

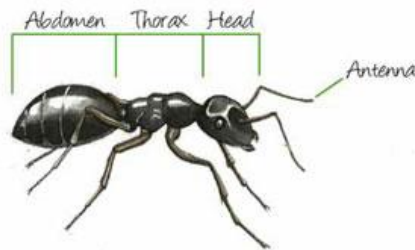
General Pests

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Ants

Ants are the most frequent and persistent pests encountered around homes and buildings. Dozens of different species occur around homes and buildings, each has unique characteristics that may influence the most effective control method to use. In Kentucky, the most common house-invading ants include pavement ants, carpenter ants, acrobat ants, and odorous house ants.

Besides being a nuisance, ants contaminate food, build unsightly mounds, or cause structural damage by hollowing out wood for nesting. Most species of these social insects live in belowground colonies. Exceptions include carpenter ants and acrobat ants that live in moist wood. Some species enter buildings in search of sweet or fatty substances. Others live in lawns and gardens or under rocks, patios, or sidewalks. While many of these species do not enter buildings, the mounds of fine soil that they bring to the surface while excavating can be a nuisance.

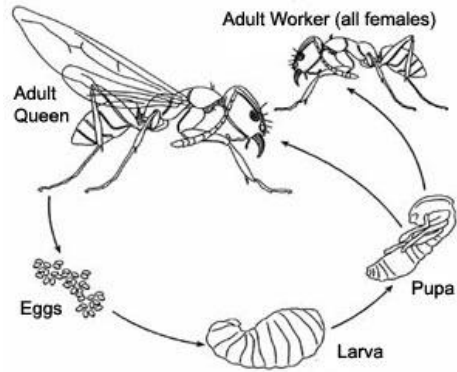


Wingless worker ant with elbowed antennae and narrow waist between thorax and abdomen. (www.antark.net)

Ants range from less than 1/8-inch to 1/2-inch long. Most have black bodies but some are yellow or red. All have chewing mouthparts. Ants undergo complete metamorphosis with 4 life stages: egg, larva, pupa, and adult.

Ants are social insects that live in cooperative, intermingling colonies consisting of hundreds to thousands of individuals. There are different types of individuals (castes) in each colony that perform specific functions. All ant colonies contain one or more egg-laying queens. The eggs hatch into grub-like larvae must be fed and cared for by sterile female workers. The workers feed and care for the queen and developing brood. In addition they maintain and expand the nest and forage for food and water. Like all social insects, ants share food. Workers lay down invisible odor trails, which they follow. In many species, the trail of ants is distinct enough to be followed back to the nest.

At certain times of the year, ant colonies produce winged individuals known as swarmers that emerge from the nest to mate and establish new colonies. When a swarm of ants emerges inside a home, it's an indication that a nest is present within the structure. Fortunately, the success rate for swarmers establishing new colonies inside buildings is low.



Most adult ants are sterile workers. Winged males and females are produced at certain times of the year.
 (www.animalspot.net)

Winged ants can be distinguished from termites:

- Ants have a narrow (pinched) waist similar to wasps, while termites are virtually the same width from end to end.
- Ants and termites each have four wings; however, the front wings of ants are longer than the hind wings. The 4 wings of termites are equal in size and length.
- The antennae of ants are bent or "elbowed"; termite antennae are straight.

Swarmer Termites vs. Swarmer Ants

Termites:

- Straight Antennae
- Equal Length Wings
- Straight Abdomen



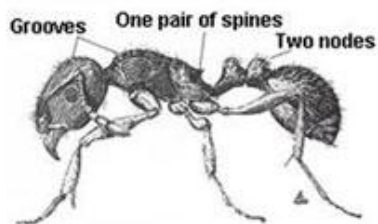
Ants:

- Bent Antennae
- Unequal Length Wings
- Thin Abdomen



Antennae, waist, and wings of termites and ants are very different. (www.tigertermite.com)

Common Ants



Pavement ant (www.ucanr.edu)



nest under objects on the ground (JJ Neal)

Pavement Ant

Pavement ants are 1/8th inch long with dark brown to black bodies. They nest under stones, boards, sidewalks, and other objects laying on the ground and pile the excavated soil in mounds around the entrance. They also may become established in bare ground next to foundations or under landscape mulch. Usually they pick sites near a water source. These ants seldom nest indoors but workers will enter buildings in search of food.

