

DPI's Bureau of Entomology, Nematology and Plant Pathology (the Botany section is included in this bureau) produces TRI-OLOGY six times a year, covering two 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.

Highlights

Following are a few of the notable entries from this volume of TRI-OLOGY. These entries are reports of interesting plants or unusual pests, some of which may be problematic. See Section Reports for complete information.

***Hybanthus linearifolius* (chancleta)** appeared in South Florida within the last decade, and now this exotic species is established and spreading. It is currently restricted to Miami-Dade and Palm Beach counties, with no indication that it will become a noxious weed, but it should be carefully monitored. This herbaceous perennial, native to the West Indies, is called "chancleta." In Puerto Rico, chancleta means "thongs" or "flip-flops." The flowers do bear a fanciful resemblance to tiny flip-flops.



***Hybanthus linearifolius* (chancleta)**

Photograph courtesy of Roger L. Hammer, [Atlas of Florida Vascular Plants](#)



***Passiflora choconiana* (passionflower)**

Photograph courtesy of J.C. Meerman, [Biodiversity in Belize](#)

***Passion fruit woodiness virus* (potyvirus) a State record,** was found on

Passiflora choconiana (passionflower) at a nursery in Broward County. Symptoms are variable and include problems such as misshapen fruit and chlorotic, mottled or puckered foliage, in addition to the woodiness in fruit for which the virus is named. This virus, found for the first time in the state, has the potential to become a serious pest for the passion fruit industry.

Meloidogyne

incognita* and *M. javanica are the most damaging root-knot nematode species for *Beta vulgaris* (sugar beet) in Florida, although sugar beets are parasitized by many other nematode species. These two root-knot nematodes induce large galls, necrosis and the proliferation of small fine feeder roots that are also significantly galled. The distorted and malformed taproots that results from root-knot nematode infection are neither palatable nor marketable.



Sugar beet tap root heavily galled by *Meloidogyne incognita* and *M. javanica*

Photograph courtesy of Mariana P. Beckman, [DPI](#)

Aceria quazumae

Section Reports

Botany

Entomology

Nematology

Plant Pathology

Our Mission...getting it done

The mission of the Division of Plant Industry is to protect Florida's native and commercially grown plants and the State's apiary industry from harmful pests and diseases. To carry out that mission, our five bureaus employ over 600 scientists, environmental specialists, agricultural and laboratory technicians along with administrative and support staff. Perhaps you'd be interested in some of the things these bureaus do.

Methods Development and Biological Control –

develops biological control programs, carries out technology transfer projects and issues permits for biomass crops.

Citrus Budwood

Registration - oversees budwood certification in



***Guazuma ulmifolia* (West Indian elm) foliage and fruit**
Photograph and copyright courtesy of Daniel Atha and [The New York Botanical Garden](#)

detected in Florida in August 2009. Since that State record, a cumulative 35 specimens of this fly have been detected at 19 sites in the northern half of Hillsborough County, including sites in Tampa and near numerous strawberry production areas. The present concern is that the numbers and distribution of this fly will increase greatly with the advent of cooler weather, threatening winter and spring strawberry and blueberry crops. See the [DPI Pest Alert](#).

(eriphyid mite), a **State record**, was collected on *Guazuma ulmifolia* (bastard cedar, West Indian elm, chicharron) from a residence in Hialeah. *Aceria guazumae*, originally described as *Eriophyes guazumae* by Cook in 1906, was collected from a *Guazuma* sp. in Cuba. No other gall forming eriophyids have been reported from *Guazuma*.

***Drosophila suzukii* (spotted wing *Drosophila*)** was first



***Drosophila suzukii* (the spotted wing *Drosophila*)**
Photograph courtesy of Gary J. Steck, [DPI](#)

***Sitophilus rugicollis* (Taiwan mangrove weevil)**, a species of potential concern, was collected at a nursery in Apopka on *Rhizophora* propagules from Thailand. The fact that this weevil is breeding in mangrove propagules is cause for concern because mangroves are important constituents of Florida's coastal ecosystem.



