

# Fire Ant Control in Two Easy Steps

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Imported fire ants were accidentally introduced into the United States from South America about 70 years ago. The first documented infestation of these ants in Arkansas was in El Dorado in 1958. Currently, they infest much of southern Arkansas and have been found in the more northern reaches of the state. Fire ants are reddish brown and range in length from 1/8 to 1/4 inch. In addition to their physical characteristics and aggressive swarming behavior, they are identified by their painful sting which produces a small pustule (white bump) on the victim within 8 to 24 hours (see FSA7042, *Imported Fire Ant Biology*).

Imported fire ants (IFA) infest home lawns, playgrounds, school yards, parks and other recreational areas, as well as pastures and cropland. Fire ants not only cause problems to homeowners but also economic losses in agriculture such as the poultry and cattle industries. They construct unsightly mounds which cause difficulty during mowing and can damage farm and lawn maintenance equipment. In addition, fire ants are attracted to electrical fields. Short circuits and damage to equipment such as air conditioners are the result of numerous fire ants being attracted to the unit.

Imported fire ants are a serious pest, but fortunately their impact upon our lives can be minimized through patience and the use of integrated pest management practices. The most effective chemical control methods for imported fire ants result in queen

mortality or prohibit her from producing more worker ants. The control program described below is a cost effective and proven procedure that provides long-term ant suppression in home lawns, ornamental turf, area-wide treatment programs and other nonagricultural land. *This program is also suited for pasture and rangeland* provided the products are labeled for use in these sites.

## Fire Ant Control in Two Steps

The two-step method is suggested for areas with a high IFA mound density (over 20 per acre) and low numbers of beneficial native ants. This method can effectively control heavy fire ant infestations when conducted once or twice per year. The first step is to broadcast a bait-formulated insecticide over the entire yard on an annual or semiannual basis (spring and fall). The second step occurs several days later with the individual treatment of problem mounds with approved insecticidal dusts, liquid drenches, baits, granules, aerosols or a nonchemical treatment such as pouring hot water on the mound. **Specific tips on the effective use of baits and individual mound treatments follow.**

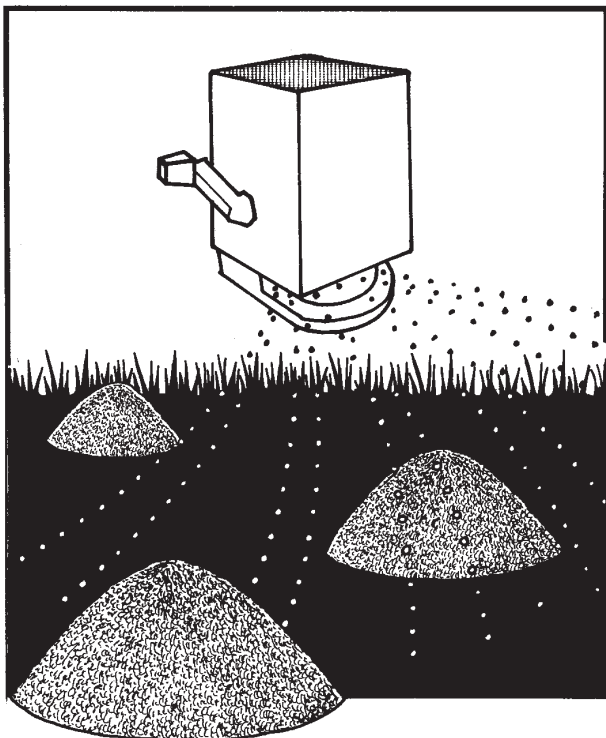
### Step One: Baits

Most fire ant bait is an insecticide and an attractive fire ant food (generally processed corn grits coated with soybean oil) combination. Baits are taken into the colony by ants searching

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for food. The bait is distributed to other members of the colony through the exchange of food known as trophallaxis. One key to the efficiency of baits is that the insecticide gets to the queen. Although several fire ant baits are available, there are two main types: insect growth regulators and actual toxins. Hydramethylnon bait (Amdro®, Siege® and Maxforce®) is a toxin (slow acting stomach poison) that disrupts the ant's ability to convert food to energy. Spinosad bait (Eliminator® Fire Ant Killer Bait, Justice™ Fire Ant Bait) is a slow acting biorational toxin derived through the fermentation of a soil dwelling bacteria. Abamectin, the toxin in Raid® Fire Ant Bait is also the result of the fermentation of soil dwelling bacteria. Fipronil bait (Chipco® Firestar™) is a slow acting toxin that disrupts the insect's nervous system through contact and stomach action. Control with fipronil bait takes from two to six weeks. *Hydramethylnon and spinosad baits demonstrate control from one to five weeks following treatment.* Fenoxycarb (Award™ and Logic®), Precor® or methoprene, (Extinguish™) and pyriproxyfen (Distance® and Spectracide® Fire Ant Bait) are all insect growth regulators that prevent queens from producing new workers. *These baits take from one to four months for control.* Abamectin (Clinch™, Varsity™, Ascend™ and Raid® Fire Ant Killer) bait acts both as an insect growth regulator and a toxin and depending on the amount of product may take a few months to achieve control. Although insect growth regulators may take longer to achieve results, control may last up to a year, especially if treated areas are greater than one acre.



