University of New Hampshire
Cooperative Extension

School IPM

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What is IPM?

It is an environmentally sensitive three prong approach that helps to manage pest problems:

- **Pest Identification and Monitoring**
- **Prevention**
- **Combinations of low-risk actions when needed**
- **Evaluate effectiveness**

What Does IPM do for Schools?

Provides:

- Health Benefits
- Economic Benefits

Health Benefits:

- Prevents/minimizes environmental risks
- Reduces risks of human exposure to pests and pesticides
- Suppresses pests that may carry allergens or disease pathogens

Economic Benefits:

- Reduces pest damage
- Eliminates unnecessary pesticide applications
- Minimizes emergency repairs
- Fits well with regular maintenance and sanitation routines

Why Implement IPM?

- Improves indoor air quality
- Eliminates unnecessary pesticide use
- Reduces human health risks
- Improves property management
- Saves money
- Prevents pest related emergencies

Steps to Implement IPM in Schools

- Establish an IPM Policy
- Designate Pest Management roles- training
- Annually inspect – establish a regular pest monitoring program
- Use sanitation and exclusion tactics
- Evaluate program effectiveness and keep records

IPM Policies for School Boards and Administration

- Write an IPM policy statement
  - ✓Emphasize the importance of IPM
  - ✓Reasons for adopting IPM
  - ✓Objectives of the program
  - ✓Include guidelines for pest management issues and decision-making

Train and Educate

Who?

- Staff (custodial, cafeteria, athletic, maintenance and grounds, health), students, pest managers, parents and the public

About?

- potential school pest problems
- IPM policies and procedures
- roles for achieving set goals

What is a Pest?

An unwanted organism (animal, plant, bacteria, fungus, virus, etc.) that has a negative effect on humans.

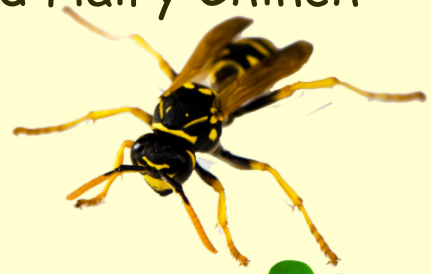
Most Pests are integral parts of the Earth's ecosystem, but too many can:

- Reduce the availability, quality, or value of human resources such as food, feed, water, or space.
- Injure humans, animals, crops, structures, and possessions
- Spread or cause disease
- Interfere with our activities by causing annoyance, discomfort, or inconvenience

Pests most commonly found in or around schools

Insects:

- Ants, cockroaches, flies, stinging insects (yellow jackets), pantry pests, lice, turf pests (white grubs and Hairy Chinch bugs), mosquitoes



Rodents:

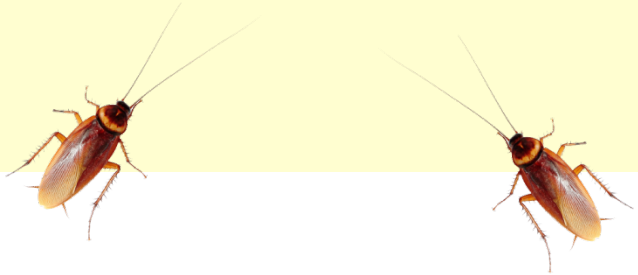
- Mice, rats, bats, moles

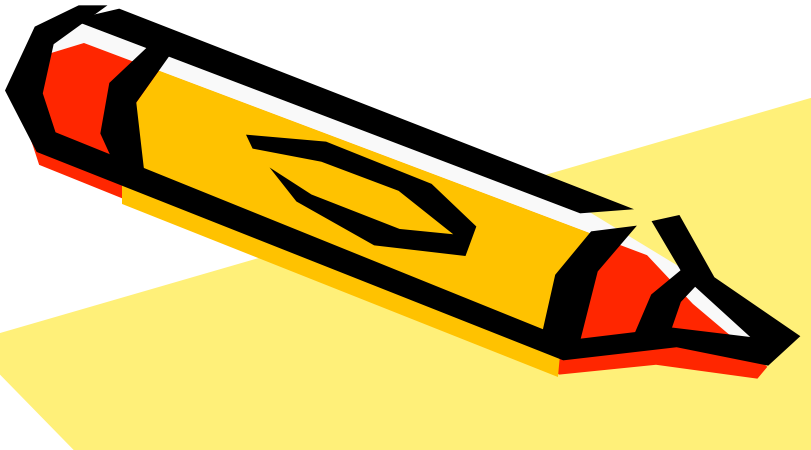
Weeds:

- Dandelions, Poison Ivy,
  Annual grassy weeds, clover, etc.

