting Billbug
- Mole Crickets
- Chinch Bugs

Details regarding the pests previously listed can found in the appendix.

Preventative Actions

The district has already or will perform the following mechanical preventative actions no later than August 30, 2003:

1. All exterior doors will be closed when not in use.
2. Custodial and maintenance staff will install or replace weather stripping on all exterior doors.
3. Caulk and seal openings in walls, cracks and crevices
4. Routinely clean floor drains and grates.
5. Fix dripping faucets.
6. Sweep and/or dust mop floors daily
7. Empty trash baskets daily
8. Vacuum carpeted areas daily using HEPA vacuums
9. Keep Vegetation, shrubs and wood mulch at least one foot from structures.
10. Remove tree stumps and wood debris
11. Install or repair screens on vets floor drains and louvers.

Necessary Operating Changes

1. Food shall be consumed primarily in designated areas
2. Snacks in classrooms shall be of the types that limit the disbursement of crumbs and debris creating a food source for pests.
3. All coffee makers, microwave and toaster ovens, and refrigerators shall be removed from classrooms.
4. All privately owned carpet remnants shall be removed from district activities.
5. Instructional food items shall be limited and stored in tightly sealed containers.
6. Areas around refrigerators, vending machines and microwaves in designated areas shall be kept clean and free of spills.
7. Leftover food items shall be disposed of properly or stored properly
8. Food items shall not be left in lockers or desks.

Action Thresholds

The concept of action thresholds is the understanding that most pests can be tolerated at a low level. While there may be social and cultural reactions to selected pests indicating immediate action, the district has established the following guidelines or Action thresholds when dealing with pests.

Please see the appendix for action thresholds

Monitoring

The district shall regularly inspect areas where pest problems may occur. These areas include, but are not limited to classrooms, offices, faculty rooms, receiving, the boiler room, plenum spaces, and the perimeter of buildings.

During the monitoring program inspectors shall be looking for the pest's point of entry into the building. This practice will assist with the identification of areas that may need to be sealed with foam, mortar or screened.

Response Actions

The district shall practice the use of the least toxic pesticide after all other mechanical, biological, and physical means have been exhausted. Pest specific pesticides will be employed when the pest(s) can pose an imminent threat to human safety such as stinging, and biting insects including venomous spiders, bees, wasps, and hornets

Public Notification, Education, and the Neighbor Notification Law

The school safety committee established under Commissioner's Regulation 155.4(d)(1) "Rescue" will be the group providing input for the coordination and articulation the IPM program. The committee's role will be to inform constituents and encourage faculty and staff members to assist with the removal of food sources for pests by:

- Cleaning up after themselves.
- Limiting the use of food for instruction
- Limiting snacks to non-crumbling type foods that can be easily cleaned up
- Limiting food-based celebrations to designated areas within school buildings.

The district shall be responsible for the notification of parents and guardians as well as staff at the beginning of each school year. Notification, according to Section 409-h of the Education Law shall include;

- A statement that pesticide products may be used periodically throughout the school year
- A statement that schools are required to maintain a list of parents, guardian, and staff who wish to receive 48 hour advance written notice from the school of an actual pesticide application
- The name of the school representative to contact for further information

Notification must occur:

- Three times per year within ten days of the end of the school year, within two school days of the end of winter recess and within two school days of the end of spring recess.

Notification for the period previous shall include:

- The dates and locations of pesticide application
- The products used for each application which required prior notification
- Information on emergency applications
- A reminder that persons may add their names to the 48 hour notification registry (Thurnau 12)

At least 48 hours to an actual application:

- Written notice to all parents' guardians and staff who have registered to receive advanced notice.
- The specific date and location of the upcoming pesticide application
- The pesticide product name and EPA product registration number
- The name of the school representative to contact for further information (Thurnau 11)

Posting

The district will post the appropriate notification that a pesticide application is in process. This notice will be strategically located to inform visitors to school buildings.

Exempt Items

The following applications are not subject to prior notification.

- A school remains unoccupied for a continuous 72 hours following and application
- Anti-microbial products
- Nonvolatile rodenticide baits in tamper resistant bait stations in area inaccessible to children
- Nonvolatile insecticide baits in tamper resistant baits stations in areas inaccessible to children
- Silica gels and other nonvolatile ready-to-use pastes, foams or gels in areas inaccessible to children
- Boric acid and disodium octaborate tetrahydrate
- The application of EPA designated biopesticides
- The application of EPA exempt material
- The use of aerosol products of 18oz or less to protect persons from imminent threat from stinging and biting insects including bees, wasps, spiders, and hornets.

Works Cited

New York State. State Education Department. School Integrated Pest Management and Neighbor Notification. Albany: Facilities Planning 2001.

State of Maryland. Maryland Department of Agriculture. Action Thresholds in School IPM Programs. Baltimore: State of Maryland 2000.

