

# PESTPRO

From Pest Management Education, Inc. to Landscape and Pest Managers

**The Capybara  
Comes to Florida**

**Lobate Lac Scale**

**Climate  
Change**





PROFESSIONAL  
PEST MANAGEMENT

# MAKE MOSQUITO CONTROL YOUR COMPETITIVE EDGE.

The SecureChoice<sup>SM</sup> Mosquito assurance program lets you offer a mosquito service that gives your customers up to 60 days of mosquito control. This is nearly 2 to 3 times longer lasting than other competitive services. So take advantage of the convenience of this offer, and give your customers a yard they can enjoy.

Learn more about the SecureChoice Mosquito assurance program and the benefits you get as part of the PestPartners<sup>SM</sup> 365 program at [SyngentaPMP.com/Mosquito](https://SyngentaPMP.com/Mosquito)

FOR LIFE UNINTERRUPTED<sup>TM</sup>

 **SecureChoice<sup>SM</sup>**  
Mosquito assurance

 **syngenta<sup>®</sup>**

©2018 Syngenta. **Important: Always read and follow label instructions. Some products may not be registered for sale or use in all states or counties. Please check with your state or local extension service to ensure registration status.** PestPartners<sup>SM</sup>, SecureChoice<sup>SM</sup>, For Life Uninterrupted<sup>TM</sup>, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company. Syngenta Customer Center: 1-866-SYNGENT(A) (796-4368) MW 1LGP8007-SCMA-AGP3 04/18

®

# PESTPRO

magazine is a publication of  
**Pest Management Education, Inc.**,  
and is the official magazine of the  
**Florida Pest Management Association**



## Board of Directors

**Tim Brock**, Brock Lawn & Pest Control

**John Cooksey**, McCall Service

**Dr. Phil Koehler**, University of Florida

**Marie Knox**, Control Solutions, Inc.

**Jane Medley**, Pest Management Education

**John Paige III**, Bayer

**Dr. Roberto Pereira**, University of Florida

**Sandee Weston**, Pest Management Education

**Tony Weston**, Pest Management Education

## Managing Director

Philip Koehler (352) 392-2484  
pgk@ufl.edu

## Managing Editor

Roberto Pereira (352) 392-2485  
rpereira@ufl.edu

## Production Editor

Jane Medley (352) 871-1809  
medleyuf@gmail.com

## Advertising Manager

Sandra Krempasky (904) 679-5615  
ads@pestpromagazine.com

PESTPRO (ISSN 1553-4693) is published Jan.–Feb.,  
March–April, May–June, July–Aug., Sept.–Oct., and  
Nov.–Dec. by:

Pest Management Education, Inc.  
5814 Nob Hill Blvd.  
Port Orange, Florida 32127  
Phone (352) 392-2326

Copyright © 2018 by Pest Management Education,  
Inc., a nonprofit corporation working to help UF  
Urban Entomology. Technical information provided  
by the University of Florida and other sources.

POSTMASTER: Send address changes to:

**Pest Management Education, Inc.**  
5814 Nob Hill Blvd.  
Port Orange, FL 32127

FOR ADVERTISING information contact our  
advertising manager, Sandra Krempasky, at (904) 679-  
5615, or by email at ads@pestpromagazine.com.

# CONTENTS

CONTACT SANDRA FOR 2018 MEDIA KIT  
ADS@PESTPROMAGAZINE.COM

## FEATURES

- 8 Climate Change Effects on Pests
- 11 Lobate Lac Scale In South Florida
- 16 The Capybara Comes to Florida
- 18 Student Profile: George Roman
- 21 Guide to Summer Grass Weeds
- 25 Equipment for Bait Application



## DEPARTMENTS

- 6 **FPMA President's Message**
- 7 **Editorial:** Landmark Date for Urban Entomology In Florida
- 13 **Past President's Corner:** Thomas Walkup
- 15 **Pest Detective:** Gas Can Borer
- 23 **Market Hardware:** Win More New Customers From the Most Profitable Zip Codes
- 27 **Executive Suite:** Strategy and Tactics
- 29 **PCO Pointer:** Pest Control Compliance



## ON THE COVER

Asian tiger mosquito, *Aedes albopictus*, feeding. Mosquitoes are expected to thrive during times of climate change, due in part to greater numbers of extreme rain events.

Cover photo by James L. Occi, Armed Forces Pest Mgmt. Board



## Knock 'em down to keep them safe.

Our new Pressurized Solutions are proven -- by researchers in labs and PMPs in the field -- to save time, materials, and money!



Lab Tested



Quality Assured



Cost Effective



Pest Control



**Control Solutions Inc.**

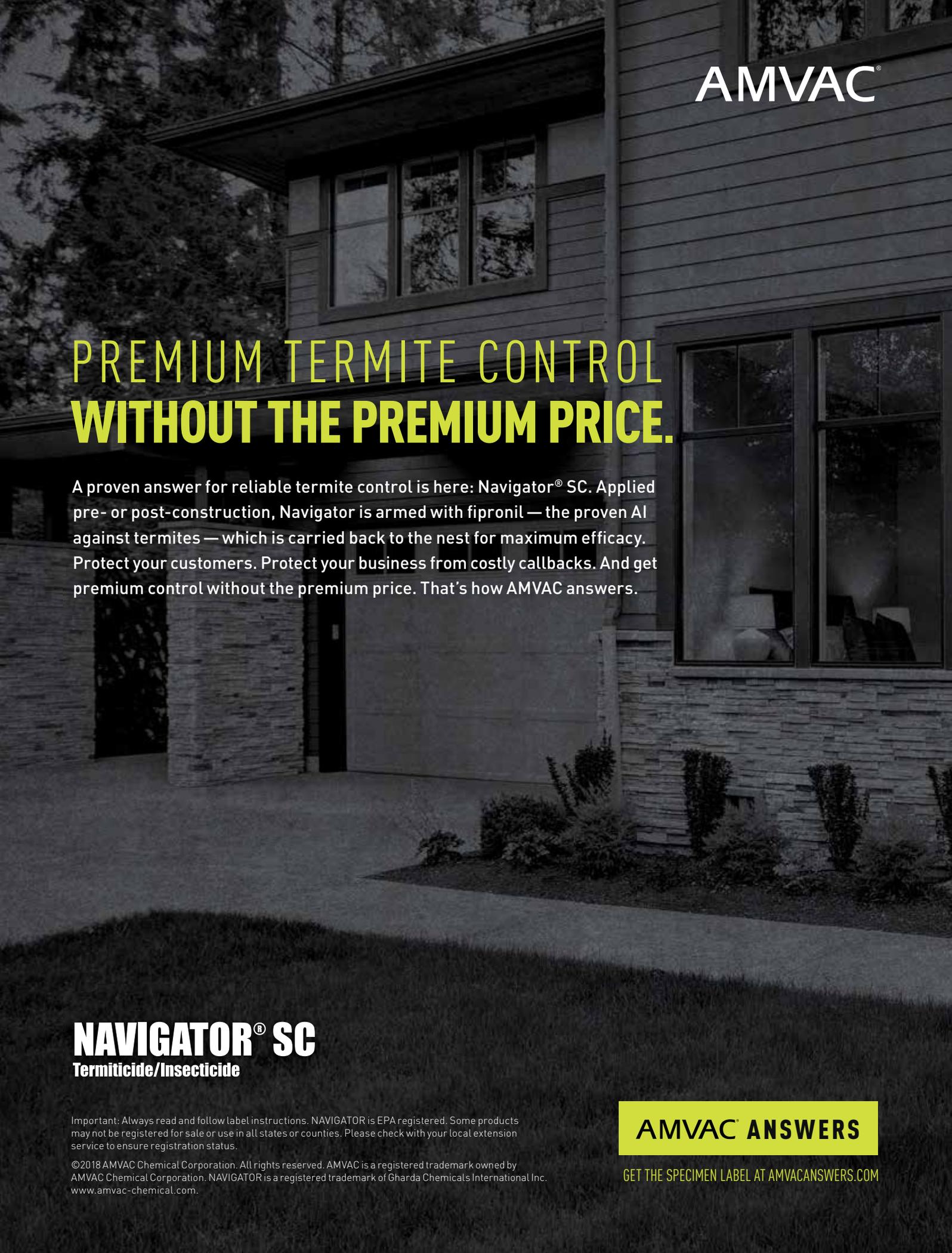
A member of the ADAMA Group

**#CSIPEST**

Adama.com  
ControlSolutionsInc.com

@csi\_pest

@csipest



AMVAC®

# PREMIUM TERMITE CONTROL WITHOUT THE PREMIUM PRICE.

A proven answer for reliable termite control is here: Navigator® SC. Applied pre- or post-construction, Navigator is armed with fipronil — the proven AI against termites — which is carried back to the nest for maximum efficacy. Protect your customers. Protect your business from costly callbacks. And get premium control without the premium price. That's how AMVAC answers.

**NAVIGATOR® SC**  
Termiticide/Insecticide

Important: Always read and follow label instructions. NAVIGATOR is EPA registered. Some products may not be registered for sale or use in all states or counties. Please check with your local extension service to ensure registration status.

©2018 AMVAC Chemical Corporation. All rights reserved. AMVAC is a registered trademark owned by AMVAC Chemical Corporation. NAVIGATOR is a registered trademark of Gharda Chemicals International Inc. [www.amvac-chemical.com](http://www.amvac-chemical.com).

**AMVAC® ANSWERS**

GET THE SPECIMEN LABEL AT [AMVACANSWERS.COM](http://AMVACANSWERS.COM)



# The Time is Now

## Message from the President of FPMA

Steve Lum

**A**S I WRITE this article, the 2018 “FPMA In Paradise” Summer Conference is about a week away, and as you read this article it has come and gone.

Many of you attended and invested time, effort and expense to meet with fellow PCOs. You broke bread, you relaxed a bit, you shared your experiences of what is working and what is not working in your businesses. You gave and you received new ideas about how to do business better, and maybe you even picked up a useful tip that helped you do your personal life just a little bit better as well.

Getting better, doing better, and making things better is for me the point in life. It’s been said that in life you are either going forward or your are going backward, and that there is no standing still. Status quo is the same as going backward.

So that is my question for you today. Are you going forward or are you going backward? Relatively speaking, are you a better person, are you a better company? Are you a better (fill in the blank) than you were yesterday?

Are you still doing pest control exactly the same way you were doing it 20 years ago? When was the last time you picked up

a self-help book? When was the last time you did something new or thought about something differently?

I think that most of us, over time, naturally bring ourselves to a point where we think we have arrived or where we decide that good is good enough, and we’re doing just fine, thank you. I may be wrong (and I often am) but I think that mindset is the beginning of the end.

### Take Time to Associate

Recently I had the privilege and the pleasure of listening to a presentation by Dan Moreland, the publisher of *PCT Magazine*, who gave his state-of-the-industry presentation in which he shared his optimism for the industry. Dan shared his observations and findings based on a battery of surveys, reports and metrics taken over extended periods of time.

Needless to say, I was not only impressed both with Dan Moreland and his excellent work, but I left his presentation inspired and motivated to do something new and to think differently about some possibilities.

The point I’m making is that there is value in taking time away from the

daily valuable work you do and are paid handsomely for day in and day out. Don’t get sucked into the mindset that you’re too busy to learn anything new and you’re too busy to “associate.”

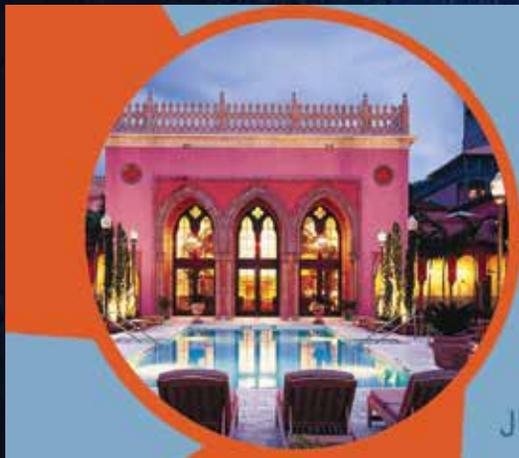
I will continue to hammer home the fact that the value of an “association” of any association is the association itself.

Take some time to take advantage of associating. So if you missed FPMA Summer Conference this year, don’t miss the next chance to associate. That next chance will be at your local FPMA Region meeting, and another chance will be at the UF Lab Tour coming up in August.

To find out when and where your local region meeting is, go to [www.FLPMA.org](http://www.FLPMA.org), click on “Region Listing & Map,” and scroll down to your region. To find out about the UF Lab Tour, go to [www.FLPMA.org](http://www.FLPMA.org), click on “Events,” and scroll to UF Lab Tour. It should be listed on the site by the time this editorial is published.

So jump on in, do something new, and challenge yourself to think differently. There has never been a more exciting time in pest management than right now. **PP**

**Steve Lum**  
**President, FPMA**



# • FPMA • IN PARADISE

JUNE 17–20, 2019 BOCA RATON RESORT & CLUB

# Looking Back: Landmark Date for Urban Entomology in Florida

**A**PRIL 12, 1996, was an important date for urban entomology at the University of Florida. That was 22 years ago, and it was the date that the Urban Entomology Laboratory Building was dedicated.

The building represents a long tradition of urban entomology at the University of Florida that started in the 1920s, when John Creighton came to UF and taught the students who became the first leaders in urban pest control. Some of these leaders were Earl Dixon, Dempsey Sapp, Sr., and Chuck Steinmetz, who went on to become successful businessmen and applied scientists. These are some of the names of the founders of modern pest control in Florida, and also founders and supporters of FPMA.

