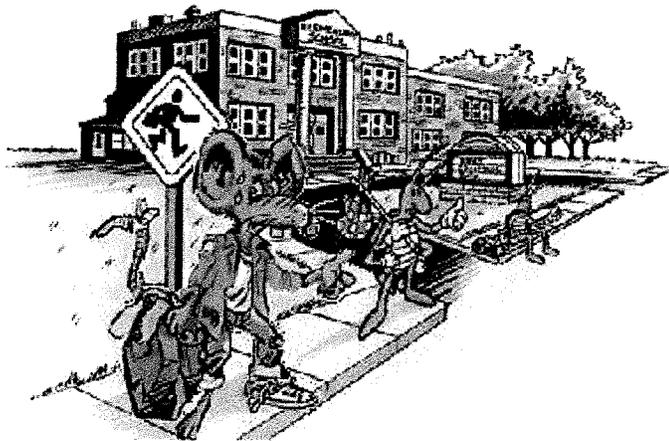


**Integrated Pest  
Management Program  
for  
South Meadows  
Elementary  
335 Pierce St.  
Chelsea MI 48118**



## Table of Contents:

<u>Topic</u>	<u>Page</u>
<b>Introduction</b>	<b>2</b>
<b>Key Terms</b>	<b>3</b>
<b>Administration of the IPM Program</b>	<b>5</b>
• MDARD Regulations	
• IPM Communication	
• Applicator Credentials	
• Pesticide Applications & PPE	
• Pesticide Application Records	
• Pesticide Use In & Around Schools & Day Care Centers	
✓ Annual Parental Notification	
✓ Advance Notice of Pesticide Use	
✓ Restrictions Pertaining to Pesticides at Schools	
• Program Evaluation	
• Posting	
<b>Pest Management Strategy and Pest Biology</b>	<b>10</b>
• Strategy	
• Impact on Human Health & Environment	
• Pest Biology Information	
<b>Examples &amp; Forms</b>	<b>12</b>
• Site Evaluation Example	
• Pest Sighting Form	
• Monitoring Station Form	
• Pesticide Recordkeeping Form	
• Advisory to Parents (Parental Notification) Form	
• Advance Notice of Pesticide Application Form	

## Introduction

Integrated Pest Management (IPM) is a pest management system that utilizes all suitable techniques to prevent pests from reaching unacceptable levels or to reduce an existing population to an acceptable level. An emphasis is placed on manipulation of the pest environment to the point that it will not support a pest population.

Two Michigan Laws, the Natural Resource and Environmental Protection Act, Public Act 451 of 1994, Part 83, Pesticide Control *and* Regulation 637, Pesticide Use require that certain conditions must be met prior to making a pesticide application (other than sanitizers, germicides, disinfectants, or anti-microbial agents) in schools, day care facilities, public buildings or health care facilities. These conditions include:

1. The pesticide applicator must have been trained under an approved IPM program.
2. There must be a verifiable IPM program in place for the building.

**ONLY QUALIFIED INDIVIDUALS MAY APPLY PESTICIDES AT THIS FACILITY.**

**PLEASE READ THIS MANUAL CAREFULLY AND FOLLOW APPROPRIATE PROCEDURES BEFORE MAKING ANY PESTICIDE APPLICATIONS AT THIS FACILITY.**

Be advised that violations of Michigan's pesticide use laws are misdemeanor offenses and are punishable by administrative fines of up to \$1,000 per count, or, upon a conviction in a court of law, may be punishable by fines of up to \$5,000 per count and/or imprisonment. Be advised that the Michigan Department of Agriculture and Rural Development (MDARD) is the enforcing agency for pesticide use requirements and MDARD may conduct routine unannounced inspections to verify compliance with IPM requirements.

This IPM program is intended to help reduce the incidence of pest infestation and to reduce the need for chemical pesticide applications. It is intended to satisfy the regulatory requirement of having an IPM program in place for the building. *Note: in a situation where there are multiple buildings, the program will include a site description and evaluation for EACH building. In accordance with The Natural Resources and Environmental Protection Act, Act 451 of 1994, Part 83, Section 8316(1), a person shall not apply a pesticide in a school or day care center unless the school or day care center has an integrated pest management program in place for the building.* MDARD interprets this to mean that each building must have a verifiable (written) program within the building.

