

Significant Pests Make Big Moves

Karen Snover-Clift, Cornell University, Department of Plant Pathology and Plant Microbe Biology

It was announced on July 5th that the Asian longhorned beetle (ALB) was found on six red maple trees on the grounds of Faulkner Hospital in Jamaica Plain, MA.

This represents the first confirmed find in Massachusetts outside of Worcester County. The site is across the street from the Arnold Arboretum of Harvard University, a 265 acre arboretum and the oldest arboretum in North America. You can read more about this most recent find

and learn what the arboretum is doing to protect their collections at <http://arboretum.harvard.edu/index.html>. Additional information is available at the Massachusetts Department of Conservation and Recreation website at www.mass.gov/dcr.

Emerald ash borer (EAB) was in the news on July 22nd making significant moves in upstate New York. The beetle was found in NYS DEC purple traps

in two new counties. One of the new locations is in Steuben County, just over 100 miles from the first find in NY State in Cattaraugus County. The other find was the most alarming move to Ulster County in eastern NY in the Catskills region. The NY Department of Environmental Conservation suggests the movement of firewood was the means for the spread of this pest.

Just a few days later, on July 27th it was announced that EAB was found in a truck stop in Knox County, TN. Read more at the Tennessee Department of Agriculture website at www.tn.gov/agriculture/.



Map of the regulated area in Boston. From the Massachusetts Introduced Pest Outreach Project. ALB photo courtesy of Kent Loeffler, Cornell University.



Emerald ash borer adult. Photo courtesy of Kent Loeffler, Cornell University.

Issue Highlights:

- APS meeting - NPDN announcements
- Tip - Tobacco hypersensitivity
- Bioinformatics workshop
- Upcoming meetings
- PDIS2 - Reports diagnosis
- IT Tip - Data Backup
- First Detector booth at NACAA



National Institute of Food and Agriculture

National Updates

NPDN Booth in Charlotte

Lee Duynslager, Michigan State University,
Department of Plant Pathology



This year NPDN will have an exhibit at the American Phytopathological Society Annual Meeting in Charlotte, North Carolina. The theme of the booth this year is diagnostics and the SOPs.

The dates and times the booth will be open are available on the NPDN website. [View current schedule here.](#)

We would like to have a couple of diagnosticians and at least one Regional Director and/or one Regional IT person staffing the booth at any given time.

In addition to spending time in the booth, we would like to have your business card available for people who might come by with questions. Please stop by the booth on Sunday when you arrive to drop off some business cards.

Besides helping to answer questions from cooperators, researchers and plant pathologists, diagnosticians can use the time to discuss what's going on in their labs and regions and become more familiar with other members of NPDN.

We are developing a roster for staffing the booth and really need your help in staffing it this year, so sign up today!

Please email Lee at duynslag@msu.edu or Karen at kas8@cornell.edu to confirm the time you can volunteer. 🌱

Consider staffing the NPDN booth while at the APS meeting! Spend time with colleagues, answer questions, give out prizes.

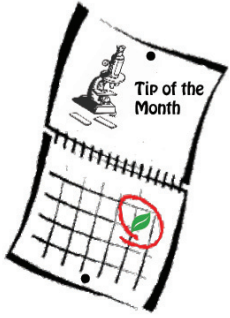
2010 NPDN Town Hall Meeting at APS

The NPDN National Operations Committee welcomes you to our annual update and discussion session at the APS meeting.

Topics:

- **NPDN highlights of the year**
- **Proficiency testing**
- **Lab accreditation update**
- **Upcoming national meeting**

When: August 9, 2010 at 4:00 PM
Where: 203B in the Convention Center



Tobacco Hypersensitivity; the First Test to Screen Bacteria for Pathogenicity

Dr. Robert Wick,
University of
Massachusetts,

Department of Plant, Soil and Insect
Sciences

Tobacco hypersensitivity is a fast
and convenient

way to screen bacterial cultures for pathogenicity. It works particularly well for *Pseudomonas* but can be variable for *Xanthomonas* and *Ralstonia*. Some Xanthomonads may require some tweaking of the environmental conditions the tobacco is grown in (Fahy and Persley, Lelliott and Stead), and the response may take up to four days (Klement and Goodman). *Erwinia amylovora* and some of the coryneform bacteria will also cause a hypersensitive response. *Ralstonia solanacearum* cause various results depending on the race. Race 1 results in chlorosis after two days, race 2 induces a typical hypersensitive response in one day and race 3 results in chlorosis after two to eight days (Lozano and Sequeira).