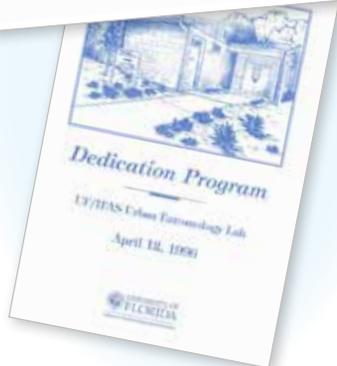
The urban entomology building dedication was a ceremony to show the state's support for an important industry in Florida. It also demonstrated recognition of the importance of urban pest control to the University of Florida and the state of Florida. The funds to construct the building were raised from industry and were an important testament to the importance of urban pest control to residents and businesses in Florida.

The program for the dedication had some of the most recognizable names in Gator history as well as in pest control. University of Florida President John Lombardi presided over the ceremony. He was one of the most lauded orators in the history of the state of Florida. He went on later to become president of the University of Massachusetts and chancellor of the Louisiana State University System. Everyone was welcomed to the event by UF Vice President of Agriculture and Natural Resources Jim Davidson. Jim Davidson was a huge proponent for agriculture and business in our state and was named to the Florida Agricultural Hall of Fame.

Next on the program were representatives from S.C. Johnson Wax and MGK. The funding for construction of the building was donated by both corporations.

The S.C. Johnson donation was in recognition for all the field testing entomologists at UF did to improve their products for cockroach control. MGK was represented by Fred Preiss, a longtime friend and supporter of urban entomology at UF. As a result of the close UF and MGK collaboration, pyriproxyfen was registered for flea control and is still registered as a broadcast treatment for fleas.

The actual dedication of the building was conducted by C.B. Daniel, representing the State University System Board of Regents. Ben Rowe



from the governor's office accepted the building for the state of Florida.

Jerry Williams, president of the Florida Pest Management Association, accepted the building for the pest control industry. Jerry and his family were true Gator fans, and he personally took on the task of helping to develop pest management research at UF.

Later in his presidency Jerry raised money for the FPMA endowment in urban entomology. Jerry was a leader in pest management who will be long remembered for his leadership and vision for the industry.

Following Jerry on the program was John Lombardi, who accepted the building for the University of Florida, Jim Davidson, who

accepted the building for UF/IFAS, and Freddie Johnson, entomology department chair, who accepted for the department.

Dini Miller was a graduate student in our lab at the time and was selected to accept the building for the students. Dini is now a professor of entomology at Virginia Tech University and is a superstar in urban entomology. She is widely known for her work with bed bugs and developing new methods of bed bug control. At the time, she was researching cockroaches and was widely recognized for her oratory abilities. At the dedication ceremony, she gave a very moving and sentimental speech on what the building meant to urban entomology students at UF.

At the conclusion of her presentation, John Lombardi, the widely recognized orator, took over and adjourned the crowd. John Lombardi was not used to being outshined in the public speaking arena by anyone. Dini did that, according to everyone in the crowd. John Lombardi was not too happy for being upstaged by a student. He never entered our laboratory, and later sent off an email about how he did not like the looks of the building.

## Building a Lasting Legacy

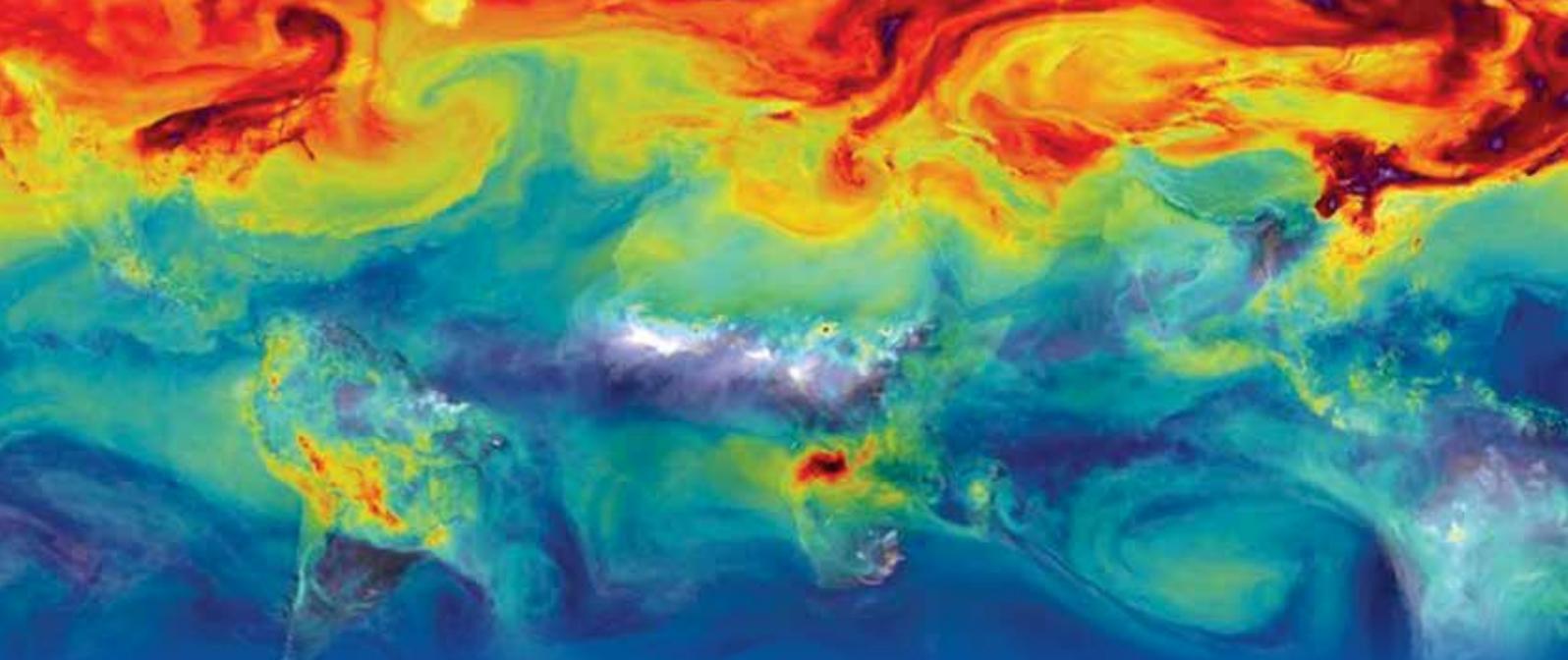
The Urban Entomology Building at UF is very important for our urban entomology program. It is where many of the former students, who are now leaders in the industry, were educated.

It is also where we write a lot of the content for *PestPro* magazine. Without the support of the industry in Florida, UF would not have an urban entomology program. The building was funded by the industry. The professorships — Margie & Dempsey Sapp Professorship in Structural Pest Control and the FPMA Professorship in Urban Entomology — were funded by the industry, and *PestPro* magazine is supported by the industry.

*PestPro* magazine and the Urban Entomology Building are tangible symbols of the partnership between the University of Florida and the pest management industry. The University needs the support of industry, and the industry utilizes the research findings and hires graduates of our program. Everyone wins when we all work together.

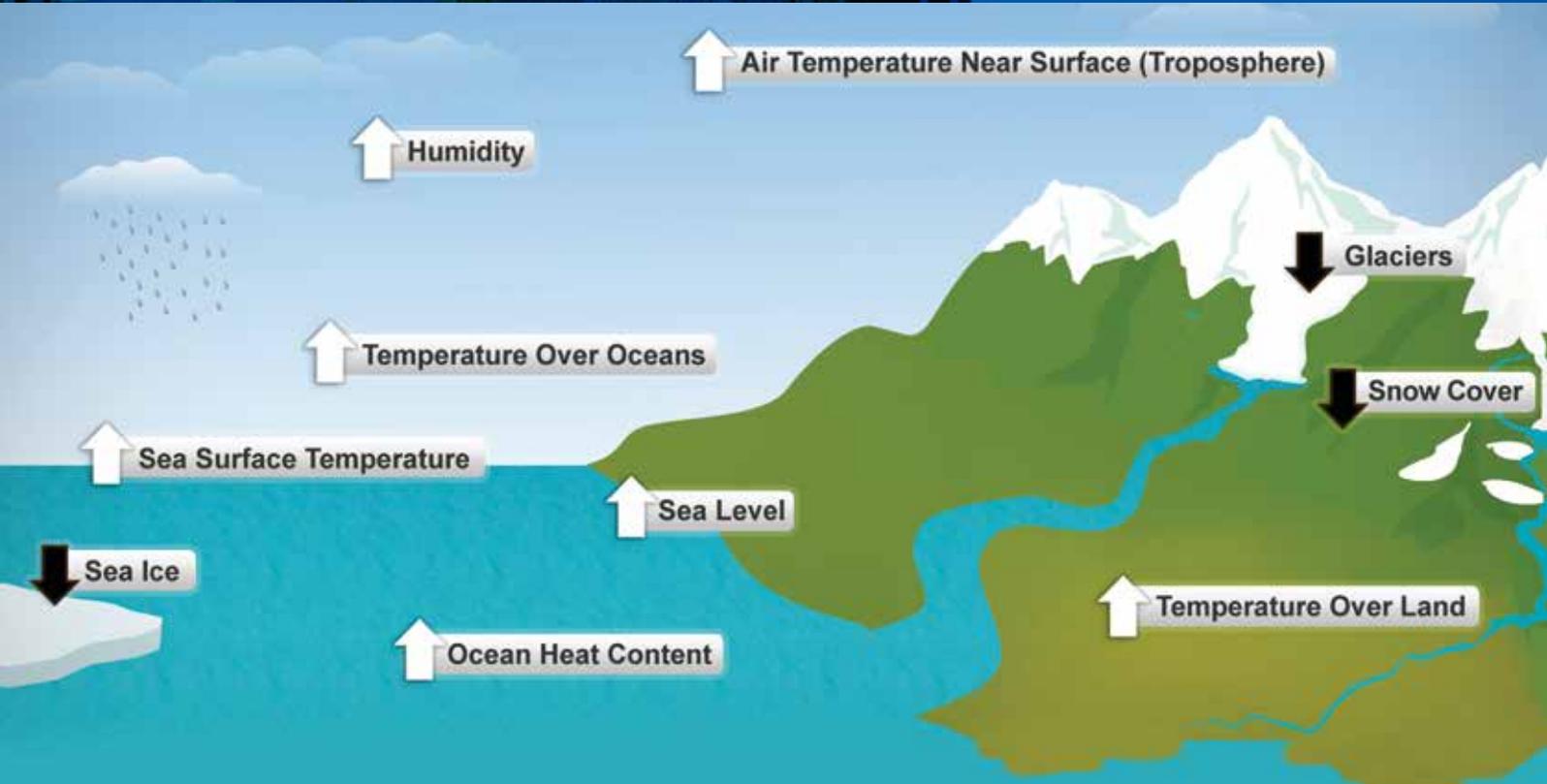
If you would like to add your contribution to this partnership, please send me a note at [pgk@ufl.edu](mailto:pgk@ufl.edu). **PP**

— Dr. Philip Koehler,  
Managing Director, *Pest Pro*



# Climate Change Effects on Pests and Structural Pest Management

Roberto Pereira and Phil Koehler



**C**LIMATE CHANGE has been in the news quite a bit these days. Even those who for years tried to discredit the science behind the predictions are now faced with the reality of a warming Earth.

There is much each of us can do to try to minimize any effect we may have in changing the Earth's climate. For example, pest management companies can design routes that are more efficient and can use vehicles that are more fuel-efficient.

We are going to discuss in this article the potential effects of a changing climate on the pests we deal with in the pest management industry: How will climate change affect the presence and abundance of these pests? What pest control actions may become necessary?

First, it is important to understand that climate is not a simple thing. There are just too many factors that affect our climate — and too many variables affected by the climate that end up affecting a number of other variables. That makes for a very complex system.

Changes in climate may speed up some processes while slowing down other processes. If these are processes that affect growth and development of insect pests, it is hard to predict the result. The complexity of biological processes combined with the complexity and uncertainty of climate changes makes for an unpredictable future.

### **So, WHAT DO WE KNOW?**

We know that insects do not regulate their own temperature and depend on outside temperature to adjust developmental rates and other functions. Therefore, insects are probably affected more directly by changes in climate than other animals.

Higher temperatures may accelerate egg hatch and developmental rates of insects, but may decrease survival rates of insects. That means the consequences of a warming trend may not be clearly defined or predictable.

For some insects, research has shown an increase of one to two

life cycles per growing season after average temperature increases only about 3.6° F. So, if we are used to three generations of mosquitoes during the summer, we may end up with four or more generations. If we have just one extra generation of flies, the total number of flies we have in that generation may be 100 times or more greater than what we are used to.

Luckily, some insect populations we deal with in urban pest management likely will not increase with changes in climate. This is the case of pests that live most of the time inside our homes and other buildings. Because these pests are protected from changing weather conditions outside our structures, their populations will probably not change much with a warming climate. Some of these pests include indoor ants, indoor cockroaches, bed bugs, clothes moths, and some other general household pests.

However, populations of flies, mosquitoes, outdoor ants, and termites are likely to increase with a warming climate. These pests may also benefit from a change in rainfall.

