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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



North Florida pines and fall wildflowers.
Photo by Patti Anderson, 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

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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

Patti J. Anderson, 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.



NEMATOTOLOGY

13

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



PLANT PATHOLOGY

15

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

Cover Photo

Hordeolicoccus nephelii (Takahashi), a mealybug.
Photo by Erin Powell, FDACS-DPI



HIGHLIGHTS



1 *Turnera ulmifolia* L. (yellow alder; ramgoat dashalong) in the plant family Turneraceae is native to Mexico, Central America and the Caribbean. At one time, it was thought to be native to Florida, but recent evidence indicates the species was introduced to the state.

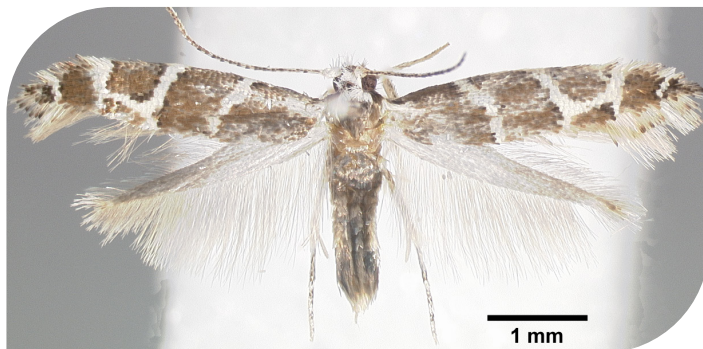
2 *Eudarcia* sp., a meessiid moth, a new Continental USA record. This strikingly patterned micro-moth has been photographed in Lake Kissimmee State Park, Collier-Seminole State Park and Gainesville from 2019 to the present. After the initial sample was determined, a specimen was found in the Florida State Collection of Arthropods, collected in Miami-Dade County in 2016.

3 *Diaporthe australiana* R.G. Shivas, Akinsanmi & Y.P. Tan, a new Continental USA record, was found on *Macadamia integrifolia* Maiden & Betche (Proteaceae). Samples were submitted with brown leaf spots, wilt and dieback.

4 *Paratylenchus minutus* Linford, Oliveira & Ishii, 1949, was parasitizing *Hemerocallis* sp. (daylily) in a commercial nursery in North Florida. Morphological characters and DNA sequences of the Florida population collected from daylilies were compared with those of *P. shenzhenensis* from China and a population of *P. minutus* from Hawaii. The results of this comparison indicated the three pin nematode populations from Florida, China and Hawaii were morphologically identical.



1 - *Turnera ulmifolia*, yellow alder, flower and leaves.
Photo by Ben Bindschadler, [Atlas of Florida Plants](#)



2 - *Eudarcia* sp., a meessiid moth. Female.
Photo by James Hayden, FDACS-DPI



3 - *Macadamia integrifolia*, edible macadamia. Leaves, flowers and fruit.
Photo from Shutterstock



4 - *Hemerocallis* sp., daylily.
Photo from Shutterstock





BOTANY

Compiled by Patti J. Anderson, Ph.D. and Alex de la Paz, B.S.

The Botany section of the Division of Plant Industry identifies plants for regulatory purposes as well as for other governmental agencies and private individuals. The section maintains a reference herbarium with over 18,000 plants and 1,400 vials of seeds.

QUARTERLY ACTIVITY REPORT

	JULY - SEPT	2023 - YEAR TO DATE
Samples Submitted by Other DPI Sections	1,403	4,315
Samples Submitted for Botanical Identification Only	292	1,134
Total Samples Submitted	1,695	5,449
Specimens Added to the Herbarium	273	843

Some of the samples submitted recently are described below.

1 *Cyperus distinctus* Steud. (swamp flatsedge), from a genus of about 600–700 species of herbs from tropical and warm temperate areas around the world, in the plant family Cyperaceae. This species is native to four states in the southeastern United States (Florida, Georgia, Louisiana and South Carolina) and the Bahamas, where it grows in marshes, wet pine flatwoods, wet hammocks, ditches and other disturbed wet areas. In Florida, it is found throughout the peninsula. Plants are perennial herbs with smooth, terete (round) culms (stems) up to 90 cm tall, flat leaf blades up to 70 cm long and 12 mm wide and an inflorescence composed of numerous spikelets arranged in digitate clusters or umbellate heads. The entire inflorescence is subtended by several leaf-like bracts. Each spikelet is flattened and consists of a central axis with flowers arranged consecutively along the axis with each flower subtended by a floral scale. The scales are narrowly lanceolate with the midrib two-keeled (bicarinate) basally. The flowers are bisexual and lack a perianth, each with one stamen and a superior ovary with three stigmas. The ovary eventually develops into an achene (a single-seeded, dry, indehiscent fruit). In this species, the achene is three-angled (trigonous) and narrowly ellipsoid, with a swollen, spongy base. The swollen, spongy base of the achene is distinct for this species among the *Cyperus* species in Florida. (Flagler County; LIST 08292023-08912; Jennifer Hesse; 29 August 2023.) (Tucker *et al.*, 2002; Weakley and Southeastern Flora Team, 2023; Wunderlin and Hansen, 2011).



