



Cryptic



Multiple queens

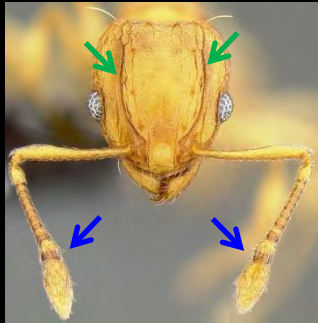
Little Fire Ant

Arnold Hara, Entomologist
Susan Cabral, Research Support
University of Hawaii at Manoa
College of Tropical Agriculture & Human Resources
Hilo, Hawaii
arnold@hawaii.edu, susancab@hawaii.edu

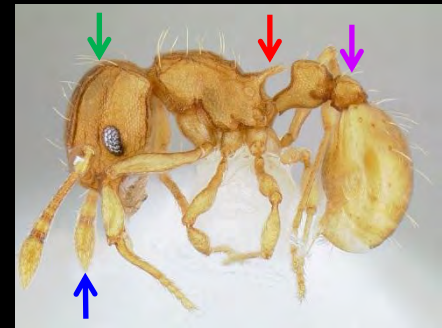
LFA

DESCRIPTION

Little fire ant (LFA) workers are approximately **1.5 mm in length, reddish to golden brown**, and **move very slowly**. They can be identified by looking for **distinctive characteristics under magnification**.



- **2 grooves** on the front of the head where the antennae can lay at rest (antennal scobes).
- **antennae** end in two-segmented clubs
- **long, pointy spines** on the upper abdomen (propodeum)
- **2 nodes** (petiole and post-petiole)



Worker

Queen



Life Styles of LFA

Worker

Male



LFA Reproduction

- Queen mates with male to produce sterile workers.
- She can clone reproductive eggs (more queens and males).
- Colonies can have several queens.
- Average egg production per queen is ~600 in a 12 week period.
- Queens can live up to 13 months; males were observed to live about 1 month under lab conditions.

LFA Worker

Egg to Adult Worker* –

37 days (35 days to 40 days)

Development under lab conditions:

