

PROGRESS REPORT

to

**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE**

from

UNIVERSITY OF HAWAII
Office of Research Services
2440 Campus Road, Box 368
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**Pacific Cooperative Studies Unit
University of Hawai'i at Mānoa**

Hawai'i Ant Lab Statewide funding 2021

March 1 to August 31, 2021

Summary

The Hawai'i Ant Lab (HAL) is a collaborative project of the Pacific Cooperative Studies Unit (PCSU), University of Hawai'i. This contract is for the partial provision of core funds to allow the Hawai'i Ant Lab to provide ongoing support for invasive ant management statewide and maintains a critical mass needed to provide these support services. This report relates to DLNR contract C11129 (PCSU account 4505564).

The HAL is a point-of-contact for conservation agencies, industry and members of the public on any matter involving identification and control of invasive ants. The HAL is developing a regional and global reputation as a center of excellence and cutting-edge research on biosecurity, pest ant management and ant taxonomy. Daily services provided by the Hawai'i Ant Lab include the following:

- Operate and maintain a 24/7 telephone contact service for members of the public.
- Provide a diagnostic service to members of the public and other conservation agencies.
- Develop, update and promote the www.littlefireants.com website
- Produce "fact sheets" providing practical advice to residents and industry.
- Provide ongoing advice, expertise and assistance to island invasive species committees as needed.
- Regular speaking engagements to associations and societies, including public displays.
- Conduct monthly training days for residents and industry groups.
- Provide training in identification, awareness and control practices to other agencies such as island ISCs, Hawai'i Department of Agriculture and DLNR.
- Manage new detections of LFA on neighbor islands, develop and implement eradication plans for these.
- Prevent and mitigate infestations that threaten public safety or act as vectors for inter- and intra- island spread of invasive ants.

Impact of COVID19 (SARS-CoV-2) pandemic on HAL work program

The Sars-CoV-2 pandemic reduced the ability of HAL to execute its work program during this reporting period. HAL staff worked remotely and avoided working in indoor locations, training larger groups (>10 persons) in order to minimize infection risks to staff and stakeholders. The restrictions imposed by public health agencies and government changed frequently and were different on each island. HAL adapted to the new working environment by operating and meeting in a virtual team environment with access to data and resources via cloud-based systems already in use. Each HAL team member prepared a designated office area in their home with office and lab equipment taken from the regular workplace.

Much of the work program continued as in pre- COVID19 conditions, modified in order to ensure that COVID19 risks were not increased as a result of work tasks. The major changes in work practices are listed below:

Staff meetings

In lieu of regular monthly office meetings, staff met twice-weekly on the Zoom™ platform. This is more frequent than usual HAL practice which is one meeting per month. However, with all staff working remotely, additional interaction was necessary to ensure the HAL work program was delivered efficiently and effectively.

In-person meetings

In-person meetings were reduced to those that could comply with social distancing and other covid guidelines. The new ant-management clinic format, employing the Zoom™ platform gained traction during this period and attendance has steadily increased.

Farm visits and site meetings

All staff followed HAL safety protocols which had been developed for field and office-based work. Field interactions were limited to 10 participants or less. The HAL Hilo office was staffed on a rolling schedule to ensure availability of one staff member in the office during normal business hours. Personnel had, at all times, authority to cease any activity they believed increased their risk of being infected with COVID19 or potentially impacting on their health or the health of others.

Inter-island travel

All inter-island, interstate and international travel was suspended pending easing of restrictions as specified by recognized medical experts.

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Program highlights

Operations

During the reporting period, Operations continued within the restrictions mandated as a result of the Sars-CoV-2 pandemic but changed frequently as infection rates first declined then increased substantially with the arrival and spread of the Sars-CoV-2 Delta variant (B.1.617.2 and AY lineages).

A total of 21 surveys (7,002 vials) and 13 treatment events were completed. These were primarily conducted at critical sites deemed a high priority on Hawai`i island. These sites included the major points

of entry, greenwaste distribution facilities and properties managed by the UH College of Tropical Agriculture and Human Resources. Table one provides a summary of activities for the reporting period. HAL operations staff also collaborated in the development and refinement of a new data collection and management system (NRDS) which is slated to become the predominant data collection system statewide.