1- *Cyperus distinctus*, swamp flatsedge, achene with swollen, spongy base.
Photo by Alex de la Paz, FDACS-DPI



2 *Paspalum urvillei* Steud. (**vaseygrass**), from a genus of about 300–400 species of herbs from tropical and warm temperate areas around the world, in the plant family Gramineae (Poaceae). This species is native to South America and has been introduced to the United States, where it grows in ditches, roadsides, fields and other disturbed areas. In Florida, it is found throughout the entire state, and there are only three counties remaining without a documented voucher specimen (Dixie, Gilchrist and Monroe mainland). This species was introduced to the United States as a pasture grass in the late 1800s, and the earliest Florida specimen was vouchered in 1943. Plants are perennial, clumping grasses with culms (stems) up to 220 cm (over two meters) tall, flat leaf blades up to 60 cm long and 12 mm wide. The inflorescence is a panicle composed of 4–30 racemously arranged branches. Each panicle branch contains numerous spikelets appressed to the branch axes. The spikelets are paired, 1.8–2.8 mm long and 1.1–1.5 mm wide, elliptic to slightly obovate and pilose along the margins. The long hairs along the margins of the spikelet are a good character to distinguish this species from other members of the genus in Florida. (Flagler County; LIST 08152023-08377; Jennifer Hesse; 14 August 2023.) (Allen and Hall, 2007; Weakley and Southeastern Flora Team, 2023; Wunderlin and Hansen, 2011).



2 - *Paspalum urvillei*, vaseygrass, inflorescence with four branches.
Photo from Shutterstock

3 *Turnera ulmifolia* L. (**yellow alder; ramgoat dashalong**), from a genus of about 130 species of herbs and shrubs, mainly from warm and tropical regions of the Americas, in the plant family Turneraceae. This species is native to Mexico, Central America and the Caribbean. At one time, it was thought to be native to Florida, but recent evidence indicates the species was introduced to the state. Yellow alder has been introduced widely in tropical and subtropical regions as an ornamental and medicinal herb used for digestive and dermatological problems. In Florida, it has been documented previously in coastal areas as far north as Pasco and Volusia counties and southward to Monroe County (including Key West). This specimen is a new record for Flagler County. Seeds of this species are dispersed by ants for short distances, encouraging dense populations near the parent plants. The UF/IFAS assessment of potentially invasive species has not yet been completed, and the species is not listed as a noxious weed, but it is known to escape cultivation to grow in natural areas. This herb or subshrub can grow to a height of 1 m. The leaves are alternate, elliptic to ovate in shape, with serrate margins. The leaf petiole has a pair of easily seen nectaries at the point of attachment with the blade. Solitary, yellow flowers with petals fused into a short tube are borne in the leaf axils. These flowers have five sepals, five petals, five stamens and a single superior ovary with three styles and fringed stigmas. The fruits are spherical capsules, opening by longitudinal slits to release numerous tiny seeds. Escaped plants are found mainly in disturbed sites, roadsides, abandoned farms and sandy fields. (Flagler County; LIST 08152023-08366; Jennifer Hesse; 16 August 2023.) (Mabberley, 2017; Wunderlin and Hansen, 2011; Wunderlin and Hansen, 2015; [Turnera ulmifolia \(West Indian holly\) | CABI Compendium \(cabidigitallibrary.org\)](#) [accessed 11 October 2023]; [Turnera ulmifolia in Flora of North America @ efloras.org](#) [accessed 5 October 2023]; [Turnera ulmifolia - UF/IFAS Assessment - University of Florida, Institute of Food and Agricultural Sciences \(ufl.edu\)](#) [accessed 11 October 2023].)



3a - *Turnera ulmifolia*, yellow alder, flower and leaves.
Photo by Ben Bindschadler, [Atlas of Florida Plants](#)



3b - *Turnera ulmifolia*, yellow alder, leaves with swollen nectaries.
Photo by Patti Anderson, FDACS-DPI



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BOTANY IDENTIFICATION TABLE

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

COLLECTOR NAME	COLLECTOR 2	LIST NUMBER	RECEIVED DATE	PLANT NAME	COUNTY
Alexa Barrios		4720	5/4/2023	<i>Gladiolus dalenii</i>	Columbia
Alexa Barrios		7052	7/6/2023	<i>Albizia julibrissin</i>	Dixie
Alexa Barrios		7040	7/6/2023	<i>Eriobotrya japonica</i>	Gilchrist
Alexa Barrios		7055	7/6/2023	<i>Melia azedarach</i>	Dixie
Alexa Barrios		7054	7/6/2023	<i>Morus rubra</i>	Dixie
Alexa Barrios		7053	7/6/2023	<i>Prunus serotina</i>	Dixie
Alexander Tasi	Victoria Benjamin	7880	8/3/2023	<i>Syzygium cumini</i>	Brevard
Alicia Velazquez		9999	9/29/2023	<i>Crotalaria pallida</i> var. <i>obovata</i>	Hernando
Angi Hutcherson		7758	8/2/2023	<i>Cuscuta pentagona</i>	Gulf
Caroline Pride		8887	8/29/2023	<i>Ardisia crenata</i>	Indian River
Chase Groninger		10030	9/28/2023	<i>Hedychium coronarium</i>	Brevard
Chase Groninger		9908	9/28/2023	<i>Mimosa microphylla</i>	Brevard
Chase Groninger		10071	9/29/2023	<i>Rhynchosia michauxii</i>	Brevard
Cynthia Blattenberger	Vaden Edmondson	9453	9/18/2023	<i>Atalantia buxifolia</i>	Pasco
Cynthia Blattenberger		7584	7/27/2023	<i>Broussonetia papyrifera</i>	Okeechobee
Cynthia Blattenberger	Vaden Edmondson, Gary Webb, Carrie Karppe, Shanelle Mulrooney	7264	7/18/2023	<i>Kalanchoe x houghtonii</i>	Pasco
Cynthia Blattenberger		8308	8/15/2023	<i>Morrenia odorata</i>	Pasco
David Brown		9818	9/26/2023	<i>Broussonetia papyrifera</i>	Flagler
David Brown		8540	8/22/2023	<i>Ipomoea hederifolia</i>	Putnam
David Brown		8160	8/10/2023	<i>Morus alba</i>	Flagler
David Brown	Deann Hansen	8300	8/15/2023	<i>Platanus occidentalis</i>	Volusia
David Brown	Deann Hansen	8624	8/23/2023	<i>Ruellia simplex</i>	Flagler
Deann Hansen		8567	8/22/2023	<i>Ipomoea hederifolia</i>	Flagler
Gary Webb	Vaden Edmondson, Cynthia Blattenberger, Carrie Karppe, Shanelle Mulrooney	7270	7/18/2023	<i>Clerodendrum bungei</i>	Pasco
Gary Webb	Vaden Edmondson, Cynthia Blattenberger, Carrie Karppe, Shanelle Mulrooney	7267	7/18/2023	<i>Gloriosa superba</i>	Pasco
Gary Webb	Vaden Edmondson, Cynthia Blattenberger, Carrie Karppe, Shanelle Mulrooney	7269	7/18/2023	<i>Heliotropium amplexicaule</i>	Pasco



