

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.

***Ceratitis capitata* (Mediterranean fruit fly).** On 3 July 2010, the last wild fly (a male in a pheromone-baited trap) was detected in the eradication program that began with the discovery of 10 wild flies in Boca Raton on 2 June 2010. A total of 49 males, 8 females and 11 larvae were detected at 12 different sites during the course of the survey program. The presumption is that a population is no longer present when a time equal to an estimated three life cycles passes without a further detection. That was achieved on 29 August 2010.



Medfly impact area
 Photograph courtesy of Jeffrey W. Lotz, [DPI](#)

Therefore, an official declaration of eradication was made on 1 September 2010. The total program cost was an estimated \$4.5 million.



***Achimenes patens* (magic flower)**
 Photograph courtesy of Christian Feuillet, [The Gesneriad Reference Web](#)

***Achimenes patens* Bentham (magic flower)** belongs to a group of exceptionally ornamental plants, with bright, showy flowers and attractive foliage. These plants are generally grown in containers, particularly in cool climates, but they make excellent ground covers for the shady garden as well. This species is native to western Mexico and has been in cultivation for more than 150 years.

***Agrilus difficilis* Gory (a metallic woodboring beetle), a new State record,** was collected in a



Spraying for medfly
 Photograph courtesy of Darci G. Hames, [DPI](#)

Section Reports

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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. Perhaps you'd be interested in some of the things we do to protect our state's native plant species.

DPI is responsible for providing protection to the native plant species that are classified as endangered, threatened or commercially exploited. These plants are listed in the Regulated Plant Index (Florida Administrative Code Chapter [5B-40](#)). Permits are most often approved for projects to rescue endangered plants from destruction during development projects or to conduct conservation and restoration research.

An essential part of the

purple prism trap baited with manuka and phoebe oils in Tampa, Hillsborough County. This species is widespread in the central United States.



***Sagittaria subulata* (awl-leaf arrowhead)**

Photograph courtesy of Jason D. Stanley, [DPI](#)

Hirschmaniella species nematodes share the common name “rice root nematodes” because they parasitize rice. They also parasitize many aquatic plants including some used as aquarium plants, such as *Hydrophyllum* spp. and *Sagittaria subulata* (L.) Buch. In Florida, these aquatic plants are infected by *H. caudacrena* and *H. oryzae*.



***Agrilus difficilis* (a metallic woodboring beetle)**

Photograph courtesy of Michael C. Thomas, [DPI](#)

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

procedure for obtaining permission to harvest listed plants from the wild is submitting the form, DACS 08051 – “Request for Permit to Harvest Endangered or Commercially Exploited Plant(s) or Plant Part(s).” After this form is received, a permit is either approved or disapproved based on our assessment of the project. The following steps are required:

- To collect even **one** individual (or any plant parts) of a species listed as **endangered** in Florida from private land that you do not own, you must have written permission of the landowner and submit DACS 08051. To collect on public land, you must have written permission of the local administrator controlling the public land and submit DACS 08051.
- To collect **three** or more plants or plant parts of **commercially exploited** plants from public or private land you do not own, you must have written permission of the private landowner or administrative authority and submit DACS 08051.
- To collect plants listed as **threatened** from public or private land you do not own, only written permission from the private landowner or administrative authority for public land is required.

In addition to regulating the harvest of wild plants, DPI continues to assist the Endangered Plant Advisory

Council (EPAC), which recommends additions to and deletions from Florida's lists of endangered, threatened and commercially exploited plants. Further information on this subject can be found on the [DPI Web site](#).

We welcome your suggestions for improvement of TRI-OLOGY. Please feel free to contact me or [Dr. Patti Anderson](#) with your comments.

[Dr. Wayne N. Dixon](#), editor
Director, DPI

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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.

