



# Pests and Pesticides in Child-serving Facilities: An IPM Newsletter

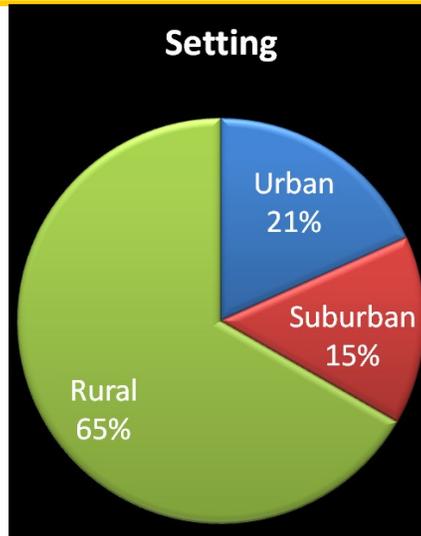
## Pest Management Survey Results

Karen M. Vail

Way to go Pat. By now, most of you have spoken to Pat Barnwell, my assistant at UT, as she spent from 5 to 20 minutes asking questions pertaining to pest management in your school district. Thanks to the 96 school districts' facility directors that took time out of their busy day to complete the survey.



**That's a whopping 71% completion rate which is almost unheard of when conducting surveys.**



Given the choice of one setting, 65% of school system personnel identified themselves as rural, 21% as urban and 15% as suburban.

Question	% Yes	% No	% Don't Know
Does your school district currently use integrated pest management or IPM in your buildings?	72	20	8
Does your school district currently use integrated pest management or IPM on your grounds?	67	22	11
Does your school have a written pest management policy? Examples are available online at <a href="http://schoolipm.utk.edu">schoolipm.utk.edu</a>	19	68	14
Does a person trained in pest management decide that pesticides need to be applied?	97	3	0

### Special points of interest:

> Pest Management Phone Survey Results

> Pest Spotlight: German Cockroach

Roughly 65% of the school systems are using most (>70%) of the IPM practices queried about in the survey.

Based on the first three needed improvements (pesticides still applied on a predetermined schedule regardless of pest presence, baseboards still sprayed on a regular basis and lack of or uncertainty of cockroach baiting), 50% may be a better estimate of the Tennessee schools using IPM.

### This issue

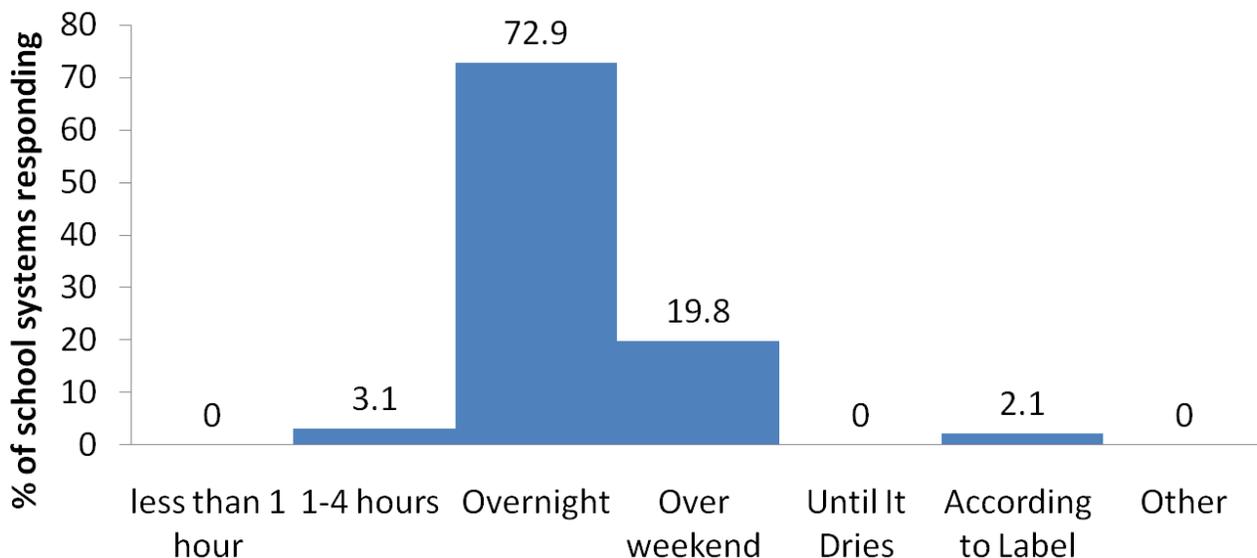
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<b>Question</b>	<b>% Yes</b>	<b>% No</b>	<b>% Don't Know</b>
Does a person trained in pest management apply the pesticides?	99	1	0
Are pesticides applied on a predetermined schedule regardless of pest presence?	51	45	4
Are baseboards sprayed on a regular basis?	50	39	11
Do you have a monitoring program that uses glue boards, sticky traps or similar devices?	72	21	7
Do results of school inspections or monitoring programs help determine when and where pesticides should be applied?	71	22	7
Are the exterior doors checked to ensure they are sealed well enough to prevent mice from entering, for example, are the gaps around doors less than ¼ inch in diameter?	97	3	0
Are baits used for cockroaches?	50	24	26
Are most pesticides used indoors applied into cracks and crevices?	87	4	9
Is a logbook kept of pest sightings and pest management efforts including the type, amount and location of pesticides applied?	35	59	5
If pesticides are sprayed, are children and adults kept out of the pesticide-treated area for a specific time?	98	2	0
Have school buildings or equipment been sprayed for head lice in the last three years?	16	69	16

