

# School IPM 2015

## Reducing Pest Problems and Pesticide Hazards in Our Nation's Schools

School IPM 2015 Newsletter: July 2012

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### Greetings from School IPM 2015!

Every day, 49 million children attend school in the United States, served by nearly seven million teachers and staff. But they're not alone. Schools are also frequented by a number of pests including cockroaches, mice, dust mites and more. Asthma is epidemic among children, impacting nearly 6% of school children nationally with rates as high as 25% in urban centers. Cockroaches are potent asthma triggers.

Integrated Pest Management (IPM) is a prevention-based, highly effective approach proven to reduce pest complaints and pesticide use by up to 90% in schools and other public buildings. IPM practices such as sanitation and exclusion also improve food safety, fire safety and energy conservation. Our newsletter highlights real-life examples of IPM in practice and can help you start an IPM program in your school district. For more information, visit [www.schoolipm2015.com](http://www.schoolipm2015.com).

### ➔ Proactive Action Plans Discourage Bed Bug Problems

Bed bugs are on the radar at many school districts. More than 1,000 people registered for US Environmental Protection Agency (EPA) Region 2's June webinar, "[Bed Bugs go to School](#)." The [presentation](#) covered basic facts about bed bugs and tips for keeping them from becoming a problem in schools.

Bed bugs remain a growing problem nationally. However, breeding populations of bed bugs have not been reported in schools. Rather, bed bugs are "introductions," arriving in staff and student belongings including clothing or book bags. Unless a school is a boarding facility, or also serves as a shelter where people are staying overnight, schools do not offer feeding opportunities at night which are critical for establishing bed bug infestations.

Long before a bed bug is found, school districts should create a policy and action plan for responding to a bed bug detection. All staff should be aware of their responsibilities in the event of a confirmed bed bug specimen. A policy and plan can help avoid confusion and overreaction when a bed bug is discovered.

There is no need to close the school or send any students home when a bed bug detection is confirmed. Instead, districts should have a comprehensive procedure in place, which includes:

- Discretely remove the affected student from class so the school nurse can check the student's clothing and belongings.

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## What's New This Month

Texas AgrLife Extension recently updated the [IPM Cost Calculator](#), a tool to help schools determine what IPM steps need to be implemented. After leading the participant through a pest inspection, a report is generated which includes a "pest risk report card" to indicate the school's risk of pests. The calculator also includes a budget tool.

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## Upcoming Events

September 18-19, 2012

Texas School IPM Coordinator  
Training  
Corpus Christi, TX  
[More Information](#)

October 12-15, 2012

ASBO 2012 Annual Meeting and  
Expo  
Phoenix, AZ  
[More Information](#)

November 13-15, 2012

TIPMAPS/TASBO Second Annual  
Facility Masters Conference  
San Marcos, TX  
[More Information](#)

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Remember that bed bugs are very seldom found on the body.

- The nurse or school principal should contact the student's parents or guardian to inform them of the situation. The student should not be excluded from school activities.
- Send [additional bed bug information](#) home with the child, including basic information about bed bugs and how they are controlled.

Schools should [educate](#) students, parents, faculty and staff about basic bed bug biology and habits and how to recognize all life stages of bed bugs. Let parents know the school has a bed bug action plan in place and send an awareness flier home to educate them on how to avoid sending bed bugs to school with their children.

Tried and true IPM approaches can discourage all pests, including bed bugs, cockroaches, rodents and ants from setting up shop:

- Inspect rooms regularly. Tools of the IPM trade include a magnifying glass, strong LED flashlight, plastic zip-bags or clear tape for collecting specimens, a probe (like a cut credit card) and tools for removing outlet and light switch covers.
- Encourage staff to reduce clutter by at least half, focusing on anything that hasn't been used in the last two years.
- Clean and vacuum regularly. For classrooms where bed bugs have been confirmed, vacuum up a small amount of talcum powder to discourage any bed bugs that are inside the vacuum from crawling back out.
- Isolate all student belongings in clear plastic bags or bins, especially if there has been a bed bug detection in a particular classroom.
- Reduce items brought back and forth from home to school. Identify items that can be left at school or at home until the end of the year.

