



Fire Ant Management Options For Golf Courses

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Red imported fire ants (*Solenopsis invicta* Buren) infest approximately 300 million acres in the United States. Every year these ants cause hundreds of millions of dollars in damage. These costs affect everyone from small property homeowners to large landowners and ranchers to managers of golf courses and commercial properties. Fire ants are the single most prolific pest in turfgrass. Although they do not damage the turf directly, the mounds are unsightly and can cause damage to mowing equipment. Fire ants hinder outdoor recreation, which thus affects tourism. Although less than one percent of the human population has extreme reactions to fire ants stings, they can pose a serious medical threat to visitors of public lands. Serious incidents can be costly to managers of these areas, which can be held liable for such an event.

Golf courses are especially attractive to fire ants due to the ideal conditions that exist there. Their mounds can ruin a good shot. In fact the United States Golf Association (USGA) has a rule and decisions specifically addressing situations where a ball lands on ant hills:

33-8/22 Local Rule Treating Ant Hills as Ground Under Repair

(from <http://www.usga.org/rules/decisions/dec33.html>, from pers. Comm. Dave Donally, USGA, Sept. 2, 1998)

Q. An ant hill is a loose impediment and may be removed, but there is no other relief without penalty. Some ant hills are conical in shape and hard, and removal is not possible, but relief under Rule 25-1b is not available since an ant is not a burrowing animal. If such ant hills interfere with proper playing of the game, would a Local Rule providing relief be authorized?

A. Yes. A local rule stating such ant hills are to be treated as ground under repair would be justified.

Such a Local Rule is also justified on courses where fire-ants exist. A fire-ants' mound or hill is removable, but its removal will cause the fire-ants to swarm out of the ground. When this occurs, anyone in the vicinity is in danger of being bitten by the ants, and the bite of the fire-ant can cause serious illness.

If a Local Rule giving relief from fire-ants has not been adopted and a ball is so close to a fire-ants' mound that the player is in danger, the player is, in equity, entitled to relief as prescribed in **Decision 1-4/10**:

If the ball lay in a hazard, it should be dropped, if possible, in the same hazard and, if not, in a similar nearby hazard, but in either case not nearer the hole. If it is not possible for the player to drop the ball in a hazard, he may drop it, under penalty of one stroke, outside the hazard, keeping the point where the original ball lay between the hole and the spot on which the ball is dropped.

If it is clearly unreasonable for the player to play a stroke because of interference by anything other than the dangerous situation he may not take relief as prescribed above, but he is not precluded from proceeding under Rule 26 or 28.

In the south, the 'unofficial ruling' is that you may remove your ball from the mound the distance of one club length.

Golf courses are man-made ecosystems that include natural habitats; wildlife population's (permanent and migratory) ground and surface water, managed turf, and provide recreation for millions of people each year. Additionally, grasses release oxygen and reduce glare and noise. Irrigation water applied to golf courses provides an ideal habitat for fire ants. Fire ants are attracted to areas of high moisture content, fertile soil, and open sunny areas.

Golf Course Integrated Pest Management

An Integrated Pest Management (IPM) program is an environmentally justifiable, cost-effective

approach to pest control. An IPM program utilizes a combination of approaches to best manage a pest population. A sound IPM program is based on the goal to keep pest populations below the level at which they become intolerable (either as a medical threat or a turfgrass pest in the case of fire ants). Most IPM programs reduce over-reliance on pesticides, which is an important objective in maintaining golf courses and ornamental turf. In most IPM programs, populations of pests and their natural enemies are monitored over time using field monitoring or “scouting” methods (see [FAPFS007](#)). Decisions to use pest suppression methods are based on decision levels (e.g., economic threshold or action levels) or historical pest occurrence data to justify pest control practices used.

There are four basic steps to a successful IPM program:

- 1) Learn the identity the pests (see [FAPFS010](#) & [013](#)) and know their life cycles of pests so that selected, appropriate treatment(s) can be administered most effectively and at the right time(s).
- 2) Map the area to be managed and establish a level of acceptable(s) pest presence/damage/tolerance.
- 3) Check your pest situation early, regularly and often. Treat only when careful monitoring indicates that the pest situation going to become unacceptable.
- 4) If pest problems are unacceptably high, start with the method that is least damaging to naturally occurring beneficial insects (i.e., use the least toxic methods, see [FAPFS020](#) & [FAPFS036](#)).