Pavement ants can feed on a variety of foods but prefer those that are greasy or sweet. Worker ants may forage for food up to 30 feet from the colony and readily set up trails to help them to move to from food sources at night.

Odorous House Ant

The odorous house ant has become the **most common and difficult ant species to control in homes and buildings**. These small (1/8-inch long) dark-bodied ants form distinct trails along outdoor and indoor surfaces.

Odorous house ants will nest in virtually every imaginable location: under pavement, stones, mulch, woodpiles, flower pots, and house siding, foraging indoors for food and moisture. Nests also occur indoors within wall cavities, appliances, potted plants, etc., especially near a moisture source. The **nests tend to be mobile**; colonies relocate fast and often in response to changes in weather and disturbance. Odorous house ant colonies tend to **have numerous, egg-laying queens and the primary colonies may split into smaller ones** for no apparent reason. Ants foraging indoors feed on all manner of foods, ranging from the trash can to the cereal bowl. They apparently prefer foods with a high sugar content. **Baits can be used to control odorous house ants**. Foraging workers collect and carry the bait back to the nest. The slow-acting insecticides do not kill the workers before they have had a chance to share the



(allpestcontrolcompany.com)

bait with the queen and developing immature ants. Baits must be placed where ants are active but where children and pets cannot reach them. It may require two weeks or longer to obtain control with a bait.

Occasional Invaders



The clover mite has a very long front pair of legs.

Clover Mites

Clover mites are accidental invaders that can be temporary nuisances in homes and buildings during cool, rainy spring weather. They can be especially abundant in homes and buildings surrounded by thick, succulent growth of well-fertilized lawns. The mites feed on grass and broadleaf plants in turf but may crawl from those areas to homes and buildings. They can enter structures through gaps around windows and exterior doors.

The clover mite is easily recognized by the pair of very long front legs that are attached to its small dark body. These mites leave a red-brown stain when crushed that makes them appear to be blood feeders; however, they will not harm people or pets, nor will they infest household products. They are a temporary nuisance that cannot survive long indoors.

A soapy rag or wet sponge can be used to clean mites from surfaces. Wipe carefully to avoid crushing the mites and causing stains. The crevice tool of a vacuum cleaner may also be useful.

Over-fertilized lawns create situations that are ideal for mite numbers to explode. A barrier spray of a residual insecticide may reduce movement of the mites from grasses to patios, decks, or house walls. Treat at the base of all exterior doors, garage, and crawl space entrances, around foundation vents and utility openings, and up underneath siding. It may also be useful to treat around the outside perimeter of the foundation in a 2- to 6- foot-wide band along the ground, and 2 to 3 feet up the foundation wall according to label directions.



Millipedes are slow-moving decomposers with 2 pairs of legs per body segment. (David Cappaert, Bugwood.org)

Millipedes

Millipedes are ½ to 1½-inch long gray or brown cylindrical worm-like arthropods. They have a pair of antennae and 2 pairs of short legs on each body segment. Millipedes are common under moist leaf litter and in heavily mulched landscapes where they feed on decaying organic matter. The life cycle of these decomposers includes egg, nymph and adult stages.

Large numbers of millipedes become active during their mating season, crawling over lawns and sidewalks, and occasionally entering buildings. **They are a nuisance but do not cause damage nor can they live long indoors.** Prevent invasion by removing leaves and compost around buildings and by sealing cracks in foundation walls and around doors, basement windows, crawl spaces, and vents.

Spraying a 10-foot wide strip around the foundation is helpful in control. Repeat applications may be necessary during periods of heavy migration.



(Joseph Berger, Bugwood.org)

Centipedes

Centipedes are **fast-moving predators that use sharp fangs to inject venom into the insects and other small creatures on which they feed.** They are usually active at night and hide in cracks or under objects. These arthropods prefer dark, humid areas under rocks, mulch, leaf litter, or beneath loose bark in rotting logs. Individual centipedes may live for a year or more.