***Sitophilus rugicollis* (Taiwan mangrove weevil)**
Photograph courtesy of Michael C. Thomas, [DPI](#)

Patti J. Anderson, Ph.D., managing editor
Wayne N. Dixon, Ph.D., editor

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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 also thank Scott Weinberg for his skillful use of web authoring tools to produce this report.

Florida's commercial citrus nurseries to prevent the spread of diseases and pests when trees are grafted and provides certified citrus budwood to the industry.

Pest Eradication and Control - assists in detecting and eradicating or controlling plant pests and diseases, particularly those affecting citrus, after they have been introduced.

Plant and Apiary Inspection - conducts regular inspections and surveys for the early detection of plant and honeybee pests. Any person selling or distributing nursery stock or maintaining an apiary must be registered with and inspected by this bureau.

Entomology, Nematology and Plant Pathology - in addition to bringing you Triology, this bureau includes scientists, technicians and support staff working to identify plant pests and their hosts.

Along with the bureaus, DPI's **administrative team** directs the activities of DPI; carries out data processing, human resources, training, fiscal and maintenance responsibilities; and provides public information through videos, printed material, web sites and a telephone help line.

DPI also participates in collaborative programs with the USDA and plant industries to protect Florida's plant resources. For example, staff of the Bureau of Plant and Apiary Inspection, along with their federal counterparts, check for exotic insects in over 60,000 traps throughout the state. Two other such projects are:

Cooperative Agricultural Pest Survey Program (CAPS) - a combined effort by state and federal agricultural agencies to survey plant pests.

Citrus Health Response Program (CHRP) - a collaboration among the citrus industry, USDA and DPI to limit the impact of citrus diseases.

Next time. . . a year's end review of major pests in 2009.

We welcome your comments and suggestions for improvement of TRI-OLOGY. Please feel free to contact me at dixonw@doacs.state.fl.us or Dr. Patti Anderson at andersp1@doacs.state.fl.us

Wayne N. Dixon, Ph.D., editor
Assistant Director, DPI

Botany Section

Compiled by [Richard E. Weaver, Jr., Ph.D.](#), and [Patti J. Anderson, Ph.D.](#)

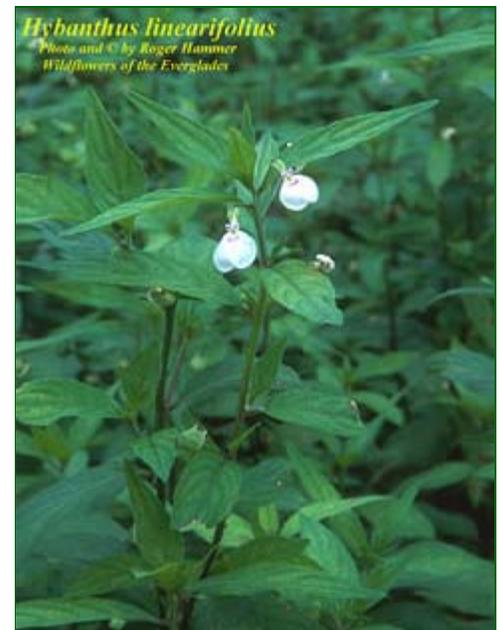
This section identifies plants for the Division of Plant Industry, as well as for other governmental agencies and private individuals. The Botany Section maintains a reference herbarium with over 10,000 plants and nearly 1,400 vials of seeds.