You will need to have tobacco plants and access to a greenhouse. We seed the tobacco in a small tray and transplant them into larger pots. Plants should be a healthy green color and preferably not flowering but flowering plants will usually work fine.

Prepare an aqueous suspension of the bacterium of about 10⁸-10¹⁰ CFU/ml from a 24 to 48 hr culture. We don't actually determine the CFU's but the suspension should be turbid. Most references will suggest that you use a needle to inject the cell suspension but we find it easier to simply hold the barrel of the syringe against the bottom of the leaf as illustrated in figure 1.



Fig. 1. Injection of a bacterial suspension through the bottom of a tobacco leaf; note the water-soaked tissue.

Diagnostic Updates

It is a good idea to use a positive control when carrying out this test; water can be used as a negative control.

Turn the leaf over, bottom up, hold the needle or syringe



Fig. 2. Isolate "1" was tobacco hypersensitive negative and isolate "2" (three patches) was tobacco hypersensitive positive.

barrel against the leaf and lightly press with your index finger of your other hand on the leaf opposite the syringe. Gently force the suspension into the mesophyll. If the stomata are closed, it can be difficult to get good infusion. A water-soaked area will develop as the suspension infiltrates the mesophyll (see figure 1). Generally the entire water-soaked area will become necrotic within 12 to 24 hours. Non-pathogenic bacteria will not result in any symptoms; occasionally non-pathogens result in chlorosis.

References

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Klement, Z. *et al.* 1990. Isolation of bacteria. In: Z. Klement, K. Rudolph and D. C. Sands. (eds). *Methods in Phytobacteriology*, Akademiai Kiado, Budapest, pages 95-124.

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Klement, Z. and Goodman, R. N. 1967. The hypersensitive reaction to infection by bacterial plant pathogens. *Annual Review of Phytopathology*, 5: 17-44.

Lelliott, R. A. and Stead, D. E. 1987. *Methods for the diagnosis of bacterial diseases of plants*. Blackwell Scientific Publications, Oxford. 216 pp.

Lozano, J. C. and Sequeira, L. 1970. Differentiation of races of *Pseudomonas solanacearum* by a leaf infiltration technique. *Phytopathology* 60:833-838. 🌿

NPDN-USDA APHIS 2010 Last Bioinformatics Advanced Diagnostic Training for this Summer

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 continuing to offer training sessions on Bioinformatics this summer. The last session with available spaces is offered on August 25 starting at 1pm, August 26 and 27. The 2 ½ -day session 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 registration charge for the meeting 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. 🌿



Epidemiology Committee Report – Data Sharing Progress

Carla Thomas, University of California at Davis, Department of Plant Pathology

Data sharing policies and procedures are continuing to evolve in several ways. In May, the NPDN Operations Committee met at UC Davis with the National Plant Board (NPB) President, Carl Schultz, NPB Executive Secretary, Aurelio Posadas, and the NPDN Operations Committee NPB representative, Mitch Yergert. As a follow up, Ray Hammerschmidt, NCPDN Director, and Eileen Luke, CERIS Director, will serve on a panel discussion at the NPB Annual Meeting in Indianapolis this month. The panel will discuss the risks and benefits of sharing data and explore practical solutions that protect markets and trade while improving preparedness and situational awareness among first detectors, diagnosticians and first responders. Additionally, the GPDN State Plant Regulatory Officials (SPROs) have agreed to work with Mary Burrows (Montana State University) of the GPDN to share data from a regional wheat virus survey. The survey is conducted by the GPDN each year for *Wheat streak mosaic virus*, *Triticum mosaic virus*, *High Plains virus* (*Wheat mosaic virus*), *Barley yellow dwarf virus* – PAV and *Cereal yellow dwarf virus* –RPV. Wheat virus alerts were produced on a regular basis with maps and charts of GPDN lab survey results by county (positive, suspected, or not detected). Additionally, a degree day map was provided to indicate which areas are likely to see the first symptom expression as the wheat matures. The alert was sent to GPDN diagnosticians, SPROs and State Plant Health Directors (SPHDs). The project is nearly finished for this year and is expected to continue next year. 🌱

NPDN IT/ Diagnosticians/ Epidemiology Meeting

Eileen Luke, Purdue University, CERIS

Save the Dates

The IT/Diagnosticians/Epidemiology meeting will take place on October 12-13, 2010. The afternoon of Wednesday, October 13th will be a combined meeting with the NPDN Operations Committee. Following on Thursday, October 14th the NPDN Operations Committee will meet.

