



# Red Imported Fire Ant

## A Seriously Harmful Potential Invasive Species

Neil J. Reimer and Carol Okada, Hawaii'i Department of Agriculture

The red imported fire ant, *Solenopsis invicta*, native to South America, is a serious pest of agricultural, urban, and native environments in areas that it has invaded. This species is *not known to be present in Hawaii'i* but is related to the tropical fire ant, *Solenopsis geminata*, which *is* present in Hawaii'i. The red imported fire ant, however, is much more aggressive.



### Distribution in the United States

The red imported fire ant was accidentally introduced into Alabama in the 1930s and has since spread throughout the southern USA. It now occurs in Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Puerto Rico. There have been spot infestations in Arizona, but these have been eradicated. This pest will continue to spread on the Mainland. Its distribution appears to be limited by temperature and moisture: it does not tolerate freezing well, and it does poorly in areas that receive less than 10 inches of rain per year.

### Distribution in Hawaii

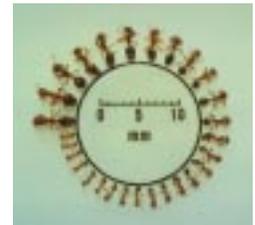
At present, the red imported fire ant is not found in Hawaii. However, conditions in Hawaii are definitely conducive to its survival. The Hawaii Department of Agri-



Workers and queen, relative sizes



Mounds in a pasture



Workers, actual sizes

culture regards it as a high priority to prevent the red imported fire ant from establishing in Hawaii.

### Life cycle and biology

The life cycle of this ant is similar to many other pest ants. The colonies (“mounds”) can contain 10–100 or more queens, which each lay up to 800 eggs per day. After 7–10 days, the eggs hatch into larvae, which develop over a 6–10-day period before pupating. After another 9–15 days, the adult emerges from the pupa.

Soil from excavation of the colony nest is mounded at its entrance. The ants will nest in any soil and habitat, but they prefer sunny, open areas such as pastures, fields, parks, and golf courses. Pasturelands may have 250 mounds or more per acre, each containing from 80,000 to 500,000 worker ants.

**Human health risks**

Red imported fire ants are very aggressive toward anything that disturbs their mound. They can sting repeatedly. Typically, the ant grasps the skin with its jaws and inserts its stinger into the flesh, injecting venom from its poison sac. Pivoting its head, it can inflict an average of seven to eight stings in a circular pattern.



*Typical red imported fire ant sting symptoms.*

Symptoms of each sting are a burning and itching that lasts about an hour. A small blister will form in a few hours, followed by a white pustule in a day or two. Scratching the stings can lead to infection and scarring. Reaction to the sting ranges from localized swelling with pustule formation to severe, life-threatening anaphylactic shock.

Individuals who have a severe reaction to the venom may suffer chest pains, nausea, swelling of the face and/or throat, sweating, loss of breath, or slurred speech. Diabetics and others with circulatory disorders including varicose veins and phlebitis are at risk for complications. In 1988, 32 human deaths were attributed to these ants in the United States.

**Agricultural impacts**

Domesticated animals attacked by red imported fire ants are susceptible to anaphylactic shock, and their sensitivity can vary with age and amount of exposure. Young animals, if they are unable to escape, may be blinded or killed.

The ants feed on germinating seeds and can destroy buds and developing fruits, thus causing serious damage to crops. They also cause extensive damage to seedlings and saplings by girdling stems and branches.

Mounds built in clay soils become hard as rock and damage farm machinery.

**Environmental impacts—urban and recreational**

The red imported fire ant is a serious problem in urban and recreational environments. Its presence will deter people from outdoor recreational activities. Playgrounds, athletic fields, parks, and golf courses must either be heavily treated with pesticides to control these ants, or they are best left unused.

These ants often form nests near buildings and forage into the buildings for food and water. They will occasionally nest in electrical equipment, such as air conditioners, traffic signal boxes, and other devices, causing shorts. Fire ants have a major impact on ground-nesting species, such as birds, rodents, and insects. The decimation of insects will reduce the food supply of native wildlife and negatively impact the pollination of native plants.

**What to look for and who to contact**

The red imported fire ant looks very much like the fire ant already present in Hawai‘i. The two species can be accurately differentiated only by an expert, but there are some characteristics which may help distinguish them:

<b>Red imported fire ant</b> <i>Solenopsis invicta</i> (Not present in Hawai‘i)	<b>Tropical fire ant</b> <i>Solenopsis geminata</i> (Present in Hawai‘i)
<b>Builds mounds</b>	<b>Never builds mounds but may form small dirt piles</b>
<b>Very aggressive; expect many stings</b>	<b>Less aggressive; expect just a few stings</b>
<b>Sting causes small blister followed by white pustule</b>	<b>Sting causes small red swelling</b>
<b>Found in any environment including dry coastal areas</b>	<b>Generally restricted to dry coastal areas</b>
<b>No large-headed workers</b>	<b>Some workers with large, bi-lobed heads</b>

If you suspect that you have seen a red imported fire ant, or to obtain more information, contact the Hawai‘i Department of Agriculture on O‘ahu at 586-PEST (586-7378); on Moloka‘i and Lāna‘i at 800-468-4644; on Hawai‘i at 974-4000 ext. 67378; on Kaua‘i at 274-3141 ext. 67378; or on Maui at 984-2400 ext. 67378.