

Colorado Coalition for School IPM Newsletter

May 2017

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CCSIPM School District Spotlight: Douglas County District

Integrated Pest Management: Finding Your Champion

By Zach Nannestad, Environmental Health Manager, Douglas County School District



Before IPM was introduced in its full extent to Douglas County School District, dealing with Pests was less of a process and more of a practice in repetition. A repetition of pest sightings, a repetition of phone calls and meager response, a repetition of not knowing what or how pest control companies were “managing” these pests. And worst of all, repetition of doing it all again every week/month, because very little actions were taken to break the cycle.

In spring of 2015, pest management was thrown under the purview of Environmental Health for Douglas County District. Terms like IPM were thrown around a lot, but very little attention was paid to the actual details of IPM and when I saw how pest control was handled, I knew a lot of things had to change.

As I immersed myself into the world of IPM, I discovered that this is not a program to be taken lightly. This was not going to be an easy switch for

my district to take on. So many factors play a role and no two situations are the same. This was not going to take a one size fits all approach.

As taxing as an IPM program might be, I knew it was the right step. I knew I could not do it alone, in fact, I knew it would not succeed unless I found a few champions to help me.

A “champion” is a person who takes extraordinary interest in the adoption, implementation, and success of a program*. A champion is someone with whom you can educate, empower, and most importantly collaborate with. I needed a few champions and I knew where to find them.

In Douglas County School District, we have a position that is the pivot point for all things facility related - they are called Building Engineers. Many other districts have them as well, but in DCSD, they are the gatekeepers to the building. If something is being fixed, replaced, maintained, cleaned, or otherwise impacted, they know. They act as liaisons between district personnel and their own building staff of teachers, administrators, nutrition folks, and custodians. In most cases they care for their building as if it were their own house, always going to great lengths to make sure that every detail is correct.

I knew these people would be my champions and for good reason. They were my eyes and ears at the school, always looking, always listening. If a pest was sighted they would soon know and take action. Likewise, if they identified opportunities for improvement such as unsealed food being kept in classrooms and offices, they could take the appropriate steps to educate those around them.

Because we needed these individuals on our side, we decided to start with them. For a program as large as IPM, we brought all the building engineers in for a comprehensive training course (3 in fact), complete with hands-on experience. Thankfully, our regional experts were happy to participate, so the training was put on by folks like Clyde Wilson, Deb Young (one of the last courses she taught), Kent Holle, and Jonathan Handy. We were very lucky to get their expertise.

Only because we got our building engineers involved early do I feel that IPM was a success (at least so far). If you find the task daunting to implement IPM district wide (or any multi-faceted program), just find your champion.

*<http://www.businessdictionary.com/definition/champion.html>

Colorado Coalition for School IPM Agency Partner Spotlight: SPN

SPN: Bed bugs happen: Even in school

Written by: Dr. Mike Merchant, Professor and Urban Entomologist

A message to all parents with kids in school: Bed bugs happen.



Image of a fed bed bug, by Gary Alpert Harvard

Bed bugs happen even in your children's school, and like it or not we're all going to have to deal with it. That will mean fighting the inclination to go into hyper-protective parent mode. Instead we all need to relax. Deep breaths. Eyes closed. Find your center. Breeeaathe... it will be all right.

It doesn't matter what kind of school our kids attend, there's a good chance that sooner or later you'll hear rumors of bed bugs on campus. I say this with some confidence because, in case you haven't heard, these tiny, bloodsucking pests have become something of an epidemic over the past 15 years. It's inevitable that sooner or later children who live in infested homes will bring bed bugs to school. While statistics are few, the numbers of public and private schools reporting problems appear to be on the rise.

Even so, the number of schools with bed bug infestations remain few and far between. Notice the difference between a report of an introduction (one or a few bed bugs being brought somewhere) and an infestation (an entrenched, actively feeding, reproducing and sustainable community).

Schools get introductions, but almost never get infestations of bed bugs. Why? Because schools are dynamic environments. Our kids don't usually sleep at school (at least not long enough to become a bug snack). On top of that, school children rarely slow down long enough to interest a shy, retiring blood-feeding parasite. And that's a good thing.

