



FDACS-P-00124

July - September 2025

Volume 64, Number 3

TRI-OLOGY

A PUBLICATION FROM THE DIVISION OF PLANT INDUSTRY, BUREAU OF ENTOMOLOGY, NEMATOLOGY, AND PLANT PATHOLOGY

Division Director, Trevor R. Smith, Ph.D.



BOTANY

Providing information about plants:
native, exotic, protected and weedy



ENTOMOLOGY

Identifying arthropods, taxonomic
research and curating collections



NEMATOLOGY

Providing certification programs and
diagnoses of plant problems



PLANT PATHOLOGY

Offering plant disease diagnoses
and information



Florida Department of Agriculture and Consumer Services • Division of Plant Industry



Aegomorphus circumflexus (Jacquelin du Val, 1857) collected in Miami.
Photo by Mayumi Needham, FDACS-DPI.

ABOUT TRI-LOGY

The Florida Department of Agriculture and Consumer Services-Division of Plant Industry's (FDACS-DPI) Bureau of Entomology, Nematology, and Plant Pathology (ENPP), including the Botany Section, produces TRI-LOGY four times a year, covering three months of activity in each issue.

The report includes detection activities from nursery plant inspections, routine and emergency program surveys, and requests for identification of plants and pests from the public. Samples are also occasionally sent from other states or countries for identification or diagnosis.

HOW TO CITE TRI-LOGY

Section Editor. Year. Section Name. A.D. Grinage and G.S. Hodges (Editors). TRI-LOGY Volume (number): page. [Date you accessed site.]

For example: S.E. Halbert. 2015. Entomology Section. A.D. Grinage and G.S. Hodges (Editors). TRI-LOGY 54(4): 9. [Accessed 5 June 2016.]

Copies of TRI-LOGY are kept on the FDACS website for two years. To obtain older copies, contact the FDACS-DPI Library at (352) 395-4722 or PlantIndustry@FDACS.gov.

ACKNOWLEDGEMENTS

The editors would like to acknowledge the work of all those who contributed information and explanations by providing data, photographs or text, and by carefully reading early drafts.

We welcome your suggestions for improvement of TRI-LOGY. Please feel free to contact the [helpline](#) with your comments at 1-888-397-1517.

Thank you,

Gregory Hodges, Ph.D.

Editor

Assistant Director, Division of Plant Industry

Ayress D. Grinage, Ph.D.

Managing Editor

Botanist, Division of Plant Industry

TABLE OF CONTENTS



HIGHLIGHTS

03

Noteworthy examples from the diagnostic groups throughout the ENPP Bureau.



BOTANY

04

Quarterly activity reports from Botany and selected plant identification samples.



ENTOMOLOGY

08

Quarterly activity reports from Entomology and samples reported as new introductions or interceptions.



NEMATOLOGY

15

Quarterly activity reports from Nematology and descriptions of nematodes of special interest.



PLANT PATHOLOGY

18

Quarterly activity reports from Plant Pathology and selected identified plant pest and disease samples.

Cover Photo

Hoplotaimus floridensis sp. n., a new lance nematode from Florida.
Photo by Mihail Kantor, the Pennsylvania State University, University Park, PA.



HIGHLIGHTS



1 *Cladium jamaicense* Crantz, commonly known as sawgrass, is in a cosmopolitan genus of four species in the plant family Cyperaceae. Plants are perennial, rhizomatous herbs with culms (stems) up to 3 m tall and long, narrow, leathery leaf blades with small sharp teeth along the margins that can easily cut skin if contacted, hence the common name sawgrass.



1 - *Cladium jamaicense*, sawgrass, inflorescence.
Photo by Keith Bradley, [Atlas of Florida Plants](#)

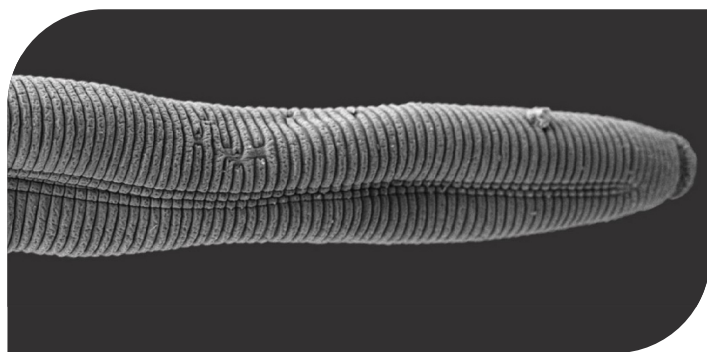
2 *Calepitrimerus vitis* (Nalepa, 1905), is an eriophyoid mite known primarily from grapevines (*Vitis* spp.) in temperate regions. It is associated with rusting symptoms and occasional economic damage. A **new Florida State record**, the mite was recovered from *Vitis aestivalis* Michx. (common name: summer grape), a native grape species found throughout the southeastern United States.



2 - *Calepitrimerus vitis*, an eriophyoid mite.
Photo by Samuel J. Bolton, FDACS-DPI

3 *Hoplolaimus floridensis* sp. n., is a new lance nematode species, detected from a soil and root sample of Bermuda grass, *Cynodon dactylon* (L.) Pers. This is a **new taxonomic discovery**.

4 *Entyloma holwayi* P. Syd., was found on the sulfur cosmos, *Cosmos sulphureus* Cav. (Compositae/ Asteraceae), a Mexican native weed, at a residential landscape in Gainesville (Alachua County, Florida). Members of the genus *Entyloma* are fungal plant parasites commonly known as white leaf smut. They are considered significant pathogens in *Cosmos* species due to their impact on ornamental value. This observation represents a **new Florida State record**.



3 - *Hoplolaimus floridensis*, a lance nematode, female.
Modified version of photos provided by the International Journal of Molecular Sciences, Assembled by Scott Burton, FDACS-DPI



4 - *Entyloma holwayi*, symptomatic leaf spots on *Cosmos sulphureus*.
Photo by Hector Urbina, FDACS-DPI





BOTANY

Compiled by Ayress D. Grinage, Ph.D. and Alex de la Paz, B.S.

This section identifies plants for the Division of Plant Industry, as well as for other governmental agencies and private individuals. The Botany Section maintains a reference herbarium with nearly 20,000 plants and 1,500 vials of seeds.

QUARTERLY ACTIVITY REPORT

	JULY - SEPT	2025 - YEAR TO DATE
Samples Submitted by Other DPI Sections	1,811	4,320
Samples Submitted for Botanical Identification Only	317	932
Total Samples Submitted	2,128	5,252
Specimens Added to the Herbarium	355	893

Some of the samples submitted recently are described below.