***Achimenes patens* Bentham (magic flower)**, from a genus of 22 species in tropical America. Gesneriaceae. This species belongs to a group of exceptionally ornamental plants, with bright, showy flowers and attractive foliage. In addition to the 22 wild-occurring species, breeders have developed numerous hybrids and selections. These plants are generally grown in containers, particularly in cool climates, but they make excellent ground covers for the shady garden as well. This species is native to western Mexico and has been in cultivation for more than 150 years. Prior to 1848, it was crossed with *A. rosea* to produce *A. x venusta*, one of the first hybrids in the genus, and one which is still available today. Like all species in the genus, *A. patens* grows from small, scaly rhizomes, and these are the primary means of reproduction for plants in cultivation, since cultivated *Achimenes* seldom produce seeds. The leaves are opposite, with those of each pair unequal in size. They are pubescent on both surfaces, ovate in shape, dentate on the margins, dark green above and reddish beneath, 5-7 cm long and 2-3 cm broad. The beautiful flowers have a slender corolla tube, expanding abruptly into a flat, slightly zygomorphic, five-lobed, violet-colored limb about 3 cm across. They are borne singly in the upper leaf axils, and they hang slightly downward on the stems. *Achimenes* are of easy culture, both in containers and in the garden; the substrate should drain well, and they should receive bright but filtered light. The plants begin to senesce as autumn progresses. Water should then gradually be withheld from containerized plants, and the pots should be kept completely dry during the winter. (Lafayette County; B2020-422; Clay B. Olson, Florida Cooperative Extension Service for Taylor County; 13 July 2010.) (www.plant-care.com/why-not-grow-Achimenes.html accessed: 9/9/2010.)

***Ilex cornuta* Lindley & Paxton 'Burfordii' (Burford holly)**, from a genus of approximately 400 species, widely distributed through the tropical and temperate zones of both hemispheres. Aquifoliaceae. This is probably the most widely cultivated exotic holly in the Deep South, and it tolerates remarkably well the hot and humid summers so typical here. The species, *Ilex cornuta*, is native to eastern China and Korea and is a fine, heavily-fruited, heat-tolerant evergreen ornamental. Its stiff, plastic-like leaves are armed with five to seven vicious spines, and caution is required when working around the plant. The clone, 'Burfordii', with only a single, less rigid spine, is much more user-friendly. It was originally found as a sport on *I. cornuta* in a cemetery in Atlanta around 1900. The Burford holly is generally a dense shrub to about 3 m tall, although very old specimens can become small trees about twice that height. The leaves are stiff, glossy dark green

Sample Submissions

	July/ Aug	Year to Date
Samples submitted by other DPI sections	1,255	4,959
Samples submitted for botanical identification only	105	496
Total Samples Submitted	1,360	5,452
Specimens added to the herbarium	12	49



***Achimenes patens* (magic flower)**
Photograph courtesy of Christian Feuillet, [The Gesneriad Reference Web](#)

and oblong, with a small apical spine; they are about 5 cm long and 2.5 cm broad. The Burford holly is a female clone, and the bright red berries are borne in profusion, apparently developing parthenogenetically, without pollination. A slow-growing clone with small leaves, *Ilex cornuta* 'Burfordii Nana' has become popular for foundation plantings and sidewalk edgings. It is an attractive and useful plant, but unfortunately it produces few berries (Orange County; B2010-444; Willie McDonald, USDA; 3 August 2010). (Dirr 1990).

***Murdannia keisak* (Hassk.) Hand.-Maz. (marsh dewflower, Asian spiderwort, wart removing herb)**, from a genus of 50 species from warm and tropical areas. Commelinaceae. This perennial herb produces a rhizome as well as fibrous roots. Roots also form at the nodes of the succulent stem which creeps initially, then grows upright to 40 cm tall. The leaves are sessile with linear to lanceolate or linear-elliptic blades. Flowers may be terminal or axillary, usually borne singly, with three narrow, 6-10 mm long sepals; three pink, purple, or blue petals; three stamens and three staminodes. The grayish seeds are 5-10 mm × 2-3 mm and somewhat flattened, not unlike a grain of rice in size. This species is widely distributed from India to Japan and has invaded marshes and waterways in the United States from Virginia to Florida and west to Louisiana and Tennessee, with disjunct populations in the Pacific Northwest. This weed of rice fields in Asia is thought to have spread as a contaminant in rice imported for planting in South Carolina. After rice fields were abandoned there, following the failure of commodity rice production, weeds were left uncontrolled and were able to spread via waterways. This species sometimes forms dense mats and excludes other wetland plants. Marsh dewflower is found in a scattering of counties in northern Florida and is not listed as an invasive species here, but it is included in the noxious weed list of the state of Washington and is listed as "highly invasive" in Virginia. (Submitted by the general public; Alachua County; 18 August 2010.) (Dunn and Sharitz 1990; Mabberley 1997; plants.usda.gov; www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf; www.efloras.org; all accessed: 9/9/2010.)