Action Thresholds for Red Hook Schools

Pest	Classrooms/ Public Area	Maintenance Area	Infirmary	Kitchen	Grounds
Ants, Common house	5/room	5/100ft in two successive periods	1/room	3/room	2 mounds/ yards
Ants, Carpenter	3/room	3/room	1/room	2/room	1 nest within 25ft
Bees, honey	1/room	3/room	1/room	1/room	If children threatened
Bees, bumble	1/room	3/room	1/room	1/room	In children threatened
Bees, carpenter	1/room	3/room	1/room	1/room	If children threatened; 1 carpenter bee/5 linear feet
Cockroaches	2/room	5/room	1/room	1/room	If noticeable or invading
Crickets	3/room	10/room	1/room	2/room	If nuisance
House Flies	3/room	5/room	1/room	1/room	5/trash can; 10/dumpster
Lice (head or body)	Take no action Refer to nurse				
Mice	1/room	1/room	1/room	1/room	Burrows or activity in any student area
Rats	1/room	1/room	1/room	1/room	Any burrows/activity
Silverfish	1/room	2/room	1/room	2/room	N/A
Spiders, poisonous	1/room	1/room	1/room	1/room	1/activity area
Spiders, other	1/room	3/room	1/room	1/room	Only if nuisance
Yellow jackets, hornets	1/room	1/room	1/room	1/room	10/10 minutes at trash; 1 if threatening children

Source: State of Maryland

Action Thresholds for Red Hook Schools

Landscape or Ground Pests	
Bagworms	Control on conifers whenever two or more large bags/tree or bush
Landscape Plants	When pest damage reaches 10 percent/plant
Lawn Pests	When pest damage reaches 10 percent/100ft
Pigeons	10/building in 3 successive inspections; droppings 1-inch deep; nests obstructing gutters or equipment
Poison Ivy	1 plant in any student area; no action in woods unless near path or student area
Tent Caterpillars	1 tent or egg mass/desirable tree; other trees in aesthetically unacceptable; 2 public complaints within 2 weeks
Ticks	3 of any species in student activity areas; in woods, action if moderate to heavy infestations; treat wood edges if evidence of blacklegged ticks
Weeds	15 percent in 100ft

Source: State of Maryland

**New York
State Education
Department
School Integrated Pest
Management &
Neighbor Notification**



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Room 1060 Education Building Annex
Albany, New York 12234
518-474-3906
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Introduction

There exists a need for a significant reduction in pesticide use in schools. Pesticide applications always have the potential to contaminate the school or work environment and expose staff and students to pesticide residues. The development and implementation of an integrated pest management (IPM) program is the key in achieving pesticide use reduction, while providing effective and economical pest control. The Board of Regents amended Part 155 of the Regulations of the Commissioner of Education and now requires the establishment of a least-toxic approach to IPM (§155.4(d)(2)).

IPM is a common sense and economical process that consists of seven basic elements:

- **Pest Identification**- the current and/or potential presence of specific pests needs to be determined.
- **Preventative Actions** – structural repairs and maintenance, such as the installation or patching of screens and simple tasks, properly disposing of one's own trash, and removing food items from desks and lockers.
- **Establish Tolerance and Action Threshold** – a determination that prescribes pest-specific tolerance levels in specific locations throughout the facility above which responsive actions will be taken.
- **Monitoring** – sticky traps and visual monitoring provide vital information regarding the presence of any pests.
- **Response Actions** – this includes the use of mechanical, biological, and physical treatments and, as a last resort, least toxic pest specific pesticides.
- **Public Notification and Education** – a written notification to all parents, guardians, and staff explaining the program and offering them the opportunity to receive detailed information on the IPM program. This includes 48-hour advance notification of any pending pesticide applications required by the Neighbor Notification Law. The entire school community must understand what IPM is, its goals, and why everyone has a role to play in the IPM's effectiveness.
- **Record Keeping** – detailed records documenting all aspects of the IPM program must be maintained.

Pesticides should only be considered as a last resort when other methods have proven unsuccessful. Even then, only least toxic and pest-specific pesticides should be used. Any public or nonpublic elementary or secondary school that decides to use a pesticide product as a last resort in addressing a pest problem, must comply with the Neighbor Notification Law (section 409-h of the Education Law) see page 10 of this guide.

This guideline will provide information and guidance regarding the implementation of a school IPM program, as well as the elementary and secondary school requirements of the Neighbor Notification Law.

What is IPM?

IPM is a process for managing, preventing, and suppressing pests with minimal impact on human health, the environment, and non-target organisms. IPM incorporates all reasonable measures by properly identifying, monitoring, and controlling pests through the use of cultural, physical, biological, and chemical control methods to reduce pests to acceptable levels. Pesticides must only be used as a last resort, and if pesticides are needed, the least toxic pest specific alternative must always be selected. ¹

IPM is cost-effective and economical. The money that may have previously been designated for employing chemical control methods may now be redirected to other school activities. Public confidence and trust is still another added benefit to an IPM program.

Preventing a pest problem begins with the identification of the pest, determining its source and origin, monitoring its presence, and assessing the risk posed by its presence. Pests include bees, wasps, beetles, ants, flies, as well as rats, mice, or birds. Pests also include weeds, fungus, and microorganisms. All pest populations depend on a suitable habitat, including moisture, food, and shelter. Therefore, IPM's goal is to create an inhospitable and an unfavorable environment for pests by removing their food and shelter, and by restricting their access into building structures. Good housekeeping is the cornerstone for this process. Additional steps include, but are not limited to, promptly removing trash, trimming weeds and grass near structure, sealing and caulking cracks, repairing leaks.

