



Managing Red Imported Fire Ants in Wildlife Areas

Bastiaan M. Drees, Fire Ant Director

Department of Entomology, Texas A&M University, College Station, Texas

The red imported fire ant, *Solenopsis invicta* Buren (Hymenoptera: Formicidae), is an introduced species that arrived in Mobile, Alabama, from South America around the 1920s. This species has had an enormous impact in the southeastern United States and continues to spread into areas of North America with mild climates and adequate moisture and food. About two-thirds of eastern Texas counties are currently infested.

Biology of the Red Imported Fire Ant

Like other ants, the fire ant is a social insect, and colonies reside in mounds of dirt that may exceed 18 inches in height. Mounds commonly occur in open, sunny areas. Periodically, winged reproductive male and female ants leave colonies on mating flights. Mated females (queens) can fly for miles, land, and start a new colony. Development from egg to adult occurs in about 30 days, progressing through four larval stages and a pupal stage. Worker ants (sterile female ants capable of stinging) can number in the hundreds of thousands in a mature colony. Two forms of fire ant colonies occur: single queen and multiple queen colonies. Multiple queen-infested land can harbor 200 to 800 or more colonies per acre because worker ants are not territorial and move freely from mound to mound.

Fire ant mound numbers can increase rapidly on lands disturbed by mechanical methods, pesticide use, or flooding. The ants disperse naturally through mating flights, mass movement of colonies, or by floating to new locations in flood water. Fire ants can travel long distances when newly-mated queens land in cars, trucks, or trains. Shipments of hay, nursery stock, or soil from an infested area may relocate entire colonies or nests. Quarantine regulations, enforced by the Texas Department of Agriculture, restrict movement of infested articles from infested (quarantined) to non-infested areas.

Fire ants feed primarily on other insects and arthropods (ticks, chiggers), although they “tend” (protect) some species of sucking insects (aphids), which provide them with a sugary solution (honeydew). This imported species has displaced many native ant species and has eliminated food used by some wildlife. Fire ants are attracted to newborn livestock and wildlife on the ground or those nesting in low trees, causing human and animal medical problems associated with multiple stings and, occasionally, death. Populations of some wildlife species may be dramatically reduced.

Impact on Wildlife

Certain types of wildlife, such as deer, ground-nesting birds, and reptiles, are especially affected by ants during and soon after birth or hatching. Fawns are vulnerable because they are born in June and because they instinctively remain motionless in their hiding places. Hatching quail and ground-nesting waterfowl chicks are also attacked. Until recently, however, the impact of fire ants on area-wide populations of wildlife are largely undocumented by scientific studies (see brochure, [Red Imported Fire Ant Highlights 1997-2003](#)).

In Texas, no endangered species has been reported to have become extinct because of fire ants, although the ants can attack individuals of several threatened species. Insecticide-based fire ant control programs in wildlife areas are discouraged unless the benefits from such treatments are known. Many pesticides are toxic to non-target organisms (particularly to aquatic organisms) and may directly or indirectly affect game species if not used properly. Below are some considerations when selecting management options:

1. If wildlife breeding areas are considered non-agricultural lands, fire ants on these lands can be treated with insecticide products registered for this kind of usage site (e.g., non-agricultural lands, ornamental turfgrass, way-side areas). However, if these lands are agricultural lands, or if the game/wildlife or livestock is being produced to be harvested and consumed, insecticide products selected to treat ants on these lands must be registered for use on those sites (see [B-6076, Managing Red Imported Fire Ants in Agriculture](#)).
2. Exotic game ranches are considered commercial agricultural areas. Breeding areas may be treated with products registered for use in wildlife or livestock areas, pastures, and rangeland.

Management Strategies

Non-chemical or cultural approaches can reduce problems caused by fire ants while maintaining a stable ant population that will help suppress lone star ticks, filth-breeding flies, and other pests. In operations where wildlife breeding is managed, schedule breeding to assure that the young are born during cooler months of the year when fire ants are less active (soil temperature below 65° F). This will reduce the probability of ant attacks. If hay pastures are in wildlife management areas,

non-chemical methods for avoiding fire ant problems include:

1. Use shallow discing or drag-heavy objects such as railroad ties across pastures, particularly after rotating livestock out of a pasture, to temporarily flatten tall, hardened mounds (although this practice seldom eliminates fire ants) and scatter manure. Manure can breed fly larvae upon which fire ants feed.
2. Use disc-type (Kountz) mowers to mow hay. These machines are designed and promoted to withstand the impact of fire ant.
3. Use mechanized balers and bale movers such as those used in round bale production that reduce human contact with infested bales.
4. Remove hay bales from the field immediately to prevent ant invasion, particularly when rain is anticipated.
5. Store bales off the ground or in an area around which the ants have been treated (Note: a quarantine is in effect that prohibits the shipment of hay from infested to non-infested counties without certificates. Call Texas Department of Agriculture personnel to certify that hay shipments are ant-free).

Maintaining Native Ant Populations

A number of ant species are native to Texas, including several other species of fire ants. Many of these ants compete for resources with the red imported fire ant, attack mated queen ants trying to establish new colonies, and invade weakened fire ant colonies. Preservation and encouragement of native ant species is considered the best defense against invasion of high populations of this imported pest. In areas with less than 20 red imported fire ant mounds per acre and where native ants are a concern, the broadcast application of a bait-formulated insecticide product is discouraged. For information on identifying native fire ant species, see [FAPFS010](#) and [013](#) in this series and publications [B-6043](#) and [B-6076](#) and [B-6099](#).

Insecticide-Based Management Program

Fire ant populations can be suppressed in pastureland, using currently available methods, for \$10 to \$15 per acre per year. Current methods are not capable of eradicating this species, and treatments need to be periodically re-applied. Applications of some bait-formulated insecticides may affect some native ant species, which compete with fire ants. However, in fully-infested areas (20 or more mounds per acre), implementation of the Two-Step Method of fire ant management (see [L-5070](#)) may be justified. This program relies on the periodic (annual, semi-annual) broadcast application of an effective fire ant bait

product. These treatments can reduce mound numbers by up to 90 percent, but reduction requires several weeks to months to achieve, depending upon the product chosen.

Amdro® (hydramethylnon), Extinguish™ (s-methoprene) and Justice® (spinosad) are the only bait products currently registered for use in pastures. Logic® (fenoxycarb) is currently registered only for non-agricultural lands and horse pastures.

Few individual mound treatments are registered for use in livestock or hay pastures. Mound treatments can be used to treat “nuisance colonies” between bait application. Sevin® (carbaryl) formulations, applied as an individual mound drench, cost about \$0.10 per mound. Justice® (spinosad) is a fast-acting bait available for treating fire ant mounds. A few other insecticides are being promoted for fire ant control in pastures, although the product labels may not specifically mention pastures as a use site. Always closely follow the instructions provided for pesticide use on the product’s label.

In the future, there is great hope that research entomologists will be able to successfully import and release natural enemies of the fire ant from the native habitats in South America to permanently suppress the red imported fire ant.

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For more information regarding fire ant management, see Extension publications [B-6043](#), *Managing Red Imported Fire Ants in Urban Areas*; [B-6076](#), *Managing Red Imported Fire Ants in Agriculture*; [B-6099](#), *Broadcast Baits for Fire Ant Control*; or [L-5070](#) *The Texas Two-Step Method Do-It-Yourself Fire Ant Control for Homes and Neighborhoods*. Also visit our web site at <http://fireant.tamu.edu>.

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