***Hybanthus linearifolius* (Vahl) Urban (chancleta)**, a genus of ca. 150 species in the tropics and subtropics of both hemispheres, with one species native to the eastern United States. Violaceae. Two genera of the Violet Family are native in Florida: *Viola* itself and the very different *Hybanthus*, with a single species, *H. concolor* (the green violet), occurring only in Gadsden County. Within the last decade, an exotic species of the latter genus, *H. linearifolius*, treated here, has made an appearance in South Florida and is now established and spreading. It is currently restricted to Miami-Dade and Palm Beach counties, with no indication that it will become a noxious weed, but it should be carefully monitored. It is an herbaceous perennial growing to 50 cm tall with oblong-lanceolate to linear-lanceolate, acute, short-petiolate leaves that are opposite in the upper portions of the stem, but alternate below. The odd flowers are usually borne singly on slender pedicels in the axils of the upper leaves. They are white or pale blue, from 5-8 mm long; the sepals and four of the petals are tiny and inconspicuous, but the fifth petal is enlarged and relatively prominent. Curiously, this largest petal rolls up lengthwise like a scroll as it ages. The plant is native to the West Indies. Its Puerto Rican name, "chancleta," is the same as the word for "thongs" or "flip-flops," those cheap sandals so popular nowadays. The flowers do bear a fanciful resemblance to tiny flip-flops. (Palm Beach County; B2009-555; Ellen J. Tannehill; 24 September 2009.) (Liogier 1994; <http://www.florida.plantatlas.usf.edu>.)

***Plumeria pudica* Jacq. (fiddle-leaf plumeria, bridal bouquet)**, a genus of 17 species native to tropical America. Apocynaceae. *Plumeria* is a genus of deservedly popular ornamentals, called "frangipani," grown for their delicately colored, very fragrant flowers. The common ornamentals are mostly *P. rubra* and its cultivars. These are open, spreading trees with thick branches that regularly lose their leaves in dry or cold weather. The species treated here is very different from those described above in several important horticultural and technical aspects. It is mostly evergreen, with more slender but still fleshy branches, growing to 4 m tall with a dense, upright habit. The flowers are white, 5-7 cm across, with a yellow throat. They lack a sweet fragrance, but are borne profusely, and the blooming period extends through more than half of the year. In addition, the 12-25 cm long leaves have a very distinctive shape, termed pandurate (fiddle-shaped), with a lobe on each side above the middle, and then narrowing abruptly to the apex and tapering very gradually to the base. As with many other members of the Dogbane Family, a wound to any part of the plant produces a copious, thick, milky sap. *Plumeria pudica* is native to Panama, Colombia, and Venezuela and is frost-sensitive, succeeding as an

Sample Submissions

	Sept/ Oct	Year to Date
Samples submitted by other DPI sections	1,676	7,977
Samples submitted for botanical identification only	122	603
Total Samples Submitted	1,798	8,580
Specimens added to the herbarium	108	437



***Hybanthus linearifolius* (chancleta)**
Photograph courtesy of Roger L. Hammer,
[Atlas of Florida Vascular Plants](#)

ornamental only in the warmer parts of Florida. A form with variegated leaves is in cultivation, and recently a pink-flowered form has been introduced from Thailand. We have found no record of this species escaping from cultivation and becoming a weed anywhere to date. (Sarasota County; B2009-541; K. Lea Etchells; 22 September 2009.)

(<http://lee.ifas.edu/Hort/GardenPubsAZ/PlumeriaPudica.pdf>. )

***Schinus molle* L. (Peruvian peppertree)**, a genus of 27 species distributed in tropical America. Anacardiaceae. Floridians are only too familiar with another species of *Schinus*, the Brazilian peppertree, *S. terebinthifolius*, which has become a destructive and almost uncontrollable weed in many parts of our state. *S. molle* is also a serious weed, particularly in South Africa and Australia, but not yet in the United States, although it is naturalized in California, Hawaii, Texas and Puerto Rico. The California Invasive Plant Council presently lists its statewide impact as "limited," but there is concern that the impact could worsen. Peruvian peppertree is sparingly cultivated in Florida, and there is no report to date that it has naturalized here. Native to the drier parts of Andean South America, *S. molle* is tolerant of adverse soil and climatic conditions, particularly drought. It is a fast-growing tree, eventually reaching as much as 15 m tall, often with drooping branches. Its foliage is exceptionally airy and attractive. The evergreen leaves are alternate and pinnately compound, about 10-20 cm long, with 20-40 alternate, glossy, slender, long-acuminate leaflets. The leaflets are 2-5 cm long, seldom more than 7 mm wide, and often have indistinct serrations along the margin. Unlike the Brazilian peppertree, the rachis of the leaves is not winged. The small, cream-colored flowers are borne profusely in axillary and terminal panicles and are followed by conspicuous clusters of long-lasting red to pink or purplish drupes. The fruits have a peppery taste and are often mixed with true peppercorns to add color. The Incas used the berries to make fresh and alcoholic beverages. All in all, this is a handsome and useful plant. Unfortunately, it has the potential to become a serious pest and should be planted with caution. (Volusia County; B2009-558; Stacey S. Simmons; 6 October 2009.) (Mabberley 1997; http://en.wikipedia.org/wiki/Schinus_molle.)

