

Control Fire Ants in Commercial Fruits, Nuts, and Vegetables



Fire ants interfere with commercial fruit, nut, and vegetable production in several ways. Sometimes they damage plants directly by eating the germ from newly planted seeds, by feeding on okra or other fruits, or by feeding on the inner bark of young trees. The mounds can physically interfere with management operations and even damage equipment, and fire ants readily nest in organic mulch, under plastic mulch, around irrigation equipment, or near the bases of trees.

But it's their sting that causes the most problems. Fire ants interfere with hand harvesting and other jobs, such as pruning or staking. They also can increase liability and reduce return business in "pick-your-own" operations.

Granular baits are the best way to control fire ants in commercial fruit and vegetable crops. When used properly, baits provide effective control for relatively little cost and effort, but baits are slow-acting and have to be applied preventively.

Fire Ant Baits for Fruits and Vegetables

Only a few fire ant baits are labeled for commercial fruit and vegetable crops. Check the label before you buy, and be sure the product is approved for the crop you plan to treat. Fire ant baits are sold in small quantities (1–5 pounds) and in 25-pound bags, which usually cost less per pound of product. You can buy these large packages from farm co-ops, feed and seed stores, lawn and garden stores, or horticulture supply stores, but they may have to be specially ordered.

Caution: Extinguish, with methoprene only, is the product that is labeled for use around edible crops. Do not use Extinguish Plus around edible crops. Extinguish Plus contains methoprene + hydramethylnon, and hydramethylnon is not approved for use around fruits and vegetables. Extinguish, with methoprene only, is usually more difficult to find and may have to be specially ordered. Also, Extinguish, with methoprene only, is available only in 25-pound bags (it is not available in small packages).



Table 1. Fire ant baits for commercial fruits, nuts, and vegetables.¹

Brand name	Active ingredient	Rate/acre	Uses	PHI ²
Extinguish	methoprene (0.5%)	1–1.5 lb	Extinguish is labeled for use in most food crops.	0 days
Esteem	pyriproxyfen (0.5%)	1.5–2 lb	Esteem is labeled for use in some, but not all, fruits and vegetables. ³	1 day
Ferti-Lome Come and Get It!	spinosad 0.015%	2.5–5 lb	Labeled for use on vegetables and some fruits. ⁴	0 days

¹Always check the label before you buy. Be sure the bait is labeled for the crop you plan to treat.

²PHI (pre-harvest interval) is the number of days you must wait to harvest after treating.

³Esteem is labeled for use in fruiting vegetables (tomatoes, peppers, eggplant, etc.), brassicas, cucurbits, bush berries, pome fruits, stone fruits, and nuts. See label for details.

⁴Ferti-lome Come and Get It! is labeled for use on tree nuts, citrus, stone fruit, tropical tree fruit, and vegetables. This product is sold only in small quantities and is most useful for small-scale producers.

How much do fire ant bait treatments cost?

When purchased in 25-pound bags, fire ant baits cost around \$8 to \$10 per pound. If you use 1.5 pound per acre and only treat once per year, that's about \$12 to \$15 per acre. Don't buy more bait than you can use in one season because the oil in fire ant baits will go rancid, and fire ants don't like rancid bait.

How long does it take for baits to work, and how long do they last?

Fire ant baits are designed to be slow acting. The worker ants collect bait granules when they are out foraging, take them back to the colony, and feed them to their young. If fast-acting insecticides were used in baits, they would kill the foraging workers before they could carry the bait back to the mound. The growth regulator baits, like Extinguish and Esteem, work by interfering with the development of immature fire ants, but they do not kill adults. Mounds eventually die out because there are no new workers to replace the ones that die. This takes 2–3 months.

Bait treatments won't eliminate every mound in the field, but if you apply the bait properly and do not get rain for a couple of days, you should see a significant reduction in the number of active fire ant mounds. The area will be reinfested as newly mated queens fly in and establish new colonies, but you can improve control by applying multiple treatments. For best control, treat two or three times per year; up to four treatments per year may be appropriate for especially sensitive situations. When used correctly, baits should provide around 80 percent control.

When is the best time to apply baits?

You can apply fire ant baits anytime during the growing season, but spring is probably the best time. Wait until soils warm in the spring and fire ants are actively foraging. You can use potato chips—the greasy kind, not the baked ones—to check for foraging activity. Scatter a few chips in the area and come back to check on them in 20–30 minutes. If fire ants find the chips in this time, they will find the bait.

A single bait treatment, applied in the spring, will substantially reduce fire ant numbers. If you want even better control—and you're willing to spend the time and money to get it—make a second and even a third treatment later in the season, in midsummer and fall, for example. Fall treatments help reduce the number of mounds present the following spring.

Anticipated harvest time is often the most important point to consider in determining when to apply fire ant baits. For a relatively fast-producing crop, such as southern peas, you will need to apply bait shortly after planting so it will have time to work before picking time. For a perennial crop, such as "pick-your-own" blueberries or blackberries, you may want to treat in the fall and then follow up with a spring application. Just keep in mind that it takes 2–3 months for the growth regulator products to work, and time the application appropriately.

How do I apply fire ant bait on large acreage?