Broadcast Bait Application

Broadcast treatments are less expensive (in terms of product cost as well as time) and control colonies even when mounds are not visible. For best results:

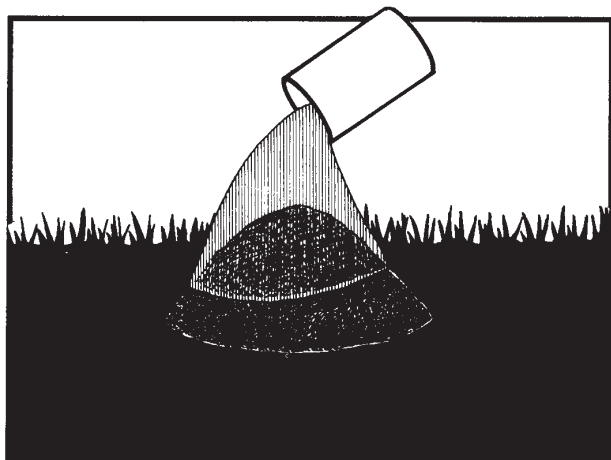
- Use **fresh bait**, preferably from an unopened container or one that has been tightly sealed and not stored for long periods (most labels suggest using within three to six months after opening).
- **Do not disturb mounds** before application.
- Apply when the **ground** and **grass** are **dry** and **rain is not expected** for the next 12 to 24 hours.
- Apply when foraging **ants** are **actively searching** for food. This can be tested by leaving a small amount of bait next to an active mound. If ants are seen removing the bait within 10 to 30 minutes, it's a good time to apply bait. Ants are **less active** during cold and hot periods (when soil temperature is less than 70°F or greater than 95°F).
- In the summer, it may be necessary to apply baits in late afternoon or evening when **ants** are **most active**.
- **READ AND FOLLOW LABEL INSTRUCTIONS.** Make certain that the area you plan to treat with the bait product is listed on the label. Some fire ant baits can be used only on certain areas while others have broader labels. For example, Extinguish® is the only fire ant bait labeled for use in home gardens as long as the bait does not contact the edible portions of the plant.

Baits can be applied with hand-held seed spreaders such as the Cyclone Seed Sower, Ortho Whirlybird or EZ Handspreader. For small areas, set the spreader at the smallest opening and make passes (swaths) approximately 10 to 15 feet apart (a couple of passes for the average yard) at a normal walking speed to apply the recommended rate (for most baits 1 to 1 1/2 pounds per acre, or approximately 1 ounce per 2000 square feet). For medium- to large-sized areas, chest type or vehicle-mounted spreaders can be used.

### Step Two: Individual Mound Treatments

Chemical and nonchemical methods may be used for individual treatment of fire ant mounds. **Individual mound treatments should be applied from seven to ten days following the broadcast of bait.** Dusts, liquid drenches, granules and aerosols are all examples of contact insecticides. As a contact insecticide, these products must actually come into direct contact with the ant. Note: Retail sales of Dursban® (chlorpyrifos) for home use is prohibited after December 31, 2001. Retail sales of diazinon formulations for lawn, garden and turf will be discontinued August 31, 2003.

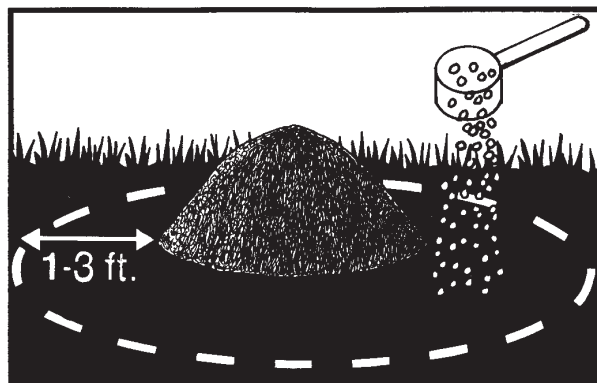
**Chemical Treatments.** Some products, such as those containing 75 percent acephate (Orthene® Fire Ant Killer and Orthene® 75S), 15 percent acephate (Velocity®), deltamethrin (Deltadust® and Eliminator® Ant Killer Dust) and cyfluthrin (Bayer Advanced Lawn™ Fire Ant Killer), are formulated as *dusts*. Ants walking through the treated soil get dust on their bodies and transport the insecticide into the mound. Within a few days the entire colony should be killed. To use a dust, distribute the recommended amount evenly over the mound. **DO NOT INHALE THE DUST OR GET IT ON YOUR SKIN.**



