
A HOUSEHOLDER'S GUIDE TO MANAGING LITTLE FIRE ANTS AROUND THE HOME



LITTLE FIRE ANT FACT SHEET 2

(VERSION 4: FEBRUARY 2014)

Little Fire Ants (*Wasmannia*) are a new pest species on the Big Island of Hawaii. They are found from Laupahoehoe to Pahoia on the east coast of the Big Island, and in isolated locations in Kailua-Kona. Recently they have been detected on the neighbor islands of Oahu, Maui and Lanai. Once they become established on a lot, they can infest lawns, gardens, trees and even inside your home. Often, the first time you notice them is when you or a member of the household is stung.

Can you eradicate them from your home? Well... probably not. Eradicating pest ants is very difficult, expensive and time consuming. On top of that, if your property has LFA, your neighbors probably do as well. So, even if you eradicated them, ants from next door would simply migrate back to your place.

This fact sheet details how you can reduce the LFA problem in and around your home in a way that gets you the best bang for your buck.

Want more information?

go to www.littlefireants.com

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ANT MANAGEMENT BASICS – DON'T MAKE IT EASY FOR THEM.

The reason that Little Fire Ants live around our homes is that the environment we provide gives them everything they need. All they have to do is move in! Little Fire Ants like warm, wet and shady places with lots of foliage, nooks and crannies for locating their nests. They feed on nectar from flowers, honeydew produced by sap-sucking insects, and prey on other insects as well. They will build nests in any convenient location and have a preference for “ready-made” nest sites like under rocks, in leaf litter, rotting wood, under pots and other items in contact with the soil and at the bases of leaves from large-leaved plants (especially palms, banana, Ti, dracaena plants etc).

The windward sides of Hawaii Islands have the perfect climate for these ants. We can not change the climate (not quickly anyway), and aside from removing all your plants and turning the entire yard into an asphalt car park, it is not possible to exclude all ants. But, making some small changes to your yard can reduce the number of nests able to live there. Removing rubbish, trimming vegetation (especially vegetation close to or touching your home) and choosing hardier plants can all help.

Leeward areas are much drier and not as favorable for LFA. Here, limiting artificial irrigation and planting drought tolerant plants could make a big difference. Xeriscaping is a landscaping

approach that minimizes or even eliminates the need for artificial irrigation. It consists largely of choosing water “un-thirsty” plants and landscaping techniques that maximize water retention. By planting xeriscape gardens, you will make your property unattractive to LFA. Now this approach will not work if you live in Pahoia where the average rainfall is maybe 200 inches, but if you live in Kailua-Kona for example, it would be a very good approach to minimizing the LFA problem. The Honolulu Board of Water Supply has an excellent web page with links and ideas. Check it out at

<http://www.hbws.org/cssweb/display.cfm?sid=1086>

GRAB THE RAID – THERE ARE ANTS IN MY KITCHEN!

Often, our first reaction on seeing ants trailing through the house is to grab a can of insect spray and let them have it!

BUT, using an insect spray (or any other spray for that matter) is rarely successful at controlling ants inside the home. The trail of ants we see are only the older workers. More than 90% of the colony is somewhere else. Killing off these older worker ants just means the queen will lay some more eggs to replace them. A few days later, the ants are back in your kitchen, you grab some more insect spray, the queen ant lays a few more eggs, and so on.

It's an interesting fact that many ants we see wondering around the home actually have their nests outside the house. They wander into your home looking for food. This is not true for all ant species, but LFA definitely prefer

living outside. So, it makes more sense to deal with the problem outside the house rather than spreading insecticides in your home. Put the insect spray away and try treating the ants outside first...

WHERE DO I START?

The array of pesticides on the shelf at your local garden exchange or hardware store can be bewildering. There are dozens of different proprietary products available and it can be very difficult to know which is the right one for your situation. Some are liquids, some are granules, they can be in small bottles or huge bags, in ready to use spray bottles or concentrates... So, which one do you buy?

BAITS, BARRIERS AND CONTACT SPRAYS

Pesticides for ant control can be divided into three main types: baits, barrier treatments, and contact sprays. Each of these work differently and its important to know which is which.

Ant baits

Baits are the recommended first-line treatment because they are very effective and also minimize the use of pesticides. They are made from an attractive food laced with a toxin (usually a very small amount). Ants harvest baits and take them back to the nest where the foraging workers share the food they bring back with the rest of the colony. Once the toxin takes effect, most or all of the ants are killed. Different ant species prefer different food types so its

important to match up the bait with the ant species you are trying to control.