***Quercus macrocarpa* Michaux (bur oak)**, from a genus of approximately 400 species, mostly of the North Temperate Zone, with extensions into the tropics in Asia and the Americas. Fagaceae. With its massive trunk and wide-spreading crown, a mature, open-grown specimen of this species is one of the most magnificent of our native American trees. It grows to 30 m tall, with a spread equaling or exceeding the height, and a trunk diameter of 1.5 m or more. The bark is dark gray with deep furrows. The bur oak is in the white oak group, so the five to seven lobes of its leaves are rounded rather than bristle-tipped. The terminal lobe is typically large and almost semicircular in outline, with the sinuses below it reaching almost to the midrib. The leaves are 12-20 cm long and 7-10 cm broad, dark green above and grayish with a dense covering of fine hairs beneath. The acorn is unique. The nut is as much as 2.5 cm long and is more than half-covered by the bristly, bur-like cup. The bur oak is widely distributed in the eastern half of the United States and adjacent Canada, but it is most common in the



***Ilex cornuta* 'Burfordii' (Burford holly)**
Photograph courtesy of Alex Robinson, TAMU Herbarium, Texas A&M University



***Murdannia keisak* (marsh dewflower)**
Photograph courtesy of Linda Lee, University of South Carolina, Bugwood.org
<http://www.invasive.org>



***Quercus macrocarpa* (bur oak)**
Photograph courtesy of USDA

Midwest, and it is almost completely absent from the Southeast. It reaches the north shore of Lake Winnipeg in Manitoba, Canada, the northernmost station for any oak species in North America; there it forms a shrub rather than a magnificent tree. The wood is usually marketed as "white oak," and like that of the white oak (*Quercus alba*), it is hard, tough, close-grained and moderately heavy. It is highly prized for use in cabinetry and flooring and formerly was made into barrels. (Baker County; B2010-414; M. Janie Echols; 15 July 2010). (Stein *et al.* 2003.)

***Syzygium cumini* (L.) Skeels (Java plum, jambolan)**, from a genus of about 1,000 species of the Old World tropics. Myrtaceae. This evergreen tree native to India and Southeast Asia can reach 30 m in its native habitat, but is usually no more than 15-20 m tall in Florida. Like many other trees in this family, the bark cracks and flakes away, at least on the lower portion, becoming smoother near the canopy. The aromatic, oblong to elliptic leaves are opposite, simple, glossy green and up to 10 cm long. The fragrant flowers are up to 1.25 cm wide, with four or five petals that are white at first, then change to pink. The funnel-shaped calyx and corolla are fused into a cup-like structure with numerous, showy stamens. The rounded to oblong, dark-purple fruit is usually one-seeded, but can have up to five seeds. This species was introduced to the United States in the early 1900s, but after initial plantings produced abundant fruit that fell and formed mounds of malodorous, fermented litter, enthusiasm for the tree diminished. Unfortunately, this species flourishes in Hawaii and Florida where it has become an invasive pest plant. Because the seeds are easily spread by birds or mammals and the tree produces multiple sucker stems, this species can form dense stands that block sunlight from lower-statured species, including the notoriously invasive *Schinus terebinthifolius* (Brazilian pepper). It has invaded natural areas within the Big Cypress Swamp in Florida and many wet areas of Hawaii. In addition, the California Department of Food and Agriculture includes this species on its list of known fruit fly hosts. (Miami-Dade County; B2010-449; Duraid I. Hanna; 5 August 2010; and Brevard County; B2010-477; William M. Purvis, USDA; 18 August 2010.) (plants.ifas.ufl.edu/misc/pdfs/syzcum.pdf; www.cdfa.ca.gov/phpps/PDEP/target_pest_disease_profiles/caribbean_ff_HostList.html; www.hort.purdue.edu/newcrop/morton/jambolan.html; www.fleppc.org/list/list.htm; all accessed: 9/9/2010.)

