

Fire Ant Control in Two Easy Steps

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Imported fire ants (IFA) 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.

Imported fire ants 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 units.

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 (colony) density (over 20 per acre) and low numbers of beneficial native ants. This method can effectively control heavy fire ant infestations when conducted at least twice yearly. The first step is to broadcast a bait-formulated insecticide over the entire yard on a semiannual basis (spring and fall). The second step occurs seven to ten 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.

Step One: Broadcast Bait Applications

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

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searching (foraging) for food. The bait is distributed to other members of the colony through the exchange of food, a process 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 (IGRs) and actual toxins.

Hydramethylnon bait (Amdro and Amdro Pro) is a toxin (slow-acting stomach poison) that disrupts the ant's ability to convert food to energy. Spinosad bait (Safer Fire Ant Bait, Greenlight Fire Ant Control with Conserve and Fertilome Come and Get It) is a slow-acting biorational toxin derived from soil-dwelling bacteria through a fermentation process. Abamectin, the toxin in Ascend, Varsity and Clinch fire ant baits, is also derived through a fermentation process with soil-dwelling bacteria. Indoxacarb (Advion, Spectracide Once and Done and Real-Kill fire ant bait) is a fast-acting toxin acting on the ant's nerve cells resulting in paralysis and death. *Hydramethylnon and spinosad baits demonstrate control from one to five weeks following treatment. Indoxacarb bait is the fastest-acting bait, providing control in three to seven days following application.*

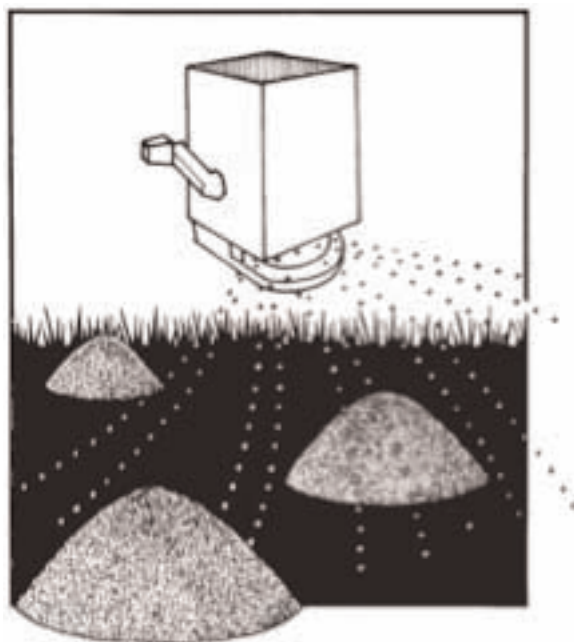
Fenoxycarb (Award), (S)-methoprene (Extinguish) and pyriproxyfen (Distance and Esteem Fire Ant Bait) are all IGRs that prevent queens from producing new workers. *These baits take from one to four months for control.* Abamectin (Clinch, Varsity and Ascend) bait acts much like an insect growth regulator when applied at broadcast rates and like a toxin when applied at rates for individual mound treatment. Although IGRs may take longer to achieve results, control may last up to a year, especially if treated areas are greater than one acre.

Extinguish Plus is a pre-blended combination bait containing both a slow-acting stomach poison (hydramethylnon) and an IGR (methoprene). This combination is fast-acting like hydramethylnon and long-lasting like methoprene.

Broadcast 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 bait application.
- Apply bait when the **ground and grass are dry** and **rain is not expected** for the next 12 to 24 hours.