COLLECTOR NAME	COLLECTOR 2	LIST NUMBER	RECEIVED DATE	PLANT NAME	COUNTY
Jennifer Hesse		7060	7/7/2023	<i>Asclepias curassavica</i>	Flagler
Jennifer Hesse		8371	8/16/2023	<i>Chamaecrista nictitans</i> var. <i>aspera</i>	Flagler
Jennifer Hesse		8912	9/1/2023	<i>Cyperus distinctus</i>	Flagler
Jennifer Hesse		8680	8/24/2023	<i>Fuirena pumila</i>	Flagler
Jennifer Hesse		7062	7/7/2023	<i>Galactia volubilis</i>	Flagler
Jennifer Hesse		8359	8/16/2023	<i>Gibasis pellucida</i>	Flagler
Jennifer Hesse		8377	8/16/2023	<i>Paspalum urvillei</i>	Flagler
Jennifer Hesse		9117	9/8/2023	<i>Praxelis clematidea</i>	Flagler
Jennifer Hesse		9153	9/8/2023	<i>Richardia grandiflora</i>	St. Johns
Jennifer Hesse		8908	9/1/2023	<i>Stenotaphrum secundatum</i>	Flagler
Jennifer Hesse		8361	8/16/2023	<i>Tradescantia pallida</i>	Flagler
Jennifer Hesse		8366	8/16/2023	<i>Turnera ulmifolia</i>	Flagler
Kacie Gmitter		6903	7/5/2023	<i>Myriophyllum aquaticum</i>	Osceola
Kelsey Helseth	Jennifer McKeever	7216	7/14/2023	<i>Bromelia pinguin</i>	Orange
Lisa Tyler		8791	8/28/2023	<i>Albizia julibrissin</i>	Duval
Lisa Tyler		8789	8/28/2023	<i>Galactia volubilis</i>	Duval
Mark Laurint		9169	9/8/2023	<i>Hydrolea corymbosa</i>	St. Johns
Mary Sellers		8183	8/10/2023	<i>Sporobolus jacquemontii</i>	Lake
Nora Marquez	Sam Hart, Diane McColl, Mo Violett	6985	7/5/2023	<i>Asparagus aethiopicus</i>	Pasco
Nora Marquez	Sam Hart, Diane McColl, Mo Violett	6936	7/5/2023	<i>Dioscorea alata</i>	Pasco
Nora Marquez	Sam Hart, Diane McColl, Mo Violett	6984	7/5/2023	<i>Epipremnum pinnatum</i>	Pasco
Nora Marquez		7712	8/3/2023	<i>Helianthus annuus</i>	Sumter
Nora Marquez	Sam Hart, Diane McColl, Mo Violett	6982	7/5/2023	<i>Sansevieria hyacinthoides</i>	Pasco
Nora Marquez	Sam Hart, Diane McColl, Mo Violett	6970	7/5/2023	<i>Tradescantia zebrina</i>	Pasco
Randi Shreve	Deann Hansen, Diane McColl, Kenneth Ellis	8675	8/24/2023	<i>Centrosema virginianum</i>	Flagler
Randi Shreve		8552	8/22/2023	<i>Epipremnum pinnatum</i>	Seminole
Randi Shreve		8619	8/23/2023	<i>Mirabilis jalapa</i>	Volusia
Randi Shreve		8550	8/22/2023	<i>Pinus elliotii</i>	Seminole
Sam Hart		7806	7/31/2023	<i>Chamaecrista rotundifolia</i>	Marion
Sam Hart	Nora Marquez	7807	7/31/2023	<i>Sassafras albidum</i>	Sumter
Vaden Edmondson	Gary Webb, Cynthia Blattenberger, Carrie Karppe, Shanelle Mulrooney	7272	7/18/2023	<i>Eustachys distichophylla</i>	Pasco



ENTOMOLOGY

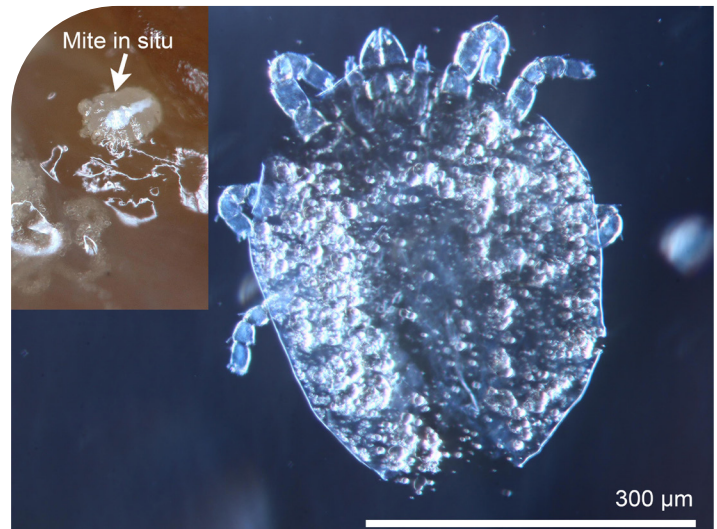
Compiled by Susan E. Halbert, Ph.D.

