



**Virginia Cooperative Extension**  
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## **Integrated Pest Management Guidelines for Virginia Schools (K-12)**

**Presented by the Virginia Cooperative Extension Service In  
cooperation with the Virginia Pesticide Control Board and the  
Virginia Department of Agriculture and Consumer Services.**

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Information regarding the certification requirements for individuals applying pesticides on school property may be accessed at [www.virginia.gov/pesticides](http://www.virginia.gov/pesticides) . Questions regarding certification may be directed to the Virginia Department of Agriculture and Consumer Services, Office of Pesticide Services; telephone 804-786-3798.

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## **1. Integrated Pest Management on School Property (Virginia Code 22.1-132.2), as amended.**

In February 2009, the Virginia state legislature passed House Bill 1836 which required that guidelines for implementing integrated pest management (IPM) be made available to Virginia schools. These guidelines explain how school personnel can properly address the management of pests while reducing pesticide use on school grounds. **Note that these are guidelines and their implementation is highly recommended but not mandatory.** The code section is presented below.

### **§ 22.1-132.2. Integrated pest management on school property.**

*The Department of Education shall make information available to school boards on integrated pest management programs that appropriately address the application of chemical pesticides and other pest control measures on school property. For purposes of this section, "integrated pest management" (IPM) shall mean a managed pest control and suppression program that uses various integrated methods to keep pests from causing economic, health-related, or aesthetic injury, and minimizes the use of pesticides and the risk to human health and the environment associated with pesticide applications. Methods may include the utilization of site or pest inspections, pest population monitoring, evaluation of control requirements, and the use of one or more pest control methods including sanitation, structural repair, nonchemical methods, and pesticides when nontoxic options produce unsatisfactory results or are impractical. Each local school division shall maintain documentation of any pesticide application that includes the target pest, the formulation applied, and the specific location of the application. The guidelines and programs adopted pursuant to this section shall permit the immediate application of pesticides or other effective control measures to eradicate pest infestations that pose an acute danger to students and staff.*

Pests that pose an acute danger to students and staff in Virginia include stinging insects such as wasps, bees, and fire ants. Vertebrates, non-stinging, and nuisance pests should be dealt with using management methods that are part of or compatible with IPM.

## **2. The Virginia Pesticide Control Act and Regulations Pursuant to the Act (2 VAC 20-51-10 through VAC 20-51-210).**

The Virginia Pesticide Control Act requires all persons who apply pesticides for compensation of any kind be certified, and that all pesticides are applied in a manner consistent with the pesticide label. The Regulations Pursuant to the Virginia Pesticide Control Act requires that any person who uses or supervises the use of <sup>1</sup>**any pesticide** as part of their job in educational institutions (schools), health care facilities, day-care

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<sup>1</sup> Note that "any pesticide" includes both professional *and* consumer use products such as Round-Up®, Raid® or Wasp-Freeze that may be purchased at home stores. Such products can only be applied on School grounds by a certified applicator. Persons who apply only general use sanitizers, disinfectants, and germicides for cleaning and janitorial purposes are exempt from the certification requirements.

facilities, or convalescent facilities **must be certified** by the Office of Pesticide Services in the Virginia Department of Agriculture and Consumer Services as a commercial applicator or registered technician. If any school employee applies a pesticide inside a school building or on school grounds they must be a certified as either a commercial applicator or registered technician or their pesticide application would be in violation of state law.

### **3. What is the purpose of the School IPM Guidelines?**

**Maximizing Child Safety.** School administrators have to face tough questions about the potential hazards of using pesticides on school grounds. The presence of pests in schools can be annoying and disrupt the learning environment. Some pests are simply distracting, but others can bite, sting, or cause allergic responses. Traditionally, applications of pesticide have been the primary method of eliminating these pests, yet whenever a pesticide is applied in a school there is potential for human exposure. Young children may be more reactive to pesticide exposure because of their small body size. Also their behavior at play is more likely to bring them into contact with pests and/or pesticide residues. Young people may also be more susceptible to respiratory irritants from pests or pesticides because their bodies are still developing. In the school environment our pest control practices have to be able to strike a delicate balance between controlling pests and minimizing pesticide exposure risk. The School IPM guidelines provide the schools with specific practices designed to prevent pest infestations and to reduce the need for pesticide applications on school grounds.

**Reducing Pesticide Use in Schools.** In many Virginia schools, pest control practices commonly include the application of pesticides on a calendar-based basis (regardless of need). If there are no pests to control, these applications may be an unnecessary exposure risk. While there is no data to support that these "preventative" applications have caused any ill health or exposure problems in Virginia, it can be argued that more pesticide is being applied than is necessary. This practice must be changed. These guidelines introduce a philosophy of pest control that reduces the potential hazards of controlling pests in the school environment, **School Integrated Pest Management (IPM)**.

**IPM is a National Movement.** Beginning in the early 1990s, parents and other public interest groups became concerned about pesticide use in schools. The first mandated School IPM program was implemented in Texas in 1995 as the result of a widely publicized pesticide misapplication in a school building. Since that time, many other states have mandated IPM programs within their public schools systems. Since 2001, several bills have been put before Congress to mandate that IPM be used in all U.S. public schools. Two of the most notable have been the School Environmental Protection Act and the Children's Environmental Protection Act (SEPA and CEPA, respectively). Both acts proposed to regulate pesticide use in locations where children might be exposed (schools). Similar acts were introduced in 2002 and 2003. While none of the previous federal IPM mandates passed, the reintroduction of School IPM acts, bills, and amendments indicates that there is still widespread support for mandating IPM (reduced pesticide use) in U.S. public schools. Today there is another School IPM bill seeking a federal mandate. This is the School IPM Initiative for 2015. If this bill passes the use of specific IPM practices will

be required of all public schools throughout the country. To read the entire School IPM Initiative for 2015, or just the executive summary go to:

<http://www.ipmcenters.org/pmsp/pdf/USschoolsPMSP.pdf>

**A Proactive Program.** All of the states surrounding Virginia (e.g. West Virginia, Maryland, Pennsylvania, and North Carolina) already have state mandated School IPM programs. These programs were the result of grassroots efforts from concerned parents and public interest groups. In Virginia, the 2009 code amendment requiring that the schools be provided with the IPM guidelines was also the result of concerned parents lobbying their local representative to write a bill that would implement IPM in Virginia public schools. The 2009 Virginia code requires that the IPM guidelines be provided without mandating their adoption. This allows the school districts to take a proactive approach to IPM. Unlike our neighboring states, the Virginia school districts will have the time to receive IPM training, and to get their employees properly trained and certified without having to implement an IPM program by a particular date. Keep in mind that 18 School districts in the state of Virginia have already adopted IPM. See the Virginia School IPM website to locate your colleagues who are already using IPM: <http://sites.ext.vt.edu/schoolipm/>. You can also find contact information for Dr. Dini Miller (Virginia School IPM specialist) on the website and schedule personalized IPM training for your school division at no cost.

**Virginia School IPM**  
(Integrated Pest Management)

**Who Benefits from IPM?**  
**Everyone!**

With an IPM program in place there will be very few pest problems. Little, if any, pesticide will need to be applied, and less pesticide means that exposure risk is reduced or eliminated. School Administrators specifically benefit from IPM: they can confidently address parents when they ask questions about pesticide use in schools.

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#### **4. What is Integrated Pest Management (IPM)?**

Integrated Pest Management (IPM) is a way to reduce pesticide use and still keep pests at bay. It is an environmentally friendly program that reduces human exposure to pesticides. IPM takes a proactive approach to pest control by employing a variety of pest prevention techniques instead of relying on pesticides alone to cure pest problems after they develop.