Most baits for outside use are in a granular form to make them easier to spread. The granules are usually made from corn grits and the toxin is added to these during manufacture. Although they are not harmful to pets and other animals, birds and chickens might find them attractive. If you have birds on your property, remove them from the sites you are treating or spread the granules late in the afternoon just before your chickens roost.

Barrier treatments

Can come in a spray or a granule, and can be applied to the soil, hard surfaces or vegetation. They contain a toxin that has a residual effect and can stay active for a month or even longer. Once they are deployed, any ants or other insects that wander across a treated surface will come into contact with the chemical and die. It is easy to confuse granular pesticides with granular baits, so it is important to read the label carefully. Many granular pesticides contain synthetic pyrethroids. The active ingredient list will usually contain one or more chemicals with names ending in “-*thrin*”, like “bifenthrin”, “cyfluthrin” etc. Granular pesticides also need to be watered before they are activated, while water often inactivates baits.

Contact sprays

are used to directly spray a target pest. They are useful for spraying spiders, flies or other bugs that you discover in your home. Often contact sprays are sold in pressurized aerosol cans which can be aimed at the offending insect or spider. These are generally not useful

for controlling LFA except for instances where you wish to remove individual ants from a particular location for a short period of time.

BAIT THEM FIRST, THEN BLAST THEM

The best way to manage Little Fire Ants around the home is to use a dual approach of baiting followed by barrier treatments. It is important to use them properly because even small differences to your application method can lead to big differences in results. First, NEVER apply a bait and a barrier treatment at the same time. Why?... Well, baits work when ants bring them back to the colony and share them with the other workers (and also to tell the others where to get more bait). If a worker ant is carrying some bait back to the nest and crosses over a barrier treatment, she will die before being able to get back to the colony. One treatment will cancel out the other and you will be wasting your hard-earned cash.

So, bait first and give the baits enough time to have an effect – around 2 weeks is good. Then, apply a barrier treatment around houses and other structures. Wait around four weeks and repeat this cycle. Continue to repeat this sequence for 3-4 months or until ant numbers drop to a level you are comfortable with. At this point, increase the amount of time between treatments to 1 month (bait, then apply the barrier treatment a month later, followed by baiting a month after that etc.).

BAITING BASICS

- *Read the label*
- *Do not use old bait*
- *Treat in dry weather*
- *Treat your entire property*

Always read the label directions for the product you intend to use. The label is a legal document and specifies what you can and can not do. It will also list any precautions you should take and any personal protective equipment you should wear while mixing or applying the product.

The baits most suitable for control of Little Fire Ants all look very similar – small yellow granules around $\frac{1}{8}$ inch in size. The granules are actually corn grits which have been infused with vegetable oil and a toxin. They are most easily spread using a small fertilizer spreader. Please read [Fact Sheet 4 – Get the most out of your spreader](#) for information on how to improve performance.

Once the bottle has been opened, the baits will quickly deteriorate and become rancid, so its best to use the whole container rather than storing left-over bait for next time. Bad bait will not be attractive to ants and they will not feed on it. Most baits come in different pack sizes, so buy the size that is sufficient to treat your property once. This way your bait will always be fresh. Only a small amount of bait is needed. A one pound pack is enough to treat an average house-lot with some to spare.

Rainfall makes the bait soggy and unattractive to ants. Try to pick a dry

day for applying baits. In places where this is difficult, a dry period of around 4 hours after treatment should be sufficient time for ants to find the granules and take them to the nest. After a day or so, the baits are no longer effective even without rainfall.