***Trichostema dichotomum* L. (forked bluecurls)**, from a genus of about 16 North American species. Labiatae/Lamiaceae. This annual (sometimes perennial) plant can be weedy in the beaches and dry, sandy forests where it is usually found, in the eastern third of the United States and the Canadian provinces of Quebec and Ontario. The 30-70 cm stems are square in cross-section, branch several times and are covered with tiny, glandular hairs. The opposite leaves are ovate to oblong and as large as 6 cm long and 2 cm wide, but not more than five times as long as wide. The inflorescence is terminal, diffuse and many-flowered, resembling a panicle.



***Syzygium cumini* (Java plum)**
Photographs courtesy of Asit K. Ghosh, [Atlas of Florida Vascular Plants](#)



***Trichostema dichotomum* (forked bluecurls)**
Photograph courtesy of Wikimedia

Flowers have a two-lipped calyx with two short lobes and three longer ones and a blue and white bi-labiate corolla with the lower lobe about twice as long as the other four roughly equal lobes. The long, lower lobe is mainly white with blue dots, while the other lobes are mostly blue. The four elongated blue stamens of the flower inspired the common name, bluecurls, because of their arching and coiled filaments. The fruit is a schizocarp with four nutlets somewhat fused to the persistent calyx. Unlike many members of the mint family, this species is not prized for its medicinal or culinary uses, but bees make good use of its nectar and pollen. The intense blue flowers of this Florida native make it a dramatic addition to wildflower gardens throughout the state as well as a lovely late-summer surprise in natural areas of almost every county in Florida. (Miami-Dade County; B2010-454; Olga Garcia; 6 August 2010.) (Deyrup *et al.* 2002; Hammer 2002; Wunderlin and Hansen 2003; plants.usda.gov; www.missouriplants.com/Blueopp/Trichostema_dichotomum_page.html both accessed: 9/9/2010.)

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- Hammer, R. 2002.** Everglades wildflowers. Falcon Press, Guilford, Connecticut. 231 p.
- Mabberley, D.J. 1997.** The plant-book, 2nd edition. Cambridge University Press, Cambridge, England. 858 p.
- Stein, J., D. Binion and R. Acciavatti. 2003.** Field guide to the native oak species of eastern North America. United States Department of Agriculture, Washington, D.C. 161 p.
- Wunderlin, R. P. and B. F. Hansen. 2003.** Guide to the vascular plants of Florida, 2nd edition. University Press of Florida, Gainesville, Florida. 787 p.

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.

***Ceratitis capitata* (Mediterranean fruit fly).** On 3 July 2010, the last wild fly (a male in a pheromone-baited trap) was detected in the eradication program that began with the discovery of 10 wild flies in Boca Raton on 2 June 2010. During the course of the survey program, 49 males, 8 females and 11 larvae were detected at 12 different sites. Eradication was achieved by multiple approaches. Foliar bait sprays containing the toxicant spinosad, protein and sugar were applied on more than 32,000 properties. The bait spray preferentially attracts female flies. In addition, over 76,000 pounds of fruit were stripped from a total of 372 properties in the vicinity of adult detection sites to remove any larva-infested fruit that may have been present. In another approach, about 290 million sterile male medflies were released between June 22 and the end of August. The objective of the "sterile insect technique" is to flood a small wild population with sterile flies. When wild females become much more likely to encounter and mate with sterile males, the wild population cannot maintain itself. Finally, a quarantine area of approximately 84 square miles was established within which the movement of plant material was regulated and potentially infested fruit was not allowed to leave. High density fly trapping continued throughout the program to monitor the effectiveness of eradication efforts. The presumption is that after a time equal to an estimated three life cycles passes without a further detection, a wild population is no longer present. That was achieved on 29 August 2010. Therefore, an official declaration of eradication was made on 1 September 2010. The total program cost was an estimated \$4.5 million. (Palm Beach County; E2010-5639; Ellen J. Tannehill; 3 July 2010.) (Dr. Gary J. Steck.)