Rates for most granular fire ant baits range from 1 to 2 pounds per acre. That's not very much bait, and it is easy to overapply and waste a lot of money, especially if you don't have a proper applicator. A typical fertilizer spreader will put out way too much bait. It's not a good idea to mix fire ant bait with fertilizer because the fertilizer will absorb some of the oil from the bait granules, making them less attractive to the ants.

If you only need to treat an acre or two, you can use one of the hand-operated spreaders sold to apply fire ant baits to home lawns. Hand seeders designed to spread small seeds will also work if calibrated properly. But if you plan to treat large acreage, you will need a power-operated spreader that can be calibrated to apply the right amount of bait. Herd Seeder Company and Spyker Spreaders are two companies that make spreaders specifically designed to apply fire ant baits to large acreage. This type of bait spreader is driven by a small electric motor and can be mounted on a tractor, ATV, or other vehicle. These can be purchased, usually as special-order items, through local co-ops or other farm or horticulture supply stores, or through Internet sources.

Tips for Using Fire Ant Baits

1. Always read the label at least twice—once before buying and again before treating. Be sure the bait is labeled for the crop you plan to treat. Follow the label directions.
2. Buy only as much bait as you need. Most fire ant baits contain vegetable oils, which go rancid over time, and fire ants don't like rancid bait.
3. Be sure you have the right kind of applicator to do the job.
4. Calibrate your applicator properly. One to two pounds per acre is not very much bait. It may look like the spreader is not putting out enough bait—just a granule here and there—but that is probably about right! Follow the calibration directions that came with the spreader.
5. Try to pick a time when it is not likely to rain for a day or two after treatment. Rainfall will wash away or dissolve your costly bait. Reapply if you get significant rain within 6–12 hours of your treatment.
6. Wait until leaves are dry before applying bait.
7. Don't be tempted to apply excessive rates in order to "really get 'em." If you are willing to spend more money for improved control, it's much better to spend it on a second application later in the season!
8. Don't worry if you have a few narrow gaps between your bait swaths. Remember, the fire ant workers are out there looking for the bait. That's one reason baits work so well.
9. Don't forget to treat turnrows and field borders. Fire ant populations often are highest in untilled areas around field edges.
10. Know what results to expect. Baits don't work fast, and they won't eliminate every mound in the area, but by 1–2 months after treatment, you should see significantly fewer active mounds.

11. For best control, make two or more applications per year.
12. If your goal is to maintain a very high level of control in a "pick-your-own" crop or other sensitive area, don't wait until you start seeing new mounds before treating again. Apply baits preventively in spring, midsummer, and fall.

Quickly Eliminate Problem Mounds with a Liquid Drench

You can use a liquid drench for large mounds that need to be controlled quickly, but be sure to use an insecticide labeled for the crop being grown. Many insecticides commonly used in fruits and vegetables have label directions for mixing and applying as a fire ant mound drench. Products containing the active ingredients spinosad, permethrin, or carbaryl are especially effective.

Use a watering can or similar container to mix and apply the drench. Just read the label, mix the specified amount of insecticide in water, and pour it over the mound. The key to success with liquid drenches is to use enough liquid to thoroughly soak the mound. Depending on the size of the mound, this ranges from 1 to 2 gallons. Begin by applying about one-fourth of the total volume to a 10- to 12-inch band around the outside of the mound. This prevents the queen from escaping through underground foraging tunnels and improves control of workers. Then, apply the rest of the drench directly to the mound. Liquid drenches are messy and time-consuming to mix and apply, but they are a quick way to get rid of problem mounds. When applied properly, they will kill most of the ants within a few hours.

Caution: Do not use dry mound treatments containing the active ingredient acephate around fruits and vegetables! Acephate is commonly used as a dry mound treatment in home lawns, but it must not be used around edible plants because it is a systemic insecticide that is readily absorbed by plant roots and carried into leaves and fruits.

Table 2. Examples of insecticides for use as fire ant mound drenches.

Brand name	Active ingredient	Use directions
Hi-Yield Garden, Pet, and Livestock Insect Control	permethrin (10%)	Mix 1.5 fl oz (3 Tbsp) in 1 gallon of water to treat one mound.
Ferti-Lome Bore, Bagworm, Leafminer, & Tent Caterpillar Spray	spinosad (0.5%)	Mix 2 fl oz (4 Tbsp) per gallon of water and use 1–2 gallons per mound.
Sevin SL	carbaryl (43%)	Mix ¾ fl oz per gallon of water and apply 1–2 gallons per mound.

This work is partially supported by Crop Protection and Pest Management, Extension Implementation Program grant no. 2017-70006-27200/project accession no. 1014037 from the USDA National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

The information given here is for educational purposes only. References to commercial products, trade names, or suppliers are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended. Always read and follow current label directions of any insecticide you use.

Publication 2494 (POD-04-19)

By **Blake Layton**, PhD, Extension Professor, Entomology.



Copyright 2019 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Produced by Agricultural Communications.

Mississippi State University is an equal opportunity institution. Discrimination in university employment, programs, or activities based on race, color, ethnicity, sex, pregnancy, religion, national origin, disability, age, sexual orientation, genetic information, status as a U.S. veteran, or any other status protected by applicable law is prohibited. Questions about equal opportunity programs or compliance should be directed to the Office of Compliance and Integrity, 56 Morgan Avenue, P.O. 6044, Mississippi State, MS 39762, (662) 325-5839.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director