*Schools get introductions, but almost never get infestations of bed bugs.
~Dr. Mike Merchant*

In fact, until this week, I had not heard of a documented case of a public or private school with a bed bug infestation. Dr. Marcia Anderson, of the Environmental Protection Agency, enlightened me this week about a few of the schools she has investigated over the years with actual, if isolated, infestations of bed bugs. In my opinion, however, the stories seems to be a case where the exceptions serve to prove the rule. And such stories are rare in my experience.

The cases Marcia reported involved donated sofas. In some of the cases, love seats and couches were brought into classrooms for reading areas. Children thought the furniture was a good place to toss their backpacks, and eventually bed bugs found their way from backpack to sofa. In these situations, bed bugs were able to survive for a time thanks to students and teachers who would sit for extended times, or even nap, on the comfiest furniture in school. At least long enough to embolden a bed bug to sneak out for a meal.



Classroom reading area with bed bug infested sofa. Photo courtesy M. Anderson

In another school, discarded, but decent-looking sofas and love seat were donated to deck out the teacher's lounge. Turns out all of the aforementioned upholstered furniture was discarded for a reason. It had bed bugs. In a couple of these cases the district had the furniture steam-treated, in one case, repeatedly. In most of the cases, the problem went away when the furniture was

removed... no pesticides needed.

And that's my point. Even though bed bugs are easily carried from home to school, we shouldn't assume that our schools will necessarily get overrun with bed bugs. The chance of a stray bed bug being able to safely take the blood meals required to establish a long-term new home in a school is low. And infestations are so rare because individual bed bugs don't commonly survive long when moved to a relatively hostile environment, like a school.

So what should schools be doing about bed bugs? **First, every school should have a policy about bed bugs.** It should involve the following:

- **Kids should not be singled out** for notice, or stigmatized, for bringing bed bugs to school. Kids have a difficult enough time without being labeled as bed bug smugglers. Instead, the parents of kids with bed bugs should be discreetly advised about the problem, and assisted with information about how to make their home bed bug free.
- **Backpacks of kids from bed bug infested homes should be isolated**, or treated with heat, and the child encouraged not to put their belongings on, under or next to beds, sofas, or stuffed chairs overnight.
- Pest control should be asked to **inspect trouble spots and vacuum or steam** furniture within 5-10 feet of a bed bug sighting. Pesticides should almost never be needed.
- Baited **interceptor monitors should be placed around trouble spots** and left overnight, or better yet, over the weekend. After a week or two of this kind of sampling (and trapping), the classroom can be declared clear.
- In the meantime, **students, staff and teachers should be educated about bed bugs** and what they look like. When and whether to inform parents about an introduction should be part of the policy.
- **School nurses should be involved** in the process. A nurses office can be a safe place for a child to have their belongings thoroughly inspected or heat treated, or stored for the day. Items with suspected infestations can usually be safely stored in a large garbage bag or smooth, vertical sided tote box that bed bugs find difficult to exit.

The good news in all this is that bed bugs are not known to carry any disease, and the chance that your child will bring home a bed bug is low.

It's possible to both overreact, and underreact, to bed bugs. Overreaction might result in unnecessary disruption and expense for the school, or unnecessary pesticides being used. And you don't want that. Under-reaction is usually due to not knowing what to do. Inquire if your school has a policy for dealing with bed bugs. If not, suggest that they look at our model protocol for schools (and don't allow used sofas to be brought to campus).

And now, relax. Deep breaths. Eyes closed. Find your center. Breathe... it will be all right.

This entry was posted in [Newsletter](#) and tagged [bed bugs schools](#), [school IPM](#). Bookmark the [permalink](#).

Featured Pests of the Month: Ants

Ants Commonly Found in Colorado (part I)

Almost anywhere in the state one travels, ants will be the most common insects that can be found in yards, gardens, fields and forests. Tremendous numbers of ants normally reside in a typical house lot, although most lead unobserved lives underground or otherwise out of sight. Often it is only when they occur indoors or produce their periodic mating swarms that they come to human attention.

Overall, the activities of ants are quite beneficial. Many feed on other insects, including pest insects. Ant scavenging helps to recycle organic matter and their tunneling is useful in aerating and mixing soils. On the other hand, ants sometimes promote the activities of certain plant pests, notably aphids that excrete sweet sugary honeydew that is favored by many ants.

