

RED IMPORTED FIRE ANT

Integrated Pest Management in and around the Home

Although the red imported fire ant (*Solenopsis invicta*) is common in 12 southern states, it is new to California and has recently been found infesting numerous residential and commercial areas in Orange, Los Angeles, Riverside, San Bernardino, and to a lesser extent, San Diego counties. The spread of these ants has largely been a result of the movement of infested soil to uninfested areas.

IDENTIFICATION

Red imported fire ant workers (Fig. 1) are variable in size ($\frac{1}{16}$ to $\frac{1}{5}$ inch long) and dark reddish brown. Unlike our native southern fire ant (*Solenopsis xyloni*) and harvester ant (*Pogonomyrmex californicus*), the red imported fire ant can quickly produce many nests and colonize a yard. Harvester ant workers are all the same size ($\frac{1}{5}$ inch long) and are red in color. Many people refer to these as "red ants." The most common ant around homes in California is the Argentine ant, *Linepithema humile*, a small grayish black ant that is uniform in size ($\frac{1}{10}$ inch long) and is seen moving along in long trails. While there are several physical characteristics that distinguish red imported fire ants from other common ant species found in California, one way to recognize this pest is to observe its aggressive behavior when its nest or food source is disturbed or to experience its painful bite and sting.

In areas that are not disturbed, red imported fire ants typically make dome-shaped mounds (Fig. 2) that are about 18 inches across and about 8 to 12 inches tall. They resemble large gopher mounds or look like crumbly earth with small holes; these mounds readily distinguish red imported fire

ant colonies from other California ant colonies. Nests of the native southern fire ant, for instance, are usually irregular and consist of scattered soil with multiple obscure entrances. Unlike the other ant species mentioned, red imported fire ants tend to build nests in open, sunlit, grassy areas that are typically irrigated. They will readily run up any object that touches their mound, whereas the other species are much less aggressive. Because red imported fire ants often build their nests in turfgrass areas in California, frequently the mounds have been mowed and are nearly flat, appearing as soft, loose dirt that obscures the grass and looks like a bald spot in the turf.

In some instances red imported fire ants do not build mounds but nest in

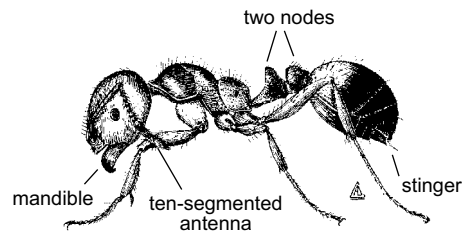


Figure 1. Adult red imported fire ant worker.

places such as rotten logs, walls of buildings, or under sidewalks.

LIFE CYCLE

The fire ant life cycle, like that of other social Hymenoptera (ants, bees, and wasps), consists of four main stages: egg, larva, pupa, and adult (Fig. 3). The egg, larval, and pupal stages occur

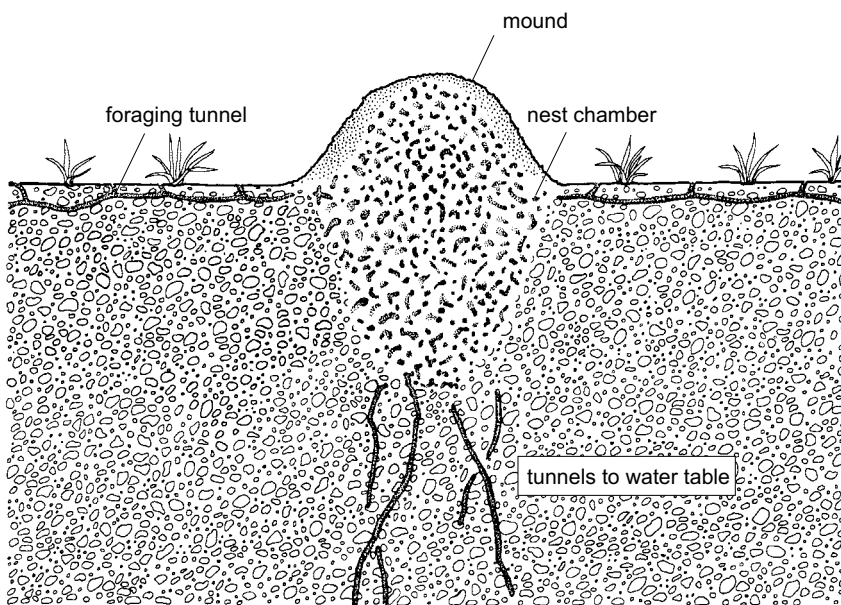


Figure 2. Cross section of a red imported fire ant mound.