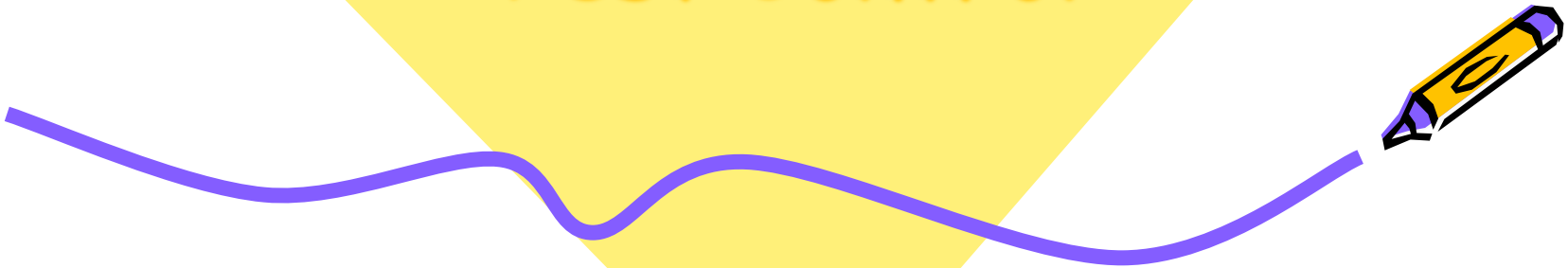
Possible Health Risks to Humans

- Cockroaches and Rodents-asthma
- Stinging Insects- Life-threatening allergic reactions
- Lice- rashes
- Rodents- salmonella, hanta virus, plague and more
- Mosquitoes- West Nile Virus, encephalitis
- Ticks- Lyme disease





Integrated Pest Management vs Pest Control



4 Steps of IPM

1. Inspection, monitoring & pest identification
2. Prevention
3. Intervention activities
4. Evaluation of effectiveness

Inspection, Monitoring & Pest Identification

***Inspections are critical for management of pests**

- Pest identification
- Determining potential location of pest entry
- Looking for pest signs (rodent droppings, feeding damage etc.)
- Inspections should locate active infestations and signs of activity.
- Inspections should identify pest sites and sources of food and water.

Pest Monitoring

- Inspect sites and identify pest populations for potential problems regularly.
- Helps determine if treatment is needed
- Helps determine where, when and what kind of treatments are needed
- Allows evaluation and fine tuning of treatments

Identifying Pests

The first step in solving a pest problem **effectively** and **safely** is correct identification of the pest.

- **New Hampshire:**
  UNHCE: extension.unh.edu
- **Vermont:**
  UVM: uvm.edu/extension
- **Maine:**
  UMEXT: extension.umaine.edu

Inspecting "Indoors"

Kitchen, Cafeteria & Restrooms

- Inspect for cracks and crevices around pipe chases and seal.
- Inspect for condensation and leaks around pipes and repair.
  - ✓ This will prevent pests from accessing food, water and shelter.

Inspecting "Indoors"

Dirty traps attract pests so drains should be cleaned with long handled brushes and appropriate cleaners and inspected regularly.

Inspecting "Indoors"

Check dry food containers to make sure they are pest proof, if not transfer to pest-proof containers

Rooms should be cleaned daily, and trash removed

Inspecting "Indoors"

Food should be kept in sealed containers or refrigerated: *Notice- wrap is loose, allowing insects easy access to food source.

Inspecting "Indoors"

All surfaces are cleaned and dried daily.

