

NPDN/PSU Plant Disease Diagnostics Workshop

Sara May, Penn State, Department of Plant Pathology

Diagnosticians from around the country participated in a two-day basic diagnostics technique workshop and a one-day Fusarium basics training held in the Penn State Department of Plant Pathology at University Park on May

18-20, 2010.

Sara May of the Penn State Plant Disease Clinic and Dr. Beth Gugino, vegetable extension pathologist at Penn State, coordinated the workshop, with assistance from the NPDN Diagnostics Program Area Committee.

Forty-eight individuals participated in the basic techniques training and 45 individuals attended the Fusarium basics training. Dr. Barbara Christ, Penn State Professor and APS President, opened the workshop with a welcome

to the group, which was followed by a two-day basic techniques program that included sessions on identification of fungi, bacteria, nematodes, insects, and viruses, as well as on basic methods and abiotic disorders. The group toured the Penn State campus to view disease and



Anne Vitoreli of University of Florida and Nick Singh of the Louisiana State University Center look at examples during the basic techniques workshop. Photo courtesy of Karen Snover-Clift, Cornell University.



Dr. Gary Moorman showed participants examples of plant problems. Photo courtesy of Karen Snover-Clift, Cornell University.

insect problems and to see the mature American elm trees. They also visited Penn State's 2000-acre Russell E. Larson Agricultural Research Center and toured the Pasto Agricultural Museum. A roundtable at the end of the basic techniques training gave the group an opportunity to discuss and share diagnostic tips and techniques.



National Institute of Food and Agriculture

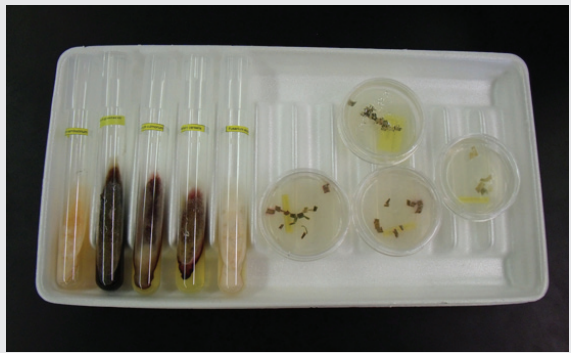
Issue Highlights

- New Federal Orders from APHIS
- Tip - Diagnosis of Powdery Scab
- Upcoming workshops
- Uploading Samples in PDIS 2
- Program Area Committees

Dr. David Geiser, Professor of Plant Pathology, and Jean Juba of the Fusarium Research Center coordinated the

Fusarium basics training. Participants learned basic culturing and identification techniques, looked at 19 different Fusarium species that diagnosticians may encounter in their clinics, and learned

about and discussed mycotoxins and their identification. 🌿



Fusarium species. Photo courtesy of Karen Snover-Clift, Cornell University.

into effect upon publication. Comments can be made prior to August 16, 2010.

[Click here](#) to read the full release and for information on how to submit comments. 🌿

New Quarantine for European Grapevine Moth in Parts of California

[APHIS Newsroom](#)

A Federal Order was issued on June 22, 2010, issuing quarantine areas for portions of Fresno, Lake, Mendocino, Merced, Napa, Solano, and Sonoma counties in California for the European grapevine moth (EGVM).

A serious pest of grapes, the European grapevine moth (*Lobesia botrana*) poses a significant threat to California's grape and wine industry.

[Click here](#) to read the full release with the link to the official Federal Order. 🌿

National Updates

New Quarantine to Prevent the Spread of Citrus Greening

[APHIS Newsroom](#)

As of June 17, 2010, there is a new quarantine in effect for several states and territories in the United States to stop the spread of citrus greening. The new rule replaces all previous federal orders related to citrus greening.

Florida and Georgia, the territories of Puerto Rico and the Virgin Islands, as well as areas in both Louisiana and South Carolina are included in the quarantine. Also included in the rule are quarantine restrictions for the Asian citrus psyllid, which vectors the bacterial disease, for the states of Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, Texas, parts of California, South Carolina, and Arizona, and the territories of Guam, Puerto Rico, and the Virgin Islands.

The interim rule was published in the Federal Order on June 17, 2010 and went



Cercidiphyllum japonicum leaves. Photo courtesy of Molly Swartwood, Cornell University.

