

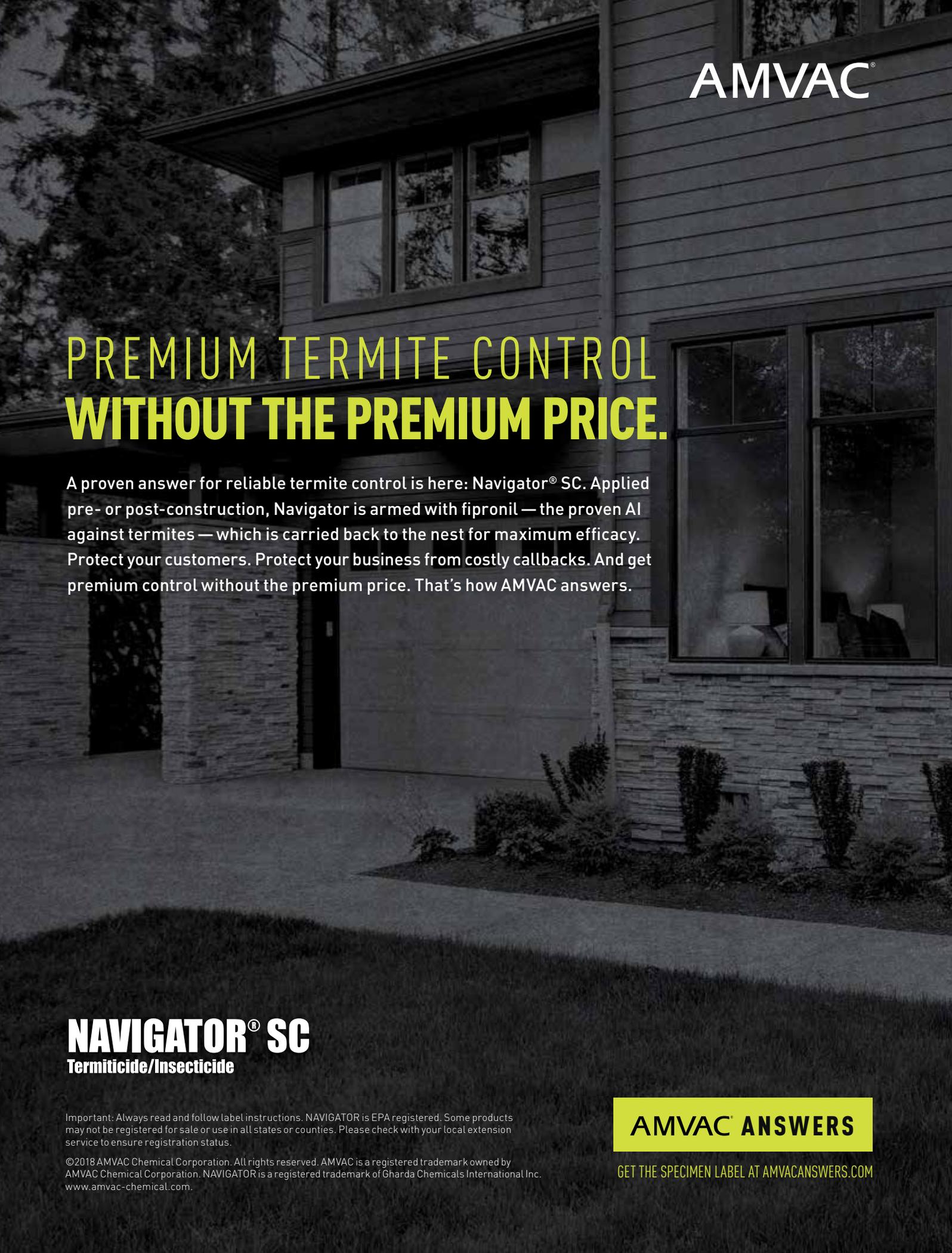
PESTPRO

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

BMPs for Lawns: Fertilization

Tawny Crazy Ant and Fire Ant in Florida





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Dru Bloomfield

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ON THE COVER

Tawny crazy ant queen, adult worker, and eggs in a laboratory colony at The University of Texas at Austin, Brackenridge Field Laboratory, where researchers study the spread of this new pest species.

Photo by Alux Wild and Ed LeBrun

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Advocacy and Membership

Message from the President of FPMA

Suzanne Graham

IT IS A GREAT HONOR that you have chosen me to lead FPMA at the beginning of the decade. It is my intention to build on the solid foundation which has been so diligently and carefully laid down by our past leaders. We have so much to be grateful for and proud of. However, we cannot rest on our achievements, but instead, must forge new ways to meet the challenges facing the industry, our individual businesses, and our Association.

Two words you will hear me say over and over again: *advocacy* and *membership*.

Advocacy

Our industry is highly regulated, and it's up to us to make sure that our interests are represented in Tallahassee. What happens there affects us all — from the single-man operator to the large, multi-state companies and vendors. As an Association, we are able to do what none can truly do alone: speak for the industry in the state of Florida.

We are fortunate that our leaders of the past few years have made our Association financially stable. Our Board of Directors has set aside funds to serve as a “war chest” should the need arise to fight any legislative battles that may arise.

We have also started to make alliances with other associations whose interests overlap with ours — the Florida Turfgrass Association as well as the Florida Nursery Growers and Landscape Association, to name a few — and I look forward to expanding those relationships and strengthening our voice.

Membership

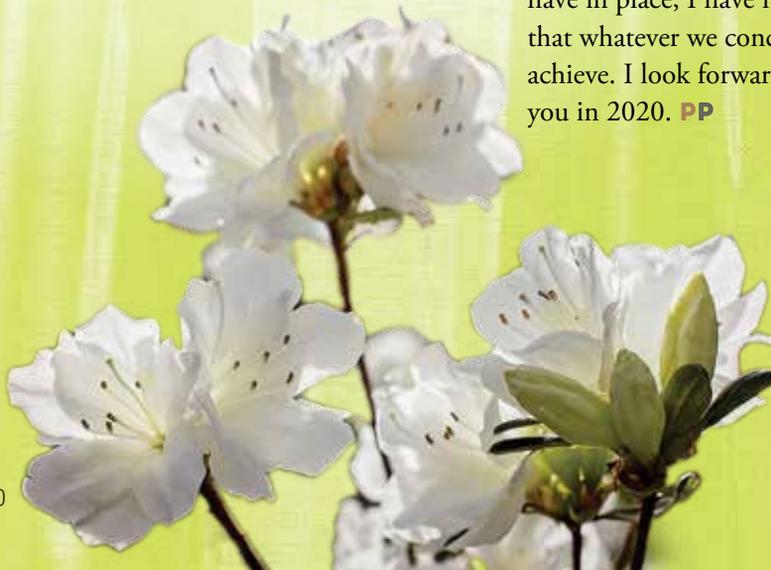
We face the challenge of diminishing dues revenues as the industry consolidates and companies are bought and sold. However, there are literally thousands of companies out there that have yet to discover our Association. I intend to work with the Membership Committee to strengthen our reputation, expand our value-added benefits and widen our outreach. I will be relying on the regional directors to recruit companies that are licensed by the Florida Department of Agricultural and Consumer Services.

Running a pest control business demands not only technical knowledge but business acumen. Together with input from the membership, the Board, and FPMA staff, I will strive to make FPMA a one-stop shop for technical and business information and training covering all aspects of the business. Our regional meetings, major events, and members-only events will be reconsidered and adapted to meet this objective. I want to hear your input.

Because none of these challenges occur individually, FPMA staff and I will work with the Board and membership to help develop a strategic plan and contract for an economic impact study. We cannot fight legislative battles if we do not know what impact our industry has on the Florida economy. And the strategic plan will be our guiding document to enhance our membership.

With the great leadership we have in place, I have no doubt that whatever we conceive we can achieve. I look forward to serving you in 2020. **PP**

Suzanne Graham
President, FPMA



The Changing Face of Termite Control

DURING the past 50 years termite control has changed drastically. As a matter of fact, Formosan and Asian termite control has completely changed the way we think about controlling termites.

