when broadcast), and spinosad (works in several weeks). They may need to be reapplied more often than slower acting and longer lasting products such as abamectin, methoprene or pyriproxyfen, which work in 1 to 2 months when applied in spring and 6 months when applied in fall. Products that combine fast- and slow-acting ingredients, such as hydramethylnon plus methoprene (Extinguish® Plus, Amdro® Firestrike), may control ants better because they act quickly and last longer.

Granular fipronil products are slower acting but longer lasting; only one treatment is permitted per year. Faster-acting contact insecticides, such as the pyrethrins (listed above), eliminate ants on the surface for months but may not eliminate colonies nesting deeper in the soil.

Individual Mound Treatments

Although treating ant mounds individually is more labor intensive and may use more insecticide than other methods, it is a suitable approach for small areas with few fire ant mounds (fewer than 20 per acre) or where you want to preserve native ants. Faster-acting bait products (hydramethylnon, indoxacarb, spinosad) can be used to treat individual ant mounds and are ideal for treating inaccessible colonies like those nesting under sidewalks, in plant beds and at the bases of tree trunks. Some mound treatment products are available as liquid drenches, injectable aerosols, dusts, or granules that are watered in to the mound. Ants are killed only if the insecticide contacts them, so proper application is essential. These treatments are most effective when ants are nesting close to the mound surface (as they do when the temperature is mild). Colonies should not be disturbed during treatment. If you use a watering can to apply insecticide, do not use it more than a few times a week, and be careful not to water the insecticide away. Instead, use a mister or a spray bottle with a fine mist setting that will allow the insecticide to get to the mound. Ants are killed only if the insecticide contacts them, so proper application is essential. These treatments are most effective when ants are nesting close to the mound surface (as they do when the temperature is mild). Colonies should not be disturbed during treatment.

Make a Management Plan

Chemical control lasts only as long as the effects of the insecticide used, or until the specified amount is applied. The agitators in some spreaders may cause bait to cake up so that it does not flow properly. Always read and follow the application instructions on the label of the product you are using.

Long-residual Contact Insecticide Treatments

With this approach, a contact insecticide is applied to the lawn and landscape surface. This is not as expensive as other control methods but it may be more effective in smaller areas because ants that move into treated areas will be eliminated as long as the chemical is active. Granular products are best applied with a push-type fertilizer spreader and must be watered in after treatment.

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Imported fire ant queen, workers and eggs.

Identifying Fire Ants
If you have ant problems, first identify the species. There are hundreds of ant species in the southern United States, including some native fire ant species, and most of them are considered beneficial insects. Collectively, they eat more than 500 times as much as earthworms and some prey on other insect pests and help reduce their numbers.

Fire ants will build their mounds almost anywhere—in the open next to a building, tree, sidewalk, or electrical box. A fire ant mound does not have a central opening. When the mound is disturbed, fire ants emerge quickly and begin biting and stinging. They will even run up vertical surfaces. Worker fire ants are dark reddish-brown with shiny black abdomens, and are about $\frac{1}{8}$ to about $\frac{1}{4}$ inch long.

Controlling Fire Ants
The current USDA quarantine for imported fire ants covers 320 million acres in all or parts of 14 U.S. states and territories (Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Puerto Rico). The quarantine means that shipments of hay, nursery stock, sod and other articles from quarantined counties must comply with state regulations. Ant colonies can’t be eliminated entirely because it’s not possible to treat all areas that are infested. Thus, the goal of current integrated pest management (IPM) programs is to suppress fire ants as much as possible with biological control methods and pesticides that cause only minimal economic and environmental damage to be done. There may not be one “best” method for fire ant control, especially in large areas. Your objective should be to find the method or methods that are most cost-effective and environmentally sound. In areas where ants do not present problems, doing nothing is certainly one option.

Control Products

Biological control: Government and university researchers have imported and tested natural enemies of fire ants, such as the parasitic psorid flies from South America. These natural enemies have been successful in areas where they have been released. However, the biological control agents available on the retail market, such as parasitic nematodes, do not sustain themselves or spread on their own once they are released.

Home remedies: Many home remedies have been devised to control fire ants. Drenching a mound with 2 to 3 gallons of almost boiling water eliminates ant colonies about 60 percent of the time, but it will also kill any plants the water contacts. This method is labor intensive and the hot water must be handled carefully. Some home remedies are considered beneficial insects. Collectively, they eat more than 500 times as much as earthworms and some prey on other insect pests and help reduce their numbers.

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Organic products: A few treatments are certified as organic. These include insecticides such as d-limonene, an extract from citrus fruit, or spinosad, a chemical complex produced by a soil microbe.

Insecticides: The use of insecticides for fire ant control is regulated by the Environmental Protection Agency. Approved products must be used according to directions on the labels. Be sure a product is registered for the kind of application site where you intend to use it, particularly if you will be treating a vegetable garden or other food production site. There are special products for use in electrical utility boxes and indoors, but they may not be available at retail stores. Some products are for use on professional pest control operators.

This publication refers to the generic names of the active ingredients in insecticides, which you should look for on the product labels. Most active ingredients are marketed under more than one brand or trade name. Some sample trade names are given as well.

**Baits**
Baits contain active ingredients dissolved in a substance ants eat or drink. In fire ant baits this substance is usually soybean oil. Some bait ingredients affect the nervous system. These include acephate (Orthene®), cypermethrin, deltamethrin, lambda-cyhalothrin, fipronil (Over ‘N Out® broadcast granules), pyrethrins, pyrethroids (bifenthrin, cyfluthrin, cypermethrin, deltamethrin, lambda-cyhalothin, permethrin, esfenvalerate, tefluthrin or tralomethrin), and spinosad (a chemical complex produced by a soil microbe). Some affect the digestive system (boric acid) and some affect the nervous system of ants that come in contact with baits. Contact insecticides include acephate (Orthene®), carbaryl (Sevin®), fipronil (Over ‘N Out® broadcast granules), pyrethrins, pyrethroids (bifenthrin, cyfluthrin, cypermethrin, deltamethrin, lambda-cyhalothin, permethrin, esfenvalerate, tefluthrin or tralomethrin), and spinosad (a chemical complex produced by a soil microbe)."