

Control of Argentine Ants and Odorous House Ants in the Home

Although several species of ants will invade homes in Mississippi, Argentine ants and odorous house ants are, by far, the two most commonly encountered species. Both are primarily outdoor species that go largely unnoticed by homeowners until they invade homes and begin raiding pantry shelves.

To the untrained eye, Argentine ants (**Figure 1**) and odorous house ants (**Figure 2**) look similar. Workers of both species are about $\frac{1}{10}$ of an inch long, do not have a sting, and are light brown or brown in color. Although there are distinct differences that can be seen easily under a microscope, these are difficult to see without magnification. One way to tell the difference between these two ants is by the smell of freshly crushed workers. Argentine ants have a stale, musty odor, while the smell of odorous house ants often is compared to that of rotten coconuts.

Because Argentine ants tend to displace other ant species, odorous house ants are less common in areas infested with Argentine ants. Another species that occasionally invades homes, the little black ant, could be confused with these two ants, but it is smaller and shiny-black in color. The little black ant also moves more slowly than the other two ants.

Odorous house ants and Argentine ants are difficult to control, with Argentine ants being especially challenging. Unfortunately, there is no single, simple means of controlling these ants, and effective control requires using a combination of several methods. A basic understanding of the biology and habits of these pests will give you a better chance of successfully controlling them.

Argentine Ants

The Argentine ant is one of the most persistent and troublesome of the house-infesting ants. This species, known by the scientific name of *Linepithema humile* (Mayr), was introduced to the United States from Brazil and Argentina in the late 1800s. It is well established through much of Mississippi and is especially abundant in the southern half of the state. It is typically an outdoor ant species, but it frequently invades homes.

Argentine ants can be recognized by their small size (workers are about $\frac{1}{12}$ of an inch long), their uniform brown color, and the single upright node found between the thorax and abdomen. Unlike fire ant workers, which vary greatly in size, Argentine ant workers all are similar in size. Argentine ant workers do not have stingers. They can bite, but the bite is not very painful. When workers of this species are disturbed or freshly crushed, they emit a stale, musty odor.

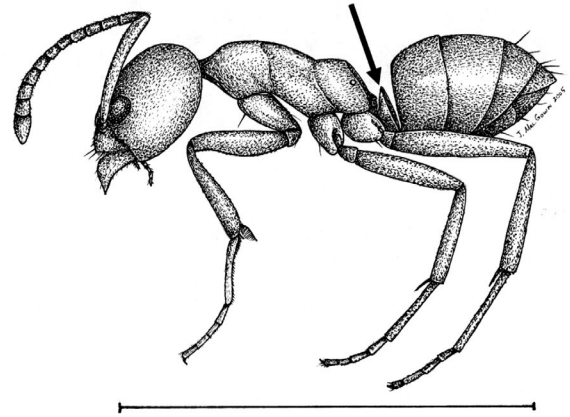


Figure 1. The Argentine ant, *Linepithema humile* (Mayr), lateral view of a worker. Note the single, pointed node between the thorax and abdomen. The scale bar equals 2 mm (about $\frac{1}{12}$ inch).

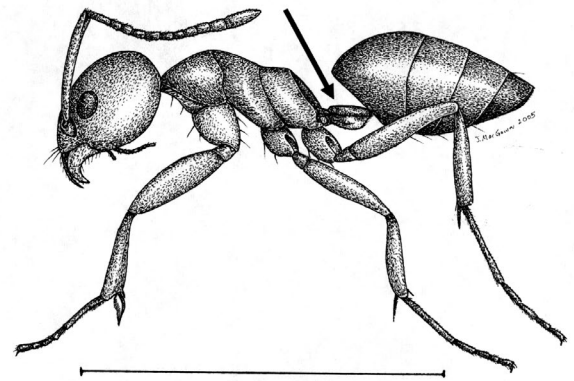


Figure 2. The odorous house ant, *Tapinoma sessile* (Say), lateral view of a worker. Note the single, flattened node between the thorax and abdomen. The scale bar equals 2 mm, or about $\frac{1}{12}$ inch.

Nest sites may consist of little more than a moist, protected area where eggs, larvae, and pupae are kept in piles and tended by workers. Unlike fire ants, Argentine ants do not nest in single, easily recognized—and, therefore, easily treatable—nest sites. Instead, a single colony will have many different nest sites, connected by trails. These nest sites normally are hidden and difficult to detect.

A colony may consist of tens of thousands of workers and hundreds of reproductive queens. Despite their aggressiveness toward other species of ants, Argentine ant colonies will peacefully coexist with other colonies of Argentine ants and will even cooperate with other colonies to form “super colonies.”