Control strategies in an IPM program begin with prevention – structural, environmental, and social modifications that reduce pest access to resources like food, water, and harborage. Chemical control methods are still used, but only on an "as needed basis". When chemical control methods are necessary, only the least toxic, most effective products are used. All pesticide products are placed in locations where they are accessible to pests but inaccessible to students, faculty, and staff.

#### **5. How is IPM different from what my school is doing right now?**

In some cases the IPM guidelines may look very similar to what your school is doing right now. However, there are still many schools in Virginia that will have to make significant changes to their current pest management practices. Below is a list of some of the IPM practices that are part of a fully implemented IPM program. These may be very different from how your schools have controlled pests in the past.

1. Parents may have the option of being notified about pesticide applications on school grounds. The reason that these IPM guidelines came into existence was because parents were concerned about pesticide use in schools. Therefore, as part of the IPM guidelines it is recommended that you make parents aware of the IPM program twice a year (at the beginning of the school year and again at the winter break) and ask if they would like to add their name to a list for notification prior to a pesticide application. For those who want to be notified, a written or email notification should be delivered within 24 hours of the pesticide application so that the parents may keep their child at home if they wish. The only exceptions to the parent notification would be the application of baits, pastes and gels that are placed out of reach of children or in areas that are inaccessible to children, or in tamper-resistant containers or stations. Applications to control pests that are an immediate danger to students (bees, wasps, red imported fire ants) are also exempt from the notification requirements.
2. Insecticide applications made to outdoor locations shall be posted with signs warning students and staff to avoid the area. The posting can be removed after the product label re-entry interval has passed or (if no re-entry time is on the label) the product has dried and the area is safe to for re-entry.
3. IPM replaces calendar-based insecticide applications with pest monitoring. Therefore, your faculty and staff should not expect to see someone applying pesticides on a regular basis anymore. Instead your pest management professional will be looking for pests with a flashlight and placing sticky traps in very specific locations.
4. IPM focuses on pest prevention techniques so maintenance and sanitation efforts may need to increase. Those responsible for the increased sanitation may complain that they would not need to work so hard if you would just get the pest control company to

spray like they used to. To prevent these complaints the goals of the IPM program must be explained to all staff members.

5. IPM does not eliminate pesticide use, but other methods of controlling the pest should be attempted first. For example, a trail of ants should be wiped up with sponge full of soapy water rather than sprayed with a can of insecticide.
6. IPM uses record keeping to document all pest problems and the pesticides used on school grounds. Each school should keep a log book to record pesticide applications. Application records shall include the pest, the pesticide product used, the amount, date, and location of the pesticide application.
7. The IPM coordinator for your school should draft a pest control contract that specifically states what methods and products can and cannot be applied on school grounds (see sample contract provided; Appendix 1). These decisions on how to treat pest problems will no longer be completely left up to the contract pest management company. The IPM coordinator needs to be prepared to learn more about pest control than ever before.

## **6. The Four Points of IPM.**

There are four main points that make up any successful School IPM program. Each of these points represent the shared responsibility between the school personnel and the contract pest management company (if pest control services are contracted out). With IPM, the school facilities manager or "IPM coordinator" oversees all pest control conducted on school grounds. No longer are the pest control practices and pesticide applications left completely up to the discretion of the pest management contractor.

### **1. Prevention- Responsibility of the schools**

a. Sanitation- indoor cleanliness, elimination of clutter, removal of outdoor debris, and keeping dumpsters away from dock doors all help to prevent pest infestations.

b. Exclusion- building maintenance and repairs. Some pest control companies may do caulking, screening, and other small repairs; however, proper maintenance by school personnel will do the most to prevent pest entry and survival.

### **2. Monitoring- Responsibility of the pest management company**

a. Sticky traps for cockroaches, etc. should be established in specific locations that are conducive to pests. Traps must be checked regularly for pest evidence. Pests found in monitors should be recorded in the log book. Monitoring is used in place of "preventative" pesticide applications.

b. Food monitors can be used prior to baiting for ants. Food monitoring is used to determine pest ant feeding preferences. Any pest ants found, and their feeding preferences, should be recorded in the log book.

### **3. Least toxic control methods- Responsibility of the pest management company**

a. A "least toxic control" method may simply be the use of hardware cloth to block a rodent entrance rather than the use of rodent bait. However, "least toxic" will generally include the use of control methods like baits, boric acid dust, and insect growth regulators (IGR)s.

b. Chemical control methods (baits, dusts, IGRs) are used only on an "as needed" basis in response to documented pest problems.

c. Chemical products should be selected from the "IPM Suggested Products List" Pesticides should be placed in locations where they are accessible to pests but are inaccessible people or pets (precision targeting) (See Virginia School IPM website for sample product lists).

#### **4. Record keeping- Responsibility of schools and pest management company**

a. A log book should be kept on the property to record pest sightings and any action taken in response to these sightings. The log book records should also include:

I. Pests found in monitors and any action taken.

II. Pesticide application records. The record should include the product name, the formulation, date, and location of the application.

III. Any pesticide application record should be identified as a response to a specific pest sighting or pest in monitor record.

IV. Copies of the pest management company's license and contact information.

V. Copies of the labels and MSDS sheets for all "IPM pesticides".

#### **7. Develop an IPM Policy Statement.**

Everyone in your school district needs to be aware that you are adopting an IPM policy. Let administrators, faculty, staff, and students know that you will be using a new method of pest control called IPM. Circulate your IPM policy statement so everyone understands the problems associated with both pests and pesticide use. The IPM policy explains that pest prevention is now the primary method of pest control in your school district. Maintenance and sanitation are the first line of defense against pests, not pesticides. If additional control measures are needed only the least toxic, most effective pest control products will be used. A copy of the IPM Policy statement should be kept in the pesticide application logbook. Below is an example of an IPM Policy statement:

##### ***Policy Statement***

*It is the policy of this school district to implement Integrated Pest Management procedures to control structural and landscape pests and minimize potential exposure of children, faculty, and staff to pesticides.*

##### ***Pests***

*It is the policy of this school district to control pests in the school environment. Pests such as cockroaches, fleas, ants, stinging wasps, termites, and rodents are annoying and can disrupt the learning environment in schools. Pests are known to bite, sting, transmit diseases, or cause allergic responses.*

## **Pesticides**

*It is the policy of this school district to minimize exposure to pesticides in the school environment. Children may be more susceptible to pesticides than adults due to their smaller size and rapid development. Children's behavior may also increase their risk of exposure to residues. When pesticides are used to control pests in schools, there is potential for exposure to children. Exposure may result in allergic responses in sensitive individuals or poisoning in extreme cases. Therefore, we intend to eliminate the use of broad application pesticides wherever possible.*

## **Integrated Pest Management**

*It is the policy of this school district to employ non-chemical methods first, as a means of pest prevention. These methods include sanitation, exclusion, and monitoring. The application of chemical control products will be used only "as needed" to correct documented pest problems. Only products that are the least hazardous and most effective for the control of targeted pests will be used. Chemical control products will be placed using precision targeting, meaning the products will be placed in specific locations where they are available to pests but not accessible to children, faculty, and staff. Staff members (one or two) have been designated to coordinate the IPM program and maintain pest management records.*

## **8. Communicating the IPM Policy to Others**

The goals of your IPM program (reducing pests and pesticide use) must be communicated to the entire school community or your efforts will fail. The sanitation efforts will be slack, the records will not be kept, teachers will begin bringing in their own cans of pesticide to apply (illegally) in their classrooms, and your pest problems (and subsequent pesticide applications) will begin to increase. It is paramount that all of the school employees are made aware of how the IPM program will work and why the IPM program is being implemented.