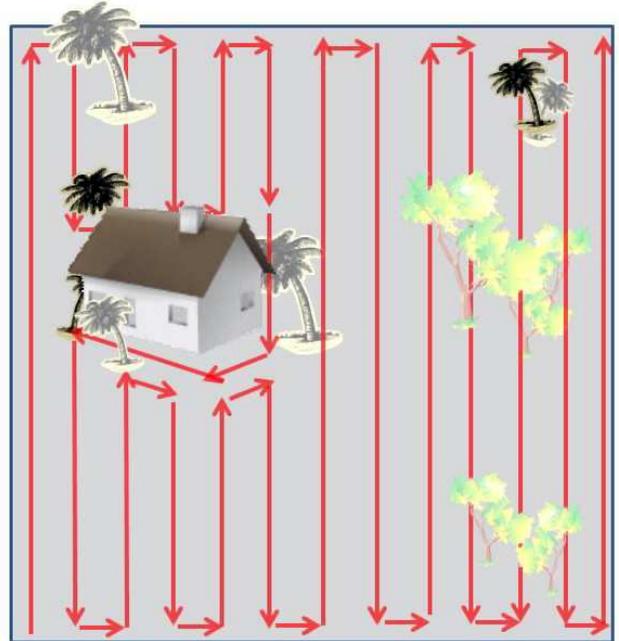
One mistake a lot of people make is to only spread bait in places where they have seen ants. It is **very important** to treat your entire property because Little Fire Ants have lots of small nests and often we do not know where they all are. So, walk over the entire property and systematically apply the bait to every section. This is actually quite easy to do if a small seed spreader is used.

These are available at low cost from hardware and pesticide stores. They feature a hopper for holding the bait, a winding handle that agitates the bait and scatters it over the ground, and an adjustable aperture that is used to calibrate output. These spreaders are also used to scatter seeds and fertilizer.



Typical hand held bait spreader showing the winding handle and the aperture adjustment Set the aperture at “1”.

With the aperture set at “1” (see above) turn the spreader handle at approximately 1 revolution per step while walking at 2-3 mph. The bait will fling out and create a swath of about 4 yards. Remember, not a whole lot of bait is needed and often it is spread so thinly on the ground, it seems you have not put out enough. Don't worry – there will be enough bait there. When applying the bait over your property, an overlapping series of parallel swathes is recommended. This is accomplished by starting on one boundary of an infested site and proceeding 1 yard inside the boundary.



Example of a treatment path taken by an operator treating around an urban structure.

Once you reach the property boundary, take 2 paces towards the untreated area and return parallel to the original path, working around buildings and other obstacles (see below). Continuing this process, you will be able to systematically cover the entire property

in just a few minutes. It is important that all ground is treated including spaces between buildings and corners of gardens. An additional sweep around buildings, garden edges and other structures is a good idea because more ant colonies live in those locations. Rainfall within 12 hours of treatment will reduce effectiveness so plan to conduct treatment when rain is not expected for 12 hours.

Another common mistake is to bait again too soon. The ants that survived the first round of baiting can remember that those little yellow granules made them sick last time, and will actually avoid taking your baits the next time around. Wait about 6 weeks before using baits again.

The Hawai`i Ant Lab has tested several bait products available in Hawai`i. Some are good and others, not so good.

Siesta™ Fire Ant Bait

HAL rating 👍👍👍👍👍

- This is a bait formulation containing a new active ingredient called metaflumizone. This compound is very safe for use around humans and pets and is practically non-toxic. Siesta™ is sold at chemical supply companies. It is a little more expensive than other products but it remains attractive to ants even after it gets wet. This can be very important in our climate where it rains on a regular basis and for this.

Amdro®

HAL rating 👍👍👍👍

- is sold at most garden exchanges, hardware stores and chemical supply companies, under several different names. This product seems to be consistently effective and is very popular. Lately, the “Amdro” brand has been used for a number of products that are not actually baits. Please read the label carefully to make sure you are buying the right version.

Probait®

HAL rating 👍👍👍👍

- is sold at chemical supply companies, and is similar to Amdro®. Usually it is sold in larger jugs. This product is also a consistent performer.

Maxforce Complete®

HAL rating 👍👍👍👍

- is sold at chemical supply companies and has a very attractive bait matrix. It is a little more expensive than other products but we have found it to be extremely effective. Not only does it control LFA, but a wide number of other annoying ant species.

Extinguish Plus®

HAL rating 👍👍👍

- is also available at some locations. It is moderately attractive and not as effective as other products.

Advion® fire ant bait

HAL rating 👍👍

- is sold as a professional use only product. We have found

performance of this product to be rather inconsistent. Sometimes it is effective and at other times performs poorly.

Tango™

HAL rating 🍑🍑🍑🍑🍑

- is a new product recently registered in Hawai'i. It is a concentrate intended to be mixed with a bait matrix of your choosing. The Hawai'i Ant Lab has a recipe for an effective bait matrix (see Fact Sheet 5). This matrix forms a gel so it can be applied into trees and other vegetation. Please refer to the HAL fact sheet 5 for more information on this product.