Outdoor nest sites often are found in the soil under things like bricks or boards, rotting wood, and refuse piles; under bark or other crevices in stumps or trees; in moist leaf litter or organic mulch (this is a real

favorite); and in bee hives, bird nests, and other similar locations. Environmental conditions, such as drought, excessive rainfall, or the onset of cool weather, may trigger Argentine ants to move some nests indoors. The presence of attractive food sources also may result in the establishment of indoor nests.

Indoor nest sites may be located in wall voids, behind insulation, under house siding or shingles, behind brick veneer, in potted plants, under carpeting or other flooring, and in other protected sites. Nest sites usually are located in moist areas like bathrooms and kitchens, and indoor nests often are associated with plumbing or structural leaks.

The Argentine ant is a very aggressive species that often displaces native ants. Despite their lack of a sting, Argentine ants can even displace imported fire ants. In fact, fire ants may be essentially absent in landscapes where Argentine ants are well established. Once established, Argentine ants become the dominant ant species, and millions of ants can be present in a landscape.

It is not unusual to see large lines of foraging workers running up and down trees, on fences, on the ground, and throughout infested landscapes.

Because of their small size and hidden nests, large populations of Argentine ants can be present outside without being noticed by the homeowner. It is when foraging workers enter homes and begin feeding on food items that they become pests. Because these ants are omnivorous (they eat both animal and vegetable foods), they will readily feed on most types of food they can get to inside your home.

When foraging workers locate a suitable food source, they lay a chemical trail back to the nest site, which allows other workers to return to the site quickly. This is why indoor infestations of Argentine ants can appear overnight. Once they find their way inside, foraging workers often will branch out, locating other food sources.

Argentine ants will feed on live and dead insects, honeydew produced by insects, meats, pet foods, sweets (such as sugar, syrup, etc.), and many other things. Due to the wide variety of foods they will eat, these ants are serious pests in households or other places where food is prepared or stored. Although they may not eat large quantities of food in homes, they contaminate the food stores, and the infested product should be thrown away.

When they invade homes, these ants also can cause problems simply because of their sheer numbers, crawling anywhere in the home including shelves, closets, stoves, dishwashers, countertops, refrigerators, beds, in clothes, or anywhere else imaginable. These ants also may spread disease because they tend to crawl over such things as feces, dead and decaying animals, sewage, and other forms of refuse, and then contaminate foods.

In areas where Argentine ants have become well established, it is not likely that they can be eliminated totally from the landscape. However, there are several things you can do to help reduce the frequency of indoor invasions by Argentine ants. In order to battle this ant effectively, you must be proactive, using a combination of different methods, including sanitation, exclusion, baiting, and treating with insecticides.

Odorous House Ants

Odorous house ants (OHAs), known by the scientific name of *Tapinoma sessile* (Say), are one of the most common species of ants encountered indoors. These native ants are quite adaptable and occur throughout the United States. They nest in a wide variety of habitats, including sandy beaches, pastures and fields, forests, wet areas (such as bogs), and houses or other buildings.

As long as they remain outdoors, OHAs go largely unnoticed by humans and are not considered pests. It is when they invade homes and begin foraging in the sugar bowl or on other foods that they become a problem.

Odorous house ant workers are about 1/10 of an inch long, are uniformly brown to blackish-brown, and do not have an upright node between the thorax and abdomen. Like Argentine ants, these ants do not have stingers, but they are capable of biting. However, the bite is not very painful because the ants are so small. As their name suggests, odorous house ants have a distinctive odor, especially when crushed, and this odor can help you identify them.

OHAs do not produce large, easily visible nests like those of fire ants. Instead, their nests are much smaller and may be found in the soil or beneath rocks, stones, bricks, logs, boards, or other objects on the ground. They also nest under the loose bark of stumps and logs; in stacks of firewood; in plant cavities, insect galls, trash piles, and animal nests; under mulch in flower beds; under shingles or siding; behind ivy or other vines on external walls; behind brick veneer; in wall voids; and in many other locations. Indoor nests usually are located in or near a source of moisture.

This pest has the habit of moving its nest site every few weeks, which can make control more challenging. OHA colonies often consist of a main colony, or nest site, and many satellite nest sites with queens and broods of their own. The main colony and satellite colonies are interconnected by foraging trails. In most cases where they nest in homes, the colony also will have other nest sites located outside. Colony size may range from several hundred to many thousands of individuals. Colonies of OHAs will contain many reproductive queens.

In natural habitats, OHA workers are noted for their love of honeydew produced by insects such as scale insects, aphids, mealybugs, and plant hoppers. They eat the honeydew and tend and protect the insects that produce it. Additionally, workers regularly feed on flower nectar and other plant secretions. They also feed on both live and dead insects, dead and decaying animals, and a variety of other things.

