

2012 School IPM Survey Results

Utah and Colorado

WHAT'S BUGGING YOU?



Presented By:
The Rocky Mountain Consortium



"What's Bugging You?" Utah and Colorado School IPM Survey Results

QUICK STATS

- 167 surveys were completed in Colorado and Utah.
- About half (47%) of school districts said they were familiar with school IPM.
- 85% of districts report having problems with vertebrate pests.
- Two primary barriers to IPM adoption are lack of staff and unavailability of IPM education and training.

INTRODUCTION

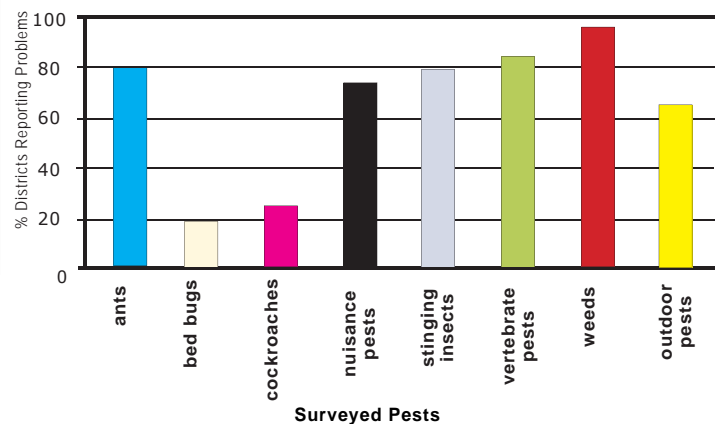
Implementing Integrated Pest Management (IPM) practices minimizes health risks that may result from exposure to diseases transmitted by pests such as mice and roaches. IPM practices also reduce potential environmental and health risks associated with student and staff exposure resulting from pesticide use in traditional pest management programs.

This survey was conducted to determine the use of Integrated Pest Management in Colorado and Utah schools. The purpose of the project is to improve environmental and human health by increasing student attendance in schools with verifiable integrated pest management programs by 25%, and promoting awareness, adoption and dissemination of IPM by addressing human, environmental and economic parameters. Faculty and staff at Colorado State University and Utah State University conducted the survey.

This survey is part of a grant issued by the *United States Environmental Protection Agency*.

SURVEY METHODS

Percentage of Utah and Colorado School Districts Reporting Problems with Common School Pests

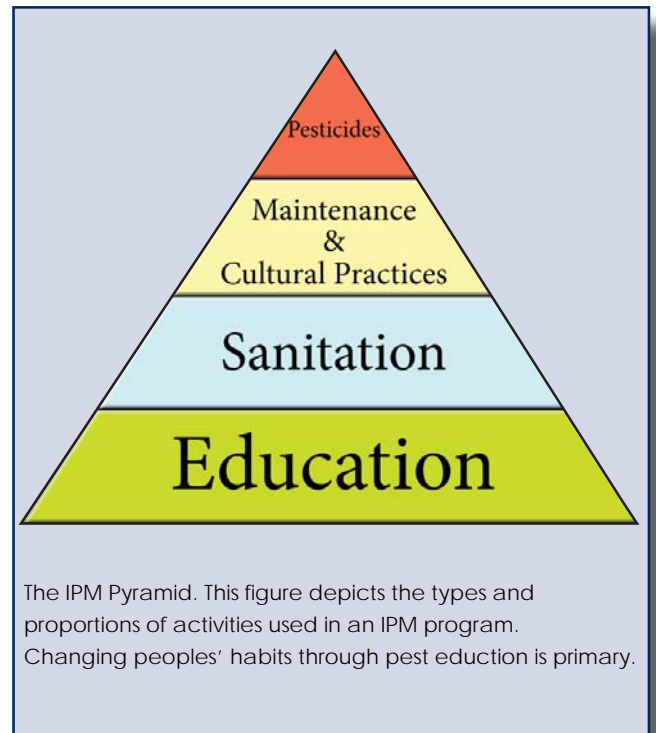


The individuals surveyed were sent an introductory letter in June, 2012 requesting their participation; an informational poster on healthy schools was included. Next, an email was sent to each individual with the online link to the survey. Follow-up phone calls were made to each individual who did not complete the survey in 4 weeks. The survey was closed in November, 2012. Survey protocol was approved by the Colorado State University Institutional Review Board.

The survey was conducted online using a paid subscription to SurveyMonkey. Two-hundred and twenty surveys were sent to key pest management professionals in each school district in Colorado (182 districts) and sixty-five surveys were sent to professionals in Utah (41 districts). The survey took

approximately fifteen minutes to complete. Individual responses were confidential and only the researchers had access to responses, which were not attributed to a specific individual. All data was stored in a secure computer that was password protected.

We received 167 surveys; 150 respondents completed all questions. A few people responded by printing and filling out the survey on paper (and mailing it to us) and a few people took the survey on the phone. Participation in this survey was voluntary and individuals were not required to provide names. Only 73% of respondents provided names. Of these, the survey represented 109 school districts in Colorado (62%) and 16 school districts in Utah (39%). However, more than one person filled out and submitted surveys in eight of the named school districts.



Each district uses a different title for this position such as facility manager, environmental health specialist, and operations manager. Those answering the survey had the following job titles:



SECTION 1 PEST MANAGEMENT PERSONNEL & SCHOOL DISTRICT POLICIES AND PLANS

IPM is a strategy of managing pests using multiple tactics that provide the best control with the least cost and environmental impact. IPM is based on thorough knowledge of the pests and the technologies used to control them, and can be performed by anyone with proper training. A good IPM program modifies the environment to make

schools less hospitable to pests and uses the lowest impact pesticides as necessary. Managing risks from pests and pesticides used to control them are top priorities under an IPM program.