1 *Washingtonia robusta* H. Wendl. (Mexican fan palm), is one of two species in the genus *Washingtonia* from the plant family, Palmae/Arecaceae. A commonly cultivated palm species, *W. robusta* is native to the Baja California Peninsula and Sonora. This palm is solitary with a slender stem to 22 m tall. It tends to retain dead leaves that if uncut, encircle the stem, giving the stem its characteristic "skirt." Leaves are costapalmate, armed with curved teeth along the length of the petiole, and split into numerous leaf segments, with many fibers originating between segments on young leaves. Inflorescences are branched and protrude from the crown of leaves bearing numerous bisexual, cream-colored flowers that later develop into brownish-black spheroid drupe fruit to 1 cm in diameter. *Washingtonia robusta* is sometimes treated as a variety of *W. filifera*. However, the two are distinguishable by their stems, where *Washingtonia robusta* (*W. robusta*: height = to 22 m tall, diameter = to 80 cm wide) is often taller with a slenderer stem than *W. filifera* (*W. filifera*: height = to 15 m tall, diameter = to 1 m wide), darker colored leaves (*W. filifera* is a lighter minty green), and the presence of a tawny brown patch on the base of the lower surface of young leaves. *Washingtonia robusta* is faster growing than *W. filifera* and is considered more suitable to the Florida climate, and thus is the more commonly cultivated variety in Florida. *Washingtonia robusta* is listed as a Category II invasive plant according to the Florida Invasive Species Council, meaning it has increased in abundance among Florida plant communities but is not yet negatively impacting these communities to the extent shown



1a - *Washingtonia robusta*, Mexican fan palm, overall growth form.
Photo by Patti Anderson, FDACS-DPI

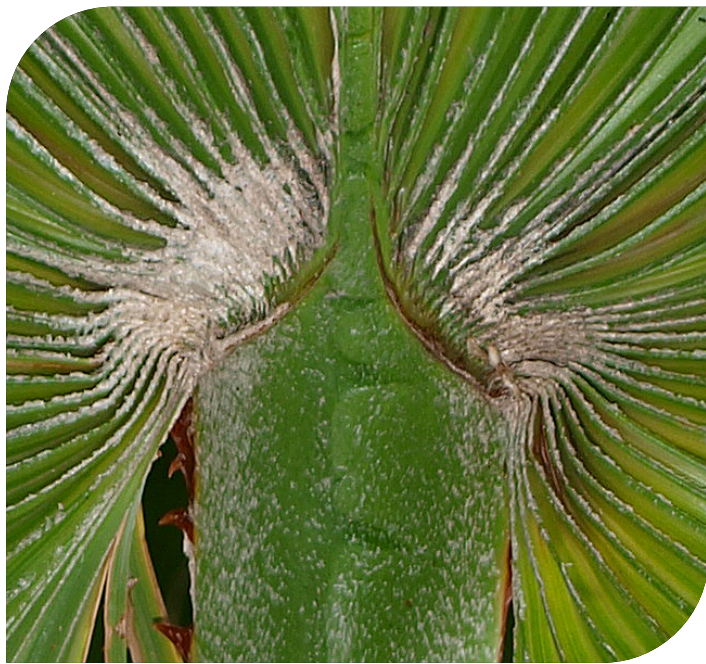


by Category I species. Collections of *W. robusta* have been made from the wild in Broward, Hardee, Hillsborough, Miami-Dade, Palm Beach, Pasco, Pinellas and Volusia counties. This quarter, *W. robusta* was found growing in a suburban woodland in Brevard County, a new county record for this species. (Brevard County; 08082025-07607; Chase Groninger; 14 August 2025.) (Anderson, 2011; Broschat, 2013; Henderson et al., 1995; Villanueva-Almanza et al., 2021; Wunderlin et al., 2025).

2 *Cladium jamaicense* Crantz (sawgrass), from a cosmopolitan genus of four species in the plant family Cyperaceae. This species is native to the southeastern United States, Mexico, West Indies, Central America and South America where it grows in brackish and freshwater marshes and savannas. It is particularly abundant in the Everglades of South Florida where it is the dominant species. This is the species that Marjory Stoneman Douglas referred to in her well-known book titled, "*The Everglades: River of Grass*." Although it is commonly referred to as "sawgrass", it is actually a sedge, not a grass. Plants are perennial, rhizomatous herbs with culms (stems) up to 3 m tall and long, narrow, leathery leaf blades with small sharp teeth along the margins that can easily cut skin if contacted, hence the common name sawgrass. Plants will flower and fruit in the spring through summer. Inflorescences are large, many-branched corymbs with numerous spikelets in groups of two to six. Each spikelet is narrowly ellipsoid to lanceolate and contains several flowers inside, each hidden behind a brown floral scale. Flowers have two stamens and a three-branched style connected to the ovary. Once a flower is pollinated by the wind, the ovary will develop into an achene, a one-seeded indehiscent fruit. The achenes are light greenish-brown, ovoid, with a truncate base and acute apex, 2 mm long and 1 mm wide and lack a perianth. This quarter, *Cladium jamaicense* was documented for the first time in Osceola County. (Osceola County; 09192025-09410; Jennifer McKeever; 19 September 2025.) (Tucker, 2002; Weakley and Southeastern Flora Team, 2025; Wunderlin and Hansen, 2011).

REFERENCES

- Anderson, P.J. (2011).** *Identifying Commonly Cultivated Palms* (https://idtools.org/palm_id/). In *A Resource for Pests and Diseases of Cultivated Palms*. Florida Department of Agriculture and Consumer Service, Division of Plant Industry and Identification Technology Program, S&T, PPQ, APHIS, USDA; Fort Collins, CO. [Accessed 24 September 2025].
- Broschat, T.K. (2013).** *Washingtonia robusta*: Mexican Fan Palm. *EDIS*. ENH-827 ST670.
- Henderson, A., Galeano, G. and Bernal, R. (1995).** *Field guide to the palms of the Americas*. Princeton University Press. Princeton, New Jersey.
- Tucker, G.C. (2002).** *Cladium*. In: Flora of North America Editorial Committee, eds. 1993+. *Flora of North America North of Mexico* [Online]. 21+ vols. New York and Oxford. Vol. 23. <http://floranorthamerica.org/Cladium> [Accessed 15 October 2025].
- Villanueva-Almanza, L., Landis, J.B., Koenig, D. and Ezcurra, E. (2021).** Genetic and morphological differentiation in *Washingtonia* (Arecaceae): solving a century-old palm mystery. *Botanical Journal of the Linnean Society*. 196(4): 506-523.
- Weakley, A.S. and Southeastern Flora Team (2025).** *Flora of the southeastern United States*. University of North Carolina Herbarium, North Carolina Botanical Garden. Chapel Hill, North Carolina.
- Wunderlin, R.P. and Hansen, B.F. (2011).** *Guide to the vascular plants of Florida* (3rd edition). University Press of Florida. Gainesville, Florida.
- Wunderlin, R.P., Hansen, B.F., Franck, A.R. and Essig, F.B. (2025).** *Atlas of Florida Plants* (<http://florida.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa. [Accessed 24 September 2025].



1b - *Washingtonia robusta*, Mexican fan palm, bottom side of young leaf showing tawny brown patch.

Photo by Patti Anderson, FDACS-DPI



2 - *Cladium jamaicense*, sawgrass, in flower.

Photo by Pete Dunkelberg, *Atlas of Florida Plants*



🔍 BOTANY IDENTIFICATION TABLE

The following table provides information about new county records submitted in the reported quarter. The table is organized alphabetically by species name. The full version with more complete data is downloadable as a [PDF](#) or an [Excel](#) spreadsheet, also organized by species name, except new county records are listed first.