***Agrilus difficilis* Gory (a metallic woodboring beetle), a new State record,** was collected in a purple prism trap (employed for the emerald ash borer) baited with manuka and phoebe oils in Tampa. This species is widespread in the Central United States, being recorded as far east as Kentucky and Louisiana, but it has not previously been recorded from Florida. It has been reared from prickly ash (*Zanthoxylum clava-herculis* L.) and honey locust (*Gleditsia triacanthos* L.) and is not known to be a pest. (Hillsborough County; E-2010-5308; Douglas A. Restom-Gaskill, USDA; 21 July 2010.) (Dr. Michael C. Thomas.)

***Heterococcus rauli* (Rau mealybug), a new State record,** was found on a grass in Bill Baggs Cape Florida State Park. This species was described from a series collected in South Carolina on *Andropogon virginicus*

Sample/Specimen Submissions

July

Samples Submitted	943
Specimens Identified	17,607

August

Samples Submitted	868
Specimens Identified	14,929

Year to Date

Samples Submitted	3,997
Specimens Identified	137,627



Timothy D. Mutter, DOF, spraying for medfly.
Photograph courtesy of Darci G. Hames, [DPI](#)

(Graminae) in 1944. An additional, but unpublished, record is was collected in 1975 from Cedar Key, Florida. Other than the original collection data published in the description, nothing is known of this species. It is unlikely to be a pest and is probably native. (Miami-Dade County; E2010-4722; Olga Garcia; 4 August 2010.) (Dr. Ian C. Stocks).

References

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- Flechtmann, Carlos H.W. and G.J. De Moraes. 2003.** New genus and species of eriophyid mites (Acari, Eriophyidae) from Myrtaceae in Brazil, with notes on damages caused by *Aculus pitangae* Boczek & Davis. *Zootaxa* 153: 1-10.

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.

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David Dean, DPI entomologist, monitors the release of sterile med flies.
Photograph courtesy of Gary J. Steck, [DPI](#)



***Agrilus difficilis* (a metallic woodboring beetle)**
Photograph courtesy of Michael C. Thomas, [DPI](#)

Plant Species Name	Plant Common Name	Arthropod Species Name	Arthropod Common Name	County	New Records
<i>Acacia pinetorum</i>	pineland wattle	<i>Tachardiella mexicana</i>	lac scale	Lee	Host
<i>Cactaceae</i>	cactus	<i>Pseudococcus viburni</i>	obscure mealybug	St. Johns	Regulatory Incident

<i>Catharanthus roseus</i>	Madagascar periwinkle	<i>Aleurodicus rugioperculatus</i>	whitefly	Dade	Host
<i>Chorisia speciosa</i>	silk floss tree	<i>Myllocerus undecimpustulatus</i>	Sri Lanka weevil	Miami-Dade	Host
<i>Citrus aurantifolia</i>	lime, key lime	<i>Aonidiella aurantii</i>	California red scale	Alachua	Regulatory Incident
<i>Citrus aurantifolia</i>	lime, key lime	<i>Lepidosaphes gloverii</i>	glover scale	Alachua	Regulatory Incident
<i>Citrus reticulata</i>	tangerine, mandarin	<i>Euxesta juncta</i>	picture-winged fly	Martin	County
<i>Citrus sinensis</i>	orange	<i>Bipalium vagum</i>	terrestrial broadhead Planarian	Hillsborough	County
<i>Citrus sinensis</i>	orange	<i>Philornis porteri</i>	burrowing fly	Manatee	County
<i>Citrus x paradisi</i>	grapefruit	<i>Olbiogaster sackeni</i>	a wood gnat	Polk	County
<i>Citrus x paradisi</i>	grapefruit	<i>Sobarocephala atrifacies</i>	a clusiid fly	Sarasota	County
<i>Clausena lansium</i>	wampee; wampi	<i>Pseudococcus odermatti</i>	mealybug	Miami-Dade	Host
<i>Clivia miniata</i>	kaffir lily	<i>Pseudococcus viburni</i>	obscure mealybug	St. Johns	Regulatory Incident
<i>Coccoloba diversifolia</i>	pineon plum.	<i>Milviscutulus maniferarum</i>	manno shield scale	Miami-Dade	Host