“47% of schools said they were familiar with Integrated Pest Management...only 17% of school districts in CO and UT have an IPM Coordinator.”

What is the status of IPM in schools in Colorado and Utah?

About half (47%) of school districts said that they were familiar with IPM. Reducing the number of pests in and around buildings and pest control costs were cited as the

Table 1

From your perspective, how important are the following IPM goals in your school district's pest control strategies?

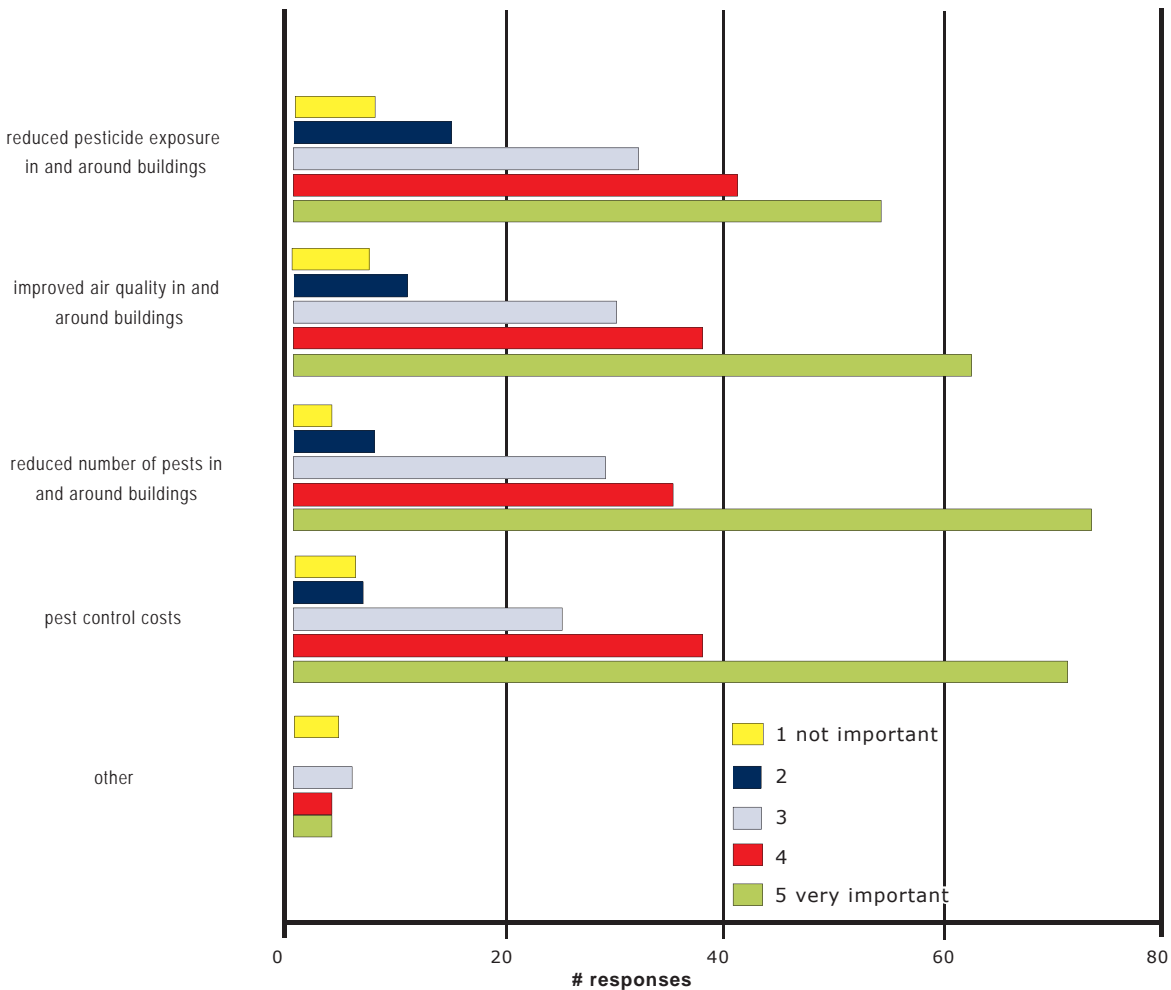
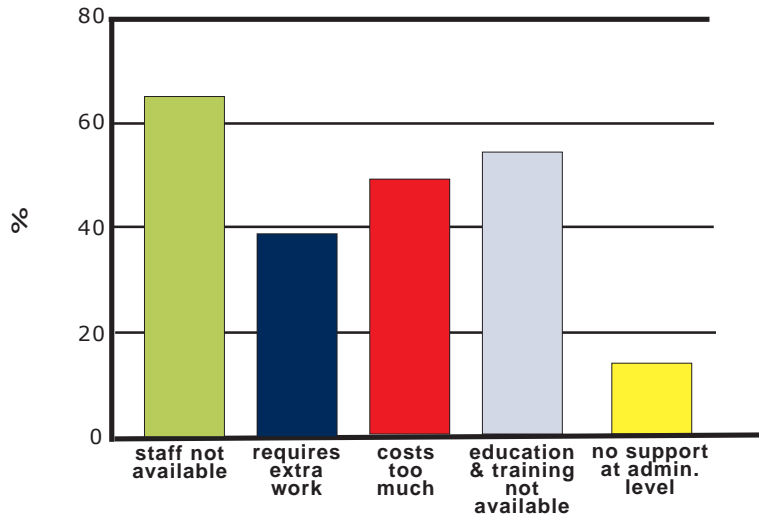


Table 2

From your perspective, what are the primary barriers to implementing a IPM program in your school District?



most important IPM goals, followed by improved air quality and reduced pesticide exposure (Table 1).