egg incubation - 8-10 days

larval stages - 16-18 days

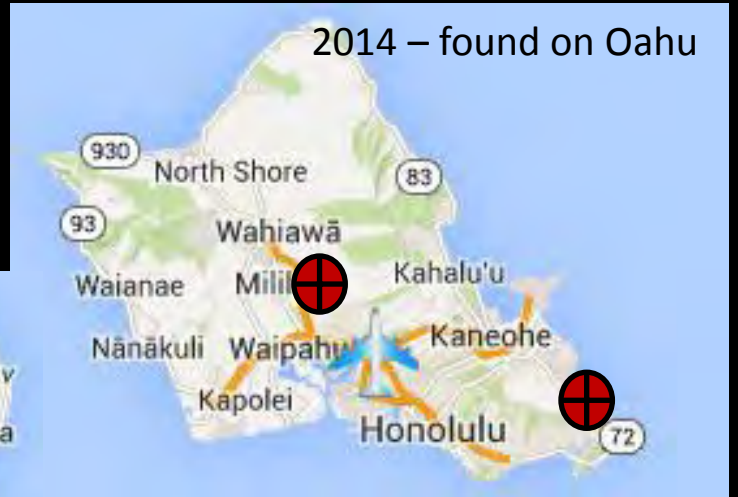
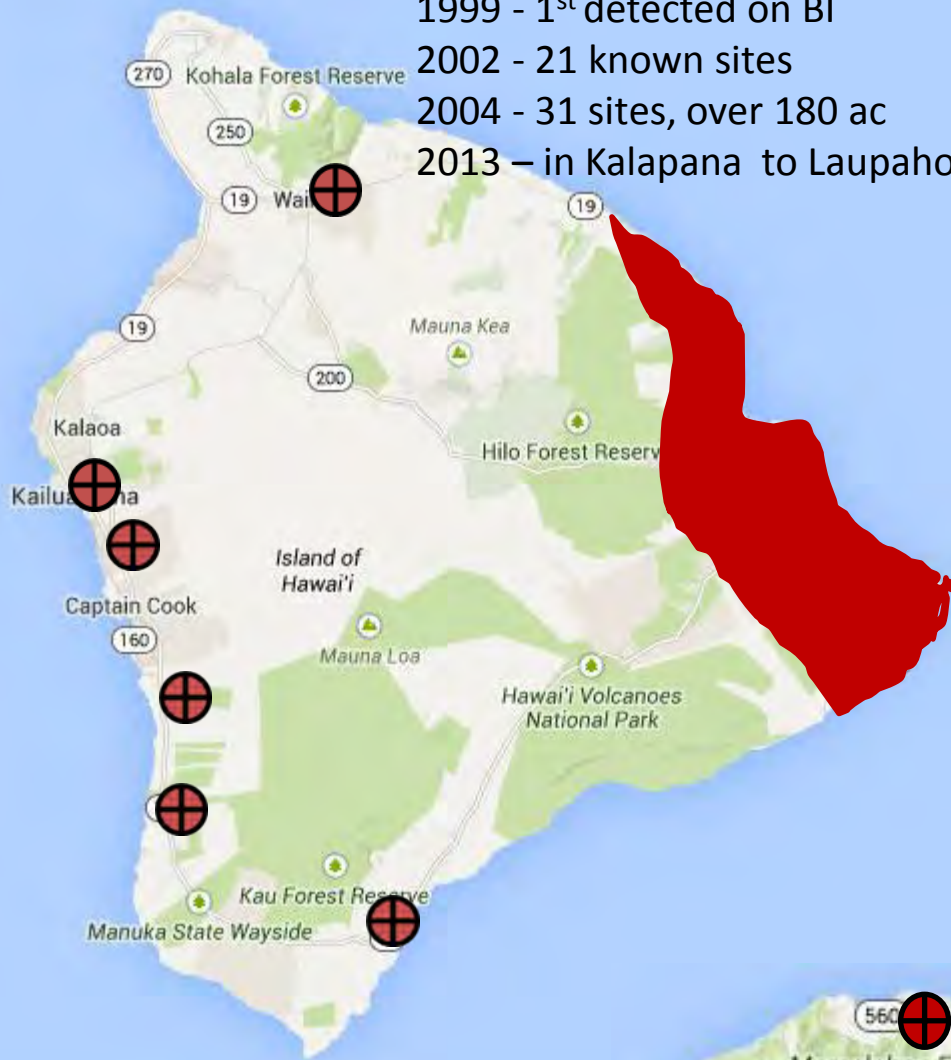
pupal stage - 11-12 days

*Ulloa-Chacon, P. and D. Cherix. 1988. Quelques aspects de la biologie de *Wasmannia auropunctata* (Roger) (Hymenoptera Formicidae). Actes Coll. Soc. 4: 177-184

Distribution of LFA in Hawaii

2013, Mapping by Hawaii Ant Lab

1999 - 1st detected on BI
 2002 - 21 known sites
 2004 - 31 sites, over 180 ac
 2013 - in Kalapana to Laupahoehoe



2000 - found on Kauai

Estimated range of optimal temperatures: 65°F to 107°F
 (Harris, Abbott, & Lester (2012))

Maximum Elevation: 2000'

A photograph of several white flowers with dark spots on their petals, growing in a garden bed. The flowers are arranged in a cluster, and the background shows green foliage and brown mulch. The text is overlaid on the image in a bold, red font.

**Am I inviting LFA into
my home and garden?**

**Where Would I Find Them?
Habitats for LFA**



- LFA will forage on the ground as well as on plants and in trees.
- Nests of LFA can be established in 3 dimensional super colonies.
- They can be found in forks of tree or under moss growing on trees.
- They are 'tramp ants' which means they can be easily transported by us!





- **Undisturbed mulch and compost piles are favorite habitats.**



- **Discarded plants and potting supplies provide nesting areas for LFA.**
- **A water moat with a few drops of Dawn dish soap can discourage LFA from moving in!**



- **Old weed mat and debris that has built up over a shadehouse are excellent spots for LFA to set up colonies.**



- **Trash cans filled with discarded food, cracks in cement, and water lines provide dark, moist habitats.**



Unusual LFA Habitats include electric outlets, even can knife handles!