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Nematology Section

Compiled by [Janete A. Brito, Ph.D.](#), [Maria L. Mendes, Ph.D.](#), [Ramandeep Kaur, Ph.D.](#), and [Jason D. Stanley, M.S.](#)

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

Nematodes of special interest detected and/or identified in May – June 2010

Hirschmanniella species nematodes are large (1-4 mm long) compared with other plant parasitic nematodes (usually less than 1 mm long). *Hirschmanniella* includes 23 species with the common name “rice root nematodes” because they parasitize rice. However, the ability to damage rice has been demonstrated for only seven species (*H. belli*, *H. gracilis*, *H. imamuri*, *H. mexicana*, *H. mucronata*, *H. oryzae*, and *H. spinicaudata*). The other species have been detected inside rice or in the roots of weeds in rice fields, but their damage potential to rice has not been assessed. *Hirschmanniella* species parasitize many aquatic plants including some used as aquarium plants, such as *Hydrophyllum* spp. and *Sagittaria subulata* (L.) Buch. In Florida, these aquatic plants are infected by *H. caudacrena* and *H. oryzae*. The majority of the species in this genus are regulated by states or countries, including the European Union. These regulations help protect the rice industry from the damage that nematodes can cause. (Bridge *et al.* 2005.)

***Hirschmanniella oryzae* (van Breda de Haan, 1902) Luc & Goodey, 1964, a rice root nematode**, was found infecting the roots of the aquatic plant *Sagittaria subulata* (awl-leaf arrowhead). (Broward County; N10-00688; Frank A. Burgos; 26 May 2010.)

***Hirschmanniella caudacrena* Sher, 1968, a rice root nematode**, was found infecting the roots of this aquatic plant *Sagittaria subulata* (awl-leaf arrowhead). (Broward County; N10-00688; Frank A. Burgos; 26 May 2010.)

Collectors submitting five or more samples that were processed for nematological analysis in July - August 2010

Anderson, James L.	58
Bailey, Wayne W.	17
Burgos, Frank A.	113
Edenfield, Carrie S.	116
LeBoutillier, Karen W.	230

Sample Submissions

	July/ Aug	Year to Date
Morphological Identifications	1,889	7,037
Molecular Identifications	189	472
Total Samples Submitted	2,078	7,509

Certification and Regulatory Samples

Multistate Certification for National and International Export	1,458	7,355
California Certification	274	1,702
Pre-movement (Citrus Nursery Certification)	22	182
Site or Pit Approval (Citrus Nursery and Other Certifications)	4	74

Other Samples

Identifications (invertebrate)	1	5
Plant Problems	33	106
Intrastate Survey, Random	97	489
Molecular Identifications*	189	472

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

Ochoa, Ana L.	82
Pate, Jo Ann	18
Qiao, Ping	137
Spriggs, Charles L.	126
Tannehill, Ellen J.	8

References

Bridge, J., R. A. Plowright and D. Peng. 2005. Nematode parasites of rice. Pp. 87-130. *In* M. Luc, R.A. Sikora and J. Bridge (eds.). Plant parasitic nematodes in subtropical and tropical agriculture, 2nd edition. CAB International, Wallingford, Oxfordshire, United Kingdom. 896 p.



***Sagittaria subulata* (awl-leaf arrowhead)**
 Photograph courtesy of Jason D. Stanley, [DPI](#)



A specimen of *Hirschmanniella oryzae* partially embedded in *Sagittaria subulata* root tissues.
 Photograph courtesy of Jason D. Stanley, [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.

***Phytophthora citrophthora*, a leaf spot blight**, was found on *Osmanthus fragrans* (sweet olive). This is a new host record for the fungal pathogen with a syndrome suggestive of ramorum blight, also known as sudden oak death. The pathogen thrives in warm, moist conditions often found in plant nurseries. (Duval County; P2011-36087; Theresa R. Estok and Tracy L. Wright; 18 May 2010.)

