

## **ORNL Imported Fire Ant Update (July 2006)**

Much of southern Tennessee is infested with imported fire ants. Several of their mounds have been reported across the ORNL site this year. This update offers information and advice to ORNL staff on the identification and control of fire ants at ORNL and at home.

### **Identification**

The fire ant present in our area is a hybrid of the black and red fire ants that were imported into Mobile, Alabama, in 1918 and in the 1940s, respectively. Adults are reddish to dark brown and occur in five forms: minor workers, about 1/8 inch long; major workers, about 1/4 inch long; winged males and females, each about 1/3 inch long; and egg-laying queens, also about 1/3 inch long.



Fire ants are easily identified from their mounds. Mounds constructed in clay soils are usually symmetrical and dome-shaped; mounds built in sandy soils tend to be irregularly shaped. There are usually no obvious external openings in the mound; tunnels approximately 25-50 mm below the surface radiate from the mound and allow foraging workers ready egress and ingress. Mounds vary in size, usually in direct proportion to the size of the colony. A mound that is 2 feet (0.6 m) in diameter and 18 inches (46 cm) high may contain about 100,000 workers, several hundred winged adults, one queen, and many whitish rice grain-like larvae and pupae that will eventually develop into workers or winged adults.

### **Infestation Expansion**

Portions of Southern Tennessee are quarantined for fire ants, although neither the Oak Ridge Reservation nor the city of Oak Ridge is within the current quarantine area. (See map below.) However, the infestation is expanding.

Fire ants have a high reproductive rate and disperse easily, allowing them to expand naturally and steadily into new territory. Each colony produces thousands of winged, reproductive females. These mated females can fly up to one mile on their own or farther when assisted by favorable winds. Wherever they land, they are the queens that can begin a new colony. Recent mild winter weather has accelerated their natural spread. However, the spread of these ants across the U.S. has been largely due to the transport of fire ant-infested landscaping plants into areas outside of the quarantine zone. Current technology and efforts are not expected to reverse this spread in the foreseeable future.

For the general public two aspects of imported fire ant infestations are particularly annoying: the unsightly mounds formed in lawns and yards and the painful stings received when mounds are disturbed.

## **The Bite**

Unlike many other ants, which bite and then spray formic acid on the wound, fire ants bite to get a grip and then sting from the abdomen and inject a toxic, alkaloid venom. Their sting is painful to humans — hence the name fire ant. The aftereffects of the sting can be deadly to the few individuals who are highly allergic to the stings and require immediate medical attention after being stung.

Within 24 hours after being stung, a pustule-like sore may form at each sting site and usually itches intensively. Scratching the pustule may rupture the skin, leading to secondary infection and scarring.

## **What if I am stung?**

Immediately after being stung, wash the area with alcohol, and try not to scratch it to prevent infection. Commercial preparations (e.g., StingEze) or a thick paste of baking soda and water will temporarily numb the area and can help reduce the pain. Application of ice will also help decrease pain, but can burn the skin if left on too long. Over the counter (OTC) antihistamines (e.g., Benedryl) may help with local reactions such as burning and itching. Follow label instructions carefully.

A white pustule will sometimes form the second day, but it will eventually be resorbed. If the pustule becomes infected, apply an antibiotic and see your doctor.

If other reactions occur soon after the stings (e.g., difficulty breathing, itchy rash, loss of consciousness), get the person to an emergency room immediately. About 1% of the population can have a serious, dangerous anaphylactic reaction to fire ants. A physician can prescribe an EpiPen (i.e., a single dose epinephrine auto injector device) to carry with you in case of subsequent stings.

## **How can I avoid being stung by fire ants?**

Constant awareness of your surroundings is the best way to avoid everything from car wrecks to rattlesnake bites. When fire ants crawl onto your skin, they first bite with their mandibles in order to anchor themselves for the thrust of the sting. As soon as you feel this pinching sensation, quickly sweep the ants off before they sting, and you can avoid most of the damage! If you must work in proximity to fire ants, wear rubber boots and gloves powdered with talc.

## **What if I see a mound at ORNL?**

If you see a mound, do not disturb it. Call or e-mail Ernest Ryan (865-576-1409, 865-873-6457, [el4@ornl.gov](mailto:el4@ornl.gov)) or Nancy Dailey (865-574-8774, pager at 865-873-6424, [nsd@ornl.gov](mailto:nsd@ornl.gov)). They will notify Facilities and Operations staff who will treat the mound if necessary.