¹The Board of Regents in September 1996 adopted the policy that schools shall adopt and publicize IPM policies and practices to prevent, reduce, or eliminate the use of pesticides. Installing and/or repairing screens and regularly vacuuming the facility using a HEPA (high efficiency particulate air) filter system.

A pesticide is a poison specifically created to kill a living organism. Consequently, as previously stated, pesticide products should only be used as a last resort in addressing a pest problem. If a pesticide product is going to be used to control a specific pest problem, the cautious and conservative use of a least toxic and pest specific pesticide may be employed. IPM must not include any automatic or regularly scheduled pesticide applications. According to the New York State Department of Environmental Conservation/Cornell University IPM Workbook for New York State Schools "pesticides are designed specifically to interfere with life processes; this fact alone is good reason

to treat them with respect, and to minimize their use.” Since pesticides are designed to poison and kill living organisms, there always exists a possibility that pesticides may affect building occupants.

Pesticide applications may only be performed by individuals currently certified by the DEC as pesticide applicators or by a certified pesticide technician or an apprentice working under the direct on-site supervision of a certified applicator pursuant to DEC Regulation Part 325.7. It is illegal for individuals other than those noted above to apply any pesticide products in a school building or on school grounds. If a school determines that pesticides should be applied, the State Education Department strongly recommends that schools only employ mature individuals who are at least twenty-one and are certified by the DEC as a pesticide applicator to apply pesticide products in school and on school grounds. In addition, the 48-hour advance notification requirements of the Pesticide Neighbor Notification Law must be followed – see page 10 of this guide.

The following key components of an IPM program will be described in this guidance document:

- pest identification
- preventative actions
- establishment of tolerance threshold levels
- monitoring
- response actions
- public notification, education, and the Pesticide Neighbor Notification Law
- record keeping.

Pest Identification

It is important to accurately identify any pests which are present, or which might occur at levels of concern. Knowing what pests might cause problems, will influence the course of the IPM program. Proper identification results from a combination of observation, monitoring, and research. This may include noting specific characteristics of rodent droppings; gnaw marks, sightings of pests such as bees or roaches; or the identification of wood or other structural damage.

Pests cannot be properly managed without being familiar with the pest’s life cycle, habitat, and natural enemies. Knowing where specific pests live and what they eat, will be the key to eliminating their habitat. For example, cockroaches need access to water and dark places. Equipped with this knowledge, a school may choose to repair water leaks, caulk cracks and crevices, and eliminate clutter to prevent cockroaches from becoming a problem. Flies are attracted to odors. Therefore, by controlling wastes and

odors, flies may also be controlled. Simple acts such as frequent garbage disposal and ensuring that refuse cans and dumpsters are securely sealed may significantly reduce the presence of flies and other pests.

Preventative Actions

Structural repairs and maintenance are key preventative actions or cultural controls in IPM. These simple, inexpensive, and often common sense steps will service as the backbone to the IPM program. According to the Environmental Protection Agency's (EPA) Pest Control in the School Environment: Adopting Integrated Pest Management, the following are examples of these activities:

- Keep doors shut properly when not in use.
- Place weather stripping on doors.
- Caulk and seal openings in walls, cracks and crevices.
- Install or repair screens on windows, vents, floor drains, and louvers.
- Routinely clean floor drains and grates.
- Fix dripping faucets.
- Sweep and mop floors daily.
- Empty trash baskets daily.
- Vacuum carpeted areas daily using a high efficiency particulate air (HEPA) vacuum system.
- Keep vegetation, shrubs, and wood mulch at least one foot from structures.
- Remove tree stumps and wood debris.

Additional housekeeping and sanitation IPM techniques include:

- Power-wash areas with accumulated debris, such as floor drains, loading docks, dumpsters, and food carts.
- Regularly clean grease from ovens, exhaust vents, and grease traps.
- Ensure that dumpster, recycling, and trash compactor bins close securely.
- Repair cracks and leaks in damaged floors, walls, and roofs
- Replace moldy ceiling tiles, carpet, and other damaged items
- Caulk and seal pavement cracks
- Repair and/or replace worn and cracked grout.
- Install and/or repair screens and door sweeps.
- Remove clutter and debris
- Locate dumpster and bins away from buildings so that vermin that might be attracted to them are not encouraged to enter building.

Sanitation and personal responsibility for cleaning up after oneself are other notable areas to target in launching an IPM effort. Since pests need adequate food, water, and shelter in order to survive, it is reasonable to launch the IPM effort by working to remove these items. The removal of adequate sustenance from the reach of pests may significantly, quickly, and inexpensively reduce a school's pest problem.

The following are some suggested steps in implementing this program. Students and staff should be educated to do the following in classrooms, faculty rooms, offices, and lockers:

- Consume food only in designated areas
- Clean up and properly dispose of leftover food
- Do not leave food in lockers or desks
- Store food and beverages only in designated areas and in tightly sealed containers.
- Promptly dispose of any trash that contains food.
- Keep instructional food items (items used in home & career class) in tightly sealed containers.
- Keep areas in and near refrigerators, vending machines, and microwaves clean and free of spills.

