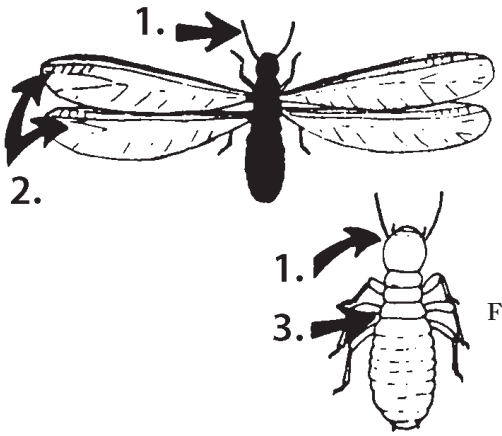
Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-STATE Research and Extension

Ants



Compare these features to distinguish reproductive termites from ants

Termites	Ants
1. Antennae not elbowed	1. Antennae elbowed
2. Two pair wings of equal length	2. Front wings longer than hind wings
3. Waist thick	3. Waist thin

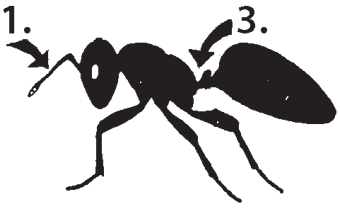


Figure 1

Ants are common throughout Kansas. They are scavengers that feed on almost anything consumed by humans, which can make them an agricultural and household nuisance. Some ant species feed predominantly on sweets; others prefer meat and grease but can also be predators of other insects. In general, ants have chewing mouthparts with heavy mandibles suitable for biting, cutting, and gnawing. Ants range greatly in size; the smallest species are less than 1⁄16 inch long and the largest may attain a length of 1½ inches.

Life History

Periodically, usually after a rain, an established colony produces winged reproductives that emerge in large swarms. These winged males and females mate, and the males die shortly afterward. Mated females then disperse in search of a suitable site to begin a new colony.

When a suitable location is found, the female discards her wings, digs a nest, and produces eggs. If she is successful, a colony is established. She nourishes the first brood through the larval stage. Larvae are translucent, white, soft-bodied, and legless. Larvae pass through several growth stages, called instars, before pupation and adulthood. Young workers (foragers) then take over the work of the colony. Worker ants forage for food, feed the queen, fight off enemies, construct a maze of tunnels, and care for the young. In many species, the foragers create a chemical or pheromone trail that helps others find a source of food or water. Most ant species have only one queen per nest. She lays the eggs to maintain or increase the colony size. When the colony has matured, a special brood of winged males and females is again produced to disperse and establish new colonies. Winged adults are often mistaken for swarming termites.

It is easy to distinguish ants from termites (Figure 1). Winged ants have elbowed (bent) antennae and narrow "waists" while winged termites have straight antennae and thick "waists." The forewings of ants are larger than the hind wings and have comparatively few veins, whereas the two pairs of termite wings are similar in size and appearance, with many indistinct veins.

Ants in Kansas

Most types of ants can be a nuisance in the home and lawn, but a few species are of more concern because they can damage structures or may bite or sting if disturbed.

Carpenter Ants (*Camponotus spp.*)

Carpenter ants occur throughout the United States and are some of the largest common ants. Adults vary in length from ¼ inch for small workers to ¾ inch for a queen. The body is reddish-brown to black in color and in some cases the front of the body is red and the rear is black.

Carpenter ants seek soft, moist wood to establish nests, particularly weathered wood that has begun to decay. Although the nest is usually started in soft wood, ants may excavate into perfectly sound, dry lumber such as porch columns and roofs, window sills, hollow core doors, firewood, and telephone poles.

Carpenter ants do not eat wood (as is the case with termites), but excavate galleries in the wood in which to rear their young. These are made without regard for the grain and follow the softer portions of the wood. The galleries are kept smooth and clean, having a sandpapered appearance. Carpenter ants eject coarse sawdust from these galleries; these characteristic sawdust piles indicate the nest's location.