Having a sustainable IPM program takes time, effort and people. Simply adopting IPM tenets and practices is part of the solution, but having a well thought out program takes effort. Few school districts have a statement committing to the use of IPM (11%) or an IPM plan with specific practices to minimize pest pressure (21%). At the time of the survey, neither Colorado nor Utah had state mandates regarding the use of IPM; however 42% reported that they had "State or district mandated rules or regulations". Fifty percent reported that they had a requirement that only a state licensed pesticide applicator may use pesticides in and around the school grounds. As of this date, the Utah Department of Health has adopted the "School Rule," which mandates that all public schools in Utah practice IPM. See Appendix B for the IPM portion of the School Rule. A similar rule or regulation is not in place in Colorado.

Staffing, training and cost were significant barriers to implementing IPM practices (Table 2).

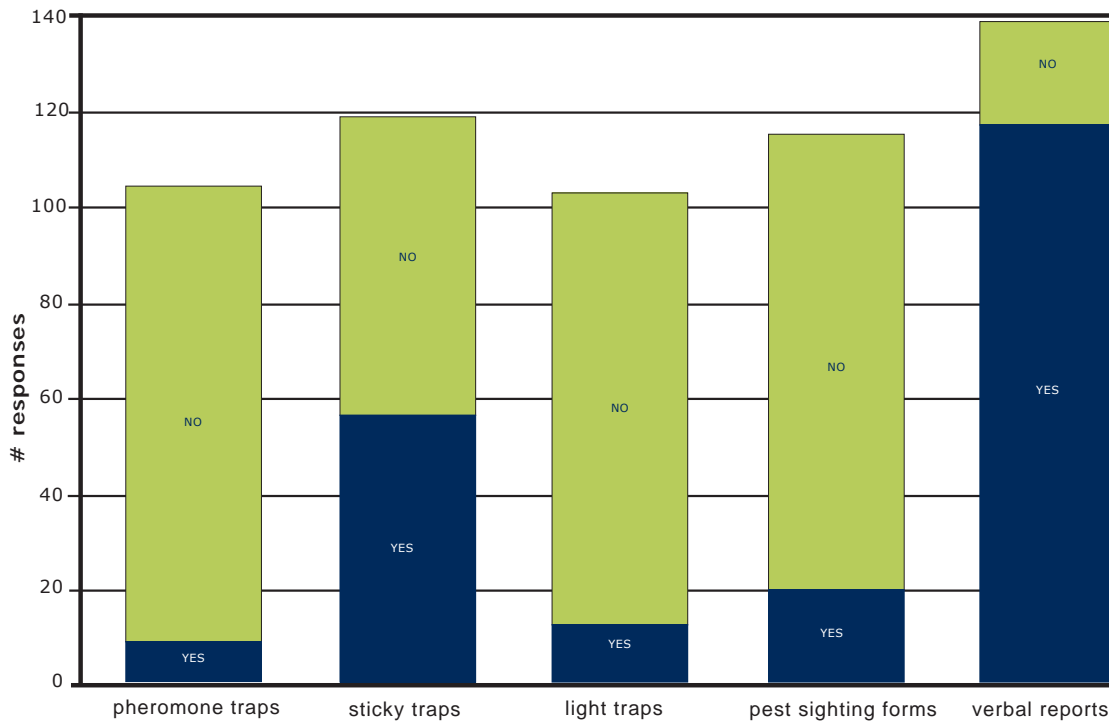
Fifty-one percent said that the school district does not provide training and education in pest management, environmental health and safety; 34% do provide in-house training to facility managers and custodians.

One of the key steps to implementing an IPM program is having a designated IPM coordinator ("The Bug Stops Here" person). The IPM coordinator is an important part of the overall environmental quality team for the school or district and interacts with upper administration, principals, teachers, custodians, food service and maintenance on a regular basis. Only 17% of school districts reported having such a person.

The majority (65%) of schools used a pest control professional (contracted or hired as needed) for pest management. Thirty percent performed pest management duties with district employees. In 81% of the school districts, district employees (custodial or facility

Table 3

How do you monitor and keep track of the number and kinds of pests inside and outside district buildings?



maintenance) are responsible for decisions about pest management.

In one-third of the districts, the principal or superintendent oversees decisions.

Schools are keeping track of pests and pesticide use in different ways. Schools keep records of product names and quantity of pesticides used (50%), the number of pesticide applications per year (48%), costs associated with pest management activities (42%), the location of pest sightings (37%), and the number of pest complaints per year (20%).

Using monitoring devices (such as sticky cards and pheromone traps) to determine what pests occur is also important for pest management. However, most schools (85%) use verbal reports as the main way to monitor pest incidence (Table 3).

The majority of schools are regularly inspecting structures and grounds (82%), as well as installing materials that exclude pests from buildings (89%), a key to preventing pest problems. However, many schools are applying pesticides to both structures (59%) and grounds (64%) on a calendar basis. IPM practices recommend the use of pesticides when other methods of exclusion and sanitation have failed.

About 50% of the school districts reported that there is no policy for notifying parents when pesticides are used. A few school districts do notify parents, mostly by posting a notice on site at the school (19%). Other methods included school newsletters (5%), take home notes/flyers (5%), list serve or website (4%), and phone

SECTION 2 PEST PROBLEMS IN YOUR SCHOOL DISTRICT



THE PROBLEM

Ants are the one of the most frequent and persistent pests encountered around schools. Thirty audits of schools in Colorado were conducted between 2009 and 2013; ants were observed in 21 or 70% of the schools inspected. In Utah, 7 schools inspected in 2013 all had ants present.

WHAT ARE SCHOOLS DOING?

Seventy-three percent of those reporting ants as a problem used a perimeter insecticide spray to control them. Another 43% reported using crack and crevice or baseboard insecticides. In many school districts, custodians regularly “spot spray” foraging ants in classrooms, hallways and around door thresholds.

