

Pest Management News

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Fire Ant Management around the Home

John D. Hopkins and Kelly M. Loftin

If you have had fire ants in the past and are seeing those unwanted mounds pop up on your property, then it is time to do something about them. 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 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.

TOXINS

Hydramethylnon bait (Amdro, Amdro Pro, and Amdro Fire Ant Bait Yard Treatment) is a toxin (slow acting stomach poison) that disrupts the ant's ability to convert food to energy. **Spinosad** bait (Southern Ag Pay Back Fire Ant Bait and Fertilome Come and Get It) is a slow acting bio-rational toxin derived from soil dwelling bacteria through a fermentation process. **Abamectin**, the toxin in Ascend and Clinch (labeled for use around chicken houses and barns NOT lawns) fire ant baits, is also derived through a fermentation process with soil dwelling bacteria. **Indoxacarb** (Advion fire ant bait) is a fast acting toxin affecting 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.

IGRs

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** (Ascend and Clinch) 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 and Amdro FireStrike Fire Ant Bait are pre-blended combination bait products 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.
- 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

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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 Fertilome Come and Get It 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.

For small areas, baits can be best applied with a handheld seed spreader. 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 2,000 square feet). For medium to large sized areas, chest type or vehicle mounted spreaders can be used.



Handheld Seeder/Spreader



Chest Type Seeder/Spreader



Vehicle Mounted Seeder/Spreader

Some bait formulations like Amdro Fire Ant Bait Yard Treatment and Amdro FireStrike Fire Ant Bait are applied at higher rates, usually with a wheeled granular/fertilizer applicator.



**Wheeled Granular/Fertilizer
Applicator**

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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 and **DO NOT WATER IN.**



Dust Application



Liquid Drench



From Charles Apperson & Michael Waldvogel,
NCSU Insect Note-ENT/rsc-35
Bait Application Around Individual
Fire Ant Mound

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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 that 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 insecticide.



Granular Insecticide watered in

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 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. Some products containing spinosad (Entrust Naturalyte Insect Control and Scott’s Green Light Lawn & Garden Spray) are considered “organic” and are OMRI (Organic Materials Review Institute) certified for organic production areas while other liquid spinosad products (Conserve SC and Bonide’s Captain Jack’s Dead Bug Brew Concentrate) are not OMRI certified. These spinosad products are available in a concentrated formulation that can be mixed with water to use as a mound drench.

All chemical information provided is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Individuals who use pesticides are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Before purchasing or using any pesticide, always read and carefully follow the label directions.

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 very hot 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.

An economical and successful approach for a heavily infested area is to broadcast a fire ant bait first followed by an individual mound treatment, seven to ten days later, to any remaining colonies showing activity. Research throughout states infested with fire ants has shown that the two-step

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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.

Prevathon® 2 (ee) Recommendation for Grasshoppers on Forage Grass includes Arkansas

Kelly M. Loftin

DuPont™ recently added Arkansas to the Prevathon® 2 (ee) recommendation for control of grasshopper nymphs and suppression of grasshopper adults in grass forage, fodder and hay. This recommendation is permitted under the Section 2 (ee) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and expires December 31, 2015. The recommended application rate is from 8 to 16 ounces of Prevathon per acre. The preharvest interval for Prevathon is 0 days. For additional information on this new use, review the 2 (ee) recommendation. The 2 (ee) is available online at: <http://www.cdms.net/LDat/IdA6E019.pdf> . Applicators using Prevathon™ to control grasshoppers in grass forage should have a copy of the 2 (ee) recommendation in hand.

We have received a couple of reports of fairly large grasshopper nymph infestations in forages. In general, broadcast insecticide application is not economically feasible if less than 10 grasshoppers per square yard are present. Another option to consider is spot treating areas where a large number of grasshopper nymphs (small grasshoppers that lack wings) are observed. This technique can reduce grasshopper numbers in local areas because newly hatched nymphs remain concentrated in the hatching areas for some time. Later, as wings develop, grasshoppers are capable of flying from the hatching area in search of suitable forage. Insecticides labeled to control grasshoppers in pastures and hay fields can be found in the "2013 Insecticide Recommendations for Arkansas – MP 144 (Forages Section)" which is available online at: http://www.uaex.edu/Other_Areas/publications/PDF/MP144/C_Forages.pdf .

Mistletoes

Stephen R. Vann

Both the true (leafy) and dwarf mistletoes are parasitic higher plants that cause plant diseases on various trees. These two groups of mistletoe plants produce both flowers and seeds. The mistletoes have chlorophyll but no roots thus they depend on their host only for water and minerals. The root-like absorbing organ of the mistletoe is called a haustorium. Mistletoe was recognized as a parasitic plant as early as A.D. 1200 by German bishop Albertus Magnus. Magnus also reported that the host plant could be cured by pruning out the part carrying the mistletoe. The mistletoes are obligate parasites, not growing or surviving on dead host trees.

The true mistletoes are most commonly found in warmer climates of the Southeast and Eastern United States. They primarily attack hardwood forest and shade trees, but can occasionally be seen on some conifers such as cypress and juniper. Every winter people will notice mistletoe. The true mistletoes are readily visible during the winter on deciduous trees. Leaves are bright green,

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evergreen, and thick. Infestations of mistletoe can be so severe that they make the tree appear evergreen during the winter.

The flowers of the true mistletoes are dioecious, with male and female flowers on different plants. Pollen is transported to the female flowers by insects such as wasps, bees and possibly ants. Flowering times vary, but are usually from mid-September to late November. The fruit is a round pseudo-berry with a translucent, pearlescent, white color that ranges from 1/6 to 1/4 of an inch in diameter. The fruit contains a single sticky seed that is dispersed by birds by sticking to their feet, beaks, in excrement, or by regurgitation.