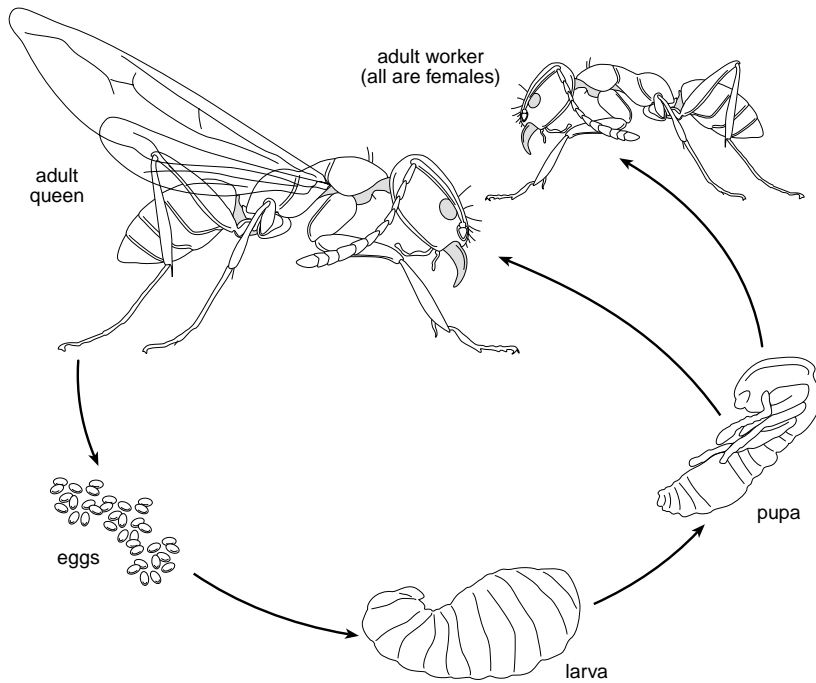


Figure 3. Life cycle of the ant.

within the underground nest and are only seen when nests are disturbed or when they are being carried to a different location by workers. The eggs are almost too small to be seen with the unaided eye. They hatch into the grublike larvae that are fed by the workers. There are four larval instars (stages); the fourth larval instar is particularly important because it is the only stage that can ingest solid food. Once the larvae finish their growth, they molt into pupae, which look like adults except that their legs and antennae are held tightly against the body. These pupae are initially white, but begin to turn darker as they mature. In the final molt the pupa becomes an adult.

Most larvae develop into sterile worker ants, all of them female and wingless. However, some larvae in the colony receive extra food during their development and become much larger than the larvae destined to become workers. These larger larvae will develop into reproductives. Large numbers of reproductives are normally produced once a year in the spring in preparation

for a mating flight, although flights can occur more than once a year if conditions are favorable. The female reproductives are future queens and have wings. Male larvae develop into winged adult males that are black in color and have a smaller head and larger thorax than female reproductives. During a mating flight, the winged males and females fly and mate in midair before falling back to the ground. Males die shortly afterward; the mated queens remove their wings and dig a small hole in the soil and seal themselves inside. In the nest, the queens begin to lay eggs that develop into small worker ants in a month or two.

Some fire ant colonies have only one queen per nest and are called "monogyne" colonies. Others can have many queens and are called "polygyne" colonies. The polygyne colony may be more difficult to control because all the queens must be killed to prevent the colony from surviving. Polygyne colonies frequently expand by "budding"; i.e., some of the queens and workers start a new mound

nearby. This process accounts for much higher mound densities for polygyne colonies than for monogyne colonies, sometimes approaching 1,000 mounds per acre.

DAMAGE

The red imported fire ant's sting is a serious concern to people and their pets. Venom injected into the skin causes a burning sensation (hence the name "fire ant"). Both southern fire ants and red imported fire ants become very agitated when their nests are disturbed, but red imported fire ants are much more aggressive and can quickly climb onto the object or person causing the disturbance and begin stinging. A single red imported fire ant can bite and sting its victim repeatedly (Fig. 4). Symptoms start as a burning and itching sensation followed by the formation of a white pustule, which takes several weeks to disappear. The pustules can become infected if not kept clean and may leave permanent scarring.

A small percentage of the human population is allergic to these stings. If a person experiences chest pains, nausea, dizziness, or shock, they should seek emergency medical assistance immediately after a stinging incident. Avoid medical emergencies by teaching children and visitors about fire ants.

Fire ants feed on almost any plant or animal material, including other insects, ticks, ground-nesting animals, young trees, seedlings, plant buds,

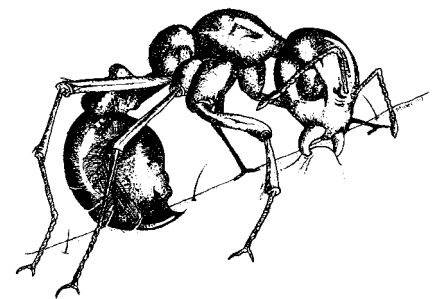


Figure 4. A red imported fire ant attack involves both a bite and a sting.

developing fruits, and seeds. In addition to their stings, the red imported fire ant causes problems by building its nests around trees, yard plants, pipes, and in the walls of structures. Colony-building can damage plants, lawns, and outdoor electrical fixtures.

MANAGEMENT

Because fire ants can sting en masse, most people will want to keep them off their property. This contrasts with other common ant species, such as the Argentine ant, where the primary goal is to keep them out of homes. For management of household ants, see *Pest Notes: Ants*, listed in "References."

California currently has a program aimed at eradicating the red imported

fire ant within the state. Therefore, homeowners should not attempt their own control measures. Any suspected infestation should be reported using the statewide toll free number that has been set up by the California Department of Food and Agriculture for this purpose (1-888-4fireant). There is also an informative web site, www.fireant.ca.gov. Once contacted, state personnel will determine if the ants are red imported fire ants, and if so, will apply approved treatments free of cost or recommend a course of action.

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