In fact, scientists have already detected some interesting changes in pest populations. For instance, leaf-cutting ants that live in cities withstand higher temperatures, before dying, than ants from rural areas. In cities, temperatures are usually higher due to a phenomenon called the “urban heat island” — a higher temperature in cities than in surrounding rural areas. Therefore, city ants are already adapted to higher temperatures.

Range expansion is another factor likely to be affected by climate change. Tropical species are able to invade temperate zones if the climate warms. The expansion of the tropical Asian subterranean termite and the more temperate Formosan subterranean termite into zones of historically colder climates may become a consequence of a warming climate. As these species extend their ranges and interbreed, as has been observed in South Florida, new,

*Continued*



### **The scientific method and climate change: How scientists know**

The scientific method is the gold standard for exploring our natural world. You might have learned about it in grade school, but here's a quick reminder: It's the process that scientists use to understand everything from animal behavior to the forces that shape our planet—including climate change.

“The way science works is that I go out and study something, and maybe I collect data or write equations, or I run a big computer program,” said Josh Willis, principal investigator of NASA's Oceans Melting Greenland (OMG) mission and oceanographer at NASA's Jet Propulsion Laboratory. “And I use it to learn something about how the world works.”

Using the scientific method, scientists have shown that humans are extremely likely the dominant cause of today's climate change. The story goes back to the late 1800s, but in 1958, for example, Charles Keeling of the Mauna Loa Observatory in Waimea, Hawaii, started taking meticulous measurements of carbon dioxide (CO<sub>2</sub>) in the atmosphere, showing the first significant evidence of rapidly rising CO<sub>2</sub> levels and producing the Keeling Curve climate scientists know today.

Since then, thousands of peer-reviewed scientific papers have come to the same conclusion about climate change, telling us that human activities emit greenhouse gases into the atmosphere, raising Earth's average temperature and bringing a range of consequences to our ecosystems.

“The weight of all of this information taken together points to the single consistent fact that humans and our activity are warming the planet,” Willis said.

— Holly Shaftel,  
NASA's Jet Propulsion Laboratory

## The scientific method's steps

The exact steps of the scientific method can vary by discipline, but since we have only one Earth (and no “test” Earth), climate scientists follow a few general guidelines to better understand carbon dioxide levels, sea level rise, global temperature and more.

1. Form a hypothesis (a statement that an experiment can test)
2. Make observations (conduct experiments and gather data)
3. Analyze and interpret the data
4. Draw conclusions
5. Publish results that can be validated with further experiments (“rinse and repeat”)

The scientific method is iterative (repetitive), meaning that climate scientists are constantly making new discoveries about the world based on the building blocks of scientific knowledge.

— Holly Shaftel,  
NASA's Jet Propulsion  
Laboratory



Fruit flies already are adapting to climate change

better adapted populations or species may take hold in these new territories.

Of course, the natural selection process for new species or newly adapted populations is not easy. Some species may not survive this process, but those that do will be better adapted to the new conditions.

## DISEASE VECTORS may be the VICTORS

Unfortunately, some of the species likely to increase with a warming climate are flies and mosquitoes that transmit diseases. These species also may benefit from weather extremes and disasters.

Fly and mosquito species have relatively short life cycles and can produce many generations during their active season. Coupled with a high reproductive rate — with each female having many offspring in each generation — these pest populations will be well prepared to take advantage of and adapt to a changing climate.

Evidence of these genetic changes to fly populations has already been reported. Changes in climate have already affected pests we are dealing with today. For example, in the fruit fly *Drosophila subobscura*, the genetic composition of fly populations is responding to recent climate change. Changes in their chromosomes seem to provide the fruit flies with protection against warmer temperatures.

Filth-breeding and other flies are likely to take advantage of disasters brought about by a changing climate. As the climate changes, weather conditions we consider abnormal now are likely to become more frequent, or more normal. Extreme weather events will also become more common. That may mean more floods and more severe ones, along with more hurricanes and other tropical events affecting greater areas.

With these tropical events we may have widespread destruction of buildings, lots of animal carcasses, destroyed vegetation, and exposed garbage and sewage

Photos below: Fly, mosquito and termite populations stand to adapt and benefit from extreme climate conditions to come.



Blue bottle fly: J.J. Harrison



Asian tiger mosquito: James Gathany, CDC



Formosan termites: Scott Bauer, USDA-ARS

that can serve for proliferation of flies. So flies may benefit from extreme climate due to:

- Availability of food (decomposing plants, animals)
- Suitable breeding habitats
- Warm climate
- Expansion of geographic range.

**T**HE ACCUMULATED water will also offer excellent opportunity for mosquito development. Masses of mosquitoes will encounter a large number of humans who cannot necessarily protect themselves from the large populations of hungry mosquitoes.

Because mosquitoes directly transmit disease organisms, these diseases will find ample opportunities to inflict great suffering to the human population.

## TERMITES could THRIVE

But it is not just flies and mosquitoes that may take advantage of climate-related disasters. Termites may also take advantage of the many trees killed during storms and greatly increase their populations. This effect may not be immediately clear, since the termites will be working under the cover of soil or destroyed vegetation. The resulting increased termite populations may target our buildings later.

## PEST PROS and CLIMATE CHANGE

So, is there anything we can do to prepare the industry for these potential risks? Individually, we all can take steps to minimize any potential effect we may have in causing a warming trend in climate. Take a look at your routes, the products you use, and your procedures. Perhaps you can find a few ways to be more efficient, use less fuel, or switch to different energy source.

As an industry, pest management professionals can take steps to minimize any potential effects their activities may contribute to accelerating climate change. Think about any potential action that may benefit the survival of pests or the effects these pests have on human activity.

As you inspect a structure for pest points of entry, you may want to point out to your clients that fixing entry points may also make the structure more energy efficient. If you choose to use applications that require less water, you may save on fuel. These and others are small changes that may lead to a “Gator good,” to use UF’s campaign phrase.

And remember, if an action ends up causing pest populations to increase, it is probably not the right step! **PP**

---

Roberto Pereira is Research Scientist and Philip Koehler is Endowed Professor at UF/IFAS Entomology and Nematology Department.

# Lobate Lac Scale

Riten Gosai

**A** SPECIES of scale insect new to Florida is potentially one of the most devastating pests of trees and shrubs in the state's history.

Lobate lac scale, *Paratachardina pseudolobata*, was found for the first time in Florida in August 1999 by personnel of the Florida Department of Agriculture and Consumer Services, Division of Plant Industry. Identification of the species as *P. lobata* by Avas Hamon of DPI was confirmed by D.R. Miller of the Systematic Entomology Laboratory, U.S. Department of Agriculture, Beltsville, Md.

Further research by Kondo and Gullan determined that the Florida insect was not consistent with *P. lobata*, and the scientific name was updated to *P. pseudolobata* in 2007.

The first record was on a hibiscus, *Hibiscus rosa-sinensis*, in the town of Davie. The plant was destroyed by DPI personnel. Plants in the vicinity of this infested hibiscus were inspected without finding lobate lac scale. However, the species was found again in 2000 on a Benjamin fig, *Ficus benjamina*, in Davie, on cocoplum, *Chrysobalanus icaco*, in Weston, and on cocoplum at two sites in Miami.

In 2001, the scale insect species was found on 11 sites in Broward County and six sites in Miami-Dade County. In December 2001, DPI inspectors found lobate lac scale in Lake Worth. As of October 2002, lobate lac scale was recorded at sites from Lake Worth to Homestead.

In 2006, UF/IFAS researchers reported lobate lac scale in Alachua, Broward, Collier, Hendry, Indian River, Lee, Martin, Miami-Dade, Monroe, Palm Beach, and St. Lucie counties. In 2008, the insect was reported as "distributed in virtually all counties of southern Florida."

## DESCRIPTION and BIOLOGY

The mature females of lobate lac scale are about 1.5 to 2 mm long and about the same width. The body has two pairs of prominent lobes. To the practiced eye, this scale insect's x-shaped appearance is discernable even without magnification. The scale covering is extremely hard, brittle, glossy, and dark reddish brown, but often appears dull and black due to a coating of sooty mold.

The first instars, or crawlers, are elongate-oval, deep red, and about 0.2 mm long. The

Article adapted from three UF/IFAS publications about lobate lac scale:

EDIS and Featured Creatures documents by F.W. Howard, Robert Pemberton, Avas Hamon, Greg S. Hodges, Bryan Steinberg, Catharine M. Mannion, David McLean, and Jeanette Wofford

Tropical Research and Education Center fact sheet by Catharine Mannion, Kim Gabel, Adrian Hunsberger, Eileen Buss, and Lyle Buss



Adult females, left, and first instar crawler of lobate lac scale.



Walter Nagamine, Hawaii Dept. of Agriculture

Lobate lac scale typical infestation on a small woody branch. Each female is protected by a sturdy, lobed cover.



Lyle J. Brass, UF/IFAS

characteristic lobate pattern develops in the second instar. The second-instar female presumably molts to the adult female as in other scale insects. Males of this species have not been observed in Florida.

Since the mature females of scale insects are wingless, they play no role in dispersal of populations to occupy new host plants. Scale insects rely mostly on passive dispersal of the crawler stage via air currents. Phoresis — being carried by birds and other animals — may be of some importance in some species. Undoubtedly, movement of infested host plants from one locality to the next is a key factor in spreading scale insect pests in urban areas.

#### The LAC SCALE FAMILY

Lobate lac scale belongs to the lac scale family, Kerriidae, the best-known species of which is the true lac scale insect, *Kerria lacca lacca*.

The testa or hard cover of the true lac scale insect has been utilized for centuries for making lacquer and similar products. However, most species of the family, including *P. pseudolobata*, do not produce any material of known commercial value.

The scientific name *lobata* refers to the four prominent projections, or lobes, of this scale.

#### EFFECTS on HOST PLANTS

Lobate lac scale has been found mostly on woody plants. It infests the woody portions of twigs and small branches and, less frequently, main stems of usually less than 2 cm in diameter, but usually not branches or main stems of more than 2 cm in diameter. It has not been observed on foliage.

On highly susceptible hosts, the scale insects are crowded, forming a contiguous mass that appears as a dark, lumpy crust. On wax myrtle, *Myrica cerifera* — a highly susceptible host — up to 42 mature females have been counted per 1 cm segment of twig. Sooty mold covers the branches, the insects themselves, and occurs in patches on the foliage. Dense infestations are associated with branch dieback of some plant species, and in severe cases, highly infested shrubs and small trees have died. Wax myrtle is especially prone to become heavily infested and die from the effects of lobate lac scale. Some plant species appear to tolerate dense infestations, but this may be illusory, as the long-term effects of such infestations are not yet known.

*Continued on Page 14*

## DON'T ENCASE THEM... KILL THEM



**Stop the Bites...  
...Prevent the Infestation**

- Starts working within 10 minutes
- Provides Prevention & Control for 2 years
- Easy to Install

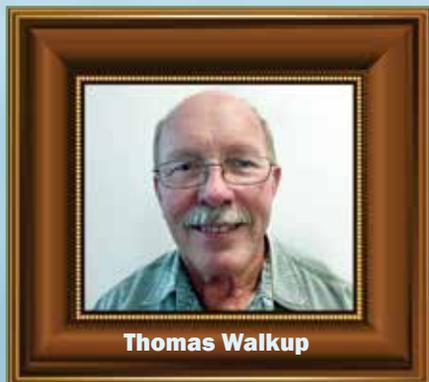
 **ActiveGuard® Mattress Liners**

[www.allergytechnologies.com](http://www.allergytechnologies.com) • (866) 978-6288

**Name:** Thomas Walkup

**Hometown:** I was born and raised in Orlando, Fla., where I still reside today. I have seen a once-nice small town grow, after Disney arrived, to a large town with big-city problems.

**About your company:** Walkup Exterminating was started by my father in 1969. He had previously been with Orkin for a good many years. Graduating from college in 1972, I became a full-time employee of Walkup Exterminating. I started off doing termite work, which included fumigations, pretreats and sub termite work. We had two acres of property on the north side of downtown Orlando that was northwest of the local newspaper, the *Orlando Sentinel*, which was owned by the *Chicago Tribune*. We had underground fuel tanks and decided to have them removed, at



Thomas Walkup

which time trichloroethylene was discovered under our property. This wasn't a product in pesticides but was used to clean printing presses. It was a 14-year fight with the *Orlando Sentinel*, which never admitted pouring the TCE down the sewer system. In the end the *Sentinel* paid for 60 percent of the cleanup, the city of Orlando 20 percent, and state 29 percent. It was a hard couple of years when the local news was saying you polluted a plume of contamination about 2,000 feet by 900 feet. When my father passed away in 1981, my brother Sam and I continued running the business until 2000, when we sold the operation. After this, I had the pleasure of working with Florida Pest Control for 15 years.

**First paying job and what you learned from it:** My first few jobs were busing tables at a pancake house, making Plexiglas boat windshields, and summers working on a fumigation crew in Palm Beach for Orkin. It didn't take long to realize this was a hard way to make a living.

**First break in the pest business:** Starting with my father I had a lot of opportunities and learned much more about the industry.



**Best piece of business advice you received:** Treat everyone fairly, as you like to be treated. People pay a lot for our services and expect the best.  
**What would you tell someone new to the pest business?** Pest control offers a lot of opportunities for people starting out. I would advise them to be active in FPMA because they will receive a world of help and information.

**Where can we find you when you are not at the office?** I retired October 2, 2017, and have been traveling some to see our son and his family in Maine and enjoying our daughter's family in Orlando (she just had twins in March!). I also spend more time at our place in Oak Hill on Mosquito Lagoon and will make time to go hunting in Georgia more.

