



Integrated Pest Management in Schools



Improving Kids' Environment

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- “Protecting children from environmental health hazards through advocacy, education and initiatives that create environmentally healthy homes, schools and communities.”
- Lead
- Air Quality – No Idling
- Combined Sewer Overflows
- Pesticides



Why is pest management important?



Pesticide Exposure and Children



- Children more vulnerable
 - Take in more food, water and air proportionate to their body weight
 - Growing rapidly
 - Behaviors
- Exposure linked to significant health problems
 - Cancer
 - Respiratory Problems
 - Nausea and Vomiting
 - Headaches
- Interactions with other chemicals environment not well understood

What is IPM?

IPM is an effective and environmentally sensitive approach to manage pests that relies on a combination of biological, cultural, physical, mechanical and least toxic chemical management practices.

Traditional Pest Control

Scheduled Pesticide Sprays

Creating Healthy School Environments Process

- Step One - Gaining Approval
 - Introducing a policy
 - Forming an environmental health committee
- Step Two - Assessment
 - Outdoor Grounds and Outdoor Air Quality Checklist
 - Classroom Checklist
 - Indoor Athletic Facility Checklist
 - Non-Classroom Areas Checklist

Inspections



Are the pests here?

- The pest itself
- Evidence
- Pest Vulnerable Areas (PVA)



Why are pests here?

- Food
- Water
- Shelter/Harborage



More Reasons

- Light
- Access
- Heat



Where do you look? Pest Vulnerable Areas (PVAs)



How to Inspect

- Tools: flashlight, screwdriver, extendable mirror, vial, and camera
- You need to look where they might be



Outdoor Checklist

Grounds Adjacent to Buildings	Yes	No	N/A
1.6. Grounds adjacent to buildings are free of standing water that may contribute to mosquito breeding, and building exterior is free of evidence of water damage or of conditions that may contribute to water intrusion into the building. ★			
1.7. Gutters and drainage systems are in good repair and well maintained. ★			
1.8. Windows and walls are free of signs of damage. ★			
1.9. There is adequate drainage away from building foundation. ★			
1.10. The area immediately adjacent to the building foundation is clear of the accumulation of grass clippings or other organic debris.			
1.11. Vegetation, shrubs, and wood mulch are kept at least 1 foot away from the school building. ★			

Trash, Recycling, Compactor Containers	Yes	No	N/A
1.12. Trash and recycling containers are in good condition, equipped with lids and the lids cover the containers when not in use. ★			
1.13. Area surrounding trash, recycling and compactor containers is free of trash and debris. ★			
1.14. Trash and recycling containers are located away from building and air intake or windows. ★			

Exterior Doors	Yes	No	N/A
1.28. Doors are properly installed and maintained to fit tightly in their frame. Exterior doors have no cracks, gaps or other visible openings that allow the entry of insects or other pests into the building. ★			
1.29. Doors are kept shut when not in use. ★			

Classroom Checklist

Prevent Moisture/Mold in Schools	Yes	No	N/A
3.1. Indoor environments are sanitary with no sign of moisture, water damage, or suspected mold on any interior surface (OSHA 29 CFR 1910.22(a)(1)). ★			
3.2. Routine moisture inspections are conducted to ensure the school building is free of moisture problems, water damage, and visible mold on all interior surfaces (OSHA 29 CFR 1910.141(a)(3)(ii)).			
3.3. Information on mold is integrated into the student curricula.			

Dust and Clutter	Yes	No	N/A
3.4. Surfaces are free from excessive accumulation of dust or sediment.			
3.5. Items are annually assessed for disposal or stored promptly so that routine maintenance and cleaning are not inhibited or restricted by stored items. ★			



Pests	Yes	No	N/A
3.6. Indoor areas are free of evidence of pests or obvious food sources for pests (OSHA 29 CFR 1910.141(a)(4)(i)) (OSHA 29 CFR 1910.141(a)(5)). ★			
3.7. Food waste or pest attractants are immediately placed in a trash can, and trash is removed daily from the school building. ★			
3.8. Food and beverages are allowed only in designated areas and food is stored in airtight containers. ★			
3.9. All food crumbs or spilled drinks are cleaned immediately. ★			
3.10. Dishes are washed promptly after use. ★			

Classroom Furnishings	Yes	No	N/A
3.11. Furniture and toys are cleanable, clean and in good repair. ★			
3.12. Drapes, blinds, shades and banners are clean and in good repair.			
3.13. There is no excessive accumulation of chalk or marker dust and markers are low or no volatile organic compound emitting.			

Walls	Yes	No	N/A
3.17. Walls have paint and plaster intact with no visible bowing or evidence of cracks or damage (OSHA 29 CFR 1910.22(a)(1)). ★			
3.18. Rooms are identified that may contain paint produced before 1978.			