Inspecting "Indoors"

Pasta used for classroom projects should be stored in sealed containers to discourage harboring pests

Inspecting "Indoors"

Seal all backsplashes and fixtures attached to walls.

This keeps cockroaches and ants from harboring around countertops and away from food areas.

Inspecting "Indoors"

Electrical cords and pipes are great runways for pests to access food, water and shelter.

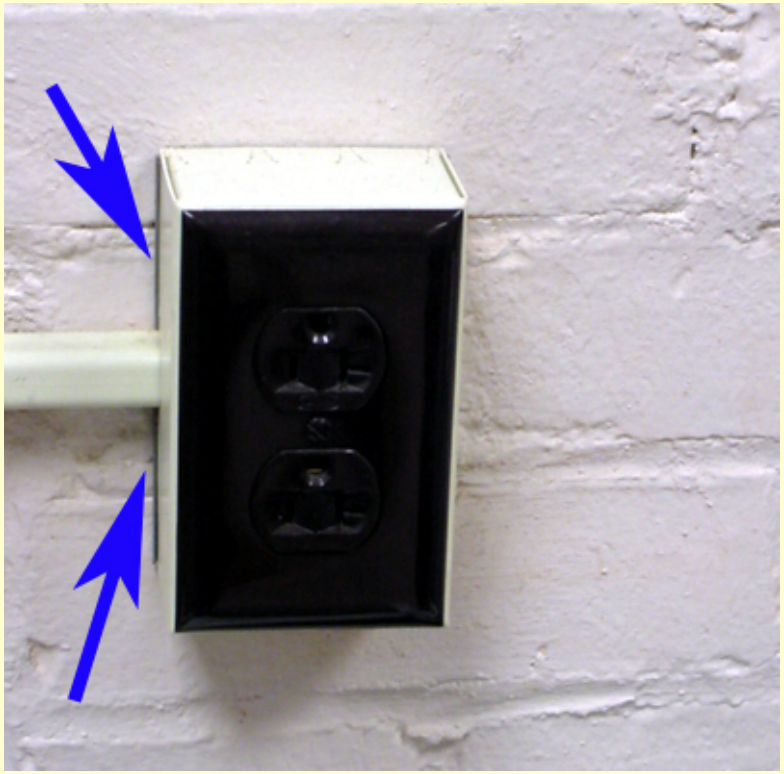
Seal pipe chases and other gaps and holes in walls, ceilings and floors.

Inspecting "Indoors"

Mops and mop buckets should be properly dried and stored (e.g. mops hung upside down, buckets emptied).

Inspecting "Indoors"

Inspect openings around electrical conduits and seal.



Remove trash from lockers and desks and clean out twice a year. They may contain leftover food, which will attract insects and rodents.

Inspecting "Indoors"

Food and Beverages should only be allowed in limited, designated areas and should be cleaned daily.

Waste Management is a Critical IPM Component

Food waste is especially attractive to pests. Keep all waste bins and dumpsters clean, well maintained, and empty often. Place on impermeable surfaces as far from building as possible (minimum 50').

Inspecting "Outdoors"

Lid should fit tight

Dumpster is too close to the door entrance

Garbage containers, compactors, and garbage storage should be placed 50 feet away from building entrances and lids should fit tight

Inspecting "Outdoors"

Look for signs of deteriorating paint: scrape and sand the surface & repaint (prevents wood rot, carpenter ants and mold).

Inspecting "Outdoors"

Building perimeters and playgrounds should be inspected at least every other week during warm weather months to find and destroy wasp nests.

Inspecting "Outdoors"

Weather stripping and door sweeps should be present and in good repair to prevent pest entry.