The suggested steps outlined above are just a sampling of some simple inexpensive steps that may be initiated in an IPM programs. Most of these activities are largely common sense in nature; however, their impact will be significant in managing and limiting the school's pest population.

Establishment of Tolerance and Action Threshold

A tolerance and action threshold defines the point at which specific pests can no longer be tolerated, thus initiating a pest-specific treatment action. Tolerance levels may be based on various circumstances including, health problems and illness caused by pests; pest damage that results in monetary loss; or aesthetic damage to plants. Public health threats should take precedence over the other circumstances and factors. For example, the presence of rodents inside a school building poses a potential health threat that must be addressed.

It is important that tolerance thresholds are pest-specific and are not set too low. One fly in a classroom should elicit a very different response than the sighting of a bee's nest on a playground. However, the only way to effectively manage and recognize potential problems is through a regularly scheduled pest monitoring inspection routine.

Monitoring

While education is the human key to IPM, monitoring is the engineering key to the IPM program. According to the EPA, monitoring is the "regular and on-going inspection of

areas where pest problems do or might occur. Information gathered from these inspections is always written down.” The identification of pests and the location of their habitat and food are essential steps in IPM. Monitoring also provides a window into the world of the pest, the size of their population, their entry route into the building, as well as sanitation or structural problems that may have permitted their entry in the first place. Both visual techniques and monitoring traps may be used in this investigation.

Visual monitoring techniques essentially involve an individual using simple tools such as a flashlight or magnifying glass to physically identify the presence of any pests, pest droppings or pest parts; a plastic bag to collect specimens; and an inexpensive camera to document pest damage and evidence. In lieu of a camera, simple sketches may also be made to further document the situation.

An essential component of an IPM program is the identification of the pest’s point of entry into the building. The location of the pest, its point of entry into the building, and follow up actions should be recorded for future reference and monitoring. A map or diagram clearly indicating the exact effected area may be helpful in future follow up activities. For example, it is noted that ants are helpful in future follow up activities. For example, it is noted that ants are entering the building through a crack in the floor. An IPM technique for addressing this situation would be to thoroughly caulk the crack in order to block the ant’s future entry into the building. This same crack will then be monitored in follow up IPM investigations. Still another example of visual monitoring involves locating animal droppings in and around a garbage dumpster. The dumpster has no lid, smells of spoiled food, and is usually filthy. An IPM technique for handling this situation may be to replace the dumpster with a new unused one with a lid. Another option may be to install a lid on the existing dumpster and thoroughly power-wash the inside and outside of the dumpster. The areas surrounding the dumpster will then be monitored in follow up IPM investigations.

The use of sticky and pheromone traps are another effective method for determining the extent of a potential pest problem. Traps are used to monitor a variety of insects, mites, and rodents. Sticky traps are generally glue covered cardboard surfaces that trap pests. Prior to placing them in strategic locations throughout the building, the traps should be dated and numbered for future reference. The traps may be placed in areas such as under sinks and stoves, in food storage areas, and behind toilets. Additionally, mechanical traps may be used to monitor rodent population. Key information should be compiled based on what is found on the trap, such as the quantity of pests caught, the location of the pests on the trap, and whether adults and or nymphs were captured.

Pheromone treated traps attract specific target insects, such as a wide variety of beetles and moths. Pheromones are the natural physical scents, which insects use to communicate and attract each other. Since insects are often attracted by odors, pheromone treated traps rare an effective method of monitoring specific target pests. Traps should never be placed in areas readily accessible to students where they may be disturbed, moved, or tampered with.

Should pest monitoring and/or traps disclose a pest problem, then a systematic approach to managing the target pest, which focuses on long-term prevention or

suppression with minimal impact on human health, the environment, and non-target organisms, should then be implemented. This approach may utilize cultural, physical, biological, and chemical pest population control methods to reduce target pests to acceptable levels.

Response Actions

IPM response actions include the use of mechanical, biological, and physical treatments and, as a last resort, least toxic pest specific pesticides. The use of vacuums, screens, caulk, and traps are examples of mechanical and physical controls for managing pests such as flies, ants, and termites. For example, a strong vacuum, including a crevice attachment, can suck cockroaches, their droppings, and their eggs from cracks. A tablespoon of cornstarch in the vacuum bag will ensure the pest's death.

Other physical controls may include screening windows, vents, and other openings in combination with weather stripping or silicon or mildew-resistant caulk to insure an even tighter fit. Caulk may also be used around baseboards, wall shelves, cupboards, pipes, sinks, and toilets to control pests such as cockroaches and ants. Additional examples of mechanical and physical controls include physically removing stinging insect nests; controlling flying insects with sticky traps; vacuuming crawling insects; and trapping rodents.

A physical control for weeds may mean pulling the weeds up by hand or controlling them with various heat treatments. Raising mower height also reduces weeds. According to the EPA, "the taller the grass can be kept, and the denser the canopy, the greater the interception of available sunlight. By keeping the soil shaded, weed seeds are less likely to germinate."