53 Reproductive LFA were found in a
knife handle!

How Would I Find LFA? What would I look for? Little Fire Ant Survey and Control Techniques

- The best time to check for LFA is in the early morning or late afternoon when they are most actively foraging.
- Avoid hot sunny days and mid-day (if you must survey then, find shady areas). They will not forage during heavy rainfall.
- LFA prefer proteins. A small smear of peanut butter on a stick or in a small vial works well to detect LFA (bright paint on the stick or vial makes these easier to find). Hot dogs or spam in a vial work, too.
- Use a recommended ant bait and pesticide (Bulletin: “Little Fire Ant Products for Homeowners” and “Little Fire Ant Products for Landscape, Golf and Nursery Use”) and recheck 2-3 weeks after each baiting.



Peanut Butter

Extinguish Plus (0.365% hydramethylnon, and 0.25% s-methoprene)

Little Fire Ant Field Attractancy of 3 Ant Baits

75Minutes After Exposure



Amdro (0.73% hydramethylnon)

Distance (0.50% pyriproxifen)



Mean # of LFA attracted to Baits:

Peanut Butter:	123.8
Amdro:	203.0
Distance:	35.9
Extinguish Plus:	67.6

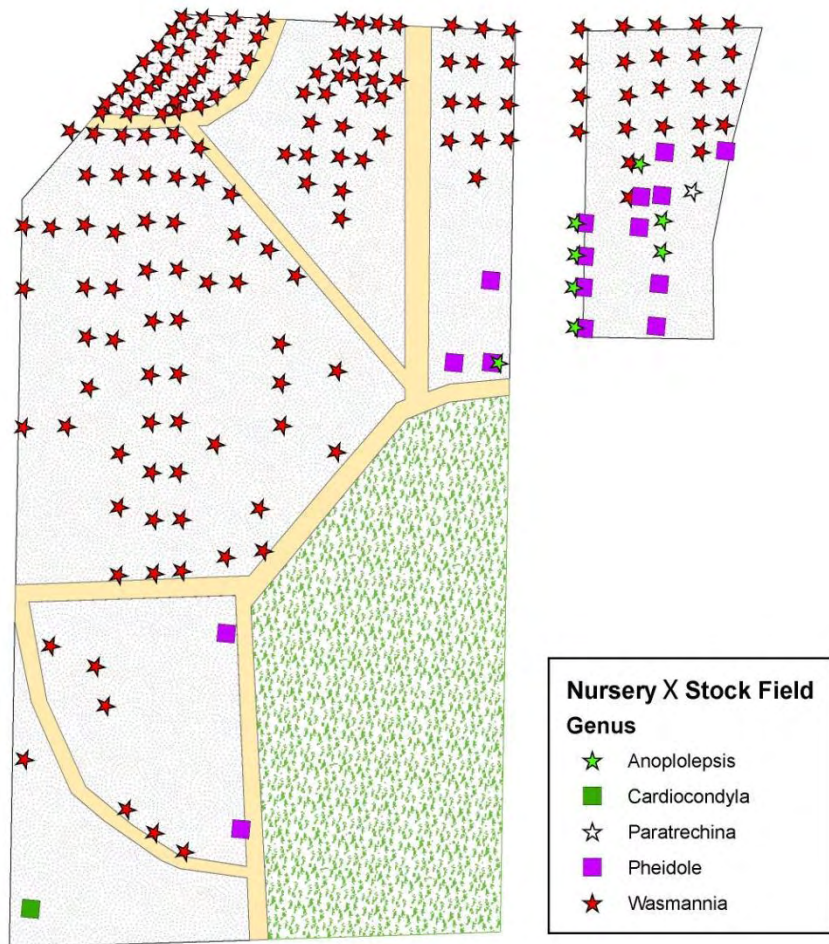


Ant Survey - Field Stock Dracaena

Treatment: Amdro, broadcast, label rate (25 lb), Talstar, below survey area 2/22/12