SPECIES NAME	COUNTY	LIST NUMBER	COLLECTOR	COLLECTOR 2
<i>Ageratum conyzoides</i>	Orange	7865	William Hangen	
<i>Ageratum conyzoides</i>	Hernando	9398	William Hangen	
<i>Amaranthus spinosus</i>	St. Lucie	6418	Jeanie Frechette	
<i>Ammannia latifolia</i>	St. Lucie	7369	Teresa Ortelli	Jeanie Frechette
<i>Arachis glabrata</i>	Pasco	8144	Christina Huetcher	
<i>Bulbostylis barbata</i>	St. Lucie	7050	Jeanie Frechette	Teresa Ortelli
<i>Ceratophyllum demersum</i>	St. Lucie	7032	Jeanie Frechette	Teresa Ortelli
<i>Ceratopteris thalictroides</i>	St. Lucie	7382	Jeanie Frechette	Teresa Ortelli
<i>Citrullus lanatus</i>	Pasco	7328	Gary Webb	
<i>Cladium jamaicense</i>	Osceola	9410	Jennifer McKeever	
<i>Clerodendrum bungei</i>	Lake	6836	Nora Marquez	
<i>Clerodendrum speciosissimum</i>	St. Lucie	7257	Jeanie Frechette	
<i>Clerodendrum speciosissimum</i>	Pasco	7432	Christina Huetcher	
<i>Commelina gambiae</i>	Osceola	9578	Jennifer McKeever	
<i>Costus pulverulentus</i>	Pasco	7617	Gary Webb	
<i>Crassocephalum crepidioides</i>	St. Lucie	7054	Jeanie Frechette	Teresa Ortelli
<i>Crinum americanum</i>	St. Lucie	7407	Teresa Ortelli	
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Sumter	7241	Nora Marquez	
<i>Cyperus involucratus</i>	Glades	9460	Mary Graham	
<i>Cyperus papyrus</i>	Marion	7161	Nora Marquez	
<i>Desmanthus virgatus</i>	Brevard	7153	Chase Groninger	
<i>Epipremnum pinnatum</i>	Sumter	7215	Nora Marquez	
<i>Eragrostis amabilis</i>	Sumter	9114	William Hangen	
<i>Eragrostis ciliaris</i>	Sumter	9110	William Hangen	
<i>Euphorbia cyathophora</i>	Gilchrist	8381	Logan Cutts	
<i>Gloriosa superba</i>	Volusia	9376	Deann Hansen	
<i>Hedera helix</i>	Flagler	8390	Jennifer Hesse	
<i>Jacquemontia tamnifolia</i>	Suwannee	8800	Jeffrey Eickwort	
<i>Justicia angusta</i>	St. Lucie	7390	Jeanie Frechette	Teresa Ortelli
<i>Leptadenia lanceolata</i>	Polk	7520	Lindsay Miller	
<i>Micranthemum umbrosum</i>	St. Lucie	7384	Jeanie Frechette	Teresa Ortelli
<i>Mirabilis jalapa</i>	Gilchrist	8382	Logan Cutts	
<i>Monarda punctata</i>	Nassau	8151	Lisa Tyler	
<i>Nuphar advena</i> ssp. <i>advena</i>	St. Lucie	6863	Jeanie Frechette	Teresa Ortelli
<i>Nymphaea odorata</i>	St. Lucie	7826	Jeanie Frechette	
<i>Phoenix reclinata</i>	Sumter	6299	William Hangen	
<i>Physalis pubescens</i>	Pasco	6226	Cynthia Blattenberger	
<i>Potamogeton illinoensis</i>	St. Lucie	7388	Jeanie Frechette	Teresa Ortelli
<i>Praxelis clematidea</i>	Seminole	9709	Alberto Rentas Muller	
<i>Pseudosasa japonica</i>	Jackson	6233	Riccardo Tordi	
<i>Rhynchosia minima</i>	St. Lucie	6222	Alexander Tasi	Teresa Ortelli
<i>Senna alata</i>	Volusia	8625	Nora Marquez	
<i>Sesbania punicea</i>	Gilchrist	8383	Logan Cutts	
<i>Sphagneticola trilobata</i>	Hendry	6647	Mary Graham	Patricia McGill
<i>Stachytarpheta jamaicensis</i>	Pasco	7616	Cynthia Blattenberger	



SPECIES NAME	COUNTY	LIST NUMBER	COLLECTOR	COLLECTOR 2
<i>Thespesia populnea</i>	Indian River	9758	Caroline Pride	
<i>Tridax procumbens</i>	Hendry	8411	Mary Graham	
<i>Vallisneria americana</i>	St. Lucie	7435	Teresa Ortelli	
<i>Viburnum dentatum</i>	Citrus	6847	Stephen Jenner	
<i>Washingtonia robusta</i>	Brevard	7607	Chase Groninger	
<i>Wisteria sinensis</i>	St. Johns	8197	Mark Laurint	
<i>Zamia furfuracea</i>	Brevard	7490	Chase Groninger	





ENTOMOLOGY

Compiled by Susan E. Halbert, Ph.D., Catherine E. Nance and Helen Beiriger

This section provides the division's plant protection specialists and other customers with accurate identifications of arthropods. The entomology section also builds and maintains the arthropod reference and research collection (the Florida State Collection of Arthropods with over 12.5 million specimens), and investigates the biology, biological control and taxonomy of arthropods.

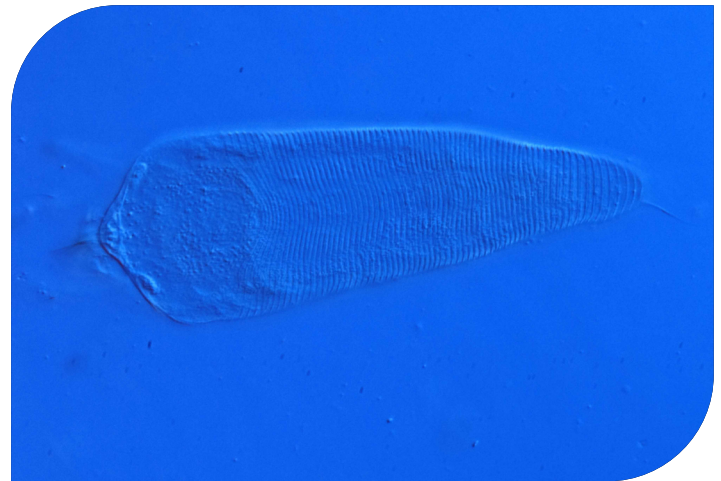
	JULY - SEPT	2025 - YEAR TO DATE
Samples Submitted	1,906	4,674
Lots Identified	2,867	7,688

1 *Aegomorphus circumflexus* (Jacquelin du Val, 1857), a longhorned beetle, a new Continental USA record. A female specimen was collected floating dead in a pond and submitted for identification. This species is distributed widely in Mexico, Central America and the Caribbean and is not likely to be a pest of concern. The larvae develop in dead hardwood trees. The native Florida species, *Aegomorphus quadrigibbus* (Say), is similar looking, and eye characteristics can be used to distinguish the two. Considering the similarity to a native species, confirmation of the specimen determination through DNA barcoding was performed. (Miami-Dade County; E3888-01-08252025-08195 and M0400-01-08252025-08195; Sandra Domenech; 22 August 2025; FSCA130953.) (Dr. Patrick S. Gorrying and Matthew R. Moore.)



1 - *Aegomorphus circumflexus* (Jacquelin du Val, 1857).
Photo by Mayumi Needham, FDACS-DPI

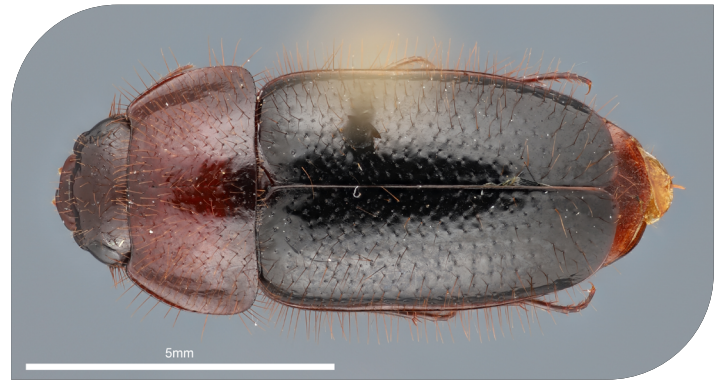
2 *Calepitrimerus vitis* (Nalepa, 1905), an eriophyoid mite, a new Florida State record. This eriophyoid mite is known primarily from grapevines (*Vitis* spp.) in temperate viticultural regions, where it is associated with rusting symptoms and occasional economic damage. Although *Calepitrimerus vitis* has been intercepted once before in Florida (in 2013), that earlier detection was not formally published as a new state record. This note serves to document its presence officially. In this new record, the mite was recovered from *Vitis aestivalis* Michx. (common name: summer grape), a native grape species found throughout the southeastern United States. The plant exhibited rusting symptoms consistent with eriophyoid mite activity. Given the limited history of detection in Florida and the sporadic nature of symptoms, this mite is unlikely to have regulatory significance. Nonetheless, this record fills a gap in the known distribution of *C. vitis* and may be of interest to viticulture specialists and regulatory entomologists monitoring emerging pest threats in native and cultivated grape systems. (Pasco County; E4417-01-09112025-08926, Armando Noguera; 10 September 2025.) (Dr. Samuel J. Bolton.)