Inspecting "Outdoors"

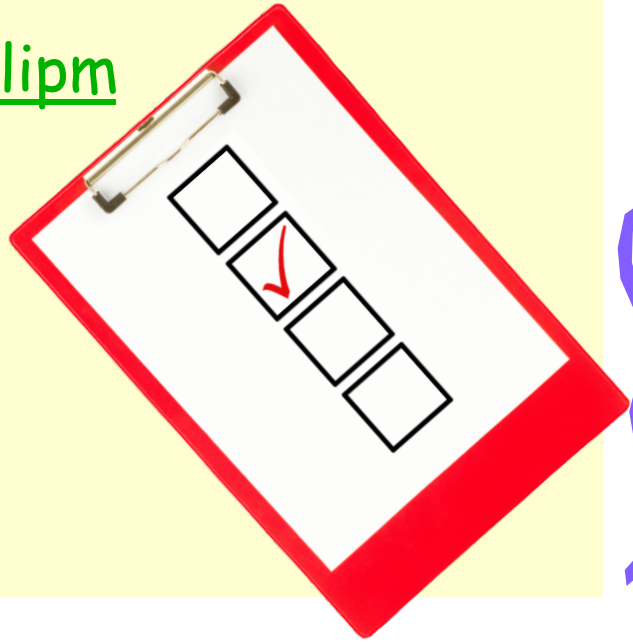
Healthy grass

- Are weeds present in high concentrations on athletic fields?
- Are the soils compacted ?
- Is the appropriate grass species planted?
- Are the grounds irrigated?

Inspection & Monitoring

A thorough monitoring checklist for school facilities is available at:

- thinkfirstspraylast.org/schoolipm



Record Keeping

Record keeping functions as the memory of the IPM program.

- Teaches you about the pests
- Helps you keep track of controls that have worked or not worked
- Helps with communications between employees
- Helps form the basis for making decisions
- Information is not lost when employees leave or retire

Record Keeping
Who, What, Where & When

- Records should show:
  - **Who is doing the monitoring.**
  - **What you are monitoring.**
  - **Where you are monitoring.**
  - **When you are monitoring.**

Evaluate Course of Action

- Are numbers excessive for type of pest (ants)?
- Can pests get out of control (mice, cockroaches)?
- Are pests tolerable (grubs)?
- Are pests an immediate danger to people (stinging pests)?

Prevention

- Practice a high level, of sanitation.
- Limit areas where food is eaten.
- Store food properly.
- Eliminate points of entry.
- Modify the pest's environment don't provide them food, water or harborage for survival.

Pest Suppression Tactics

- Sometimes despite good sanitation and facilities management pests will become more numerous than can be tolerated.

- Tolerance limits, called pest thresholds or action thresholds, can vary from one school or situation to another.

Pest Suppression Tactics

- Communicate with school staff, students and administrators to establish thresholds for anticipated pests, taking into consideration comfort, risks, opportunities for effective low risk interventions.

- When pest monitoring indicates that pests are near or above the threshold, intervention may be called for.

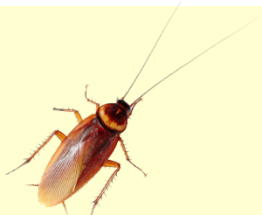
Pest Posing Health Risks

- Cockroaches, stinging pests, and rodents require a very low threshold.
- Nuisance pests such as pavement ants don't constitute an urgent threat, therefore more measured approaches and a threshold that allows for a little tolerance are sensible.

Action Thresholds

- Defines the point above which specific pests cannot be tolerated
- May be based on different criteria;
  - ✓ Potential health risks associated with pests
  - ✓ Pest damage resulting in monetary losses
  - ✓ Aesthetic damage to plants or buildings

Examples: Action Thresholds



- Cockroaches- 1 or more caught on a sticky trap in the school kitchen is too many

- Mice – 1 found in any room of the school is too many

****This pest action threshold is for example only. Schools are urged to develop their own.**

Intervention activities

- Thoroughly clean all floors, surfaces, drains, cupboards, closets to remove all food residues and crumbs.
- Deny rodent access to buildings, sealing small holes with steel or copper wool or caulk, sealing gaps around exterior doors with weather stripping, screening openings in all vents and louvers.
- Reduce stress on lawns by employing good horticultural practices

IPM Relies on Combinations of Different Pest Intervention Approaches

- Cultural
- Physical
- Biological

And as a last resort

- Chemical

Cultural Control

Indoors:

- Clean under and behind equipment daily.
- Clean all areas daily where ever food is eaten and stored.
- Keep kitchens clean and dry.
- Keep trashcans in clean and good condition.