Table 1. Summary of survey and treatment activities for March-August 2021

location	# surveys	target	# vials	treatment
CTAHR, Komohana	1	1	410	4
CTAHR, Waieka	3	3	1,200	1
Hilo Greenwaste	6	6	803	
Hilo Sea port	2	2	881	4
ITO airport	3	2	1,648	4
Kawaihae Seaport	1	1	352	
KOA airport	2	2	925	
Kona Green waste	3	2	783	
total	21	19	7,002	13

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Extension

HAL receives ant samples for identification, e-mails, and calls from members of the public and industry requesting advice and resources for surveillance and treatment activities. Table 2 summarizes these activities. Public and industry interaction has almost returned to pre-pandemic levels with the exception of presentations and informational booths at conferences, workshops and plant societies. The team continues to update extension and training materials to reflect advances and changes to treatment and survey methods, availability of registered pesticides and other information related to invasive ants.

New fact sheets and extension materials were developed and distributed as appropriate to pesticide distributors, libraries, and other locations over the island for public access. The website continues to be improved to keep pace with contemporary standards.

Due to the Covid-19 pandemic, the extension team pivoted from in person training, presentations, and event booths to mostly online training. Some in-person training events continued for small groups when these were able to be conducted in outdoor locations and within social distancing guidelines and other safety measures in place. A total of 13 in-person training events, reaching 80 persons, were scheduled and completed during the reporting period (Table 3).

A total of 3,472 clicks were recorded on the HAL littlefireants.com website (Figure 1). Visitation increased predictably during this period as the seasons progressed from early spring to end summer when ant activity is at its highest. During this period, and for the first time, the majority of devices used to access the website were mobile cellular devices (54%) vs desktop computers (43%) and tablets (3%). The resources downloaded most frequently were HAL Fact Sheet #8 (guide for homeowners), the recipe for Tango® Bait and the keys to ants of Hawaii.

Table 2. General extension metrics for reporting period.

Source	target	1 March to 31 Aug 2021	1 Sept 2021 to Feb 28 2022	total	Percent progress
public calls and emails	700	567			81
Mail-in samples		349			117
public submissions	300	667			222
website visits		Website data are reported separately			
at presentations	400	80			20
AMZ(oom) participants	11	6			55
total	1,411	1,666			181

Table 3. Summary of stakeholder presentations for the reporting period.

Date	Group	Type of outreach	# people	Presenter
3/19/2021	AMZ!	Training	3	Cas/ Michelle/Alison
4/9/2021	Site Visit (Mauna Kea Cacao)	Training	1	Heather/ Alison
4/30/2021	AMZ!	Training	6	Cas/Michelle/Alison
5/11/2021	Site Visit (Kahale O' Kiolaka'a)	Training	2	Heather/ Alison
5/13/2021	Site Visit (DOFAW Mauna Kea)	Training	3	Heather/ Alison
5/21/2021	HDOA Pesticides Branch	Training	15	Heather
5/21/2021	AMZ!	Training	5	Cas/ Michelle/Alison
6/25/2021	AMZ!	Training	6	Cas/ Michelle/Alison
7/30/2021	AMZ!	Training	6	Heather/Cas/Michelle
8/5/2021	Farm Visit	Training	2	Heather
8/13/2021	Farm Visit	Training	4	Heather
8/27/2021	AMZ!	Training	25	Alison/Cas/Michelle
8/31/2021	Farm Visit	Training	2	Kiyoshi/ Alison
total			80	