I remember when I first discovered Formosan termites in Hallandale at the beach. People were used to seeing drywood termites swarm during the evening. The Formosan termite also swarms during the evening, but the extreme numbers of swarms annoyed people. In fact, the people who were trying to play poker at night had their poker party destroyed by flying termites. So these new termites not only destroy wood but are annoying flying insects as well.

The Formosan termite is a species of subterranean termite that often is challenging to control, but they can be controlled with the same procedures used for native subterranean termites. The first publications on Formosan termite control in Louisiana recommended doubling the dose of termiticide to handle the situation. That turned out to be wrong information.

Formosan termites are about the same size as our native Eastern subterranean termites, and are as sensitive to pesticides as the Eastern subterranean termites, so it takes the same amount of chemical to control both species. Also, the same application techniques will control both types of subterranean termites. In fact, all the termiticide labels do not differentiate among the methods or amounts of product needed to control these species. The same procedures and concentrations are used for both Formosan termites and native subterranean termites.

Exclude by LOCATION, not SPECIES

Recently, I started suggesting that the pest control industry should not be allowed to exclude Formosan subterranean termites on a subterranean termite contract. After all, Formosan termites ARE subterranean termites. All subterranean termites



Formosan termite damage near a window.

primarily live in the soil and need an exterior source of moisture to survive. Formosan termites have the same requirements as our native subterranean termites.

I think about a newly built senior housing facility in the Panhandle. It was less than five years old when Formosan termites attacked and damaged the building. When the facility contacted the pest control company about the failure, they found out that Formosan termites were excluded on their warranty. They ended up paying an additional \$65,000 to have a Formosan termite treatment. However, the same procedures previously used to control native subterranean termites were used to control the Formosan termite infestation.

Some companies that operate in areas where Formosan termites are the primary termite species wrongfully exclude Formosans from their termite contracts. If the company knows that the infestation they are trying to control is Formosan, and they exclude that species, that business practice should be prevented. Right now, nothing prevents that from occurring.

One argument for excluding Formosan termites on subterranean termite contracts is that the Formosan termite has a greater tendency to build aerial nests with no ground contact. If that is a concern, then exclude all aerial nests from the contract, not a single pest species. By excluding aerial nests, drywood termites, dampwood termites, tree

termites, and any subterranean termite aerial nests would automatically be excluded from the subterranean termite contract warranty.

Consumers Speak Out

Last year, I had a meeting with homeowners in the Panhandle about Formosan termite control. The industry was NOT highly regarded by the citizens who attended the meeting. They were furious that they had bought termite protection for years from the industry, and when they had an infestation they found out their

contract was worthless for their situation.

I heard that the average cost for retreatment and repair of a Formosan termite infestation was \$36,000. The homeowners thought they were covered by having a subterranean termite contract. But the Formosan termite exclusion left them paying the bill. The truth is, a subterranean termite treatment that is done properly will control both native and Formosan termites.

Facing the Future

Allowing the exclusion of Formosan termites on subterranean termite contracts is something that needs to change. I have formed a committee of pest control operators, builders, building code officials, and Florida Department of Agriculture and Consumer Services regulators to look into changing the rules on Formosan termites. So far we have had two meetings, and the discussion has been lively.

It is time to change the rule and stop the practice of excluding Formosan termites on subterranean termite contracts. A subterranean termite contract that excludes any subterranean termite species may become a legal liability that could end up being costly for your company. **PP**

— Dr. Philip Koehler,
Managing Director, *PestPro*

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GH**OS**TBUGSTERS

May 5, 2020: General Household Pests (GHP)

- 7:00 AM – 8:30 AM Registration and Exhibitor Set-up
- 8:30 AM – 9:20 AM **GHP** Pest Management in Commercial Accounts – Bennett Jordan, PhD, ServiceMaster
Break
- 9:20 AM – 9:40 AM **GHP** Delusory Parasitosis – Nancy Hinkle, PhD, University of Georgia
Break
- 10:30 AM – 10:50 AM **GHP** IPM for General Household Pests – Richard Kramer, PhD
SEPMC, Urban Entomology Lab, and FPMA: Partners in PCO Education
- 11:40 AM – 12:00 PM Lunch Sponsored by AMVAC, Parking Garage on Gale Lemerand Drive
- 12:00 PM – 1:15 PM **GHP** Cockroach IPM in Subsidized Housing – Dini Miller, PhD, Virginia Tech University
- 1:15 PM – 2:05 PM **GHP** Rodent Control – Don Foster, MS, Gregory Pest Control
Break
- 2:05 PM – 2:55 PM **GHP** Pesticide Safety – Cory Goeltzenleuchter, McCall Pest Control
- 2:55 PM – 3:15 PM **GHP** Diagnosis of Pest Problems – Karen Vail, PhD, University of Tennessee
Sapp - Walkup Tailgator Steak Dinner, Parking Garage on Gale Lemerand Drive

May 6, 2019: Wood-Destroying Organisms (WDO)

- 7:00 AM – 8:30 AM Registration and Exhibitor Set-up
- 8:30 AM – 9:20 AM **WDO** Identification of Wood-Destroying Organisms – Dan Suiter, PhD, University of Georgia
Break
- 9:20 AM – 9:40 AM **WDO** Formosan Termites in North Florida – Ben Hottel, PhD, Orkin
Break
- 10:30 AM – 10:50 AM **WDO** Termite Control: More than Applying Termiticide – Faith Qi, PhD, University of Florida
SEPMC, Urban Entomology Lab, and FPMA: Partners in PCO Education
- 11:40 AM – 12:00 PM Lunch Sponsored by Bayer and Univar: Gator Low-Country Boil, Parking Garage on Gale Lemerand Drive
- 12:00 PM – 1:15 PM **WDO** Wood Feeding by Termites
– Claudia Teigel, PhD, NOLA Mosquito, Termite and Rodent Control Board
- 1:15 PM – 2:05 PM **WDO** Proposed Termite Rules: Exclusions and Nonchemical Products
– Dale Dubberly, Pest Management Consultant
Break
- 2:05 PM – 2:55 PM **WDO** Effective Technician Management and Training – Stephanie Hill, PhD, Hometeam Pest Control
- 2:55 PM – 3:15 PM **WDO** Effective Products and Equipment for Urban Pest Management
– Brittany Campbell, PhD, NPMA; Tommy Powell, MS, MGK; Marie Knox, Control Solutions

May 7, 2019: Lawn & Ornamentals (L&O)

- 7:00 AM – 8:30 AM Registration and Exhibitor Set-up
- 8:30 AM – 9:20 AM **L&O** Lethal Bronzing Disease in Florida – Brian Bahder, PhD, University of Florida
Break
- 9:20 AM – 9:40 AM **L&O** Change is Everywhere: FDACS Update – Paul Mitola, FDACS
Break
- 10:30 AM – 10:50 AM **L&O** Research Updates: Dale's L&O Entomology Lab – Adam Dale, PhD, University of Florida
- 10:50 AM – 11:40 AM Lunch Sponsored by McCall Service, Parking Garage on Gale Lemerand Drive
- 11:45 AM – 1:00 PM **L&O** Best Management Practices for Turfgrass Fertilization
– Marco Schiavon, PhD, University of Florida, Ft. Lauderdale
- 1:00 PM – 1:50 PM **L&O** The Emerging Threat of Rose Rosette Disease
– Xavier Martini, Phd, and Gary Knox, PhD, University of Florida, Quincy
Break
- 1:50 PM – 2:40 PM **L&O** Water-Quality Contaminants in Urban Environments – A.J. Reisinger, PhD, University of Florida
- 2:40 PM – 3:00 PM **L&O** Breaking Down IPM for Realistic Implementation – Adam Dale, PhD, University of Florida
- 3:00 PM – 3:50 PM **L&O**
- 3:50 PM – 4:40 PM **L&O**

Register at <http://tinyurl.com/2020-SEPMC>

Will Both Ants Survive?

Tawny Crazy Ant and Red Imported Fire Ant Fight it Out in Florida

Roberto Pereira and Philip Koehler



Alex Wald

Red imported fire ant, *Solenopsis invicta*

THE NEW ant on the block seems to be here to stay: The tawny crazy ant, or TCA, showed up in the 1990s, and it definitely does not seem to be going away.