The list of regulated articles for Asian longhorned beetle has been updated to include *Cercidiphyllum* (katsura tree).

[Read here...](#)

Diagnosis of Powdery Scab (*Spongospora subterranea* f.sp. *subterranea*)

Anette Phibbs, WDATCP Plant Industry Laboratory and Brian Hudelson, University of Wisconsin-Madison, Department of Plant Pathology

Powdery scab is a disease of potatoes in most potato growing areas. This slime fungus also vectors potato mop top virus (PMTV). Potato tubers heavily infested with powdery scab produce large amounts of spore balls or cystosori and

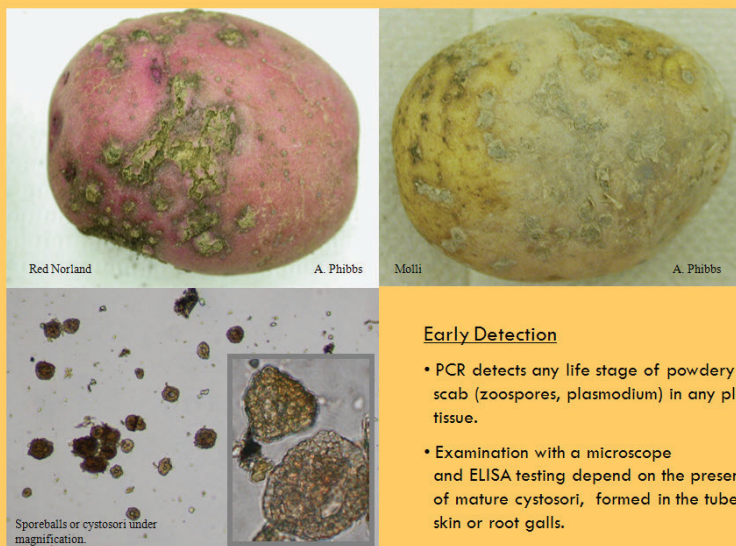
Egan and H. Lahert). For extraction of DNA from tuber and soil we prefer [MoBiolabs Powersoil Extraction kit](#).

We adapted Dr.

Qu's protocol for use on our real time PCR instrument (Biorad Opticon 2, formerly MJ Research) with SYBR green. Primers SsF 5' GTCGGTTCTACCGGCAGACC 3' and SsR 5' GCACGCCAATGGTTAGAGACG 3' are used at a final concentration of 0.2µM. The cycling program consists

of 95°C for 15 sec, 57°C for 35 sec, 72°C for 30 sec, final 72°C for 5 min. Follow the protocol of your SYBR green mix and include activation temperature and time for hot start mixes. The melting temperature of the amplification product will be 85°C or 434 bp for endpoint PCR. 🌱

Symptoms of Powdery Scab on Potato Tubers
Spongospora subterranea (Wallr.) Lagerh f.sp. *subterranea* Tomlinson



Early Detection

- PCR detects any life stage of powdery scab (zoospores, plasmodium) in any plant tissue.
- Examination with a microscope and ELISA testing depend on the presence of mature cystosori, formed in the tuber skin or root galls.

can be easily diagnosed by microscopy. For less infected tubers the diagnosis becomes more tenuous and a [Bioreba Agri strip test](#) will be helpful in verifying the presence of sporeballs. This ELISA based test does rely on the presence of cystosori.

Many Russet varieties do not show tuber symptoms and therefore do not form sporeballs on potato skins. To detect powdery scab in both symptomatic and asymptomatic tubers and soil, we have been using a PCR with selective primers developed by Dr. Qu at Dr. Barb Christ's lab at Penn State (Plant Pathology (2001) 50, 420-426 X.-S. Qu, J.A. Kavanagh, D.