2 - *Calepitrimerus vitis* (Nalepa, 1905).
Photo by Samuel J. Bolton, FDACS-DPI



3 *Pseudomorpha excrucians* Kirby, 1823, a ground beetle, a new Florida State record. A single female specimen of this beetle was collected in a Cooperative Agricultural Pest Survey Lindgren funnel and submitted for identification. This species was known previously from several southeastern U.S. states (Louisiana to South Carolina), so its discovery in northern Florida is unsurprising. While the genus *Pseudomorpha* currently contains 23 species in the United States, there are more than 125 species yet to be described across the range (Erwin and Amundson 2013). In the U.S., the genus is primarily western, *P. excrucians* being the only species found east of Texas. This beetle is unlikely to be mistaken for any other species in the area due to its unique appearance compared to other ground beetles and unique color pattern compared to other species in the genus. The larvae are obligate myrmecophiles, meaning they must live in ant nests to complete their development. Adults will also live in and around ant nests and are most commonly collected at lights. This species is not a pest. (Jackson County; E3486-01-08062025-07465; Allison Finch; 29 July 2025.) (Evan S. Waite.)



3 - *Pseudomorpha excrucians* Kirby, 1823.
Photo by Jonathan Bremer, FDACS-DPI

REFERENCE

Erwin, T.L. and Amundson, L.M. (2013). Beetles that live with ants (Carabidae: Pseudomorphinae: *Pseudomorpha* Kirby, 1825): A revision of the *santarita* species group. *ZooKeys*. 362: 29-54.



ENTOMOLOGY SPECIMEN REPORT

The following are tables with entries for records of new hosts or new geographical areas for samples identified in the current volume's reporting period as well as samples of special interest. An abbreviated table, with all the new records, but less detail about them, is presented in the body of this web page and another version with more complete data is downloadable as a [PDF](#) or an [Excel](#) spreadsheet.

The tables are organized alphabetically by plant host if the specimen has a plant host. Some arthropod specimens are not collected on plants and are not necessarily plant pests. In the table below, those entries with no plant information included are organized by arthropod name.

PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Abelmoschus esculentus</i>	okra	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Kate Kaste	First in county; regulatory significance
<i>Abelmoschus esculentus</i>	okra	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Mark Zenoble	First in county; regulatory significance
<i>Abelmoschus esculentus</i>	okra	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Muhammad Haseeb	First in county; regulatory significance
<i>Abelmoschus esculentus</i>	okra	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Krystal Ashman	First in county; regulatory significance
<i>Ambrosia artemisiifolia</i>	ragweed	<i>Ferrisia malvastra</i>	a mealybug	Riccardo Tordi	First in county
<i>Annona glabra</i>	pond apple/alligator apple	<i>Matsumurasca insularis</i>	an <i>Annona</i> leafhopper	Lane Southerland	New Florida host record
<i>Annona</i> sp.	annona	<i>Matsumurasca insularis</i>	an <i>Annona</i> leafhopper	KC Gonzalez, Douglas Restom-Gaskill	First in county
<i>Annona</i> sp.	annona	<i>Matsumurasca insularis</i>	an <i>Annona</i> leafhopper	Douglas Restom-Gaskill	First in county
<i>Annona</i> sp.	annona	<i>Matsumurasca insularis</i>	an <i>Annona</i> leafhopper	Mark Zenoble	First in county
<i>Bidens alba</i>	beggarticks	<i>Petrusa epilepsis</i>	seagrape flatid planthopper	Mark Zenoble	New Florida host record
<i>Bothriochloa bladhii</i>	Australian beardgrass	<i>Balclutha rubrostriata</i>	red streaked leafhopper	Jimmy Hernandez	First in county
<i>Brassica oleracea</i>	kale	<i>Aphis glycines</i>	soybean aphid	Logan Cutts, Dyrana Russell, Vincent Barrios, Jacob Bryan, Caroline Pride, Renee Shiska	Regulatory significance
<i>Brassica rapa</i>	bok choy	<i>Ceratagallia californica</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Buxus microphylla</i>	Japanese boxwood	<i>Fiorinia phantasma</i>	phantasma scale	Caroline Pride	New Florida host record; regulatory significance
<i>Cajanus cajan</i>	pigeon pea	<i>Alconeura macra</i>	a leafhopper	Carly Dodgen, Susan Halbert	First in county
<i>Capsicum annuum</i>	poblano pepper	<i>Bactericera cockerelli</i>	potato psyllid	Jakira Davis, Justin Anto	Regulatory significance
<i>Capsicum annuum</i>	poblano pepper	<i>Bactericera cockerelli</i>	potato psyllid	Jakira Davis, Justin Anto	Regulatory significance
<i>Capsicum annuum</i>	Jalapeño pepper	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significance
<i>Capsicum annuum</i>	poblano pepper	<i>Bactericera cockerelli</i>	potato psyllid	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Capsicum annuum</i>	pepper	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Michael Bentley	First in county; regulatory significance
<i>Cichorium endivia</i>	escarole	<i>Deltocephalus fuscinosus</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Cichorium endivia</i>	escarole	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Cnidocolus stimulosus</i>	tread-softly	<i>Phenacoccus madeirensis</i>	Madeira mealybug	Mark Rothschild, Susan Halbert	New Florida host record
<i>Colocasia esculenta</i>	wild taro	<i>Tarophagus colocasiae</i>	a taro planthopper	Grayson Grume	First in county
<i>Conocarpus erectus</i>	buttonwood	<i>Diolcus irroratus</i>	a shield bug	Caroline Pride, Alexander Tasi	First in county
<i>Crassula</i> sp.	crassula	<i>Vryburgia trionymoides</i>	a mealybug	Chase Groninger	Regulatory significance
<i>Dombeya</i> sp.	dombeya	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Scott Krueger	New Florida host record; regulatory significance
<i>Dracaena</i> sp.	dracaena	<i>Lepidosaphes chinensis</i>	Chinese mussel scale	Samantha Miller, Laura Dunn, Caroline Pride	Regulatory significance
<i>Echeveria</i> sp.	echeveria	<i>Vryburgia trionymoides</i>	a mealybug	Lisa Tyler	Regulatory significance
<i>Eustachys petraea</i>	pinewoods fingergrass	<i>Antoninoides parrotti</i>	a mealybug	Mark Zenoble, Julian Cordo	First in county