Even after treatment, some of the initial sites infested with tawny crazy ants still have problems similar to what they were a few years ago, such as in the Duval County area. Current treatments are similar to old solutions and are inefficient at best. Science certainly cannot guarantee a long-term, treatment-based solution for the tawny crazy ant, *Nylanderia fulva*.

THE STORY of the tawny crazy ant in the United States overlaps quite a bit with that of the red imported fire ant, so perhaps

the solution needs to be similar. It took years to begin a serious biological control program for the fire ant, but perhaps we can find funding and the right researchers to attempt serious biological control of tawny crazy ants before they spread as far as they can go.

That would be good news. Meanwhile, it might help to better understand this enigmatic new ant: How does it resemble and how does it differ from the red imported fire ant? And how do the two species interact in nature? *Continued next page*



Tawny crazy ant, right, produces venom that neutralizes the sting of the fire ant

Laurence Gilbert



Tawny crazy ant
Nylanderia fulva

Lyle Buss

TAWNY CRAZY ANT populations are spreading in areas that have been dominated by red imported fire ants for several decades. Will the two species coexist into the future? The long-term survival of each species is just one of many questions surrounding the relatively recent introduction of tawny crazy ants.



Nylanderia fulva ranges from Texas to Florida, shown in blue and orange. Gotzek 2012

Which Ant Will Outcompete?

The tawny crazy ant is another of the South American ants that pose major problems in North America. Argentine ants were reported in the States before 1900, and red imported fire ants probably arrived around 1940.

For now, tawny crazy ant populations are still contained in the southeastern United States. However, given the predicted changes in climate, the potential of their expansion is a bit scary. The tawny crazy ant population may have an expansion similar to that of the red imported fire ant before it.

Fortunately or unfortunately, depending on where your ant sympathies run, the presence of fire ants may actually prevent a greater expansion of the territory that the tawny crazy ants occupy. It will be an interesting battle to watch as the two ant species compete for territory in their adopted land in North America.

By the way, the territory that imported fire ants occupy in North America is already beyond the territory that was predicted to fall under that invasion, even with little help from climate change so far. What will happen with the tawny crazy ant is anyone's guess.

Which Ant Will Outlast?

Despite some overlap between the behaviors of the red imported fire ant and the tawny crazy ant, they are indeed very different species, and they are not great friends, either. In fact, there are many stories that seem to confirm some antagonism between these two ant species.

Furthermore, the fire ant has a powerful stinger, while the tawny crazy ant cannot sting at all — but the stingless crazy ant seems well prepared to fight the fire ant.

In laboratory studies where groups of these two species have faced each other on a

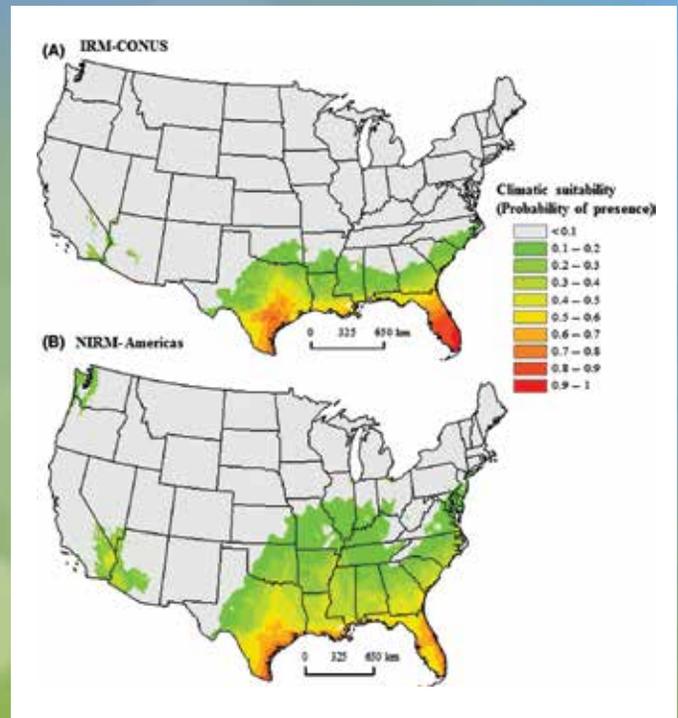
battleground, the results were very interesting. With low numbers of ants, they all kill each other, and there are no survivors, but with larger numbers of ants, the last survivors are the tawny crazy ants. Part of that may be explained by the fact that the tawny crazy ant seems to be much more aggressive than the fire ant, and it engages in battle even when obviously outnumbered. Also, the tawny crazy ant looks for a fight even when it is obviously in fire ant territory. I guess that is why we call it “crazy.”

A TCA Riddle

The tawny crazy ant has gone through major identity changes since its introduction in the United States. It was formerly misidentified as the Caribbean crazy ant, *Nylanderia pubens*, but that was probably a mistake — the pest that has been hard to control in many areas of Florida was probably *Nylanderia fulva*. Whether the ant known as *Nylanderia pubens* was ever present in Florida is not known.

Also, it is not completely clear whether there was a single introduction of the tawny crazy ant, or whether two or more introductions occurred. When it was clear that there was a new ant in the southern United States causing a lot of headaches for pest control companies, the scientists had to get a better look at the beast bothering everyone.

There were two well separated infestations: one in Florida and one in Texas. The Texas folks were calling their ant “Raspberry ant,” while in Florida we were still stuck using the old common name — “Caribbean crazy ant.” Studies such as DNA comparison made it clear that the ants that were then found from Texas to Florida were indeed one and the same species. It took a while to sort out what was really going on, but the study of genetic material eventually made things clear.



Predicted potential distribution of *Nylanderia fulva* in the continental United States based on occurrences from (A) invaded range in southern United States (IRM-CONUS), and (B) native and invaded range combined (NIRM-Americas).



Red imported fire ant infestation shown in red, and potential infestation in green. USDA-ARS

Wrapped in a TCA Mystery

Interestingly, the ant we call “tawny crazy ant” was moved into another country on purpose before 1971 as part of an ill-planned biological control project. The idea was to use this ant as a biological control agent to get rid of a snake species in Colombia.

Why that idea gained force and was implemented is a

mystery. But as a result of its introduction into Colombia, the tawny crazy ant became a problem and ended up being responsible for the elimination of 36 species of native ant species in Colombia, plus the elimination of seven insect species, three lizard species, and even a snake species — although not the species that was the target of the biological control effort.

Continued on Page 18



Best Management Practices for Lawns:

FERTILIZATION

Laurie E. Trenholm

A HEALTHY LAWN is an important component of an urban landscape. Not only do lawns increase the value of a property, they reduce soil erosion, filter stormwater runoff, cool the air, and reduce glare and noise.

A HEALTHY lawn effectively filters and traps sediment and pollutants that could otherwise contaminate surface waters and groundwater.

Lawn mismanagement can often have adverse effects on turf health. Loss of turf health can render it less able to filter stormwater runoff and reduce soil erosion, which can lead to increased nonpoint source pollution. Misuse of fertilizers can result in direct deposition of granules into water bodies or increased risk of leaching into groundwater. In either case, the result can be unhealthy turf and increased nonpoint source pollution.

Therefore, it is very important to use best management practices (BMPs) when maintaining

lawns. Best management practices follow Florida-Friendly Landscaping™ principles, developed for maintenance of a healthy landscape that does not contribute to nonpoint source pollution. Following BMPs can reduce potential pollution of Florida's surface or groundwater resources as a result of lawn and landscape maintenance.

Fertilize Appropriately

Proper fertilization consists of selecting the right type of fertilizer and applying it at the right time and in the right amount for maximum plant uptake and benefit.

Lawns require nutrients throughout the growing season to stay healthy. The growing season will vary depending upon the location in the state. The amount

of fertilizer required annually will primarily depend on the grass species and geographical location.

Selecting a Fertilizer

The labeling requirements make it easier to find appropriate lawn fertilizers in the retail market. Select only a fertilizer that is indicated for use on urban turf.

Do not use a fertilizer for flower or vegetable gardens on lawns. These products will contain both slow-release nitrogen and low or no phosphorus. Slow-release nitrogen will provide a longer-lasting response from the grass and reduces the potential for burning from excess application. The low phosphorus will not be harmful for many lawns in Florida because

Continued on Page 13

Urban Turf Fertilizer Labeling Rule

In June 2007 the Florida Department of Agriculture and Consumer Services passed a rule regulating labeling requirements for urban turf (home lawn) fertilizers known as the Urban Turf Fertilizer Labeling Rule [RE-1.003(2) FAC].

