UF IFAS Extension UNIVERSITY of FLORIDA

Sample Submission and DDIS



Sample Submission: Sample Types

- Plant disease
- Insect and other arthropods
- Management, plant physiology, nutrient disorders, non-biotic problems
- Plant and weed identification
- Livestock and aquaculture
- Invasive species



How do you Survey to Collect Samples?

- Use a Systematic approach Search every plant the same way
- Document your methods
 - Search every other plant, every fifth plant, 10 plants in a row in 10 rows per crop, etc.
- Quantify the effort
 - Number of plants searched, total number of plants on the innermost row, etc.



How to Package your Samples: **Hard-Bodied Insects**

- Capture multiple specimens if possible and put them in a vial with preservative (70% alcohol)
- Put the vial in a sealable bag
- Put this bag plus the sample submission form in yet another bag
- Box your sample and take it to your county extension agent.
- http://www.youtube.com/watch?v=DPSOddSQxDE lacksquare

Photo credit: Colorado potato beetles, Leptinotarsa decemlineata (Say), feeding on foliage. David Cappaert, Michigan State University, www.insectimages.org; Southern green stink bug, Nezara viridula, Suwannee Valley Research Center; Eastern lubber grasshopper, Susan Follick, Master Gardener Volunteer.

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Beetles (Coleoptera)



Stink bugs, grasshoppers (Hemiptera)



How to Package your Samples: **Small Insects (difficult to remove)**

- Capture multiple life stages on 6-8in of a plant; wrap in a • paper towel or newspaper and double bag them
- Host plant ID can help with pest identification ullet
- Capture multiple life stages on a smaller piece of plant, lacksquareput them in a vial along with a preservative (70%) alcohol); put the vial in a sealable bag
- Put both sample bags plus the sample submission form • in yet another bag.
- Box your sample and take it to your county agent.
- http://www.youtube.com/watch?v=Ma42IE02pDo ${\color{black}\bullet}$

Photo credit: Whiteflies, mealybugs and scales (Raymond Kartzman, Just Home Gardening), and thrips (Babu Panthi, UF/IFAS), feeding on foliage.





Order Hemiptera



Thrips (Thysanoptera)



How to Package your Samples: Soft Bodied Insects

- Capture multiple specimens if possible
- Be sure the water is boiling, then add the specimens to the boiling water for approximately 1 minute
- Remove the specimens from the water and put them in a preservative-filled vial (70% alcohol)
- Put the vial into a sealable bag
- Put this bag plus the sample submission form in yet another bag
- Box your sample and take it to your county agent
- http://www.youtube.com/watch?v=2HA06HW4Kc4

Photo credit: https://www.fdacs.gov/Agriculture-Industry/Pests-and-Diseases/Plant-Pests-and-Diseases/Lime-Swallowtail-Citrus-Pest#; Cactus moth larvae, Cactoblastis cactorum, Right-Baez, USDA Agricultural Research Service, Bugwood.org, #5015069; Old World Bollworm, Helicoverpa armigera, Central Science Library, Harpenden, British crown, Bugwood image 0454075



Lime Swallowtail (Lepidoptera)



Moth larvae (Lepidoptera)



How to Package your Samples: Butterflies & Moths

- Capture multiple specimens if possible.
- Place in a freezer overnight to submit a dry sample
- Put some in a preservative-filled vial (70% alcohol)
- Place a tissue in the vial to prevent damage during transit and place the vial in a sealable plastic bag
- Put these bags plus the sample submission form in yet another bag
- Box your sample and take it to your county agent.

