

AGRICULTURAL GUIDE

Published by the University of Missouri-Columbia Extension Division

MAR 27 1980
Insects and Diseases

Ants

Darryl Sanders
Department of Entomology
College of Agriculture

Ants are among the most successful insects and are also among the most common pests in and around the home. They may build nests in the soil, in the open lawn, under concrete slabs, stones or boards, and adjacent to foundation walls, in the walls of the house, or in decaying wood or other cavities.

Ants are social insects and live in colonies with three distinct adult castes: queens, males, and workers. The immature stages consist of eggs, larvae, and pupae (See Figure 1). Unlike other social insects, an ant colony may pick up its young and move if disturbed.

Most individuals in a colony are wingless workers. During the year, mature colonies produce winged males and females which leave the colony in swarms. After mating, the female sheds her wings and attempts to establish a new colony. The male usually dies soon after mating. Queens may live up to 15 years, workers from 4-7 years.

The winged swarmer ants are often confused with swarming termites. They are similar in appearance and both may be triggered to swarm by the same environmental conditions — often a warm, sunny day following a rain.

Winged ants may be distinguished from winged termites by differences in wings, antennae, and "waist". See Figure 2 for comparisons.

Food sources

Ants feed on a variety of foods such as sweets, starches, greases, and other plant and animal materials. Some species feed on a secretion from aphids called "honey dew". These aphids may be tended on plants and cared for by the ants. In this relationship, the aphids are referred to as "aphid cows".

Almost all ant species feed on secretions from their own larvae. Adult ants are restricted to a liquid diet. They may appear to eat solids but are merely squeezing the liquid from the food.

Sugar granules may be dissolved in liquid and then

imbibed. In some species, the larvae are capable of eating small particles of solid food. The search for food is the primary reason ants enter buildings and become pests.

Importance

The activities of most ants do not adversely affect man. Those that prey upon other insect pests are considered beneficial. Most ants are capable of stinging and some, such as the fire ants in the southern U.S., are severe threats to man.

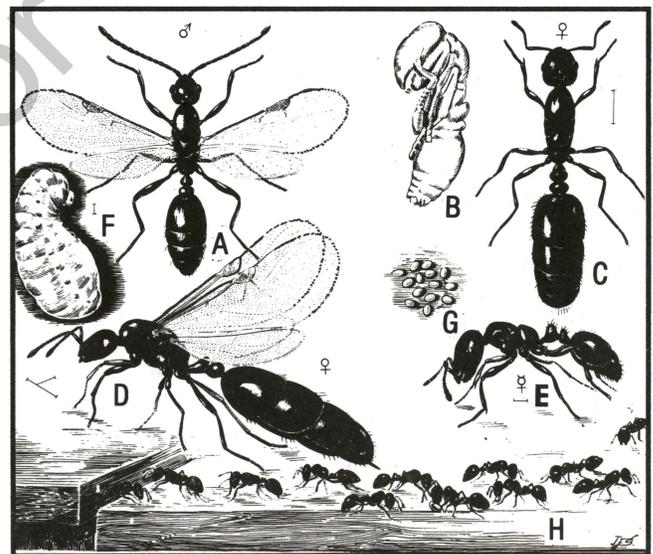


Figure 1. The little black ant: A, male; B, pupa; C, female; D, female with wings; E, worker; F, larva; G, eggs; H, group of workers in line of march. A to G much enlarged; H about 6 times natural size.

Some ants damage desirable plants by stealing seeds, chewing on the plant, and by the fostering of injurious insects such as aphids. The presence of ant mounds may be undesirable in locations such as lawns,

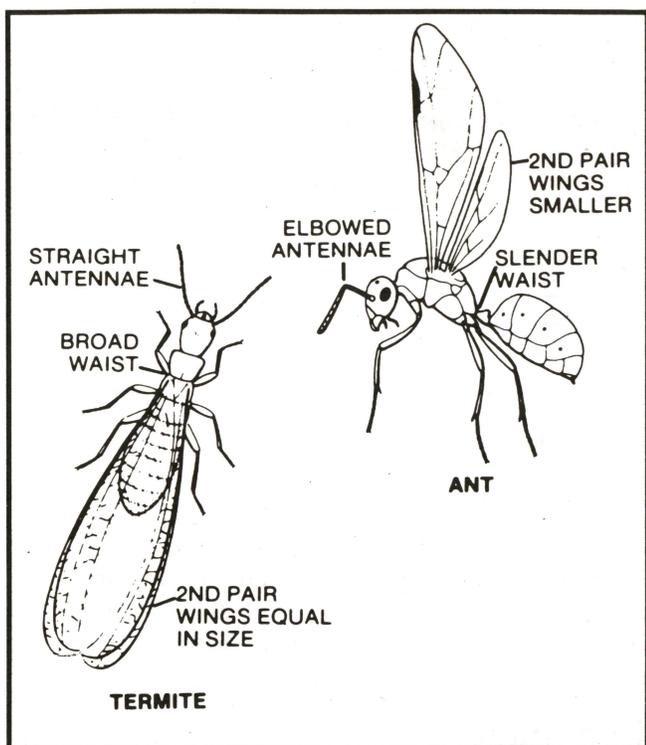


Figure 2. Distinguishing features of winged ant versus winged termite.

parks and golf courses.

The most common conflict with man, however, is when ants invade the home in search of food. In so doing they may contaminate food and become pests simply by their presence.

Probably hundreds of different species of ants live in Missouri (we are not sure since no definitive studies have been conducted). Of these, only about a dozen are common house pests. Table 1 lists the more common species with other pertinent information.