Acronyms used in this program include:

IPM	Integrated Pest Management
EPA	Environmental Protection Agency
MDARD	Michigan Department of Agriculture and Rural Development
PA	Public Act

## Key Terms

### Certified

**Applicator:** A person authorized to use and supervise the use of a restricted use pesticide. You must receive a passing score on one or more certification exams administered by MDARD to become a certified applicator.

### Commercial

**Applicator:** A person who is not a private agricultural applicator (i.e., a farmer, or someone growing a crop for an agricultural purpose) and who meets one of the following conditions:

- a. **who is required to be a registered technician or certified applicator under this part (see note below).**
- b. who uses or supervises the use of restricted use pesticides.
- c. who holds themselves out to the public as being in the business of applying pesticides.

**Note:** PA 451, section 8314 requires a person to be a certified applicator to apply any pesticide (other than a sanitizer, disinfectant, bactericide or general-use ready-to-use product), other than for a private agricultural purpose, in the course of their employment.

### Commercial

**Building** Any portion of a building that is not a private residence where business is located and that is frequented by the public.

### Concentration:

The volume of pesticide formulation and the volume of carrier used to create an end use dilution.

### Day care

**Center:** A facility, other than a private residence, which receives 1 or more preschool or school-age children for care for periods of less than 24 hours a day, at which the parents or guardians are not immediately available to the child, and which is licensed as a child care organization by the Michigan Department of Human Services.

### General Use

**Pesticide:** A pesticide that may be purchased by an individual who is not required to be a certified applicator.

### Health Care

**Facility:** A facility that is not a private home and at which people may stay one or more nights and receive medical care, such as a hospital or nursing home.

Integrated

Pest Mgt.: A pest management approach that uses all suitable techniques in a total management system to prevent pests from reaching unacceptable levels or to reduce existing populations to acceptable levels.

Pest: An insect, rodent, nematode, fungus, weed, or other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism, or any other organism that the director of the MDARD declares to be a pest under PA 451, Part 83, Section 8322, except viruses, fungi, bacteria, nematodes or other microorganisms in or on living animals.

Pesticide: A substance or mixture of substances intended for preventing, destroying, repelling, or mitigating pests or intended for use as a plant regulator, defoliant, or desiccant. Note that products such as Weed-and-Feed, Roundup, or Raid are pesticides.

Public

Building A building that is owned or operated by a federal, state, or local government, including public universities.

Ready-To-Use

Pesticide: A pesticide which is applied directly from its original container consistent with label directions, such as an aerosol insecticide or rodent bait box, which does not require mixing or loading prior to application. Granular weed-and-feed products applied using rotary or drop spreaders are NOT considered to be ready-to-use and for nearly all situations an applicator applying the product as part of their non-agricultural work duties must be certified to use it.

Registered

Applicator: A classification of applicators authorized to apply general use pesticides for a commercial or private purpose as a scheduled and required work assignment.

Threshold

Level The level of pest numbers or pest infestation that can be tolerated.

## Administration

### Regulations

Laws concerning pesticide use in schools, day care centers, public buildings, and medical care facilities can be found in:

- Public Act 451 of 1994, Part 83, Pesticide Control
- Regulation 636, Pesticide Applicators
- Regulation 637, Pesticide Use

These laws can be downloaded from the Michigan Department of Agriculture and Rural Development (MDARD) web site located at [www.michigan.gov/mdard](http://www.michigan.gov/mdard). Type the appropriate Act or Regulation into the search engine and follow the links to get a copy, or you may contact MDARD at 800-292-3939.

### Communication – Sighting Log

Proper implementation of an Integrated Pest Management (IPM) program requires careful administration. It is important for the building manager and administrative staff to communicate with the pesticide applicator(s) to ensure full implementation of the IPM program. To meet this goal, a Pest Sighting Log and recordkeeping data will be used as part of the communication process. The building manager will ensure that pest sightings are recorded in the log. A form is included with this manual.

### Applicator Credentials

A person who applies a pesticide (other than a sanitizer, germicide, disinfectant, or anti-microbial agent) in schools, public buildings or health care facilities **MUST** have been IPM trained using training approved by MDARD. Approved IPM training includes use of MDARD's self-study manual and/or attendance at an MDARD approved IPM training session. IPM training credentials do not expire, so the training only needs to occur once. The IPM training manual is available online at [www.michigan.gov/mdard](http://www.michigan.gov/mdard). Go to the web site, type in "IPM" into the search box found in the upper right corner and follow the links to the appropriate information.