***Solidago* species (goldenrods)** are among the most readily identified wildflowers of the late summer and early fall. Their golden yellow inflorescences brighten roadsides, disturbed areas and waste places throughout all the United States (including one naturalized species in Hawaii) and Canada as well as in Mexico, Central America and even Eurasia where a few species are native. Recognizing the genus is fairly easy for observers driving 50 miles per hour; however, sorting out the species can be challenging. We have received several samples of *Solidago* for identification during the months of September and October, suggesting an interest in tips for separating these very similar fall beauties. All are perennials and have alternate, simple leaves and composite flowers with disc and ray florets. Characters such as the shape of the inflorescence, whether inflorescence branches are recurved (curve downward), whether flower heads are secund (with flowers on one-side of the branch), the



***Plumeria pudica* (fiddle-leaf plumeria, bridal bouquet)**

Photograph courtesy of Forest & Kim Starr, <http://www.hear.org/starr/>



***Schinus molle* (Peruvian peppertree)**

Photograph courtesy of Liz Upton, <http://en.wikipedia.org>



***Solidago sempervirens* (seaside)**

change in the size of leaves from the base to the tip of the stem, leaf venation, and presence or absence of hairs on the leaves and stem are all important in separating these species. The table below, comparing several of these characters, includes species submitted for identification (indicated by an asterisk*) and other species commonly found in Florida.

Solidago species	Leaves appressed to stem	Leaf size upward from base of stem to apex	Leaf margin	Leaves with 3 main veins (tri-nerved)	Stem with hairs or glabrous	Inflorescence
<i>S. canadensis</i> *	no	only slightly smaller	usually serrate	yes	pubescent below inflorescence	paniculate, branches recurved, secund
<i>S. leavenworthii</i>	no	about the same size	serrate or entire	yes	glabrous	paniculate, branches recurved, secund
<i>S. fistulosa</i>	no	smaller, abruptly	few to many shallow teeth	no	covered with coarse, tangled hairs	paniculate, branches recurved, secund
<i>S. odora</i> *	no	smaller, gradually	entire	no	pubescent below inflorescence	paniculate, branches recurved, secund
<i>S. sempervirens</i>	yes	smaller, gradually from basal rosette	entire	no	glabrous	pyramidal or club-like, secund
<i>S. stricta</i>	yes	smaller, abruptly	entire	no	glabrous	elongate, wand-shaped, not secund
<i>S. petiolaris</i> *	no	about the same size	entire or with a few teeth	no	with short, fine pubescence	branches stiffly rising, not secund

***Solidago canadensis* L. (Canada goldenrod)**, a genus of about 80 mainly North American species. Compositae. *Solidago canadensis* grows from a rhizome, with a stem up to 2 m tall that is glabrous to about the midpoint then more or less covered with stiff, soft hairs up to the inflorescence. The tri-nerved, alternate leaves are narrowly ovate or elliptic and usually have serrate margins, but they can be entire. The abundant flower heads are held in one-sided pyramidal panicles with recurved branches. Each flower head usually has 8-14 ray florets and 3-6 disc florets, but larger and smaller numbers are possible. Although each ray is less than a millimeter long, the entire display of 150 or more heads is quite spectacular in the fall months. The dry fruit of the Compositae is a "cypsela," an achene from an inferior ovary; for example, the edible sunflower seed. The cypsela of this species is 1-1.5 mm long. *S. canadensis* is the most common goldenrod species in the eastern United States. It has been used medicinally by indigenous people throughout its range and as a source of medicine, dyes and cordage by Europeans as well. (Alachua County; B2009-584; Paul Cohen; 19 October 2009.) (Austin 2004; Correll and Correll 1982; Hammer 2002; Mabberly 1997; www.enature.com/fieldguides; www.fna.org.)