Phytophthora nicotianae, a fungal blight that usually strikes plants at soil level, was found on foliage of Meyer lemon and sweet orange. Several retail citrus nurseries have had this foliar problem, which probably originated with the propagators. (Alachua County; P2011-38447; Cheryl A. Jones; 17 August 2010 and Bradford County; P2011-38703; Theresa R. Estok; 17 August 2010.)

Thozetella cristata, a synnematus saprophyte, infected dooryard blueberry plants (*Vaccinium corymbosum*) that had been damaged by salt. This is the first report of the fungus in Florida. (Alachua County; P2011-38038; home owner; 28 July 2010.)

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.

Sample Submissions

	July/ Aug	Year to Date
Pathology	304	1,508
Bee	3	33
Soil	2	68
Citrus Canker	341	1,118
Citrus Greening	932	5,666
Citrus Black Spot	2	100
Miscellaneous	13	58
Total Samples Submitted	1,597	8,551



***Vaccinium corymbosum* (highbush blueberry)**

Photograph courtesy of Wikipedia

Plant Species	Plant Common Name	Causal Agent	Disease Name	Location Type	County	Sample Number	Collector	Date	New Records
<i>Abutilon x hybridum</i>	Chinese lantern, flowering maple	<i>Phytophthora nicotianae</i>	stem/foliar blight	Nursery	Marion	37795	nursery owner	12-Jul-10	Host
<i>Arctostaphylos patula</i>	greenleaf manzanita	<i>Pestalotiopsis</i> sp.	leaf spot	Nursery	Volusia	37975	Stacy S. Simmons, Tracy L. Wright	28-Jul-10	Host
<i>Carya alba</i>	mockernut hickory	<i>Pestalotiopsis</i>	leaf spot	Dooryard	Orange	39418	Steven Reams,	3-	

		<i>uvicola</i>					USDA	Sep-10	
<i>Chamaerops humilis</i>	European fan palm	<i>Cylindrocladium pteridis</i>	leaf spot	Lawn Service	Hillsborough	39456	James R. Martin	7-Sep-10	
<i>Citrus x meyeri</i>	Meyer lemon	<i>Phytophthora nicotianae</i>	blight	Discount store	Bradford	38703	Theresa R. Estok	17-Aug-10	Host
<i>Citrus</i> sp.	orange	<i>Phytophthora nicotianae</i>	blight	Nursery	Alachua	38447	Cheryl A. Jones	17-Aug-10	
<i>Clusia</i> sp.	balsam apple	<i>Mycosphaerella</i> sp.	leaf spot	Dooryard	Miami-Dade	38831	Juan Garcia Lopez	2-Aug-10	
<i>Eucalyptus</i> sp.	eucalyptus	<i>Phaeophleospora epicoccoides</i>	leaf spot	Pasture	Martin	37846	Leann M. West	9-Jul-10	
<i>Juniperus conferta</i>	shore juniper	<i>Diplocladiella scalaroides</i>	saprophytic fungus	Dooryard	Alachua	38005	home owner	20-Aug-10	
<i>Miscanthus sinensis</i>	Chinese silvergrass	<i>Leptosphaeria</i> sp.	leaf spot	Nursery	Marion	39392	Shelly M. Wayte	3-Sep-10	
<i>Osmanthus fragrans</i>	sweet olive, tea olive	<i>Phytophthora citrophthora</i>	leaf spot blight	Nursery	Duval	36087	Theresa R. Estok, Tracy Wright	18-May-10	Host
<i>Pennisetum glaucum</i>	pearl millet	<i>Pyricularia</i> sp.	leaf spot	Nursery	Marion	39122	nursery owner	3-Sep-10	Host
<i>Vaccinium corymbosum</i>	highbush blueberry	<i>Thozetella cristata</i>	secondary	Dooryard	Alachua	38038	home owner	28-Jul-10	State
<i>Viburnum odoratissimum</i> var. <i>awabuki</i>	mirror-leaf viburnum; chindo viburnum	<i>Phytophthora palmivora</i>	leaf spot blight	Nursery	Volusia	38536	Karen Coffey	12-Aug-10	

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