The Entomology Section provides the division's plant protection specialists and other customers with accurate identifications of arthropods. This 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	2023 - YEAR TO DATE
Samples Submitted	1,580	4,999
Lots Identified	2,318	7,473

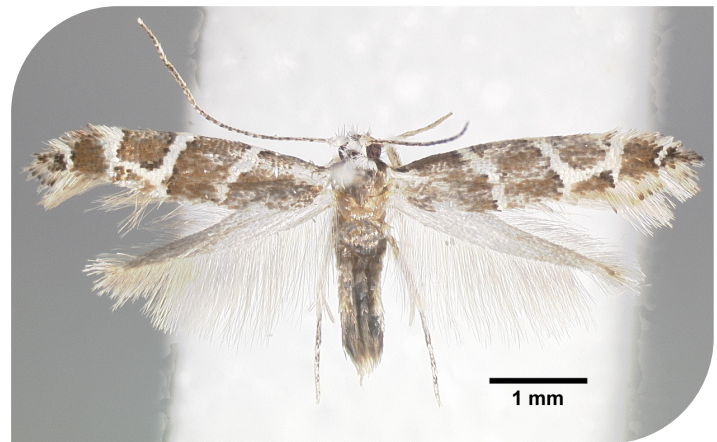
1 *Austreynetes* Fain & Barker, a new Hemisphere record for the genus. Only a single species of mite within this genus has been described based on material recovered from the pallial (lung-like) cavity of a snail, *Pseudaneztea schauznslandz* (Plate). This new record pertains to an undescribed species (apparently the second global record for the genus) also recovered from the pallial cavity of a snail, *Bulimulus bonariensis* (Rafinesque), an invasive species in Florida. The snail was collected in a citrus grove. The only described species of *Austreynetes* is recognized as a parasite on its host. As with so many other seemingly exotic mite genera, the extreme infrequency of records does not necessarily mean this genus is rare. Snails are seldom dissected for the purpose of recovering mites. (St. Lucie County; E4389-01-08162023-08394; Nicole Quinn, UF/IFAS, Indian River Research and Education Center; 29 June 2023.) (Dr. Samuel J. Bolton.)

2 *Eudarcia* sp., a meessiid moth, a new Continental USA record. This strikingly patterned micro-moth probably was introduced to Florida recently and has dispersed quickly. It has been photographed in Lake Kissimmee State Park, Collier-Seminole State Park and Gainesville from 2019 to the present. After the initial sample was determined, a specimen collected in Miami-Dade County in 2016 was found in the Florida State Collection of Arthropods (FSCA). The species belongs to Meessiidae, and this is a new State record of the family for Florida. This new species is provisionally placed in *Eudarcia* Clemens because the genus includes the majority of Meessiidae as currently circumscribed. The moths may have originated from the Caribbean region because another species described from Puerto Rico has similar maculation and venation. Meessiidae is significant because it may be the sister-group to the rest of Ditrysia (Regier et al. 2014). Thus far, only female moths of the new species have been collected. Similar specimens of both sexes collected on Big Pine Key in 2019 may represent a closely related species; a male from the Peninsular population is needed to corroborate any difference. The larvae of meessiids make cases of sand grains and feed on lichens on rocks. (Alachua County; E3452-01-06212023-06544; Luke Smith; 7 May 2023, and Miami-Dade County; E4032-01-07272023-07692; Scott Weihman; 9 May 2016.) (Dr. James E. Hayden.)



1 - *Austreynetes*, under a compound microscope; inset in situ under a stereomicroscope.

Photos by Nicole Quinn, University of Florida, and Samuel Bolton, FDACS-DPI



2 - *Eudarcia* sp., female.

Photo by James Hayden, FDACS-DPI



3 *Bactrocera dorsalis* complex (Hendel), Oriental fruit fly, a regulatory incident. A single male specimen was captured in a Jackson trap baited with methyl eugenol, hung in a mango tree in Winter Park. Increased trap densities in an 81-square-mile area around the detection site were maintained, and traps were monitored closely for two life cycles. No additional flies were found, and the delimitation program was terminated on August 29, 2023. (Orange County; E3694-01-07062023-07045; Bridget Herbes, USDA-APHIS-PPQ; 5 July 2023.) (Drs. Craig H. Welch and Erick J. Rodriguez.)

4 *Bactrocera correcta* (Bezzi), guava fruit fly, a regulatory incident. A single male specimen was captured in a Jackson trap baited with methyl eugenol, hung in an oak tree in Tampa. Increased trap densities in an 80-square-mile area around the detection site were maintained, and traps were monitored closely for two life cycles. No additional flies were found, and the delimitation program was terminated on October 11, 2023. (Hillsborough County; E4383-01-08152023-08360; Michael Weiss, USDA-APHIS-PPQ; 14 August 2023.) (Drs. Craig H. Welch and Erick J. Rodriguez.)

5 *Hordeolicoccus nephelii* (Takahashi), a mealybug, a regulatory incident. Live specimens were collected on imported *Hoya* R.Br. ornamentals from Indonesia during an import inspection in central Florida. This species is native to Southeast Asia and does not occur in the Western Hemisphere. This is the first time this mealybug has been intercepted in Florida. *Hordeolicoccus nephelii* is polyphagous, known to feed on 10 plant genera across nine plant families. (Lake County; E5156-01-09212023-09772; Mary Sellers; 21 September 2023.) (Dr. Erin C. Powell.)