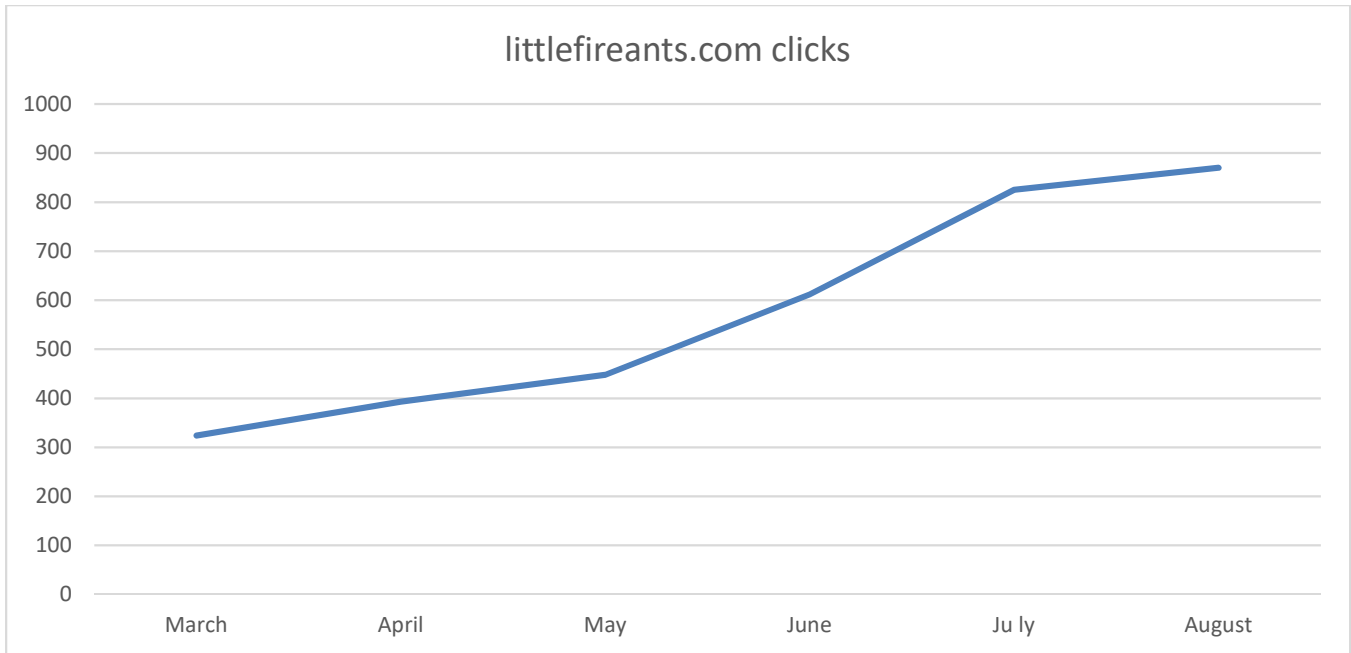


Figure 1. visitation to www.littlefireants.com website

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Research

Publications

A manuscript detailing the LFA eradication effort at Kalihiwai, Kauai was completed and submitted to the journal Biological Invasions in July, 2021 and is currently under review. A preprint of this manuscript is available here <https://www.researchsquare.com/article/rs-697858/v1.pdf?c=1631903796000>. A second publication is in progress detailing the results from a 2020 Laboratory experiment testing efficacy of Entrust SC in the HAL gel bait.

Field Trial

An EUP was granted to conduct field efficacy trials comparing Entrust SC (Spinosad) in the HAL gel bait against Firefighter Fire Ant Bait and Altrevin Fire Ant Bait. The first treatment was conducted in May, 2021 however post treatment monitoring suggested the Altrevin Fire Ant Bait used during treatment had gone bad and was no longer effective. Because of this, we had to find and order fresh product and wait for the ant populations to fully rebound to pre treatment levels before re-starting the field trial. The field trial was restarted August 3, 2021 and is currently in the “Round 1” post treatment monitoring phase.

Laboratory Experiments and Testing

Recently, questions regarding use of neem oil for control of LFA has come up public inquiries. We conducted an unofficial, observational, lab trial to see if neem oil is effective when used per label instructions as a contact insecticide compared with soapy water and regular tap water. Our observations were that neem oil and soapy water were equally effective at killing ant on contact. However, past field trials and research has suggested contact insecticides are not effective at managing LFA.

NRDS App Beta Testing

We have been testing a new survey and data collection app for ant surveys through the Mamalupoepoe project and have been working with the developers to refine and streamline the apps workflow. The app is intended to standardize data collection among partners working on the Mamalupoepoe project and has great potential to standardize data collection for ant surveys when multiple partner organizations and agencies are involved. We plan to fully implement using the app during airport surveys and potentially for all other ant survey work.

Industry Assistance

In late 2020, it was noticed that our inventory of 2 commercial bait products manufactured by Neudorff had spoiled despite being unopened and not being in storage for more than several months. We were able to determine the cause of spoilage and have been working with the manufacturer to resolve the issues.

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