Biological Controls, such as pheromone specific traps which attract insects into a sticky trap, and least toxic pesticides may sometimes play a useful role as a last resort in an IPM program. The blanket and automatic application of any pesticide product should never be used as part of IPM. Pest specific least toxic pesticides that concentrate on long-term prevention or suppression with minimal impact on human health may be applied as a last resort in handling a pest problem. EPA designated bio-pesticides, products derived from natural materials such as animals, plants, bacteria, and certain minerals, may be useful tools in these circumstances. Information on these products may be found at www.epa.gov/pesticides/biopesticides/. Unfortunately, bio-pesticides are not yet available for all pests. In the absence of such products, it is important that schools are very careful not to use any products, which are known, probable, or possible carcinogens, neuro-toxic organophosphates, or pesticides classified by the EPA as having high acute toxicity.

DEC regulates the registration, distribution, sale, commercial use, purchase, and application of pesticides throughout New York State. Article 33 of the State Environmental Conservation Law and Part 325 of DEC regulations dictate the rules relating to the application of pesticides. Pesticide applications may only be performed by individuals currently certified by the DEC as a pesticide applicator or by a certified pesticide technician or apprentice working under the direct on-site supervision of a

certified applicator. The State Education Department strongly recommends that schools only employ mature individuals who are at least twenty-one years old to apply pesticide products in schools and on school grounds, who are also certified by the DEC as a pesticide applicator. DEC law requires that the applicator must provide a copy of the pesticide label to the building owner prior to the actual application.

DEC further requires the person applying a pesticide to possess a copy of the label for the product, which is being applied at the time of the application, as well as their current DEC applicator certification card. It is illegal for any individual other than those noted above to apply any pesticide products in a school building or on school grounds. Specific questions relating to the DEC pesticide regulation may be directed to DEC regional offices throughout the state.

The State Office of General Services has issued a state contract for “Pest Control Through Integrated Pest Management” for IPM vendors and contractors. Question on the state contract may be directed to the State Office of General Services; Services and Technology Group; Contract Administration; Corning Tower; Empire State Plaza; Albany, New York 12242.

<http://www.ogs.state.ny.us/purchase/snt/awardnotes/71010s940019spec.htm>

Public Notification, Education, & the Neighbor Notification Law

Education is essential to an effective IPM program. IPM will only succeed if the entire school community understands, supports, and consciously works to make the program a success. The EPA recommends that a “school IPM program should include a commitment to the education of students, staff, and parents. This education should include not only the teachers, but also school nurses, cafeteria employees, and housekeeping and administrative personnel as well.” The school health and safety committee, required by Commissioner’s Regulation §155.4(d)(1), is an excellent starting point for this process. The committee’s district officials, staff, bargaining unit and parent representatives should be enlisted to promote and advocate for IPM’s successful implementation throughout the school community. Everyone should have a clear understanding of his or her role in the IPM program. Whether their individual role simply entails cleaning up after themselves, caulking cracks, or removing food from their lockers and desks, it takes the entire school community to effectively implement and maintain an IPM program. Informational brochures, public presentation and assemblies, and notices to parents, students, teachers, and staff are all techniques to communicate IPM awareness news to the school community.

Notification to the school community of potential pesticide applications is an additional component of IPM education. The **Pesticide Neighbor Notification Law**, Section 409-h of the Education Law, has formalized the notification process and provides specific direction on when and how the notification must take place. The Neighbor Notification Law, effective July 1, 2001, applies to all public and nonpublic elementary and secondary schools and details specific parties who must be notified, as well as the times and circumstances related to such notification.

This requirement states that schools provide a written notice to all parents, guardians, and staff at the beginning of each school year that includes the following points:

- a statement that pesticide products may be used periodically throughout the school year.
- A statement that schools are required to maintain a list of parents, guardians, and staff who wish to receive 48 hour written notice from the school of an actual pesticide application.
- The name of the school representative to contact for further information.

At least 48 hours prior to an actual application, an additional written notice must be disseminated to all parents, guardians, and staff that have registered to receive the advanced application notification. This notification must explain the following:

- the specific date and location of the upcoming pesticide application;
- the pesticide product name and EPA product registration number;
- the name of the school representative to contact for further information.

The 48-hour notice must also include the following statements:

This notice is to inform you of a pending pesticide application to a school facility. You may wish to discuss with the designated school representative what precautions are being taken to protect your child from exposure to these pesticides. Further information about the product(s) being applied, including any warning that appear on the label of the pesticide(s) that are pertinent to the protection of humans, animals, or the environment, can be obtained by calling the National Pesticide Telecommunications Network Information phone number 1-800-858-7378 or the New York State Department of Health Center for Environmental Health info line at 1-800-458-1158.

If a public health emergency exists which does not allow for the full 48 hour prior notification, the school must still make a good faith effort to notify those on the 48 hour list prior to the application.

The 48-hour notification registry and written notification provides parents and staff an opportunity to receive an accurate and timely accounting of what pesticide products have been and will be used in school buildings and on school grounds.