Cultural Control

Outdoors Horticultural:

- Landscape and turf- a map should be made to indicate all the trees, shrubs, garden and fields.
- Keep plants healthy in the landscape, proper planting, watering, fertilizing and pruning.
- Develop a plan for regularly monitoring those potential problem pests.

Physical Control

Indoors:

- Create barriers
- Modify conditions such as temperature, light and humidity
- Trapping
  - ✓ **Use snap traps for rodents**
  - ✓ **Sticky traps for roaches**
- Seal pipe chases and other gaps and holes in walls, ceilings and floors with steel wool or screening material
- Storage in tight containers

Physical Control

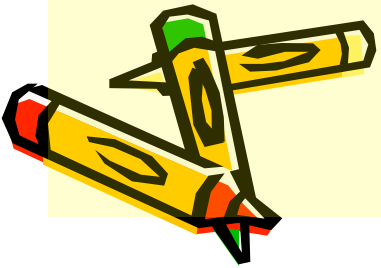
Outdoors:

Habitat Modification:

- Removing dense vegetation near buildings
- Eliminating standing water
- Removing secondary plant hosts
- Planting pest resistant varieties

Barriers:

- Window screens, landscape fabric



Biological Control

This type of control targets specific pests and once established can provide long term, or even permanent control.

**Allowing mother nature to work by restricting the use of pesticides, good bugs thrive and help to keep pests under control.

- Introduce insect predators and parasites.

Chemical Control

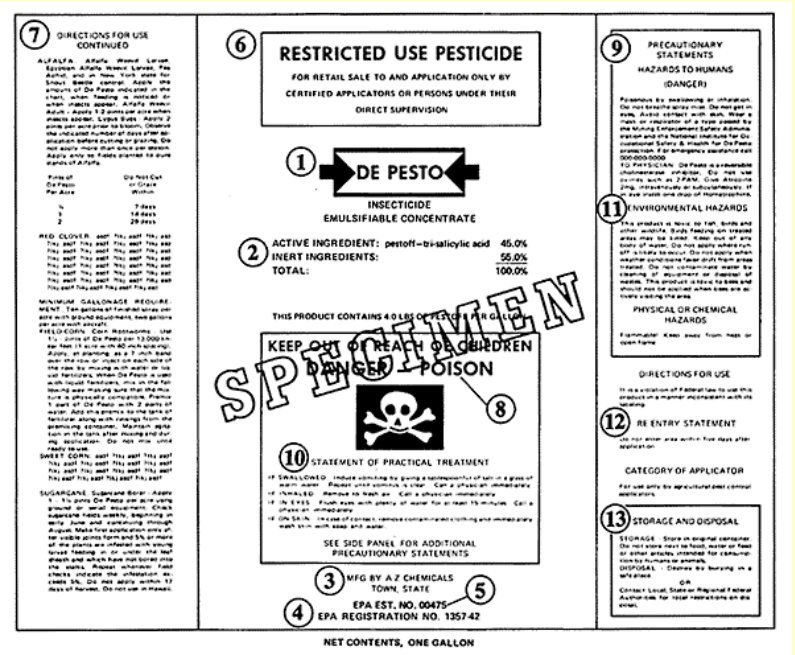
**Chemical control is used as a last resort after other methods have not given adequate control

Or

when the pest poses an immediate risk such as with stinging insects.

Chemical Control

- Use a licensed applicator for application in school buildings or on school grounds
- Always select the least risky material
- Always follow the directions on the LABEL



Poison Control Center

To reach a poison control center from anywhere in the United States, call:

1-800-222-1222

Evaluation of effectiveness

- Were all the necessary components to the program actually developed?
- Were the right people involved in the integration of the components into a whole program?
- Was the pest population adequately suppressed?
- Was the pest population suppressed in a timely manner?

For more information go to:

extension.unh.edu

Acknowledgements

- A special thank you to:
  Dr. Robert Corrigan-RMC Pest Management Consulting- Richmond, Indiana

- Design: Rachel L. Maccini, Faye Cragin
  UNH Cooperative Extension