**What is the most important trait you look for when hiring:** Integrity and a desire for a career. Young people change jobs so much, but our business needs to have dedicated people who enjoy their work and don't just come for a paycheck. **PP**

## OPPORTUNITIES FOR EXCELLENCE

### ESTABLISHED PEST CONTROL COMPANY

#### NOW ACQUIRING

McCall Service is growing and we are interested in acquiring your established pest control business. It's a perfect time to sell, and there's no better team to join than ours.

#### NOW SEEKING Managers

- ▶ Comprehensive Compensation Plan that Includes Quarterly and Annual Bonus Opportunities
- ▶ Company Paid Insurance and Company Vehicle

#### Sales Professionals

- ▶ Salary Plus Commissions with Dedicated Support Staff
- ▶ Company Vehicle

#### Service Professionals

- ▶ Competitive Pay Plan with Paid Training
- ▶ Complete Benefits Package



For information on joining our growing family call *Bryan Cooksey*



(904) 301-0026  
mccallservice.com

Sooty mold caused by lobate lac scale on mangrove. This scale insect infests more than 300 woody plant species in Florida.



Stephanie Iba

Lobate Lac Scale, continued from Page 12

**HOST RANGE**

Lobate lac scale has been found on woody plants, on one coniferous species — southern red cedar, *Juniperus silicicola* — and on a palm, *Phoenix roebelenii*. As of June 2006, 307 species of woody plants had been determined to be hosts of *Paratachardina pseudolobata* in Florida, including 83 plant species native to Florida.

Most of the exotic host plants are grown as ornamental shrubs or trees, or as fruit trees. Some of these are extremely important in the urban landscape as shade trees, specimen trees, or hedges. Some plant families, notably Fabaceae, Myrtaceae and Moraceae are especially well represented by species that serve as hosts, but this may be related to their abundance in the landscape or other biases. Plants at different sites have been exposed to infestations for different periods, and infestation levels are highly variable.

Certain plant species, listed below, appear to be highly susceptible to lobate lac scale, including certain natives, popular exotic ornamentals, and fruit trees.

**Natives**

- Wax myrtle, *Myrica cerifera*
- Cocoplum, *Chrysobalanus icaco*
- Buttonwood, *Conocarpus erectus*
- Strangler fig, *Ficus aurea*
- Myrsine, *Myrsine guianensis*
- Red bay, *Persea borbonia*
- Wild coffee, *Psychotria nervosa*

**Popular exotic ornamentals**

- Black olive, *Bucida buceras*
- Indian laurel, *Ficus microcarpa*
- Benjamin fig, *F. benjamina*

**Fruit trees**

- Lychee, *Litchi chinensis*
- Mango, *Mangifera indica*
- Star fruit, *Averrhoa carambola*

**Bill Barrs,**  
Regional  
Sales Rep

approved for indoor and outdoor applications

broad-spectrum control

use as a crack-and-crevice or an indoor broadcast spray

**THE AEROSOL THAT EXTENDS YOUR REACH.**

Active Ingredients That Do More.

Zenprox® Xtend Aerosol is the most recent premium performer from Zoëcon. With five active ingredients, Zenprox® Xtend Aerosol quickly kills and controls more than 25 labeled adult insects. Flexible delivery options help pest management professionals extend the reach of insect control protocols.

**Contact your local sales representative Bill Barrs at 813-220-7165 or visit [ZoeconFieldGuide.com](http://ZoeconFieldGuide.com) to learn more.**

Zoecon.com

Zenprox and Zoëcon with design are registered trademarks of Wellmark International. Central Life Sciences with design is a registered trademark of Central Garden & Pet Company. ©2018 Wellmark International.

## MANAGEMENT

This pest is difficult to manage for several reasons. Typically, initial lobate lac scale infestations go unnoticed for a long time, especially if they infest natural areas. They attack a wide variety of plants and locations. The thick, resinous scale covering provides protection. Furthermore, there appears to be a lack of natural enemies.

Landscape management pros can monitor highly susceptible plants on a regular basis. The use of horticultural oil applied to the branches and twigs can effectively manage populations in areas of low scale populations and reduce the spread to other plants.

Depending on the level of infestation and weather conditions, oil applications may need to be applied every seven to 10 days for four to six weeks.

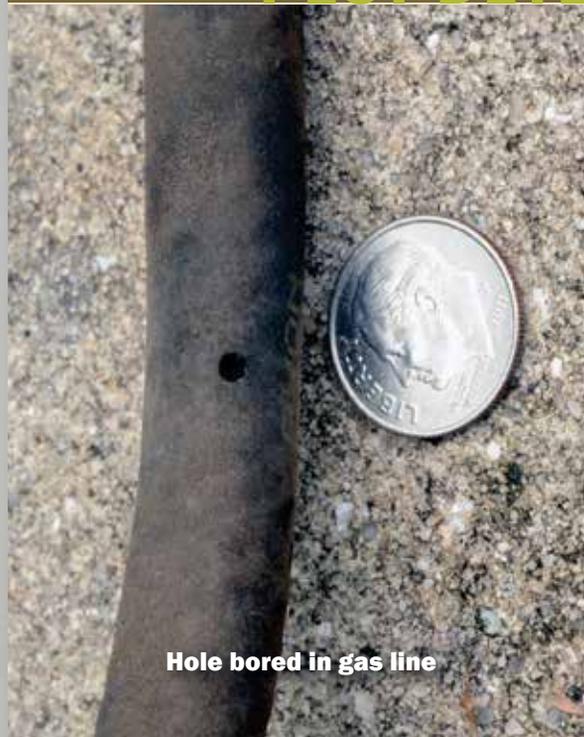
Although some plants may be able to tolerate this insect, it is important to control it to keep it from spreading to other, more susceptible, plants. If the problem persists, imidacloprid will provide some control of this pest. The commercial landscaper may consider using Merit or Allectus, a combination of imidacloprid and pyrethroid.

In the nursery, it may be necessary to use a systemic insecticide for severe infestations. Although not all products have been tested, the neonicotinoid insecticides such as imidacloprid (Marathon), acetamiprid (TriStar), dinotefuran (Safari), or thiamethoxam (Flagship) may provide some control.

There is also some evidence that pyrethroids such as bifenthrin (Talstar) may also help control this pest. Products such as Discus that contain both a neonicotinoid and a pyrethroid may be a good option. **PP**

---

*F.W. Howard, UF/IFAS Ft. Lauderdale Research and Education Center, Robert Pemberton, USDA, Avas Hamon, Division of Plant Industry, Greg S. Hodges, Division of Plant Industry, Bryan Steinberg, University of Florida, Catharine M. Mannion, UF/IFAS Tropical Research and Education Center, David McLean, Broward Community College and Nova Southeastern University, Jeanette Wofford, City of Cooper City, Fla., Kim Gabel, UF/IFAS Monroe County Extension Office, Adrian Hunsberger, UF/IFAS Miami-Dade County Extension Office, Eileen Buss and Lyle Buss, UF/IFAS Entomology and Nematology Department.*



Hole bored in gas line



Camphor shot borer

Durham Field Office – Forest Health Protection



Holes bored in plastic gas can

Rob Korn

Photo above by Lyle J. Buss.

## Gas Can Borer Revisited

Lyle J. Buss

**I**N EARLY JUNE, a man called me about a problem with his riding lawn mower. After starting the engine, he noticed a thin stream of gas shooting out a couple feet from the mower. When he looked closer, he found four holes in the rubber fuel line, with a beetle still inside one of the holes.

If this story sounds familiar, then you have a good memory! Three years ago, we alerted *PestPro* readers to a beetle that was making holes in plastic gas cans. After getting more reports from north and central Florida this spring, we thought it would be good to remind everyone about this destructive beetle.

The beetle is called the camphor shot borer, with a scientific name of *Cnestus mutilatus*. It is an ambrosia beetle, so its normal habit is to bore into trees. It mostly attacks hardwoods, and one of its favorite hosts is sweetgum. As a tree pest, it isn't very significant, since it mainly attacks trees that are dying or recently deceased. More concerning is its habit of boring into containers that hold gasoline.

The substance attracting the beetles is ethanol, which is a chemical emitted by dying trees. It's also a common additive in gasoline, so the confused beetles seem to detect the ethanol in the gas and think they are boring into a tree. They end up damaging plastic and rubber materials while tunneling into spare gas cans, gas tanks on power equipment, and fuel lines. I have even heard of them starting to bore into a tire, probably because gas had been spilled on it.

These beetles are obviously creating some safety hazards. If your company uses equipment with small engines, alert your employees so they can regularly inspect their equipment and watch for gas leaks. Lawn equipment isn't the only target — watch your boats as well!

Storing equipment and gas cans in a shed or under a tarp may help protect them from the beetles. Use metal gas cans when possible. Keep gas containers clean, as spilled gas may attract the beetles. The beetles are active from spring to fall, but seem to be most common in the spring. **PP**

---

*Lyle J. Buss, Scientific Photographer, manages the Insect Identification Lab at the UF/IFAS Entomology and Nematology Department.*



**A white-throated kingbird sits atop a capybara in the world's biggest wetland, the Pantanal in Brazil**

What animal is related to the guinea pig, runs fast as a horse, and is the size of a Saint Bernard? Capybara!

# The Capybara Comes to Florida

William H. Kern, Jr.

**T**HE CAPYBARA, *Hydrochaeris hydrochaeris*, is a very large, semiaquatic rodent from South America. It is related to guinea pigs and agoutis, but is in its own unique family, the Hydrochaeridae.

The modern South American species was introduced to the wilds of Florida in the 1990s. The largest introduction was due to an accidental escape from a private collection in northern Alachua County. A tree damaged a fence during a storm, allowing about 21 animals to escape. A similar escape happened from the Jacksonville Zoo, but those animals were all recaptured.

Long ago there was a giant capybara that made its way into Florida after the formation of the Panama land bridge. It reached 150 pounds and was likely semiaquatic like its modern relatives. Ancient capybaras were found in Florida during the Pliocene and Pleistocene epochs from 5 million years ago until they were extirpated 5,000 to 10,000 years ago.

### Description

The capybara is the world's largest living rodent, with adults reaching 70 to 90 pounds. Like the guinea pigs that people often keep as pets, capybaras are tailless. They have a large, blocky head with small eyes and ears



Brian Falk, USGS

*No other Florida mammal has the combination of characters seen in the capybara: large, stocky and tailless, with coarse brownish fur. Photo taken at Chalalán Eco Lodge, Madidi National Park, Bolivia, by Rodrigo Mariaca*



**Fossil jaw with teeth**



**Guinea pigs**



Photos at upper left and bottom by Charles J. Sharp

near the top so they can see and hear danger with most of the body submerged and hidden underwater.

Their coat is coarse and reddish to dark brown. Their front feet have four toes, and the hind feet have three toes. The short toes are widely splayed, with a web of skin between them. This allows them to move through mud without getting stuck.

### Habitat and Food Habits

Capybaras prefer wetland habitats or areas adjacent to wetland habitats. River flood plains, ponds, lakes, marshes, swamps, and canals are their core habitats.

They forage well away from these areas looking for food. They are entirely herbivorous, feeding on aquatic and emergent plants and moving into uplands to feed as well.

They may cause damage to crops such as corn, rice, sugar cane, soybeans, peanuts, garden crops, and hay fields and pastures. They likely cause damage to landscapes and nursery production. When not hunted, capybaras quickly adapt to tolerate human activity.



Masaki Tokutomi

### Reproduction

The normal litter size of capybaras is four pups, but can range from one to eight. Photos showing a female surrounded by a dozen or more pups is because a lactating female will nurse any pups from her herd.

### Florida Distribution

The distribution of sightings of capybaras in Florida is shown in the map at bottom left. The light green indicates counties with a single sighting, while darker green indicates counties with two to 10 sightings. The region between the Santa Fe and Suwannee rivers has the most sightings.

### Control

Capybaras are active in late afternoon to well after dark and then again before dawn until mid-morning. They tend to rest during the midday and the middle of the night.

During cool weather, capybaras are likely more diurnal. Their daytime activity makes shooting a reasonable control option. Use firearms that you would normally choose for deer or hogs. This will not be an option in suburban or residential areas.

Live trapping requires a very large trap with the floor completely covered. They will be unwilling to enter a trap if they feel the wire of the bottom of the trap. Bait the trap with carrots, apples or sweet corn.

Snares may be a legal option on private land in Florida with the property owner's permission. Use standard locking snares for neck capture or leg snares. Remember that all traps must be checked at least once every 24 hours.