**We are making progress towards the goal of all schools using IPM by 2013.** Tennessee school pest management surveys conducted in 1997, 2002, and 2008 (<http://schoolipm.utk.edu/SchoolIPMsite/wwwroot/School%20Sample%20Site/ipmresu.htm> ) indicated that slow, but steady, progress is being made towards adoption of school IPM. In 1997, indoor school IPM adoption was estimated at 12% (74% return) and in 2002, had reached 25% (36% return). In 2008, only 6.7% of school districts completed the survey, but 54% of the schools were using high level IPM. It appeared the rate of IPM adoption is doubling about every 5 years, but the low response rate in 2008 called that data into question. Thus the survey was changed from an online submission to a phone survey, it was reduced and simplified to include 17 questions and was to be completed for the school district and not for each school. Simplifying it to 17 questions no longer allowed us to collect the detailed data as in the past, but did allow us to discern whether schools were using IPM.

**So what looks good?** Roughly 65% of the school districts are using most (>70%) of the IPM practices queried about in the survey. IPM practices included having a pest management policy, using a person trained in pest management to decide that pesticides needs to be applied, using a person trained in pest management to apply pesticides, using a monitoring system or inspections to help determine when and where pesticides should be applied, pest-proofing, using cockroach baits, applying pesticides in cracks and crevices, using a logbook, keeping occupants out of treated areas and not spraying buildings or equipment for head lice. Most schools districts are keeping occupants out of pesticide-treated areas overnight (73%) or for the weekend (20%).

### How long are children and adults kept out of the pesticide-treated area?



## What needs improvement?

1. A schedule is still determining when pesticides are applied in 51% of the school districts. We would like to see pest sightings, or results from inspections or monitoring devices as the trigger for pesticide applications. I think this question is a bit ambiguous. Because the pest management professional is present on the same day of each month, the respondents might have interpreted this questions as the pest management person applying pesticides on a predetermined schedule.

2. Also, 50% of respondents are still spraying baseboards regardless of pest presence. Spraying baseboards is often ineffective and not necessary. We would like to see pest sightings, or results from inspections or monitoring devices as the trigger for pesticide applications and to determine where the pest is most active. Pests are often hidden in a crack and crevice and not found in an open area such as on a baseboard.