Inside the home, OHAs feed on a wide variety of foods, including meats, vegetables, pet foods, and fruits. They are attracted especially to sugar, honey, sweetened cereals, pastries, syrup, and other sugary foods. Because they like sweets so much, OHAs will take sweet baits readily, especially liquid baits. These baits can help you control OHAs.

In homes, OHAs are most commonly found in the kitchen/pantry area, but they can occur anywhere in the house where there is an attractive food source, such as where pets are fed, where pet food is stored, or

where garbage cans are kept. Because these ants nest primarily outdoors, indoor infestations are likely to be linked to outdoor colonies. Foraging ants lay a chemical trail from the colony to the food source, and with a little patient effort, these trails often can be identified and followed back to the nesting site.

Control of Home-Invading Ants

Short-term control of Argentine or odorous house ants can be as simple as locating their trail, wiping it away with a damp, soapy cloth, and removing the food source that was attracting the ants or storing it in an ant-proof container. Without their scent trail, the ants lose their way to the food source, and are forced to either re-establish the trail or forage elsewhere.

If you can follow the trail to a point where the ants are entering your house, apply an appropriately labeled insecticide at this point to discourage the ants from re-establishing the trail. This is most effective when an outdoor colony has only recently established a single foraging trail into your home. However, if there are heavy populations in or around the home, they will likely return eventually, especially if they have nests already established in your home or have readily available routes into your home.

Long-term control of these ants can be quite challenging, requiring a combination of methods and much persistence and patience. Some of the practices that are most useful in controlling home-invading ants are discussed below.

Locate and Treat Nest Sites

One step toward eliminating infestations of these home-invading ants is to locate and treat nest sites. Do this by looking for foraging trails and attempting to follow them back to their source. It is especially important to identify and treat any nest sites located inside. It usually is impossible to locate all nest sites, especially all outdoor sites, but this is an important first step. When you locate a nest site, treat it with an appropriately labeled residual insecticide. If you think ants are nesting indoors but you cannot locate or access the nest sites, use baits as described in a following section.

When choosing an insecticide, read the label carefully before you purchase the product, and be sure that it is labeled for the particular use that you have in mind. If you need to treat inside your home, be sure that the insecticide is specifically labeled for indoor use. Note that two products with the same active ingredient may have very different labels; one may be formulated specifically for in-door use while another may be restricted to outdoor use.

Examples of insecticides that can be used to treat indoor infestations of ants include aerosol sprays containing active ingredients such as prallethrin + tralomethrin, prallethrin + esfenvalerate, or pyrethrins + PBO + permethrin. Ready-to-use trigger pump sprays are another choice, often containing active ingredients such as bifenthrin, cyfluthrin, permethrin, delta-methrin, or tralomethrin.

Treat nest sites located inside walls or other voids with an insecticide dust containing the active ingredient deltamethrin, or with dusts containing silica or diatomaceous earth. Apply dusts using a

commercially available bulb duster that allows you to “inject” dusts through small holes drilled into the target void. If you cannot find dust applicators locally, you can purchase them online or from mail-order suppliers.

When treating outdoor ant colonies, choose insecticides that contain one of the following active ingredients: bifenthrin, cy-fluthrin, deltamethrin, lambda-cyhalothrin, or permethrin.

Eliminate Attractive Food Sources

Eliminate attractive food sources by practicing good sanitation and storing food products in ant-proof containers. If pet food bowls are the cause of the problem, simply limit the amount of time you leave the food bowls out. Remove the food at other times, rather than giving the pet—and, consequently, the ants—free access to the food.

You may need to make a thorough search of your home to identify food sources and either remove them or store them in ant-proof containers. Storing foods in ant-proof containers, or in the refrigerator or freezer, is a key ant management tool, especially in homes that suffer chronic infestations. This practice also helps prevent infestations of other stored-food pests.

Seal Entry Points

Although it is usually impossible to locate and seal all potential entry points, sealing points where you have observed trails entering your house can help divert foragers to other outside food sources. When sealing cracks and entryways for ant control, keep in mind that it is important to retain adequate ventilation of your home for health and safety reasons.

Prune Trees and Shrubs

Limbs of trees or shrubs that touch the exterior of your house provide convenient travel ways for foraging ants to enter. Keeping limbs and branches pruned away from your house can aid greatly in ant control. Also, remove any ivy or other vines growing on the building because vines can provide nesting sites and lead ants inside.