Common Nuisance Ants in Kansas

Common Name	Photo	Nest Location	Food Preferences	Worker Characteristics	Workers bite or sting
Acrobat Ant		Generally outdoors under wood (stumps, boards, hollow trees) and under trash or rocks	Plant juices, honeydew, nectar, termite workers, protein	⅛ – ¼ inch When disturbed elevate abdomen directing forward and emit odor	Bite
Big-headed Ant		Generally outdoors in protected soil (under stones, leaf litter, mulch, etc.), but occasionally in crawl spaces	High-protein foods such as meat, grease, pet foods and peanut butter, seeds, honeydew, insects	1/16 – ⅛ inch. Identified by individuals, called majors, that have very large heads proportionate to their bodies	Neither
Cornfield ant, *Lasius alienus* (Förster) (not pictured): Pictured = related species, *L. neoniger* Emery		Generally outdoors, but can nest in faulty woodwork or masonry of basements or ground floor of buildings. Presence of nests indicated by numerous small craters of soil surrounding a central opening.	Will feed on live and dead insects, gather nectar from plants and tend honeydew producing insects	1/10 inch Color generally light to medium brown	Neither
Harvester Ant		Large, coarse sand mounds in non-disturbed vegetative areas	Seeds and small insects	5/16 inch Dark reddish brown Aggressive defenders of nest Destroy vegetation adjacent to mound	Bite aggressively

When carpenter ants are found within a structure, the colony is either nesting within the building or the ants are nesting outside and entering to forage for food. Houses near wooded areas are especially subject to invasion. These ants utilize a wide variety of foods including honeydew excreted by aphids, plant and fruit juices, other insects, animal remains, and household food scraps including sweets, eggs, meats, cakes, pet foods, and grease.

The key to controlling carpenter ants is locating the nest, which may be difficult. If found, there is an excellent chance of controlling this pest.

Carpenter ants are usually associated with moist conditions. When looking for the nest, carefully inspect wood affected by water seepage (window sills, porch floors, roofs, porch posts and columns). Look for nearby stumps, logs, and trees that might contain nests. Trees with overhanging branches touching the roof may offer a colony direct access to the structure.

Sanitation measures such as removing and destroying logs and stumps that harbor nests, trimming back vegetation, and eliminating moisture problems, are nonchemical ways to help prevent these pests. Replace all damaged or weathered wood.

For effective control, it is necessary to apply an insecticide directly to the nesting area to eliminate the parent colony. In addition, it may be helpful to apply an insecticide spray around the perimeter of buildings or at the base of trees that may harbor nests. Spot treatments should be applied on any possible entry points for carpenter ants as well as any known foraging trails.

(L) Black and Red Carpenter Ants, (R) Red Carpenter Ant

Common Nuisance Ants in Kansas

Common Name	Photo	Nest Location	Food Preferences	Worker Characteristics	Workers bite or sting
Larger Yellow Ant		Loose soil around shrubs, crawl spaces (often emerge in late winter/early spring in swarms from crawl space)	Honeydew, plant juices	3⁄16 inch Yellow to tan Characteristic soap odor when mashed	Neither
Legionary Ant		Generally outdoors under stones, slabs, and in lawns and turf	Predaceous on other insects	1⁄8 – 3⁄8 inch Often form long foraging columns	Bite
Little Black Ant		Generally outdoors in lawns, under objects and rotten wood, often adjacent to building foundations	Grease, oil, meat, fruits, vegetable material and sweets	1⁄16 inch Dark black in color Common household invader	Capable of a small sting
Mound Ant		Large mounds usually covered with dead vegetation	Honeydew, nectar, small insects	1⁄8 – 1⁄4 inch Front 2⁄3 of body rust color; rear dark brown to black	Bite
Spinewaisted Ant		Protected soil (under rocks, logs, etc.)	Insects and seeds	3⁄16 – 1⁄4 inch Long legs and antennae	Bite
Thief Ant		Generally outdoors in soil or rotten wood. Enter homes in warm weather	High-protein foods, dairy products, sweets, seeds, and germinating seeds	1⁄16 inch Reddish tan to dark brown	Neither