The following applications are not subject to prior notification requirements:

- a school remains unoccupied for a continuous 72 hours following as application;
- anti-microbial products;
- nonvolatile rodenticides in tamper resistant bait stations in areas inaccessible to children;
- silica gels and other nonvolatile ready-to-use pastes, foams, or gels in areas inaccessible to children;
- boric and disodium octaborate tetrahydrate;

- the application of EPA designated biopesticides;
- the application of EPA designated exempt materials under 40CFR152.25;
- the use of aerosol products with a directed spray in containers of 18 fluid ounces or less when used to protect individuals from an imminent threat from stinging and biting insects including venomous spiders, bees, wasps, and hornets;

In general, a school district can avoid the 48-hour notification process by designing an IPM program that is restricted to the above noted items.

Finally, all schools must also provide additional written notification to all parents, guardians, and staff three times each year to inform them of any pesticide applications that have occurred. Notification must occur at the following intervals:

- within ten days of the end of the school year
- within two school days of the end of winter recess;
- within two school days of the end of spring recess;

Notifications must include the following information for the period since the previous notice:

- the dates and locations of pesticide applications;
- the products used for each application which required prior notification;
- information on emergency applications;
- a reminder that persons may add their names to the 48-hour notification registry.

In addition to the requirements specified in the Pesticide Neighbor Notification Law, it also recommended that schools post a notice concerning any actual pesticide application at the entrance of the building. A posted notice will serve to inform individuals not on the 48-hour registry and visitors to the building of the application.

Record-keeping

Education, people, cleanliness, and pest monitoring are key elements of IPM. However, accurate and detailed record keeping is what ties the entire program together. Careful IPM record keeping leads to better-educated and informed decision making in managing school pest problems. According to the EPA, “accurate records of inspecting, identifying, and monitoring activities show changes in the site environment (reduced availability of food, water, or shelter), physical changes (exclusion and repairs), pest population changes (increased or reduced numbers, older or younger pests), or changes in the amount of damage or loss.”

The types of pests, their physical location in the building or on school grounds, the quantity found, the season, the time of day, as well as exact circumstances surrounding their presence are all critical to IPM record keeping. A building specific logbook, including a floor plan indicating the locations of pests, traps, and monitoring devices, should be carefully maintained. Follow up actions and activities must also be carefully maintained. Copies of pesticide labels, MSDS, as well as the date, time, and pest-

specific pesticide application locations must also be recorded. Finally, the name of the applicator and a photocopy of their DEC certification should also be retained. Information on pesticide products must also be recorded pursuant to Occupational Safety and Health Act (OSHA) regulations. All IPM and pesticide application records should be made available for inspection to anyone who wants to review such materials.

The State Pesticide Reporting Law (PRL) (Chapter 279 of the Laws of 1996) mandates pesticide applicators and technicians, including school districts that employ certified applicators, to record and report, at least annually, all pesticide applications to DEC. This reporting requirement includes pesticide applications that have been performed by DEC certified school personnel. The annual report must be sent to DEC certified school personnel. The annual report must be sent to DEC no later than February 1 of the year following the calendar year for which the report is submitted. The information and records maintained for each pesticide application must be retained for at least three years. The information, which must be maintained, includes: the EPA registration number of the pesticide, which was applied; the product name; the quantity of each pesticide application by address (including the five digit zip code). The pesticide dosage rate, the method of application, the target organism, as well as the place of application must also be recorded. Questions pertaining to this law should be directed to the DEC Bureau of Pesticides Management, Pesticides Reporting Section at 1-888-457-0110 (toll free from within New York State).

Conclusion

Thank you for working to make New York State's schools healthful and safe through the implementation of effective IPM programs. Through the diligence and commitment of all members of the school community, parents, staff, and students, IPM will result in healthy learning environments.

RESOURCES

CONTACT	PHONE	WEB SITE
American Lung Association	212-315-8700	www.lungusa.org/
BOCES Health and Safety Offices	Contact the State Education Department for the local BOCES Health and Safety Office in your area.	
Cornell Cooperative Extension	800-635-8356	www.nysaes.cornell.edu/ipmnet/ny/urban/
Healthy Schools Network	518-462-0632	www.healthyschools.org
IPM Institute of North America	608-232-1528	http://www.ipminstitute.org/school.htm
National IPM Network		http://www.reeudsa.gov/nipmn/
NY Coalition for Alternative to Pesticides (NYCAP)	518-426-8246	http://www.crisny.org/not-for-profit/nycap/nycap.htm
State Department of Health (DOH)	800-458-1158	http://www.health.state.ny.us/
State Department of Environmental Conservation (DEC)	518-457-0300	http://www.dec.state.ny.us/website/dshm.pticid.pesticid.htm
State Education Department (SED)	518-474-3906	www.emsc.nyse.gov/facplan/
State Office of General Services (OGS)	518-486-7323	www.ogs.state.ny.us/purchase/snt/swardnots/71010s940019spec.htm
U.S. Environmental Protection Agency (EPA)	703-305-7090	http://www.epa.gov/pesticide/ipm/
University of Florida IPM Program		http://www.ifas.ufl.edu/~schoolipm/