Ants most prominently become problems when they are found in homes. Most ants found indoors in Colorado are merely foragers, seeking food or water in a home but returning to colonies they have established outdoors. A small number of the ants found indoors may become more permanent residents and establish a nest within a building. This ability to nest indoors is most often associated with pharaoh ants; some colonies of pavement ants and carpenter ants may establish within a building.

Life History and Habits of ants

Ants are social insects that live in a colony, usually consisting of thousands to tens of thousands of individuals. Within the colony are various ant “castes” of different forms and function. Colonies are overwhelmingly comprised of **workers**, wingless females that forage for food, construct, maintain and defend the nest, tend the young and do other necessary colony duties. Many kinds of ants produce workers that are all the same size (monomorphic); some, such as field ants, have workers that vary in size (polymorphic).



Figure 1: Ant pupae attending the queen and tended by the workers. Upon egg hatch, the pale-colored, legless larvae are fed and protected by the workers. When full-grown, ant larvae produce a smooth silken cocoon within which they pupate, ultimately emerging as an adult ant. Ant pupae are often seen when turning over a rock that exposes a colony and are sometimes mistakenly called “ant eggs”.

Each colony contains one or, sometimes, a few **queens** (Figure 1). These are fertile females that are larger than workers and dedicated to egg production. The minute eggs are taken from the queen and tended by the workers. Upon egg hatch, the pale-colored, legless larvae are fed and protected by the workers. When full-grown, ant larvae produce a smooth silken cocoon within which they pupate, ultimately emerging as an adult ant. Ant pupae are often seen when turning over a rock that exposes a colony and are sometimes mistakenly called “ant eggs”.

Some kinds of ants can establish new colonies by producing multiple queens within a colony and then dividing (“budding”). This habit is particularly common with pharaoh ants that may split colonies and scatter in response to disturbances, including use of some insecticides. Other types of ants, such as carpenter ants, may form “satellite colonies” that contain large numbers of foraging workers but lack a queen or developing young.

Worker ants forage constantly during the warmer months of the year. The workers lay down chemical trails as they forage that helps direct other workers to sources of food or water. Feeding habits of the various kinds of ants vary with sugary materials preferred by most species, at least for part of their diet. Others may favor greasy materials, seeds, or protein-rich foods such as living or dead insects. Feeding habits may shift during the season with changes in colony needs.

Pavement ants (*Tetramorium caespitum*) are ants to have first found their way to Colorado only in the past few decades but now are often the most common species that people notice (Figure 2). They characteristically produce small mounds of soil at

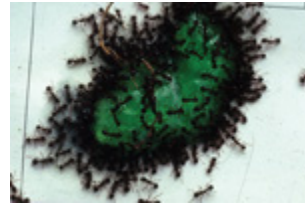


Figure 2: Pavement ants visiting mint apple jelly.



Figure 3: Soil piled at nest entrance, typical of pavement ant.

entrances of their nest, and nests are often located under pavement or rocks (Figure 3). They are small ants (1/10-1/16-inch), dark-brown colored and have fine grooves that line their head. Pavement ants forage a wide variety of foods, usually consistently preferring greasy materials. Feeding habits shift during the season with higher protein materials being sought when young are being reared and sugars more favored at other times.

Field ants (*Formica species*) are among the most common ants found in yards and gardens and are observed in homes most commonly in spring (Figure 4). They are black or reddish-brown and black ants of medium size (3/16-1/3 inch) and sometimes are mistaken for carpenter ants. They nest outdoors in loose soil and some produce mounds that incorporate twigs, dried leaves and other plant materials. Migrations into homes occur in spring when soils warm enough to cause colonies to resume activity but cool temperatures prevent normal foraging in yards. Field ants feed on a variety of foods but most often are observed visiting sweet honeydew excreted by aphids and or other sweet materials.