Ceilings	Yes	No	N/A
3.24. Ceilings are present, intact and sanitary with no water damage, stains, suspected mold or chipping or peeling paint (OSHA 29 CFR 1910.22(a)(1)). ★			

Windows	Yes	No	N/A
3.25. Window panes and frames are clean, intact and properly caulked or sealed and glazed. ★			

Animal Management	Yes	No	N/A
🍏 3.30. Animal containers or cages are free from excessive accumulation of animal waste.			
🍏 3.31. Animal containers or cages are equipped with properly fitting lids and/or doors.			
3.32. Hand washing facilities are available and immediately used when animals are handled in the classroom.			
🍏 3.33. Animals are prohibited from roaming in the school building, except for therapy animals or animals that are used for assistance.			
🍏 3.34. Animals are prohibited from being on surfaces where food or drink is prepared or consumed.			
🍏 3.35. All animal feed is in tightly sealed in labeled containers and separate from human food. ★			

Plumbing Fixtures	Yes	No	N/A
3.38. All plumbing fixtures are in good repair. ★			
3.39. Drinking fountain streams crest a minimum of one inch above the mouth guard of the fountain but not so high as to promote water spillage onto the floor.			
3.40. Floor drains, strainers, and grates are clean and in good repair. ★			
3.41. Pipe chases are sealed. ★			
3.42. Paper products or cardboard boxes are stored away from moist areas and are not in direct contact with the floor or the walls. ★			



Indoor Athletic Facilities Checklist

- Locker Rooms
- Athletic Offices
- Concession Stands



Non-Classroom Areas Checklist

Hallways and Stairwells/Stair Tread and Rails	Yes	No	N/A
7.2. Stair treads and handrails are secure and in good repair (OSHA 29 CFR 1910.24(f) (1910.23(d)(1)). ★			
Auditoriums and Student Dining Areas/General Safety	Yes	No	N/A
7.3. Portable banquet tables, cafeteria tables and other portable furniture items, when not in a position intended for use, are stored in a manner that is inaccessible to students or are secured to the wall or floor to prevent injuries from tipping. Heavy furniture items are moved only by authorized personnel. ★			
Auditoriums and Student Dining Areas/Housekeeping	Yes	No	N/A
7.4. The cafeteria tables are cleaned and sanitized between each use. ★			
7.5. Floors are cleaned after spills and after periods when food is served. ★			



Sinks and Plumbing Fixtures	Yes	No	N/A
7.9. All plumbing fixtures are sanitary, operable, properly supplied and in good repair. ★			

Restrooms/Housekeeping	Yes	No	N/A
7.14. Toilet tissue is available at each toilet.			
7.15. Floors are clean and dry. ★			

Moisture, Water Damage and Mold	Yes	No	N/A
7.20. Floor drains, strainers, and grates are clean. ★			
7.21. Pipe chases are sealed. ★			
7.22. Mops and buckets are clean, dry and stored appropriately. ★			
7.23. A mold prevention and remediation plan is established.			
7.24. A flood cleanup plan is established.			
7.25. Records are kept to monitor improvements in moisture management.			
7.26. Information and updates on mold and moisture management are integrated into newsletters, school announcements, and other outreach material. ★			



Pest Presses

PEST PRESS



Safe handling of pests in schools

Mice

Insert date



House Mouse



Deer Mouse

The house mouse is the most common rodent infesting schools today. Though not native to North America, having arrived with early settlers from Europe and elsewhere, the house mouse has adapted brilliantly to

- * Urinates several thousands of “micro-droplets” per day!
- * Can produce from 25 to 60 young each year!
- * May transmit the following parasites to humans and pets: ringworm, mites, tapeworm and ticks.

Access and Infestations

Mice may infest schools year round, but as the house mouse cannot hibernate he is more likely to invade structures in the fall. While in search of food and shelter from colder temperatures, mice are drawn to buildings - which initially offer them cover. From



Administrative Areas/Break Rooms	Yes	No	N/A
7.46. All food in break rooms is properly stored to limit attraction of pests. Storage of chemicals or specimens in refrigerators in break rooms is prohibited. ★			
7.47. All appliances used in a break room are clean and in good repair. ★			

Infrastructure Maintenance	Yes	No	N/A
7.58. Water pipes are inspected for leaks and corrosion. ★			

Floors	Yes	No	N/A
7.71. High-efficiency vacuums and filters (e.g., high efficiency particulate air filters-HEPA) are used. ★			

Windows	Yes	No	N/A
7.72. Screens are installed and maintained in good repair, if applicable. ★			

Policies Checklist

EH and Safety Management Policies continued	Yes	No	N/A
8.10. INTEGRATED PEST MANAGEMENT PLAN (IPM). Schools should have a written IPM plan that includes identification of pests and conditions that attract pests; prevention techniques such as sanitation, vacuuming, structural repair and sealing; monitoring; education and training; approved least toxic chemical use only as a last resort; and pre-notification of chemical use. (If policy exists, it must be in accordance with OAC 901:5-11-14.) ★			
8.11. PESTICIDE APPLICATION POLICY in accordance with ORC 921. and OAC 901-5 to assure safe application of pesticides by qualified individuals. ★			

Sample IPM Policy

“The school district shall utilize integrated pest management procedures to manage structural and landscape pests and the toxic chemicals used for their control in order to alleviate pest problems with the least possible hazard to people, property and the environment.”