NPDN-USDA APHIS 2010 Now Offering Advanced Diagnostic Training on Bioinformatics

Karen L. Snover-Clift, Cornell University and Laurene Levy, USDA-APHIS-PPQ-CHPST-NPGBL

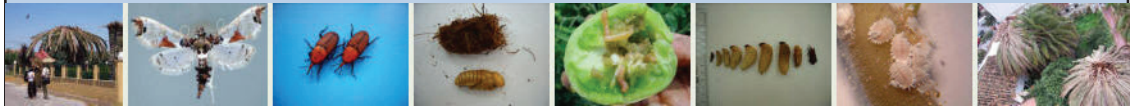
The NPDN Diagnostics Program Area Committee and members of USDA-APHIS-PPQ-CHPST-National Plant Germplasm and Biotechnology Laboratory (NPGBL) are offering training sessions on Bioinformatics this summer. The sessions are offered the weeks of July 12, 2010 (July 12,

Diagnostic Updates

13, and 14 until noon) and August 23, 2010. (August 23, 24 and 25 until noon, August 25 starting at 1pm, 26 and 27.) The three 2½ day sessions will cover analysis of obtained sequences from both plus and minus strands, editing sequences, blasting sequences, understanding blast results based on size and gene target, when to directly sequence PCR products or clones, which genes are used for sequence analysis for fungi, bacteria, and viruses, what sequence analysis programs are available commercially or as freeware, and hands-on use of sequence analysis programs using sequences from case studies for

different pathogen types. Participants of this meeting are expected to cover their travel, lodging and meal expenses. There is no fee for registration or for meeting materials. These expenses are covered by our colleagues at USDA-APHIS-PPQ-CPHST-NGBTL. If you are interested in participating in any of these workshops please contact Karen Snover-Clift at kls13@cornell.edu. 🌿

Potential Invasive Pests Workshop



October 10-14, 2010
Miami, FL

Sponsored by:
UF IFAS Center for Tropical Agriculture

IT News

Security Tip of the Month: Automatic Updates

Michael Hill, Purdue University, CERIS

It is a good security practice to keep your computer updated with the latest patches since unpatched systems are more vulnerable to attacks. Both the Windows and Mac operating systems natively support automatic updates. Enabling automatic updates will help protect your computer against vulnerabilities by downloading and

applying security patches as soon as they become available.

For more information on Microsoft Updates for Windows visit: <http://update.microsoft.com>

For more information on Software Updates from Mac visit: <http://www.apple.com/softwareupdate/>

Visit the NPDN homepage at www.npdn.org for more information on specific Program Area Committees.

Announcements ~ Membership information ~ Committee reports and meeting minutes ~ Documents and SOPs

OPERATIONS COMMITTEE

Operations Committee

Carrie Harmon, Committee Secretary, University of Florida, Department of Plant Pathology

The Operations Committee held a conference call on June 24, 2010 and the following agenda items were discussed:

1. NPDN Communications
2. Action items from the Ops Comm meeting:
 - Thank you Karen Snover-Clift for coordinating the equipment list.
 - Training and Education module review team and guidelines.
 - Data sharing update

- NPB – booths and displays may be made available to NPDN and NPDN collaborators.
- NPDN-wide subscription to CABI. <http://www.cabi.org/DFB/>
- Initiative to strengthen systematics and diagnostic training.
- 3. APS Town Hall - Charlotte
- 4. Week of July 12th, Rick, Ray, Anne Vitoreli, Karen Snover-Clift and APHIS will meet regarding accreditation.
- 5. NPDN funding

The next conference call is scheduled for July 22, 2010.

DIAGNOSTICS COMMITTEE

Diagnostics Committee

Karen L. Snover-Clift, Committee Chair, Cornell University, Department of Plant Pathology and Plant-Microbe Biology

Since the last newsletter, the Diagnostics Committee held a conference call on June 10, 2010. During this meeting, a number of issues were addressed. Please refer to the website, www.npdn.org/diagnostics, for complete minutes of this meeting (login and password required).

- Basic technique workshop review

- Audit experience @ UC Davis
- Secretary, Chair election process
- Membership on committee
- Gap-Surge capacity analysis
- SOP updates
- Beltsville trainings
- APS working group needs agenda ideas
- APHIS-SOD trace forward progress

The next conference call will be held on Thursday, July 8, 2010.

EPIDEMIOLOGY COMMITTEE

Epidemiology Committee

Carla Thomas, Committee Chair, University of California-Davis, Department of Plant Pathology

The Epidemiology Committee held a conference call on June 11, 2010 and the following agenda items were discussed:

- IPPC Codling Moth Catch Map
- New governance of the committee
- New from Oregon State
- Data Sharing

- Phase 2 schema – no updates
- PDIS updates
- Other

For complete minutes of this meeting (login and password required) visit the NPDN epidemiology page at www.npdn.org/epidemiology.

