

Ant Control for Householders

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ENTFACT-619

Ants are the most frequent and persistent pests encountered around homes and buildings. Besides being a nuisance, ants contaminate food, build unsightly mounds on property, and cause damage by hollowing out wood and other materials for nesting. Species such as fire ants inflict painful stings, which can be life-threatening to hypersensitive individuals.

To many householders, most ants look pretty much alike. In truth, dozens of different species occur around homes and buildings, each having distinct characteristics which may influence the method of control. In Kentucky and much of the Midwest, common house-invading ants include pavement ants, carpenter ants, acrobat ants, pharaoh ants, and odorous house ants. The latter species has become such a nuisance in recent years that it will be discussed in some detail. Knowing which type(s) of ants you have often requires the help of an entomologist or knowledgeable pest control firm. Collecting a few of the non-winged 'workers' in a plastic bag or vial will help with subsequent identification.

Dealing with ants can be frustrating. This publication will help you control them, or at least know when it's time to call a professional. Recommendations pertain to all home-invading ants in Kentucky and the Midwest except carpenter ants, which are discussed in a separate publication (see University of Kentucky Entomology Entfact-603).

Facts About Ants

Ants are social insects that live together in cooperative, intermingling colonies. The colonies may range in size from hundreds to millions of members, depending on the species. Within each colony are different types of individuals, each with a specific function. All ant colonies contain one or more queens whose primary role is to lay eggs. The eggs hatch into white, grub-like larvae that

later transform into adult 'worker' ants. The workers feed and care for the queens and developing brood, and are the ones seen foraging for food and water, often at considerable distance from the colony. Ants lay down invisible odor trails, which the workers follow between food and the nest. In many cases, the trail of ants is distinct enough to be followed back to the nesting location, or to where the ants are entering from outdoors.



Fig. 1: Worker ants forage for food & nourish the rest of the colony.

At certain times of the year, ant colonies produce large numbers of winged individuals known as 'swarmers.' These winged ants emerge from the nest to mate and establish new colonies. When a swarm of ants emerges indoors, it's an indication that a nest is present. Fortunately, the likelihood of swarmers establishing a new colony inside a building is low. Nonetheless, an exodus of winged ants appearing indoors can be disturbing, and is often mistaken for termites.

Winged ants can be distinguished from termites by comparing certain features. Ants have a narrow (pinched) waist similar to wasps, whereas termites are virtually the same width from end to end. Ants and termites each have four wings; however, on ants the front wings are longer than the hind wings while on termites all four wings are of equal size and length. Finally, the antennae of ants are bent or "elbowed" whereas termite antennae are straight.



Fig. 2a: Winged ants (above) versus winged termites (below).

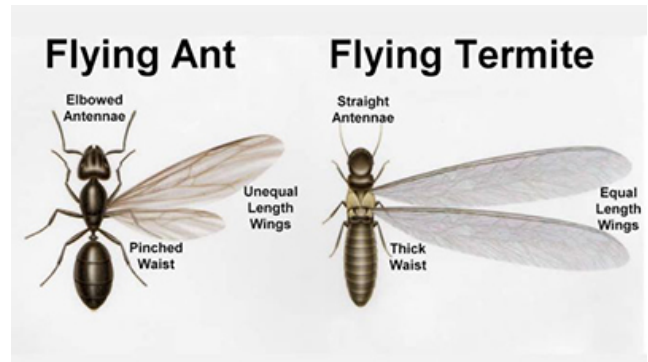


Fig. 2b: Appearance of winged ants (left) versus winged termites (right). Note the pinched waist and elbowed antennae on the ant.

Ants build their nests in many different locations both inside and outside of buildings. Species nesting inside, or foraging indoors for food or moisture, tend to be the most challenging to control.

Ant Elimination

The mistake most people make when attempting to control ants is only spraying the ones they see. This approach usually fails because the ants seen foraging over exposed surfaces is only a small portion of the colony. Typically, there will be thousands of additional ants (including one or more egg-laying queens) hidden somewhere in a nest. Eliminating queens and other colony members within nests is often the key to effective ant control.

Ants Nesting Indoors. Buildings contain many favorable nesting locations for ants. Preferred sites include spaces behind walls, cabinets, and appliances; behind door and window frames; and under floors and concrete slabs. Most of these nesting areas are hidden, making it hard to pinpoint their location. When the whereabouts of a nest can't be determined, or is inaccessible, insecticide baits are usually a good option, especially for householders.

Ant baits contain a food attractant combined with a slow-acting insecticide. Upon discovery, foraging ants transport the bait back to the nest and feed it to the queen(s) and other colony members. As a result, the entire colony can be destroyed. Several effective ant baits are sold in stores and online. Some come in pre-filled plastic stations (about the size of a cookie), while others come in a plastic tube or syringe. Often formulated as gels, the squeezable/syringe-type baits are often the most

versatile and effective. Popular consumer brands include Combat, Raid, Ortho, and Terro. Highly effective professional ant baits sold online include Maxforce FC, Maxforce Quantum, Advion, Optigard, or Alpine. Active ingredients in such baits include fipronil, imidacloprid, indoxacarb, thiamethoxam, and dinotefuran.



Fig. 3: Baits are convenient and often effective.

Place the baits next to wherever ants are seen, preferably beside ant ‘trails’ —invisible odor trails that worker ants follow between food and the nest. When using gel-type baits, floors, countertops and other indoor surfaces can be protected by placing dabs of bait on the top (non-sticky side) of masking tape, wax paper, etc. As a convenience, some baits also come with small plastic trays. Do not spray other insecticides or cleaning agents around the bait placements as this may deter ants from approaching and eating the bait. Initially, you should see an increase in the number of ants around the bait... **DO NOT SPRAY THEM.** This indicates that the ants are feeding and transporting the material back to the nest. Ant activity will usually subside in a few days as the number

of ants in the colony declines. Continue to place additional baits wherever ants are seen.