This year's meeting will be held at the Courtyard by Marriott hotel located in Chandler, AZ. Reservations can be made by contacting the hotel at (480) 855-8600 and mentioning NPDN to receive the group block rate of \$99/night. Additional information on the hotel can be found by visiting their website at www.Marriott.com/Phxcf.

Invitations to attendees will be sent by the regional directors soon. Please stay tuned to the newsletter for additional information in the coming months. 🌱

Security Tip of the Month: Data Backup

Michael Hill, Purdue University, CERIS

This month's tip is simply a friendly reminder to backup data, especially data that you consider critical. Most operating systems provide an easy way to schedule backups that can be performed on a regular basis. If possible, full disk

IT News



backups provide the best protection against data loss. However, if you don't have enough disk space to perform full backups then you want to make sure to backup files that could not be recovered in the event of loss.

An important piece of backing up data is to select a different location than the same drive the data already exists on. For example, you may elect to backup to a network drive, CD, external hard drive,

or USB drive. Just be sure to protect the copy of the backup so that it does not fall into the wrong hands. Frequency of backup is also an important aspect of backing up. Portable devices, including laptops, should be backed up more often because the risk of data loss is greater. An additional piece of protection would be to encrypt the contents on your backup device, but encryption is a topic for another day. 🌿



Reports Diagnosis in PDIS2

Judy Dizon, Kansas State University, Department of Plant Pathology

A diagnostician has the option of editing the Common Name and Taxonomic Name entries that are shown on their diagnostic reports.

Diagnostic Samples : Preliminary Queue
This table contains a list of preliminary diagnostic samples from which diagnosticians have given preliminary diagnoses to.

Navigation: New & Pending Queue | **Preliminary Queue** | Completed Queue | Archived Queue | Sample Sets

Sample Number	Host	Submitter/Contact	Location Site	Submit Date	
200900303	Corn	Peter Patricson	Riley County Request Site	11/04/2009	[Refresh]
200900017	Apple Of peru; shoo-fly plant	Jack Taylor	Request site for demonstration	10/08/2009	[Edit] [Refresh]
200900015	Beaked Hazelnut	Jill Knight	Request site for demonstration	05/17/2009	[Edit] [Refresh]
200900010	Australia Brush cherry	Jack Taylor	Request site for demonstration	05/17/2009	[Edit] [Refresh]
200900008	Acorn Squash	Submitter Person	Request site for demonstration	10/07/2009	[Edit] [Refresh]

1. Select a diagnostic sample from any of the queues (New & Pending, Preliminary, Complete, Archived) by clicking on the pencil icon.

Sample Number: 200900015 (Submitter: Jill Knight; Host: Beaked Hazelnut)
NPDN No.: NPDN-9996-8306243; Checked-In By: Diagnostician Person; Status: Complete; Submit Date: 5/17/2009

List of Tasks

- Submitter
- Contacts
- Lab Form
- Images
- Diagnosis**
- NPDN Upload
- Diagnosticians / Consultants
- Diagnostician Comments
- Reports
- Generate Consolidated Report
- Referrals
- Invoices
- Replicate Current Sample
- Archive Current Sample
- View Correspondence
- View Sample Summary
- Close Current Sample Dashboard

Diagnosis | PIPE Information | **Report Diagnosis**

Common Name	Taxonomic Name	Edited Common Name	Edited Taxonomic Name
Host/Habitat			
Beaked Hazelnut	Corylus cornuta		
Diagnosis/ID			
Acacia Psyllid	Acizzia uncatoides		
Apple Anthracnose; Bull's Eye	Neofabraea malicorticis		

Sample Navigator
NOTE: Use the navigation buttons below to navigate through all the samples found in this queue.
Navigate to Sample #:

2. From the Sample Dashboard page, select 'Diagnosis' task then click on 'Report Diagnosis' tab.

continues on page 9...