Pesticide treatments are not needed in typical school environments. A dryer can be used to heat belongings to the lethal temperature for bed bugs. For boarding schools, dormitories or other educational facilities where people sleep at night, a variety of heat treatments are very effective including hot boxes to treat infested furnishings, books, etc., whole-room hot air generators and application of steam to potential harborages. Avoid steam treatments to electrical outlets or fixtures.

Bed bug dogs can be effective tools, but can also be expensive and performance can be variable. Given schools are typically not harboring breeding populations of bed bugs, canine inspections have limited value. If used, children should not be in the school while the dog is working to reduce distractions for the dog team.

EPA has developed a collection of [additional information](#) on bed bug prevention and management, including tips on hiring pest management professionals, identifying and treating bed bug infestations, and common bed bug myths.



**Pest Identification is Vital to IPM**

"Proper pest identification is very important, because if you don't know what kind of pest you're dealing with, it's very difficult to come up with a successful management plan," says Janet Hurley, school IPM extension program specialist with Texas AgriLife Extension Service.

Ants are a good example. Insecticide baits are available for many but not all species, and each bait product is effective for a limited list of species. With some types of ants, such as odorous house ants and carpenter ants, it is best to locate and treat the nest directly. In species such as pharaoh and Argentine ants, however, treating the nest with a spray like a pyrethroid can cause the ants to bud, or create multiple new colonies.

Hurley encourages IPM coordinators for school districts to have access to a microscope, jeweler's loupe or high-powered magnifying glass during inspections. "Some schools have science labs with microscopes that IPM coordinators can use for pest identification," says Hurley.

In many states, those who aren't well-versed in pest identification can contact their county extension office. "Seasoned county agents should have some knowledge of pest identification," says Hurley, "but those who don't still have access to extension entomologists." Most extension agencies are able to accept digital photos for identification, or pest samples can be sent in a vial or small container containing some rubbing alcohol or hand sanitizer. Websites such as [bugwood.org](http://bugwood.org) or [bugguide.net](http://bugguide.net) house libraries of insect images and make great aids for pest identification. Commercial identification services are also available, such as [IdentifyUS, LLC](http://IdentifyUS.com), founded by Dr. Richard Pollack. IdentifyUS provides identification of both physical specimens and digital photos, as well as guidance on pest management.

Several pests that often get confused are bed bugs and bat bugs, blacklegged ticks and dog ticks, and common species of ants. Below is a brief guide to help with identification of these pests. If you are still unsure about what kind of insect you're dealing with, always check with an extension agent, entomologist or other expert before taking action.



Gary Alpert, Harvard University, Bugwood.org

#### Bed Bug

##### *Cimex lectularius*

Bed bugs are broadly flattened, oval-shaped insects with greatly reduced wings. They are unable to fly or jump, but can move very quickly. They have segmented abdomens. They are light brown to reddish-brown in color before feeding, but become swollen and mahogany red

after a blood meal. Eggs are white and newly hatched nymphs are translucent, becoming increasingly brown in color as they mature. Some individuals may exhibit skin rashes and other allergic reactions to bed bug bites, but not everyone exhibits symptoms after being bitten. Bed bugs typically leave small blood spots behind after feeding. Studies show that bed bugs can survive without feeding for up to a year, but they typically try to feed every five to ten days.



#### Western Bat Bug

##### *Cimex pilosellus*

Bat bugs feed primarily on the blood of bats, but will feed on other warm-blooded animals including humans if bats are not available. They will not become established on humans as a regular host. Bat bugs look very similar to

Susan Ellis, USDA APHIS PPQ, [Bugwood.org](http://Bugwood.org), bed bugs, possibly requiring microscopic examination to distinguish between them. A key difference is that the fringe hairs on the upper covering of the thorax (pronotum) are longer in the bed bug.



Susan Ellis, USDA APHIS PPQ, [Bugwood.org](http://Bugwood.org)

#### American Dog Tick *Dermacentor variabilis*

Dog ticks are predominantly found in the US east of the Rocky Mountains and are part of the family of ticks called hard ticks, which have a scutum or hard shield on their backs. Adults have eight legs and are brown to reddish-brown in color with a grayish scutum. Unfed males and females are about 3/16 of an inch long, and females grow to about 1/2 inch long after feeding, about the size of a small grape. They can be carriers of [Rocky Mountain spotted fever](#). Nymphs feed on small

rodents and adults prefer dogs or medium-sized mammals, including humans. They are most often found in the spring and early summer along animal paths in grassy, shrubby areas adjacent to wooded areas or forests.