This rule requires fertilizer manufacturers to place specific language on fertilizer bags with the intent of reducing potential nonpoint source pollution that might result from misapplication of fertilizer to lawns.

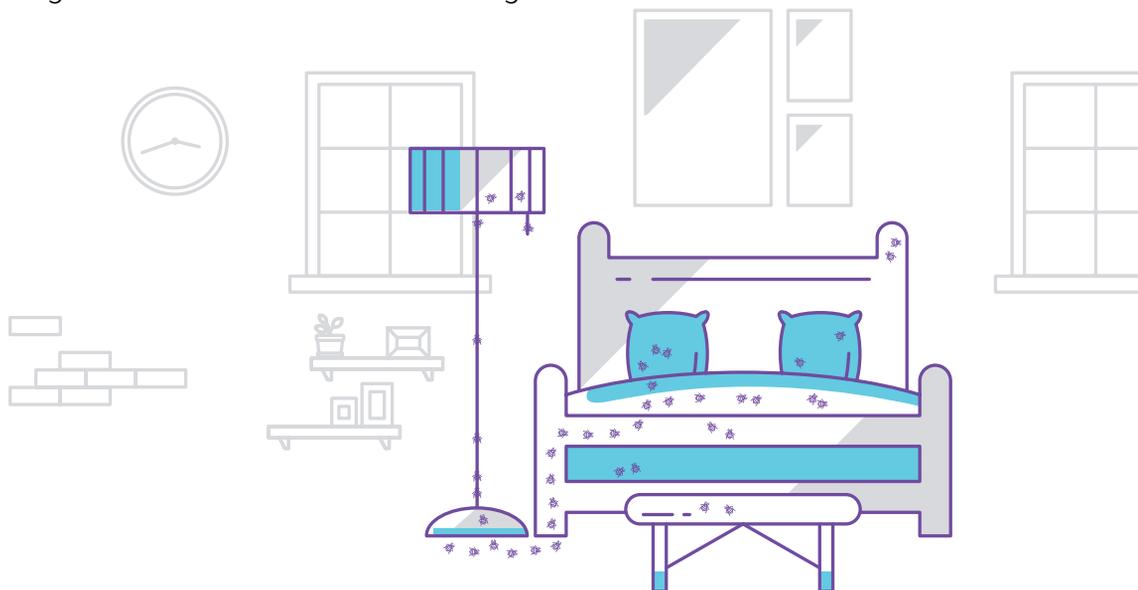
The rule regulates the maximum amount of nitrogen and phosphorus that is in the bag and directs users to follow UF/IFAS recommendations for annual fertilizer application rates.

The rule is based on scientific research conducted by UF/IFAS.

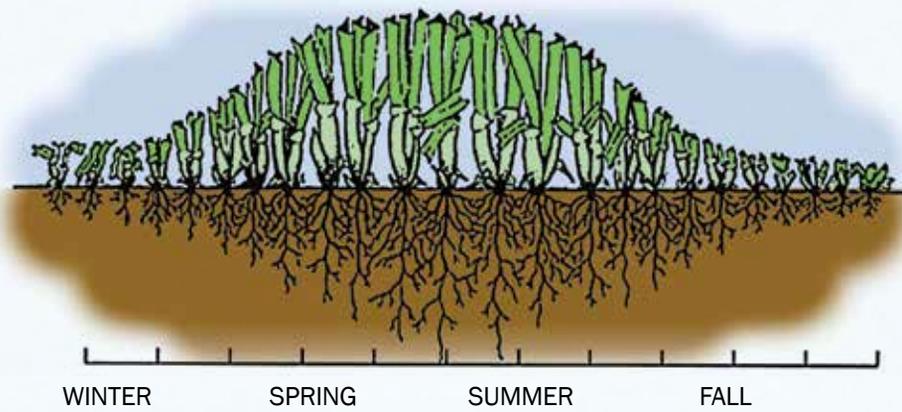
ASK YOUR CUSTOMER:

HOW MANY BED BUGS
DO YOU
OWN?
LOWEST NUMBER

The answer is obvious, and so is the solution. Kill all bed bugs present, including eggs, in one treatment with fumigation. Give them all the facts, send them to EliminateBedBugs.com to show them why fumigation is the best answer to bed bugs.



Seasonal shoot and root growth of warm-season turfgrasses



Fertilizer, continued from Page 11

some Florida soils are already high in phosphorus, and turf requirements for this nutrient are low relative to nitrogen and potassium.

However, there have been increased phosphorus deficiencies in a number of lawns throughout Florida, and soil tests may be warranted if deficiency symptoms occur. These symptoms include reduced growth and dark-green followed by purple shoot color of lower leaves. A soil test is required to identify a phosphorus deficiency and allows for supplemental phosphorus to be applied when a deficiency exists.

Fertilizer Timing

Our warm-season grasses grow in response to both increasing temperature and day length, making summer the time of most active growth. This is when grasses are best able to take up nutrients and also have the most need for them; see graphic above.

It is important to not fertilize when grasses are not growing, as this can increase the possibility of nutrients leaching through the soil or running off. This occurs largely because the root systems of warm-season grasses “slough off” during the winter months, rendering them less able to assimilate nutrients from fertilizer. This is especially true in

north and central Florida and becomes less common as you head farther south in the state.

University of Florida research on nitrate leaching from various lawngrass species found that the potential for nitrate leaching in north-central and northwest Florida is greatest January through March, when the root system has the least mass and the grass may be in some stage of cold-induced dormancy. It is therefore important to wait until growth begins in the spring to fertilize. For north Florida and the Panhandle, this would be around the middle of April. For north-central and central Florida, it would be early April.

The last fertilizer application should be around the middle or end of September in north Florida and early October in central Florida. In South Florida, you can apply fertilizer throughout the year.

Fertilizer Application Rate

No matter what species of grass you have or where you live in the state, you should apply only up to 1 pound of nitrogen for every 1,000 square feet of lawn each time you apply fertilizer. To see how much fertilizer 1 pound of nitrogen is, refer to Table 1 online¹, which lists the

amount of fertilizer needed by percentage of nitrogen in the bag.

For example, if you have a fertilizer that has 15 percent nitrogen, as indicated by the first of the three numbers on the bag, you would apply 6.5 pounds of that product per 1,000 square feet to apply the correct amount of nitrogen.

Rates for annual fertilization should follow the UF/IFAS recommendations found in Table 2 online¹ for your grass species. Applying fertilizer at rates greater than listed can contribute to increased disease or insect problems and may increase the potential for increased nutrient leaching or runoff. This will determine how many applications you will make annually.

For example, if you live in central Florida and have St. Augustinegrass, you can apply anywhere from 2–5 pounds of nitrogen on a yearly basis. This means that you might apply fertilizer anywhere from two to five times a year. Typically, a commercial lawn care company would fertilize at the higher range (four to five times yearly), while a homeowner may fertilize fewer times a year.

An important part of figuring out how much fertilizer to apply is to know the size of your lawn. It is easiest to do this by breaking

it into the front, back and sides of the house and adding those amounts of fertilizer to the spreader. This will help you apply the right amount.

What if you live in an area where lawn fertilization is prohibited from June 1 through September 30?

A number of cities and counties in Florida have passed fertilizer ordinances that do not allow for application of nitrogen or phosphorus fertilizers during the summer. These ordinances are passed out of concern for nutrient leaching due to potential heavy rainfall, but research has shown that this is the time of least nitrate leaching (Trenholm et al., 2012).

If you are in one of these restricted areas, fertilize with a long-term, controlled-release product at the end of May. The grass will receive low doses of nitrogen over a period of three to four months, depending on the product used.

When the restrictive period is over, fertilize again with a product that has a more soluble nitrogen component, such as sulfur-coated urea. This will reduce the potential for the fertilizer to release nitrogen during the winter months when the ability to take up the nutrients is reduced.