Management Options*

Many golf course superintendents indicate their budget does not allow for fire ant treatments exclusively. However, for the ideal situation, a combination of two approaches should be able to provide acceptable levels of fire ant control at a reasonable cost.

The Two-Step Method: This method is suitable for larger turfgrass areas and provides relatively long-term control, but rarely provides 100 percent control (see [L-5070](#), [B-6043](#) & [B-6099](#)):

Step 1) Make an annual or semi-annual (once or twice per year) broadcast application* of a bait-formulated insecticide. Conventional baits (i.e., Amdro® or Seige®, Award®, Ascend® or Varsity®, or Extinguish™) are applied at 1 to ½ pounds of product per acre. Other products (i.e., FireStar®) require different rates. Periodic broadcast applications of fire ant baits provide roughly 90% suppression of ants when properly applied (using fresh bait, applied in late evening/mid morning). The speed and duration of ant suppression differ with the product used. A late summer or early fall application can produce fewer ants by the following spring.

Step 2) Wait several days after the bait is applied, and then treat nuisance ant colonies (in high traffic areas) using an individual mound treatment such as products formulated as dusts, granules, granules drenched with water after application, liquid drenches, baits, or aerosol injections (see next page).

The Ant Elimination Method: This program controls nearly all ants in treated areas. Its effects are more rapid than those of other programs, and re-invasion of treated areas by migrating colonies and mated queen ants is minimized as long as the contact insecticide remains active on the treated surface. However, it is relatively more expensive and uses more insecticide, requiring more frequent treatments. For high use areas in golf courses such as putting greens and tee boxes where maximum fire ant control is required, this program would be preferable.

Step 1) (Optional) Broadcast a bait-formulated insecticide in areas where there are more than 20 per acre. Wait at least 2 to 3 days before conducting the next step (Note: Do not apply ant bait

products while the effects of a surface applied contact insecticide application persist).

Step 2) Apply a contact insecticide (i.e., pyrethroid products like those containing bifenthrin, permethrin, lambda-cyhalothrin or others, or products containing fipronil granules like Chipco® Choice™ or Chipco® TopChoice™) to turf periodically as directed (i.e., generally every 4 to 8 weeks, or when ant activity is detected). Liquid or granular products that can be evenly applied to an area are appropriate for this treatment. Areas treated must be watered soon after application to wash the insecticide below the surface. Although surface treatment may not initially kill ants located deep in mounds, routine re-application will eventually eliminate colonies.

Individual Mound Treatments: In areas with just a few fire ant mounds, use of an individual mound treatment product may be all that is needed. This approach may help preserve native ant colonies that are left untreated.

Program combinations: The three programs described above can be used on specific sites within a managed area where different levels of fire ant control are desired. On golf courses, for instance, The Ant Elimination Method may be suitable for high use areas such as putting greens and tee boxes. In fairways and rough areas, The Two-Step Method may be sufficient. Careful monitoring may document the absence of imported fire ants in some areas, or the presence of competitor ants that are not pestiferous. These areas can remain untreated. Furthermore, imported fire ants migrating from nearby untreated areas can be detected and treatments applied only as barrier zones to prevent movement of colonies into the managed areas from these reservoirs.

Non-chemical or cultural practices used by golf course managers for managing the imported fire ant management involves mowing frequency and height. The more times areas are mowed, the less time fire ants can establish colonies. Constant disturbance of ant colonies nesting in frequently mowed areas usually causes them to move to less disturbed areas. As an example of a management program, greens can be mowed seven times a week, tee boxes and fairways mowed three times a week, and roughs can be mowed once each week. Spot treatments for fire ants may only be needed on roughs. Watering turfgrass and bodies of water will attract ant colonies (see [FAPFS021](#)). Conversely, minimizing watering may result in reduced ant nesting activity.

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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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