3. Baiting for cockroaches is only performed in 50% of the school districts. This percentage baiting may be higher as 26% of responding school districts were unsure if they had baited for cockroaches. Baiting aids in getting the pesticide back into the cockroach harborage site. Bait is placed in or near a crack and crevice where cockroaches have been found on glueboards or have been sited during an inspection. The cockroach feeds on the bait and either dies in the harborage and is eaten (necrophagy), or its feces containing toxicant is eaten (coprophagy) or its vomit containing the toxicant is eaten (emetophagy). Baiting is a very efficient way to control roaches and has been proven to reduce the cockroach allergen load without other effort.

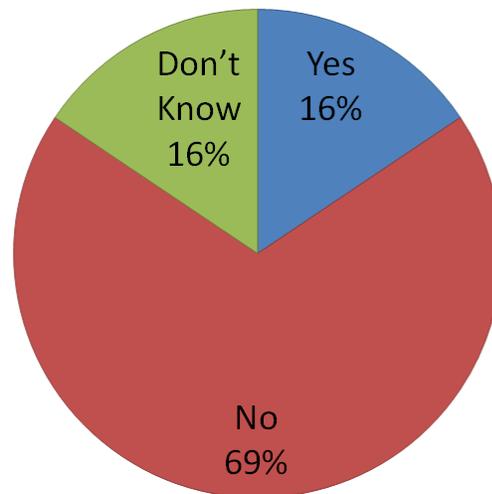
Based on these first three needed improvements, 50% may be a better estimate of Tennessee schools using IPM.

4. Only 35% of school districts are using a logbook which is crucial to any IPM program. Occupants should have access to information describing pesticide treatments. If pest control services (monitoring and inspections as well as pesticide applications, etc.) are performed on the same day of each month, concerned individuals could inquire if, when, where and what pesticides were applied before entering the school the next day.

Accurate record keeping is essential to a successful IPM program. It allows the school to evaluate the results of practicing IPM to determine if pest management objectives have been met. Keeping accurate records leads to better decision making and more efficient procurement. Accurate records of inspecting, identifying and monitoring can document changes in the site environment (less available food, water or shelter), physical changes (exclusion and repairs), pest population changes (increased or reduced, older or younger pests) or changes in the amount of damage or loss. Each school should keep a complete and accurate logbook of pest control services. Pesticide use records also should be maintained to meet any requirements of the Tennessee Department of Agriculture and the school's administrators. The logbook should contain the following items: Pest Sighting Log, Structural Repair Log, Inspection Forms, Maps & Traps of Facility & Monitoring Station Location, Pesticide Application Records, Time Log, Labels and Material Safety Data Sheets (MSDS), Newsletters and Web Sites, and IPM Policy & Plans or Contract. Extension agents from each county were to deliver an example of the log book to each school district this and last year. Logbook examples can be found at [schoolipm.utk.edu](http://schoolipm.utk.edu).

5. Only 19% of school districts have developed a policy statement. A policy statement should be written stating the school administration's intent to implement an integrated pest management program. It should briefly specify the expectations of the program, including the incorporation of existing services into an IPM program and the education and involvement of students, staff and pest manager. A model policy statement is provided in APPENDIX I (<https://utextension.tennessee.edu/publications/Documents/pb1603.pdf>).

## Have school buildings or equipment been sprayed for head lice in the last three years?



6. School personnel are still spraying buildings or equipment for head lice in 16% of the responding school districts. We do not recommend spraying for head lice. Head lice don't live away from the human host for very long (< 2 days) and it is illegal for school personnel to apply pesticides in a school unless they are under the direct supervision of someone licensed by the Tennessee Department of Agriculture to apply pesticides. See the February 2011 newsletter ([http://schoolipm.utk.edu/SchoolIPMsite/wwwroot/School\\_Sample\\_Site/Pests and Pesticides vol 4 issue 3 February 2011.pdf](http://schoolipm.utk.edu/SchoolIPMsite/wwwroot/School_Sample_Site/Pests_and_Pesticides_vol_4_issue_3_February_2011.pdf)) for a lengthy discussion of this subject.