At least two staff meetings should be scheduled to introduce everyone to the new program. At the first meeting, the IPM coordinator(s) can explain to the teachers and cafeteria staff, the goal of reduced pesticide use. Employees should also be shown how to record their pest sightings, and what they can expect to see their pest management professional doing while he or she is in the building. Announcements should also be made to the students regarding the closing of windows and doors to prevent mice, stink bugs and other pests from entering the buildings. A second meeting should take place some time after the program has been implemented to review the goals of IPM, and to get feedback from the staff about the success of the program.

## **9. Establishing a Pest Monitoring Program**

An ongoing pest monitoring program is going to replace your calendar-based pesticide applications. Instead of treating for potential pests every month or quarter, the pest

management professional is going to inspect and monitor for any pest problems that may have developed since his or her last visit. They will also use monitoring to see if a previous pest problem has been reduced or eliminated. The establishment of a pest monitoring program begins with a thorough inspection.

## **Inspection**

The pest management technician initiates an IPM program by making a thorough initial inspection of each building to evaluate the pest control needs of the campus. The technician will identify problem areas and any structural features or practices that are contributing to pest infestations. Using the building floor plan as a permanent record, the technician will suggest site specific solutions for eliminating pest entry and access to food, water, and harborage. Any problems and suggested corrections need to be reported to the IPM coordinator so they can be addressed.

## **Monitoring Program**

The technician will next set up a pest monitoring program in areas where he or she observed one or more of the following during the inspection: an active pest infestation, pest evidence, or conditions conducive to pest infestation. Cafeterias and other food service areas should always be included in the monitoring program because these locations are particularly susceptible to pest invasion. The technician will establish a Pest Sighting/Pesticide Application log book at each school facility as part of the monitoring program. Inspection and the establishment of a monitoring program should be completed prior to any pest control methods being applied.

## **Monitoring for the First Time**

After the inspection, the pest management technician will obtain a floor plan of those specific areas selected for monitoring (i.e. the cafeteria or school kitchen). Using the floor plan, he or she will decide where the monitors should be located. Traps should be placed in areas that have conditions conducive to pests or pest evidence. Additional traps should be placed throughout the room to get full coverage of the entire area. After the monitoring locations are selected on the floor plan, those locations should be numbered in a systematic and logical fashion so they are easy to find.

After monitoring locations are numbered on the floor plan, the technician should number the same quantity of sticky traps (high quality) and put one out in each monitoring location. Monitors are left in place for 24 hours and then collected by the technician. The pests found in each trap should be identified and recorded on the floor plan.

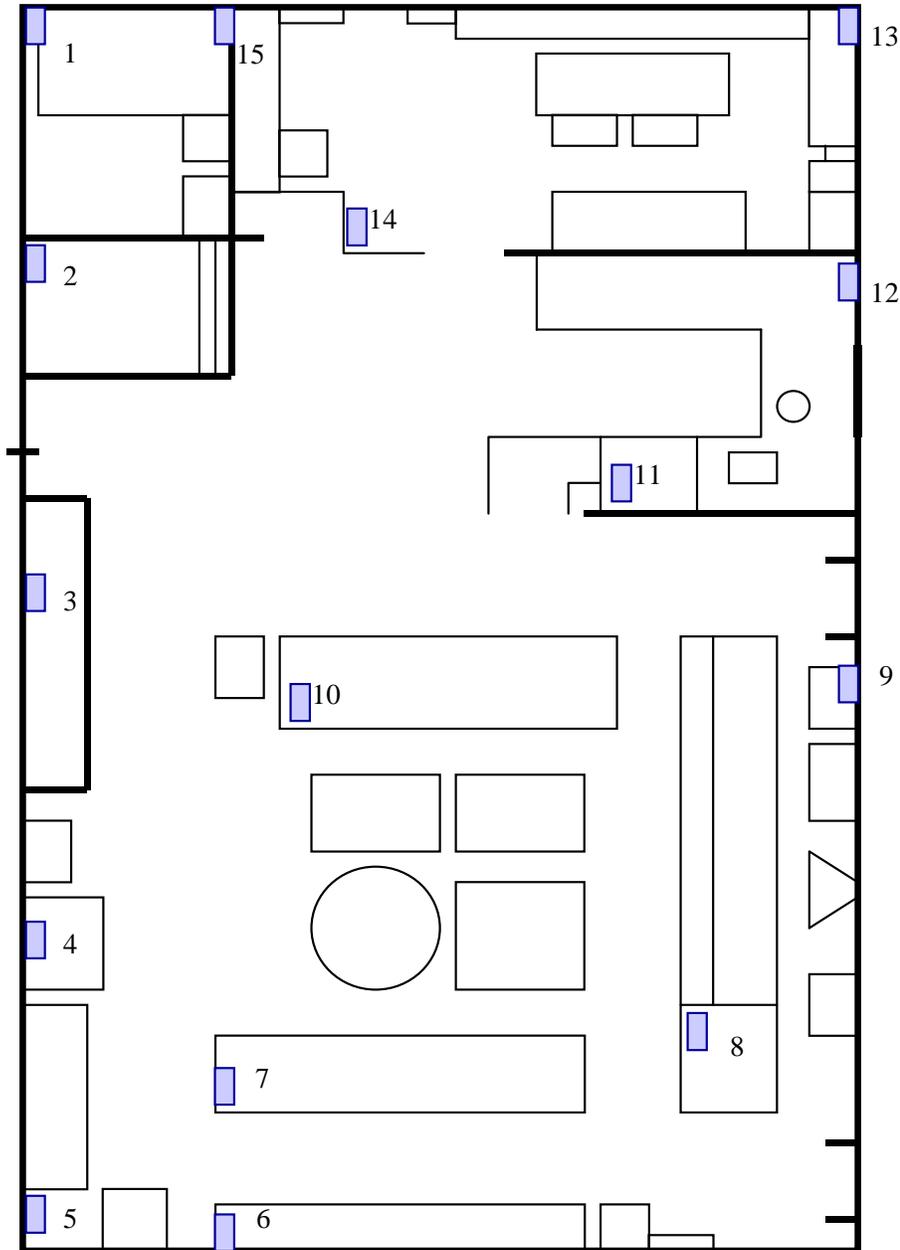
Based on the monitoring results the technician will decide how many traps will be needed to monitor on a monthly basis. If pests are found in 10 different monitoring locations, then all of these locations need to be monitored every month, in addition to locations with conducive conditions. If pests are found in only 2 monitors, then those two locations need continuous monitoring in addition to the areas with conducive conditions. If no pests are

found in any of the traps, then only those areas with conducive conditions need monthly monitoring. Keep in mind that you still want to get good coverage of the room with the monitoring traps so enough should be placed to alert the technician of any incipient pest problems.

### **Continuous Monitoring Program**

When the final number of monitoring locations is determined, they should be marked on the floor plan (Figure 1). This will be the monitoring plan for the year. Additional copies of the monitoring plan should be kept in the record keeping log book for the pest management technician to use from month to month. The monitors will be checked and replaced every month, and the technician will document all pest problems and pesticide applications on the floor plan. All pesticide application information will include the brand name, formulation, application location, date, and technician's initials (Figure 2). These monthly floor plans will be added to the log book as a permanent record.