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3 - *Bactrocera dorsalis* complex (Hendel), Oriental fruit fly, collected in Winter Park.
Photo by Erick Rodriguez, FDACS-DPI



4 - *Bactrocera correcta* (Bezzi), guava fruit fly, collected in Tampa.
Photo by Erick Rodriguez, FDACS-DPI



5 - *Hordeolicoccus nephelii* (Takahashi), mealybugs on the roots of *Hoya* sp.
Photo by Erin Powell, FDACS-DPI



ENTOMOLOGY SPECIMEN REPORT

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>Asparagus aethiopicus</i>	asparagus fern	<i>Petrusa epilepsis</i>	seagrape flatid planthopper	Mark Zenoble	New Florida host record
<i>Blighia sapida</i>	akee	<i>Fiorinia phantasma</i>	phantasma scale	Miguel Hernandez	New Florida host record
<i>Brassica oleracea</i>	cauliflower	<i>Ceratagallia longula</i>	leafhopper	Twylah Morelli, Dyrana Russell, Logan Cutts	Regulatory significant
<i>Brassica oleracea</i>	cabbage	<i>Frankliniella tenuicornis</i>	thrips	Twylah Morelli	Regulatory significant
<i>Brassica rapa</i>	Napa cabbage	<i>Lygus</i> sp.	western lygus bug	Jakira Davis	Regulatory significant
<i>Camellia japonica</i>	camellia	<i>Pseudococcus oederatti</i>	mealybug	Lisa Tyler	New Florida host record
<i>Capsicum annuum</i>	Anaheim peppers	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significant
<i>Capsicum annuum</i>	jalapeno peppers	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significant
<i>Capsicum annuum</i>	poblano peppers	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significant
<i>Celtis laevigata</i>	sugarberry	<i>Celticis aciculata</i>	gall midge	Ray Jarrett, Rook Barrios	First in county
<i>Cenchrus echinatus</i>	southern sandspur	<i>Blissus</i> sp.	chinchbug	Mark Zenoble	New Florida host record
<i>Chrysobalanus icaco</i>	cocoplum	<i>Petrusa epilepsis</i>	seagrape flatid planthopper	Mark Zenoble	New Florida host record
<i>Coccoloba uvifera</i>	seagrape	<i>Choreutis sexfasciella</i>	banyan leaf skeletonizer	Ashley Herbes	First in county
<i>Commelina diffusa</i>	dayflower, common dayflower, climbing dayflower	<i>Aspidiella sacchari</i>	sugarcane scale	Mark Zenoble	New Florida host record
<i>Coriandrum sativum</i>	coriander	<i>Uroleucon picridis</i>	aphid	Justin Anto, Jakira Davis	Regulatory significant
<i>Digitaria ciliaris</i>	southern crabgrass	<i>Oebalus ypsilongriseus</i>	rice stink bug	Alexander Tasi	New Florida host record
<i>Digitaria ciliaris</i>	southern crabgrass	<i>Paromius longulus</i>	seed bug	Alexander Tasi	New Florida host record
<i>Digitaria ciliaris</i>	southern crabgrass	<i>Pseudopachybrachius vinctus</i>	seed bug	Alexander Tasi	New Florida host record
<i>Dracaena marginata</i>	dragon tree	<i>Lepidosaphes laterochitinoso</i>	armored scale	Sallie Simmons	New Florida host record
<i>Ficus</i> sp.	fig	<i>Choreutis sexfasciella</i>	banyan leaf skeletonizer	Scott Krueger	First in county
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus elisus</i>	pale legume bug	Justin Anto, Jakira Davis	Regulatory significant
<i>Fragaria x ananassa</i>	strawberry	<i>Lygus hesperus</i>	western lygus bug	Justin Anto, Jakira Davis	Regulatory significant
Gramineae	grass	<i>Stemmatomerinx acircula</i>	mealybug	Elise Pounders	First in county
<i>Hoya</i> sp.	hoya	<i>Hordeolicoccus nephelii</i>	mealybug	Mary Sellers	Regulatory significant
<i>Ipomoea</i> sp.		<i>Dendrothripoides innoxius</i>	thrips	Mark Zenoble	First in county
<i>Ixora</i> sp.	ixora	<i>Thrips parvispinus</i>	short spine thrips	Mark Zenoble	First in county
<i>Lactuca sativa</i>	lettuce	<i>Acyrtosiphon lactucae</i>	lettuce aphid	Justin Anto, Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	red butter leaf lettuce	<i>Acyrtosiphon lactucae</i>	lettuce aphid	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Acyrtosiphon lactucae</i>	lettuce aphid	Jakira Davis, Justin Anto	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Autographa californica</i>	alfalfa looper	Justin Anto, Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	red butter leaf lettuce	<i>Ceratagallia californica</i>	leafhopper	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	red butter leaf lettuce	<i>Ceratagallia longula</i>	leafhopper	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	artisan lettuce	<i>Circulifer tenellus</i>	beet leafhopper	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Cixius cultus</i>	cixiid planthopper	Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	romaine hearts	<i>Deltocephalus fuscinevus</i>	leafhopper	Dyrana Russell, Logan Cutts	Regulatory significant