***Solidago odora* Aiton (sweet goldenrod, anise-scented goldenrod)**, a genus of about 80 mainly North American species. Compositae. *Solidago*

goldenrod)

Photograph and copyright courtesy of Shirley Denton, [Atlas of Florida Vascular Plants](#)



***Solidago stricta* (wand goldenrod)**

Photograph courtesy of Mariana P. Beckman, DPI



***Solidago canadensis* (Canada goldenrod)**

Photograph courtesy of Shirley Denton, [Atlas of Florida Vascular Plants](#)

odora is most easily identified by the anise fragrance of its leaves when they are crushed. The stem, growing to a meter tall, is covered with a minute down or with the hairs growing in lines up to the base of the inflorescence. The basal leaves are oblanceolate with entire margins, while leaves along the stem are lanceolate to linear-lanceolate. Leaves near the inflorescence are much smaller than those at mid-stem. Unlike those of *S. canadensis*, the leaves of this species are not tri-nerved, a characteristic that helps distinguish the two quite similar species. The pyramidal paniculate inflorescences can contain over 300 heads, held on secund, recurved branches. Each flower has 3-4 (but sometimes 6) ray florets and 3-5 disc florets. The fruit is 1.4-2.3 mm long. This species is found in the eastern United States from New Hampshire to Texas including northern Florida and as far south as Volusia and Pasco counties. Sweet goldenrod has a long history of use by early residents of North America. During the Revolutionary War, colonists made a "Liberty Tea" from its leaves or flowers as a substitute for the taxable tea from China. This plant has also been used as a tonic and medicine for a range of conditions, including respiratory ailments and fevers. Some people continue to use the dried leaves for tea and young, green leaves are eaten as salad. (Sarasota County; B2009-509; K. Lea Etchells; 8 September 2009.) (Austin 2004; Clemants and Gracie 2006; Kunkle 1984; www.fna.org.)

***Solidago petiolaris* Aiton (downy ragged goldenrod)**, a genus of about 80 mainly North American species. Compositae. Although this species is clearly a goldenrod, it is quite different from the two *Solidago* species described above. The inflorescences are not recurved and one-sided, but have stiff ascending branches. This plant grows up to 1.5 m tall and has at least a few hairs on the stem. Leaves along the stem are somewhat variable: they can be either sessile or with a short petiole; either lanceolate or ovate; and have entire or slightly-toothed margins. The heads have leafy bracts that are similar in shape to the nearby leaves, but are much smaller. Each flower has 7-9 (but sometimes 5) ray florets and 10-16 disc florets. The ray florets are relatively large for goldenrods (3-7 mm long). The fruit is 3-4 mm long. Found only occasionally in North Florida, this goldenrod grows from North Carolina as far west as New Mexico and as far north as Illinois. Uses for *S. petiolaris* can be assumed to be those included in uses of the entire genus, for example, as a yellow dye or a medicinal tonic.



***Solidago odora* (sweet goldenrod, anise scented goldenrod)**

Photograph courtesy of Roger L. Hammer, [Atlas of Florida Vascular Plants](#)



***Solidago fistulosa* (pine barrens goldenrod)**

(Compare with *S. odora*)

Photograph courtesy of Mariana P. Beckman, [DPI](#)

Perhaps because *Solidago* species can be difficult to separate or because the species are interchangeable for many purposes, writers often lump uses for all the species under the generic name. (Alachua County; B2009-582; Claudia A. Larsen; 19 October 2009.) (Austin 2004; Wunderlin and Hansen 2003; www.fna.org; www.missouriplants.com.)

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***Solidago petiolaris* (downy ragged goldenrod)**

Photograph courtesy of Mariana P. Beckman, [DPI](#)



***Solidago stricta* (wand goldenrod)**
(Compare with *S. petiolaris*)
Photograph courtesy of Mariana P. Beckman,
[DPI](#)

Entomology Section

Compiled by [Susan E. Halbert, Ph.D.](#)

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 9 million specimens), and investigates the biology, biological control and taxonomy of arthropods.