# Floor Plan of School Kitchen with Monitor Locations Designated



**Figure 1. Fifteen sticky traps were placed in this kitchen to effectively monitor the entire area. The traps are located in areas where the initial inspection identified an active infestation, pest evidence, or conditions conducive to pests. These monitors will be checked and changed every month. New monitors will be numbered and placed in the same locations. Pests found in the monitors will be recorded on this floor plan.**

# Record of Pests Found in Monitors and Remedial Pesticide Applications

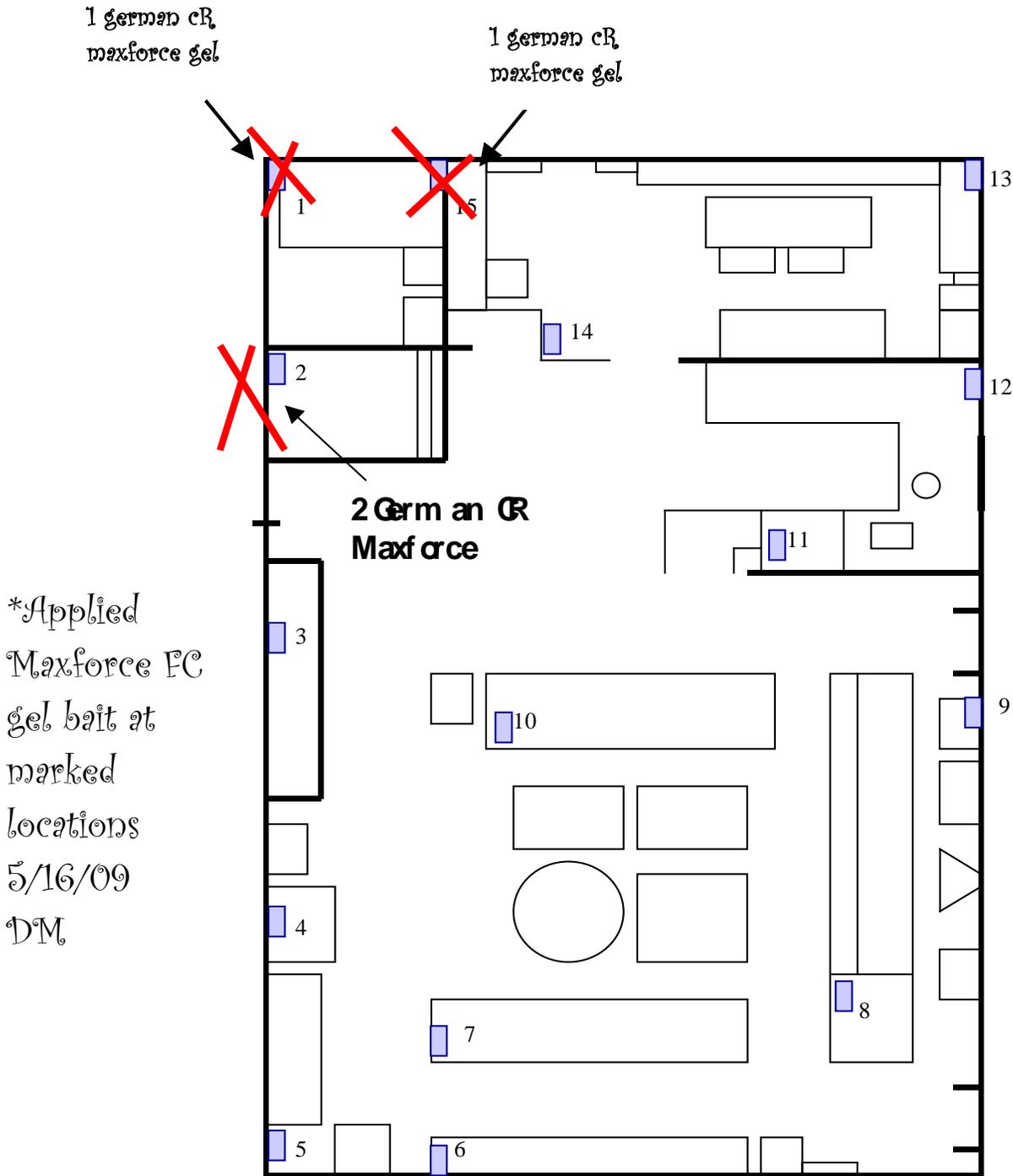


Figure 2. The pest management technician will record any pests found in the monitors (i.e. monitors 1, 2, and 15) and all pesticide applications directly on the floor plan. The technician will then add this floor plan to the log book as a permanent record.

## 10. Keeping Records of Pests and Pesticide Applications.

One of the most important aspects of IPM is the keeping of accurate pesticide application records. Why is record keeping such an important part of IPM? The main reason is that good records can help with the pest control effort. They let you know if your pest management methods have resulted in fewer pests this month than last month. Another important reason for keeping records is to help school administrators answer questions from parents about pesticide applications in their child's environment.

### What kind of records should you keep?

A log book containing the following information should be maintained in a specific location at each school:

1. A pest sighting log (see example below) where school employees can record pest problems and pest control technicians can record the action taken against these pests.
2. A copy of the IPM policy statement.
3. Monthly monitoring floor plans documenting all pest incidence and pesticide applications.<sup>2</sup> Pesticide application information should include the brand name, formulation, concentration used (if not a bait), specific location, and date applied. These floor plans are part of the IPM permanent record. Pesticide applications should be identified on the floor plan in response to a documented pest problem.
4. New monitoring floor plans for technicians to use at each service.
5. List of IPM pesticide products that are allowed to be used on school grounds. **The use of any other product must be discussed in advance with the school personnel in charge of the IPM program (IPM coordinator).**
6. Copies of pesticide labels for all products allowed in the IPM program.
7. Copies of Material Safety Data Sheets (MSDS) for all IPM pesticide products. Please note that the MSDS sheet lists only the properties and hazards of the undiluted insecticide active ingredient. Therefore, it is essential that the insecticide product label also be kept to understand the specific hazards (which will be considerably less than those listed on the MSDS) of the formulated product.
8. Contact information for the school district's pest management company, including copies of business licenses and state pesticide applicator certification.

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<sup>2</sup> If you use a pest control contractor, the only records you need to keep at the school are those listed in the text above. Your contractor will keep the detailed records required by the state. However, if your school division's pest management is conducted in-house, your certified applicators must follow the state record keeping requirements specified in the Virginia Pesticide Control Act regulation 2VAC20-51-210.



**There are a number of advantages for keeping good records that apply to both schools and the pest management professionals.**

**Advantages of record keeping for pest management:**

- Allows the pest control technician to detect new infestations before they become a problem.
- Allows the technician to track the movement of an infestation from month to month.
- Allows the technician to determine if his or her control methods have been effective in decreasing the population.
- Allows a new technician who has never visited the account to locate the monitors and address any pest problems immediately.

**Advantages of record keeping for school personnel:**

- Reduces exposure risk by limiting pesticide applications to only documented pest problems.
- Allows IPM coordinators to know what is being applied in their buildings at all times.
- Provides an on-site record of all pesticide applications, including why, where, and when they were applied.
- Reduces potential liability.

**11. If you use a Pest Management Contractor.**

In 1999, the Virginia Department of Agriculture and Consumer Services Pesticide Control Board conducted a survey of Virginia School Divisions. The survey found that over 90% of Virginia Schools used a licensed pest management contractor to perform indoor pest control. The selection of pest control contractor was typically initiated by a school purchasing agent putting the pest control contract out for bid. The pest management companies then submitted bids (basically a sample contract) explaining what they would do in the school facilities each month or quarter for a specified price. The school purchasing agents, facilities manager, or superintendent (depending on the division) would then decide on whose bid to accept. Very often the contract was awarded to the company that offered the lowest price.

When using IPM the pest management bidding process is somewhat different. This is because the school division specifies exactly what the pest management practices will be on the school grounds. The schools specify that only IPM practices will be used, and that monitoring will replace calendar-based insecticide applications. The pest management contractor then offers a price for performing IPM.

A sample pest management contract is available in Appendix 1 of these guidelines. You will notice that the contract specifically states that IPM will be used in and around the school facilities and that the goal is to replace pesticide applications with monitoring and prevention methods. The contract also specifies that no pesticides will be used other than those agreed upon by the IPM coordinator as being appropriate for use in an IPM program.