While insecticides (baits) are a critical part of any ant management plan, spot sprays and spraying worker ants often do little to eliminate the problem, and can actually counter an

ANTS	Response %
Ants have not been a problem	20.0
Don't know if ants have been a problem	2.5
Exterior perimeter insecticide spraying	48.1
Exterior insecticide baiting	22.5
Caulking or screening cracks and crevices	36.9
Fix dripping faucets and leaking pipes	21.3
Use of crack and crevice or baseboard insecticide applications	33.1
Improved food handling, storage, and clean-up methods in cafeteria and lounges	36.3
Bait stations (insecticides) placed indoors	34.4
Provide a dry, vegetation-free border around building perimeter	8.8
Manage honeydew-producing insects (aphids, scales) on plants near the building	2.5

otherwise effective baiting program. It is always critical to exclude ants with sealant or caulking, properly store food and trash, clean regularly and lastly, baits. Spray and liquid insecticides should be reserved to direct applications made to ant nests found through a thorough inspection of the affected area.

IPM MANAGEMENT STRATEGIES

- Insecticide sprays only kill the ants that are exposed to the spray. This approach usually fails because the ants seen foraging over exposed surfaces is only a small portion of the colony.
- The key to effective ant control is to eliminate queens and other colony members within nests. Bait stations or ant stakes are easy to use, relatively safe for the environment, and effective when used correctly.
- Multiple preventative methods are needed to prevent future ant infestations.



THE PROBLEM

Bed bugs are an increasing problem around the world in hotels, homes, businesses and in schools. If your school hasn't had to deal with bed bugs yet, it will. Will your school be ready with a bed bug action plan in place?

WHAT ARE SCHOOLS DOING?

Only 20% of schools reported bed bugs in their school district. There are many control methods for bed bugs and an integrated approach works best for eradicating bed bugs from any situation. The chart in the upper right summarizes the control techniques used by school districts.

In addition to monitoring sensitive areas where bed bugs are likely to be introduced and/or survive, one proactive option not given in the survey is to have a bed bug action plan/policy in place before an incident occurs. An action plan can help quickly isolate introduced bugs, eradicate bugs faster, properly deal with the person(s) responsible for the introduction, and outlines a plan to educate teachers and staff about bed bugs and the action plan. Examples of bed bug action plans for schools can be found by visiting: <http://www.vdacs.virginia.gov/pesticides/pdf/files/bb-schools1.pdf>. A bed bug action plan will greatly minimize the chance that an irrational,

BED BUGS	Response %
There have been no reports of bed bugs	79.8
Don't know	4.3
Inspect and monitor areas with upholstered furniture, donations, lost & found items, backpacks and coats	11.1
Remove clutter and vacuum regularly	14.2
Use a silicone or acrylic-based sealant to fill cracks, crevices and around utility ducts	1.9
Insecticide sprays	9.3
Insecticidal dusts (like diatomaceous earth)	0.5
Heat treatment	1.9
Cold (cryogenic) treatment	0.0
Steam	1.2

irresponsible, or insensitive response will occur if bed bugs are located, not to mention save the district money.

IPM MANAGEMENT STRATEGIES

- Train staff to identify bed bugs and the signs of bed bugs in the classroom and the children's items.
- Understand the difference between an "introduction" and an "infestation".
- Establish a school Integrated Pest Management Plan with an emphasis on monitoring.
- Any student with bed bugs identified on their person or in their belongings may remain in school until the end of the day.
- Respond promptly to bed bug complaints within the school and through contact and counseling with parents.
- Parents should promptly respond to bed bugs in the home.



THE PROBLEM

Cockroaches are one of the most common, and more difficult indoor pests in a school. With a vigilant sanitation, exclusion, monitoring, and education program, your school can stay on top of these cryptic pests before they become a big problem.

WHAT ARE SCHOOLS DOING?

About 25% of school districts reported issues with cockroaches and have dealt with them in various ways as summarized in the above table. When combined with other non-chemical techniques, chemicals are a valuable tool in roach control, however, monitoring is the cornerstone of any cockroach IPM program. If your school does not monitor for roaches and other pests, it is time to develop a pest monitoring program.

Cockroaches are capable of spreading disease and are allergy/asthma triggers. Schools should have zero tolerance for these pests. Develop a monitoring program to catch roach populations while they are small so you can eliminate them quickly! Non-chemical controls coupled with well placed baits are typical practice.

COCKROACHES	Response %
Cockroaches have not been a problem	74.4
Don't know	4.4
Seal around cracks and crevices and around utility ducts with a silicone or acrylic-based sealant or foam	13.1
Store food in pest proof containers	14.4
Move dumpsters or trash storage away from building	7.5
Repair any leaks or plumbing malfunctions	13.1
Eliminate clutter	6.6
Use cockroach traps to monitor	11.3
Exterior perimeter insecticide spraying	12.5
Interior insecticide baiting	13.8
Eliminate cardboard boxes used for storage	4.4

IPM MANAGEMENT STRATEGIES

- Monitor placement is critical and monitors should be placed in between resources (harborage, food, and water) and along structural lines, adjacent to walls, corners etc., where roaches travel or harbor.
- Monitors should be kept out of view if possible.
- Monitoring stations or units should always be dated and assigned a unique identifying code to track activity over time and help keep precise records.
- Place enough monitoring units to accurately monitor an area because monitors provide valuable information about pest activity. Food service areas should have more monitors than nonfood areas.
- Create a map of the area that includes the location of the traps.
- If a trap is consistently empty, the trap may be relocated to another site.
- Monitors should be replaced if full, wet or covered in dust.