***Aceria guazumae* (Cook) (eriophyid mite)**, a **State record**, was collected on *Guazuma ulmifolia* (bastard cedar, West Indian elm, chicharron) from a residence in Hialeah. *Aceria guazumae*, originally described as *Eriophyes guazumae* by Cook in 1906, was collected from a *Guazuma* sp. in Cuba. While Cook did not draw or photograph the mite, he did provide an image of the galls and leaf curling caused by this pest. Cook reported the mite was widespread in Cuba, and Dorsete reported this mite on *Guazuma ulmifolia* in Venezuela in 1968. This is the first report of the mite in Florida, but we do not know how long it may have been in the state. Although we have neither a specimen nor photograph of this species to compare with the sample, we know the mites in the Florida galls are *Aceria*, and the galls are very similar to those photographed by Cook in 1906. No other gall forming eriophyids have been reported from *Guazuma*. (Miami-Dade County; E2009-5798; Olga Garcia; 6 August 2009.) (Dr. W.C. 'Cal' Welbourn.)

***Drosophila suzukii* (Matsumura) (spotted wing *Drosophila*)**, was first detected in Florida, a **State record**, in August 2009. A cumulative 35 specimens of this fly have been detected at 19 sites in the northern half of Hillsborough County, including sites in Tampa and near numerous strawberry production areas. This exotic pest first appeared in California in 2008 where it caused damage to strawberry, blackberry and raspberry crops; then in 2009, infestations in cherry were severe. The present concern is that numbers and distribution will increase greatly with the advent of cooler weather, threatening winter and spring strawberry and blueberry crops. See the [DPI Pest alert](#). Oregon also has an excellent [web publication on this new pest](#). (Dr. Gary J. Steck.)

***Sitophilus rugicollis* Casey (Taiwan mangrove weevil)**, a species of potential concern, was collected at a nursery in Apopka on *Rhizophora* propagules from Thailand. This is an exotic weevil, but it was described from Florida more than a century ago. The weevil usually feeds on trees and woody debris, but is known to infest seeds as well. The fact that it is breeding in mangrove propagules is cause for concern because mangroves are important constituents of Florida's coastal ecosystem. (Orange County; E2009-6966; Lance A. Brown; 2 September 2009.) (Dr. Michael C. Thomas.)

Sample/Specimen Submissions

September

Samples Submitted	945
Specimens Identified	32,783

October

Samples Submitted	741
Specimens Identified	35,671

Year to Date

Samples Submitted	8,142
Specimens Identified	307,045



***Guazuma ulmifolia* (West Indian elm) foliage and fruit**

Photograph and copyright courtesy of Daniel Atha and [The New York Botanical Garden](#)



***Drosophila suzukii* (spotted wing *Drosophila*)**

Photograph courtesy of Gary J. Steck, [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 time 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 have no plant information included and are organized by arthropod name.

 [Download full spreadsheet in PDF format](#)

 [Download full spreadsheet in Microsoft Excel format](#)



***Sitophilus rugicollis* (Taiwan mangrove weevil)**

Photograph courtesy of Michael C. Thomas, DPI

Plant Species Name	Plant Common Name	Arthropod Species Name	Arthropod Common Name	County	New Records
<i>Abelmoschus esculentus</i>	okra	<i>Gynaikothrips uzeli</i>	weeping fig thrips	Miami-Dade	Host
<i>Abelmoschus esculentus</i>	okra	<i>Maconellicoccus hirsutus</i>	pink hibiscus mealybug	Manatee	Host
<i>Amyris balsamifera</i>	West Indian sandalwood; balsam torchwood	<i>Paratachardina pseudolobata</i>	lobate lac scale	Miami-Dade	Host
<i>Annona squamosa</i>	sugar apple; custard apple; sweetsop; anon	<i>Pycnarthrum hispidum</i>	a bark beetle	Lee	County
<i>Arenga pinnata</i>	gomuti palm; sugar palm; black fiber palm	<i>Raoiella indica</i>	red palm mite	Lee	Host
<i>Asystasia gangetica</i>	Ganges primrose Chinese violet; blue-angel	<i>Crypticerya genistae</i>	a scale insect	Miami-Dade	Host
<i>Citrus sinensis</i>	orange	<i>Sobarocephala flaviseta</i>	a clusiid fly	Volusia	County
<i>Citrus x paradisi</i>	grapefruit	<i>Leptoglossus fulvicornis</i>	leaf-footed bug	Orange	County
<i>Cladium</i> sp.	sawgrass	<i>Argiope trifasciata</i>	banded garden spider	Broward	County
<i>Coccoloba uvifera</i>	seagrape	<i>Nymphocixia unipunctata</i>	a cixiid planthopper	Palm Beach	County
<i>Dypsis lutescens</i>	areca palm, yellow butterfly palm	<i>Aleurodicus rugioperculatus</i>	a whitefly	Miami-Dade	Host