The dwarf mistletoes are found wherever conifers (e.g. pines and firs) are grown, especially in the Sierra Nevada foothills. In the United States, they tend to be more prevalent in the western half. The dwarf mistletoes are smaller plants than the true (leafy) mistletoe. Mature plant stems are often less than 6-8 inches long. The shoots are nonwoody, segmented and contain small scale like leaves. Seed dispersal is most often accomplished by being forcibly discharged from the fruit. Seeds can be discharged into trees up to 30-40 feet away. Trees of any age may be stunted and even killed as a result of infection. Timber quality is reduced as a result of knots and spongy wood. Swellings and cankers can develop on the trunks of infected trees. Infected branches may develop witches- brooms. The dwarf mistletoe parasite removes minerals and water from the host tree, causing a loss of vitality and subsequent death. Furthermore, it upsets the balance of hormonal substances within the tree resulting in branch deformities. Infected trees are prone to wood decay and root pathogen attack, beetle infestations, and wind breakage.

Although mistletoe infected trees may survive for many years, branches of the tree beyond the mistletoe infection often become deformed and die. Infected trees show reduced growth. These parasites can also initiate wood decay, discoloration, and entry by other pathogens. Apparently, true mistletoe infections aren't nearly as severe as those caused by the dwarf mistletoes. Early intervention is important when dealing with both types of mistletoe infections. Control of both the true and dwarf mistletoes in isolated trees can best be obtained by pruning of infected branches or even entire infected trees. Removal of mistletoe stems from the branches is temporary since plants will resprout.



True (leafy) mistletoe in dormant hardwood tree



Translucent fruit and the foliage of true (leafy) mistletoe

For the true (leafy) mistletoes, the plant growth regulator ethephon, when used as directed, has been effective in controlling mistletoe in dormant host trees. To be effective, the spray must thoroughly wet the entire mistletoe foliage. A spring application just before normal bud break of the tree is best for management. This is also a time when temperatures began to warm. Chemical management is often not practical or feasible for the homeowner.

Feral Hogs and Their Control

Becky McPeake

Feral hogs are a pest problem in Arkansas. The Arkansas Game and Fish Commission reports feral hogs are present in every county of the state. Issues associated with feral hogs are crop loss, pasture degradation, wildlife habitat loss, water pollution, and disease transmission to livestock. Studies have associated feral hogs with reduced forest regeneration and facilitating the distribution of invasive non-native plants through soil disturbance.

The Arkansas legislature passed a bill in the last session to address problems associated with the increasing feral hog population. Act 1104 states captured feral hogs need to be killed immediately or transported to a “terminal” facility, which are feral hog game ranches. The bill provides enforcement more opportunity for arresting those who illegally release hogs on public and private lands.

Farmers who experience problems with feral hogs have several options. Feral hogs avoid human disturbance, so shooting, chasing, loud noises, or other forms of harassment often cause them to move elsewhere, at least temporarily. Although feral hogs initially may be active during daylight hours, they become nocturnal to avoid human activity.



Figure 2. Feral hogs captured in a corral trap. Photo by Billy Higgenbotham, www.bugwood.com

A camera is useful for identifying potential locations for corral traps as well as for monitoring the trap to determine when all hogs in the sounder are entering regularly. Then set the trap and capture the whole sounder. At a study site in Georgia, the area remained pig-free for several years except for an



Figure 1. Feral hog damage to a pasture. Photo by Craig Hicks, www.bugwood.com

A longer-term approach is to capture feral hogs in corral traps. Single box traps do little to control feral hog populations. Also, feral hogs become “educated” about traps and learn to avoid them. A better approach is capturing an entire group or “sounder.” The number of livestock panels needed depends on the size of the group you intend to capture. Also keep in mind that feral hogs will more likely enter larger traps with plenty of open space. Rounded traps are recommended, as frightened hogs pile into corners, with those on top escaping over the fence.

Traps should be placed where hogs frequent, which typically is near a water source. Trap gates should be left open and bait scattered to lure them into the trap. Having a wildlife

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occasional boar passing through. Just one sow left outside the trap can quickly repopulate an area. The average litter size is six piglets, and feral hogs have few predators. Female piglets reach maturity in six months and begin producing more litters.

When dealing with nuisance wildlife, multiple approaches are often used. The USDA Wildlife Services in Arkansas recommends a combination of trapping followed by hunting with dogs to eliminate stragglers. Snares set outside corral traps can also capture trap-shy hogs.

For more information about feral hogs and control methods, visit our website at <http://www.arnatural.org/feralhogs/default.htm>, or www.eXtension.org.

Name That Weed

Bob Scott

This weed is a prostrate summer annual with small, elliptic leaves that is primarily found in compacted areas of turfgrass such as pathways or sports fields. This weed is found throughout the United States. Seedling cotyledons are narrow, linear in outline, often resembling and being mistaken for a grass. The stem below the cotyledons (hypocotyl) is often reddish in color. The weed has a taproot.

Be the first to email me with the correct common name of this weed and win a prize bscott@uaex.edu.



To The Readers

Please offer any suggestions for Urban or Livestock Integrated Pest Management topics (insect pests, plant diseases, weed problems, wildlife control problems) that you would like to see – **OR** – feel free to submit an article that you have prepared. Kelly and I will be glad to include it (subject to editing). Send feedback to jhopkins@uaex.edu or kloftin@uaex.edu

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