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Lactuca sativa</i>	lettuce	<i>Deltocephalus fuscineruosus</i>	leafhopper	Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	romaine hearts	<i>Ericaphis wakibae</i>	aphid	Dyrana Russell, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Frankliniella williamsi</i>	thrips	Jakira Davis, Justin Anto	Regulatory significant
<i>Lactuca sativa</i>	lettuce 'Little Gem'	<i>Liriomyza langei</i>	California pea leafminer	Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	romaine lettuce	<i>Lygus hesperus</i>	western lygus bug	Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Lygus</i> sp.	western lygus bug	Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	romaine hearts	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis	Regulatory significant
<i>Lactuca sativa</i>	romaine lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Jakira Davis, Justin Anto	Regulatory significant
<i>Lactuca sativa</i>	red butter leaf lettuce	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	romaine hearts	<i>Nothodelphax consimilis</i>	delphacid planthopper	Dyrana Russell, Logan Cutts	Regulatory significant
<i>Lactuca sativa</i>	lettuce	<i>Thyanta pallidovirens</i>	red-shouldered stink bug	Jakira Davis, Justin Anto	Regulatory significant
<i>Lactuca sativa</i>	romaine hearts	<i>Thyanta pallidovirens</i>	red-shouldered stink bug	Dyrana Russell, Logan Cutts	Regulatory significant
<i>Lagerstroemia indica</i>	crape myrtle	<i>Acanthococcus lagerstroemiae</i>	crape myrtle bark scale	Jakira Davis, Justin Anto	First in county
<i>Leucophyllum frutescens</i>	Texas sage, Texas silverleaf, cenizo, purple sage	<i>Nipaeococcus viridis</i>	lebbeck mealybug	Scott Krueger	New Florida host record
<i>Mangifera indica</i>	mango	<i>Bactrocera dorsalis</i> complex	Oriental fruit fly	Bridget Herbes	Regulatory incident
mixed sample	spring mix	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Logan Cutts	Regulatory significant
<i>Nekemias arborea</i>	peppervine	<i>Aphis illinoisensis</i>	grapevine aphid	Mark Zenoble	New Florida host record
<i>Persea americana</i>	avocado	<i>Acutaspis albopicta</i>	albopicta scale	Jakira Davis, Justin Anto	Regulatory significant
<i>Persea americana</i>	avocado	<i>Acutaspis albopicta</i>	albopicta scale	Justin Anto	Regulatory significant
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	armored scale	Logan Cutts	Regulatory significant
<i>Persea americana</i>	avocado	<i>Davidsonaspis aguacatae</i>	armored scale	Justin Anto, Dyrana Russell, Logan Cutts, Jakira Davis	Regulatory significant
<i>Physalis philidelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significant
<i>Physalis philidelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Lindsey Larrimore, Logan Cutts	Regulatory significant
<i>Physalis philidelphica</i>	tomatillo	<i>Bactericera cockerelli</i>	potato psyllid	Logan Cutts	Regulatory significant
<i>Pueraria montana</i> var. <i>lobata</i>	kudzu	<i>Brachyplatys subaeneus</i>	black bean bug	Mark Zenoble	New Florida host record; First in county
<i>Quercus acutissima</i>	sawtooth oak	<i>Clastoptera querci</i>	oak spittlebug	Sam Hart	New Florida host record
<i>Quercus</i> sp.	oak	<i>Bactrocera correcta</i>	guava fruit fly	Michael Weiss	Regulatory incident
<i>Quercus</i> sp.	oak	<i>Phthiacnemis picta</i>	coreid bug	Ronny Terry	First in county
<i>Rhizophora mangle</i>	red mangrove	<i>Scaphoideus immistus</i>	leafhopper	Alexander Tasi	First in county
<i>Rubus</i> sp.	raspberry	<i>Amphorophora</i> sp.	aphid	Justin Anto, Jakira Davis	Regulatory significant
<i>Rubus</i> sp.	raspberry	<i>Rhinacloa forticornis</i>	western plant bug	Justin Anto, Jakira Davis	Regulatory significant
<i>Schinus terebinthifolia</i>	Brazilian pepper tree	<i>Nymphocixia unipunctata</i>	cixiid planthopper	Alexander Tasi, Teresa Orтели	First in county
<i>Spermacoce remota</i>	woodland false buttonwood	<i>Dysmicoccus diodum</i>	mealybug	Mark Zenoble	First in county
<i>Spermacoce verticillata</i>	shrubby false buttonweed	<i>Planchonia stentae</i>	euphorbia pit scale	Jeanie Frechette, Teresa Orтели	New Florida host record
<i>Tillandsia usneoides</i>	Spanish moss	<i>Graminorthezia tillandsiae</i>	Spanish moss orthesia	Trudi Deuel	First in county
<i>Vitex agnus-castus</i>	chaste tree	<i>Vanduzeeia segmentata</i>	treehopper	Paola Ramos Perez	New Florida host record
<i>Zamia furfuracea</i>	cardboard plant	<i>Petrusa epilepsis</i>	seagrape flatid planthopper	Liliana Jerez	New Florida host record
		<i>Acrolophus walsinghami</i>	tribble moth	Jennifer Hesse	First in county
		<i>Anotia uhleri</i>	derbid planthopper	Connor Kuppe	First in county
		<i>Apache degeerii</i>	derbid planthopper	Robert Cahal	First in county



