

IMPORTED FIRE ANT



BE ALERT FOR FIRE ANTS AT ORNL

Imported fire ants were accidentally introduced into the United States from South America, beginning in about 1918. The black imported fire ant (*Solenopsis richteri*) was the first of two species of fire ants to be introduced via shipping into Mobile, Alabama. This species remains limited to northeastern Mississippi, northwestern Alabama and southern Tennessee. The red imported fire ant (*Solenopsis invicta*) also became established in the Mobile area by the early 1940's. It now infests more than 318 million acres comprising most of nine southeastern states and Puerto Rico, with small infestations in Tennessee, Oklahoma, New Mexico and California. A large population of hybrid fire ants (imported red x imported black) exists in a band between the two parent species and can be found in southeastern Tennessee, northwestern Georgia, northern Alabama, and northern Mississippi. The first confirmed sighting of an imported fire ant in Tennessee was an isolated infestation in Shelby County in 1948, which was quickly eradicated. Natural migration of imported fire ants was first documented in Tennessee in Hardin County in 1987. Today, much of southern Tennessee is infested with imported fire ants. It is the hybrid fire ant that is present in our area.

Imported fire ants are reddish-brown to black and are 1/8 to 1/4 inch long. They construct nests that are often most visible as dome-shaped mounds of soil, sometimes as large as 3 feet across and 1 1/2 feet in height. In general, mounds are 12 inches or more in diameter and height. In sandy soils, mounds are flatter and less visible. Fire ants usually build mounds in sunny, open areas such as lawns, pastures, cultivated fields and meadows, but they are not restricted to these areas. Mounds or nests may also be located in rotting logs, around trees and stumps, under pavement and buildings, and occasionally indoors. Fire ants are most notable here at ORNL in sparse grassy areas, and along sidewalks and curbs. Typically at home you will notice fire ants in sparse areas of your lawn,, or along the edges of your driveway, curbs or walks. Many of the fire ant mounds in the ORNL developed areas are of the smaller, flatter variety. Outlying natural areas at ORNL where areas are undisturbed will contain the more classic larger, higher mounds.

Fire Ant Mound Along Curb at ORNL



Fire ants can travel long distances when newly mated queens land on cars, trucks or trains, or when winged forms are carried by the wind. Fire ants have a high reproductive rate and disperse easily. Thousands of reproductive females are produced per colony, and the mated females begin a colony wherever they land. Queen ants can fly up to one mile on their own, or further when assisted by favorable winds. The ants eliminate competing insects, and then rapidly overwhelm an area. Whole colonies can move, and in the multiple queen form, the colonies can split into many new colonies. The shipment of nursery stock or soil from infested areas is one way that entire colonies can move from one place to another. For this reason, the U. S. Department of Agriculture implemented a quarantine program in the 1950's. The purpose of the quarantine program is to minimize the spread of imported fire ants by requiring proper inspection and treatment of all nursery stock, turf grass, hay and other articles shipped out of designated quarantined areas.

For the most part, fire ants are a "people pest" because they often occupy the same areas where we work, live and play. It is estimated that about 40 million people are in potential conflict with fire ants, almost on a daily basis.

Fire ants are most notorious for their stinging behavior. They respond rapidly and aggressively to any disturbance of the colony or to a food source. A single fire ant can sting repeatedly. The attacks are carried out by many ants, sometimes numbering in the hundreds or more. The classic attack occurs when the fire ant mound is disturbed by accident, at which time the ants will deploy rapidly to attack the invader. They will bite the victim with their powerful jaws, while arching their backs and stabbing the victim with a stinger located in their rear abdomen.

After being stung, the wound typically forms a red welt, about twice the size of a normal freckle. The next day, a white pustule (blister) forms. The most common symptom, other than the burning pain when the sting happens, is a mild itch. The itch usually lasts no more than a few days. If the pustule is popped or broken open, an infection and scarring can occur. It is best to just leave it alone and let the healing process take its course.