BARRIER TREATMENTS

- ***Read the product label***
- ***Do not mix barrier treatments and bait treatments***
- ***Use a different spreader when using granular baits***
- ***Apply to wet soil or when rain is expected***
- ***Make a wide band – 3-6 feet wide***

Always read the label directions for the product you intend to use. The label is a legal document and specifies what you can and can not do. It will also list any precautions you should take and any personal protective equipment you should wear while mixing or applying the product.

Barrier treatments are insecticides that are sprayed or sprinkled around areas where ants are to be excluded. As ants and other insects crawl over the treated

areas, they come into contact with the toxin and are killed. Barrier treatments usually have a residual activity and can provide protection for months.

Granular barrier treatments are the easiest to apply because there is no mixing required. This also makes it a bit safer because you will not be handling concentrated chemicals. The easiest way to spread granular barrier treatments is with a simple fertilizer spreader, just like baits. However, it is good practice to have 2 spreaders – one for use with baits and the other for the barrier treatment (mark each one with a marker pen so you know which is which). If you use the same spreader for both jobs, it is possible you might taint the baits with traces of the barrier granules. The ants could be repelled by the smell of the barrier granules and not feed on the bait. A reminder here that it is not a good idea to apply a barrier treatment at the same time as a bait because, the ants carrying the baits back to the nest will be killed and the colony might survive. Always apply the barrier treatment around 2 weeks after you have applied baits.

The chemicals in barrier treatments need to stick to the soil particles for them to work and the best time to apply these products is when the ground is wet or rain is expected soon. This helps the binding process needed for the chemicals to work. If the soil is dry when you want to apply these products, you can wet the ground with a garden hose or sprinkler after applying the treatment. Generally around Hilo, this will not be necessary!

The more ground you treat, the better the effect of a barrier treatment.

However, if you want to limit your use of chemicals, you can just sprinkle or spray those parts of your lot where you want the most protection such as around the home and the lawn areas used by people or pets. A barrier treatment around your home should be at least 3 feet wide and preferably 6 feet.

DEALING WITH ANTS AROUND FOOD PLANTS

Many pesticides are not registered for use on food plants. This is because the Environmental Protection Agency has very strict guidelines for registering pesticides to be used on crops. Therefore, there are less products available for treating ants in food crops, and often a product will be registered for one crop but not another. Usually the “popular” crops have more products available, but unfortunately for growers in Hawaii, the crops and fruits we grow here are often not on product labels. Chemical companies are required to carefully test their products for residues in each crop they wish to list on their labels, and each test can be very expensive. Many crops and fruits grown here in Hawaii are not grown anywhere else in the USA and the cost of testing these is too great to make it economically worthwhile.

There are several bait products available in Hawaii registered for use on a broad range of crops. These are listed below. However, be sure to read the label carefully to make sure your crop or fruit is listed. You can download many product labels mentioned in this fact sheet by going to the Hawaii Pesticide Information Retrieval System (HPIRS) maintained by University of Hawaii College of Tropical Agriculture

and Human Resources at Manoa (<http://state.ceris.purdue.edu/doc/hi/statehi.html>). Baits available for use on or near food plants include the following:

Esteem Fire Ant Bait® or Extinguish PRO™

HAL rating 👍

- these are granular baits registered for use on many food plants. They contain either the insect growth regulator pyriproxyfen or (S)-methoprene) as the active ingredient. Unfortunately ants seem to be repelled by these baits and do not feed on it to any great extent.

Tango™

- (see above) is registered for use on and under food plants also. It contains the insect growth regulator (S)-methoprene and may be mixed in a bait matrix of your choosing. This product appears to be very effective and safe. Please read Fact Sheet 5 to understand how Tango™ works to find out if it is right for you.

Boric Acid Baits

HAL rating 👍👍👍

- are available in liquid or gel form. They are easy to find and very popular. Unfortunately most are formulated for “sugar-loving” ants (such as Terro) and will not be effective against LFA. But never fear! You can easily mix up your own boric acid bait at home! Boric acid baits are effective “natural” alternatives to other products but they generally take longer to work. Repeated

treatments of boric acid bait may lead to an accumulation of boron in the soil which can be toxic to plants so make sure to carefully follow directions to minimize this risk. Please read Fact Sheet 6 for more information on mixing and using Boric Acid Baits. Legal restrictions apply.