For additional information see the subject area, Movement of Soils, Plants or Plant Products, or Other Contaminated Equipment at <http://sbms.ornl.gov/sbms/sbmsearch/subjarea/MvtSoilsPlants/sa.cfm> and the procedure titled: [Reporting of Fire Ant Mounds on the ORR and Movement of UT-Battelle Policy-Regulated Soils or Used, Mechanized Soil Moving Equipment](#).

## **What about eradication of fire ants at home?**

Fire ants cannot be eradicated over wide areas. Therefore, the goals of insecticide treatment are to eliminate fire ants in areas where the risk to people is high and to reduce infestations to acceptable levels.

An insecticide can either be applied to individual mounds or it may be broadcast over an area infested with multiple fire ant colonies. Regardless of the method used, the objective is to kill the queen, the only ant in the colony capable of laying eggs. Label directions should always be carefully followed when applying any insecticide.

Mound-specific treatments are usually more environmentally acceptable because they require only a fraction of the insecticide needed for broadcast treatments. Numerous insecticides are currently labeled for this use.

Broadcast treatments also kill other species of ants that help control the spread of fire ants. Other ants compete with fire ants for food, but fire ants are better at colonizing and dominating newly disturbed habitat than the average ant species. When you kill all the ants in your yard, you create an "ant vacuum." After the next rain your yard is a "safe" yard for fire ant queens to begin new mounds unopposed by any other ants.

Often when one removes a native element of the ecosystem, something much worse fills the void. Most native lawn ants are not pests in houses or in general. If native ants are not harming you but simply sharing their habitat with you, it is best to leave them alone.

For assistance in identifying potential imported fire ants, contact your local [County Extension Agent](#) who has educational materials to help you identify fire ants and minimize their impact or the Tennessee Department of Agriculture, Division of Regulatory Services, [Plant Certification Section](#).

#### **LINKS TO RELATED SITES**

ORNL Environmental Protection Services Information - <http://www-ep.ornl.gov/landerin/WEBPages/shwc/Usdahome.cfm>

TN Imported Fire Ants - <http://www.state.tn.us/agriculture/regulate/plants/ifa.html>

Insects: Fire Ants - <http://msucares.com/insects/fireants/index.html>

Imported Fire Ants in Tennessee - <http://fireants.utk.edu/>

Control of the Red Imported Fire Ant - <http://www.ces.ncsu.edu/TurfFiles/pubs/insects/ag486.html>

Fire in the Hole—Battling the Red Imported Fire Ant - <http://www.bryrus.net/gordons/fireant.htm>

Fire Ant Web Page Links - <http://hbs.bishopmuseum.org/ants/Solenopsis/Sollinks.html>

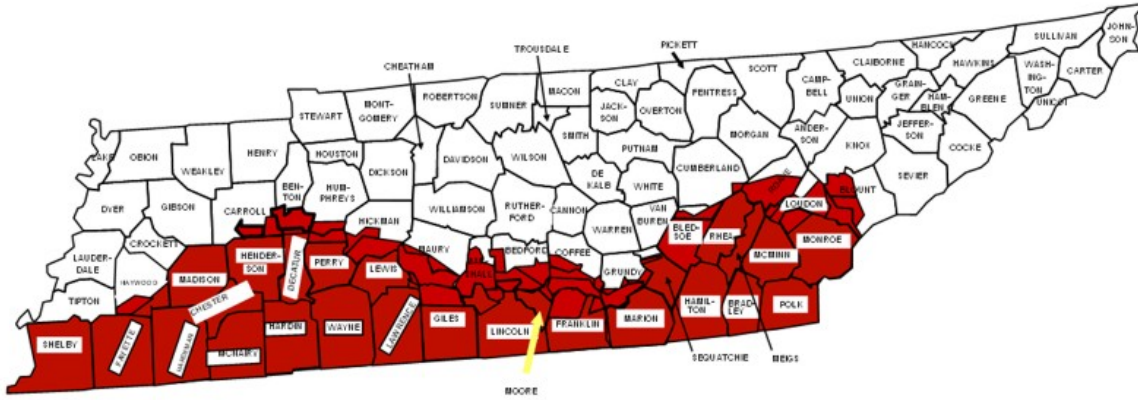
Fire Ant Photos - [http://fireant.tamu.edu/materials/multimedia\\_photos](http://fireant.tamu.edu/materials/multimedia_photos)

Imported Fire Ant Management - <http://fireants.utk.edu/Webpages/Controlpage.htm>

Managing Fire Ants - <http://fireant.tamu.edu/management>

Insects Imported Fire Ant – [http://www.aspb.arkansas.gov/plant\\_insect2.html](http://www.aspb.arkansas.gov/plant_insect2.html)

# 2005 TENNESSEE IFA Quarantine



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