If you are stung by a fire ant:

- Apply a cold compress to relieve the swelling and pain.
- Gently wash the affected area with soap and water and leave the blister intact.
- Stings can be treated with over the counter products that give relief from insect stings.
- People who are allergic to insect stings should seek medical attention immediately.
- On rare occasions, fire ant stings can cause severe acute allergic reaction (anaphylaxis). Symptoms to watch for are severe headache, severe nausea, profuse sweating and, most importantly, shortness of breath or chest pain. If these symptoms occur, the person should seek emergency medical attention by calling 911.

To minimize the risk of being bitten:

- Be alert for the presence of fire ant mounds and avoid them.
- When at all possible, wear protective clothing during outdoor activities in areas where fire ants may be present. Wear shoes or boots and/or tuck pant legs into socks.
- Use insect repellents on clothing and footwear.
- Control fire ants in areas used most frequently by people and pets.

Fire ants are typically controlled with chemical pesticides. However, the high reproductive rate of the ants and their ability to disperse easily significantly hinders the success of any measures taken. In addition, the queen is protected from many poison baits because she is fed only by food eaten first by workers and larvae. If the poison works too rapidly, the worker is killed before the poison is passed

on to the queen. Also, worker ants from well-fed colonies may not forage on poison baits, or baits may not be as attractive as some abundant natural food.

The implementation of Integrated Pest Management (IPM) can increase the success of eradication programs. IPM, which combines compatible chemical, biological and cultural controls, can be used to manage pest populations. IPM prevents or reduces pest problems in cost-effective and environmentally sound ways. Biological control methods, such as the introduction of decapitating flies, are currently being studied. Cultural control methods use agronomic (turf) and horticultural (ornamental plants) practices to produce an environment or habitat that is unattractive to the infestation of this exotic pest.

Cultural control methods that may minimize the presence of fire ants include the following:

- Shade – Imported fire ants tend to nest in open, sunny areas. Numerous surveys have shown that relatively few fire ant colonies are found in shady wooded areas. Planting of shade trees to increase shading may be a good deterrent.
- Planting Pest-Free Plants – Imported fire ants eat caterpillars, beetles and other insects. Growing plant varieties that are not insect pest prone may indirectly provide less food for the fire ants.
- Good Sanitation – Pet food bowls left outside can provide ample food for fire ants. Similarly, fly larvae in pet manure serves as ant food and should be properly discarded. Reducing any form of litter could make your yard less attractive to fire ant foraging and nesting.
- Access to Water - Fire ants need water daily. Lack of water in low maintenance dry areas can limit fire ant nesting and establishment. Fix leaky faucets, irrigation valves and heads, improve drainage and conserve water to discourage fire ant infestations.
- Mulches and Nesting Sites – Some mulches like cedar bark may repel fire ants, although no studies confirm these manufacturer’s claims. Areas covered by pea gravel or other small stones in sunny areas may be non-conductive to ant nesting. Using rough gravel instead of sand underneath brick or other patio structures also may deter fire ants from nesting there. Conversely, “hardscape” edges (i.e., edges of cement slabs, landscape timbers) and many other types of mulch (straw, composted leaves, bark) often attract fire ants because they provide a structure, moisture and temperature buffering effects that are apparently ideal for fire ant nesting.
- Mowing and Disturbing Ant Mounds – Disturbing colonies frequently may cause fire ants to move to a new location. When grass is mowed frequently at a low cutting heights, the disturbed colonies will move to less disturbed areas, adjacent to sidewalks and foundations or to hedgerows and trees. Conversely, fire ants are recognized as rapid invaders and will rapidly invade the disturbed lands once these practices are stopped.

Be aware that cultural elements and practices alone will never eliminate this pest. At best, manipulation of these cultural influences may reduce fire ant infestations, and thereby reduce dependence on insecticides.

If you discover a fire ant mound on the ORNL campus, please contact Ernest Ryan at 576-1409. For more information about fire ants, please visit the UT fire ant website at <http://fireants.utk.edu> .