The next conference call is scheduled for July 12, 2010.

**E X E R C I S E
C O M M I T T E E**

Exercise Subcommittee

Sharon Dobesh, Committee Chair, Kansas State University, Department of Plant Pathology

The Exercise Committee conducted a conference call on June 15, 2010 and the following agenda items were discussed:

- Upcoming Exercise Updates
 - Aphis Exercises
 - NPDN Exercises

- Update on ETK Exercise
- Update on Chain of Communication
- Update on Mike Stubbs Position
- Other business

The next conference call is scheduled for Tuesday, July 13, 2010.

**I T
C O M M I T T E E**

IT Subcommittee

Mike Hill, NPDN National Respository

The IT Subcommittee held a conference call on February 16, 2010. The committee discussed:

- APS meeting
- IT/Diagnostics/Epidemiology meeting
- Updates on regional portals
- Summary of Operations Committee meeting

- IT equipment requests

If you would like to read the complete minutes from this meeting visit the IT webpage on the NPDN website at www.npdn.org/IT (login and password required).

The next conference call is scheduled for Tuesday, July 13, 2010.

**N A T I O N A L
D A T A B A S E
C O M M I T T E E**

National Database Subcommittee

Karen L. Snover-Clift, Committee Chair, Cornell University, Department of Plant Pathology and Plant-Microbe Biology

Since the last newsletter, the National Database Committee held a conference call on June 9, 2010. The committee continues to work on reviewing the massive NPDN Pest and Host lists and revising guidelines for uploading documents that will clarify how sample diagnoses should be transmitted to the

National Repository at Purdue University. Please refer to the National Database page on the website, www.npdn.org/national_database (login and password required), for complete minutes of this meeting.

- Discussion of change submissions
- Discussion of fungi pest codes beginning with scientific names S

The next meeting will be held on July 7, 2010.

**E D U C A T I O N
C O M M I T T E E**

Training and Education Committee

Amanda Hodges, Committee Chair, University of Florida, Entomology & Nematology Department

The Training and Education Committee held a conference call on June 21, 2010 and the following agenda items were discussed on the call:

- Working site for revised website design
- Collaborative E-Learning Project

- APGA (American Public Gardens Association) and Sentinel Plant Network
- Promotional Video: 10 modules for non-entomologists
- Committee Chair and Secretary Elections
- Community of Practice for various crops

The next conference call is scheduled for July 19, 2010.

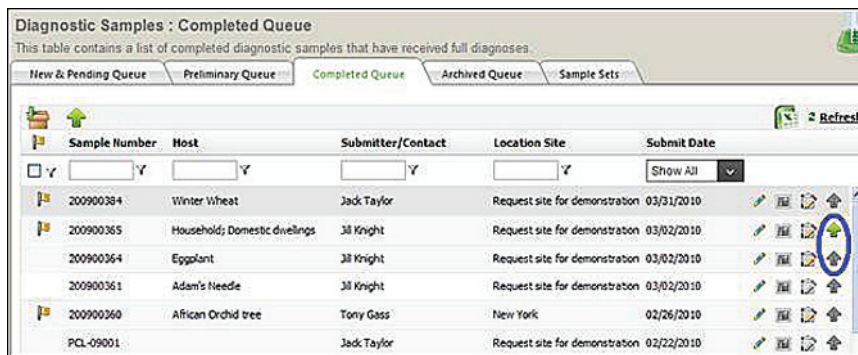
Three Ways to Upload Sample Data in PDIS 2

Sharmila Dabade, Kansas State University, Department of Plant Pathology

There are three places one can upload a sample to the NPDN Repository.

1. Diagnosticians can upload a sample to the NPDN repository from sample queues (Diagnostics: <Lab Name> → Sample Queues). On the right hand side there are 'Up Arrow' icons, clicking those arrows will take one to the NPDN Sample Upload screen. From that screen one can upload the samples to the NPDN Repository.

A Green Up Arrow  means the sample has already been uploaded to the NPDN Repository and a Gray Up Arrow  means the sample needs to be uploaded. One can click on  to edit and begin the process of uploading the sample again (figure 1).