THE PROBLEM

Many schools have various types of **nuisance pests**, including carpet beetles, spiders, flies, gnats, ground beetles, clover mites, boxelder bugs, pillbugs, millipedes, etc. Most of the time, these pests are occasional and should not prompt any reaction.

WHAT ARE SCHOOLS DOING?

Most schools have nuisance pests (71%) and many ways of dealing with them. The most commonly used method of dealing with nuisance pests is vacuuming and cleaning (50%), followed by maintaining door sweeps and tight door thresholds (47%). Thirty percent caulk or screen cracks and crevices to exclude pests.

A large number of school districts also employ chemical strategies such as exterior perimeter insecticide spraying (47%) and the use of crack and crevice or baseboard insecticide applications (30%) for control.

Unless there is an outbreak population of a specific nuisance pest, chemical treatments indoors and outdoors are usually not needed. The potential impact of the pest on the school and the students and teachers must be considered. If the pest has a potential to spread disease and can't be tolerated, then a chemical tactic might be used in conjunction with non-chemical methods. However,

NUISANCE PESTS	Response %
Nuisance pests have not been a problem	24.8
Don't know	3.7
Maintain door sweeps and tight door thresholds	47.2
Exterior perimeter insecticide spraying	47.2
Use of crack and crevice or baseboard insecticide applications	29.2
Sweep and vacuum frequently	49.7
Caulk or screen cracks and crevices	29.8
Hand removal (or smashing) of individual pests, as noticed	31.7

many nuisance pests, like boxelder bugs or pill bugs, are not of human health concern and could be dealt with non-chemically.

IPM MANAGEMENT STRATEGIES

- Most nuisance pests will not harm people or stored food products, and should be tolerated to a certain level.
- The primary way to keep nuisance pests from being an issue inside is to install effective door sweeps and astral brushes, seal all holes in the exterior of the structure where pests can enter, fix screens and windows and to clean/vacuum regularly.
- Nuisance pests should rarely be treated chemically. Chemical applications to base boards and building perimeters are ineffective methods of dealing with low-level populations of nuisance pests. Only in outbreak situations should chemicals be used to control nuisance pests.
- Consider the specific pest you are dealing with and learn its biology and effective control strategies.



THE PROBLEM

Stinging insects are a liability for every school district. While paper wasps are common pests in Colorado and Utah, they are less aggressive and potent than their relatives--yellow jackets. Regardless, all stinging insects should be managed to prevent stings, allergic reactions and even death.

WHAT ARE SCHOOLS DOING?

Eighty of all school districts have had some conflict with stinging insects such as yellow jackets, bees and paper wasps.

By far, the most common practice for eliminating stinging insects is to destroy nests with aerosol insecticide formulations (71%). The most common non-chemical technique used is to reduce nesting sites via exclusion (41%). Kids are most susceptible when using playground facilities. Playgrounds are full of potential nesting sites that put kids in direct contact with dangerous insect pests. Only 32% of schools report sealing all openings that allow access to hollow tubing, structures or voids such as playground equipment or soffits. Cleaning and/or replacing dumpsters on a regular basis will also eliminate a major wasp attractant.

Because stinging insects are a liability, they should be dealt with proactively and swiftly if they do become a problem.

STINGING INSECTS	Response %
Stinging insects have not been a problem	17.9
Don't know	1.9
Reduce nesting sites before colonies become established in early spring	40.7
Seal all openings that allow access to hollow tubing, structures or voids	32.1
Place outdoor trash cans and dumpsters away from building entrances	23.5
Destroy nest with aerosol insecticide formulations	71.0
Clean dumpsters on a regular basis	15.4
Do not plant flowering trees, shrubs, or flowers immediately adjacent to building entrances or walkways	8.0
Keep doors and windows closed as much as possible	27.2
Use baited traps in spring and/or fall	14.2
Remove individual insects with a vacuum or flyswatter	19.8

IPM MANAGEMENT STRATEGIES

- Perform an exterior/interior inspection to identify nesting sites.
- Seal cracks/crevices which provide access to nest site and possible interior entry points.
- Identify and eliminate food sources which attract stinging insects.
- Place tight-fitting lids on waste barrels/baskets.
- Replace fruiting vegetation species with non-fruiting varieties.
- Correctly identify insect species.
- Determine if nest elimination or treatment is required.
- Treat nests by vacuuming or with dust/aerosol formulations.
- Use glue traps to trap insects indoors.
- Use appropriate bottle or box traps to reduce area wide population.



THE PROBLEM

Eighty-five percent of school districts report mice, pigeons, raccoons, rats, bats or fox in or around schools. Vertebrate pests can be nuisance pests, but can also be destructive, dangerous and can potentially carry and transmit disease. **Mice** are, without a doubt, one of the biggest pest issues schools face.

WHAT ARE SCHOOLS DOING?

Fortunately, for small vertebrate control, 56% of schools report using exclusion as their primary control technique. Snap traps are the next most popular control (50%). Thirty-five percent of schools monitor for rodents using bait blocks, and only 16% use poison baits for control. Other controls methods can be viewed in the table above.