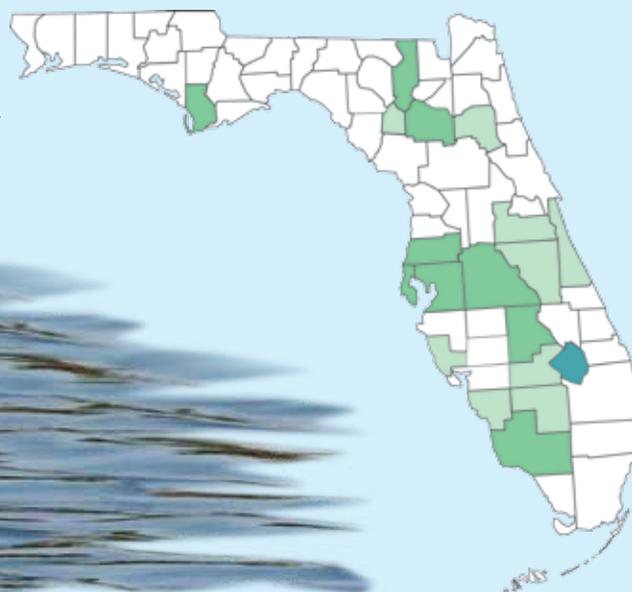
The meat of capybara is highly prized in South America, where they are even ranched for meat and hides. Ranching capybaras is considered an economical way to conserve wetland habitats. **PP**

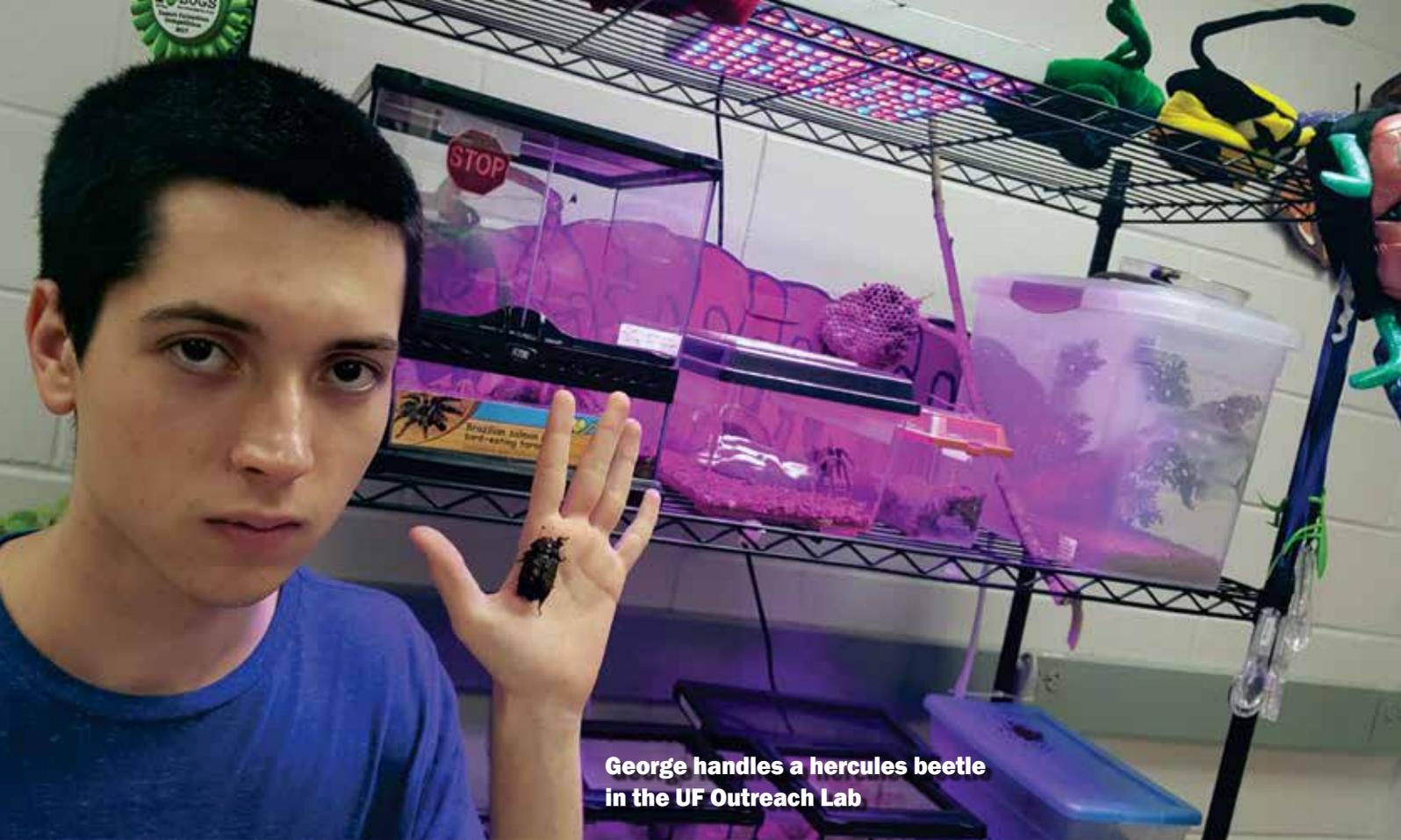
*William H. Kern, Jr. UF/IFAS Entomology and Nematology Department, Gainesville, Florida.*

*Photo below: A capybara crosses a golf course in Rio de Janeiro, Brazil. This could soon be a common scene in Florida. Photo by Scott Halleran*



*The distribution of sightings of capybaras in Florida. The light green indicates counties with a single sighting, while darker green indicates counties with two to 10 sightings.*





**George handles a hercules beetle in the UF Outreach Lab**

*A born entomologist, world traveler, chemistry and math student, and dedicated Gator. In this unusual Q&A, George Roman recalls his past, plans his future, and celebrates his Romanian roots.*

# George Roman gets to the point



## **Where are you from?**

I was born in Romania in 1999. My parents decided to move to Florida in 2000, before I was even a year old. Romania is a former Communist nation, and having grown up in poor conditions, my parents didn't want me to have the same upbringing.

I think the first place we lived was Hollywood, Fla., but the city I remember best is Davie. Davie is where I went to school for grades one through 12, and it's where I made all my friends.

## **When did your interest in entomology begin?**

I guess I would have to say I was born liking bugs. My parents told me a story about how when my dad would come home, tired after working all day as a food delivery

man, I'd immediately want him to take me outside so that I could make sure all the spiders around our apartment were still present and accounted for.

Whenever we would have book fairs, I'd always spend my time looking at the ones with bugs in them, and I even bought a few. My favorite book had a stinkbug in resin and a scratch-and-sniff sticker.

When I was dual-enrolled at Broward College, the campus was full of golden silk spiders. I thought they were beautiful, so I looked up some videos on how to handle them and tried it myself.

When I was attending orientation at UF, I encountered Dr. Rebecca Baldwin. I visited her once the semester began, and we hit it off. I joined the UF

Entomology Club, and now I'm the club secretary. It's a lot of fun! We go on collecting trips, host outreach events, and do all kinds of fun bug stuff.

## **What are you studying at the University of Florida?**

My current major is chemistry. Initially it was biochemistry, but I realized that the chemistry coursework gets into more mathematics and deep explanations of why elements and chemicals behave the way they do. In addition to bugs, I also love math — I'm planning on picking up a second major in mathematics.

I plan on going to graduate school immediately after getting my bachelor's degree. Whether I go into mathematics or chemistry



is something I'll have to see as time goes on. I may even get a degree in each if I have enough time and ability.

### Have you ever gone back to Romania?

I have gone a couple of times to visit family. Romania has some beautiful scenery and great cities, but they've still got some catching up to do. A lot of infrastructure needs to be built, development needs to take place, that kind of stuff.

On my most recent trip back, I visited an ancient salt mine called Salina Turda. It's incredible to think about the effort that went into mining out the vast caverns inside. The biggest room was something like 13 stories high and had a Ferris wheel inside.

I also went to see Castle Bran, the castle of the infamous Vlad the Impaler. It was smaller than I expected, but I got to see a bunch of cool weapons and armor. I like to think I have a part of him and my heritage with me when I'm impaling insects for my collection.

### What do you do outside of classes?

Mostly I study for my classes. Totally unrelated to classes, I work for Dr. Baldwin. I'm currently working on restoring some old pest-related continuing education units. They stopped functioning for whatever reason, so I'm updating them into newer file formats so they can be played, and sprucing them up a little bit.

I also volunteer in the DiGennaro lab at UF's

Department of Entomology and Nematology. I'm working with a graduate student on a project to sequence a gene in bell peppers that we think provides resistance to certain nematodes. We've made some progress and hit a few snags, but I've had a great time so far. This is my first research experience and it has definitely confirmed that I want to do research as a career.

### What kind of research are you interested in?

I definitely know I want to do something involving biochemistry, but there's so much out there that I can't narrow it down much further. Right now, I'm interested in molecular genetics: Modifying crops to grow stronger and more nutritious, engineering plants that soak up more carbon dioxide from the atmosphere, or creating bacteria that can produce certain medicines are all ideas that fascinate me.

I plan on working in other labs as an undergraduate, and my current searching is in the chemistry department. In the DiGennaro lab, we're dealing with science on the larger side of the microscopic world. I want some experience on the smaller side as well, down to individual molecules and atoms.

### Do you plan to do research at an academic institute, or in the private sector?

Honestly, wherever seems best. I think that academic research allows more freedom in researching what interests you, but it's not always easy to get funding; in private research, I'd imagine it's easier to get money,

but companies will mainly research what makes money. If my interests align with what gets funding, then everything will be wonderful, but in the meantime, I'll just have to keep my ears open.

### Do you have any plans besides research and graduate school?

I'm actually interested in becoming a professor. Funnily enough, I would rather teach mathematics than chemistry, but I'd rather research chemistry than mathematics. Ideally I could do both, though probably not at the same time. It's a long ways away, so I'm not too worried about it now; I just as well might want to research mathematics and/or teach chemistry.

Wherever I end up, I want to stay at the level of university or higher. Our nation needs great primary school teachers, but those jobs require the patience of a saint, and I do not think I have that.

### How do you spend your time when school isn't in session?

In the summer and winter break, I often go on vacations with my parents. We always go to Europe or to other states.

In the US, we love to visit national parks. My favorite has got to be Yellowstone, because it's almost like another planet. The sulfurous pools, the smells, and the landscape are all so different than what you'd normally see. The bison and other wildlife are incredible, and the whole park is just downright cool.

*Continued on page 34*



**Wrangling a scorpion**

# 2018 Vertebrate Pest Management School: Tentative Schedule



This three-day training program will provide the most current regulations, materials, and techniques for managing nuisance wildlife situations and invasive pest vertebrates. It will include indoor classes and outdoor field exercises. Registration fee will be \$300 for all three days or \$150 for a single day's attendance. Lunch is provided each day.

For more information, contact:  
Dr. William H. Kern, Jr.  
Associate Professor  
Entomology and Nematology  
Dept.  
Ft. Lauderdale REC, UF/IFAS  
3205 College Ave.  
Davie, FL 33314  
954-577-6329  
whk@ufl.edu

## Monday, August 20, 2018

### Rodent Control

- 8:00 Registration
- 8:30 Welcome and Introductions
- 9:00 Commensal Rodent Identification and Biology — Kern
- 9:45 Break
- 10:00 Rules and Laws Related to Commensal Rodent Control by Certified Operators vs. Nuisance Wildlife Trappers — FDACS Bureau of Inspection and Incident Response
- 11:00 Effective Exclusion Techniques
- 12:00 Lunch
- 1:00 Effective Traps and Trapping Strategies for Commensal Rodents
- 2:00 Rodenticide Toxicology, Mode of Action, Formulations, and Resistance
- 2:45 Break
- 3:00 Best Management Practices for Rodenticide Application (Baits, Tracking Powders, Bait Stations)
- 4:00 Control of Native Rodents in Agriculture and Landscapes
- 4:30 Quiz

## Tuesday, August 21, 2018

### Bird Control

- 8:00 Registration
- 8:30 Birds Nesting or Roosting on Buildings and Their Legal Status
- 9:45 Break
- 10:00 Techniques for Preventing Birds from Entering Buildings
- 11:00 Harassment Techniques to Move Vulture Roosts — USDA Wildlife Services
- 12:00 Lunch
- 1:00 Safe use of Pest Control Pyrotechnics and Explosive Pest Control Devices with Demonstration — USDA WS and ATF
- 2:00 Management of Predatory Birds in Aquaculture Facilities
- 2:45 Break
- 3:00 Management of Crop Depredation by Birds
- 3:30 Use of Drones to Deter Crop Depredation by Birds
- 4:00 Avicides and Chemosterilents for Nuisance Bird Management
- 4:45 Quiz

## Wednesday August 22, 2018

- 8:00 Registration
- 8:30 Suburban Nuisance Wildlife — Mammals Identification and Biology Raccoon, Opossum, Squirrels, Armadillo
- 9:15 Suburban Nuisance Wildlife — Exclusion and Live-Trapping Techniques
- 10:00 Break
- 10:15 Legal Traps for Florida and the Steel Trap Permit — FWC
- 11:00 Gun and Light at Night Permit: Uses and Limitations — FWC
- 12:00 Lunch
- 1:00 Structure-Inhabiting Bats: Identification and Biology — Kern
- 2:00 Worker Safety Regarding Rabies and Vaccinations — TBA
- 2:30 Break
- 3:00 Bat Exclusion Techniques — Kern
- 4:00 Dealing with Customer Health Concerns Regarding Bats — Kern
- 4:45 Quiz

**Protecta EVO LANDSCAPE WEIGHTED**

**NEW WEIGHTED STATION**

**THE MOST REALISTIC BAIT STATION FOR SENSITIVE ACCOUNTS, NOW EVEN FASTER**

**Bell LABORATORIES, INC.**

THE WORLD LEADER IN RODENT CONTROL TECHNOLOGY®  
Madison, WI 53704 USA • [www.belllabs.com](http://www.belllabs.com)



Crabgrass

# Summer Grass Weed GUIDE

Erin Harlow

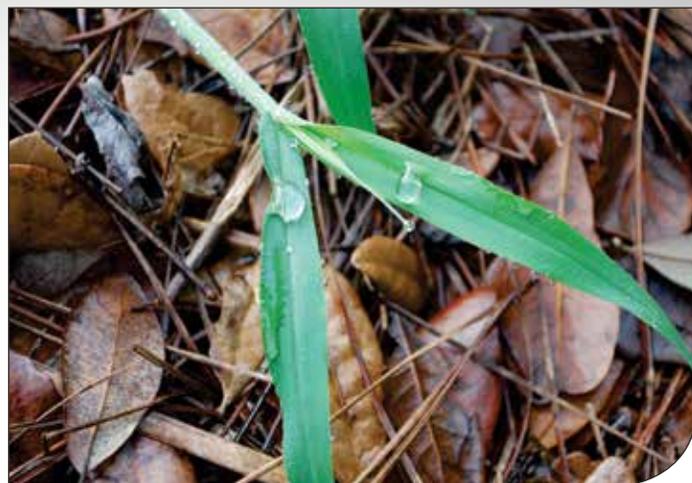
**S**UMMER heat and rain bring an abundance of weeds in landscapes and lawns. Grass and grasslike weeds can be some of the most difficult weeds to identify in the landscape. Control is also difficult depending on the type of turfgrass and the limited number of chemicals available.