February 2011

E &amp; PP Info #778

Volume 4, issue 3

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### Don't spray school premises for head lice, it's not necessary and is illegal if not performed under the direction of a licensed operator!

Karen M. Vail

In the United States, approximately 10 – 12 million people, mostly children, are infested annually with head lice, *Pediculus humanus capitis* DeGeer. The first indication of an infestation is the itching and scratching caused by these bloodsucking insects. Examination of the hair and scalp will usually reveal the white or grayish crawling forms (about the size of a sesame seed) and yellowish-white eggs (nits) attached to the hair shafts close to the scalp.



Head louse adult. Photo: University of Florida

## Pest Spotlight

### German Cockroach, *Blattella germanica*

**Description:** Adults are brown and about 5/8 inch long. Two dark bands run lengthwise on the head shield (pronotum). The wings cover the abdomen. They live indoors and do not fly. Small nymphs are dark brown to black with a pale area in the center. Large nymphs have dark streaks running lengthwise to the abdomen. The egg case is yellowish-brown with 15-20 eggs per side. It remains attached to the female cockroach until nymphs hatch.

**Life Cycle:** Egg, nymph and adult

**Where to Look:** They prefer warm, moist areas with nearby food. They are found in bathrooms, kitchens, crevices near food and water, electrical equipment and paper and wood materials (especially cardboard). When inspecting food-service areas, pay close attention to dishwashing machines and ceiling tiles above them, as well as cracks or crevices near a food source. Most commonly, they are introduced into buildings in food, paper products or secondhand appliances and furniture. They are almost never found outside.

**Management:** See action plans at [http://www.extension.org/pages/School\\_IPM\\_Action\\_Plan\\_for\\_German\\_Cockroaches](http://www.extension.org/pages/School_IPM_Action_Plan_for_German_Cockroaches) . Log all pest management activities into the Child-Serving Facility IPM Logbook (see [schoolipm.utk.edu](http://schoolipm.utk.edu) for example).



German cockroach adult with nymphs. Credit: Gary Alpert, Harvard University, Bugwood.org



German cockroach ootheca and nymphs. Credit: Gary Alpert, Harvard University, Bugwood.org



Adults and nymphs on the glue board could indicate close proximity to a harborage. Credit: Gary Alpert, Harvard University, Bugwood.org

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**For more information about IPM in Tennessee schools and other facilities, or to view past issues of *Pests and Pesticides in Child-serving Facilities*, please visit [schoolipm.utk.edu](http://schoolipm.utk.edu) or [utyeah.utk.edu](http://utyeah.utk.edu)**

### NATIONAL IPM INFORMATION

eXtension's Pest Management In and Around Structures: Urban Integrated Pest Management  
<http://www.extension.org/Urban%20Integrated%20Pest%20Management>

National School IPM  
[schoolipm.ifas.ufl.edu/](http://schoolipm.ifas.ufl.edu/)

IPM in Schools Texas  
[schoolipm.tamu.edu/resources.htm](http://schoolipm.tamu.edu/resources.htm)

IPM Institute of North America  
[www.ipminstitute.org/](http://www.ipminstitute.org/)

School IPM PMSP—all schools IPM by 2015  
[http://www.ipminstitute.org/school\\_ipm\\_2015.htm](http://www.ipminstitute.org/school_ipm_2015.htm)

National Pest Management Association IPM  
[www.whatisipm.org/](http://www.whatisipm.org/)

EPA schools  
[www.epa.gov/pesticides/ipm/schoolipm/index.html](http://www.epa.gov/pesticides/ipm/schoolipm/index.html)

For further information about the IPM program at your school or in your county, contact your county Extension Agent or the school IPM Coordinator. For county agent contact information, please visit [www.agriculture.utk.edu/personnel/districts\\_counties/default.asp](http://www.agriculture.utk.edu/personnel/districts_counties/default.asp)

## Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

## Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), the University of Tennessee Institute of Agriculture and University of Tennessee Extension assume no liability resulting from the use of these recommendations.

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