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

Login and password required

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

OPERATIONS COMMITTEE

Operations Committee

Rick Bostock, University of California, Davis,
Department of Plant Pathology

The Operations Committee held a conference call on July 22, 2010 and the following agenda items were discussed:

- Outcome of Raleigh lab accreditation meeting
- Update on *P. ramorum*/Hines nursery sampling

- Upcoming meeting with NPB and data sharing
- Updates/issues from committees (e.g., regional and national newsletters issue)
- October Operations Committee meeting and coordination with IT/Diagnosticians meeting
- Other items

The next conference call is scheduled for August 26, 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 July 8, 2010. During this meeting, a number of issues were addressed.

- Open the nomination process and discuss voting for a new chairman and secretary –Snover-Clift
- Basic technique workshop certificates and survey

- Gap-Surge capacity analysis
- SOP Updates
- Beltsville trainings
- 7th IT-Diagnosticians Meeting, Phoenix, AZ
- Lab Accreditation update
- Other items?
- APS-NPDN town hall
- Gail still needs pictures for poster

The next conference call will be held on Thursday, August 19, 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 July 12, 2010 and the following agenda items were discussed:

- Data Sharing
- Website Update by Len

- Website Update by Mike
- IT/Diag/Epid Meeting
- Data Analysis
- Other Items

For complete minutes of this meeting visit the NPDN epidemiology page at www.npdn.org/epidemiology.

The next conference call is scheduled for August 23, 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 July 13, 2010 and the following agenda items were discussed:

- Mike Stubbs retired, interim introduction

- Upcoming full scale APHIS exercise progress
- ETKnet trial run in KS
- NPDN Governance and Committee Chair elections
- Other Business

The next conference call is scheduled for Wednesday, August 25, 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 July 19, 2010 and the following agenda items were discussed on the call:

- Committee (chair and secretary) nominations due by July 16, 2010.

- Collaborative e-learning modules -review process
- Revised Training and Education web pages will soon go live
- T&E task force to coordinate the national newsletters with the regional newsletters
- NACAA meeting update

The next conference call is scheduled for August 23, 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

The National Database Committee held a conference call on July 7, 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 website for complete

minutes of this meeting.

- Discussion of change submissions
- Open the nomination process and discussion of voting for a new chairman and secretary of the committee.
- 7th IT/Diagnosticians meeting update, Phoenix, AZ, October 13-14, 2010.
- Discussion of fungi pest codes continuing with scientific names S

The next meeting will be held on September 9, 2010.

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

IT Subcommittee

Mike Hill, NPDN National Respository

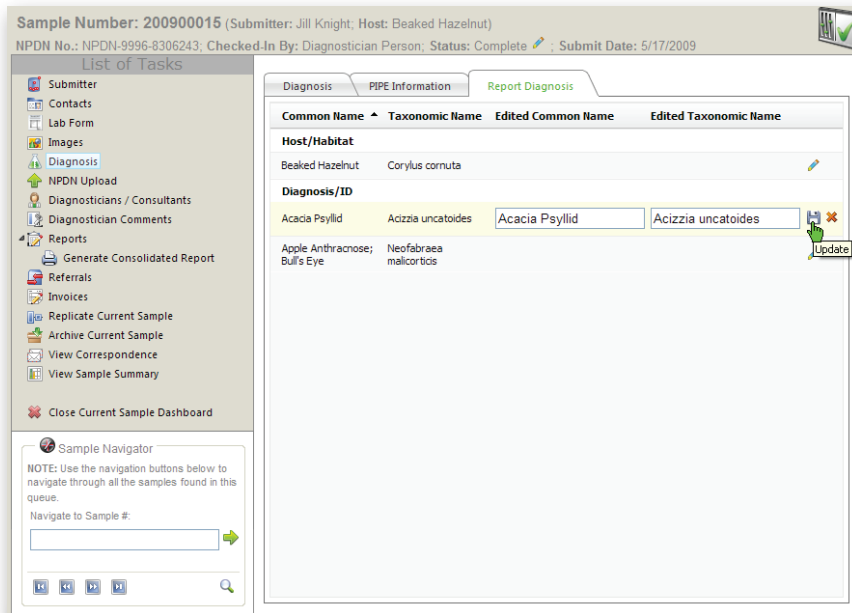
The IT Subcommittee held a conference call on July 13, 2010 and the following agenda items were discussed on the call:

- Elections discussion
- Upcoming APS meeting

- IT/Diagnosticians/Epidemiology meeting update

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

continued from page 6...