Other Important Fertilization BMPs

Soil Test

It is important to test your soil to determine phosphorus and other nutrient levels. Check with your local UF/IFAS Extension office for information on how to submit soil samples for testing, or visit the UF/IFAS Extension Soil Testing Lab website.²

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¹ <https://edis.ifas.ufl.edu/ep236>

² <http://soilslab.ifas.ufl.edu/ESTL%20Home.asp>

Lakeland ‘Snake Orgy’ is Just an Annual Mating Ritual

MASSES of mating snakes prompted a minor public panic the day before Valentine’s Day in Lakeland, Florida. It turned out to be a yearly mating ritual among Florida water snakes — a harmless species.

“Relax. Keep calm. The snakes at the lake are not venomous!” a February Facebook post from the Lakeland city government read. “We wanted to clarify some rumors that have been going around over the last day or so about the snakes at Lake Hollingsworth near the roundabout, which were mistakenly thought to be venomous.”

The snakes may not be venomous, but it would not be wise to mess with them whether or not they are mating. When threatened, the Florida water snake defends itself by biting and smearing its tormentor with a foul-smelling musk.

Because they are found around bodies of water, water snakes are often killed in the mistaken belief that they are the venomous cottonmouth, *Agkistrodon piscivorus*. However, cottonmouths can easily be distinguished from water snakes.

THE COTTONMOUTH has a triangular head and a vertical pupil. If the head is viewed from above, the eyes of cottonmouths cannot be seen, while the eyes of water snakes are visible. Cottonmouths have elliptical pupils and water snakes have round pupils, and cottonmouths have a facial pit between the nostril and the eye, while water snakes do not.

The Florida water snake bears live young. Mating occurs mid-winter to spring, and litters of 20–30 young are born in late spring through summer. The young are 7½–10½ inches long at birth.

Following public concern about the snakes in February, Lakeland Parks & Recreation posted the following notice on Facebook.

Public Works Department, Lakes and Storm Water Division, identified the snakes found by the roundabout as Florida water snakes. It



appears they have congregated for mating.

Florida water snakes are nonvenomous and generally not aggressive as long as people do not disturb them. Once the mating is over they should go their separate ways.

Florida water snakes are a native species and, as their name implies, aquatic environments are their habitat. They are generally found resting in tree limbs over water or basking on

shorelines. They are an important part of the ecosystem and should not be disturbed.

While we cannot rule out the presence of other species being in that location or other locations around the lake, we believe the water snakes have congregated in that area as they seem to do yearly.

We have put up caution tape in the area and are in the process of hanging signs to make the public aware of their presence. This is for the protection of the public and the snakes. PP

Florida water snake information from <https://www.floridamuseum.ufl.edu/herpetology/fl-snakes/list/nerodia-fasciata-pictiventris#>

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Name: Tim Brock

Hometown: Lynn Haven, Florida

Where you live now: Fortunate to raise my kids where I grew up, Lynn Haven.

About your company: After getting out of the cattle business my grandfather started in the pest control industry in the 1960s and my dad later joined his company. After several years, my grandfather decided to sell. Wanting to go out on his own my dad founded our company in 1973. I bought the company from my dad in 2007, and he retired in 2012. We service 15 counties from Pensacola to Tallahassee, with the bulk of our business in Bay, Walton and Okaloosa counties. We have three offices and just over 50 employees. The last year and a half have been quite challenging for our company and community as we continue to recover from Hurricane Michael. We lost around 15 percent of our customers.

First paying job and what you learned from it: I was 12 and it was the summer of 1988. We had an Ariens riding mower that I had never seen run. I tinkered with it and finally got it working. My dad helped line up some accounts and I was off and running. I learned a little about small



Tim Brock

engine repair, customer service, the power of making yourself valuable, and meeting a customer need. That experience, and learning how much I enjoyed working, parlayed into working spring break and summers in our family business.

Best break in the pest business:

I had recently graduated from Troy University and had always planned to enter the business. Coincidentally, we had a supervisor leave the company around the same time and it was a natural fit for me to fill that role.

Best business book: That's a tough question, I have over 100 books in my office. *Top Grading*, by Bradford Smart, or Jim Collins' *Good to Great* would definitely be at the top of my list. I should mention the Gino Wick series, of which *Traction* is the flagship book.

Best piece of business advice you received:

Not to sound like a cliché, but my dad taught me the golden rule early on: Treat others the way you want to be treated. As I was thinking about this article I reread past editions of *Past President's Corner* and realized all the great advice I've received over the years from a lot of great people, many of whom I consider mentors to this day.

What you would tell someone new to the pest business:

Get involved with trade and networking

groups like FPMA and NPMA. As I mentioned, I've received a lot of great advice from some great people, which wouldn't have been possible without the relationships made through various trade and networking organizations. Our industry is very resilient, consistent, and in many ways insulated from extremes in the economy.

Where can we find you when you are not at the office:

Traveling or doing something fun with my wife, Natalie, and kids, Jackson, Averie Grace, and Griffin — snow skiing, boating, hunting, scuba diving, RVing.

What is the most important trait you look for when hiring?

We measure the fit with all potential new team members with our company core values and governing principles: own excellence, uphold integrity, choose trust, maximize time, energy and resources, treat others the way I want to be treated, and be a team player. **PP**





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At UF outreach events, Remy wrangles Rose the tarantula



Danny S.

TARANTULAS! *Poecilotheria vittata*, top, and *P. metallica*, at right, are two species Remy has raised.



Martin Leschinsky

Remy Powell



Young Remy

This self-proclaimed tarantula rancher from Windemere, Florida, found a niche market to sell the creepy crawlers and made \$7,000. Raising tarantulas for fun and profit is just one way UF student Remy Powell exercises his passion for arthropods.

How did you begin your journey within the entomology department?

I have always had a passion for insects and animals since I was young, but I did not realize there was a giant industry for it until I got to college. I got in contact with Dr. Rebecca Baldwin and took her “Bugs and People” course, which made me realize how amazing the entomology department is. Since then, I make sure to share my passion with anyone who will listen.

So why are you not an entomology major if you have such a passion for insects?

I receive a hard time from people in the lab for currently pursuing a combined bachelors and master's degree in public health. However, I do have a minor as well as a certificate in medical entomology. I also plan to stay on and get my PhD in entomology, so in the long run I think I will make up for it!

What cool things have you done during your time at UF, regarding the entomology department?

Well, the entomology department, especially Dr. Koehler and Dr. Baldwin, has opened up so many doors for me. I first was able to get an internship my freshmen year summer working for Florida Department of Agriculture and Consumer Services at the Bronson Animal Disease and Diagnostic Laboratory (BADDL) researching the Zika virus.

My next summer was spent in Thessaloniki, Greece, doing research under Alex Chaskopoulou — another

graduate from Dr. Koehler's lab. I spent three months in Greece researching mosquito traps and their efficacy.

This summer, I plan to stay in Gainesville and work for the USDA, also working with mosquitoes.

On top of my internships, I serve as a teaching assistant for a few of the entomology courses here at UF, attend conferences, work as the vice president of the Urban Entomological Society, and help out with various outreach events within the department.

Tell us about your introduction to the urban lab and Dr. Koehler.

I met Dr. Koehler in a lecture he was giving in one of my classes. While everyone shied away from his "who is the most attractive?" mosquito demonstration, I was fascinated by it. When I learned his lab works with roaches, ants and mosquitoes, I knew it was a match made in buggy heaven.

I started volunteering in his lab the first opportunity I got, and have been grateful for the endless amount of information and experiences I have been a part of in this lab.

What career do you want to pursue after you get your PhD in entomology?

I would love to be able to either work for mosquito control or Extension, and/or teach in some capacity. I believe that there needs to be more professors and educators like the people we have at the UF entomology department — ones that not only teach their students but enrich students' lives through giving them opportunities that would not have been possible without otherwise. I believe that, no matter what profession I eventually work in, I can be one of those people that contributes something meaningful to other people's lives.

Do you have any hobbies? Or any hobbies you would like to get into?

I actually love to cook and fish. If I had my way, I would be fishing all day long and then eating what I catch.

I also don't know how to hunt but am super interested in learning how to and plan to start to learn in the coming months. I also eventually want to own a lot of land — around 100 acres — and my own homestead, where I can grow my own food and collect all sorts of bugs in my own backyard! **PP**



TERMITES!