Next Steps

- Step Three – Priority Planning
 - Start Small – demonstration school
 - Think success
- Step Four – Action Planning and Implementation

IPM Plan

- State Objectives
- Define Roles
- Set Action Thresholds
- Describe Monitoring Protocol
- Delineate Management Strategies
- Establish Record Keeping and Evaluation Methods

Monitoring



Identification

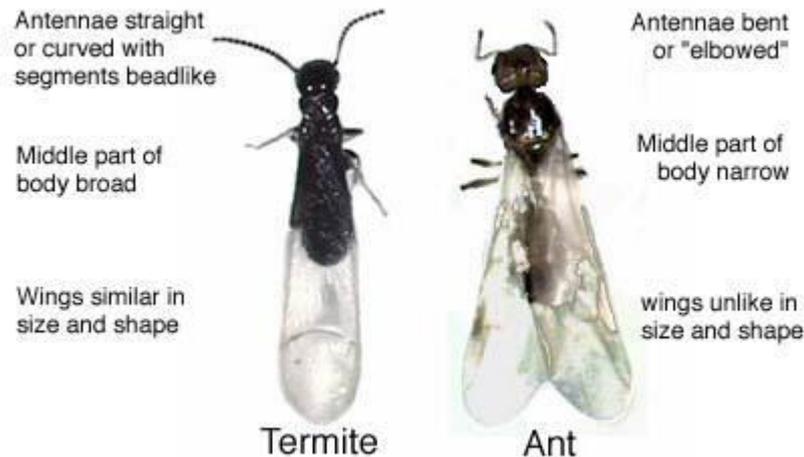


IPM Tool Kit



Understand the Biology of Pest

- More effective identification
 - Swarming Ants vs. Termites
- Identify potential vulnerabilities
- Formulate baits or attractants more effectively – protein, carbohydrate or lipid



Sanitation

Clean, Clean and Clean



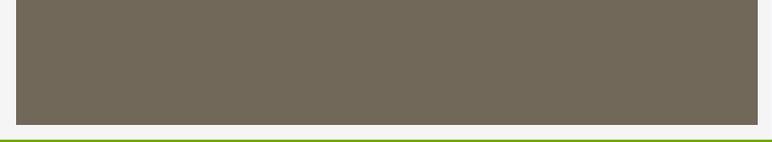
Look at Green Cleaning Options

- Low toxicity
- Low environmental impact
- Favorable ingredient profile: minimal VOCs, natural/renewable ingredients and minimal additives like fragrances & dyes
- Ability to minimize human exposure
 - No aerosols
 - Use concentrates

Third Party Certification

- Green Seal
- EcoLogo
- Design for the Environment (EPA)





Maintenance and Cultural Practices

Make Repairs



“Do what you normally do, just think pests.”

Exclusion



Change How People Do Things

- Storage
- Keep food
- Clean
- Prioritize
- React

Least Toxic Pesticide

Formulation and Delivery



Recordkeeping

- Pest sighting log – what did you see, where and when
- Record of action taken
- Tool to evaluate success

Step Five - Train and Communicate

- Foundation Tool
- Educate yourself and your staff about the facility, pest problems and management options
- Communicate what you are doing and why to the ENTIRE community, school board - students

IPM Contract

- Details important, especially the respective roles of the school and the PMP
- Sample contracts at:
 - http://www.ipminstitute.org/school_biblio.htm
 - <http://www.ipm.iastate.edu/ipm/schoolipm/sites/default/files/SamplePestControlContract.pdf>
 - <http://schoolipm.ifas.ufl.edu/Florida/contract.htm>

Ohio Regulations

- OAC 901:5-11-14 Integrated Pest Management Standard- **optional** but rules must be followed for those who claim to use IPM.
 - Conduct assessment,
 - Determine needs, priorities and measures to be taken
 - Establish a strategy, schedule, and specific recommendations based on assessment
 - Evaluate results

OAC 901:5-11-15 Pesticide Use in Schools-**mandatory**

- Timing – four hour prior (or longer depending on label), after school or when school is not in session
- If applied during school: timing and signs
- Type – gels, tamper-resistant bait stations, termite bait stations, rodenticides in inaccessible locations, disinfectants et al and dusts in unoccupied areas
- Recordkeeping – individual designated
- Prior Notification Policy

Thank You!



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