Scott Bauer, USDA ARS, [Bugwood.org](http://Bugwood.org)

#### Blacklegged Tick (Deer Tick) *Ixodes scapularis*

Blacklegged ticks are common in the northeastern and upper midwestern US and can be carriers of [Lyme disease](#). They are also hard ticks. Unlike the dog tick, adult blacklegged ticks have no white markings on the scutum. They are about 1/10 of an inch long and dark brown to black in color. Females are often orange or red behind the scutum. Adults feed on large mammals, primarily white-tailed deer. Engorged ticks, or those that have had a blood meal, look significantly different

from unengorged ticks, appearing swollen with a light grayish-blue colored abdomen. When identifying an engorged tick, it is helpful to focus on the legs and upper part of the body, which do not change upon feeding.



Alex Wild, [alexanderwild.com](http://alexanderwild.com)

#### Argentine Ant *Linepithema humile*

This is the most accomplished invasive species or "tramp" ant. It arrived in the US in the 1990s and is the predominant pest ant in California. It is also found along the

Gulf Coast from Texas to Florida. Argentine ants have only one node (also called a petiole; a small bump between the thorax and the gaster, or abdomen), which is distinct but small and is never hidden by or fused with the abdomen. They are almost completely hairless, and are about 1/10 of an inch long. During the summer, multiple Argentine ant colonies may merge to form large supercolonies. They are monomorphic, meaning all ants within a colony are the same size.

#### Black Carpenter Ant *Camponotus pennsylvanicus*

Carpenter ants have only one node and a tuft of hair at the tip of the gaster. The thorax, when viewed from the side, is evenly convex with no obvious bumps and ridges. They are generally



Susan Ellis, USDA APHIS  
PPQ, Bugwood.org

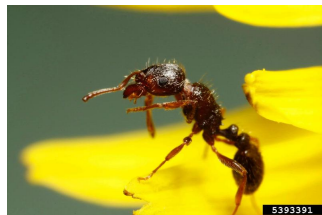
large in size, ranging from 1/2 inch to more than 3/4 inch long, and are polymorphic, meaning the colony includes several different sizes of ants that have different jobs. These include winged reproductive ants that overwinter and emerge in the spring. They prefer dead, damp wood in which to build nests, but they do not eat wood like termites.



Pest and Diseases Image Library,  
Bugwood.org

Fire Ant  
*Solenopsis geminata*  
Fire ants have two nodes between the thorax and gaster. Their antennae are composed of ten segments, with the last two forming a distinct club. They

have a visible stinger. They do not have any spines on their thorax. Thief ants have the same basic characteristics but are smaller, with fire ants greater than 1/10 inch long and thief ants less than 0.07 inches. Like carpenter ants, fire ants are polymorphic.



Joseph Berger, Bugwood.org

Pavement Ant  
*Tetramorium caespitum*

Pavement ants have two nodes, which are attached to the front of their abdomen rather than the top. They are dark brown or black in color and are about 1/10 of an inch long or slightly larger. They have distinct ridges on their face, which give a

striped appearance, and no antennal club. They have a pair of small spines on the thorax close to the nodes.




## Suburban Exterminating Offers Mobile Device Pest ID App

[Suburban Exterminating](#) created a mobile app, [Suburban Pest ID](#), to help with on-the-go pest identification. This free app allows users to take a picture of a pest and send it to the staff entomologists at Suburban, who will respond with an identification of the pest. An image gallery is also included in the app, which contains pest photos and basic information.

The app is designed for users from all over the US, not just those in New York. "We've gotten photos from people all over the world, including England and Canada," says Lynn Frank, technical director for Suburban. "A few of the identifications have been a little challenging, because they are pests that we haven't seen in a long time."

Applications like this are useful tools for districts to become more involved in the pest management in their schools. IPM coordinators or administrators can use it to help them identify a pest and get information on the life cycle and behaviors of the pest.

"Make sure you include something in the photo that gives an idea of the scale of the insect, like a yard stick or a penny," recommends Frank. He requests that the picture include as much contrast as possible, to make



the insect easier to see. "Occasionally we get a photo of a toy, like a rubber spider. I also suggest that people check to make sure it's a live insect before sending it to us for identification."

The app is in the [iTunes](#) store and is currently only available for Apple users. Suburban plans to release an update that will include Android users soon.