Remy's work as a UF student includes research on termites. Here he examines a colony of eastern subterranean termites, R. flavipes, with Phil Koehler in the UF Urban Lab.



This is a prime example of why detailed studies must be conducted before a biological species is introduced into an area where that species is not native. Detailed studies were not done before the tawny crazy ant introduction in Colombia, and it ended in a big disaster.

A similar disaster occurred with the introduction of this ant into the southern United States. As far as we know, the

introduction of the tawny crazy ant in North America was an accident, but pest control professionals are left with the responsibility to minimize the effects of these ants on people's daily life and businesses.

Inside a TCA Enigma

Unlike the fire ant, which initially occurred only as single-queen colonies, the tawny crazy ant colonies in Florida have numerous

queens in the nest, and it is difficult to define the territory of any particular colony. Although fire ant colonies can sometimes have numerous queens, the number of reproductives in tawny crazy ant colonies seems to be much higher. Therefore, these crazy ant colonies may be able to expand much faster once the conditions are right for a boom in the ant population.

That is what we see every spring in Florida. With good weather, the tawny crazy ants expand their foraging territory very fast. They leave the protected areas where they spend the colder months of the year and quickly overwhelm whatever efforts we may put in to control this ant population. That is why it is so important to try to decrease the tawny crazy ant population as much as possible before good weather conditions are firmly established and the ant colonies are in full expansion mode.

In order to avoid calls in summer and early fall, when clients are getting overwhelmed with ants, the pest control operator needs to start an initial program against the tawny crazy ant before summer settles in.



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Freddy Graham

Integrated Pest Management For Tawny Crazy Ants

Because tawny crazy ants are not aggressive toward nests of the same species, the ant population can grow without any controls over an area. What may limit their expansion are limited resources, so it is important to avoid “feeding” the ants. These ants take advantage of several nutrients provided by nature, but they seem to do much better when humans provide them with extra nutrients.

In fact, avoiding “feeding” the ants is always a priority in ant control in general. Ants can feed on greasy, proteinaceous and sweet food items, and they are very flexible in terms of what form the food comes in. Denying nutrition has to be the most important part of the control of ants. That includes the elimination of honeydew-producing organisms, eliminating any trash the ants may forage on, and exercising care in choosing landscape plants so they do not provide extra nutrition for the ants.

Inspections of the areas surrounding places usually infested with these ants later in the season may lead to the identification of plants and other sources that may be used as food by an expanding tawny crazy ant colony. Denying ants the necessary nutrition for their population expansion is key to the success of any tawny crazy ant control program.

IN THE END, the pest control operator may still have to make pesticide applications to control tawny crazy ant populations, but also should take initial steps to deny nutrition to the ants and prevent population expansion. Using pesticide applications that attack both the growing ant population and sap-sucking, honeydew-producing insects outdoors will offer better results than products that target the ants alone. **PP**

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



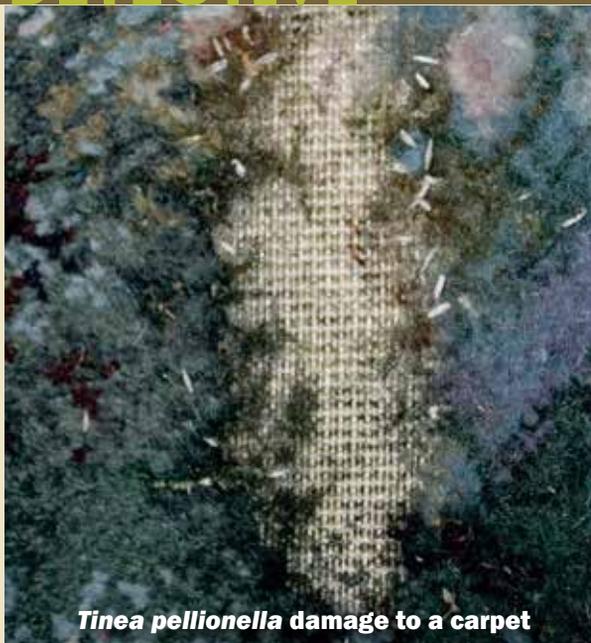
Multiple cases, *T. translucens*



Larva extending from a case



Tinea translucens adult



Tinea pellionella damage to a carpet

Tinea translucens photos, left, by Lyle J. Buss at high magnification. *Tinea pellionella* damage photo, right, by Laurence Livermore.

Tropical Casebearing Clothes Moth

Lyle J. Buss

THE MAIN clothes moth species in Florida has often been considered to be the casemaking clothes moth, *Tinea pellionella*. Recently, however, Dr. Jim Hayden, moth identifier for Florida Department of Agriculture & Consumer Services, determined that most of the clothes moths found as pests in Florida are actually a closely related species called the tropical casebearing clothes moth, *Tinea translucens*.

The two species look nearly identical. Proper identification requires dissection and examination of reproductive organs, which is no easy task on these tiny moths.

Tinea translucens is a tropical species found around the world in humid, tropical climates. The only other North American record I know of is from Virginia. *Tinea pellionella* prefers more temperate climates, and is likely the common species over most of the United States. I’m not sure which species is most common in the southeastern states between Florida and Virginia.

The two species have similar habits and biology. The caterpillars construct a portable case using silk, bits of food material, and fecal pellets. They drag the case around with them and enlarge it as they grow. The cases are about ¼" long and often contain the colored fibers of the material that the caterpillars have been feeding on. When they have finished feeding, they may crawl away from the food source to pupate, and this is often when they are first noticed. The adult moths are about ¼" long, and are brownish with two or three dark spots on the forewings.

Tropical casebearing clothes moths feed on wool, feathers, leather, animal skins, and hair, so they can damage a variety of items containing these materials. Oriental or antique rugs made of wool can be damaged. In the picture of the cases, you can see how the caterpillars used red fibers clipped from an Oriental rug to make their cases.

Fortunately, clothes moths aren’t nearly as common as they used to be. In many products, wool and animal hides have been replaced by fabrics made of synthetic materials or plant-based fibers like cotton. This has led to a decline in many fabric pests like carpet beetles and clothes moths. For most practical purposes, it may not matter which of the two moth species you may be dealing with, but there may yet be differences in aspects like insecticide resistance that could be important. **PP**

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

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Facts from FDACS: Definitions

I RECEIVE many questions from pest control operators, or PCOs, about issues that they are not sure of. For example, I had a question from a PCO about a separate office space that he was using for storing chemicals. He wanted to know if he had to have a certified operator at that location.

Based on the definition in Chapter 482.021(2), *business location* means an advertised permanent location in or from which pest control business is solicited, accepted, or conducted. Therefore, I told him that he did not need to have a certified operator at that location because it is not considered to be a “business location.”

ANOTHER QUESTION had to do with “*certified operator*” vs. “*certified operator in charge*.”

Chapter 482.021(4) “Certified operator” means an individual holding a

current pest control operator’s certificate issued by the department.

(5) “Certified operator in charge” means a certified operator:

- (a) Whose primary occupation is the pest control business;
- (b) Who is employed full time by a licensee; and
- (c) Whose principal duty is the personal supervision of the licensee’s operation in a category or categories of pest control in which the operator is certified.

Chapter 482.121 Misuse of certificate.

(1) A certified operator may not allow her or his certificate to be used by a licensee to secure or keep a license unless:

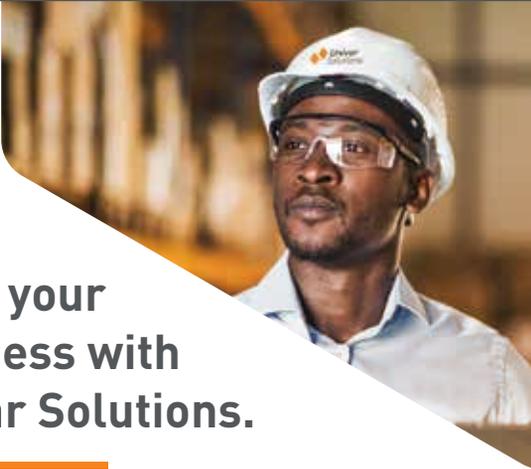
- (a) She or he is in charge of the pest control activities of the licensee in the category or categories covered by her or his certificate;

(b) She or he is a full-time employee of the licensee; and
(c) Her or his primary occupation is with the licensee.