Every vertebrate pest is treated differently, so properly identify your pest and contact your local Extension office or state School IPM representatives for advice on control. The risk of contact with rodent-associated pathogens and allergens increases when cleaning areas that have been infested. Follow guidelines at: <http://www.cdc.gov/rodents/cleaning/index.htm>

VERTEBRATE PETS	Response %
These pests have not been a problem	15.1
Don't know	1.3
Repair or seal all openings > than 1/4" diameter that allow entrance	56.0
Store items in plastic containers	32.7
Minimize landscape areas on school grounds that attract or provide shelter for animals	20.8
Use live traps to capture and move animals	39.0
Use 'snap traps' to kill animals	49.7
Place bait blocks in inaccessible areas and check regularly for feeding	34.6
Remove debris, clutter, or stored materials from building exterior and surroundings to reduce areas that shelter pests	36.5
Use poison baits labeled for appropriate species	16.4

IPM MANAGEMENT STRATEGIES

- Seal gaps of ¼ inch or more with silicone or polyurethane sealant products that stretch as gaps and cracks in buildings expand and contract.
- Fill holes/cracks 1/4" or larger with quality concrete, or stuff with Xcluder cloth or Stuf-fit copper mesh, then sealed with silicone or polyurethane sealant. Steel wool and expandable foam are not recommended for exclusion.
- Seal around water, gas, electric, and other pipes and conduits going through walls.
- Make all external doors mouse-proof using the high-quality, door sweeps that seal the gap between the threshold and the door base.
- Maintain and repair all ventilation screens, louvers used in attic spaces, and furnace closets. All gaps around the frames of screens and louvers should also be kept tightly sealed.
- Mouse-proof the crawl space skirt around portable class rooms. Dig a 6-inch trench below the skirt, attach ¼-inch hardware cloth to the bottom of the skirt so that it goes to the bottom of the trench, then fill in the trench with dirt or crushed rock.



THE PROBLEM

Ninety-six percent of respondents reported that **weeds** have been a problem. Weed control is a necessary part of maintaining school grounds. Healthy and well-maintained landscapes and turf will deter weed invasions but weeds still manage to find openings to establish and spread. Weeds can interfere with footing on athletic fields, and some weeds – like the spurge – contain harmful substances. Noxious weeds are problematic because of their nature to dominate plant communities, including landscapes and turf, and state law requires their control.

WHAT ARE SCHOOLS DOING?

The two most common practices in weed control were (1) to spot spray weeds in turf areas and/or pavement areas (66.5%); (2) to apply weed and feed herbicides in turf areas (61.5%); and (3) spray large areas of turf (52%).

Using IPM will minimize the use of herbicides. Try non-herbicidal controls first. Chemical control should be used in combination with other methods, when other methods have failed, and/or are cost prohibitive.

WEEDS	Response %
Weeds have not been a problem	4.3
Don't know	5.6
Hand-weed or hoe weeds	43.5
Apply weed and feed herbicides to control weeds in turf areas	61.5
Adjust mowing heights, fertilization and irrigation to prevent weeds	35.4
Spot spray weeds in turf areas and/or pavement areas	66.5
Spray large areas of turf to control weeds	52.2
Accept broad leaf weeds as part of outdoor areas	7.5
Convert turf areas into non-turf plantings	5.6

IPM MANAGEMENT STRATEGIES

- Mow as high as practical during the summer months for the particular grass species present in your turf.
- Mow often enough so that no more than one-third of the grass blade is removed in a single mowing.
- Irrigate properly to help reduce annual weed infestation.
- Fertilize according to the needs of your grass species.
- Core cultivate (aerate) the turf at least once a year to reduce compaction and to control thatch.
- Mulch with organic or inorganic materials to prevent annual weeds.
- Prune or remove flower heads or weeds to limit seed production in April for winter annuals and summer for summer annuals.
- Remove annual weeds by hand. Hand removal of perennials is seldom effective.



THE PROBLEM

Most **plant problems** are not caused by insects and disease, but by “non-living” factors, such as extremes of temperature (freeze damage and sun scald), lawn-mower damage, salt damage, and chemical factors. You can use IPM to maintain a healthy and safe landscape on school grounds, no matter what the causal factor.

WHAT ARE SCHOOLS DOING?

About 1/3 of respondents said that no insect and/or disease problems have occurred on their school grounds. Of the 2/3 of respondents who did report problems, 33.5% reported that they applied insecticides on sports fields and/or playgrounds. The next most common practice (28.5%) was to prune dying branches from trees and shrubs.



OUTDOOR PESTS	Response %
No insect and/or disease problems have occurred	35.4
Don't know	13.3
Prune dying branches from trees and shrubs	28.5
Apply fungicides to control diseases	22.8
Prune out plant parts infested with insects and/or diseases	17.7
Remove caterpillars, beetles, and other insect pests by hand	1.9
Apply insecticides on sports fields and/or playgrounds	33.5
Adjust irrigation and nutrition to prevent disease and insect problems	20.9

IPM MANAGEMENT STRATEGIES

- Consider managing the school grounds in zones. Map out the landscape and turf areas on the property and think about how each area will be used. High use and high visibility areas, such as the front entrance of a building or sports turf, will receive more attention than boundary areas or lawns.
- Plant the “right plant in the right place”. Consult your university or landscape professional for a list of plants that are hardy and drought tolerant for your area.
- The need for pesticides is reduced by keeping plants healthy – through proper fertilization, irrigation, and soil management.
- It’s important to diagnose the problem – fungi, bacteria, viruses, nematodes, insects, mites, etc. Once diagnosed, consider all options – pruning, irrigation, fertilization, removal, replacement with more appropriate species, and pesticide.

CONTACT INFORMATION

Education is the cornerstone of IPM. Please use the results from this survey to help create or improve your district's IPM program. Remember, you are not alone. Representatives from Colorado State University, Utah State University, and your state school IPM coalition are ready and willing to help you learn about and create an IPM program.

Don't hesitate to contact your state School IPM representatives!

UTAH CONTACT

Ryan Davis
Department of Biology
Utah State University Extension

Phone: 435-797-2435
Email: ryan.davis@usu.edu
www.utahpests.usu.edu

Address:
Utah State University
5305 Old Main Hill
Logan, UT 84322

COLORADO CONTACT

Deborah Young
Center for Sustainable IPM
Colorado State University Extension

Phone: 970-491-1377
Email: deborah.young@colostate.edu
www.coloradoipmcenter.agsci.colostate.edu

Address:
Colorado State University
Department of Bioagricultural Sciences
and Pest Management
Fort Collins, CO 80523-1177

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Appendices

APPENDIX A: SURVEY QUESTIONS

Thank you for taking the time to help us understand the pest management information needs of your school district. This survey has three sections. The first section (A) asks about personnel involved with pest management in your school district. The second section (B) asks about current pest problems in your school district. The third section (C) asks, generally, about school district policy and practices with regard to pest control.