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Fragaria x ananassa</i>	strawberry	<i>Ceratagallia californica</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Chaetosiphon fragaefolii</i>	strawberry aphid	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus hesperus</i>	a Western lygus bug	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus</i> sp.	a Western lygus bug	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus</i> sp.	a Western lygus bug	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus</i> sp.	a Western lygus bug	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus</i> sp.	a Western lygus bug	Jakira Davis, Justin Anto	Regulatory significance
<i>Fragaria x ananassa</i>	strawberry	<i>Vespula pensylvanica</i>	Western yellowjacket	Cameron Suiters, Dyrana Russell, Justin Anto, Elhansville Hector	Regulatory significance
<i>Fraxinus caroliniana</i>	Carolina ash, swamp ash	<i>Siphoninus phillyreae</i>	ash whitefly	Scott Berryman, Richard Bloom	First in county
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Isaac Esquivel	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Isaac Esquivel	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Isaac Esquivel	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Dyrana Russell, Logan Cutts, Renee Shiska	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Allison Finch	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Allison Finch	First in county; regulatory significance
<i>Gossypium</i> sp.	cotton	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Allison Finch	First in county; regulatory significance
<i>Hibiscus acetosella</i>	false roselle, African rosemallow, red leaf hibiscus	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Ryan Tesone, Silvia Vau, Christine Zamora, Keith Zugar	New Florida host record
<i>Hibiscus laevis</i>	halberdleaf rosemallow	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Doris Klenn	New Florida host record, regulatory significance
<i>Hibiscus rosa-sinensis</i>	hibiscus	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Chase Groninger	First in county; regulatory significance
<i>Hibiscus rosa-sinensis</i>	hibiscus	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Victoria Benjamin, Chase Groninger	First in County
<i>Hibiscus rosa-sinensis</i>	hibiscus	<i>Anthonomus testaceosquamosus</i>	hibiscus bud weevil	Stefan Hartz	First in county
<i>Hibiscus rosa-sinensis</i>	hibiscus	<i>Petrusa epilepsis</i>	seagrape flatid planthopper	Mark Zenoble	New Florida host record
<i>Hibiscus sabdariffa</i>	roselle, sorrel	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Abby Bartlett, Stephen Jenner	First in county; regulatory significance
<i>Hibiscus sabdariffa</i>	roselle, sorrel	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Allison Finch	First in county
<i>Hibiscus</i> sp.	hibiscus	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Marian Alcantara-Brandt	First in county; regulatory significance
<i>Hibiscus tiliaceus</i>	sea hibiscus	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Emily Safran	New Florida host record; regulatory significance
<i>Indigofera hirsuta</i>	hairy indigo	<i>Cyrtia sordida</i>	a flatid planthopper	Teresa Ortelli, Alexander Tasi	New Florida host record
<i>Lactuca sativa</i>	green leaf lettuce	<i>Acyrtosiphon lactucae</i>	lettuce aphid	Logan Cutts, Dyrana Russell, Vincent Barrios, Jacob Bryan, Caroline Pride, Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Ceratagallia californica</i>	a leafhopper	Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Cixius cultus</i>	a cixiid planthopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Delia radicum</i>	cabbage root fly	Jakira Davis, Justin Anto	Regulatory significance



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscinevrosus</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscinevrosus</i>	a leafhopper	Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscinevrosus</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscinevrosus</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscinevrosus</i>	a leafhopper	Cameron Suiters, Dyrana Russell, Justin Anto, Logan Cutts, Jakira Davis, Elhansville Hector	Regulatory significance
<i>Lactuca sativa</i>	green leaf lettuce	<i>Graminella</i> sp.	a leafhopper	Logan Cutts, Dyrana Russell, Vincent Barrios, Jacob Bryan, Caroline Pride, Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza frickella</i>	a leafminer fly	Kelly Douglas, Cheryl Jones, Kenneth Ellis, Diane McCol	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	artisan lettuce	<i>Liriomyza langei</i>	California pea leafminer	Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	romaine	<i>Liriomyza langei</i>	California pea leafminer	Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Cameron Suiters, Dyrana Russell, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Cameron Suiters, Dyrana Russell, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Liriomyza langei</i>	California pea leafminer	Cameron Suiters, Dyrana Russell, Justin Anto, Logan Cutts, Jakira Davis, Elhansville Hector	Regulatory significance
<i>Lactuca sativa</i>	romaine lettuce	<i>Lycorma delicatula</i>	spotted lanternfly	Jennifer Henry	Regulatory significance
<i>Lactuca sativa</i>	artisan lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	organic green leaf lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	William Hangen	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	red leaf lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	William Hangen	Regulatory significance
<i>Lactuca sativa</i>	green leaf lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	William Hangen	Regulatory significance
<i>Lactuca sativa</i>	romaine hearts	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Dyrana Russell, Logan Cutts, Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	"Arl Naked" lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Justin Anto	Regulatory significance
<i>Lactuca sativa</i>	green leaf lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Logan Cutts, Dyrana Russell, Vincent Barrios, Jacob Bryan, Caroline Pride, Renee Shiska	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significance



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Lactuca sativa</i>	romaine lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Lactuca sativa</i>	lettuce	<i>Nothodelphax consimilis</i>	a delphacid planthopper	Dyrana Russell, Cameron Suiters, Justin Anto	Regulatory significance
<i>Lagerstroemia indica</i>	crape myrtle	<i>Acanthococcus lagerstroemiae</i>	crape myrtle bark scale	Michael Bentley	First in county
<i>Megathyrus maximus</i>	Guinea grass	<i>Hysteronura setariae</i>	rusty plum aphid	Mark Zenoble	New Florida host record
<i>Melinis repens</i>	natal grass	<i>Sipha flava</i>	yellow sugarcane aphid	Chase Groninger	New Florida host record
<i>Melinis repens</i>	natal grass	<i>Sipha</i> sp.	an aphid	Chase Groninger	New Florida host record
<i>Millettia pinnata</i>	pongamia, pongam tree	<i>Aceria pongamiae</i>	pongamia mite	Mary Graham, Matthew Brodie, Emily Safran	First in county
<i>Millettia pinnata</i>	pongamia, pongam tree	<i>Aceria pongamiae</i>	pongamia mite	Scott Krueger	First in county
<i>Mirabilis jalapa</i>	four-o'clock	<i>Tominiotus communis</i>	a burrowing bug	Matthew Brodie, Mary Graham	First in county
<i>Opuntia mesacantha</i> subsp. <i>mesacantha</i>	southeastern prickly-pear	<i>Chelinidea vittiger</i>	cactus coreid bug	Riccardo Tordi	First in county
<i>Persea americana</i>	avocado	<i>Acutaspis albopicta</i>	albopicta scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Acutaspis albopicta</i>	albopicta scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Acutaspis albopicta</i>	albopicta scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Daniel Merced, Cheryl Jones, Vaden Edmondson, Shanelle Mulrooney, Cynthia Blattenberger, Gary Webb	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>		Shanelle Mulrooney, Daniel Merced, Christina Huetcher, Vaden Edmondson, Cynthia Blattenberger, Gary Webb	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	Davidson's avocado scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Persea borbonia</i>	redbay	<i>Omolicna joi</i>	Florida palm derbid	Vincent Barrios	First in county
<i>Petroselinum crispum</i>	parsley	<i>Ceratagallia californica</i>	a leafhopper	Jakira Davis, Justin Anto	Regulatory significance
<i>Phoenix dactylifera</i>	date palm	<i>Camponotus absquatulator</i>	an ant	William Hangen	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts, Renee Shiska	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Jakira Davis, Justin Anto	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Renee Shiska	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Elhansville Hector, Ricardo Tordi, Logan Cutts, Jakira Davis, Justin Anto, Dyrana Russell, Cameron Suiters	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Renee Shiska	Regulatory significance
<i>Physalis philadelphica</i>	tomatillo	<i>Euschistus biformis</i>	a brown stink bug	Logan Cutts, Renee Shiska	Regulatory significance
<i>Pinus</i> sp.	pine	<i>Oxoplatypus quadridentatus</i>	an ambrosia beetle	Ann Marie Robinson-Baker	First in county
<i>Quercus</i> sp.	oak	<i>Dendrocoris humeralis</i>	a stink bug	Teresa Ortell	First in county
<i>Quercus</i> sp.	oak	<i>Parabrochymena arborea</i>	a bark stink bug	Chase Groninger	First in county
<i>Quercus</i> sp.	oak	<i>Pseudomorpha exrucians</i>	a carabid beetle	Allison Finch	New Florida state record
<i>Quercus virginiana</i>	live oak	<i>Glyphonyx bimarginatus</i>	a click beetle	Riccardo Tordi	First in county
<i>Rubus</i> sp.	raspberries	<i>Rhinacloa forticornis</i>	Western plant bug	Renee Shiska	Regulatory significance
<i>Serenoa repens</i>	saw palmetto	<i>Fiorinia phantasma</i>	phantasma scale	Jakira Davis, Justin Anto	Regulatory significance
<i>Solanum melongena</i>	eggplant	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Scott Weihman	First in county; regulatory significance