Centipedes can enter homes by crawling under doors. They may enter through most any small opening, such as where pipes or wires enter a structure. Once inside, they favor undisturbed areas in garages, bathrooms, basements, and crawl spaces that provide hiding spaces and food. Long-legged house centipedes are relatively common in houses. They run across the floor very quickly, stop suddenly for a moment and then run off again, trying to crawl under something if they can.

As with millipedes, **problems with these pests often coincides with excessively wet weather;** patience and



House centipede

Centipedes are fast-moving predators that have 1 pair of legs per body segment.

drier conditions often will correct the problem. The most effective, long-term measure for reducing entry of centipedes and their prey is to **minimize moisture and hiding places, especially near the foundation**. Remove leaves, grass clippings, heavy accumulations of mulch, boards, stones, boxes, and similar items lying on the ground. These items often attract and harbor pests. Any that cannot be removed should be raised off the ground.



Silverfish (J. Hahn, University of Minnesota)



Firebrat (Mohammed El Damir, Bugwood.org)

Silverfish and Firebrats

Silverfish and firebrats are **flat, wingless insects that are about 1/4- to 1/2-inch long**. They have **three long "bristletails" at the end of their body**. The stages in their gradual metamorphosis life cycle are: egg, nymph and adult. These scavenging insects feed at night on stored foods, paper, or almost anything containing proteins or carbohydrates. They hide in cracks and crevices during the day. Silverfish prefer cool, moist places while firebrats settle in hot, humid areas. Poorly ventilated attics or leaky roofs and can provide good living conditions for them.

Silverfish and firebrats are primarily nuisances but usually cause little damage. In rare situations, large infestations may damage paper, book bindings, wallpaper, cereals, starched fabrics, leather, fur, silk and rayon.

When silverfish or firebrats are seen or their damage is suspected, inspect basements, closets, storage areas, and other potential sites to determine the source of the problem. Use sticky traps to help determine where silverfish and firebrat numbers are the highest. Concentrate management efforts at the source of the infestations.



(www.bugguide.net)

Booklice

Booklice (or psocids) are pale to light brown soft-bodied insects with long antennae. They are **not related to the blood-feeding "true" lice that infest humans and animals.** Booklice live in damp, warm, undisturbed situations: under bark, grass, leaves, damp wood, or similar places. Sometimes, they are "accidental invaders" that can become established in houses, warehouses, and libraries, etc.

Booklice can thrive in any material that can support mold growth. **Some can feed on starchy material such as the paste or glue of book bindings, stored foods, stacks of books, newspapers, etc.** Boxes of stored books or papers provide ideal living sites, which gave them the name "booklice". In addition, these insects can live wall voids or behind loose wallpaper. Locating the site or source of the infestation is the key to eliminating the problem. Then, the source of the insects can be destroyed. **It is important to lower the humidity in places where booklice are living.** This single step will not end the problem but should reduce it substantially.

Fabric Pests



Varied carpet beetle (Kansas Department of Agriculture, Bugwood.org)



Varied carpet beetle larva (www.enviro-tec.co.uk)



Larder beetle (Joseph Berger, Bugwood.org)



Larder beetle larvae (www.bugguide.net)

Carpet Beetles

In addition to attacking natural fiber carpets, carpet beetles also will attack as wool, furs, silk, feathers, felt, leather, and some stored products. Long term, undetected infestations can result in significant damage to clothing, bedding, floor coverings and other articles. There are many species of these common scavengers. The varied carpet beetle and the larder beetle are common in Kentucky.

Varied carpet beetles are about 1/10-inch long black beetles with an irregular pattern of white, brown, and yellow scales on their hard wing covers. These beetles feed outdoors on nectar and flower pollen. They are attracted to sunlight and are often found at windows in early spring.