The Virginia Pest Management Association (VPMA) in 2003, provided School IPM training for all of their member companies in the state of Virginia. The sample contact attached at the end of these guidelines was given to all of the companies that attended those training programs. Therefore, the most reputable companies in Virginia are already familiar with IPM and have received at least some School IPM training.

## **12. Using IPM in the landscape.**

IPM is also intended to be used outdoors on schools grounds, including flower beds, lawn areas and athletic fields. The goal of outdoor IPM is the same as indoor IPM, maximizing child safety and environmental quality by reducing pesticide use. However, to maintain the aesthetic quality of the outdoor environment, it is also important to keep the landscape pests to a minimum. Keep in mind that not every insect outdoors is a pest, for example, ants that live outside in the landscaping mulch do not have to be controlled unless they are invading the school building. Likewise, sow bugs, pill bugs, and earwigs in the landscaping around school are not worth the trouble to control unless they are coming indoors and causing a problem. So a major part of outdoor IPM is determining if an insect or other animal is really being a pest or minding its own business outside. Too many pesticide applications are made to the outdoor environment to control insects that are not really doing any harm. This is a needless waste of time and money. Your IPM record keeping requirements specify that you determine if the insect or animal is really doing any damage to the landscape before you apply treatment measures. When you see an insect or other pest outdoors, ask yourself if there are any consequences to just leaving it alone.

The above being said there are still outdoor insects, animals, and plants that we want to control. Aphids can ruin the health and look of expensive outdoor landscaping plants. Weeds make the school environment look messy and can provide harborage for rodents. Excessive spider webs around lights in school hallways are unattractive particularly when they are filled with dead insects that the spiders have captured as prey. Wasps and yellow jackets may pose a danger to students.

Below are some of the more general IPM practices that can be used to address outdoor pest issues. While these guidelines cannot cover the outdoor IPM practices for all possible pests, you can find more specific IPM information (e.g. wasps, bees, ants, slugs in the fact sheets on the Virginia School IPM website at <http://sites.ext.vt.edu/schoolipm/>.

### **Weeds**

Weeds are defined as any plant growing in a place where it is not wanted. However, the term weed can be very subjective. For example, many people like dandelions when they are in flower, but then want them removed after they go to seed. Certain plants on school grounds are considered weeds because they spring up in locations that were intended for other plants. For example, you do not want weeds in a bed that has been cleared for specific plants like flowers. Nor do you want weeds to become established in dry patches that develop in the heavily used turf or playing field. Similarly, you do not want weeds to

spring up in the cracks of a sidewalk. Because different weed plants reproduce in different ways (annuals from seeds, and perennials from bulbs, corms or underground stems) weeds are very difficult to control. Because of the difficulty of keeping weeds out of the school landscape, most schools have relied on applications of herbicides. However, IPM focuses on sustainable methods of weed management such as evaluating the landscape design and changing use patterns.

- Can you identify why weeds are persisting in specific locations around the campus and modify those locations to make them less weed friendly?
- Can the weed habitat be eliminated by mulching, planting competing ground cover, improving turf quality, or creating a mow strip along a fence line?
- Is it possible to use the power of the sun to kill weeds by covering them with black plastic sheeting and allowing it to heat the soil to above 85° F for several weeks?

In locations where mulching or heating cannot be used, such as between cracks in the sidewalk, pulling weeds by hand or using a hoe is still an option. If the weed growth is extensive, flaming the top of young weeds with a propane powered torch will burst the cells in the leaves. Your intention is not to burn the plants but to super heat the leaves so that they can no longer photosynthesize and eventually die.

Herbicides can still be used as part of the IPM program, however, your goal is to minimize the conditions that contribute to weed growth so that your need for herbicides is less. If you have to use an herbicide, the best time to apply it is when children are not present and are not likely to be present until the re-entry interval is passed. Keep in mind that all applications would need to be posted, and parents notified if they are applied when school is in session.

Note: If you have parent-teacher organizations or other groups caring for the school landscaping, be sure to make them aware that they are not authorized to use herbicides or other pesticides on school grounds.

### ***Turf***

Weeds and insects infest turf that is undergoing stress. The turf stress can result from a variety of factors including compacted soils, the planting of unsuitable grass species, too little or too much irrigation/fertilization, incorrect mowing height, and/or the accumulation of thatch. The best way to reduce turf pests is to reduce the stress on the turf by employing good management practices.

Soil compaction results when the pore spaces in the soil compress so that water and air can no longer pass through the soil to reach the grass roots. Soil compaction can be reduced by removing plugs of grass thus allowing for air and water to penetrate the soil. Heavily used turf on playing fields should be aerated 2-4 times a year. After the soil is aerated the turf can be further improved by applying a compost containing seeds of the desired turf grass species. Because mowers contribute to soil compaction, start your

mowing process from a different location each time. This will reduce soil compaction by the mower in the heavily trafficked areas.

Raising the mowing height to 2-3 inches can improve the vigor of the grass and keep weeds from germinating by shading the soil under the grass. The mowing frequency should also be adjusted according to the grass growing season. For instance, you can mow once a week when the grass is vigorously growing but the mowing interval should be increased to 14 or 21 days when the grass is semi-dormant. This will allow the new grass blades to grow in dense and tight so that they discourage weed growth.

Too much or too little water or fertilizer will cause lawn diseases and pest problems. Lawns and turf need to be irrigated long enough for the water to reach the roots 4 to 6 inches below the soil. While the time to achieve this depth of penetration is variable from location to location a soil probe can be used to determine the depth that your irrigation has reached. An infrequent deep irrigation is preferred over more frequent shallow watering because deep irrigation will promote deep root growth. However, low spots in the turf should be re-graded so that they do not become waterlogged.

Excessive nitrogen will weaken the cell walls of grass, therefore fertilizers should be used sparingly. Applications of fertilizer should be split between spring and fall rather than one heavy application in the spring. However, adequate fertilization can go a long way to suppress weed growth by allowing the turf grass to crowd out crabgrass and other weed species. Sample the soil and have it evaluated by the local extension office or your landscaping provider to determine your fertilizer needs.

A dense layer of thatch in the lawn will prevent water and nutrients from ever reaching the soil and grass roots. Water will puddle on the thatch and increase the habitat for disease organisms. Turf can be de-thatched with a rake or with power equipment designed for this purpose. Once the dethatching has occurred it is advisable to re-seed the areas with the desired grass species.

### ***Ornamental Plants***

Like all IPM techniques, IPM for ornamental plants is based in prevention. Therefore, plants that are used for decorative purposes in the school environment should be the toughest, most tolerant plants available. Many ornamental plants can be selected for pest or drought resistance. Species should also be selected for resistance to slug damage. Slugs and snails can require some extreme control measures so if the landscape plants are already resistant to slugs, the effort needed to maintain the aesthetic quality of the plants will be considerably reduced.

Monitor flowering plants in the spring for common pests like aphids, lace bugs, scales and thrips. Catching an infestation early, before the insects are too numerous, will go a long way to prevent them from causing serious damage. Quite often soap-based products (low toxicity) are effective at reducing the number of these pests on flowering plants. Maybe not all of the insects will be eliminated but those that are left after the application will be too

few to cause aesthetic or structural damage to the plants. Always read the product labels regarding when and how to apply the product so that you do not damage the plants with the soap ( and to determine if you need to post the application). After application, check a few of the plants each week during the spring and summer to see if pest infestations are being controlled. If a plant becomes severely infested it may be best to simply remove it before the infestation spreads to additional plants.

Discuss with a nursery professional the environmental conditions that are best for each plant species. Some plants are shade tolerant, others require direct sunlight. Other plants may not be compatible with competing species if they are planted too close together. Plants will fail to thrive if they are placed in locations for which they are not suited. Sickly plants will readily succumb to pest and disease problems. If you see plants in your landscape that are having a hard time, consult with a professional before attempting chemical applications. Fertilizers and pesticides may only prolong the miserable existence of these long suffering plants. Consider the possibility of removing sickly plants and installing species that will do better in that area.