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Solanum melongena</i>	eggplant	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Krystal Ashman	First in county
<i>Urena lobata</i>	Caesar's weed, bur-mallow, Congo jute	<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Matthew Brodie, Mary Graham	First in county
<i>Urochloa ramosa</i>	browntop millet	<i>Balclutha incisa</i>	a leafhopper	Robert Leahy	First in county
<i>Vitis aestivalis</i>	summer grape	<i>Calepitrimerus vitis</i>	an eriophyoid mite	Armando Noguera	New Florida state record
<i>Vitis</i> sp.	grapes	<i>Planococcus ficus</i>	a mealybug	Jakira Davis, Justin Anto	Regulatory significance
<i>Vitis</i> sp.	grapes	<i>Planococcus ficus</i>	a mealybug	Jakira Davis, Justin Anto	Regulatory significance
		<i>Aegomorphus circumflexus</i>	a longhorn beetle	Sandra Domenech	New Florida state record
		<i>Amrasca biguttula</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Carly Dodgen	First in county; regulatory significance
	multiple plants in a shipment	<i>Ariolimax</i> sp.	banana slug	Jesse Krok, Jennifer McKeever	Regulatory significance
		<i>Axelsonia tubifera</i>	a springtail	Felipe Soto-Adames, Catherine Nance, Kathryn Daly, Isabelle Atchia	First in county
		<i>Brachys floricola</i>	a buprestid beetle	Douglas Restom-Gaskill	First in county
		<i>Cregya oculata</i>	a clerid beetle	Allison Finch	First in county
		<i>Flavoclypeus andromedus</i>	a delphacid planthopper	Samantha Miller, Laura Dunn, Caroline Pride	First in county
		<i>Liburniella ornata</i>	ornate planthopper	Carly Dodgen	First in county
		<i>Mallodon dasystemus</i>	a longhorn beetle	Bobby Cahal	First in county
		<i>Merragata brunnea</i>	a velvet water bug	De-fen Mou, Yavonne Williams	First in county
		<i>Neomegamelanus elongatus</i>	a delphacid planthopper	Julia Laur	First in county
		<i>Oebalus insularis</i>	a rice stink bug	Chase Groninger	First in county
		<i>Orchesella bulba</i>	a springtail	Felipe Soto-Adames, Catherine Nance, Kathryn Daly, Isabelle Atchia	First in county
		<i>Pachybaris porosa</i>	a weevil	Ray Jarrett	First in county
		<i>Pelonium leucophaeum</i>	a clerid beetle	Allison Finch	First in county
		<i>Pissonotus albovenosus</i>	a delphacid planthopper	Samantha Miller, Laura Dunn	First in county
		<i>Pissonotus quadripustulatus</i>	a delphacid planthopper	Samantha Miller, Laura Dunn, Caroline Pride	First in county
		<i>Pseudanurida sawayana</i>	a springtail	Felipe Soto-Adames, Catherine Nance, Kathryn Daly, Isabelle Atchia	First in county
		<i>Pycnoderes balli</i>	a mirid plant bug	Krystal Ashman	First in county
		<i>Seira steinmetzi</i>	a springtail	Felipe Soto-Adames, Catherine Nance, Kathryn Daly, Isabelle Atchia	First in county
		<i>Sinomegoura citricola</i>	an aphid	Krystal Ashman	First in county
		<i>Sophonia orientalis</i>	two-spot cotton leafhopper, okra leafhopper (Caribbean)	Monica Triana	First in county
		<i>Spanagonicus albofasciatus</i>	a plant bug	Carly Dodgen	First in county
		<i>Stictocephala brevitylus</i>	a treehopper	Matthew Flanagan	First in county
		<i>Strangalia famelica</i>	a longhorn beetle	Logan Cutts, Dyrana Russell	First in county
		<i>Xylotrechus colonus</i>	a longhorn beetle	Logan Cutts, Dyrana Russell	First in county





NEMATOTOLOGY

Compiled by Renato N. Inserra, Ph.D. and Janete A. Brito, Ph.D.

This section analyzes soil and plant samples for nematodes, conducts pest detection surveys and provides diagnoses of plant problems, in addition to completing identification of plant parasitic nematodes involved in regulatory and certification programs. State of Florida statutes and rules mandate the predominant regulatory activities of the section. Analyses of plant and soil samples include those from in-state programs, plant shipments originating in Florida destined for other states and countries, as well as samples intercepted in Florida from outside the United States.

QUARTERLY ACTIVITY REPORT

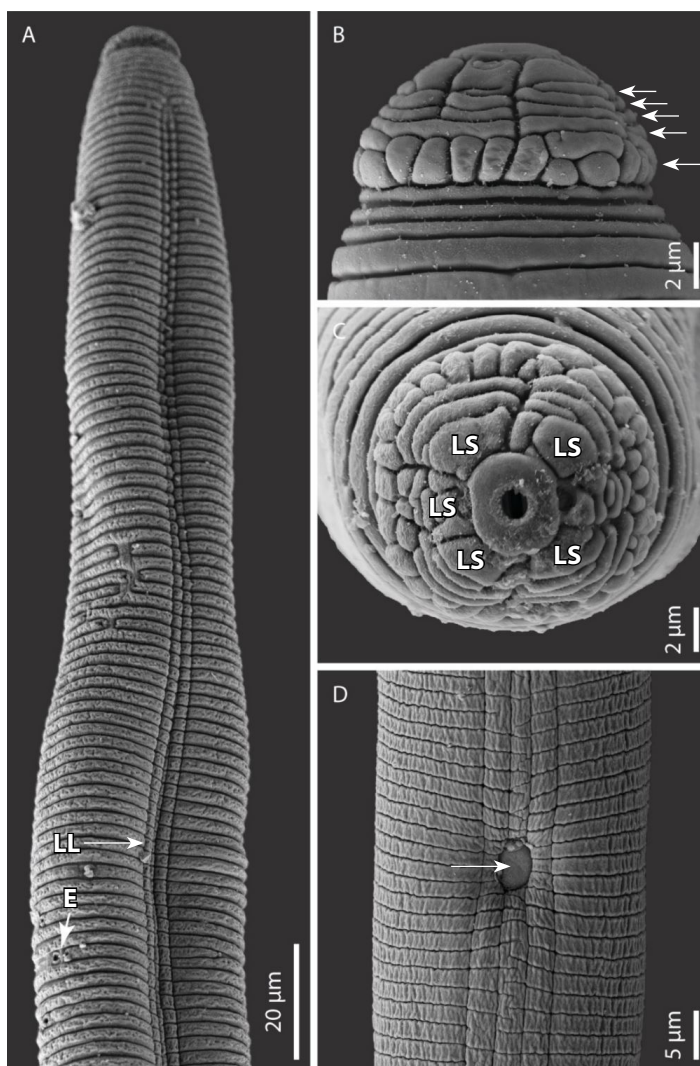
	JULY - SEPT	2025 - YEAR TO DATE
Morphological Identifications	4,630	13,291
Molecular Identifications *	445	999

* The majority of these analyses involved root-knot nematode species.