Extinguish Plus, 6 lb broadcast on south and west boundaries

Nursery X Ant Survey Results



0 40 80 160 240 320 Feet

Nursery X First Post Treatment Survey March 16, 2012



0 40 80 160 240 320 Feet

Peanut Butter



**Extinguish Professional
(0.50% s-methoprene)**



**Enhancing the Appeal
of IGR (S-methoprene)
to LFA by
Modifying the Carrier**

**Peak Field Attractancy
60 Minutes After
Exposure**

Mean # of LFA

Peanut Butter	278
Tango (0.25%)	215
Tango (0.50%)	259
Extinguish Professional (0.50%)	2

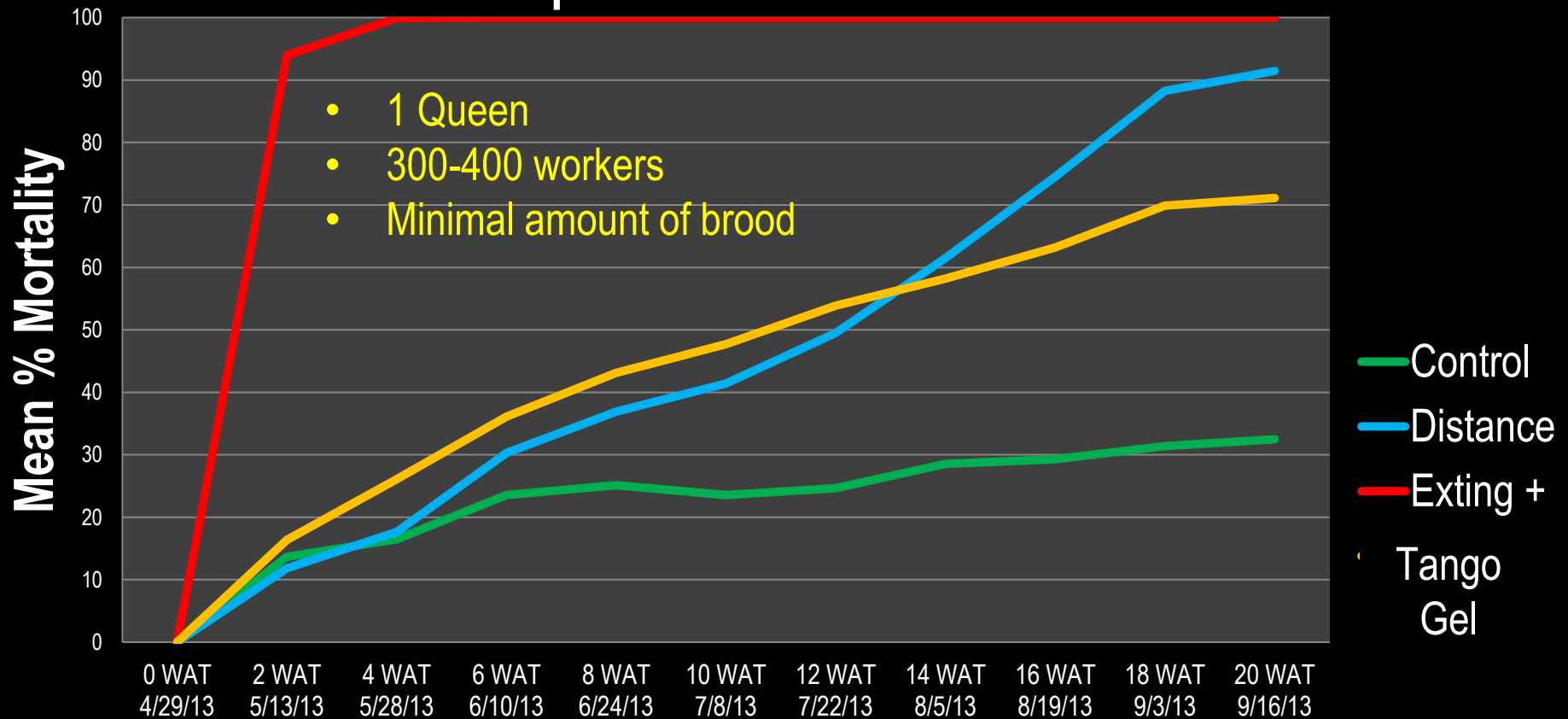
Tango (0.25 % s-methoprene)