Under a school IPM plan, the use of pesticides on ornamental plants may require posting and parent notification. As you have most likely seen, even sickly ornamental plants can survive pest problems from year to year. There should only be few cases where insect problems become so severe that pesticide use is necessary. Speak with your local county extension agent about your pest problem before purchasing pesticides for a particular pest problem. Many extension agents have horticultural training so they can make recommendations regarding the most effective and least toxic treatment for your infested plants. For more information on how to use IPM for the protection of ornamental plants see the Virginia School IPM website.

### ***Nuisance Spiders***

Typically, nuisance spiders (those that are not black widows or brown recluses) do not need to be controlled because they are “beneficial” arthropods. Spiders consume large numbers of pest insects and are therefore good to have in the landscape. However, large populations building messy webs around the school outdoor lighting fixtures are unsightly. While some nuisance spiders can bite people, most have mouthparts that are way too small to puncture human skin. So the issue with spiders is more about aesthetics, (and people’s irrational fear) than any health threat.

The presence of numerous spiders and/or their webs around a building is an indicator of one thing, the presence of food. Spiders will not continue to build webs where there is no food available. So if spiders and their webs are a problem at your school, it is because insects are plentiful. Most of these insects are attracted to lights. If your school keeps the lights on late into the night, many hundreds of insects will swarm around those lights. Spiders will build these webs near the lighted areas to capture these insects. In the daylight you may observe large accumulations of spider webs in the halls or other locations. This will let you know where insects are being attracted at night.

The best way to eliminate the spider populations is to turn off the lights at night. If there are no insects flying around the lights then spiders will have no reason to build their webs near the building. Those spiders and webs that linger, after a week or so can be eliminated using a vacuum. Suck up all spiders and their webs, then seal the vacuum bag and throw it away. There is no reason to spray the spiders with insecticide if you are still going to have to vacuum up the webs, just vacuum up everything at once. Keep in mind that spiders are not very susceptible to dried insecticide residues so applying insecticides to building exterior will not prevent spiders from repopulating the area if you continue to leave the lights on. Turning off the lights is the best spider prevention method. For more information on nuisance and venomous spiders, see the Virginia School IPM website.

### ***Overwintering insects (Multicolored Asian lady Beetles, Brown Marmorated Stink Bugs)***

Virginia currently has two introduced insect pests that flock to buildings during the fall. These are the Asian Lady beetle and the Marmorated stink bug. These overwintering insects can be a real nuisance when they appear in large numbers. Both the Marmorated Stink bug and the Asian Lady beetles tend to show up on the southern sides of buildings around mid October after there has been a cold snap, but the weather has warmed up again temporarily. This weather change signals to the insects that they need to find a place to spend the winter. Certain buildings or complexes, particularly those that are standing out in the open or surrounded by a field, can have thousands of these insects aggregating on the southwestern walls. Those insects that are able to get inside, can be a nuisance by flying around, or aggregating in the corners of the room, or getting into light fixtures and crawling around. The Asian Lady beetles are harmless for the most part but will attempt to bite if handled. They also leave a red stain when crushed. The Marmorated Stink bug is also harmless but will release a smelly fluid when disturbed, and may also attempt to bite if harassed.

So how do you deal with these pests? First, be aware that this is an annual occurrence so be prepared for their arrival. At the beginning of October, or after the first cold snap in the weather communicate with the teachers and students about the anticipated insect invasion. Tell them to remain calm, the invasion happens every year and they should be used to it. Warn them not to leave windows and doors open so that the insects get inside. Communicate to everyone that the insects are harmless but should not be handled. Let everyone know that there is no way to prevent them from coming to the building, and that the invasion will stop as soon as the weather turns cold.

Some employees may still request an insecticide application, but this is pointless. Insecticides will not prevent the insects' arrival. That being said some well-timed spot applications of a micro encapsulated formulation around outside vents and window sills might prevent some from getting inside the building, but not all. Such an application will need posting and parent notification.

The best way of dealing with these pests is to vacuum them up. Killing them first is not necessary. These insects can be vacuumed up alive or dead. Silica aerogel or

diatomaceous earth can then be added to the bag to kill the insects inside. Then it can be put out for disposal. Be aware that some of these insects will survive until spring and you will see them again as they become active and attempt to make their way outdoors. For more information on overwintering pests see the Virginia School IPM website.

### **13. Protecting biological control agents**

In Virginia, the most important biological control agents we have on school grounds are snakes (yes, snakes). Many Virginia schools have open fields either on school grounds or very nearby. These fields contain hundreds to thousands of field mice and sometimes rats. Most of these populations are kept from over-running the school buildings by the black snakes and garter snakes that live in the same field. These snakes are capable of consuming whole nests of mice in a single meal. There is no mouse trap, bait or other device that is as efficient at reducing mouse populations as a full grown black snake.

In many schools districts, harmless black and garter snakes are killed if found on school grounds. This is only done out of fear, there is no data to support that harmless snakes are a danger to children. One school district that happened to kill all snakes found on school grounds had to close two schools prior to the beginning of the school year due to rodent infestations. Rodents reproduce so rapidly that this could easily happen in other districts. It is essential that harmless snakes be protected on school grounds.

Venomous snakes are rare in disturbed habitats like schools, but make sure that your facilities managers, pest management professional and IPM coordinator can tell the difference between harmless and venomous snakes (See Dealing with Snakes on School Grounds on the Virginia School IPM website for more information). Harmless snakes that accidentally get into school buildings should be captured in a cloth bag (like a laundry sack) and moved back out into the field. Remember the snakes are in the field because there are hundreds of mice in the field. If you kill the snakes, the mouse population will quickly get out of control. Field mice typically move into buildings as soon as the cool weather starts in October. Buildings can easily be overrun with mice if the population is not kept in check by outdoor predators earlier in the year. For more information on dealing with rodents and other vertebrate pests see the Virginia School IPM website.

### **14. Insecticide applications around the perimeter of buildings**

“Perimeter applications” refer to applications where a labeled pesticide is applied in a continuous band around an entire school building as means of preventing pests (usually ants) from entering the building. Perimeter applications are not typically considered an IPM method. It is often more advisable to reduce the food or moisture resources inside the building that attract pests in the first place. However, in situations where it is well known that certain outdoor insect pests like carpenter ants, clover mites, odorous house ants etc. enter the building every year in large numbers, it may be reasonable to make one application at the beginning of the season rather than having to constantly fight these pests indoors for months at a time. Perimeter applications are most effective when made in the spring before the pest populations are so high that almost nothing will stop them.

The application can be made during the spring or Easter break so that no student will be present for a week after the application. These single applications will usually last for an entire season protecting the building until the summer break. Note that these applications will still need parent notification and posting.

Perimeter applications have not been effective in preventing the annual migration of overwintering pests. Although some of the overwintering pests may be killed, the perimeter treatment will not keep them from coming in or their stinking bodies from having to be vacuumed up. Also, the perimeter application for overwintering pests would have to be made while school is in session, therefore it is not compatible with IPM.

## **15. Dealing with Subterranean Termites in School Buildings**

Subterranean termites are the single most important economic pest of structures in the world. Termites cause millions of dollars in wood and structural damage each year. Subterranean termite infestations must be controlled or the structural damage can be very severe. So how do you deal with subterranean termites using IPM? First, you can reduce your chances of developing an infestation by reducing the termite habitat in and around the building. For example, pulling mulch back six inches from the foundation wall will reduce moisture accumulation at the foundation and hopefully will encourage termites to forage elsewhere. Fixing moisture leaks inside the building will also make the structure less hospitable to these moisture loving insects. For more information on termite prevention methods see the Virginia School IPM website.