Outside contractors who conduct pesticide applications at this facility, other than use of a sanitizer, germicide, disinfectant or anti-microbial agent, must be **licensed** and **certified**. Business license information can be found at the MDARD web site identified above to verify that the commercial applicator holds a valid pesticide applicator business license.

Persons who are employees of this facility and who have obtained their IPM training certificate may use a *general-use ready-to-use product* (see definitions section) in compliance with State of Michigan regulations without being certified or registered. However, whenever possible, pesticide applications should be conducted by the person responsible for pest control in this facility or by a licensed and certified professional applicator.

Persons who use a pesticide product at this facility which is NOT ready-to-use, other than a sanitizer, germicide, disinfectant, or antimicrobial agent, *must* be a commercially certified or registered pesticide applicator. Examples of situations where the applicator must be commercially certified or registered include:

- When pesticides are mixed and applied from a compressed air sprayer such as a hand-can or backpack sprayer.
- When pesticides such as weed-and-feed are put into a granular spreader, such as a lawn weed-and-feed spreader, for application.

### Pesticide Applications and Personal Protective Equipment

Pesticide applications for non-emergency situations shall only be conducted by an applicator who has obtained their IPM training certificate and shall be made in accordance with this IPM program.

Applications must be made in a manner that is consistent with the pesticide label directions, as required by State and Federal law. The applicator shall use personal protective equipment that is appropriate relative to the potential exposure and as required by the pesticide label. Persons who apply pesticides at this facility, other than general-use ready-to-use pesticides are commercial pesticide applicators.

Minimum personal protective equipment for commercial pesticide applicators includes long pants, protective footwear, gloves that are impervious to the pesticide being applied (when contact with the hands is likely), and long-sleeve clothing. Short-sleeve clothing may be worn if soap and water is immediately available and a long-sleeved shirt is not required by the pesticide label.

### Pesticide Application Records

Records shall be maintained on forms provided by the building manager or by the licensed and certified professional pesticide applicator. A sample form is included in this manual. Records shall contain at least the following information:

1. Site address and the location of the areas or room(s) where pesticides are applied.
2. The date of service.
3. The target pest(s).
4. An inspection report, including the number of pests found or reported (this information may be found in the sighting log), and the conditions conducive to pest infestation.
5. Pest management recommendations made by the applicator, such as structural or habitat modification.
6. Structural or habitat modifications or other measures initiated as a part of the IPM program.
7. The brand name, EPA registration number, concentration and total amount of pesticide(s) used.
8. The name of the applicator.
9. The method and rate of application.

### Pesticide Use In and Around Schools & Day Care Centers

This section contains information regarding parental notification and applications of pesticides made in and around public or private school or day care property.

#### 1. Annual Notification to Parents / Guardians

Within 30 days of the beginning of each school year, the primary administrator for the school district or his/her designee, shall provide written notification to parents (or guardians) of children attending the school that they will receive notification before any pesticide application, other than a bait or gel formulation, is made to the school property. For day care centers, the notice shall be issued in September of each year. The notice shall be on a form that contains statements informing parents (or guardians) that pesticides may periodically be applied to school or day care property and that parents (or guardians) will be notified of such pesticide applications. The form will state that in the case of an emergency, such as an infestation of stinging insects, pesticides may be applied without prior notice, but that notification will be provided after the emergency application occurs.

This annual notification shall be in writing and shall specify 2 methods by which advance notice of the applications of a pesticide will be given at least 48 hours before the application. The first method shall be by posting at the primary points of entry to the school or day care center. Subject to a request from the parent or guardian for notification by first class US mail, the second method shall be by at least 1 of the following methods:

- a. Posting in a public, common area of the school or day care center, other than an entrance.

- b. E-mail.
- c. A telephone call by which direct contact is made with a parent or guardian of a student of the school or a child under the care of the day care center or a message is recorded on an answering machine.
- d. Providing the students of the school or children under the care of the day care center with a written notice to be delivered to their parents or guardians.
- e. Posting on the school's or day care center's website.