PLANT SPECIES	PLANT COMMON NAME	ARTHROPOD GENUS AND SPECIES	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
		<i>Austreyneutes</i> sp.	mite	Nicole Quinn	New Hemisphere record
		<i>Clastoptera querci</i>	oak spittlebug	Amanda Rolon Lespier	First in county
		<i>Cornu aspersum</i>	brown garden snail	Logan Cutts	Regulatory significant
		<i>Crambodes talidiformis</i>	verbena moth	Krystal Ashman, Robert Leahy	Notable find
		<i>Draeculacephala inscripta</i>	leafhopper	Monica Triana	First in county
		<i>Dryocampa rubicunda</i>	rosy maple moth	Diane McColl	First in county
		<i>Empicoris rubromaculatus</i>	assassin bug	Robert Leahy	First in county
		<i>Empicoris rubromaculatus</i>	assassin bug	Connor Kuppe	First in county
		<i>Ephyrodes cacata</i>	erebid moth	Scott Weihman	First in county
		<i>Euclea delphinii</i>	spiny oak-slug moth	Diane McColl	First in county
		<i>Eudarcia</i> sp. cf. <i>argyrophaea</i>	meessiid moth	Scott Weihman	First in county
		<i>Eudarcia</i> sp. cf. <i>argyrophaea</i>	meessiid moth	Luke Smith	New Continental USA record
		<i>Euides fasciatella</i>	delphacid planthopper	Joseph Hanus, James Bouie	First in county
		<i>Galgupha denudata</i>	ebony bug	Rook Barrios	First in county
		<i>Hydrometra australis</i>	water measurer	Monica Triana	First in county
		<i>Ischnodemus sallei</i>	seed bug	Mark Zenoble	First in county
		<i>Leptoglossus oppositus</i>	northern leaf footed bug	Pamela Jones	First in county
		<i>Nysius tenellus</i>	seed bug	Joseph Hanus, James Bouie	First in county
		<i>Paracarsidara gigantea</i>	psyllid	Julien Beuzelin, Donna Larsen	First in county
		<i>Paramysidia mississippiensis</i>	derbid planthopper	Connor Kuppe	First in county
		<i>Pissonotus binotatus</i>	delphacid planthopper	Joseph Hanus, James Bouie	First in county
		<i>Ponana sparsa</i>	leafhopper	Connor Kuppe	First in county
		<i>Pseudatomoscelis seriatus</i>	cotton fleahopper	Maximilian Carfagno	First in county
		<i>Sophonia orientalis</i>	two-spotted leafhopper	Jennifer Castle	First in county





NEMATOLOGY

Compiled by Renato N. Inserra, Ph.D., Sergio Álvarez-Ortega, Sergei A. Subbotin,
M. Janie Echols, Silvia Vau, Ph.D., Ruimin Xue 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	2023 - YEAR TO DATE
Morphological Identifications	3,688	11,426
Molecular Identifications *	280	928

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

Nematode of Special Interest

1 *Paratylenchus minutus* Linford, Oliveira & Ishii, 1949, was parasitizing *Hemerocallis* sp. (daylily) in a commercial nursery in North Florida. (Hamilton County; N21-00604, M. Janie Echols; 18 May 2021.)

Daylilies are flowering ornamental plants grown in both warm and temperate regions of the United States. Numerous evergreen and dormant (deciduous) cultivars adapted to a range of climatic conditions are available to growers, but these plants are good hosts of plant-parasitic nematodes. A list of the most common plant-parasitic nematode species occurring in daylily operations in Florida has been reported by Inserra et al. (1998). This list also includes unidentified pin nematode species in the genus *Paratylenchus*. In 2021, roots of two cultivars of daylilies were collected in a daylily nursery in North Florida. 'Bountiful Cherries' and 'Silken Breeze' were found infested by a pin nematode species having endo-parasitic migratory habits. Morphological analyses integrated with molecular and phylogenetic analyses of the pin nematode specimens extracted from these daylily roots indicated they were *Paratylenchus minutus*, a species described by Linford, Oliveira & Ishii, 1949, from pineapple roots collected in Hawaii. In 2013, a new species of pin nematode morphologically similar to *P. minutus* was described by Wang et al. (2013) in China from roots of *Anthurium andraeanum* and named *Paratylenchus shenzhenensis*. Morphological characters and DNA sequences of the Florida population collected from daylilies were compared with those of *P. shenzhenensis* from China and a population of *P. minutus* from Hawaii (Álvarez-Ortega et al. 2023). The results of this comparison indicated the three pin nematode populations from Florida, China and Hawaii were morphologically identical. Furthermore, the molecular data based on D2-D3 of 28S rRNA and ITS rRNA gene sequences indicated the three populations were conspecific and represent *P. minutus*. As a consequence, *P. shenzhenensis* became a junior synonym of *P. minutus* because it was described many decades



1a - *Hemerocallis* sp., daylily, a stand of daylilies in flower.
Photo from Shutterstock



1b - *Paratylenchus minutus*, a parasite of daylily. Entire body of female.
Photos by Silvia Vau, FDACS-DPI



before *P. shenzhenensis*. In Florida, *P. minutus* was reported by Esser (1992) and Lehman (2002) in Monroe County. However, these reports cannot be confirmed because no morphological data on these populations are available. In 2021, a population identified as *P. shenzhenensis* was reported from a plant nursery in Apopka, Florida, by Singh et al. (2021). The DNA sequences of this population clustered together with those of *P. minutus* from daylilies in the phylogenetic study conducted by Álvarez-Ortega et al. (2023), indicating this population was *P. minutus*. According to Linford et al. (1949), *P. minutus* behaves as an ectoparasite, feeding on the epidermal cells of pineapple in Hawaii. In contrast, according to Wang et al. (2016), this species behaves as an endoparasite on *A. andraeanum* roots and penetrates the epidermal cells of this host in China. Serious stunting, chlorosis and decline of *A. andraeanum* stands infested by *P. minutus* were observed by these authors. The impact of *P. minutus* on pineapple growth and yield has not been assessed. No declining symptoms of the nematode infested daylily stands were induced by the population levels of *P. minutus* detected in our study.