Ants are rather finicky in their food preferences and may alter them throughout the year. If one bait product isn't attractive or doesn't seem to be working, try another. Optimal results usually require a sustained period of feeding, not just a brief visit by a few ants.

Ants Nesting Outdoors. Ants noticed indoors are often originating outside. Try to trace the ants spotted inside back to the point where they are entering from outdoors. This may be beneath an entrance door, along a window sill, or where exterior siding meets the foundation wall. Ants usually prefer to trail along lines and edges. When tracing ant trails indoors or outdoors, pay attention to cracks, seams, and edges created by baseboards, the tack strip beneath perimeter edges of carpeting, mortar joints, the foundation-siding interface, etc. Nests sometimes will be located in the ground, marked by a mound or anthill; other times, the colony or colonies will be concealed under mulch, gravel, stones, landscaping timbers, pavement, or beneath the grass edge abutting the foundation of the building. Some kinds of ants prefer to nest behind exterior siding or wood trim that has been damaged by moisture. While it takes a bit more time to locate where ants are entering from outdoors, results will be more rapid and permanent than if you only treat ants which have already entered. One way to entice ants to reveal the location of their hidden trails and nests (outdoors or indoors), is to place small dabs of honey or jelly on an index card, etc., next to where ants are observed. After the ants have fed, they will head back to the nest.



Fig. 4: Ants often follow lines and edges.



Fig. 5: Mulch is a common nesting site for ants.

When a below-ground nest is discovered, the colony often can be eliminated by spraying or drenching the nest location with a liquid insecticide. Effective ingredients (e.g., bifenthrin, cyfluthrin, deltamethrin, lambda cyhalothrin) are usually found in products sold to control ants, cockroaches, spiders, and other crawling insects. Large colonies may require greater amounts of liquid to move the insecticide throughout the network of underground galleries within the nest (using a bucket to apply the diluted insecticide concentrate is an effective method). Follow label directions for treating ant mounds, paying attention to precautions for mixing and application. Another effective and convenient way to control some species of outdoor nesting ants is with a *granular* bait such as Combat, Maxforce, Advance, Advion or InVict. Sprinkle the bait in small amounts beside outdoor ant mounds, along pavement cracks, and other areas where ants are nesting or trailing.

Ant entry into homes can be reduced by sealing around door thresholds, windows, and openings where utility pipes and wires enter buildings. Entry can likewise be reduced by spraying one of the aforementioned liquid insecticides around the outside perimeter of the building. Depending on product and label directions, this may entail spraying a one to six-foot swath along the ground adjacent to the foundation, and one to three feet up the foundation wall. Pay particular attention to ant trails and points of entry into the home, such as around doors and where utility pipes and wires enter from outside.



Fig. 6: Sealing entry points can help reduce entry of ants & other pests.



Fig. 7: Insecticides applied around doors and exterior openings can help reduce pest entry.

In Kentucky and much of the Midwest, spraying or applying granular insecticides to the entire yard is not recommended, and will seldom, if ever, solve an ant infestation indoors. Whole-yard treatments also eliminate beneficial ants, which help to

keep other damaging pests of lawns and gardens in check.

Managing Odorous House Ants

The odorous house ant has become the most common and difficult ant species to control in Kentucky and much of the Midwest. The ant is small (1/8-inch), blackish, and forms distinct trails along surfaces. It is often mistaken for the pavement ant, which can readily be controlled with most baits. The most accurate diagnostic difference (visible under magnification) is the absence of a noticeable node or knob along the constricted area between thorax and abdomen of the odorous house ant. Pavement ants have two obvious nodes, and fine grooves or striations along the head and thorax. Pavement ants also are more likely to displace bits of soil from their typical nesting location under driveways, garage/patio slabs, and other paved areas. Odorous house ants emit what's been described as a rotten coconut or pine scent when crushed with a finger and sniffed.

Odorous house ants will nest in many different locations, both outdoors and indoors. They commonly nest outdoors under mulch, stones, pavement, woodpiles, flower pots, and siding, foraging indoors for food and moisture. Nests also occur indoors within wall cavities, appliances, potted plants, etc., especially near sources of moisture. 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.



Fig. 8: Ants foraging indoors often originate from outside the building.

This ant can be difficult to control, especially for householders. The better consumer baits to try are syrupy, sweet ones such as Combat Ant Killing Gel or Terro Ant Killer II. Effective professional use gel baits sold online include Maxforce FC, Maxforce Quantum, Advion, Optigard, or Alpine.

As with all ants, activity indoors can sometimes be reduced by removing ready access to food and moisture (spills, trash, pet food dishes, etc.). Temporary relief can sometimes be had by wiping away the invisible odor trails with a kitchen cleanser or mild detergent. Do not disturb foraging trails, however, if you are using a bait. Sealing obvious ant entry points also may be helpful, along with trimming back shrubs and vegetation touching the building. In nature, this ant feeds extensively on nectar and honeydew excreted by plant-sucking insects such as aphids.

When odorous house or other ants are a persistent problem, householders want to contact a professional. Pest control firms have more experience combatting ants, and have a broader arsenal of effective insecticides and application equipment than the general public.

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CAUTION: Some pesticides or practices mentioned in this publication may not be legal in your area of the

country. If in doubt, please consult your local cooperative extension service or regulatory agency. **ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR THE PRODUCT YOU ARE USING.**

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