The annual notice shall state that in addition to the methods of notice provided above, parents or guardians are entitled to receive the notice by first-class US mail postmarked at least 3 days before the application, if they so request, and the manner in which such a request shall be made.

For a school, the notice shall state that parents and guardians may review the school's IPM program, if any, and may review records on any pesticide applications.

A sample form for the annual notification is included in this manual.

## 2. Advance Notice of Pesticide Use

As stated in the annual notification to parents / guardians, the Advance Notice of Pesticide Use must be delivered at least 48 hours prior to the anticipated treatment (or postmarked at least 3 days before the treatment for those who request notice by first class mail) and the notice must be delivered in the manner(s) described in the annual notice to parents / guardians.

The Advance Notice of Pesticide Application form shall contain the following information:

- a. A statement that a pesticide is expected to be applied.
- b. The target pest(s).
- c. The approximate location of the application.
- d. The date of the application
- e. The name, telephone number, and if available, e-mail address of a contact person at the school or day care center responsible for maintaining records with specific information on pest infestation and actual pesticide application as required by rules.
- f. A toll free telephone number for a national pesticide information center recognized by the Michigan Department of Agriculture and Rural Development (MDARD) and a telephone number for pesticide information from MDARD. A toll free telephone number for a national pesticide information center is National Pesticide Information Center at Oregon State University 800-858-7378 with a web site of [www.npic.orst.edu](http://www.npic.orst.edu). The telephone number for MDARD is 800-292-3939 and the MDARD web site is found at [www.michigan.gov/mdard](http://www.michigan.gov/mdard).

Note that the advance notices must be provided to parents / guardians of students enrolled at a school or day care center, *even during periods of vacation or holidays*. An example of a form that can be used to meet this purpose is shown on page #11 of this program manual.

## 3. Restrictions Pertaining to Pesticide Applications at Schools

As required by Michigan law under Act 451, Part 83, Pesticide Control, Section 8316(6) and under Regulation 637, Rule 15, there are certain restrictions pertaining to use of pesticides at schools, including the following:

- a. Liquid spray or aerosol insecticide applications shall not be made in a room of a school building unless the room will remain **unoccupied for at least four hours** UNLESS the product label requires a longer reentry period, in which case the more restrictive requirement must be met.
- b. Liquid spray pesticides used for turf or ornamental applications may not be made on school grounds within 100 feet of occupied classrooms during normal school class hours or when persons are using the treatment area.
- c. The pesticide applicator shall notify the school's building manager of any reentry periods that are required by the product label.

### IPM Program Evaluation

The IPM program shall be evaluated on a continual basis to determine the program's effectiveness and the need for program modification. The IPM program should contain the initial site evaluation and a continual record of inspections and pesticide applications. These documents can be evaluated to determine the success of the IPM program. If the evaluation does not indicate improvement or continuation of an acceptable pest level, then the IPM program should be revised to reach an acceptable level of pest control.

### Posting

When making an application of pesticides, *other than a general-use ready-to-use pesticide*, a commercial applicator shall place the appropriate signs or markers at the primary point or points of entry. It is the responsibility of the building manager (or his/her designated representative) to ensure that the appropriate signs are posted.

#### *Indoor Insecticide Applications*

The primary point or points of entry must be posted with the appropriate signs. Postings shall remain for at least 48 hours after the most recent application of insecticide. Posting signs must be in compliance with Regulation 637, Rule 11(4). Signs shall be at least 2 ½ inches square and shall depict a house surrounded by a cloud. The date shall be placed on the sign. See the rule for additional details on sign requirements. Please note that treatments using a general-use ready-to-use product are exempt from the posting requirement. The posting should be similar to the item depicted in illustration #1 or #2 below.



Illustration # 1



Illustration # 2

Note that for a school or day care center, the school will only post the advanced notice of pesticide use at the primary point(s) of entry as described in section #2 of this manual titled "Pesticide Use In and Around Schools & Day Care Centers".

#### *Ornamental or Turf Applications*

The primary point or points of entry must be posted. Postings shall remain at least 24 hours. Postings will be in compliance with Regulation 637, Rule 11(2). Signs shall be at least 4" high by

5” wide and shall depict a picture of an adult and child walking a dog on a leash. The illustration shall depict, using a diagonal line across the circle, that this action is prohibited. See the rule for additional details on sign requirements. The sign must be in compliance with the requirements of Regulation 637, Rule 11(2). It will look similar to the sign shown below, with the sign having the same information on both sides of the sign.