(2) A licensee may not use the certificate of any certified operator to secure or keep a license unless the holder of the certificate is in charge of the pest control activities in the category or categories of the licensee covered by the certificate.

(3) If a certificate is used in violation of this section, the department may revoke the license of the pest control business or the certified operator’s certificate, or both such license and certificate. **PP**

Report by Paul Mitola, Environmental Consultant



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Regards,
Jennings B. Cooksey IV
Jennings Cooksey IV
General Counsel & Director of Business Development

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Living with Urban Coyotes

Man kills coyote with bare hands after animal attacks his 2-year-old son

Police say coyote attacked several people in New Hampshire



File photo.



Adult coyote

Matt Knoth

CHARISMATIC AND CONTROVERSIAL coyotes are in the news of the nation like never before. In Florida we have had plenty of recent coyote stories of our own. Keep a cool head, and learn how to coexist with these canines.

COYOTES are found throughout Florida in almost every type of habitat. This adaptable animal belongs to the dog family and resembles a small German shepherd.

In Florida, coyotes typically weigh 15–30 pounds. They have pointed ears, a narrow muzzle, and a bushy tail. Males tend to be larger than females. Coyote fur is usually grayish-brown but occasionally is black. When running, the coyote usually holds its tail at “half mast” or straight out behind it, unlike most domestic dogs.

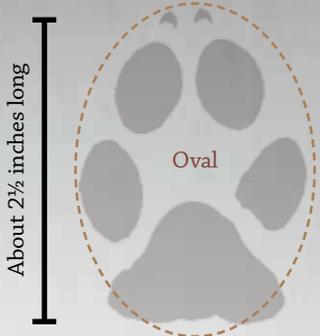
The scientific name of the coyote, *Canis latrans*, literally means “barking dog.” Coyotes use a variety of vocalizations such as barking like dogs, but most often they are heard making shrill

yips and howls. Howling is often a group effort that begins as a simple howl, but quickly increases into a series of group howls and high-pitched barks.

Coyotes typically are shy and elusive, but they occasionally can be spotted either alone, in pairs, or in small groups where food is readily available. Coyotes remain active year round. Coyotes play an important role in the ecosystem by helping to keep rodent populations under control.

Keep your pets safe

Coyotes can and do prey on domestic cats and small dogs. To protect your pets, don't allow them to roam freely. Most coyote attacks on pets occur either at night or at dusk or dawn. During these times especially, be careful if you're walking your



COYOTE PRINT



DOMESTIC DOG PRINT

pet in wooded areas or in heavily foliated areas where coyotes could hide. Keep your dog close, on a short leash. Keep cats indoors. When cats wander freely, there's an increased risk of them being attacked by coyotes. Coyotes are also attracted by garbage. Problems can be significantly reduced if residents remove attractants and secure trash.

Preventing problems

NEVER feed coyotes! Don't place food outdoors that will attract wild animals. Clean up pet food, fallen fruit, and seed around bird feeders. Secure garbage cans and compost in animal-proof containers. Don't try to pet a coyote, and teach children not to approach any unfamiliar animal.

Don't let coyotes intimidate you. Frighten away coyotes by

making loud noises and acting aggressively, such as waving your arms in the air, throwing sticks at it or spraying it with a hose. Don't attempt to hurt it because injured animals are more likely to attack.

Be aware of unusual coyote behavior. Examples of unusual coyote behavior include coyotes approaching people, stalking pets, chasing joggers or bikers, or attacking leashed pets.

Close off crawl spaces under porches and sheds. Coyotes and other animals use such areas for resting and raising young.

Teach children to recognize and not run from coyotes. If children are approached, have them move slowly into a house or climb up on a swing, tree or deck and yell.

Educate your customers. Ask them to follow these same steps.

Continued on page 26

MYTHS about COYOTES

Coyotes are extremely dangerous: FALSE!
There have been very few reported cases of Eastern coyotes biting people. The coyote's innate fear of humans tends to keep them from getting too close.

Coyotes are a new problem: FALSE!
Coyotes have been in Florida for many years and will continue to make their homes around the state. This medium-sized predator is extremely adaptable, thriving in urban, suburban and rural areas.

Coyotes need our help to survive: FALSE!
People like to feed animals. However, by providing a "free lunch" for coyotes, you eliminate their natural fear of humans and increase their populations. Remember ... a fed coyote causes problems. Keep 'em wild!

Coyotes can be totally eliminated: FALSE!
Removing coyotes is an inefficient and ineffective method to control populations. They compensate by increasing litter size and new coyotes move into areas where others have been removed. Populations can quickly return to original size.



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Lee Moore/Chemical Division Manager



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V.J. Anderson

Coyote pups in the wild

COYOTE FAST FACTS

Coyotes live throughout Florida and in every state but Hawaii.

Coyotes eat whatever is available, including fruits, nuts, seeds, dead animals, rodents, garbage, pet food, domestic cats, and small dogs.

They breed every year with two to 12 pups per litter. Pups are raised in a den.

Removing coyotes from one area can result in other coyotes moving in from surrounding areas and producing more pups per litter.

Coyotes, continued from Page 23

Coexisting with coyotes

Coyotes can be curious but are also timid and generally run away if challenged. Just remember that any wild animal will protect itself or its young. Never initiate a close encounter with a coyote.

If a coyote approaches too closely, immediately act aggressively toward the coyote. Wave your arms, throw things like stones, and shout at the coyote. If necessary, make yourself appear larger by standing up or stepping onto a rock, stump or stair. Convince the coyote you are a potential danger to be avoided.

Where coyote encounters occur regularly, walk pets at other times besides nighttime hours, dusk, and dawn. Carry something that will make noise or scare the animal, such as a small air horn, big water pistol, solid walking stick, golf club, or paintball gun. These things may deter the coyote at close range.

Make a “coyote shaker” by putting a few washers, pebbles or pennies into an empty soft drink can. Wrap the can in foil and tape it closed. Continue “hazing” the coyote until the animal leaves. Otherwise, the coyote will learn to wait to leave until the activity stops.

PP

If you are experiencing coyote problems, please contact FWC’s Wildlife Alert at (888) 404-3922 or your nearest FWC regional office:

- Lakeland: (863) 648-3200
- Panama City: (850) 265-3676
- Lake City: (386) 758-0525
- Ocala: (352) 732-1225
- West Palm: (561) 625-5122

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Neighbors have complained about a home in *The Villages* that has taken Florida-Friendly Landscaping too far.

Addressing a Myth About *Florida-Friendly Landscaping*TM

Norma Samuel

A MYTH is circulating that Florida-Friendly Landscaping means a “plant it and forget it” landscape, or one that looks wild and untamed. This is not the image we at UF/IFAS Extension want anyone to paint of a Florida-friendly landscape. Read on to learn what Florida-Friendly Landscaping, or FFL, really means and the benefits it provides.

Florida-friendly landscapes are attractive, low-maintenance landscapes that protect our natural resources by conserving water, reducing pollution and waste, creating wildlife habitat and preventing soil erosion. Implementing FFL practices saves you time, money and energy.

Know the nine FFL principles:

Right Plant, Right Place

When selecting plants for your yard, select those that are zoned for your U.S. Department of Agriculture Plant Hardiness zone¹. Consider plant size at maturity. Putting a plant that grows large in a small area or too close to your house will result in constant pruning or even cracked foundations.

When selecting plants also think about shade and moisture requirements. Plants that require full sun need at least six hours of full sunlight each day and vice versa for plants requiring full shade. The right plant in the wrong place is more likely to succumb to insect and disease

problems. Always select plants that are drought tolerant and have few pest problems.

The *FFL Guide to Plant Selection and Landscape Design*² provides plenty of options for plants that are adapted to Florida.

Water Efficiently

Florida law requires every irrigation system to have an automatic rain shutoff device, which you should periodically check to ensure is working properly. Soil moisture sensors can be used to reduce irrigation and remember to group plants by watering needs.

Water your lawn when the leaf blades of the grass begin to fold or your footprints remain

on the lawn when you walk on it. Apply $\frac{3}{4}$ inch of supplemental irrigation per week.