Nematology Section

Compiled by [Jason D. Stanley, M.S.](#), [Maria de Lourdes Mendes, Ph.D.](#), [Renato N. Inseira, Ph.D.](#), and [Janete A. Brito, Ph.D.](#)

This section analyzes soil and plant samples for nematodes, conducts pest detection surveys and provides diagnosis 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 principal part of the regulatory activity 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.

Nematodes of Special Interest

Foliar nematodes of the genus *Aphelenchoides* are common in Florida and parasitize both ornamental plants and horticultural crops such as strawberries. These nematodes are also able to feed on fungi and can be reared in dishes containing fungal mycelia in appropriate media. The most economically important species of these nematodes are *A. besseyi*, *A. fragariae* and *A. ritzemabosi*. Ornamentals infected by these nematodes are unmarketable due to defoliation and leaf damage. Symptoms include necrosis, chlorosis, discoloration and distortion of leaf tissues. In addition to causing leaf damage, these species can also infect flowers to induce flower abortion. Nematode infections are favored by persistently humid conditions and drops of water on plants. These conditions support nematode movement from the soil to the plant leaves and subsequent penetration and invasion of the leaf tissues. Cultural practices to reduce excess moisture on the foliage, such as encouraging good ventilation, avoiding overhead irrigation, use of clean stock and rigorous sanitation practices, can help prevent infection by these damaging nematodes.

***Beta vulgaris* L. (sugar beet)** is an industrial crop commercially grown in mainly temperate climates for sugar production due to its high concentration of sucrose in the tap root. Worldwide, the three largest producers of sugar beet are the European Union, Russia and the United States. In the United States, over 1,000,000 acres of sugar beets were harvested in 2008 from California, the Pacific Northwest and other temperate states. Sugar beets are not a major crop in Florida, but the related table beets (*Beta vulgaris*) are often grown in home gardens in many areas of the state. Many root-knot nematode species parasitize sugar beet and could threaten table beets. In Florida, *Meloidogyne incognita* and *M. javanica* are the most damaging species. They induce large galls, necrosis and proliferation of small fine feeder roots that are also significantly galled. The distorted and malformed tap roots that result from the root-knot nematode infection are neither palatable nor marketable. Examples of root-knot nematodes recently found on sugar beets are listed below.

***Meloidogyne incognita* (Kofoid & White, 1919) Chitwood, 1949**, (the

Sample Submissions

	July/ Aug	Year to Date
Morphological Identifications	192	12,747
Molecular Identifications	52	803
Total Samples Submitted	1,979	13,550

Certification and Regulatory Samples

Multistate Certification for National and International Export	1,453	9,590
California Certification	243	2,109
Pre-movement (Citrus Nursery Certification)	20	177
Site or Pit Approval (Citrus Nursery and Other Certifications)	56	225

Other Samples

Identifications (invertebrate)	0	17
Plant Problems	21	149
Intrastate Survey, Random	134	480
Molecular Identifications*	52	803

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

southern root-knot nematode) was found infecting the roots of *Beta vulgaris* (sugar beet). (Marion County; N09-01260; Dr. Maria de Lourdes Mendes, University of Florida; 20 October 2009.)