Photo credit: https://www.fdacs.gov/Agriculture-Industry/Pests-and-Diseases/Plant-Pests-and-Diseases/Lime-Swallowtail-Citrus-Pest#; Cactus moth, Cactoblastis cactorum, Jeffrey W. Lotz, Florida Department of Agriculture and Consumer Services, Bugwood.org, #5199023; Old World Bollworm, Helicoverpa armigera, Julieta Brambila, USDA-APHIS-PPQ bugwood.org #539264

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Butterfly (Lepidoptera)



Moths (Lepidoptera)



How to Package your Samples: **Plant Disease Sample**

- Collect 6 to 8 inches of symptomatic (**NOT DEAD**) plant material, wrap it in paper towels or newspaper, and bag it
- Alternatively, collect the whole plant, if possible
- Collect 6-8 inches of material without symptoms, wrap it in paper towels/newspaper, and bag it separately
- Put both samples plus the sample submission form in yet another bag
- Box your sample and take it to your county agent
- http://www.youtube.com/watch?v=JOrNi8Hrlpl ${}^{\bullet}$

Photo credit: Fungal, Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org; Bacterial, Margery Daughtrey, Cornell University, Bugwood.org; Viral, William M. Brown Jr., Bugwood.org; Nematode, Shannon McAmis, University of Florida



Viral pathogen

Nematode



Fungal pathogen

Bacterial pathogen



What if you can't find any pests or disease?

It is okay if you do not find a pest! -We want to know that you looked -Quantify your effort

-Tell us the methods you used



Submission Form: Information Needed

General information
 Pest surveyed for
 Plant type surveyed
 Additional information

FEE: \$40.00 per Free with this of Note to lab staff: cc fine pdc@ufl.edu and achod Bill to project, not THIS FORM CANNOT BE REPRODUCED,COL	FLORIDA sample – oupon al report to ges@ufl.edu client. IPON EXPIRES MAY 2019	Mail insect samples to Lyle Buss 1881 Natural Area Dr P.O. Box 110620 Gainesville, FL 32611	FLORIDA FIRST DETECTOR Dr. Mail disease samples to: Dr. Carrie L. Harmon F. Bldg 1291, 2570 Hull Rd. PO Box 110830 1-0620 Gainesville FL 32611-0830
Collection Information: Date collected: County:		Submitted by (if different fr Extension Agent: Name:	om collector):
lame: Address: City/Zip: E-mail:		Company: Address: City/Zip: E-mail:	
tesponse method: Notify E-mail (preferred) FAX Telephone	r: Collector Submitter Agent only	Information requested: Control information Species identification Other (please explain)	Priority: Routine Urgent (explain why) Regular mail
What insect or disease did you survey fo What type of plant did you survey? Ornamentals Field Fruit Gree Vegetables Past Forest/Shade tree Turf	r? l crop mhouse Number are	Plant name:	%of plants infested:
Parts where pest/pathogen located: Leaves Growing tips Buds Blossoms Fruit/Nut/Seeds Stem/Trunk Branches/Twigs Roots Tubers/Bulbs	Symptom L L T F A G S S S S	s: Dieback eaf discoloration eaf drop "ip burn i'ruit injury Johormal growth Galls tunting low decline udden collapse Dther:	

ADDITIONAL INFORMATION ABOUT SAMPLE:



Submissio General Inf	on Form: ormation	IFEE: \$40.00 per sample - Free with this coupon Note to lab staff: cc final report to pdc@ufl.edu and achodges@ufl.edu Bill to project, not client. THIS FORM CANNOT BE REPRODUCED.COUPON EXPIRES MAY 2019
Date and place of collection Name of collector and person submitting sample	Address, email, and phone number of the collector and person submitting the sample	Collection Information: Submitted by (if different from collector): Date collected: Extension Agent: County: Name: Name: Company: Name: Company: Address: Address: City/Zip: City/Zip: E-mail: E-mail: Phone: Phone: Response method: Notify: Collector Control information
Collection Information:	Submitted by (if different from collector):	Ornamentals Field crop Fruit Greenhouse Number of plants surveyed: %of plants infested:
Date collected:	Extension Agent:	Vegetables Pasture Forest/Shade tree Turf
County:	Name:	Parts where pest/pathogen located: Symptoms: Leaves Dieback
Name:	Company:	Growing tips Leaf discoloration Buds Leaf drop Blostoms Tip hum
Address:	Address:	Fruit/Nut/Seeds Fruit injury Stem/Trunk Abnormal growth
City/Zip:	City/Zip:	Branches/Twigs Galls Roots Stunting
E-mail:	E-mail:	Tubers/Bulbs Slow decline Sudden collapse Other:
Phone:	Phone:	ADDITIONAL INFORMATION ABOUT SAMPLE:
Response method:Notify: E-mail (preferred) Collector FAX Submitter Telephone Agent only	Information requested: Priority: Control information Routine Species identification Urgent (explain why) Other (please explain) Regular mail	