Black and Red Imported Fire Ant (*Solenopsis richteri* and *Solenopsis invicta*) Currently, these two species do not overwinter in Kansas but are pests of regulatory importance. The black imported fire ant, *Solenopsis richteri,* was introduced near Mobile, Alabama, in 1918 from a South American source but has spread very little from that time. In contrast, the red imported fire ant, *Solenopsis invicta,* which was introduced into the Mobile area in the 1930s, spread rapidly. At the time of this publication, it was established in part or all of 13 southern states from North Carolina to California. However, these ants cannot tolerate yearly minimal temperatures below 10 degrees Fahrenheit and therefore are not expected to become established much further north than southern Oklahoma. In 1990, a colony was discovered in Newton, Kansas. It apparently had been transported from Texas in the soil of a large potted plant. This colony was quickly eradicated by the Kansas Department of Agriculture. Fire ants are small, measuring 1⁄8 to 1⁄4 inch long, but have large colonies. These ants attack prey and intruders aggressively and in large numbers. The sting is painful and can cause a blister. Due to their aggressive nature, multiple stings are not uncommon and may require medical attention, especially if allergic reactions are a concern.

These ants spread naturally during mating flights where females can travel as much as 12 miles from the originating colony. They also effectively spread by human activities such as movement of soil and nursery stock.

Control of Nuisance Ants

Most nuisance ants nest outdoors. When foraging, ants may enter homes by chance. Household infestations often can be traced to the lawn, so treating the lawn often

solves the problem. In these cases, a chemical barrier is a temporary but effective treatment when applied around the outside of the house. It is helpful to locate where the ants are entering the building or at least the direction from which they approach the area. Once the route is known, careful spot treatments with the proper pesticide usually reduce or eliminate the problem. Treat all points of entry.

Mound-building ants build nests in the ground and form hills around the nest opening. The unsightly mounds may be difficult to mow over and sometimes smother a portion of the surrounding grass. In addition, some ant species weaken grass stands by destroying grass seeds and roots. There are a number of insecticides labeled for ants on turf grass, as well as several formulations that are labeled for use only by commercial and professional applicators. Mowing the lawn before treatment exposes more of the mounds; this usually maximizes efficacy.

An important aspect of ant control inside buildings is sanitation. Crumbs, grease, food scraps, and foods in open or partly open containers are easily found by foraging worker ants, and then attract large numbers of ants. Where good sanitation is practiced, large infestations are not as likely. Insecticides can reduce ant populations indoors, but they are seldom effective in eliminating colonies unless the nest is treated. Any insecticides used inside should be purchased as ready-to-use formulations for indoor use. Outdoors, the use of a concentrate to prepare your own spray may be more economical. Many lawn and ornamental preparations are also registered for ant control. Treating the trails ants follow from indoors to their outdoor nesting sites will often discourage further entry. Otherwise, follow these trails back to outdoor nesting sites and treat the nest(s) by liberal use of a labeled insecticide. At times, ants may be nesting under concrete slabs, and may require services of a professional pest control operator.

Another management tactic is the use of baits. These consist of an attractant plus an insecticide and may be useful if ant colonies are located in areas not accessible to sprays. Workers feed on the bait and carry some back to the nest where it is shared with the rest of the colony, reducing or eliminating the colony. Baits are slow acting and may take several weeks to eliminate the problem. Effectiveness varies depending on the food preferences of the target ant species. It is important to correctly identify the species to determine which bait will achieve the best control in a particular situation. Ants and termites are antagonistic, so generally where ants are found there will not be any termites.

Important Note: Read insecticide labels carefully before purchase and again before application. It is illegal to use any insecticide in a manner inconsistent with the label.

Photo Credits

Carpenter Ants: Holly Davis

Acrobat Ant: Used under license from Bayer

All others: *Insects in Kansas,* Kansas Department of Agriculture

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