***Meloidogyne javanica* (Treub, 1885) Chitwood, 1949, (the Javanese root-knot nematode)** was also found infecting the roots of this industrial crop, *Beta vulgaris* (sugar beet). (Marion County; N09-01260; Dr. Maria de Lourdes Mendes, University of Florida; 20 October 2009.)

Collectors submitting five or more samples that were processed for nematological analysis in September - October 2009

Anderson, James L.	24
Bailey, Wayne W.	5
Bentley, Michael A.	10
Burgos, Frank A.	94
Edenfield, Carrie S.	82
LeBoutillier, Karen W.	130
Ochoa, Ana L.	158
Pate, Jo Ann	34
Qiao, Ping	93
Spriggs, Charles L.	301



Meloidogyne incognita* and *M. javanica
galls on sugar beet tap root
Photograph courtesy of Mariana P. Beckman,
[DPI](#)

Plant Pathology Section

Compiled by [Robert M. Leahy](#)

This section provides plant disease diagnostic services and conducts a citrus germplasm introduction program. The agency-wide goal of protecting Florida agriculture very often begins with accurate diagnosis of plant problems. Disease management recommendations are offered where appropriate and available. Our plant pathologists are dedicated to keeping informed about plant diseases outside Florida in order to be prepared for potential introductions of new pathogens.

Passion fruit woodiness virus (a potyvirus), a new State record, was found on *Passiflora choconiana* (passionflower) at a nursery in Broward County. Symptoms are variable and include problems such as misshapen fruit or chlorotic, mottled and puckered foliage, in addition to the fruit woodiness for which the virus is named. This virus, found for the first time in Florida, has the potential to become a serious pest for the passion fruit industry. This mechanically transmissible virus can be carried by aphids to host plants. (Broward County; 29895; Keith J. Harris; 14 October 2009.)

Sample Submissions

	Sept/ Oct	Year to Date
Pathology	482	1,966
Bee	5	19
Soil	3	31
Citrus Canker	552	1,767
Citrus Greening	1,122	5,489
Miscellaneous	9	25
Total Samples Submitted	2,173	9,297

Plant Pathology Sample Report

Following is a table with entries for records of new hosts or new geographical areas for samples identified in the current volume's time period as well as samples of special interest. The tables are organized alphabetically by plant host.



Passiflora choconiana (passionflower)
Photograph courtesy of J.C. Meerman, 2003,
[Biodiversity in Belize](#)

Plant Species	Plant Common Name	Causal Agent	Disease Name	Location Type	County	Sample Number	Collector	Date	New Records
<i>Capsicum frutescens</i>	hot pepper	<i>Colletotrichum coccodes</i>	anthracnose	dooryard	Alachua	29102	Timothy S. Schubert	15-Sep-2009	Host
<i>Dyopsis lutescens</i>	Areca palm	<i>Stigmina palmivora</i>	leaf spot	nursery	Hillsborough	28313	James R. Martin	28-Aug-2009	
<i>Ocimum basilicum</i>	sweet basil	<i>Peronospora</i> sp.	downy mildew	nursery	Putnam	28425	Sol L. Looker	31-Aug-2009	
<i>Passiflora x belotii</i> hort.	Belot's passion flower	Passion fruit woodiness virus	potyvirus	nursery	Broward	29896	Keith J. Harris	14-Oct-2009	Host
<i>Passiflora</i>	passion flower	Passion fruit	potyvirus	nursery	Broward	29895	Keith J.	14-	State,

<i>choconiana</i>		woodiness virus					Harris	Oct - 2009	Host
<i>Pennisetum</i> sp.	fountain grass	<i>Pyricularia grisea</i>	leaf spot	nursery	Orange	28595	Leslie J. Wilber	2-Sep-2009	Host
<i>Podocarpus</i> sp.	podocarpus	<i>Cephaleuros virescens</i>	algal leaf spot	nursery	Miami-Dade	30221	Haylett Cruz Escoto	26-Oct-2009	Host
<i>Quercus myrtifolia</i>	myrtle oak	<i>Cylindrocladium parasiticum</i>	root/crown rot	nursery	Alachua	29252	nursery owner	28-Sep-2009	Host

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