Beetles undergo complete metamorphosis so the hairy, worm-like larvae look very different from the adults. They prefer dark, undisturbed places where they feed on a variety of natural products: natural fibers, furs, feathers, hair, processed meals and mixes, spices, cereals, and dried pet foods. They also can feed on accumulations of dead insects in ceiling light fixtures, wall voids, and attics, in addition to pet hair. These insects are very common in houses and buildings.

Larder beetles feed on a variety of animal-related materials: feathers, skins, and carcasses. Around the kitchen and food storage areas, they can feed on fur, hair, hides, feathers, cured meats, stuffed animals, pet food, and cheese. Infestations frequently can be traced to dried pet food that contains enough meat and bone meal and animal fat to allow development of this insect. They can live on fat accumulations behind stoves or in grease deposits in fume hoods. They also can develop in dead rodents, bats, or birds trapped between walls or in chimneys, heating ducts or crawl spaces, or accumulations of dried insects in window or ceiling light fixtures can be a food source for these beetles.

The key to ending carpet beetle problems is to find and remove the source. Then, the area must be

cleaned thoroughly, including cracks and crevices where larvae and eggs may have accumulated. Crack and crevice insecticide applications may be needed to end the infestation.

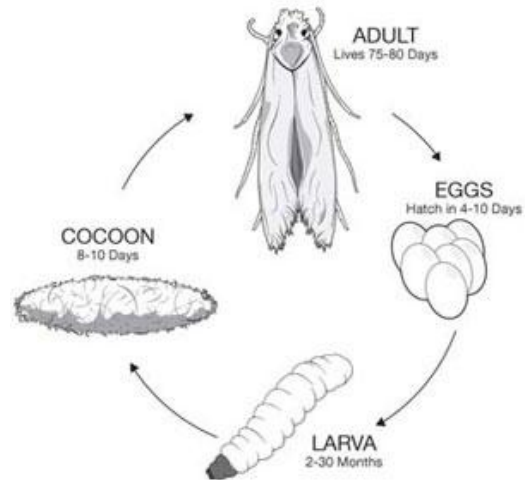


Webbing clothes moth (www.entomology.ca.uky.edu)



Case-making clothes moth (www.entomology.ca.uky.edu)

Clothes Moths



Clothes moths undergo complete metamorphosis, damage is caused by the larvae
(www.mynaturalpestsolutions.com)

The caterpillar larvae of clothes moths are well-known pests of stored woolen, cotton, and silk garments. These scavengers also will eat hair, fur, silk, felt and feathers. They use their chewing mouthparts cause irregular surface feeding or holes eaten completely through the fabric. Mature larvae that have finished feeding often leave the infested items and crawl slowly over walls or ceilings to find places to pupate. The adult (moth) stage does not cause any damage.

The casemaking clothes moth is light brown with has three dark spots on each wing. The larva lives in a silken case that includes pieces of infested item. It may travel a long distance to protected cracks or along the juncture of a wall and ceiling where the caterpillar will attach the case to a surface and pupate.

The larvae of the webbing clothes moth usually spin silken feeding tunnels over the infested item. It is



Clothes moth damage (www.saga.co.uk)

common to find them feeding under cuffs, collars, and other hidden parts of clothing.

Serious clothes moth infestations can develop undetected in a home, causing significant damage to clothing, bedding, floor coverings and other articles.

Clothing and blankets in constant use are seldom damaged, nor are rugs that get a normal amount of traffic or are routinely vacuumed. Edges of carpeting next to walls or underneath furniture are often attacked. Clothes moths may also be found infesting upholstered furniture (both inside and out), and in air ducts where the larvae may be feeding on lint, shed pet hair and other bits of debris. Infestations may also originate from bird or animal nests, or an animal carcass present in an attic, chimney or wall void.

Clothes moths are seldom seen because they avoid light. They prefer dark, undisturbed areas such as closets, basements and attics, and tend to live in corners or in folds of fabric. Clothes moth adults do not feed so they cause no injury to fabrics. However, the adults produce eggs which hatch into the fabric-eating larvae.

Prevention is a very important part of fabric pest control. This can be done by cleaning fabrics correctly and storing them in tight containers with moth crystals.