1c - *Paratylenchus minutus*, a parasite of daylily. Posterior body of male. Photos by Silvia Vau, FDACS-DPI

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SAMPLES FOR MORPHOLOGICAL ANALYSIS

Certifications and Regulatory Purposes

	JULY - SEPT	2023 - YEAR TO DATE
Multistate Certification involving California	986	2,776
Multistate Certification excluding California Certification	1,610	5,360
Citrus Certification (Citrus Nursery Certification, Site or Pit Approval)	30	132
Total	2,626	8,268

Other Purposes

	JULY - SEPT	2023 - YEAR TO DATE
Identification (other organisms)	0	2
Interdiction Station (AIS)	38	116
Plant Problems	56	102
Survey	50	222
Total	144	442

SAMPLES FOR MOLECULAR ANALYSIS

	JULY - SEPT	2023 - YEAR TO DATE
Regulatory Purposes	89	390
Other Purposes	0	0
Identifications	191	538
Surveys	0	0
Total	280	928





PLANT PATHOLOGY

Compiled by Jodi Hansen, M.S.; Hector Urbina, Ph.D.;
Kishore Dey, Ph.D.; Patricia Soria, M.S. and Claudia Paez, Ph.D.

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 *Diaporthe australiana* R.G. Shivas, Akinsanmi & Y.P. Tan, a new Continental USA record, was found on *Macadamia integrifolia* Maiden & Betcher (Proteaceae) in a nursery located in Collier County. Samples were submitted with brown leaf spots, wilt and dieback. *Diaporthe australiana* (Diaporthaceae) is a fungal pathogen of macadamia reported in Australia and South Africa causing phomopsis husk rot (PHR) on fruit. Among the *Diaporthe* species causing PHR, *D. australiana* is the most aggressive and pathogenic on husks. Information is lacking on whether *D. australiana* is saprobic, endophytic or an opportunistic/latent pathogen when symptoms present on leaves and stems. (Collier County; 06142023-06280; Mary Graham; 15 June 2023.)

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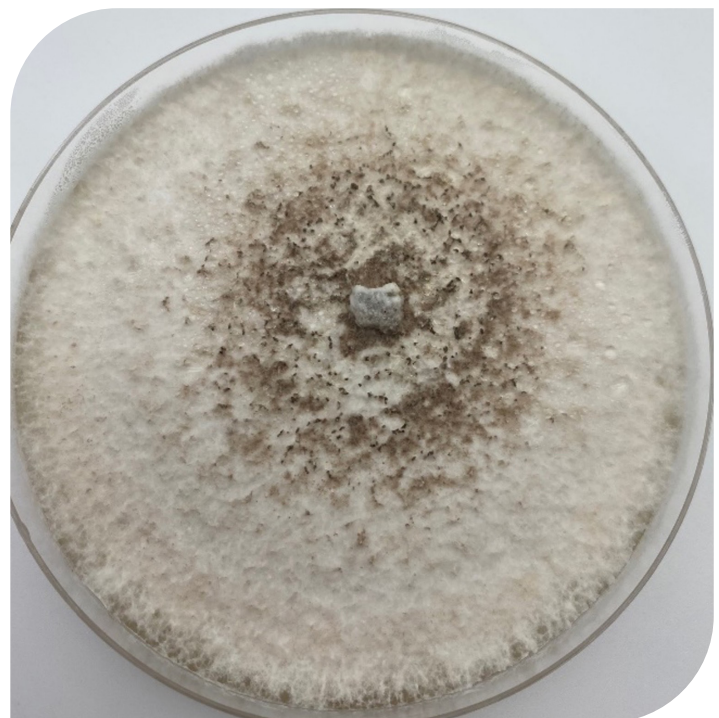
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1a - *Diaporthe australiana* on *Macadamia integrifolia* leaves and stems, showing dieback symptoms.
Photo by Claudia Paez, FDACS-DPI

QUARTERLY ACTIVITY REPORT

	JULY - SEPT	2023 - YEAR TO DATE
Citrus black spot	0	170
Citrus canker	274	519
Citrus greening / HLB	35	120
HLB Certification for out-of-state shipping	1,395	5,844
Import inspections	3	6
Interdictions	166	261
Palm phytoplasma	6	19
Pathology, General	616	1,776
Soil	26	82
Totals	2,521	8,797



1b - *Diaporthe australiana* in culture on acidified potato dextrose agar (APDA).
Photo by Claudia Paez, FDACS-DPI



🔍 PLANT PATHOLOGY IDENTIFICATION TABLE

The following table provides information about samples identified between July - September 2023. 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 NUMBER	COUNTY	COLLECTOR	DATE	NEW RECORDS
<i>Colocasia esculenta</i>	dasheen, wild taro, taro, elephant's ear, cocoyam	<i>Uromyces ari-triphylli</i>	rust fungus	nursery	P2262-08172023-08452	Alachua	Paola Ramos Perez	8/16/23	host
<i>Hibiscus sabdariffa</i>	roselle, sorrel, flor de jamaica	<i>Coniella javanica</i>	leaf blight	research center	P2695-01-09272023-09983	Sumter	external collector	9/27/23	continental
<i>Macadamia integrifolia</i>	macadamia, Queensland nut	<i>Diaporthe australiana</i>	leaf spot	nursery	P1586-02-06142023-06280	Hendry	Mary Graham	6/19/23	continental
<i>Vitis rotundifolia</i>	muscadine grapes	<i>Parvodontia relampaga</i>	relampago blight	natural area	P2650-09222023-09800	Gulf	Emily Mayhew	9/12/23	county
<i>Quercus hemisphaerica</i>	darlington oak, laurel oak	<i>Parvodontia relampaga</i>	relampago blight	state park	P2183-08092023-08143	Wakulla	Jeffrey Eickwort	8/8/23	county





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