Illustration # 3

## Pest Management Strategy and Pest Biology

### Strategy

This IPM program involves the use of available methods or strategies to control pests including sanitation, exclusion, reservoir reduction, harborage reduction and population reduction. These terms are clarified below:

1. Sanitation refers to a reduction of the food and water resources that are attractive to pests. By minimizing the resource of food and water available to the pests, we can greatly reduce the number of pests without the application of pesticides.
2. Exclusion refers to the use of caulk, mortar, screens or similar materials that can reduce or eliminate the entry of pests into the building.
3. Reservoir reduction refers to techniques such as removing a pest attraction feature, such as moving a dumpster a distance away from the building so that pests attracted to the dumpster are not brought close to the building.
4. Harborage reduction refers to elimination of habitat that provides a home (or harborage) to pests. For example, cleaning old equipment from a storage room will reduce harborage for mice. Mowing grass around a building will reduce the cover and harborage for pests.
5. Population reduction refers to means of control such as mechanical traps, use of repellents, or use of toxicants to drive away or kill pests. Chemical or biological pesticides may be utilized to reduce pest populations.

### Impact on Human Health & Environment

When considering methods to utilize for pest control, the building manager shall consider the impact of human health and the environment. The pest control method shall consider the effectiveness of the treatment for pest reduction while striving for the lowest level of adverse impacts on human health and the environment.

### Pest Biology Information

The method used for pest control shall take into consideration the relationship between pest biology and pest management methods, giving due consideration to the impact on human health and the environment. When chemical controls are necessary, this program will attempt to use products that are least toxic to human health and the environment, while remaining effective in control of the target pest(s).

Some common pests and pest control measures are described below. **It is vital that you identify the pest prior to implementing controls.** For example, pest control measures to control one type of cockroach or ant may be ineffective for another species of cockroach or ant. Some actions taken for ant control can even *promote* the spread of the ants if the ant species is not properly identified. Pest identification should be confirmed by a reliable source, such as use of keys in pest identification manuals (found on the Internet or in reference books), by consultation with a professional pesticide applicator, or by using a service such as the Michigan State University Extension Service.

A brief biology of some pests follows. Additional information can be found using pest identification books, the Internet, referencing the MSU General Pest Management Certification Study Manual, or consulting a professional.

## Pavement



## Ants

This ant is 1/10<sup>th</sup> to 1/16<sup>th</sup> inch long and has two nodes on its pedicel. Their antenna has 12 segments. They are active foragers and establish trails along baseboards and other areas inside structures. They can easily move between floors using plumbing lines, which not only provide movement between floors, but also into the structure itself. The ants feed on a wide variety of foods including pet food, food bits dropped on the floor, grease, and seeds. These ants commonly invade buildings through cracks in cement slab floors and exterior walls. Exclusion through sealing of the cracks is an effective means of control. Exterior perimeter treatments may also provide effective control. If ants still invade the building, baits are an effective means of control.

## Carpenter Ants



Carpenter Ants vary in size and color but are usually blackish in color and range in size from 1/4" to 1/2" in size. If winged carpenter ants are seen swarming in the spring, it may mean that there is a colony nesting in the structure. They can be distinguished from termites by the carpenter ant's slender waist. Termites have a wider waist. Carpenter ants look for sites with wet wood to build their nests. Ants inside a structure may be from a nest located within the structure. However, the ants may be foraging for food and may be from a nest outside of the structure. Carpenter ants tend to forage at night. You may place some food, such as a dab of honey, to bait the ants. Then, watch where the ants go. If they're going behind a baseboard or into a wall void, then attempt to determine if they're nesting in that location or if they're passing through the structure to an outside nest. Apply an appropriate pesticide. Baits are an effective means of control.

## Roaches (general information)

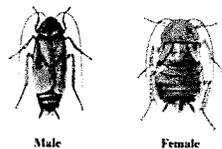
Roaches can carry germs and disease. Sanitation and reduction of harborage are important in reducing the incidence of roach infestation. Glue boards may be used to detect the presence of roaches. Where roaches are found, baits can be an effective means of control. Crack/crevice/void treatments may also be used.