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Submission Form: Pest and Plant Information

Pest surveyed (insect or disease) Plant surveyed (type and name)

Vhat type of plant did you	survey?	Plant name:	
Ornamentals	Field crop		
Fruit	Greenhouse	Number of plants surveyed:	%of plants infested:
Vegetables	Pasture		
Forest/Shade tree	Turf		

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Free with this coupon Note to lab staff: cc final report to pdc@ufl.edu and achodges@ufl.edu Bill to project, not client. THIS FORM CANNOT BE REPRODUCED,COUPON EXPIRES MAY 2019		Mail insect samples to: Lyle Buss 1881 Natural Area Dr. P.O. Box 110620 Gainesville, FL 32611-062	Mail disease samples to: Dr. Carrie L. Harmon Bldg 1291, 2570 Hull Rd. PO Box 110830 Gainesville FL 32611-083
Collection Information:		Submitted by (if different from co	ollector):
Date collected:		Extension Agent:	
County:		Name:	
Name:		Company:	
Address:		Address: City/Zip: E-mail:	
City/Zip:			
E-mail:			
Phone:		Phone:	
Telephone	Agent only	Other (please explain)	Regular mail
What insect or disease did you s	urvey for?		
What insect or disease did you s What type of plant did you surve Ornamentals Fruit Vegetables Forest/Shade tree	urvey for? ey? Field crop Greenhouse Number Pasture Turf	Plant name:	of plants infested:
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What insect or disease did you s What type of plant did you surve Ornamentals Fruit Vegetables Forest/Shade tree Parts where pest/pathogen locat Leaves Growing tips Buds Blossoms Fruit/Nut/Seeds Stem/Trunk Branches/Twigs Roots Tubers/Bulbs	urvey for? ey? Field crop Greenhouse Number Pasture Turf ed: Symptoms Di Le Le Ti Fr Al Ga Sta	Plant name: %d of plants surveyed: %d te t	of plants infested:



Submission Form: Pest Location and Damage

Location of pest (insect or disease)

Damage/Symptoms observed

Additional information

where pest/pathogen located:	Symptoms:
Leaves	Dieback
Growing tips	Leaf discoloration
Buds	Leaf drop
Blossoms	Tip burn
Fruit/Nut/Seeds	Fruit injury
Stem/Trunk	Abnormal growth
Branches/Twigs	Galls
Roots	Stunting
Tubers/Bulbs	Slow decline
	Sudden collapse
	Other:

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FEE: \$40.00 per sam Free with this coup Note to lab staff: cc final rep pdc@ufl.edu and achodges@u Bill to project, not clien THIS FORM CANNOT BE REPRODUCED,COUPON E	pie - oonMail insect samples to: Lyle BussMail disease samples to: Dr. Carrie L. Harmon Bldg 1291, 2570 Hull Rd PO Box 110830t.P.O. Box 110620PO Box 110830DXPIRES MAY 2019Gainesville, FL 32611-0620Gainesville FL 32611-08
Collection Information:	Submitted by (if different from collector):
Date collected:	Extension Agent:
County:	Name:
Name:	Company:
Address:	Address:
City/Zip:	City/Zip:
E-mail:	E-mail:
Phone:	Phone:
What insect or disease did you survey for? What type of plant did you survey?	Plant name:
Ornamentals Field crop Fruit Greenhous Vegetables Pasture Forest/Shade tree Turf	e Number of plants surveyed: %of plants infested:
Parts where pest/pathogen located:	Symptoms:
Leaves	Dieback
Growing tips Buds	Leaf discoloration
Blossoms	Tip burn
Fruit/Nut/Seeds	Fruit injury
Stem/Trunk	Abnormal growth
Describer (Describer)	Galls
Branches/Twigs Roots	Stunting
Branches/Twigs Roots Tubers/Bulbs	Stunting Slow decline
Branches/Twigs Roots Tubers/Bulbs	Stunting Slow decline Sudden collapse