Have your buildings inspected every year for termite presence. Finding an infestation early and making sure that any damage is properly identified as subterranean termite, drywood termite, carpenter ant, or wood boring beetles is essential to deciding on the correct method of control.

There is no question that the most IPM compatible method of controlling subterranean termites is using a baiting system. Termite baiting systems work by placing monitoring stations (containing pieces of untreated wood) around the perimeter of the building. If a monitoring station is "hit" by termites, a bait is either added to the station or put in place of the monitor. The idea is to get termites that are already feeding on the untreated wood monitor to now feed on the bait instead. The termites then carry the bait back to the nest and feed it to other members of the colony. Ultimately, the entire colony dies. Termite baiting is environmentally friendly because there is no toxicant installed during the monitoring process, and once a monitoring station is hit, the bait (which has extremely low mammalian toxicity) is placed into a locked station. The stations are inspected on a regular basis by the pest management company to determine if termites are present and baiting can begin.

While termite baiting is the best method for termite management with regard to IPM, it does have some drawbacks. First, termite baiting is typically more expensive (due to the inspection schedule) than liquid termite treatments. You will notice that not many school divisions use this method because of the expense. Second, there is no means of luring

termites that are already infesting a building into the stations. So there is a waiting period before baiting can begin. Some baiting systems do have above ground stations that allow the bait (in a closed container) to be attached directly to infested wood. These systems can impact the infestation more directly, and can produce more rapid results.

The most common method of subterranean termite control is the use of a liquid soil termiticide. Soil termiticides are diluted pesticides that are applied to the soil directly around the building foundation in an attempt to put a chemical blanket between the termites in the soil and the building above. To properly protect the building, the termiticide label must be followed closely. For example, a label may require that the termiticide be applied to the building at a rate of 4 gallons per 10 linear feet per foot of depth to the footer (or a minimum of four feet whichever is less). For an average sized building, this will usually require the application of 2-3 hundred gallons of termiticide. While this kind of treatment is not the most IPM compatible, it is the most common method of termite treatment because it usually begins to control the infestation immediately, stopping further damage. It is also relatively inexpensive (compared to baiting systems) and lasts for several years.

If you do choose to protect your buildings with a soil termiticide treatment you can make the treatment more compliant with IPM by waiting for the end of the school year before treating the building. In Virginia, subterranean termite swarm season happens in the spring, usually between March and June, depending on the weather. The swarm usually takes place on the first sunny day after a rain. If you experience a swarm indoors or find termite mud tubes on the walls of a building you should investigate further to determine the extent of the infestation. Regardless of how heavy the infestation might be, the termites will not do significantly more damage between the spring and the end of the school year. You can schedule your termite treatment for the day after school ends. This will ensure that no students will be exposed to the termite treatment. You will still need to post your application (for the benefit of staff and faculty), but parents will not need to be notified unless students will still be on campus.

See the Virginia School IPM website for more information regarding subterranean termite control including the pre-construction treatment of new buildings.

## 16. IPM Checklist

- Attend an IPM training program (offered by Virginia Tech).
- Adopt an IPM policy statement.
- Develop an IPM plan of work (if pest control is done in-house by certified pesticide applicators) or an IPM pest control contract.
- Designate one or two persons who will oversee the IPM program (IPM coordinators)
- Communicate the IPM program to teachers, custodians, cafeteria staff, school board members and parents.
- Remove all personal use pesticide products in possession of non-certified members of the school staff or faculty
- Compile the parent notification list.
- Work with the contract pest management company to establish an IPM monitoring program.
- Establish a pest and pesticide application record book at each school facility.
- Establish an IPM pesticide product list that is acceptable for your pest control company or certified employees to use on school grounds. Applications of anything other than those products on the list require the consent of the IPM coordinator.
- Maintain pesticide applicator certification for any school employee who applies pesticides. This includes attending annual recertification courses approved by the Virginia Department of Agriculture and Consumer Services. (Current approved courses can be found at <http://www.vdacs.virginia.gov/pesticides/pdf/files/recertcourses.pdf>)
- Establish a list of IPM protocols for employees to use when managing weed, vertebrate, or insect pests outdoors.
- Notify Dr. Dini Miller ([dinim@vt.edu](mailto:dinim@vt.edu)) at Virginia Tech of your IPM program so that your school division can be recognized on the Virginia School IPM website.

## Appendix 1.

**Sample IPM Pest Control Contract** (Schools can modify this contract for their own use):

**(It is suggested that the "Initial" and the "Monthly" service be priced separately)**

### 1. GENERAL

- a. Description of IPM program: This specification is part of a comprehensive integrated pest management (IPM) program for the school district listed herein. IPM is a process for achieving long term, environmentally sound pest suppression through the use of a variety of management practices. These practices include structural and procedural modifications that reduce pest access, food, moisture, and harborage within the school environment. Chemical methods are applied only on an "as needed" basis. Need is determined by pest population monitoring, and control products are placed where they are inaccessible to children, faculty, and staff.
- b. Contractor Service Requirements: The Contractor shall furnish all supervision, labor, materials, and equipment necessary to accomplish the monitoring, trapping, chemical control methods, and pest removal components of the IPM program. The Contractor shall also provide site-specific recommendations for structural and procedural modifications to aid in pest prevention.

### 2. PESTS INCLUDED IN CONTRACT

- a. The contractor shall adequately suppress the following pests:
  - i. Indoor populations of rats, mice, cockroaches, ants, flies, spiders, and other arthropod pests not specifically excluded from the contract
  - ii. Populations of the above pests outside of the buildings but within the school property
  - iii. Termite swarmers emerging indoors
  - iv. Excluded pests (listed below) emerging indoors
- b. The following pests are excluded from this contract:
  - i. Birds, bats, snakes, and all other vertebrates other than commensal rodents.
  - ii. Subterranean termites and other wood destroying organisms.
  - iii. Mosquitoes
  - iv. Plant feeding pests

### 3. INITIAL BUILDING INSPECTIONS AND ESTABLISHMENT OF MONITORING PROGRAM

The Contractor shall make a thorough initial inspection of each building to evaluate the pest control needs of the premises. The Contractor shall identify problem areas and any equipment, structural features, or practices that are contributing to pest infestations. The contractor will then set up a pest monitoring program in those areas that contain one or more of the following: active pest infestation, pest evidence, or conducive conditions. Cafeterias and other food service areas will always be included in the monitoring program. Pest Sighting/Pesticide Application log books will be established at each school facility as part of the monitoring program.

Inspections and establishment of monitoring programs for each facility shall be completed prior to any monthly inspection/treatment schedule. Access to building space shall be obtained through the IPM coordinator. The IPM Coordinator will inform the Contractor of any restricted areas requiring special scheduling.

#### 4. PEST CONTROL PLAN OF WORK

The Contractor shall submit to the IPM Coordinator a Pest Control Plan of Work prior to inspection and establishment of the monitoring program. The IPM Coordinator and the contractor will review and negotiate the Plan of Work before any pest management services begin.

The Pest Control Plan of Work will contain two service plans, Initial and Monthly:

##### INITIAL

- a. Initial inspection: The Contractor will inspect the entire premises and report any structural or operational changes that would facilitate the pest control effort. Using a building floorplan as a permanent record, the Contractor shall describe site specific solutions for eliminating pest access, food, water, and harborage.
- b. Establishment of monitoring program: The Contractor will monitor the facility using lo-line (or other accepted design) sticky traps to determine any existing arthropod pest problems. The contractor will then establish a monthly monitoring program in the cafeterias/food handling areas, or locations where there is an active infestation, pest evidence, or conducive conditions. Monitoring locations will be recorded in the Pest Sighting/Pesticide Application log book. Log books will be established for each facility and kept on the premises.
- c. List of proposed materials and equipment: The Contractor shall provide current labels and Material Safety Data Sheets (MSDS) for all pesticide products to be used. In addition, the brand names shall be provided for all application equipment, rodent bait boxes, monitoring

and trapping devices, and any other control equipment that may be used to provide service.