Dusts

1- or 2-gallon container, such as a sprinkler can. Write "POISON" on the container and do not use for any other purpose. Orthene®, Talstar®, Sevin®, Conserve\* SC and diazinon are examples of liquid contact insecticides. **DO NOT DISTURB THE MOUND.**

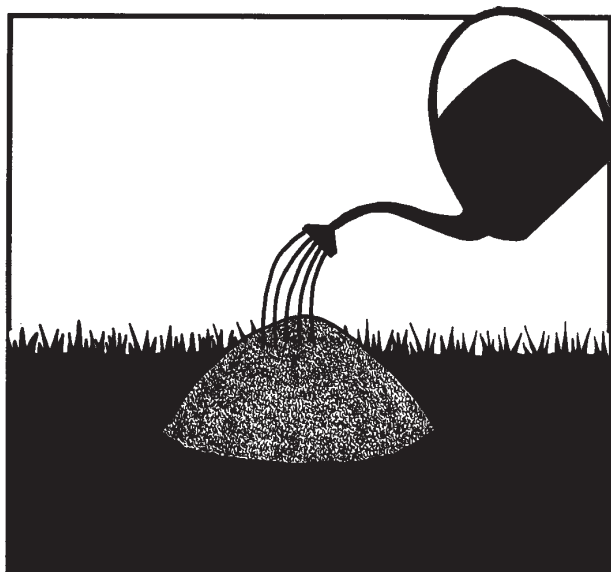
*Bait* products can also be used for treatment of individual mounds. Baits are applied as described in step one except that they are not broadcast but applied around individual problem mounds. **DO NOT APPLY BAITS DIRECTLY ON THE MOUND OR DISTURB THE MOUND.** Uniformly sprinkle 3 to 5 level tablespoons from 1 to 3 feet around the base of the mound.



Baits

Some chemical products are *liquid concentrates* that are diluted with water and then applied to the mound. These liquid mound drenches kill the ants underground but must be applied in sufficient volume to penetrate the entire nest – 1 to 2 gallons of diluted mixture poured over the top of each mound. Mound drenches generally eliminate mounds within a few hours. When handling liquid concentrates, always wear unlined rubber gloves to avoid getting the product on your skin. Mix the proper amount in a

*Granular* products are another method of getting insecticides into fire ant mounds. The active ingredient in a granular insecticide is released when water is poured over the granules. To treat a single mound, measure the recommended amount in a measuring cup and sprinkle it on and around the mound. **DO NOT DISTURB THE MOUND.** Use a sprinkling can that breaks the water stream into droplets to pour 1 to 2 gallons of water over the treated mound if the label states the product needs to be watered in. Sprinkle gently to avoid disturbing the colony and washing the granules off the mound.



Drenches



Granules

Acephate (Pinpoint® 15), bifenthrin (Talstar®), deltamethrin (Deltaguard™ G), permethrin (Spectracide® Bug Stop Insect Control Granules) and diazinon are all examples of granular contact insecticides labeled for fire ant control.

Remember, application of less than the recommended amount of water with either liquid concentrates or granular insecticides provides poor results. Unless the product completely penetrates the mound, ants will move to a different site via underground foraging tunnels to avoid the poison.

Some products come in *aerosol* containers to which an injection rod is attached. The rod is inserted into the mound and the insecticide injected according to label instructions.

Many of the applications of contact insecticides are faster acting than applications of baits; however, baits have the advantage of treating inaccessible and unseen mounds. Baits also are formulated to impact the queen. **To kill a fire ant colony, you must kill the queen.**



Aerosols

**Low Toxicity and Nonchemical Treatments.** A few active ingredients used in fire ant control products are commonly referred to as “organic” or “least-toxic” (e.g., boric acid, pyrethrins, rotenone and diatomaceous earth). Diatomaceous earth, a natural silica-based dust, kills some ants but is not very effective when the soil is moist, and it rarely eliminates ant colonies when used alone.

**Boiling Water.** Nonchemical methods such as pouring boiling water on mounds may eliminate up to 60 percent of treated mounds but can be hazardous to plants, grass and especially the person transporting the water.

**Excavation.** Problem mounds can be physically excavated by shoveling the mound into a bucket. Talcum powder should be sprinkled onto the shovel handle, buckle handle and the inside of the bucket to prevent ants from traveling up the handles.

**In conclusion,** the most successful approach for heavily infested areas is to broadcast a fire bait first, then apply individual mound treatments seven to ten days later.

Research throughout fire ant infested states has shown that the two-step method of treatment is effective in minimizing the impact of fire ants. Community or area-wide treatments also have been shown to be effective in reducing the rate of reinfestation.

To learn more about community abatement programs contact your county agent.

## Reference

*The Two-Step Method Do-It-Yourself Fire Ant Control*, L-5070, Texas Agricultural Extension Service. M. Merchant and B.M. Drees.

Reference to commercial products or trade names does not imply any recommendation or endorsement by the Cooperative Extension Service.

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