Where to Submit the Samples?

- Bring samples (plant tissue or arthropod specimens) with sample submission form (www.flfirstdetector.org) to your local county agent (https://sfyl.ifas.ufl.edu/find-your-local-office/)
- UF/IFAS Entomology and Nematology Dept. Insect ID Lab Lyle Buss 970 Natural Area Dive, Gainesville, FL 32611 http://entnemdept.ufl.edu/insectid/; ljbuss@ufl.edu; (352) 273-3933
- IFAS Nematode Diagnostic Lab Dr. Billy Crow http://nematology.ifas.ufl.edu/assaylab/index.html NEMALAB@ifas.ufl.edu; (352) 392-1994
- UF/IFAS Plant Diagnostic Center Dr. Carrie Harmon https://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center/; pdc@ifas.ufl.edu/ 2570 Hull Rd, Bldg 1291, Gainesville, FL 32611-0830 (352) 392-1795, Fax (352) 392-3438



Sample Submission Exception

- **Giant African Land Snail**
- 1. Do not collect live suspect samples
- 2. Call the FDACS-DPI Hotline-
 - 1-888-397-1517













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Observe a disorder or pest

START here









Take a digital picture



Access the DDIS website



Send sample to a specialist

Report results to grower



The DDIS Process

Online diagnosis by specialists



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DDIS Website

(http://ddis.ifas.ufl.edu/ddisx/home.jsp)



How to Use DDIS

- Reach out to local county extension
- Navigate to: <u>https://ddis.ifas.ufl.edu/</u>
- Scroll down to the bottom of the page and select: Become a User 🏨
- In "User Group" select Extension Clientele
- Input N/A for "IFAS Unit Name"
- Extension agent must approve user

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Home	Media Library	Diagnostic Labs	Equipment T
Become a User Forgot	: Your Password		user name
Become a DDIS l	Jser		
			* note as required field.
First name *			
Last name *			
User Group *	Choose one	♥ What's this?	
IFAS Unit Name			(enter N/A if not apply)
Address *			
City *			
State *	FL Zip *		
User ID *		Check availability	
Password *			
Confirm password	*		



Phone

How to Use DDIS

From the home page, Click "My DDIS" to begin the sample submission



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	ance Diagnostic and tification System	
ment	Training	Contact Us
.Qs My Acc	count My Role	Sign Out

Sample Type: Insect (Non-plant) Common Name: Scarlet-bodied wasp moth Scientific Name: Cosmosoma myrodora Family: Arctiidae Sample Submitter: Lisa Hickey Sample ID: 18-2818



How to Use DDIS

Click "Submit a Sample for Diagnosis"

My Samples

 Manage samples you have submitted. 2) View or revise submitted sample. 3) Perform diagnosis and identification. 4) Forward a sample to specialists. 5) Refer a sample to external specialists. 6) Send a sample to SPDN/NPDN.

Submit a Sample for Diagnosis

Submit a sample to specialists, laboratories or clinics, external specialists or county extension. agents in your county.



How to Use DDIS: **Select Sample Type (step 1 of 3)**

- Select the sample type for submission
- Select multiple categories if not sure about the problem with the plant

, St	mple	DDIS Sa	Submit a
	уре	ct Sample T	Sel
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ep 1 of 3

Fill Sample Data

e type to choose, you may select multiple sample types.