Grasses are monocots, characterized by parallel veins and a fibrous root system. Parallel venation refers to the pattern of the veins on a leaf blade that run lengthwise, in the same direction as the midvein.

The grasses discussed in this article are either summer annuals or year-round perennials. Because control is so difficult, identification is important to determine if there are control options.

To help with identification, let the grass produce a seedhead. Because most of these grassy weeds reproduce by seeds, preemergent herbicides applied before they germinate will provide the most success.

This article will detail a few grasses and grasslike weeds that are commonly found in a lawn or landscape.



## Crabgrass *Digitaria* spp.

There are six different species of crabgrass that can be found in Florida: India (*D. longiflora*), blanket (*D. serotina*), southern (*D. ciliaris*), large (*D. sanguinalis*), tropical (*D. bicornis*) and smooth (*D. ischaemum*).

Crabgrass leaf blades can vary in size depending on the species. India and blanket both have short leaves with hair on the leaves of blanket crabgrass. All crabgrass germinates in the spring and is mat forming.

Maintaining healthy turf is the best way to prevent crabgrass. Applying a preemergent herbicide application is also an option before the grass germinates in the spring. There are only a handful of products for use in St. Augustinegrass. If crabgrass is treated before the three-leaf stage, then thiencazone+iodos, ulfuron+dicamba, or dithiopyr are options.

## Dallisgrass *Paspalum dilatatum*

If you have a large, clumping grass that grows faster than the turf after it is mowed, then it may be dallisgrass.

This creeping perennial spreads from thick rhizomes and seeds. It is a grayish-green plant with a distinct midvein that can help distinguish it from crabgrass. The leaves are fairly large at 1/4 to 1/2 inch wide. The seedheads are large and can be several feet tall if not mowed. The seedheads have dark fringe and several spikelets.

Dallisgrass may be controlled with a few postemergent products, but as with all grasses it can be difficult, and better control will be gained when the plants are smaller. Sulfonylurea herbicides such as metsulfuron-methyl, sulfosulfuron, and mixes will provide the best options.

*Continued*



Rebekah D. Wallace



◀ **Doveweed**  
***Murdannia nudiflora***

Doveweed is a small, herbaceous plant that looks like grass, but upon inspection it has purple-bluish flowers.

This grasslike weed is difficult to control, but its succulent nature makes it easy to spread by mowers. It also reproduces by seeds. It germinates in the spring and is considered a summer annual.

Doveweed is best controlled with a preemergent program. Some products that include the active ingredients 2,4-D, dicamba, thiencarbazone and iodosulfuron, and metsulfuron–methyl may be an option for postemergent control depending on the turf species and cultivar. St. Augustinegrass tends to be the most sensitive of the turf species to these products, so following the label and applying the correct amount is key.



Terry DelValle

◀ **Torpedograss**  
***Panicum repens***

Torpedograss is a creeping perennial. It mainly reproduces by rhizomes that can be found deep in the soil profile. The leaves are pointed and have a few hairs on the top.

Torpedograss does produce seeds but, unlike the other weeds mentioned, they are not extremely viable in Florida, and preemergent herbicide applications are not very effective against this grass. There are no preemergent herbicides to control torpedograss. Quinclorac can be effective, but can be used only on bermudagrass, seashore paspalum, or zoysiagrass.



◀ **Tropical Signalgrass**  
***Urochloa subquadripara***

Tropical signalgrass is also known as small-flowered alexandergrass. This grass is being spotted across the state and has become a nuisance on sod farms, golf courses, and landscapes.

Tropical signalgrass germinates in warm temperatures when soils reach 77° F. It is a trailing, creeping perennial that roots at the node. The leaf blade is hairy and is 1/3 to 1/2 inch across and up to 3/4 inch long.

A preemergent herbicide program provides the best control. There are no control options for St. Augustinegrass once torpedograss has germinated. **PP**

Lawrence Mudge, Bayer

*Erin Harlow is Commercial Horticulture Agent for UF/IFAS Extension in Duval County. Photos by UF/IFAS unless otherwise noted.*

*EFFECTIVE CONTROL for most grasses and grasslike weeds is dependent on timing. Most are best controlled by preemergent herbicides that have to be applied prior to germination.*

**Detailed control options can be found online —**

**Crabgrass:** <http://edis.ifas.ufl.edu/ep395>

**Dallisgrass:** <https://extension.tennessee.edu/publications/Documents/SP642.pdf>

**Doveweed:** <http://edis.ifas.ufl.edu/ag395>

**Torpedograss:** <http://edis.ifas.ufl.edu/ep387>

**Tropical Signalgrass:** <http://edis.ifas.ufl.edu/ep393>

# Start Winning More New Customers From the Most Profitable Zip Codes

Alain Parcan



**W**EB MARKETING experts have frequently debated the risks and benefits of different forms of marketing. But one thing they all agree on is that when it comes to marketing, targeting the right customers is always a strategy that pays off.

Geo-targeted advertising is the quickest, most measurable way to generate inbound leads from web-savvy consumers in the most profitable zip codes. It's the 2018 term for going after specific customers in the most affluent areas that are closest to your business location. In other words, while your competitors are sinking more and more marketing dollars into their efforts, you'll be using those same dollars but marketing smarter.

## Who wouldn't want to hand-pick the zip codes to work in?

The top pest control business owners know that the best customers reside in certain zip codes, whether they are the ones that are closest to your facilities or contain the highest-paying

customers. Take some time to think about which zip codes would be most important if you could pick them yourself.

There are a few providers that offer geo-targeted advertising, and naturally, each has its set of pros and cons. FPMA educational partner Market Hardware and its team of experts suggest a short list of Facebook and The Weather Channel. Yep — The Weather Channel can in fact provide highly effective web marketing tools. Read on to find out how.

The main benefit to Facebook is its large user base, as well as the ability to target specific behavioral interests, like yard care, patios, and cookouts, for example. Facebook encourages its users to indicate their favorite hobbies, movies, books and more, which allows businesses to customize their ad campaigns around those interests. Users who have indicated that they spend time on yard care are more likely to click on an ad promoting pest extermination or prevention.

It can also be used by anyone, which unfortunately means there is more competition for placement, making your costs higher than marketing with The Weather Channel.

The benefit of marketing with The Weather Channel is that if you're able to work with one of their selected providers — Market Hardware happens to be one — you can target specific zip codes and even take it a step further by incorporating weather elements.

Here are a few creative ways to make it work:

- ✓ Promote preventive services before cold weather hits, when web users might be concerned about pests entering their homes.
- ✓ Promote bee and wasp control services when the weather heats up, as bees start to swarm and people start spending more time outdoors.

Oh, and one more bonus: There is a well known marketing tip that says to always put your brand where your customers are. Before and during severe weather conditions, customers tend to be in their homes and on their electronic devices — usually looking up when those severe conditions are going to end or killing time on Facebook. By placing your ads on platforms like Facebook and The Weather Channel, you can reach their large user bases at the times that matter most.

## Cost to your ad budget

So it all makes sense, but how much will it cost? The ads only cost a few cents each time

they're displayed, so you can set up a monthly budget that works for your business. For some businesses that might be \$500 a month, while others might be willing to spend a few thousand dollars a month.

The only other costs are for designing the ads and setting up the campaign. You'll have to pay a web designer a one-time setup fee, which will likely be a few hundred dollars, and a much smaller ongoing management fee to make sure you're targeting the right keywords on an ongoing basis and going after those specific weather conditions that make the most sense.

## Putting it all together

The best web marketing approach utilizes a comprehensive plan with several different strategies. Allocating your resources properly could help your business become the premier choice in your industry; not doing so might result in one of your competitors adopting that role. Talk to a trusted partner to figure out how you're balancing your services and consider adding geo-targeted ads if you have room in your budget to do so. **PP**

*Alain Parcan, Director of Marketing for Market Hardware, Inc., contributed this article. Alain brings nearly 10 years of experience in educating businesses so they can market themselves more effectively. Market Hardware helps small businesses compete on the web and offers special discounts for professional association members. You can reach Alain's team at 888-381-6925.*

## GEO-TARGETED ADVERTISING:



determining the geolocation of a website visitor and delivering different content to that visitor based on their location.

**PHYSICAL BARRIERS**  
**TO TERMITE ENTRY**  
 PRE-CONSTRUCTION  
 POST-CONSTRUCTION



**Sustainable**

Pretreatment Supplements      Post-construction Treatments



TERM® Sealant Barrier



TERM® Particle Barrier



TERM® All Pest Bath Trap Barrier



Well House application

**Polyguard®**  
 Innovation based. Employee owned. Expect more.

214-515-5000    www.InsectExclusion.com



**Seven Decades Strong  
 and Still Building for  
 the Future**

For over 65 years, Florida Pest Control has been a leader in the state's pest control industry. With a commitment to our customers, our employees and the industry, we are an organization with "old fashioned" values that we have woven into meeting today's ever-changing world.

**So, if you are looking to SELL your pest control operation or JOIN our team as an employee, contact us today and see where the next 65 years might take us – together.**

Visit us @ [Flapest.com](http://Flapest.com) or  
 call 352-376-2661



**You don't reach the 25-year mark on effort alone.**

It takes owners putting their faith in our ability to deliver on promises. It takes fleet managers with high standards and expectations counting on us to keep their business rolling. It takes treating the men and women behind the wheel, whose livelihood depends upon their trucks staying on the road, with respect through open and honest communication. It is because of you, our valued customer, that we have achieved this milestone.

On behalf of all 800 employees working in 16 locations across three states, we thank you for giving us the opportunity to keep you moving.



[NexttranUSA.com](http://NexttranUSA.com)



*The right product is just the beginning.®*



Drive business with  
**UNIVAR**

Get in touch with your local rep and discover how Univar can help you drive business.

Call us at **800-888-4897**  
 or go to **PestWeb.com**

© 2016, Univar USA Inc. All rights reserved. UNIVAR, the hexagon, and other identified trademarks are the property of Univar Inc., Univar USA Inc. or affiliated companies.

# Equipment for BAIT APPLICATION

Philip Koehler and Roberto Pereira

**E**QUIPMENT for pesticide application is specialized for each type of pest control treatment. Pest control operators need to select the best equipment to do a treatment based on the intended pest and the best application method to control it.

The typical applications for pest control are for interior surface, crack and crevice, void treatments, interior baiting, interior space sprays, exterior perimeter treatments, exterior broadcast treatments, residual soil treatments, and exterior baiting.

In addition, application equipment is specialized for the basic forms of pesticides, including baits, liquids, foams, dusts, granules and gases. These tools differentiate a professional applicator from the home gardener and allow a professional treatment to be accomplished.

## BENEFITS of BAIT

Baiting offers many benefits for the pest management industry and the customer. Baiting can provide long residual control and is therefore cost effective. The product can be placed precisely in the target area, providing little or no disruption while making applications. The application process is simple and requires little preparation by the customer. The only equipment needed is a simple applicator.



Bag spreader

## BAIT APPLICATORS

Bait treatment equipment is designed to apply the product as bait stations, liquid baits, gels, or granules. Select the right bait treatment to target a given pest: Rodents, general household insects, or termites.

### Rodent Bait Stations

Rodent bait stations are a major part of a rodent IPM program. Rodent bait in stations provides prevention of rodents that might enter a building from surrounding areas. They also can control an active rodent infestation on the grounds or within the building.

In order for a rodent baiting program to work, rodents need to encounter and enter the bait stations. Also, the rodents need to feed on the bait. Unfortunately, rodents often don't encounter and enter the installed bait stations because of placement or interference of structures or plants. Sometimes rodents don't interact with the stations quickly enough to solve an ongoing rodent issue.

Some of the factors that cause bait station failure are 1) rodent fear of changes to their environment by placing a new rodent station, 2) odors associated with the bait station may make them wary of the bait, or 3) rodent dislike of the location or bait product.



### Insect Bait Arenas

Insect bait arenas are sold with the bait already included in a station. Normally these stations are for cockroach, silverfish and ant control.

These stations are good for placing the maximum amount of bait in close to locations where pests aggregate. Most cracks and crevices are too small to allow their placement within these harborages. Also, customers tend to move these because they are visible and easy to pick up.

### Liquid Bait Stations

Liquid baits are often used for ant control and need to be placed in special equipment so children and pets cannot contact it and so evaporation is reduced. Some pests, like ants, only ingest liquids.



**TRY BAITS:** the modern, greener way to control pests with minimal pesticide active ingredient. Bait treatment provides a low-hazard, low-profile service.