Nematode of Special Interest

1 *Hoplolaimus floridensis* Subbotin et al., 2025, a new lance nematode species, obtained from a soil and root sample of Bermuda grass, *Cynodon dactylon* (L.) Pers., kept in culture in Citra, Florida (Marion County; 11152021-04429; Dr. William Crow; 15 November 2021). **This is a new taxonomic discovery.**

Species of *Hoplolaimus* Daday, 1905 are commonly known as lance nematodes because of their robust stylet with tulip-shaped knobs. According to Lehman (2002) there are five species of lance nematodes reported in Florida: *H. concaudajuvencus* Golden & Minton, 1970; *H. galeatus* (Cobb, 1913) Thorne, 1935; *H. magnistylus* Robbins, 1982; *H. seinhorsti* Luc, 1958 and *H. tylenchiformis* Daday, 1905. The records of the Nematology section indicate that *H. galeatus* is the most common lance nematode found in regulatory and survey samples from turfgrasses and agronomic crops collected across Florida by environmental specialists of the Bureau of Plant and Apiary Inspection. *Hoplolaimus galeatus* was described using a population collected from grasses in Virginia. By contrast, *H. concaudajuvencus* is not widespread in Florida and its distribution is limited to Escambia County, where it was originally described from Bermuda grass. The report of *H. magnistylus* in Alachua County needs to be confirmed. The infestations of *H. seinhorsti* are limited to Escambia County, where they were reported on peanut by Bae et al. (2008). *Hoplolaimus tylenchiformis*, the type species of the genus, was described using a population from Paraguay. Sher (1963) stated that he redescribed this species by using specimens of populations of lance nematodes with morphological characters matching those of *H. tylenchiformis* found in Central



1 - *Hoplolaimus floridensis* sp. n., Scanning Electron Microscope microphotographs of a female. (A) Anterior body showing the lateral field (LL) marked by four incisures or three bands (central band sunken between the other two bands). Note excretory pore (arrowed). (B-C) Head patterns showing lip annuli (arrowed) with subdivisions in B and lip sectors (LS) with subdivisions in C. (D) Lateral field with prominent phasmid (arrowed) and three areolate bands. Photos from the International Journal of Molecular Sciences assembled and modified by Scott Burton, FDACS-DPI.



Florida, in 1963 by Drs. D.J. Raski, A.C. Tarjan and C.I. Hannon. No subsequent reports of *H. tylenchiformis* from Florida are available. Molecular data have only been obtained for *H. galeatus*, *H. magnistylus* and *H. seinhorsti* (Bae et al., 2008; Ma et al., 2011). To clarify discrepancies among published results of phylogenetic analyses of *H. galeatus* and those obtained by some of the coauthors of this report, a cooperative study was conducted by the nematologists of this department, United States Department of Agriculture, California Department of Food and Agriculture and University of Pennsylvania (Subbotin et al., 2025). In this cooperative study, DNA sequences were analyzed using the D2-D3 expansion region of 28S rRNA, ITS rRNA and *COI* genes of a topotype population of *H. galeatus* from Virginia together with other populations from different geographic regions. The phylogenetic results indicated that the sequences of these lance nematodes grouped in two separate clades rather than clustering in a single clade with the topotype of *H. galeatus* population from Virginia. Populations from central-northern states of the United States clustered together with the Virginia topotype population, whereas Florida populations identified as *H. galeatus* clustered in a separate clade. These results indicate that Florida populations represent a distinct new species that was described in this cooperative study with the name of *Hoplolaimus floridensis* sp. n. Morphologically, this new species aligns with a group of other *Hoplolaimus* species characterized by lateral fields marked by four incisures (Fig. 1A, D) and ventral esophageal glands with three nuclei. However, using Scanning Electron Microscopy, it is evident that *H. floridensis* differs from other Florida *Hoplolaimus* species, by having divided subdorsal, subventral and lateral lip sectors (Fig. 1B, C), which are undivided in other representatives of this genus. In addition, *H. floridensis* differs from *H. galeatus* and *H. tylenchiformis* in having five to seven lip annuli versus five in *H. galeatus* and four in *H. tylenchiformis*. *Hoplolaimus floridensis* also differs from *H. magnistylus* by the shorter stylet, which is 47.7 μ m long in *H. floridensis* and 55.7 μ m long in *H. magnistylus*. It can be separated from *H. concaudajuventus* by the tail shape of second-stage juveniles, which is broadly rounded in *H. floridensis* versus conical with a pointed terminus in *H. concaudajuventus*. Finally, *H. floridensis* differs from *H. seinhorsti* by the shape of the lateral fields, which are marked by four incisures in *H. floridensis* versus one incisure in *H. seinhorsti*. Additional molecular, morphological, phylogenetic and biogeographical data of this new species are reported by Subbotin et al. (2025).

Acknowledgments

The authors would like to acknowledge the contributions of Drs. S.A. Subbotin and A. Michaud (California Department of Food and Agriculture), M. Kantor, E. Consoli and N.H. Lyndby (University of Pennsylvania) and Z. Handoo (U.S. Department of Agriculture, Agricultural Research Service) who played a major role in the development and completion of this work.

The authors would also like to thank M.R. Moore, R. Xue, C.G. Roberts and L.A. Combee (FDACS-DPI) for their contributions in acquiring the data for the molecular analysis, the plant inspectors for collecting the samples and the laboratory technicians for processing the samples.

SAMPLES FOR MOLECULAR ANALYSIS

	JULY - SEPT	2025 - YEAR TO DATE
Regulatory Purposes		
Other Purposes	0	0
Identifications	234	477
Surveys	0	0
Total	445	999

SAMPLES FOR MORPHOLOGICAL ANALYSIS

Certifications and Regulatory Purposes

	JULY - SEPT	2025 - YEAR TO DATE
Multistate Certification involving California	1,112	3,150
Multistate Certification excluding California Certification	2,062	6,722
Citrus Certification (Citrus Nursery Certification, Site or Pit Approval)	26	142
Total	3,200	10,014

Other Purposes

	JULY - SEPT	2025 - YEAR TO DATE
Identification (other organisms)	2	2
Identification (plant-parasitic nematodes)	26	44
Agricultural Interdiction Stations (AIS)	74	150
Plant Problems	14	58
Survey	346	502
Total	462	756