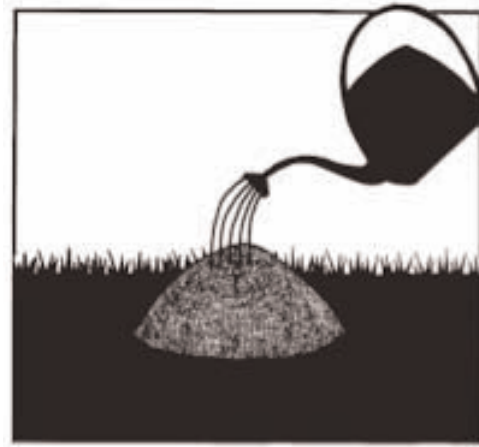
Broadcast Bait Application

- Apply bait when foraging **ants** are **actively searching** for food. This can be determined by leaving a small amount of food material (hot dog pieces or greasy chips) near an active mound. If ants are seen on the hot dog piece or chip 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 the area you plan to treat with the bait product is listed on the label. Most bait products can be used in residential, recreational and landscaped areas. However, only a few baits are labeled for use in agricultural areas, such as cropland, pastures, orchards and vegetable gardens. For example, Extinguish, Esteem and Safer or Greenlight Fire Ant Baits are the only fire ant baits labeled for use in home gardens and/or cropland. Amdro Pro, Esteem, Extinguish and Extinguish Plus are the only baits labeled for use on pastures and hay meadows.

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



Dusts



Drenches

2,000 square feet). For medium- to large-sized areas, chest-type or vehicle-mounted spreaders can be used. A few bait formulations (Amdro Yard Broadcast Treatment and Spectracide Once and Done) are applied at higher rates, usually with wheeled granular applicators.

Step Two: Individual Mound Treatment

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 examples of contact insecticides. As a contact insecticide, these products must actually come into direct contact with the ant.

Chemical Treatments. Some products 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, AND DO NOT DISTURB THE MOUND PRIOR TO TREATMENT.**

Some chemical products are formulated as liquid concentrates or wettable powders that are diluted/mixed with water and then applied to the mound. These liquid drenches kill the ants underground but must be applied in sufficient volume to penetrate the entire nest (one to two gallons of diluted mixture poured over the top of each mound). Mound drenches generally provide control within a few hours. When handling liquid concentrates, always wear unlined chemical-resistant gloves and other personal protective equipment as specified on the product label to avoid getting the product on your skin. Mix the proper amount in a one- or two-gallon container, such as a sprinkler can. Write "POISON" on the container, and do not use for any other

purpose. **DO NOT DISTURB THE MOUND PRIOR TO TREATMENT.**

Bait products, as mentioned above for broadcast treatment, 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.

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 out the recommended amount 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. 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 are formulated as aerosols, to which an injection rod is attached. The rod is inserted into the mound and the insecticide is 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.**

Low Toxicity, Organic and Nonchemical Treatments. A few active ingredients used in fire ant



Aerosols



Baits



Granules

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. Pyrethrin, a botanical insecticide, kills ants quickly and, when formulated with diatomaceous earth, effectiveness may be enhanced. Bait products containing spinosad (Greenlight and Safer) are considered “organic” and are OMRI (Organic Materials Review Institute) certified for organic production areas of less than one acre. In addition, spinosad (Greenlight Spinosad Lawn and Garden Spray) is available in a concentrated formulation that can be mixed with water to use as a mound drench.

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, bucket handle and the inside of the bucket to help prevent ants from traveling up the handles.

In conclusion, an economical and successful approach for a heavily infested area is to broadcast a fire bait first then apply individual mound treatments, seven to ten days later, to any remaining colonies showing activity.

Research throughout states infested with fire ants 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 Extension agent.

Fire Ant Control Products Formulated as Baits

abamectin	Enforcer Fire Ant Bait
	Clinch Ant Bait
	Varsity Fire Ant Bait
indoxacarb	DuPont Advion Fire Ant Bait
	GardenTech Over'nOut Fire Ant Mound Treatment (bait)
	Spectracide Fire Ant Killer Plus Preventer Once and Done
fenoxy carb	Award Fire Ant Bait
hydramethylnon	Amdro Fire Ant Bait
	Amdro Pro Fire Ant Bait
	Amdro Fire Ant Bait Yard Treatment
hydramethylnon and (s) methyoprene	Amdro FireStrike Fire Ant Bait
	Extinguish Plus Fire Ant Bait
pyriproxyfen	Distance Fire Ant Bait
	Esteem Ant Bait
(s)-methoprene	Extinguish Professional Fire Ant Bait
spinosad	Ferti-lome Come and Get It (bait)
	Green Light Fire Ant Control with Conserve (bait)
	Safer Fire Ant Bait