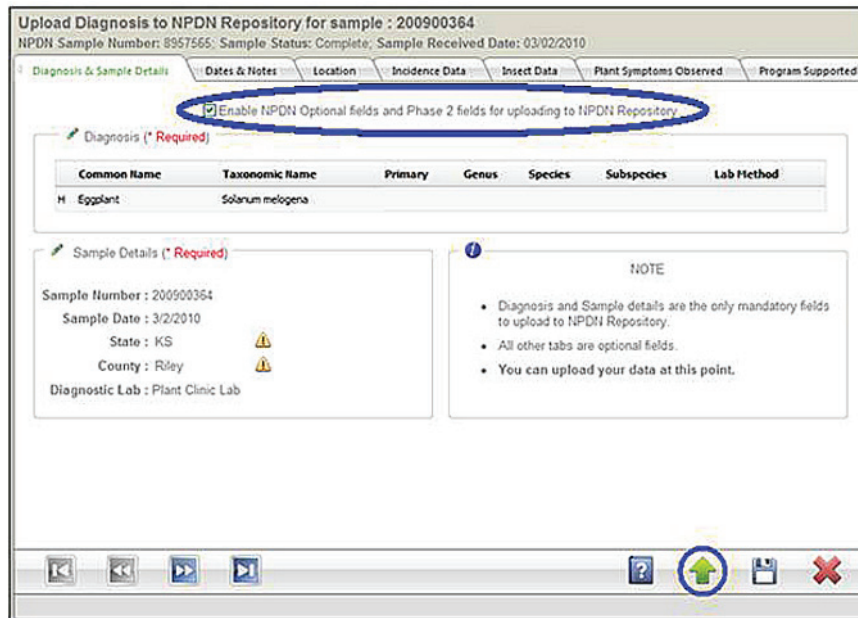
Sample Number	Host	Submitter/Contact	Location Site	Submit Date	Action
200900384	Winter Wheat	Jack Taylor	Request site for demonstration	03/31/2010	
200900365	Household; Domestic dwellings	JR Knight	Request site for demonstration	03/02/2010	
200900364	Eggplant	JR Knight	Request site for demonstration	03/02/2010	
200900361	Adam's Needle	JR Knight	Request site for demonstration	03/02/2010	
200900360	African Orchid tree	Tony Gass	New York	02/26/2010	
PCL-09001		Jack Taylor	Request site for demonstration	02/22/2010	

Figure 1

If one clicks on the checkbox for 'Enable NPDN Optional fields and Phase 2 fields for uploading to NPDN Repository', it will upload Phase 2 fields to the NPDN Repository. After entering the sample information to be uploaded, click on  to upload the sample (figure 2).



Upload Diagnosis to NPDN Repository for sample : 200900364
NPDN Sample Number: 8957565; Sample Status: Complete; Sample Received Date: 03/02/2010

Enable NPDN Optional fields and Phase 2 fields for uploading to NPDN Repository

Common Name	Taxonomic Name	Primary	Genus	Species	Subspecies	Lab Method
H Eggplant	Solanum melongena					

Sample Details (* Required)

Sample Number : 200900364
Sample Date : 3/2/2010
State : KS
County : Riley
Diagnostic Lab : Plant Clinic Lab

NOTE

- Diagnosis and Sample details are the only mandatory fields to upload to NPDN Repository.
- All other tabs are optional fields.
- You can upload your data at this point.

Figure 2

IT News
continued...



2. One can go to Sample Dashboard by editing the sample by clicking on  pencil icon (Diagnostics: <Lab Name> → Sample Queues→Pencil icon). Then click on

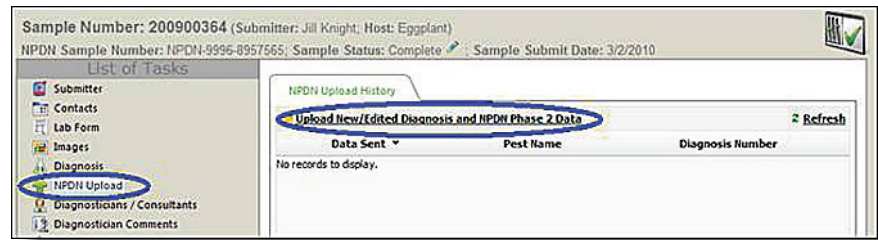


Figure 3

‘NPDN Upload’ and then ‘Upload New/Edited Diagnosis and NPDN Phase 2 Data’ (figure 3).