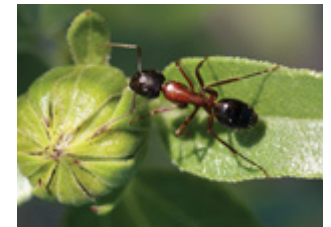


Figure 4: Field ants (*Formica species*)

Carpenter ants (*Camponotus species*) are the largest ants that occur in Colorado (1/4-3/8 inch) and are particularly abundant in forested areas. They may be either black or black with a reddish brown thorax. They are most similar to the field ants but can be distinguished by examining them in side view, with the thorax of



Figure 5: Winged adult male (top) and queen (bottom) carpenter ants.

the carpenter ants being uniformly rounded without indentation. Carpenter ants nest in wood, almost always establishing colonies in wood almost always

are foragers that will return to an outdoor nest in the yard. Rarely they will establish a nest in the building, always at some point of previous water-damage. Carpenter ants (Figure 5) mostly feed on a mixture of dead insects and honeydew.

Cornfield ants (*Lasius species*) are relatively small ants (less than 1/8 inch) that are usually light to medium-brown colored. They nest outdoors but sometimes will enter buildings to feed on sweet materials.

Odorous house ants (*Tapinoma sessile*) are small (1/10-inch) black ants that have only recently been found in Colorado (Figure 6). When disturbed, they will raise their abdomen and emit an odor reminiscent of coconut. They do not nest indoors but may enter to forage on various foods including sweets, cooked vegetables, fruit slices and pastries. Heavy mulch adjacent to building foundations has been associated with increased problems with odorous house ants.



Figure 6: Odorous house ants. Photo courtesy of Susan Ellis.

Pharoah ants (*Monomorium pharoensis*) are minute (1/12 inch), light-brown ants that are adapted to nesting in buildings. Nests can spread extensively through a structure as pharoah ants may frequently move nest locations, produce multiple queens, and may split to form "satellite" colonies. Pharoah ants feed on a wide range of foods that include syrups, jellies, grease, cake, and pet foods. They can be serious pests of hospitals, dormitories and apartments.

Source: *Ants in the Home* (Colorado State University Extension fact sheet #5.518) by W.S. Cranshaw

Current Pests: What Are You Seeing?

Statewide

- Cooley spruce gall: April: Insects continue development and usually begin to produce egg sack in late April. May: Eggs hatch and young nymphs move to feed on new growth. Galls are initiated.
- Honeylocust plant bug: April - Check trees for newly emerged nymphs. May - Nymphs have hatched and begin to damage new growth. (Except High Country Areas)
- Lilac/ash borer: Flights of adult moths may begin.
- Nightcrawlers: Tunneling activities and associated lawn lumps continue.
- Peach tree borer: Larvae causing peak injury to bases of trees at this time.
- Spider mites on pines: Populations may increase rapidly on ponderosa and other susceptible pines.
- Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees. (Except Southwestern counties)
- Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.
- Tick season: The next two months are the peak season for tick activity and spread of Colorado tick fever.
- Tent caterpillars: April - Early season species, mostly associated with cottonwood in low lying areas, should be rapidly developing. Aspen is another common host. May - Tent caterpillars affecting cottonwood in lower elevations may be completing development.
- Slugs: Slugs may cause peak damage to seedlings during cooler weather.
- Southwestern pine tip moth: Egg-laying occurs when new needles emerge on pines.

Arapahoe, Douglas, & Elbert Counties

- Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.
- Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.
- Douglas-fir beetle: In forested areas, adult

emergence, flights and tree attacks may begin.

- Brownheaded ash sawfly: Adults may lay eggs during warm days following bud break.
- Zimmerman pine moth: April: Approximate treatment timing for overwintered larvae. May: Period ending during which larval control is possible.
- Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.
- Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.
- Miller moths: Flights into areas often begin in early May.
- Spider mites: Clover mite populations should be peaking and may begin natural decline.
- Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.
- Brownheaded ash sawfly: Pinhole feeding wounds indicate early stage infestations.
- Elm leaf beetle: Adults return to trees and chew holes in leaves.
- Walnut twig beetle: Overwintered adults in trunk bark move to branches and begin tunneling.
- Pine needle scale: Egg hatch may begin during warm seasons.

Eastern Plains Counties

- European elm bark beetle: Preventive sprays should be completed before adults emerge and fly.
- Ash sawfly: Typical period of peak egg laying.
- Poplar twiggall fly: Adults emerge and feed on sap from leaves; egg laying may begin.
- Cutworms: Army cutworm injury may peak at this time. Injury can occur in gardens, lawns, wheat and alfalfa fields.
- European paper wasp: Nest initiation usually has begun.
- Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.
- Miller moths: Flight sometimes begin in early May.