Avoid overhead watering, especially in the late evening, as it keeps your plants wet for a prolonged period and allows plant pathogens to flourish. Install a micro-irrigation system in flower beds and vegetable gardens. These put the water directly into the root zone of the plant, use less water, and save money.

Fertilize Appropriately

Once you decide what you will be growing in your yard, collect soil samples and submit to the UF/IFAS Extension Soil Testing Laboratory. For \$10, the report will provide information on the soil pH and a fertilizer recommendation, based on available nutrients in the soil and what you intend to grow. Remember to use slow-release fertilizers, and do not fertilize when rain is expected. Too much fertilizer can burn plants, increase susceptibility to pests, and pollute waterways.

Mulch

This is a big time-saver. Mulch helps keep the weeds down, holds moisture in the soil, helps to reduce soil-borne diseases spread by rain splashing the pathogen into open wounds on the plant, and adds organic matter to the soil as it decomposes.

Keep the mulch about 3 to 4 inches thick and away from the base of the plant. When the mulch touches the base, it keeps that area constantly wet. Your plants will eventually decline due to rot of the trunk.

Attract Wildlife

Use a variety of plants that will provide cover, nesting areas, and food to wildlife such as birds, butterflies and bees. Bird baths and small ponds provide water sources for wildlife. Snags (dead

Continued on Page 30

¹ <https://planthardiness.ars.usda.gov/PHZMWeb/>

² <https://ffl.ifas.ufl.edu/homeowners/publications.htm>

³ <http://soilslab.ifas.ufl.edu/ESTL%20Home.asp>

New UF/IFAS Extension Bay County Horticulture CEUs

The UF/IFAS Bay County Extension Office, displaced following Hurricane Michael, is pleased to announce it has returned to its original location at

2728 E. 14th Street
Panama City, Florida 32401

Bay County Extension will offer the following CEU opportunities at this location in March 2020.

Limited Commercial Landscape Maintenance Review & Exam. \$40 plus separate exam fees.

Tuesday, March 24, 7:30 AM – 4 PM CDT

The Limited Commercial Landscape Maintenance Pesticide Applicator review class fulfills the six CEUs required by FDACS to take the LCLM exam.

This class is designed to serve as a review for exam takers obtaining the Limited

Commercial Landscape Maintenance (LCLM) pesticide license. CEUs are available for participants already holding pesticide licenses in various categories. However, they must attend all day to earn CEUs. We no longer have the four-hour CEU renewal-only option for this class. Register on Eventbrite¹.

It is strongly recommended that all attendees study prior to attending this course by reviewing the following material. Links to these listed documents can be found online¹.

- ✓ Chapter 482 F.S. The Structural Pest Control Act
- ✓ Chapter 5E-14, F.A.C. Rules of the Dept. of Agriculture and Consumer Services
- ✓ Applying Pesticides Correctly (for purchase)
- ✓ Limited Commercial Landscape Maintenance Pest Control SM-82 (for purchase)
- ✓ Identification Guide to Common Florida Lawn & Ornamental Weeds (for purchase)

If you are testing for Limited Commercial Landscape Maintenance (LCLM), you must attend all day to earn the six CEUs required to take this exam and provide proof of liability insurance. Exams will be available for LCLM at the end of the day.

Separate exam fees must be paid to FDACS prior to attending the class. Attendee must bring an FDACS Voucher to class to take the exam. The instructor cannot give the exam without this documentation.

Apply for and pay exam fees at <https://aesecomm.freshfromflorida.com>.

Landscape Pest Management, Spring CEU Class for License Renewal. \$25.

Friday, March 27, 8 AM – 12 PM CDT

This four-hour class will focus on landscape pest management strategies and pesticide safety for commercial pesticide applicators.

FDACS CEUs have been requested as follows: Two O&T, Commercial L&O, LLO, or LCLM CEUs; and two Core CEUs.

Early-bird registration on Eventbrite² ends March 26, 2020, at 5 PM. On-site registration is \$30 per person. **PP**

REGISTER on EVENTBRITE

¹ <https://tinyurl.com/March2020-LCLM>

² <https://tinyurl.com/March2020-LPM>

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Fertilizing Small Strips of Grass and Around Water Bodies

If you have a small strip of lawn that adjoins impervious surfaces such as a sidewalk or pavement, use a spreader equipped with a deflector shield that will spread the fertilizer in a 180-degree arc to keep it away from the paved area. Use the same shield when you are fertilizing areas next to water bodies. Leave a 10-foot strip of turf around the water body unfertilized to avoid polluting the water.

Fertilizer Spills and Storage

If you spill fertilizer on the driveway or sidewalk, sweep it up and put it back in the bag. Always sweep up spilled fertilizer rather than rinsing it away, even when the spill is on the lawn. Spilled fertilizer easily finds its way down storm drains or into the ground and from there into the water supply.

Store your unused fertilizer where it will stay dry. Do not store it next to pesticides, fuel, or solvents.

Watering Fertilizer In

After applying fertilizer, you will need to irrigate long enough to move the granules off the leaf blades and into the soil, where they will be taken up for use by the plant. This will avoid leaf burn and reduce potential runoff of nutrients.

Apply only enough water to moisten the top ½ inch of soil. This will wash most of the fertilizer into the top few inches of the soil, where it will best be taken up. More water than this may lead to leaching of the nutrients past the root zone, which will result in potential groundwater contamination.

Fertilizing Newly Planted Turf

Research has shown that the risk of nutrient leaching is much greater on newly planted sod than on established turfgrass. This is due to the lack of a deep root system on newly planted grass and due to import of some nutrients from the sod farm. Wait at least 30 to 60 days after planting to apply nitrogen fertilizer to turfgrass.

Weather and Fertilization

Do not fertilize if the National Weather Service has issued a flood, tropical storm, hurricane watch or warning, or if rains greater than 2 inches are likely within 24 hours. **PP**

Laurie E. Trenholm is Professor and Extension Turfgrass Specialist at UF/IFAS Environmental Horticulture Department.

Adapted from Homeowner Best Management Practices for the Home Lawn, EDIS ENH979.

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Florida-Friendly Landscaping, continued from Page 27

tree), birdhouses or bat houses can be utilized where appropriate.

Manage Yard Pests Responsibly

The correct quantity and timing of fertilizer applications and irrigation are crucial to keep pest populations to a minimum. Select pest-resistant plant varieties when available.

Remember, not all insects visiting your garden are bad! Learn to identify the good versus bad bugs. Inspect your plants regularly and be willing to tolerate some amount of pest damage. If spraying is warranted, use the least toxic pesticide options first.

Recycle Yard Waste

Keep your lawn cut at the recommended height, and leave clippings on the lawn to recycle the nitrogen. You may also recycle fallen leaves and pine needles under trees and shrubs. Start a compost pile for kitchen vegetable scraps and yard waste.

Reduce Stormwater Runoff

There's a multitude of things you can do to reduce stormwater runoff. Direct downspouts to landscape beds, lawn or into a rain barrel. Create a rain garden. Pick up your pet waste. Do not blow lawn clippings onto the

street; blow onto the lawn instead. Measure pesticides and fertilizers on a hard surface to allow easy cleanup in case of a spill.

Protect the Waterfront

Establish a 10-foot, maintenance-free (no fertilizers, pesticides or mowing) buffer of native plants along any shoreline to reduce runoff and erosion, absorb nutrients, and provide habitat for wildlife.

ALTHOUGH FLORIDA LAW stipulates that a homeowner association cannot prevent a homeowner from installing a Florida-friendly landscape, that doesn't mean you shouldn't adhere to guidelines stipulated by the HOA for making modifications to the landscape and its upkeep. **PP**

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The faculty and Master Gardener volunteers of your local UF/IFAS Extension Office offer educational workshops throughout the year to help you succeed with your Florida-friendly gardening endeavors. Check your local Extension Office website regularly for class offerings³.

Norma Samuel is the UF/IFAS Extension Florida-Friendly Landscaping and Urban Horticulture Agent in Sumter County. She can be reached at nsamuel@ufl.edu.

³<https://sfyl.ifas.ufl.edu/find-your-local-office/>



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