Clicking on ‘NPDN Upload’ task will redirect to a page where one can enter the data and upload the sample by clicking on .

3. One can go to Sample Dashboard by editing the sample by clicking on  pencil icon. Then click on ‘Diagnosis’ task after opening the Sample Dashboard. If you

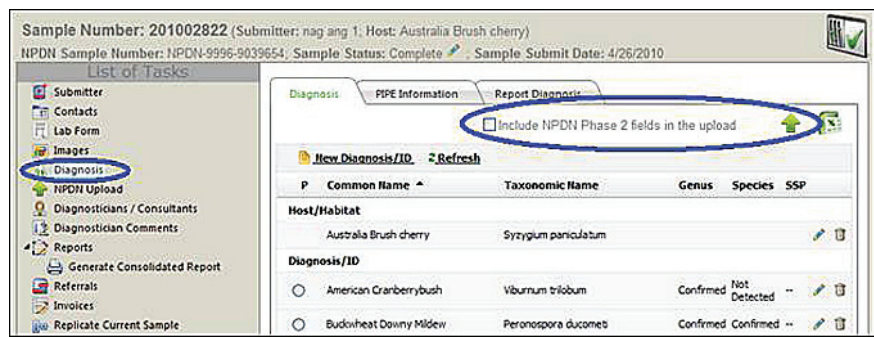



Figure 4

want to upload Phase 2 fields to the NPDN Repository, check the checkbox for ‘Include NPDN Phase 2 fields in the upload’ (figure 4) and then click on . It will upload the sample to the NPDN Repository.

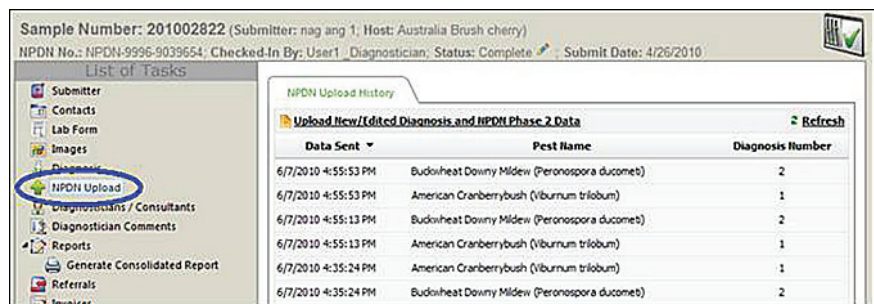



Figure 5

To check the history of NPDN Uploads click on ‘NPDN Upload’ task on left hand side and it will show all the NPDN upload history for that sample (figure 5). 



Advanced First Detector Webinars

The NEPDN is hosting three advanced First Detector webinars this summer. Laurel wilt on July 8th, thousand cankers disease on July 29th and bleeding canker of horsechestnut on August 24th. Registration is open for the laurel wilt and thousand cankers webinars. Webinars will be recorded and archived on the [NEPDN First Detector webpage](#).

[Click here](#) for more information or to register for a session. 🌿

Regional Updates



New First Detector Resources Available

First Detectors and First Detector Educators now have two new resources to add to their toolboxes. Visit www.wpdn.org for links to the new WPDN First Detector newsletter and the Pacific Pest Detector, a quarterly newsletter for First Detectors in the Pacific Islands. 🌿

National Events

July 14-15, 2010

Tree Pest of the Great Plains
Chadron, NE

August 7-11, 2010

APS Annual Meeting
Charlotte, NC

September 20-24, 2010

17th Ornamental Workshop on Disease
and Insects
Hendersonville, NC

October 10-14, 2010

Potential Invasive Pests Workshop
Miami, FL

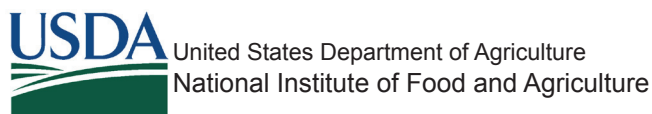
December 12-15, 2010

ESA Annual Meeting
San Diego, CA

November 6-8, 2011

NPDN National Meeting
San Francisco, CA

Upcoming Events



Rachel McCarthy, Editor
NEPDN
Cornell University