REFERENCES

- Bae, C.H., Szalanski, A.L. and Robbins, R.T. (2008).** Molecular analysis of the lance nematode *Hoplolaimus* spp. using the first internal transcribed spacer and the D1-D3 expansion segments of 28S ribosomal DNA. *Journal of Nematology*. 40: 201-209.
- Cobb, N.A. (1913).** New nematode genera found inhabiting fresh water and non-brackish soils. *Journal of Washington Academy of Science*. 3: 432-444.
- Daday, E. von (1905).** Untersuchungen über die Süßwasser Mikrofauna Paraguays. *Zoologica*. 18 (44): 1-370.
- Golden, A.M. and Minton, N.A. (1970).** Description and larval heteromorphism of *Hoplolaimus concaudajuvencus* n. sp. (Nematoda: Hoplolaimidae). *Journal of Nematology*. 2: 161-166.
- Lehman, P.S. (2002).** *Phytoparasitic nematodes reported from Florida*. Nematology Booklet. Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Bureau of Entomology, Nematology and Plant Pathology, Nematology Section. Gainesville, Florida, USA.
- Luc, M. (1958).** Les nématodes, et le flétrissement des cotonniers dans le Sud-ouest de Madagascar. *Coton et Fibrés Tropicales*. 13: 1-18.
- Ma, X., Agudelo, P., Mueller, J.D. and Knap, H.T. (2011).** Molecular characterization and phylogenetic analysis of *Hoplolaimus stephanus*. *Journal of Nematology*. 43: 25-34.
- Robbins, R.T. (1982).** Description of *Hoplolaimus magnistylus* n. sp. (Nematoda: Hoplolaimidae). *Journal of Nematology*. 14: 500-506.
- Sher, S.A. (1963).** Revision of the Hoplolaiminae (Nematoda) II. *Hoplolaimus* Daday, 1905 and *Aerolaimus* n. gen. *Nematologica*. 9: 267-295.
- Subbotin, S.A., Kantor, M., Consoli, E. Lyndby, N.H., Michaud, A., Handoo, Z. and Inserra, R.N. (2025).** Molecular phylogeny and species delimiting for the genus *Hoplolaimus* (Nematoda: Tylenchida) with description of *Hoplolaimus floridensis* sp. n. and notes on the biogeography of the genus in the United States. *International Journal of Molecular Sciences*. 26: 8501.
- Thorne, G. (1935).** Notes on free-living and plant-parasitic nematodes II. *Proceedings of the Helminthological Society of Washington*. 2: 96-98.

PLANT PATHOLOGY



Compiled by Jodi Hansen, M.S.; Hector Urbina, Ph.D.; Kishore Dey, Ph.D.; Patricia Soria, M.S.; Shelby Kernahan, B.S.; Claudia Paez, Ph.D.; Vishal Negi, Ph.D.; and Taryn Griffith, B.S.

The Plant Pathology section provides plant disease diagnostic services for the department. The agency-wide goal of protecting the flora of Florida very often begins with accurate diagnoses of plant problems. Management recommendations are offered where appropriate and available. Our plant pathologists are dedicated to keeping informed about endemic plant diseases along with those diseases and disorders active outside Florida in order to be prepared for potential introductions of new pathogens to our area.

1 *Entyloma holwayi* P. Syd. (Entylomatales, Entylomataceae), a **new Florida State record**, was found on the sulfur cosmos, *Cosmos sulphureus* Cav. (Compositae/Asteraceae), a Mexican native weed, at a residential landscape in Gainesville (Alachua County, Florida). The affected plants exhibited abundant yellow blight spots on both sides of the leaves, along with necrosis and wilting. Members of the genus *Entyloma* are fungal plant parasites commonly known as white leaf smut. They are considered significant pathogens in *Cosmos* species due to their impact on ornamental value. Only two other *Entyloma* species, *E. cosmi* Vánky, Horita & Jage and *E. calendulae* (Oudem.) de Bary, are known to infect *Cosmos*, and neither have been reported in Florida. Confirmed records of *E. holwayi* exist in Germany, Mexico and the United States (Louisiana). This disjunct distribution may indicate the pathogen's ability to evade phytosanitary controls. In the United States, *Cosmos sulphureus* has been classified as invasive since 1996, suggesting that *E. holwayi* may have potential as a biocontrol agent against this weed. Based on our literature review and field observation, we hereby establish *Entyloma holwayi* as a new State record. (Alachua County, P2305-08012025-07305, John McVay, 01 August 2025.)

REFERENCES

Farr, D.F. and Rossman, A.Y. (2018). Fungal databases, US national fungus collections, ARS, USDA. <https://nt.ars-grin.gov/fungaldatabases/> [Accessed 9 Oct 2025].

Piepenbring, M. (1996). Two new *Entyloma* species (Ustilaginales) in Central America. *Sydowia*. 48: 241-249.



1a - *Entyloma holwayi* symptomatic leaf spots on *Cosmos sulphureus*.
Photo by Hector Urbina, FDACS-DPI



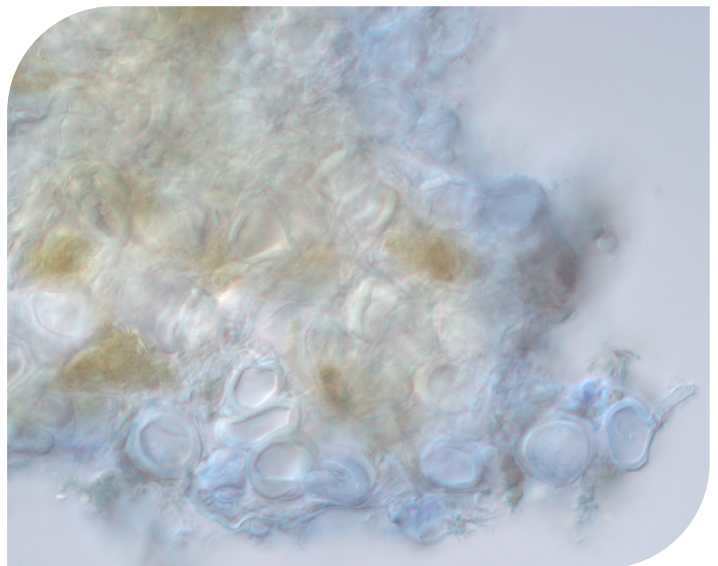
QUARTERLY ACTIVITY REPORT

	JULY - SEPT	2025 - YEAR TO DATE
Citrus black spot	2	168
Citrus canker	187	796
Citrus greening / HLB	86	212
HLB certification for out-of-state shipping	1,050	3,814
Import inspections	5	20
Interdictions	57	167
Palm phytoplasma	3	12
Pathology, General	510	2,557
Soil	25	136
Totals	1,925	7,882



1b - *Entyloma holwayi* leaf spot on *Cosmos sulphureus*, showing fungal structures formed on the abaxial surface of the leaf.

Photo by Hector Urbina, FDACS-DPI



1c - *Entyloma holwayi*, a densely packed cluster of spores, a typical characteristic of *Entyloma*.

Photo by Hector Urbina, FDACS-DPI



🔍 PLANT PATHOLOGY IDENTIFICATION TABLE

The following table provides information about samples identified between July-September 2025. The table is organized alphabetically by plant species, with new records listed on the right.

PLANT SPECIES	PLANT COMMON NAME	CAUSAL AGENT	DISEASE NAME	LOCATION TYPE	SPECIMEN #	COUNTY	COLLECTOR	DATE	NEW RECORDS
<i>Eleusine indica</i>	Indian goosegrass	<i>Phyllachora eleusines</i>	tar spot	natural area	P2355-08072025-07524	Polk	Jacob Haley, Ethan Beesley, George Lawrence, Lindsay Miller, William Bailey, Elizabeth Johnson, Rusty Noah, Christine Zamora, Chantelle Viloria, David Ortiz, Armando Noguera	8/7/25	state
<i>Nyssa sylvatica</i>	black gum sour gum	<i>Parvodontia relampaga</i>	Relampago blight	rest area	P2434-08182025-07885	Holmes	Jeffrey Eickwort	8/15/2025	county, Florida host record
<i>Quercus hemisphaerica</i>	Darlington's oak laurel oak	<i>Parvodontia relampaga</i>	Relampago blight	wooded area	P2824-09182025-09306	Jackson	Christopher Jones, Noah Mardian	8/11/25	county





TRI-LOGY

FDACS.gov/TRI-LOGY

1-888-397-1517

Florida Department of Agriculture and Consumer Services
Division of Plant Industry
1911 SW 34th St.
Gainesville, FL 32608-1201