- Millipedes: Cool wet, weather may trigger migrations of millipedes from lawns.
- Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.
- Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.
- Elm leaf beetle: Adults return to trees and chew holes in leaves.
- Ash sawfly: Early feeding injury should be present. Optimum time for treatment in most seasons.
- Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.
- Flea beetles: Larvae chew small holes in many garden plants and may kill seedlings.
- Strawberry injuries: Millipedes and slugs tunnel ripening berries.

El Paso & Teller Counties

- Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.
- Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.
- Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.
- Brownheaded ash sawfly: April- Adults may lay eggs during warm days following bud break. May - Pinhole feeding wounds indicate early stage infestations.
- White pine weevil: Adults move to spruce terminals to mate and lay eggs.
- Zimmerman pine moth: April - Approximate treatment timing for overwintered larvae. May - Period ending during which larval control is possible.
- Clover mites: continue to feed on lawns and enter homes in nuisance migrations.
- Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.
- Miller moths: Flights into areas often begin in early May.
- Spider mites: Clover mite populations should be

peaking and may begin natural decline.

- Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.
- Elm leaf beetle: Adults return to trees and chew holes in leaves.
- Walnut twig beetle: Adults move from overwintering chambers in bark to branches and initiate new tunnels.

High Country Areas

- Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.
- Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.
- Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.
- Ips beetles: Ips (engraver) beetles may be active during warm periods. Recently transplanted pines and pines in outbreak areas may need protection.
- White pine weevil: Overwintered adults may become active and move to terminals of spruce to feed and lay eggs if daily temperatures exceed 50F.
- Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.
- Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.
- Miller moths: Flights into areas often begin in early May.
- Spider mites: Clover mite populations should be peaking and may begin natural decline.
- Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.
- Western spruce budworm: Overwintered larvae begin to tunnel buds and flowers. Check for early stages of infestations.
- Elm leaf beetle: Adults return to trees and chew holes in leaves.

Pueblo & Fremont Counties

- European elm bark beetle: Preventive sprays

should be completed before adults emerge and fly.

- Ash sawfly: Typical period of peak egg laying.
- Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.
- Miller moths: Flights into areas often begin in early May.
- Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves.
- Honeylocust podgall midge: Adults begin laying eggs on new growth. First generation begins.
- Elm leaf beetle: Adults return to trees and chew holes in leaves.
- Ash sawfly: Early feeding injury should be present. Optimum time for treatment in most seasons.
- Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.
- Flea beetles: Larvae chew small holes in many garden plants and may kill seedlings.
- Strawberry injuries: Millipedes and slugs tunnel ripening berries.

Southwestern Counties

- Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.
- Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.
- Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.
- Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.
- Spider mites: Clover mite populations should be peaking and may begin natural decline.
- Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.
- Hackberry psyllid: Adults return to trees and lay eggs on the emerging leaves. Western spruce budworm: Overwintered larvae begin to tunnel buds and flowers. Check for early stages of infestations.

Tri-River Counties

- Poplar twiggnall fly: Adults can be found resting on newly emerged and females insert eggs into developing stems.
- Spider mites: Injury by Banks grass mite increases. Clover mite populations should be decreasing.
- Spider mites: Injury by Banks grass mite often increases if dry conditions persist. Clover mite populations should be decreasing.
- Pine needle scale: Egg hatch may begin during warm seasons.
- Seedcorn maggot: Early planted beans, corn, and melons are susceptible to seedcorn maggot damage.
- Flea beetles: Larvae chew small holes in many garden plants and may kill seedlings.
- Strawberry injuries: Millipedes and slugs tunnel ripening berries.

Source: <http://bspm.agsci.colostate.edu/outreach-button/insect-information/> (Yard/Garden Insect Calendars)

Credits

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Upcoming Events

- [IntereSTING Webinar Topic: Controlling Yellow Jackets and Wasps on School Grounds.](#)
Webinar: Tuesday, May 23, 2017. 2-3pm ET.

The Funnies

Comic by Bill Watterson, Calvin & Hobbes ©