Control

The key to controlling most ant species is to locate their nest and apply an appropriate insecticide. Ants usually follow a definite path, marked by pheromones, from their nest to the food source and back. By observing and following this path, one may discover the nest site. Most ants nest outside the house in the soil or adjacent to the soil under various objects.

The pharaoh ant is an exception that usually nests indoors. Carpenter ants are also exceptions that may nest indoors as well as outside.

Indoors

If the nest is not found, spray windowsills, door thresholds, and other openings, baseboard, behind and

under cabinets and appliances, and other surfaces. Ants should be killed as they crawl over sprayed surfaces.

Since only the worker ants are killed this way, re-treatment may be necessary. One must continue to kill workers until none are left. Individuals back in the nest starve to death when there are no workers to feed them.

Use **one** of the following insecticides:

- chlorpyrifos (Dursban) as 0.5% spray
- diazinon as a 0.5% spray
- propoxur (Baygon) as a 1% spray

Do not contaminate food or utensils and do not spray food preparation surfaces.

The pharaoh ant is particularly difficult to control. It is most often found nesting in the walls or other locations in institutional buildings such as hospitals and schools. It may also be found in individual homes.

Conventional spraying of premises will often cause the colony to break up in several colonies that relocate, thus increasing the problem rather than eliminating it. Baiting with boric acid in mint apple jelly or methoprene (Pharorid) bait is the most effective way of controlling this pest.

Hiring a professional pest control operator is usually advisable.

Carpenter ants hollow out dead and decaying wood to build a nest, or they may simply use an existing "void" in the building construction. Since their biology and control are considerably different than most house infesting species, they are covered in a separate publication, Guide Sheet 7423.

Outdoors

For nests in the lawn, adjacent to buildings, or other outdoor locations apply the insecticide to the nest openings and over the area surrounding the nest openings.

Use **one** of the following insecticides:

- bendicarb (Turcam, Ficam) as granular, dust, or wettable powder
- carbaryl (Sevin) as a dust, wettable powder, or liquid
- chlorpyrifos (Dursban) as a liquid
- diazinon as a liquid or granule.

Percent of active ingredient will vary by manufacturer. Check container label for mixing instructions.

In addition to the insecticides listed in this guide sheet, professional pest control operators have access to other insecticides for ant control, both inside and outside the house, that are equal to or superior to those available to the general public.

Table 1. Some Common Ant Pests of Homes in Missouri

Name	Color	Size of Worker	Foods	Common Nest Locations	Comments
Acrobat Ants <u>Crematogaster</u> spp.	Yellowish brown to black; abdomen usually darker	2.5 to 4mm	Sweets, meats	Decayed wood; under stones; behind house veneers.	Heart shaped abdomen often raised above thorax; will sting and bite; invades homes for food only occasionally.
Black Carpenter Ant <u>Camponotus pennsylvanicus</u>	Usually black but may be partially reddish brown	6 to 12mm	Sweets, meat, grease	Partially decayed wood; natural cavities in wood or other objects either inside or outside.	Doesn't eat wood but hollows it out to form cavity for nest. Sawdust and other debris kicked from nest often marks nest entrance.
Cornfield Ant <u>Lasius alienus</u>	Brown to blackish	2 to 2.5mm	Sweets, meat	Rotten wood; under stones and sidewalks; in the soil in open areas.	Normally outdoors where it may produce many small mounds in the lawn; a common "picnic" ant.
Crazy Ant <u>Paratrechina longicornis</u>	Dark brown	2 to 2.5mm	Sweets, meats, grease	Small crevices inside buildings.	Has long legs and antennae and tends to run aimlessly about, accounting for its common name.
Field Ants <u>Formica</u> spp.	Red, brown, black, or combinations of these	3 to 7mm	Sweets, meats	Outdoors in the soil along fences, sidewalks, flower beds.	There are several species in this group that are normally outdoors and only occasionally enter homes for food. Some are mound builders.
Honey Ant <u>Prenolepis imparis</u>	Light to dark brown	3 to 4mm	Sweets	In soil in shady areas.	Some individuals feed until their abdomens become greatly distended and they in turn feed other individuals by regurgitation.
Larger Yellow Ant <u>Acanthomyops interjectus</u>	Yellowish to reddish brown	4.5 to 5mm	Sweets	Old logs; stumps; under stones; along house foundation.	When crushed, give off a pleasant citronella odor. Are often confused with termites when they swarm adjacent to houses.
Little Black Ant <u>Monomorium minimum</u>	Shiny, jet black	1.5 to 2mm	Sweets, meats, grease, fruit, vegetables, bread	Rotten wood; under rocks; in masonry; in soil.	Normally nests outdoors but readily adapts to the household situation.
Odorous House Ant <u>Tapinoma sessile</u>	Brownish to black	2 to 3mm	Sweets, meats	Beneath boards or stones outside; almost where inside the house	When crushed, give off foul odor. Invade homes especially during rainy weather that washes away honeydew, which is their primary food.
Pavement Ant <u>Tetramorium caespitum</u>	Brown to blackish brown; legs and antennae paler	2.5 to 4mm	Grease, seeds, meat, sweets	Under stones, pavement, sidewalks; adjacent to house foundation; occasionally in walls of house.	Head and thorax furrowed by parallel lines.
Pharaoh Ant <u>Monomorium pharaonis</u>	Light yellow to red	1.5 to 2mm	Sweets, meat grease	Wall voids; behind baseboards; other small voids.	Very large colonies. Often pests in hospitals and will feed on human wounds. Colonies often break-up into several colonies.
Thief Ant <u>Solenopsis molesta</u>	Yellow to dirty brown	1 to 1.5mm	Grease, meats, sweets, seed	Cracks and crevices of cabinets and walls.	One of our smallest ants. Often lives in the nests of larger ants, stealing and feeding on the larvae of the hosts.



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