“Action Thresholds in School IPM Programs”

Supplemental Materials
For
Integrated pest Management – IPM Training
Manual



Maryland
Department of Agriculture

Parris N. Glendening
Governor

Kathleen Kennedy Townsend
Lieutenant Governor

Henry A. Virts, D.V.M.
Secretary of Agriculture

Hagner R. Mister
Deputy Secretary

“ Action Threshold in School IPM Programs”

Supplemental Materials
For
Integrated Pest Management – IPM Training Manual

Maryland Department of Agriculture
Pesticide Regulation Section
50 Harry S. Truman Parkway
Annapolis, Maryland 21401
Telephone (410) 841-5710 Fax (410) 841-2765
Internet: <http://www.mda.state.md.us>

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Action Thresholds in School IPM Programs

Maryland Department of agriculture (MDA) regulations requires a school system to have an approved integrated pest management (IPM) plan. The plan must include standards to determine the severity of pest infestation and the need for corrective action. One way to meet this requirement is through action thresholds. This document was developed to help schools develop their own action thresholds. **The specific action thresholds mentioned in the document are offered as examples only.** They are not required by the regulations. Each school using action thresholds should develop thresholds of their own, suited to specific conditions at the school.

Integrated pest management, or IPM, is a system of controlling pests that does not depend on automatic application of pesticides. A school IPM program consists of a cycle of monitoring, control, and evaluation. Pest levels and other factors are monitored through documented, systematic inspections conducted at regular intervals.



A key difference between IPM and traditional pest control is that IPM often uses “action threshold.” An action threshold is the point at which an IPM technician takes action to reduce a pest’s numbers. Sometimes an action threshold is a number: five yellow jackets at a trash can, 10 percent feeding damage to a plant, three flies in a classroom. Sometimes it is qualitative: light or no infestation versus heavy infestation. Below the threshold level, the IPM technician does not apply pesticides or set traps or take any other direct control action. (Although the technician should continue to monitor and do sanitation inspection, pest-proofing, and take other steps to prevent pest problems.) But if a pest is at or above the action threshold, the technician acts to control the pest.

The idea behind the action threshold is that most pests can be tolerated at some low level. An occasional ground beetle in a school hallway, for example, would bother few people. The costs and risks of taking action because of that one beetle, replacing door sweeps, caulking cracks in walls, or applying pesticide, would far outweigh any benefits. Besides, a lone beetle is likely a temporary quest rather than a serious pest. But thirty ground beetles in a hallway would be a different story, and an IPM technician would need to take some kind of pest management action.

Action thresholds are easy to understand. Establishing them is more difficult. Action thresholds vary by pest (hornet, versus ant), by site (storage room versus infirmary), and sometimes by geographic location (western Maryland versus southern Maryland), or by

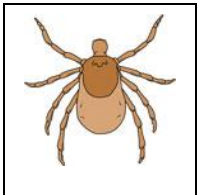
season (four-lined plant bugs stop feeding in June, so the action threshold might be much higher in July than May). For some landscape pests, action thresholds will also vary depending on whether natural enemies are present.

Establishing Thresholds

Five factors should be considered in setting action thresholds: economics, health and safety concerns, aesthetic concerns, public opinion, and legal concerns.

Economics

In high numbers, carpenter bees can seriously damage naturally aged, unfinished wood decking and trim. It can be expensive to protect this wood from carpenter bee attack by treating and sealing it. But it can be far more expensive to have to replace that wood after carpenter bees have damaged it. At some level of carpenter bee activity, the risk of damage justifies action. The action threshold might, for example, be set at an average of one carpenter bee per five linear feet. Then, if eight or more carpenter bees were seen along a forty-foot stretch of building (which equals one bee per five linear feet), the IPM technician would schedule the unfinished wood for treatment or sealing.

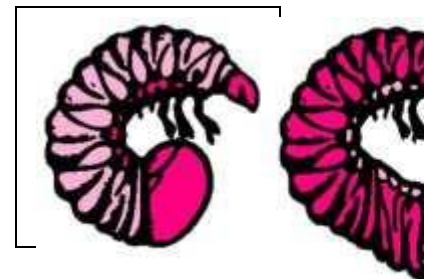


Health and Safety Concerns

Action thresholds are set low when health or safety is at stake. The action threshold for ticks by a school athletic field would be set much lower if Lyme disease was common in the area. (Blacklegged ticks transmit Lyme disease.) Bee or wasp action thresholds indoors might be set as low as one (take action if you see a single bee or wasp), if a school child is known to have a severe allergy to stings. The threshold for poisonous black widow spiders would be much lower than for garden spiders.

Aesthetic Concerns

Aesthetic damage occurs when the appearance of something is degraded. Examples include bird droppings on sidewalks, defoliation or flower damage to landscape plants, and disease spots in lawns. People often disagree over what level of aesthetic damage should trigger action. What is acceptable to one person may not be to another. Aesthetic thresholds are fairly consistent, however, for pests that damage landscape plants. The average person begins to feel that some control action is necessary when a pest has damaged roughly ten percent of the plant.