A. PEST MANAGEMENT PERSONNEL

1. On a scale from 1 (no concern at all) to 5 (a very great concern), how important is pest management in your school district?

No concern 1 2 3 4 5 Great concern

2. Who does the majority of the pest control work in your district? (Check one)

- Pest control professional, contracted or hired as needed
- Custodial or facilities maintenance employees (in-house pest control operator)
- Teachers and support staff
- Don't know
- Other (specify) _____

3. Who oversees decisions about pest management in your school district? (Check all that apply)

- No one
- Don't know
- External pest control professional
- Internal custodial or facilities maintenance employees
- Kitchen staff
- County or local health departments
- Office personnel
- Principal or superintendent
- Other (specify) _____

4. How does your school district provide training and education in pest management, environmental health and safety? (Check all that apply)

- We do not provide training in this topic
- Schools have appointed IPM coordinator(s) who receive training
- District provides in-house training of facility managers and custodians
- Administrators and/or principals receive training
- Regular staff meetings for teachers
- Don't know
- Other (specify) _____

B. PEST PROBLEMS IN YOUR SCHOOL DISTRICT

1. If ants have been a problem (inside or outside) your facilities, which methods are used to control ants on school grounds? (Select all that are currently used)

- Ants have not been a problem
- Don't know if ants have been a problem
- Exterior perimeter insecticide spraying
- Exterior insecticide baiting
- Caulking or screening cracks and crevices
- Fix dripping faucets and leaking pipes
- Use of crack and crevice or baseboard insecticide applications
- Improve food handling, storage and clean-up methods in cafeteria and lounges
- Bait stations (insecticides) placed indoors
- Provide a dry, vegetation-free border around building perimeter
- Manage honeydew-producing insects (aphids, scales) on plants near the building
- Other (specify) _____

2. If bed bugs have been reported in any of your buildings, which methods are used to control bed bugs? (Select all that are currently used)

- There have been no reports of bed bugs
- Don't know
- Inspect and monitor areas with upholstered furniture, donations, lost & found items, backpacks and coats
- Remove clutter and vacuum regularly
- Use a silicone or acrylic-based sealant to fill cracks, crevices and around utility ducts
- Insecticide sprays
- Insecticidal dusts (such as diatomaceous earth)
- Heat treatment
- Cold (cryogenic) treatment
- Steam
- Other (specify) _____

3. If cockroaches have been a problem in your facilities, which methods are used to control cockroaches? (Select all that are currently used)

- Cockroaches have not been a problem
- Don't know
- Seal around cracks and crevices and around utility ducts with a silicone or acrylic-based sealant or foam

- Store food in pest-safe containers
- Move dumpsters or trash storage away from building
- Repair any leaks or plumbing malfunctions
- Eliminate clutter
- Use cockroach traps to monitor population
- Exterior perimeter insecticide spraying
- Interior insecticide baiting
- Eliminate cardboard boxes used for storage
- Other (specify) _____

4. If nuisance pests such as spiders, clover mites, boxelder bugs, flies and crickets, have been a problem in your facilities, which methods are used to control these occasional invaders and nuisance insects? (Select all that are currently used.)

- Nuisance pests have not been a problem
- Don't know
- Maintain door sweeps and tight door thresholds
- Exterior perimeter insecticide spraying
- Use of crack and crevice or baseboard insecticide applications
- Sweep and vacuum frequently
- Caulk or screen cracks and crevices
- Hand removal (or smashing) of individuals as noticed
- Other (specify) _____

5. If stinging insects such as yellow jackets, bees and paper wasps have been a problem on school district property, which methods are used to restrict bees and wasps in and around district buildings? (Select all that are currently used.)

- Stinging insects have not been a problem
- Don't know
- Reduce nesting sites before colonies become established in early spring
- Seal all openings that allow access to hollow tubing, structures or voids (such as playground equipment or soffits)
- Place outdoor trashcans and dumpsters away from building entrances.
- Destroy nest with aerosol insecticide formulations
- Clean dumpsters on a regular basis
- Do not plant flowering trees, shrubs or flowers immediately adjacent to building entrances or walkways
- Keep doors and windows closed as much as possible
- Use baited traps in spring and/or fall
- Remove individual insects with a vacuum or flyswatter
- Other (specify) _____

6. If vertebrate pests, such as mice, pigeons, raccoons, rats, bats or fox, have been a problem in and around buildings, which methods are used to control these pests? (Select all that are currently used)

- These pests have not been a problem
- Don't know
- Repair or seal all openings greater than ¼ inch diameter that allow entrance
- Store items in plastic containers
- Minimize landscape areas on school grounds that attract or provide shelter for animals
- Use live traps to capture animal(s) and move
- Use 'snap traps' to kill animal
- Place bait blocks in inaccessible areas and check regularly for feeding
- Remove debris, clutter or stored materials from building exterior and surroundings to reduce areas that shelter pests
- Use poison baits labeled for appropriate species
- Other (specify) _____

7. If weeds such as dandelions, puncture vine and/or morning glory have been a problem in lawns, playgrounds, sports fields, and other outdoor spaces, which weed control method(s) have been used? (Select all that are currently used).