Syringes



### Bait Guns

Bait gels are applied to harborages, cracks and crevices, and voids where pests hide. Most professional applicators use either a bait gun or syringe to apply gel baits.

Metal injectors have a metallic body for a professional appearance, and the best will have way to meter the application so the correct amount of bait is dispensed with each pull of the trigger. Syringes apply bait by depressing the plunger and dispensing the correct amount.

### Granular Bait Applicators

Granular baits are applied with a wide variety of application equipment, depending on the types of application. Some granular baits are sold in shaker containers that dispense bait through small holes.

Inside structures, granular baits can be applied with a bulb duster to voids and insect harborages. Outdoors, rotary spreaders — either handheld or pushed — can be used to make spot or broadcast applications. *Continued*



Manufacturer photos



**In-ground termite bait stations**

**Termite Bait Stations**

Use of a termite baiting system involves the installation of stations in the ground and/or above ground to monitor for termite activity and for delivery of bait. When the bait is inspected and replenished, it provides ongoing prevention and elimination of termite colonies.

Target sites for this termite baiting can include buildings, fences, utility poles, decking, landscape plantings and trees, or other features that could be damaged by termite feeding and foraging activity.

Termite bait stations can be used on the inside or outside of foundation walls of crawl space areas or through access holes made through concrete and asphalt if adequate soil is not accessible and such action is warranted.

Termite baiting programs can be used as a treatment of newly constructed buildings and a means of preventing termite infestation of new structures in Florida, but may not be acceptable in some other states.



**Above-ground termite bait station**

Above-ground baiting may be used to eliminate subterranean termites from buildings. Above-ground baits are placed in bait stations inside termite-infested structures. Target sites for use of this product include interior and exterior surfaces of buildings and crawl spaces, fences, utility poles, decking, landscape decorations, trees, or other features that could be damaged by termite foraging and feeding activity.

Above-ground baits may be installed in both food and nonfood areas of all types of food-handling establishments, i.e., food service, food processing, and food manufacturing establishments. This includes but is not limited to restaurants, grocery stores, bakeries, bottling plants, canneries, meat and poultry processing plants, and grain mills.

The bait station usually consists of a rigid plastic housing containing the bait matrix. A cover allows for internal inspection of the bait station after installation. When attached to the mounting surface, an access area of the bait station lets termites get in to the bait. **PP**

*Philip Koehler is Endowed Professor and Roberto Pereira is Research Scientist at UF/IFAS Entomology and Nematology Department.*

Over 30 Years of Pest Industry Support and Closed Deals.  
Realize Your Vision.

Central FL	Gross \$1.7 million	Midwest	Gross \$2.7 million
FL East Coast	<b>SOLD</b> Gross \$90,000	North GA	<b>SOLD</b> Gross >\$150,000
FL West Coast	<b>SOLD</b> Gross \$2.1 million	FL West Coast	Gross >\$100,000
Central MO	Gross \$350,000	N Georgia	<b>SOLD</b> Gross \$4.4 million
Florida	<b>SOLD</b> Gross \$225,000	Maryland	<b>SOLD</b> Gross \$1.8 million
Central FL	<b>SOLD</b> Gross \$300,000	South FL	Gross \$625,000

Contact us for information about selling your business or to find opportunities

**Rand Hollon      Jay Hollon**  
Brokers ♦ Intermediaries ♦ Consultants

◀ All Conversations are Confidential ▶

Call 800-633-5153 or visit us at  
[www.preferredbusinessbrokers.com](http://www.preferredbusinessbrokers.com)



Liability · Auto · Workers comp · Property · Health & Life

**GREAT SCOT! INSURANCE**

• Specializing in all insurance needs of the PCO. We've been insuring pest control companies for over 20 years.



**DON'T BE BUGGED**

with your insurance program!

Visit us at  
[www.gsiinsurance.com](http://www.gsiinsurance.com)  
12155 Metro Parkway, Ste. 28A  
Ft. Myers, FL 33966-8302

CALL DAN WALL OR ROD WRIGHT  
**800-927-0418**



# STRATEGY and TACTICS:

## A Codependent Relationship Necessary for Success

HARVEY F. GOLDGLANTZ

Strategy and tactics must work in tandem to be successful. Without this synergism; your company cannot achieve its goals. If you have strategy without tactics you have big thinkers and no action. If you have tactics without strategy, you have disorder.

### Creating a Strategy

People often confuse tactics with strategy and vice versa. However, they are distinct and separate entities.

Your strategy identifies and clarifies the broader goals that advance the overall organization. It focuses on the bigger picture — what you need to do to get you where you want to go. Simply put, a strategy is a plan of action or policy designed to achieve a major or overall aim.

To create a successful strategy you must begin by envisioning the end point. Once you know where you want to go, you can figure out how to get there from here.

Strategy is big-picture stuff. Strategy happens when you think about something deeply over a period of time and make a deliberate decision. These deliberate decisions or goals are what drive everything else.

To create a strategy, it is useful to start by asking and answering the following questions:

What do we want to achieve and by when? Why do we want to do that? What do we need to do in order to achieve our desired goals? How do we best support our activities and resources to improve our odds of succeeding? What are the different ways of allocating resources and efforts to achieve our desired results? What external and internal factors could affect our ability to achieve our objectives?

### Developing and Implementing Tactics

Tactics are the means used to help you achieve your strategic intent, utilizing specific resources to achieve sub-goals that support the defined mission. Tactics are the meat and potatoes of the strategy. They are the “doing” aspect that follows the planning. Tactics refer specifically to action.

Tactics need to be evaluated and adjusted constantly based on what is learned along the way. Random tactics without a strategy leads to short-term actions with unpredictable long-term results.

Every tactic needs to deliver on a strategy. “Running ads to grow a Facebook page” is a tactic. But why are you doing it? What purpose does it serve? Once you have more fans, then what? And how does Facebook fit in with everything else?

### The Long and Short of It

Strategic marketing starts with understanding who your customers are and what is important to them. By understanding what’s

important to your target market, you can then put together a strategy that gets more qualified prospects to call and increases your conversion ratios.

The tactical portion of marketing is the execution of your marketing (strategic) plan, such as how you are going to generate leads, placing media, creating marketing tools, and implementing a follow-up system. In other words, it’s the medium in which your message is delivered.

Just like a relationship needs love and commitment to grow and flourish, strategy and tactics need one another to sustain success. **PP**

*Harvey F. Goldglantz is President of Pest Control Marketing Company, Inc., a consulting firm to the pest management industry located in Elkins Park, Pennsylvania. His clients range in size from start-up companies to those with revenues in excess of \$30 million. Goldglantz has been in the pest control industry for more than 40 years. He served three terms on the National Pest Management Association Board of Directors.*

**Let Me Help You Realize Your Potential**

**Business & Marketing Consulting**  
**Exclusively for**  
**The Pest Management Industry**

**Strategic Planning for 2018**  
**Call Today... Grow Tomorrow.**

---



**Harvey Goldglantz**  
**President**  
**Pest Control Marketing Company**  
**Elkins Park, Pennsylvania**  
**Call: (215) 906-9988**  
**E-mail: hgpcmcinc@aol.com**



We create chemistry

# New Fendona™ CS controlled release insecticide means business

Introducing serious perimeter pest control that helps protect your customers and your bottom line. **Fendona CS** controlled release insecticide contains a powerful new active ingredient, alpha-cypermethrin, that's four times more potent than regular cypermethrin. It kills a wide spectrum of arthropod pests fast. Its advanced micro-mesh encapsulation protects the active and ensures broad coverage, making it your premier perimeter pest solution.

To learn more, contact Deidra Cotton, [deidra.cotton@basf.com](mailto:deidra.cotton@basf.com) (Northern Florida) or Herman Giraldo, [herman.giraldo@basf.com](mailto:herman.giraldo@basf.com) (Southern Florida).

Always read and follow label directions.

Fendona is a trademark of BASF. © 2017 BASF Corporation. All rights reserved.

# Pest Control Compliance

THE FLORIDA Department of Agriculture and Consumer Services (FDACS) regulates Florida's structural pest control industry.

## Inspections and Investigations

FDACS conducts routine inspections and for-cause investigations of the pest control industry to ensure the protection of the health, safety and welfare of pest control employees and the general public.

## Case File Review

When violations of Florida's pest control laws are alleged, a case file is evaluated and a case file review summary is prepared to review:

- The alleged violation(s),
- The identity of the suspected violator(s), and
- The type and degree of evidence collected by our investigator.

The files of the suspected violator(s) are reviewed to determine if a record exists of any previous administrative action issued over the last three years, and notations are made on the review summary.

After review, any files with suspected violations are discussed and the proposed administrative sanction is calculated from the enforcement matrix found in Chapter 5E-14, Florida Administrative Code.

## Issuance of an Administrative Complaint Against the Violator

The issuance of an administrative complaint is not taken lightly. Case evidence must be "clear and convincing" and is evaluated for its ability to withstand the scrutiny of a hearing officer or judge.

If an administrative action is warranted, FDACS prepares the "Administrative Complaint and Proposed Settlement Agreement." The administrative complaint is then served on the violator (now known as the respondent).

The administrative complaint will state the basis for the action (a statement of facts that support the stated violations). Enclosed with the complaint will be a "Notice of Rights and Hearing Request" information sheet, which will explain the respondent's rights and provide an area for the respondent to request either an informal or formal administrative proceeding.

## Deadline to Request an Administrative Hearing

A respondent has 21 days from date of receipt of the complaint to accept the proposed settlement agreement or request a hearing.

If the proposed settlement is agreeable, the respondent simply has to execute it (by signing) and comply with its terms.

## Hearing Requests

There are two types of hearings — informal and formal.

### Informal Hearing

If the respondent does not dispute or wish to contest the facts in the administrative complaint, but wishes to object to the agency action, they should choose an informal hearing.

An informal hearing is an informal proceeding before FDACS whereby the respondent will have the opportunity to be represented by counsel. The respondent may present written or oral evidence in opposition to FDACS's proposed action or present a written statement challenging the grounds on which FDACS is justifying its actions.

### Formal Hearing

If the respondent disputes the facts in the administrative complaint, they should choose a formal hearing.

Formal hearings are like nonjury trials and are held before an administrative law judge. At a formal hearing, the respondent will have the opportunity to be represented by counsel, present evidence and argument on all issues involved, conduct cross-examination and submit rebuttal evidence, submit proposed findings of facts and orders, and file exceptions to the administrative law judge's recommended order.

The respondent will ordinarily be required to appear in person at a formal hearing.

## Failure to Respond to an Administrative Complaint

Failure to respond to a properly served administrative complaint will result in FDACS entering a Final Order imposing the maximum penalties as authorized by Florida Law, including revocation of any pest control credentials issued by the department. **PP**

---

*Report by Florida Department of Agriculture and Consumer Services.*

## Commercial Structural Pest Control

For structural pest control — pest control provided to homes or other structures — Florida law requires that each pest control business location must:

- ✓ Be licensed by the Florida Department of Agriculture and Consumer Services (FDACS),
- ✓ Carry the required insurance coverage (\$250,000 per person and \$500,000 per occurrence for bodily injury and \$250,000 per occurrence and \$500,000 in the aggregate for property damage, or a combined single limit coverage of \$500,000 in the aggregate), and
- ✓ Employ full time a Florida-certified operator in charge of the pest control operations of the business location. This operator must be certified in the categories in which the business operates:
  - General Household Pest and Rodent Control,
  - Termite and Other Wood-Destroying Organisms Control,
  - Lawn and Ornamental Pest Control, and/or
  - Fumigation.

**Florida Pest Management Association**  
**PMP Membership Application/Renewal**  
 Your dues payment provides for a joint membership in FPMA and NPMA.



THIS IS A:  RENEWAL  NEW MEMBER APPLICATION

**Active Member (PMP)**

A pest control company actively engaged in the pest control industry in Florida (licensed by appropriate State Agency under Chapter 482, Florida Statutes) is eligible to be an Active Member and is entitled to one voting representative for each registered office or branch.

**Active Member Employees and Branch Offices**

Any firm with an Active membership in the Association, having branches or separate offices has the option of registering any and all branches or separate offices as Active Branch Offices. Active Branch offices have voting privileges and can hold office. The member licensee shall inform the Executive Vice President in writing of the individual's name who will have the voting privileges for the Branch Office(s).

**YOUR INFORMATION:** *(Please complete all fields.)*

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Business Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

County: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Website: \_\_\_\_\_

**Certified in:**  GHP  L&O  Termite  Fumigation

**BRANCH INFORMATION:**

**# of Branches/Offices in Florida:** \_\_\_\_\_

There is no additional fee to list additional branches/offices for mailing privileges. Please attach a list of all branches/offices in Florida, including company name, contact person, address, telephone and email.