- **Bait Stations** may be used in some situations to control LFA. Amdro® Pro is labeled for use in bait stations throughout fruit and nut orchards. Although bait stations are not ideal for controlling LFA, they can be a useful tool when combined with gel bait applications in trees and sanitation practices. Although most granular baits may not be used in vegetable gardens, bait stations may be placed around the perimeter. This could be effective for small garden plots but is not practical for larger ones. Be sure the product you are using is labeled for use in bait stations.

- **Insecticidal Sprays** may also be used on food plants, though they are more effective as spot treatments or for small areas. Most insecticidal sprays are broad-spectrum insecticides which will kill other insects as well as ants. There is a wide variety of organic and non-organic products available in concentrates and ready-to-use formulations. When choosing an insecticidal spray, read the label carefully to make sure it is right for your situation and to know how to

properly use the product for effective pest control.

CONTROLLING ANTS IN VEGETATION

Safety precautions for all pesticides

ALWAYS read the label of the product you buy very carefully to make sure your plant species and situation is listed.

Follow **ALL** safety directions on the label.

ALWAYS make sure to keep other people and pets away from the treated plants until they are completely dry

Little Fire Ants often nest in the foliage and branches of trees. These nests are not well controlled with standard bait applications because the tree-dwelling ants do not always forage on the ground. Most baits are granular and so can not be applied to trees. Hawaii Ant Lab gel baits with **Tango®** or boric acid can be applied to trees so this is virtually the only effective bait option in trees.

The other option for controlling little fire ants in trees is to spray the trees with pesticides. Good general-use pesticides for spraying foliage are products containing carbaryl. One example is Sevin™ but there are other products with the same ingredient available. Carbaryl does not have a residual effect so its important to thoroughly wet the entire plant, making sure you observe any withholding periods for fruits and vegetables listed on the label.

Organic solutions include those containing d-limonene (or orange oil) and a number of proprietary products containing this active ingredient are

registered for many food plants as well as ornamental plants. Gardens in Hawaii often contain a mixture of food and ornamental plants so these products can be used for both.

There are other pesticides that can be used on ornamental plants only. Products containing bifenthrin often have instructions for spraying ornamental plants (for example, Talstar P®). Bifenthrin is a residual insecticide which means it continues to be effective on ants that walk over treated surfaces for some weeks after application.

These products come in a concentrate form which need mixing with water in a spray tank, or in a ready-to-use spray bottles. Concentrate pesticides are always more economical than buying ready-to-use products. When spraying plants, make sure to thoroughly wet cracks, crevices, moss and other places where ants hide.

Choose a calm day with little or no wind for spraying foliage. Be very careful to always wear the protective equipment recommended on the label and be especially careful when spraying tall plants that the spray doesn't drift onto yourself or into a neighbour's property. Always spray away from yourself and make sure the wind is blowing away from you so that the spray does not drift back. Even if the label does not specify it, Hawaii Ant Lab recommends wearing eye protection (safety glasses, goggles etc), a chemical resistant hat, and a mask whenever spraying vegetation taller than 5 feet.

Good luck and please contact us if you would like more information or have

questions not answered in this fact sheet.

BARRIER TREATMENTS FOR LITTLE FIRE ANTS

Product name	Active ingredient	EPA registration #
Ortho Home Defence Max granules	bifenthrin	279-3240-239
Ortho Home Defence ready to spray	bifenthrin	239-2698
Triazicide Once and Done Insect Killer	alpha-cyhalothrin	9688-181-8845
Triazicide Once and Done Insect Killer	alpha-cyhalothrin	9688-195-8845

CHEMICALS SUITABLE FOR SPRAYING PLANTS AND FOLIAGE

Product name	Active ingredient	EPA registration #
Orange Guard	d-limonene	61887-1-AA
Eliminator Bug Killer Sevin Concentrate	carbaryl	264-334-71004
Gardentech Sevin Concentrate Bug Killer	carbaryl	264-334-71004
Gardentech Sevin Ready-To-Spray Bug	carbaryl	264-334-71004
Bisect L	bifenthrin	34704-955
Talstar P	bifenthrin	279-3206

Other proprietary products that have label instructions for spraying foliage may be available and suitable for this purpose. Please consult the staff at your hardware, chemical supply or farm exchange for advice on these products.

The opinions expressed here do not represent an endorsement or rejection of any products mentioned and are based on a mixture of empirical and observational data. Other products may also be available.

Listing of these proprietary products does not constitute an endorsement by The Hawaii Ant Lab or the Hawaii Invasive Species Council. Similar products not listed may also be effective.