

## INTRODUCTION

Its name resulted from the mistaken belief of Linnaeus that this ant was one of the plagues of Egypt in the time of the Pharaohs. Pharaoh ants are thought to be native to the African region. This ant is found throughout the United States. Pharaoh ants have been strongly implicated in the spread of various disease pathogens.

## RECOGNITION

Workers monomorphic, about 1/16" (**1.5-2.0 mm**) long. Body usually pale, varying from **yellowish to reddish**, with **abdomen often darker** to blackish. **Antenna 12-segmented, with 3-segmented club. Thorax lacks spines**, profile unevenly rounded. **Pedicel 2-segmented**. Stinger present. Queens about 1/8" (4 mm) long, with/without wings, and slightly darker in color than workers. Males about 1/16" (2 mm), winged, black in color, and antenna straight, not elbowed.

## SIMILAR GROUPS

- (1) Thief ants (*Solenopsis molesta*) have antenna 10-segmented with 2-segmented club.
- (2) Bigheaded (*Pheidole megacephala*) and fire (*Solenopsis* spp.) ants have thorax with 1 pair of spines on upper surface.
- (3) Other small pale ants with 1-segmented pedicel.

## BIOLOGY

The colonies tend to be large with workers numbering in the thousands to several hundred-thousand. There are usually several hundred reproductive females present in such a colony. Although winged reproductives are produced, there are no flights of swarmers and mating takes place within the nest. New nests can be formed by "budding" with as few as 5 workers, 10 preadults, and one queen migrating from the original colony. Developmental time (egg to adult) for workers is about 38 days at 80°F (27°C). Workers live about 9-10 weeks, with only up to 10% out foraging at any given time. Queens live 4-12 months, and males die about 3-5 weeks after mating.

These ants are of particular importance in hospitals where they will enter wounds, enter in-use IV bottles, seek moisture from the mouths of sleeping infants, etc. More than a dozen pathogenic bacteria, such as *Streptococcus pyogenes*, have been found on Pharaoh ants collected in hospitals.

## HABITS

Inside, Pharaoh ants nest in warm (80-86°F/27-30°C), humid (80%) areas near sources of food and/or water. Nests are usually located in inaccessible areas such as wall voids, behind baseboards, in furniture, under floors, and between linens. The workers range widely, up to 148 feet (45 m), from the nest in search of food and water, and establish trails to food and water sources. They forage both during the day and night. They commonly use electrical and telephone wires as a highway system to

*Creating and maintaining healthy living and work spaces for over 30 years.  
If you have questions, please call us at (704) 436-6607 or email us at [cmiller@cmext.com](mailto:cmiller@cmext.com)*

travel through walls and between floors. Pharaoh ants are common problems in commercial foodhandling establishments such as hotels, grocery stores, hospitals, and in apartment complexes.

Outside, these ants seem to be of little importance today. In the temperate/northern areas of the United States, they usually cannot survive outdoors year round; the senior author has observed outdoor overwintering colonies as far north as Raleigh, NC. However, in the subtropical areas such as Florida and Hawaii, it can survive year round outdoors.

They have a wide preference in food, ranging from syrups to fruits, pies, meats, and dead insects. They use carbohydrates primarily as an energy source whereas, protein is primarily required for larval development and egg production by the queens.

## CONTROL

Be cautioned that the typical use of liquid or dust pesticides that are repellent (versus nonrepellent baits containing boric acid, hydramethylon, or fipronil) actually makes the situation worse by causing the colony to fracture/bud into several colonies. Immediately after such an application, a false sense of control is given during the 7-10 days it takes for the colonies to relocate and reorganize because ants are not seen. Then the ants resume their foraging activity and again become visible. This cycle can be repeated many times.

A thorough initial inspection is crucial to determine ant location(s). Look primarily near moisture sources (potted plants, sinks, etc.) and secondarily near food sources (pet dish, microwave, garbage can, window sills for dead insects, etc.). Prebaiting with non-toxic mint-apple jelly or honey can help to locate ants. Outside, inspect the building perimeter and flat roofs. On roofs they will be found only in shaded areas, so inspect in the early morning and again in the late afternoon because the shaded areas change with the sun's position.

Baiting is usually the only method of effective control. Use one bait station per foraging trail of ants. Locate it as close as is practical to where the ants are entering/exiting from the wall, ceiling, appliance, etc., but such that the likelihood of bait station disturbance is minimal. Place the station as close to the foraging trail of ants as possible without disturbing them. Then, lightly mist/spritz all foraging trails of ants with a nonrepellent pesticide. This step is very necessary for colonies located within the structure and it will speed up the control process for those coming in from the outside. Be sure to cover any surfaces below the application site with plastic before application to avoid unwanted contamination. If the Pharaoh ant infestation is in a multifamily building, the only way such an infestation can be eliminated is inspection and treatment of the entire building.

Otherwise, ants will move from non-treated units into ant-free units.

If the ants are nesting in the ground on the outside, a perimeter application utilizing a nonrepellent pesticide is highly effective in eliminating the ant problem; be sure to treat up under the bottom siding-to-foundation wall junction if present. In addition, all branches of trees and shrubs in contact with the building must be trimmed back. Be sure to check where electrical and water lines enter the building and caulk any gaps.

Pharaoh ants will nest in debris collected on flat roofs and/or those nesting inside will go outside onto flat roofs in warm weather for water and food (dead insects). They typically enter/exit via poorly caulked/defective windows, under the flashing, and/or through weep holes. If the ants are nesting on the roof, treat the roof-wall junction with a nonrepellent pesticide just as it were as another building perimeter but include any weep holes. If the ants are nesting in the building, place the bait stations in protected locations such as under the flashing; otherwise, put each in a plastic mouse bait station that is secured by a brick weight.

It is possible to eliminate Pharaoh ants from a structure by only using a nonrepellent pesticide. Prebait with mint-apple jelly or honey. Then, lightly mist/spritz all foraging trails of ants with a nonrepellent pesticide. In addition, spot treat those areas that Pharaoh ants frequent such as windowsills with dead insects, near water sources, waste food sources, and the edges that they typically use to get from place to place. This will need to be done both in the morning and again in the evening. It may be necessary to repeat this process again in about 10 days to get any ants missed the first round. Be sure to cover any surfaces below the application site with plastic before application to avoid unwanted contamination.

Be sure to educate the customers about Pharaoh ant biology and control strategy using baits and nonrepellent pesticides. They should understand why they must **not spray or disturb the ants or the bait stations!**