- Weeds have not been a problem
- Don't know
- Hand-weed or hoe weeds
- Apply weed and feed herbicides to control weeds in turf areas
- Adjust mowing heights, fertilization and irrigation to prevent weeds
- Spot spray weeds in turf areas and/or pavement areas
- Spray large areas of turf to control weeds
- Accept broad leaf weeds as part of outdoor areas
- Convert turf areas into non-turf plantings
- Other (specify) _____

8. If insect and disease problems in lawns, playgrounds, sports fields and other outdoor areas have occurred, which methods to control insects and/or disease are used? (Select all that are currently used).

- No insect and/or disease problems have occurred
- Don't know
- Prune dying branches from trees and shrubs
- Apply fungicides to control diseases
- Prune out plant parts infested with insects and/or diseases
- Remove caterpillars, beetles, and other insect pests by hand
- Apply insecticides on sports fields and/or playgrounds
- Adjust irrigation and nutrition to prevent disease and insect problems
- Other (specify) _____

C. SCHOOL DISTRICT POLICIES AND PRACTICES

Integrated Pest Management (IPM) minimizes dependence on pesticides to control pests (insects, spiders, rodents, weeds, etc.) by decreasing pest presence using proactive, non-chemical methods such as pest monitoring, cleaning, sealing and blocking pest entryways into buildings, and education.

1. On a scale from 1 (never heard of it) to 5 (know and understand), how familiar are you with Integrated Pest Management (IPM)?

Never heard of IPM 1 2 3 4 5 Know & understand IPM

2. Which written policies does your school district have regarding pest management?

YES NO

- Track the number of pest complaints per year
- Track the number of pesticide applications per year
- Track the product names and quantity of pesticides used
- Track the location of pest sightings
- Track costs associated with pest management activities (personnel hours spent, materials used, monitoring devices, equipment, licensing)
- A statement committing to the use of Integrated Pest Management (IPM)
- An IPM plan with specific practices to minimize pest pressure (such as restriction on the use of furniture, regulations on food and food storage, etc.)
- A designated IPM coordinator
- State or District mandated rules or regulations
- Requirement that only a state licensed pesticide applicator may use pesticides in and around the school grounds
- Don't know
- Other (specify):

3. How do you monitor and keep track of the number and kinds of pests inside and outside district buildings?

YES NO

- Use pest sighting forms
- Use sticky traps
- Use light traps
- Use pheromone traps
- Verbal reports
- Other (specify)_____

4. What is your policy for notifying parents when pesticides are used? (Check all means used.)

- There is no policy for notifying parents
- Don't know
- By school newsletter (hard copy or electronic)
- Take-home notes or flyers
- By phone calls
- By list serve or website
- Notice posted on site at school
- Other (please specify) _____

5. What other practices are in place in your school district regarding pest management?

YES NO

- Apply pesticides to structures based on time of year
- Apply pesticides to grounds based on time of year
- Regularly inspect structures
- Regularly inspect grounds
- Maintain, repair and install materials to exclude pests from building, such as replacing door sweeps
- Certified pest control applicators (structural and/or grounds) on staff
- Identify pests before treatment
- Determine pest numbers before treatment
- Procedures for food management
- Procedures for sanitation and housekeeping
- Other (specify): _____

6. From your perspective, which of the following do you consider barriers to implementing Integrated Pest Management (IPM) practices? (Check all that apply)

- Staff are not available
- Requires extra work
- Costs too much
- Education and training is not available
- No support at administrative level
- Other (specify) _____

7. From your perspective, how important are the following IPM goals in your school district's overall pest control strategies? (5 point or 10-point scale?)
- a. Reduced pesticide exposure in and around buildings
Not important 1 2 3 4 5 Very important
 - b. Improved air quality in and around buildings
Not important 1 2 3 4 5 Very important
 - c. Reduced number of pests in and around buildings
Not important 1 2 3 4 5 Very important
 - d. Pest control costs
Not important 1 2 3 4 5 Very important
 - e. Other (specify) _____

Please provide the title and contact information for the person who is filling out the survey

Title:

Name:

E-mail address:

Phone number:

Postal address:

APPENDIX B: IPM PORTION OF THE "SCHOOL RULE"

**UTAH ONLY*

Excerpt from the Utah Department of Health's "School Rule" concerning IPM.

(12) Pest Management.

(a) The governing body shall minimize in school buildings or on school grounds the presence of pests that are vectors for disease, carry allergens that are likely to affect individuals with allergies or respiratory problems, or may sting or bite causing mild to serious reactions in some individuals.

(b) The **governing body shall adopt integrated pest management (IPM) practices and principles** to prevent unacceptable levels of pest activity with the least possible hazard to people, property, and the environment.

(c) **The governing body shall have a written integrated pest management plan** written by the governing body or provided by the contracted pest management contractor **whether IPM is implemented as an internal process or contracted to a pest management professional**. The plan shall include sections that cover the following topics: an IPM policy statement; IPM implementation and education; pest identification, monitoring procedures, reporting and control practices; approved pesticides; procedures for pesticide use; a policy for the notification of students, parents, and staff; and applicator requirements. Guidance for an IPM plan can be found in publications of the IPM Institute of North America. The Department or the Local Health Officer may require changes in a school's IPM plan if the plan neglects or causes a threat to the health or safety of the occupants of a school.

(d) **The governing body shall use non chemical management methods whenever possible to provide the desired control**. The governing body shall use a full range of control alternatives including: identification and removal or repair of conditions that are conducive to pests; structural repair and sealing; improved sanitation; removal of clutter or harborage; elimination of food sources; exclusionary measures to protect doors, windows and any other opening to the outside against the entrance of insects, rodents, and other animals. A no action alternative shall also be considered in cases where the pest has no public health or property damage significance.

(e) If the governing body chooses to not use an outside pest control contractor, school personnel who apply pesticides shall follow the Utah Dept. of Agriculture pesticide regulation R68 7. The applicator shall apply all products according to the pesticide label directions.