#### MONTHLY

- a. Service Schedule: The Contractor shall provide service schedules that include the monthly or quarterly frequency of Contractor visits. The Contractor will record the date of each visit in the log book as well as all services received.
- b. Commercial pesticide applicator certificates or licenses: The Contractor shall provide photocopies of the company Pest Control License and dated Pesticide Applicator Certificates for every employee who will be performing on-site services under this contract.

#### 5. RECORD KEEPING

The Contractor shall be responsible for maintaining a pest control log book for each site specified in this contract. These records shall be kept on site by the IPM Coordinator and maintained on each visit by the Contractor. The log book shall contain the following items:

- a. Pest Control Plan of Work: A copy of the Pest Control Plan of Work, including the labels and MSDS sheets and service schedule.
- b. Work request and inspection forms: Work request and inspection forms will be used to advise the Contractor of routine service requests and to document the performance of all work, including emergency work. All work shall be documented in the log book, then signed and dated by the Contractor.
- c. Floorplan service report: The Contractor will submit a monthly floor plan of the area serviced to the Pest Sighting/Pesticide Application log book. The contractor will record any pest evidence detected by the monitoring program and the action taken. All chemical applications must be recorded on the floor plan and in response to a documented pest problem. Application information must include the date, location, brand name, and active ingredient of the product used.

#### 6. EMERGENCY SERVICE

On occasion the Contractor may be requested to perform corrective or emergency service(s) that are beyond the routine requests. The Contractor shall respond to these exceptional circumstances and begin the necessary work within one working day after receipt of the request.

#### 7. USE OF CHEMICAL CONTROL METHODS

The Contractor shall be responsible for application of pesticides according to the label. All pesticides used by the Contractor must be registered with the U. S. Environmental Protection Agency, state, and/or local jurisdiction. The Contractor shall adhere to the following rules for chemical control products in schools:

- a. Approved products: The Contractor shall not apply any pesticide product that is not included in the Pest Control Plan of Work approved by the School IPM Coordinator.
- b. Application by need: Pesticide application shall be according to need and not by schedule. Such chemical control methods shall not be applied unless visual inspections or monitoring devices indicate the presence of pests in a specific area. Preventive chemical control treatments in areas where there is potential for insects or rodents will be evaluated on a case-by-case basis.
- c. Minimum risk: When the application of chemical control products is necessary, the Contractor shall employ the least hazardous materials, most precise application techniques, and the minimum quantity of pesticide necessary to achieve control.

#### 8. INSECT CONTROL

- a. Emphasis on non-chemical methods: The Contractor shall use non-pesticide methods of control wherever possible, for example- use of portable vacuum for initial clean-outs of cockroach infestations, winged ants and termites, or spider control, and use of trapping devices for indoor fly control.
- b. Monitoring: Sticky traps shall be used to guide and evaluate indoor insect control efforts wherever necessary.
- c. Insecticide bait formulations: Bait formulations shall be used for cockroach and ant control where appropriate.

#### 9. RODENT CONTROL

- a. Indoor trapping: Rodent control inside occupied buildings shall be accomplished with trapping devices only. All such devices shall be concealed and in protected areas so as not to be disturbed by school operations. Trapping devices shall be checked every 24 hours by the Contractor or by designated school personnel. The Contractor or designated school personnel will be responsible for disposing of all trapped rodents or rodent carcasses in an appropriate manner.
- b. Outdoor use of bait boxes: All bait boxes shall be placed out of general view where they will not be disturbed by school operations. The lids of the boxes shall be securely locked or fastened shut. All bait boxes shall be attached or

anchored to the floor, wall, or other immovable surface so that the box cannot be picked up or moved. Bait shall always be placed in the baffle protected feeding chamber of the box. All bait boxes shall be labeled on the inside with the Contractor's business name and address. The Contractor's employee shall date the box at the time of installation and after each servicing.

10. STRUCTURAL MODIFICATIONS AND RECOMMENDATIONS

Throughout the term of this contract, the Contractor shall be responsible for advising the IPM Coordinator about any structural, sanitary, or procedural modifications that will reduce pest access, food, water, and harborage. The Contractor shall be responsible for adequately suppressing all pests included in this contract regardless of whether or not the suggested modifications are implemented. The Contractor will not be held responsible for carrying out structural modifications as part of the pest control effort.

## Glossary

<b>Certified Applicator</b>	a person who: (i) has satisfactorily completed the (Virginia Pesticide Control) Board requirements for certification as a commercial applicator, registered technician, or private applicator; and (ii) has been issued a valid certificate
<b>Commercial Applicator</b>	any person who has completed the requirements for certification to use or supervise the use of any pesticide for any purpose or on any property other than as provided in the definition of private applicator.
<b>Fungicide</b>	any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any fungi or plant disease.
<b>Herbicide</b>	any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any weed.
<b>Insecticide</b>	any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects that may be present in any environment whatsoever
<b>IPM Coordinator</b>	a school district employee who is responsible for implementing and supervising the district's IPM program. The IPM coordinator is the primary contact for the contract pest management company.
<b>IPM Products List</b>	a list of insecticide products that have been agreed upon by the school IPM coordinator and their contract pest management company(s) as suitable for use as part of the IPM program
<b>Log Book</b>	a record kept at each school facility containing the contract pest management company's contact and certification information, pest sighting and pesticide application records, IPM products list, pesticide labels and MSDS sheets
<b>Pest</b>	any deleterious organism that is: (i) any vertebrate animal other than man; (ii) any invertebrate animal excluding any internal parasite of living man or other living animals; (iii) any plant growing where not wanted, and any plant part such as a root; or (iv) any bacterium, virus, or other

	<p>microorganisms (except for those on or in living man or other living animals and those on or in processed food or processed animal feed, beverages, drugs as defined by the Federal Food, Drug, and Cosmetic Act at 21 U.S.C. § 321(g) (1), and cosmetics as defined by the Federal Food, Drug, and Cosmetic Act at 21 U.S.C. § 321(i)). Any organism classified as endangered, threatened, or otherwise protected under federal or state laws shall not be deemed a pest for the purposes of this chapter.</p>
<p><b>Pesticide</b></p>	<p>(i) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, fungi, bacteria, weeds, other forms of plant or animal life, bacterium, or viruses, except viruses on or in living man or other animals, which the Commissioner (Department of Agriculture and Consumer Services) shall declare to be a pest; (ii) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; and (iii) any substance intended to become an active ingredient in any substance defined in clause (i) and (ii).</p>
<p><b>Registered Technician</b></p>	<p>an individual who has satisfactorily completed the Board requirements for certification to apply general use pesticides, and to apply restricted use pesticides while under the direct supervision of a certified commercial applicator. Registered technicians render services similar to those of a certified commercial applicator, but have not completed all the requirements to be eligible for certification as a commercial applicator</p>
<p><b>Rodenticide</b></p>	<p>any substance or mixture of substances intended for preventing, destroying, repelling or mitigating rodents or any other vertebrate animal declared by the Commissioner to be a pest.</p>
<p><b>Use</b></p>	<p>the employment of a pesticide for the purposes of: (i) preventing, destroying, repelling, or mitigating any pest; or (ii) regulating plant growth, causing defoliation or desiccation of plants. The term "use" shall include applying, mixing, handling, or transferring a pesticide after the manufacturer's original seal is broken, and any act consistent with the label.</p>