<b>JOINT MEMBERSHIP DUES SCHEDULE</b>		
<b>Please circle appropriate category</b>		
<b>Category</b>	<b>Annual Sales Revenue</b>	<b>Dues Amount</b>
A	\$0 - \$50,000	\$149
B	\$50,001 - \$150,000	\$229
C	\$150,001 - \$300,000	\$359
D	\$300,001 - \$450,000	\$459
E	\$450,001 - \$700,000	\$598
F	\$700,001 - \$1,000,000	\$884
G	\$1,000,001 - \$2,500,000	\$1,638
H	\$2,500,001 - \$3,000,000	\$2,949
J	\$3,000,001 - \$4,500,000	\$4,699
K	\$4,500,001 - \$7,000,000	\$5,897
L	\$7,000,001 - \$10,000,000	\$6,989
M	\$10,000,001 - \$15,000,000	\$10,924
N	\$15,000,001 - \$20,000,000	\$12,139
P	\$20,000,001 - \$25,000,000	\$14,574
Q	\$25,000,001 - \$30,000,000	\$16,998
R	\$30,000,001 - \$50,000,000	\$19,418
S	\$50,000,001+	\$21,209

**COMMUNICATION AGREEMENT:** I understand that by providing my mailing address, email, and telephone number, I am consenting to receive communications via these methods from FPMA. I further understand and provide consent that this information will be published in Florida Pest Management Association publications, both online and print.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CODE OF ETHICS:** I would like to join other Florida Pest Management Association professionals, and I agree to adhere to the Association's Code of Ethics (found at [www.flpma.org](http://www.flpma.org)). I understand that membership is not effective until payment is received and official notification has been provided.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

*Dues to FPMA are not deductible as a charitable contribution but may be deductible as an ordinary business expense. A portion of dues, however, is not deductible as an ordinary and necessary business expense to the extent that FPMA engages in lobbying. The non-deductible portion of dues for 2015 was 8.0%..*

**PAYMENT METHOD:**  Check # \_\_\_\_\_  Visa  Master Card  American Express  Discover

Billing Contact Name: \_\_\_\_\_

Billing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Card Number: \_\_\_\_\_ Exp Date (mm/yyyy): \_\_\_\_\_ CVV(V) Code: \_\_\_\_\_

email address for payment confirmation: \_\_\_\_\_

**COMPLETE AND RETURN WITH PAYMENT TO:**  
 Florida Pest Management Association  
 P.O. Box 0294 • Goldenrod, FL 32733-0294  
**Questions?** Contact [info@flpma.org](mailto:info@flpma.org) or (407) 293-8627

# New UF Bee Lab Grand Opening in 2018



Jane Medley

*Photo: Alan Weinberg, a honey industry worker from Wisconsin, and PestPro's Phil Koehler tour the new UF Honey Bee Lab in Gainesville. Large hexagons establish a hive theme near the entrance of the main building.*

**A**FTER YEARS of lobbying and construction, the University of Florida will open a state-of-the-art honey bee research lab this summer.

Its realization was a combined effort by UF, the state of Florida and the state's beekeepers.

"Beekeepers have come out of everywhere to support this," said Jamie Ellis, assistant professor of entomology at UF.

Tony Hogg, former president of the Florida State Beekeepers Association, said the association had realized the state's climate and the UF entomology department brought bee researchers and beekeepers from around the country and around the world.

"We really need to have a world-class honey bee research facility in the state of Florida," Hogg said.

For three years, beekeepers lobbied for the state legislature to approve funding to create a bee research lab. The first two years, the legislature approved the spending, but Gov. Rick Scott vetoed it.

In 2016, the legislature and Scott gave the project \$2 million if beekeepers raised \$200,000 and UF raised \$500,000. The research building is an investment worth \$4 million, Ellis said, with beekeepers and UF funding the difference.

The biggest threat to Florida's honey bees is varroa, a parasite that feeds on bee fat, Ellis said. Researchers are looking into how to control varroa and improve the effectiveness of existing strategies.

Because the economy currently favors honey production, Ellis said, beekeepers have been able to recuperate their losses from parasites, poor forage quality or other bee stressors by splitting their colonies.

If honey prices declined and beekeepers couldn't recover, he said, then pollination shortage would become a possibility.

About 620,000 bee colonies travel in or through Florida each year, Ellis said, and most of the state has a year-round climate that bees tolerate well. Hogg said beekeepers will move their colonies to Florida in the fall or winter to allow their bee populations to grow before sending them to California to pollinate almond trees. Bees would otherwise be cloistered because of the cold, meaning their populations would remain stagnant.

The new lab, which consists of three buildings, is off of SW Archer Road next to Steinmetz Hall, home to the UF entomology department.

Hexagon windows in the main building tell you, yes, this is where the bee magic will happen. On the outside of the building, Ellis said, will be colored hexagons the same size as the windows to tie in the hive theme.

The carpet is yellow and gray, and the offices' walls are painted gray with a yellow accent wall.

The hallways are wide, Ellis said, so antique beekeeping tools and artwork depicting bees can be displayed. Once

everything is finished in the next few months, Ellis said, the main building might look like a museum.

"It'll be a bee experience," he said.

The main building will have all of the department's bee research necessities to fulfill UF's land-grant mission. There are offices for researchers, classrooms for students and space for extension projects to reach beekeepers and those interested in bees within the community.

A lab has a large window so visitors can examine research without interrupting it. A classroom has a closet for beekeeping suits and helmets. There are refrigerators and incubators to help rear bees.

The research topics include honey bee husbandry, integrated crop pollination and honey bee college and conservation.

The main building has a room with red lights because bees can't see red. When the room is red-lit, Ellis said, bees will act normally because "they don't know they're being watched." There are 12 ports to allow bees to come inside or go outside.

Two buildings outside will be home to a teaching pavilion and equipment for extracting and processing honey. Because UF studies sick bees to find out what's wrong with them, the department doesn't make honey. But local beekeepers can have their honey extracted as part of a class, Ellis said.

"We're trying to build a bee campus for the bee minds here," Ellis said.

Ellis expects he and his coworkers will move into the main building in a couple of weeks. A grand opening will likely be held in August. The building isn't exclusive to any sect of students, beekeepers or bee enthusiasts. It's for everyone.

"It's really amazing what the beekeepers, the state and UF did," Ellis said. **PP**

— Deborah Strange, *The Gainesville Sun*



# Choose Fleet

with fipronil and lock it down. Fast.



**Maxforce**<sup>®</sup>  
**FLEET**<sup>™</sup>

*Get fast, effective control — indoors and out.*

Now you can get the powerful ant control that you've come to expect outdoors in a formulation for indoor use. Introducing Maxforce Fleet, the fipronil-based ant gel that works inside and out. And it comes in a thicker formula designed to stand up where you need it.

Bayer CropScience LP, Environmental Science Unit, 2 TW Alexander Drive, Research Triangle Park, NC 27709. 1-800-331-2867. [www.backedbybayer.com](http://www.backedbybayer.com). Bayer, the Bayer Cross and Maxforce are registered trademarks of Bayer. Fleet is a trademark of Bayer. Not all products are registered in all states. Always read and follow label instructions carefully. ©2018 Bayer CropScience LP.

# Buy manufacturer direct from THOR

LIQUIDS - BAITS - GRANULES - AEROSOLS - BORATES  
FUMIGANT - RODENTICIDES - EQUIPMENT  
UV FLY TRAPS - TERMITE BARRIERS



Contact your local THOR representative today!

Mike Borys, Jr. - Western FL - 866-863-7154 - maborys@ensystex.com

Mike Kemp - North & Central FL - 866-863-7150 - mkemp@ensystex.com

Gary Riggs - Eastern FL - 855-415-2078 - riggs@ensystex.com

**ENSYSTEX**  
**866-FOR-THOR**  
**FOR-THOR.COM**

## Air Potato Beetles Flourishing in Florida

GAINESVILLE, Fla. — Across Florida, thousands of small, red beetles have been battling the invasive air potato vine for the last eight years, one bite at a time.

And they appear to be prospering, according to the latest data collected through the collaborative efforts of the University of Florida, the Florida Department of Agriculture and Consumer Services, and hundreds of citizen scientists.

“The data we’ve collected so far have shown how well the air potato beetle has established throughout the state,” said Christopher Kerr, a scientist with the FDACS Division of Plant Industry, who manages its air potato beetle rearing program. “Most of the sites we received data from showed increased populations through the season.”

UF and FDACS teamed up to create an educational series for the program, which teaches participants how to identify the air potato vine and beetle, and how to collect data on the status of the vines and beetles on their properties, after which they join the group as citizen scientists.

“These citizen scientists make up the Air Potato Patrol, which now has more than



Invasive air potato vines

Mary Estes

450 members in Florida,” said Bill Lester, residential horticulture agent for Hernando County with UF’s Institute of Food and Agricultural Sciences Extension.

After a year of receiving data, the data collected indicated that the beetle population was growing, even on sites that had not received any releases. This is good news for the efforts to control the invasive vine, which is known to engulf existing vegetation and disrupt native ecosystems. The air potato beetle eats only the air potato plant, making it an excellent control agent. FDACS began

releasing the beetles in Florida in 2010 with the goal of establishing a sustainable population.

In addition to submitting data, members of the Air Potato Patrol work with Lester to determine if the air potato problem on their properties requires additional beetles. Mary Estes, whose Hillsborough County property was overrun with air potato, received beetles through the program.

“The vine was choking out my plants and trees, and killed two of my orange trees,” she said. “Given the nature of this vine, I think citizens have to be involved.”

For years, patrol member Donald Jones had been struggling to control air potato on his Polk County property, where it was smothering his live oak trees. Since introducing the beetles, he’s seen no new vines. “I’ve learned, with UF’s help, how to spot them. We have some native vines here that look very close to the air potato vines,” he said.

To become a member of the Air Potato Patrol or learn more about the program, go to [airpotatobeetle.com](http://airpotatobeetle.com). **PP**

—Samantha Grenrock, UF/IFAS

# CLASSIFIED ADS

 **ACQUISITION EXPERTS LLC**  
THINKING ABOUT RETIRING  
THINKING ABOUT SELLING

**FOR SALE:**  
**S ALABAMA PRICE REDUCED L, T, PC**  
**MARTIN COUNTY, FL. L&O PENDING**  
**ST. LUCIE FL. L&O \$120K**

Contact: John Brogan  
Office: 772-220-4455 Cell: 772-284-4127  
E-mail: john@acquisitionexperts.net  
Visit our website at  
**www.acquisitionexperts.net**  
30 Years in the Pest Control Industry

**Fumigation S.P.I.D. Needed**  
email to  
rh@pioneerpestservices.com

**PESTPRO** reaches more  
than 12,000 pest professionals per issue.  
To advertise, contact Sandra at  
[ads@pestpromagazine.com](mailto:ads@pestpromagazine.com)

**ROBO || CALLWALL**  
**RoboCalls pestering you?**  
**RoboCallWall easily BLOCKS**  
**SCAMMERS and ROBOCALLERS** from  
your business or home landline or  
VoIP. **BLOCK ANY CALLER** and save  
yourself time, money and hassle.

More information at [https://  
www.RoboCallWall.net/pest](https://www.RoboCallWall.net/pest)

**(352) 437-6267**

*George Roman, continued from Page 19*

Some other memorable parks are Glacier National, Olympic National, Redwood National, Carlsbad Caverns, Arches National, and Glacier National. My parents and I have also been to New York City and Washington, D.C., a couple of times, and some other famous cities like San Francisco and Seattle.

In Europe, we've been to London, Paris, Prague and Bucharest. Europe has a really rich history, due to its age, so we love to visit old ruins and museums. London is my favorite

place in Europe right now, and I especially enjoyed its science museums. Maybe I'll be able to do some research in them at some point.

**It sounds like you've seen a lot of places! Do you have a favorite location, maybe somewhere you'd like to live one day?**

Strange as it may sound, Florida is probably my favorite place. I'm not a hugely sentimental person, but Florida feels like

home. It's funny to think about that when all my friends are desperate to leave.

I do want to spend some time living in another state — probably while in graduate school — but I could easily see myself returning to Florida. Maybe I'll even end up back at UF.

If I absolutely had to pick somewhere other than Florida, I'd say North Carolina. I love the forest scenery and the climate, and I could see myself settling down in a suburb somewhere. **PP**

MOSQUITOES SUCK.  
Now you can make them suck less.



## ONEGUARD®

OneGuard® Multi MoA Concentrate combines the power of a **knockdown agent, long-lasting insecticide, synergist and IGR in one single product with controlled-release technology.**

The result is highly effective knockdown, kill and long-lasting control of mosquitoes and other flying and crawling pests\*.

\*See label for pests controlled.



[www.mgk.com](http://www.mgk.com)



©2018 MGK. All rights reserved.

**BUSINESS AND OPERATIONS**

# **EXPO**

**FLORIDA PEST MANAGEMENT ASSOCIATION**

**JANUARY 21 – 23, 2019**

**THE FLORIDA HOTEL**

**ORLANDO, FLORIDA**



PRESENTED BY





Deliver a crushing blow to one of your customers' worst nightmares. Only Vikane® fumigant eliminates 100 percent of drywood termites.

It doesn't matter if they're in places impossible to inspect or reach with a spot treatment. Vikane kills them all. And since we've been doing this for more than 55 years, you can be confident we're helping to uphold your well-earned reputation with your customers. In fact,



no whole-structure fumigation product is more trusted and proven. That's good. Because the last thing a homeowner wants to see after you're gone is termites. Speaking of homeowners, we help you educate them, too. Use our customer support tools and award-winning instructional website, FumigationFacts.com, to help take the worry out of fumigating. So you can more easily make the sale while giving homeowners the real termite solution they need. We know you don't take any of this lightly, so we don't either. We're working to make sure you have fumigation as an option today and in the future. Which is why

Douglas Products backs Vikane with the most experienced sales and technical support team, product quality assurance and the industry's most comprehensive stewardship tools.

Our investment in research and innovation is unmatched. Nobody puts more into pounding termites into oblivion than we do. Learn how killing 100 percent of drywood termites with Vikane is good for your business by contacting your local distributor or visiting

**VikaneFumigant.com.**