Public Opinion

Certain pests are seen as more disgusting, scarier, or otherwise worse than other pests. The reasons are complex, based on social, cultural, or psychological factors. Most people are less willing to tolerate a cockroach than a cricket, a tick than a beetle, a mouse than a pigeon. Unfortunately, people often disagree on what level of a particular pest is tolerable. Some people, for example, are frightened of spiders. Seeing a spider is seeing one spider too many.



Others view spiders as beneficial, and are willing to tolerate a few spiders, even in an occupied room. Those who equate pests with social status are often willing to accept any level of any pest. In contrast, cultural factors or fear of pesticides will often force people to tolerate an unusually high level of pests before they feel pest control action is necessary.

A person's tolerance of a particular pest can sometimes be modified by providing information about pests and beneficial organisms, and the risks and benefits of control.

Legal Concerns

Pests in commercial and institutional kitchens are regulated under state and county health codes. There is little tolerance for cockroaches, ants, mice, and other pests anywhere food is stored, prepared, or served, so action thresholds are typically low. Safety and building standards, rather than IPM considerations, may determine when action is necessary to control termites, rats, flies, and other pests in commercial and public areas, including public buildings such as schools. During public health emergencies, government agencies may legally mandate control of certain pests, such as raccoons or skunks during rabies outbreaks, or mosquitoes during encephalitis outbreaks.

Setting Action Thresholds

Schools need to set action thresholds that are suited for their facilities. The specific action thresholds may be developed by a contractor, school pest control staff, consultants, or by committee. Someone may already have developed action thresholds for some of your key pests. The information may be published in research or extension publications. Schools can sometimes obtain action threshold numbers from other schools that have IPM programs already in operation. Such action thresholds can be used as a reasonable starting point, and then modified to suite the conditions at a particular site.

Most action thresholds will be developed from scratch. The school first determines which pests to include and which locations need separate action thresholds. Then the school decides site by site and pest by pest what pest level is tolerable, and sets an action threshold for each pest at each site. For example, the school might decide that field ant colonies outdoors were of little concern, than an occasional ant or two in a basement storage room was tolerable, but that a single ant in the infirmary would require immediate action. On that basis, the school might set the action levels to be 2 colonies of field ants per square yare outdoors, 5 ants per 100 square feet for storage areas, and 1 ant in the infirmary. Different levels of a pest may generate different control actions. If an IPM technician found three cockroaches in a storage room, he or she might simply place a couple of cockroach bait stations. But 30 cockroaches might require that the storeroom be extensively cleaned, treated with additional insecticide, and all cracks and crevices carefully caulked.

An Example of Setting Action Thresholds for Yellow jackets

Count the number of yellow jackets foraging at a trashcan in a given ten minute period. If that number averages around five, and you are getting no complaints about yellow jackets, and no one is getting stung, then no action is necessary. That particular level of yellow jacket activity is acceptable. You might, therefore, set the action threshold at ten. Any time you counted ten or more yellow jackets at the trash can in a ten minute period, you would take further action, perhaps increasing trash pickups, power washing trash cans, setting additional yellow jacket traps, or spending an hour or two searching for nests.

--from Yellow jackets and IPM, available from the Maryland Department of Agriculture

Spiders

Take immediate action if a black widow or brown recluse is suspected in any area; other spiders classrooms: 1 spider/room; infirmary; 1 spider/room; kitchen/cafeteria: 1 spider/room; hallways: 2 spiders/hallway; maintenance and unoccupied areas: 3 spiders/room; outdoors: only if in large numbers or causing problems.

Tent caterpillars

Desirable ornamental plants: 1 tent or egg mass/tree; woodland trees, non-ornamental trees: if potentially damaging or aesthetically intolerable, or after two complaints in two weeks (to prevent repeated infestations, remove wild cherry hosts).

Ticks

Outdoor student activity area: 3 tick, any species; outdoor wooded and other areas of low student activity: keep grass and weeds trimmed; if any blacklegged ticks found, treat wood edges; for other species, take action if moderate to heavy populations.

Weeds

Lawns: whenever weeds approach 15 percent in any 100 square foot area; ornamental plantings: whenever competing with ornamental plants or whenever aesthetically displeasing.

Yellow jackets/hornets

Classrooms and other public areas: 1 yellow jacket or hornet; outdoors: action necessary if nests are present in or near student activity area; 10/10 minutes at trash can or dumpster; 1 yellow jacket or hornet anywhere if children are threatened.

For More Information...

BIRC. 1992 IPM Training Manual for Landscape Gardeners. The Bio-Integral Resource Center, Berkeley, CA

Davidson, J.A. and M.J. Raupp. 1997. Landscape IPM: Guidelines for Integrated Management of Insect and Mite Pests on Landscape Trees and Shrubs. Maryland Cooperative Extension Service Bulletin 350.

EPA. 1993 Pest Control in the School Environment: Adopting Integrated Pest Management. U.S. Environmental Protection Agency. EPA 735-F-93-012

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Olkowski W., S. Daar, and H. Olkowski. 1991. Common Sense Pest Control. Chapter 35, Yellowjackets. Taunton Press, Newtown CT