Tango (0.50% s-methoprene)



LFA Response to Three IGR Ant Baits



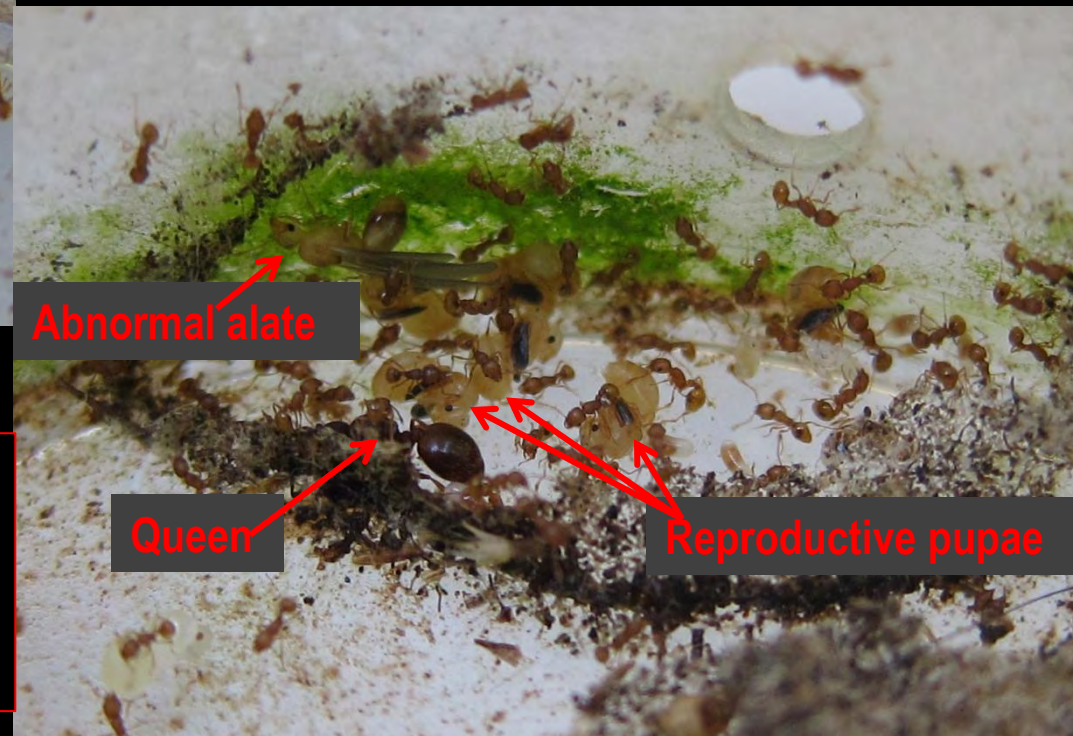
Recommendations:

- Survey your site to keep accurate records of population location and density
- Repeat baiting every 3-4 weeks and survey in between! (A one time application will not eradicate LFA colonies!)
- Rotate baits – IGRs and toxicants
- Hot water shower or drench before shipping

In an untreated nest there is a mixture of LFA workers, brood and the queen.



A View inside the LFA Nest



A nest exposed to an insect growth regulator shows very few workers, a queen, reproductive pupae and an abnormal winged reproductive.

NOTE: there are no eggs, larvae or pupae of workers. Lack of replacement workers will cause the colony to collapse eventually. IGRs take time and repeated applications!

Ants (**including LFA**) Increase Aphid, Mealybug, Soft Scale, and Whitefly Infestations!

- Ants feed on sweet honeydew excreted by aphids, mealybugs, soft scales and whiteflies.
- Ants nurture these pests by protecting them from parasitoids/predators.
- Controlling ants will reduce these pests.