Control Honeydew-Producing Insects on Landscape Plants

Because these ants thrive on honeydew produced by pests such as aphids, scales, and whiteflies, controlling these pests on landscape plants can aid in ant control. Likewise, because ants tend and protect these honeydew producers, controlling ants can help control the plant pests.

Avoid Excessive Mulch and Leaf Litter

Both Argentine ants and OHAs readily nest in the moist, protected environment provided by organic mulch or leaf litter. Help control these ants by keeping mulch and leaves away from the foundation wall of your house and avoiding the use of excessive amounts of mulch. Where feasible, use rock, pea gravel, or some other non-organic mulch in the area immediately adjacent to the foundation. Maintaining a mulch- and leaf-free area of even 3 to 4 feet around the immediate perimeter of your house can aid greatly in ant control. This also helps eliminate entry points for termites.

Use Appropriate Baits Properly

Against Argentine ants and OHAs, baits are most useful for eliminating indoor nest sites that cannot be located and treated directly. Note, however, that baits designed for control of fire ants usually are not very effective against Argentine ants or OHAs, and neither of these ants are as easy to control with baits as are fire ants.

Baits that are designed for use against these ants can be useful, but they take time to work, usually several weeks, and you must keep the bait fresh and replenish it regularly. The objective is to place baits along foraging trails where the ants will find them readily and to keep providing bait as long as the ants are foraging on it. Sometimes the ants will detect the insecticide in a bait and quit feeding on it. When this occurs and ants are still present in your house, change baits and baiting locations in an effort to get ants to resume taking the bait.

Baits are intended to work slowly so that they will be carried back to the nest site and spread throughout the nest to both adult and immature ants, eventually eliminating the entire nest. Do not apply insecticide sprays in areas where you are using baits because the sprays tend to repel ants and prevent them from taking the bait. Likewise, do not disturb the foraging trails to the bait; just keep checking and replenishing the bait as needed.

Examples of baits that can be useful against home-invading ants include liquid sweet baits, gel baits, and bait stations. These may contain active ingredients such as orthoboric acid, disodium octaborate tetrahydrate, fipronil, abamectin, or arsenic trioxide. Finely ground granular baits containing ingredients such as orthoboric acid or abamectin also may be useful in some situations. When using baits, you must put the baits in all locations where ants are foraging. If you have seen ants in the kitchen, den, and a bathroom, bait all three locations. You also may want to place appropriate baits outside where you have observed foraging trails. However, outdoor infestations often are difficult to control with baits simply because of the large numbers of ants involved. This is especially true with Argentine ants.

Apply Perimeter Insecticide Treatments

If heavy outdoor populations are causing continuous re-invasion of your home, try applying treatments of residual insecticide to a 3- to 10-foot-wide band around the perimeter of your house. These perimeter treatments can help control any nests located in the area and control or discourage foraging workers from nests located farther away from your home.

Examples of active ingredients used in insecticides labeled for such perimeter treatments include: bifenthrin, carbaryl, cyfluthrin, deltamethrin, lambda-cyhalothrin, and permethrin. Read and follow the label directions carefully. Some labels allow treatment of a portion of the outer wall of the home and around doorways and windows, while others do not. Also, the width of the treated band varies from product to product.

Hire a Professional Pest Control Company

Obviously, this is an alternative to the do-it-yourself approach. Professional technicians will have access to useful treatments that are not readily available to the general public. They also will be better equipped to drill and treat wall voids if such treatments are necessary. Most companies have experienced technicians who know and understand how to deal with ant problems.

However, don't expect an overnight solution. The technician still will have to use the methods discussed above, and it can take time and several repeat visits to obtain results. Once the ants are under control, continued service will be necessary to maintain control.

One useful treatment that can be applied only by licensed professionals is a perimeter treatment of fipronil (Termidor is the brand name) around the outside of the building. This involves applying a spray 1 foot up the side of the building and 1 foot out from the base of the building, as well as to entry points and trails. This treatment has proven to be especially helpful when combined with the other methods previously discussed.

Publication 2407 (POD-07-21)

By **Blake Layton**, PhD, Extension Professor, Biochemistry, Molecular Biology, Entomology, and Plant Pathology, and **Joe MacGown**, Research Tech/Scientific Illustrator, Biochemistry, Molecular Biology, Entomology, and Plant Pathology.

Copyright 2022 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Produced by Agricultural Communications.

Mississippi State University is an equal opportunity institution. Discrimination in university employment, programs, or activities based on race, color, ethnicity, sex, pregnancy, religion, national origin, disability, age, sexual orientation, gender identity, genetic information, status as a U.S. veteran, or any other status protected by applicable law is prohibited.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. STEVE MARTIN, Interim Director