Submit A New Sample our sample type(s) t Disease ect (Plant) ect (Non-plant) t/Weed hroom/Fungus agement/Physiology/Nutrient stock Reset Next->



How to Use DDIS: Fill Sample Data (step 2 of 3)

Choose a Clinic or Specia

Choose clinic(s) or specialist(s) by clicking on their na

County Extension Agent

Brooke Moffis

Jamie Daugherty

Juanita Popenoe

Megan Brew

Megan Mann

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- Fill with Information based on sample type
- Name, address, locality
- GPS coordinates
- Extension agent
- Any additional information



How to Use DDIS: **Upload Digital Sample (step 3 of 3)**



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The last step:

- Add CLEAR images of the sample
- Can submit up to seven images



DDIS How To

- ▶ How do I register as a DDIS user?
- How do I find my user name/password?
- Where do I get IT related DDIS support?
- ▶ How do I submit a DDIS sample?
- How do I retrieve my sample?
- How do I make diagnosis or identification?
- ▶ How do I find samples I have submitted or diagnosed?
- ▶ How do I search DDIS samples?
- ▶ How do I update my account information?
- What's the maximum file size I can upload to the DDIS server?
- How do I reduce the size of an image file?
- How do I make changes for a submitted sample?
- How do I change a sample from "Public" to "Private" or vice versa?

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Quick Links

IFAS Diagnostic Services >>



DDIS Mobile >>

Meet Your Diagnosticians >>

Latest Pest Info >>

DDIS Brochure >>

Web Resources >>

Get GPS code >>

Support

User Guidelines >>

DDIS How To and FAQs >>



DDIS FAQs

- What is DDIS and is DDIS a part of SPDN/NP
- Does DDIS support iPad, iPhone or Android pl
- Why can't I just attach a digital picture to e-n
- I don't have a microscope. DDIS won't do me
- Why do I have to fill out so much information
- Who are DDIS users?
- Who can receive my sample?
- How can I tell whether my sample has gone t
- What if I want to share a sample or a response
- How many images should I submit?
- Does DDIS allow extension clientele in Florida

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hones?	
mail and send it?	
e any good, will it?	
on the sample form?	
to the specialist?	
se with another agent?	
a to submit a sample?	

ID Resources

- IFAS EDIS and Featured Creature fact sheets
 - http://edis.ifas.ufl.edu; https://entnemdept.ifas.ufl.edu/creatures/
- IFAS Entomology Insect I.D. Lab Lyle Buss
 - http://entnemdept.ufl.edu/insectid/; ljbuss@ufl.edu; (352) 273-3933
- IFAS Nematode Diagnostic Lab Dr. Billy Crow \bullet
 - http://nematology.ifas.ufl.edu/assaylab/index.html; NEMALAB@ifas.ufl.edu; (352) 392-1994
- IFAS UF/IFAS Plant Diagnostic Center Dr. Carrie Harmon https://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center/; pdc@ifas.ufl.edu; (352) 392-1795
- IFAS Extension Bookstore I.D. books / decks
 - http://ifasbooks.ifas.ufl.edu/p-153-helpful-harmful-harmless.aspx
- Commodity-specific specialists around the state
 - http://entomology.ifas.ufl.edu/extension/; http://entomology.ifas.ufl.edu/people-directory/

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UF/IFAS Resources

- EDIS Online Publications on Vegetable Production & Diseases
- UF/IFAS Faculty Gainesville campus
 - Plant Pathology Department
 - Horticultural Sciences Department
 - Entomology and Nematology Department
 - Center for Organic Agriculture
- UF/IFAS Extension & Research Faculty County & REC vegetable specialists

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Collaborating Agencies

- U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS)
- Cooperative Agricultural Pest Survey Program (CAPS)
- Florida Department of Agriculture and Consumer Services (FDACS)
- National Plant Diagnostic Network (NPDN)
- Sentinel Plant Network (SPN)
- University of Florida Institute of Food and Agricultural Sciences (UF-IFAS)
- Protect U.S.



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