3. To edit the Common Name/Taxonomic Name of a Host or a Diagnosis/ID, click on the pencil icon. You can update the Common Name/Taxonomic Name from the textbox field provided then click on the save icon to save the changes. 🍃

First Detector Booth at NACAA

Amanda Hodges, University of Florida, Entomology and Nematology Department

The NPDPN hosted a First Detector educational booth at the National Association of County Agricultural Agents (NACAA) www.nacaa.com annual conference in Tulsa, Oklahoma, July 11-15, 2010. NPDPN's Training and Education program often integrates and includes multiple partnering organizations and/or agencies in outreach

efforts, such as USDA/APHIS/PPQ; the Extension Disaster Education Network (EDEN); the Regional IPM Centers; the Center for Invasive Species and Ecosystem Health (i.e.



Stepanie Stocks, University of Florida, and Dick Hoenisch, University of California at Davis, at the NPDPN booth in Tulsa. Photo courtesy of Virginia Morgan, Auburn University.

also known as the Bugwood Network); and eXtension. Approximately 500-600 attendees visited the booth, answered quiz questions, and received educational information and/or various give-away prizes. Items of particular

Education and Training

interest included: mealybug and thrips identification card decks; pest alerts; continuing education credits for e-learning modules; NPDN fanny packs for field collection of samples; NPDN hats and grocery bags; USDA/APHIS/PPQ promotional materials; and information on e-learning modules

under development. Many thanks to the following individuals for staffing the booth: Richard Hoenisch, University of California-Davis; Virginia Morgan, Auburn University; and Stephanie Stocks, University of Florida/IFAS Extension. 🌿

Regional Updates



Northeast Plant Diagnostic Network

Advanced First Detector Webinars

The NEPDN hosted two advanced First Detector webinars this month. Carrie Harmon gave a presentation on laurel wilt on July 8th and Ned Tisserat presented on thousand cankers disease on July 29th.

Registration is open for our final webinar for the summer of 2010. Gregg Goodman, from APHIS-PPQ, will give a presentation on bleeding canker of horsechestnut on August 24th.

Visit the [NEPDN First Detector webpage](#) to view the recorded presentations. 🌿



North Central Plant Diagnostic Network

Regional Meeting

The NCPDN regional meeting was hosted by Dimitre Mollov and colleagues at the University of Minnesota. Topics presented at the meeting included: Diagnosing herbicide-induced plant injury (Dr. Jeff Gunsolus, Department of Agronomy and Plant Genetics, University of Minnesota), biology, spread and management of oak wilt (Dr. Jennifer Juzwik, Northern Research Station, USDA Forest Service), molecular tools for Phytophthora diagnostics (John Bienapfl, University of Minnesota, Department of Plant Pathology) and characterizing newly discovered viruses (Dimitre Mollov, University of Minnesota, Department

of Plant Pathology). Dr. Ben Lockhart (UMN Plant Pathology) also presented a talk entitled "Viruses outside of the box: cautionary tales about some novel plant viruses and unexpected virus-host relationships." A hands-on exercise on diagnosing turf endophytes was presented by Cristal Cisneros of the Department of Horticultural Science, University of Minnesota. The group also toured the University of Minnesota Biomedical Genomic Center, the USDA/ARS Cereal Disease Lab and the UMN Plant Diagnostic Clinic. The meeting concluded with state reports and presentations on what was new in each lab. Next year's regional meeting will be at Iowa State University. 🌿

National Events

August 7-11, 2010

APS Annual Meeting
Charlotte, NC

August 23-25, 2010

and

August 25-27, 2010

Bioinformatics Training
Beltsville, MD

September 20-24, 2010

17th Ornamental Workshop on Disease
and Insects
Hendersonville, NC

October 12-14, 2010

IT/Diagnosticians/Epidemiologists Meeting
Chandler, AZ

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