Fire Ant Control Products Formulated as Dusts

acephate	Hi-Yield Acephate Fire Ant Killer (dust)
	Ortho Orthene Fire Ant Killer (dust)
	Surrender Fire Ant Killer (dust)
beta-cyfluthrin	Bayer Advanced Fire Ant Killer Ready-to-Use Dust
carbaryl	Hi-Yield 10% Carbaryl Garden and Pet Dust
deltamethrin	Bengal UltraDust 2X Fire Ant Killer (dust)
	Enforcer BugMax 240 Eight Month Home Pest Control (dust)
	Terro Fire Ant Killer Outdoor (dust)
permethrin	Spectracide No-Odor Fire Ant Killer Ready-to-Use Dust

Fire Ant Control Products Formulated as Liquid Concentrates or Wettable Powders

acephate	Hi-Yield Acephate Fire Ant Killer (wetable powder)
	Surrender Fire Ant Killer (wetable powder)
beta-cyfluthrin	Bayer Advanced Power Force Carpenter Ant and Termite Killer Plus Concentrate (liquid concentrate)
bifenthrin	Bifen I/T Insecticide/Termiticide (liquid concentrate)
	Hi-Yield Bug Blaster II Turf, Termite and Ornamental Insect Control (liquid concentrate)
	Surrender Termite 5 Killer (liquid concentrate)
carbaryl	Eliminator Bug Killer Concentrate Sevin (liquid concentrate)
	GardenTech Sevin Bug Killer Concentrate (liquid concentrate)
cypermethrin	Demon WP (water soluble packet)
	Surrender Cyper WP (water soluble packet)
deltamethrin	Enforcer BugMax Insect Killer Concentrate (liquid concentrate)
permethrin	Hi-Yield 38 Plus Turf, Tree and Ornamental Insect Control (liquid concentrate)
	Hi-Yield Garden, Pet and Livestock Insect Control (liquid concentrate)
	Hi-Yield Indoor/Outdoor Broad Use Insecticide (liquid concentrate)
	Martin's Permethrin 10% (liquid concentrate)
spinosad	Ferti-lome Borer, Bagworm, Leaf Miner and Tent Caterpillar Spray (liquid concentrate)
	Natural Guard Spinosad Landscape and Garden Insecticide Ready-to-Spray (liquid concentrate)

Fire Ant Control Products Formulated as Granular Insecticides

beta-cyfluthrin	Bayer Advanced Power Force Fire Ant Killer Ready-to-Use Granules
bifenthrin	Eliminator Ant, Flea and Tick Killer Granules
	Eliminator Fire Ant Killer Plus Granules
	Ortho Fire Ant Killer Mound Treatment (ready-to-use granule)
	Surrender Impose Fire Ant Killer (ready-to-use granule)
carbaryl	Eliminator Lawn Insect Killer Granules
	GardenTech Sevin Lawn Insect Granules
	Hi-Yield Lawn and Garden Insect Killer Granules
deltamethrin	Hi-Yield Imported Fire Ant Control Granules Containing Deltamethrin
	Hi-Yield Turf Ranger Insect Control Granules
indoxacarb	GardenTech Over 'n Out! Fire Ant Killer Mound Treatment (granule)
imidacloprid & beta-cyfluthrin	Bayer Advanced Lawn Complete Insect Killer for Soil and Turf (ready-to-use granule)
lambda-cyhalothrin	Spectracide Fire Ant Killer Granules Mound Destroyer
	Tero Outdoor Ant Killer Plus Multi-Purpose Insect Control (ready-to-use granule)
permethrin	Enforcer Fire Ant Killer Granules II
	Green Light Fire Ant Killer Granules
	Hi-Yield Kill-A-Bug II Lawn Granules

References

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

Art by Richard DeSpain, Extension draftsman (retired),
adapted in part from graphics by Jane Medley in
Imported Fire Ants and Their Management in Florida.

All chemical information is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Before purchasing or using any pesticide, always read and carefully follow the directions on the container label.

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