## German Cockroaches

Female German cockroaches carry an egg capsule with 30-40 eggs, producing 4-8 egg cases in her lifetime. That can be over 300 offspring from one female roach and if not controlled the population could explode to as many as 100,000 roaches in one year! German roaches prefer dark places with warmth and high humidity. They prefer harborage where they can fit closely.

## Oriental Cockroach



Adult Oriental cockroaches are 1 inch to 1 ¼ inch in size. They are shiny and range from dark brown to black in color. Their wings are not functional. Immature roaches, called nymphs, are darker in color than adults, but have a similar shape. Egg cases are dark reddish-brown and about an inch long. This roach is also known as the “water bug” and feeds on garbage and filth. It prefers a moist environment, so it may be found near leaky pipes or in a moist basement or crawl space. They may live outside during summer months and migrate indoors during cold weather.

## Mice



Mice may enter buildings to seek shelter. Exclusion and reservoir reduction are effective means of control. Keep weedy fields mowed. Move dumpsters away from the building. Clean the area of any debris that offers harborage. Use exclusion methods such as screens, caulk, and door sweeps. To eliminate mice present in the building, it is preferable to use mechanical methods such as traps or glue boards. Baits can be an effective tool, but should be used only with extreme caution and should NEVER be used in areas accessible to students.

## Head Lice



Head lice generally do not survive for more than a few hours when away from a host. Due to the biology of lice, insecticidal treatments to the school or day care center are generally not effective and should not be done. Instead, parents should be informed about the pest biology and given instruction for effective control measures on hosts (children) and garments such as hats that may be shared between students. For more information visit [www.headlice.org](http://www.headlice.org).

## Flies and Gnats

There are MANY types of flies and gnats. Proper identification is vital to determine the best type of pest control. Proper sanitation can provide effective control for most flies and gnats. Screen windows and doors to exclude these pests. Garbage containers should be closed and kept an appropriate distance from the buildings. Insecticides may be appropriate for reducing large populations of adult flies, but sanitation is the preferred means of control.

## Other Pests

Other pests such as yellow jackets, hornets, and carpenter ants may occur. In all cases, the relationship between the pest biology and effective control measures must be considered.

## *Advisory to Parents / Guardians*

Dear Parent or Guardian:

State of Michigan law requires that schools and day care centers that may apply pesticides on school or day care property must provide an annual advisory to parents or guardians of students attending the facility.

Please be advised that the **South Meadows Elementary** / day care center utilizes an Integrated Pest Management (IPM) approach to control pests. IPM is a pest management system that utilizes all suitable techniques in a total pest management system with the intent of preventing pests from reaching unacceptable levels or to reduce an existing population to an acceptable level. Pest management techniques emphasize sanitation, pest exclusion, and biological controls. One of the objectives of using an IPM approach is to reduce or eliminate the need for chemical applications of pesticides. However, certain situations may require the need for pesticides to be utilized.

As required by State of Michigan law, you will receive advance notice regarding the non-emergency application of a pesticide such as an insecticide, fungicide or herbicide, other than a bait or gel formulation, that is made to the school or day care grounds or buildings during this school year. Please note that notification is not given for the use of sanitizers, germicides, disinfectants or anti-microbial cleaners. In certain emergencies, such as an infestation of stinging insects, pesticides may be applied without prior notice to prevent injury to students, but you will be notified following any such application.

Advance notification of pesticide applications, other than a bait or gel formulation, **will be given by at least 2 methods.** The first method will be by posting at the main entrance to each school / day-care center, which is located at **South Meadows Elementary**. Other methods will be by see below:

- Posting in a public, common area of the school or day care center, other than an entrance. We will post in the Main entrances at the school.
- E-mail going out to all district employees, and parents of all students.
- Posting information on the school District website under operations notices **<https://www.chelseaschools.org>**

Please be advised that parents or guardians of children attending the school or day care center are entitled to receive the advance notice of a pesticide application, other than a bait or gel formulation, by first class United States mail postmarked at least 3 days before the pesticide application, if they so request. If you prefer to receive the notification by first class mail, please complete the attached form and return it to our office.

Please be advised that parents or guardians of children attending the school may review the school's Integrated Pest Management program and records of any pesticide application upon request.