NPDN National Plant Diagnostic Network

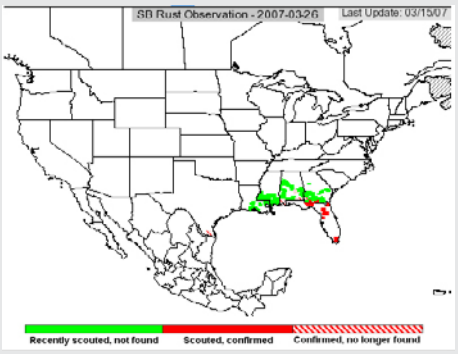
NPDN News

Volume 2 Issue 3, March 2007

National Updates

Asian Soybean Rust Confirmed on Plant Residue in Iowa

The Iowa Department of Agriculture released a statement on March 2, 2007 that soybean rust had been confirmed on plant residue recovered from a storage bin containing soybeans produced in 2006. The plant residue was from a field that had experienced low productivity during the growing season.



Soybean rust reported in the U.S. as of March 2007. (www.sbrusa.net)

It is important to note that the pathogen requires green tissue to survive and cannot survive the winter in Iowa. This recent detection of the disease in Iowa should have no impact on the 2007 growing season. However, it does indicate that soybean rust can move as far north as Iowa.

To date, soybean rust has never been detected in an Iowa soybean field. A tentative diagnosis of soybean rust was made by the Iowa State University diagnostic laboratory. In accordance with current protocols for a first find of the disease in a state, the sample was then confirmed by the USDA APHIS-PPQ laboratory in Beltsville, MD.

More information on this confirmation can be found on the web at:

Iowa State Department of Agriculture and Land Stewardship Press Release: Asian Soybean Rust Confirmed on Soybean Plant Tissue Submitted to Iowa State University

Issue Highlights:

CSREES EDUCATION RESEARCH EXTENSION USDA

Diagnostic Updates

Diagnostics Subcommittee Update

Karen L. Snover-Clift
Subcommittee Chair
Cornell University
Department of Plant Pathology

The Diagnostics Subcommittee held a conference call on March 8, 2007. During this meeting a number of issues were addressed.

Please refer to the diagnostics committee page on the NPDN web site for complete minutes of this meeting (login required).

Viburnum leaf beetle. (Photo Paul Weston, Cornell University, www.ipmimages.org)

Topics of discussion included:
– Lab Accreditation
- Discussed how to proceed.
- Discussed how this committee can help create a working group of one representative from each region.
- Discussed how this committee can help Denis McGee coordinate visits with the regional center laboratories.

– Tabled discussion on Entomology representatives from each region.
– The rotation of the subcommittee's chair.

The next meeting will be held on **April 12, 2007**.

SPDN Invasive Arthropod Workshop

The SPDN will host an intensive, invasive arthropod workshop May 7-9, 2007 in Clemson, SC. The training workshop will cover a variety of topics including the following:

- Issues and Methods of Exotic Pest Introductions
- Communication and Cooperation between SPDN and Regulatory Officials
- Historical Case Studies of Exotic Arthropod Introductions
- Exotic and Introduced Arthropod Pests of Concern
- Exotic Mollusks (not arthropods, but often unknown samples are directed to insect clinics), and
- Forestry and Ornamental Pests of Concern

A broad spectrum of workshop attendees have registered for the training to-date, but there are a few remaining spaces.

Workshop registration will close on **Monday, April 2, 2007**.

Please contact Amanda Hodges, achodges@ufl.edu, if you have any questions regarding this training opportunity.

Faculty Research Assistant Position at Oregon State University

The Department of Botany and Plant Pathology invites applications for a Faculty Research Assistant.

This is a full-time (1.0 FTE), 12-month, fixed-term position with reappointments contingent on renewed funding and the discretion of the Department Chair.

A detailed description of job responsibilities for this position can be found on the Oregon State University employment web site under job posting # 0000418.

For questions regarding this posting please contact: Melodie Putnam, 541-737-3472 or e-mail putnamm@science.oregonstate.edu.

The closing date for this position is **April 16, 2007**.

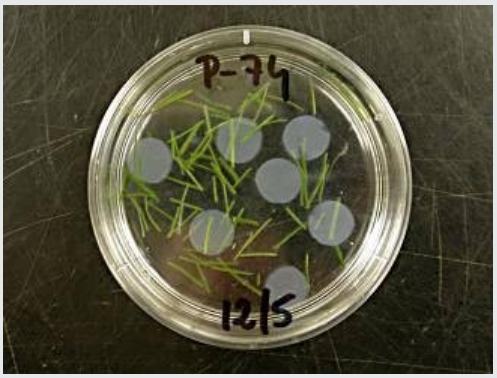
Float Incubation Technique for Plant Disease Diagnostics

Gail Ruhl
Plant and Pest Diagnostic Laboratory
Department of Botany and Plant Pathology
Purdue University

Diagnosing plant problems requires excellent observation skills. However, in most cases, initial observations require additional investigation in order to make a more accurate diagnosis of the causal agent(s) responsible.

Using a float incubation technique is an excellent way to induce the production of sporangia as well as mycelial growth from herbaceous tissue. There are many different float solutions used by labs, including tap water, deionized water (Brock, J.H. and G.H. Beard, A Simplified Techinique for Recovering *Pythium* and *Phytophthora* from Infected Plant Tissue) and Chen-Zentmeyer salt solution (D. Chen and G. A.Zentmeyer. Mycologia 62:397, 1970).

Diagnostic Tip of the Month



Sterile grass blades in water used as bait for the production of mycelium and sporangia of *Pythium* and *Phytophthora*. (Photo Margery Daughtrey, Cornell University).

Some diagnosticians surface disinfect the tissue prior to float incubation and others do not. Some labs use sterile grass blades in water as 'bait'; wait for a 'goodish' amount of mycelium and sporangia (2-4 days); put the grass culture in the refrigerator overnight; remove from refrigerator and approximately 20 minutes later observe sporangia for zoospore production characteristic of a *Pythium* or *Phytophthora*. (Shishkoff, MD).

In our lab, we find that a 1% unsterilized soil extract works well for stimulating sporangia production from *Phytophthora* infected tissue. This float technique may also be used to stimulate sporangia production from mycelium growing on agar plugs.

Ten grams of soil (chosen from ground not treated with chemicals) and 1 liter of deionized water are combined and swirled around in a flask.

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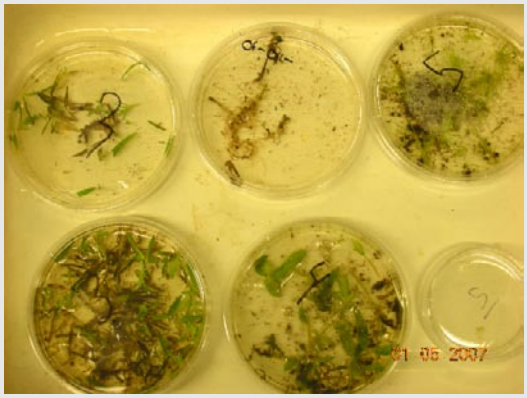
Diagnostic Tip of the Month

Continued from page 3...

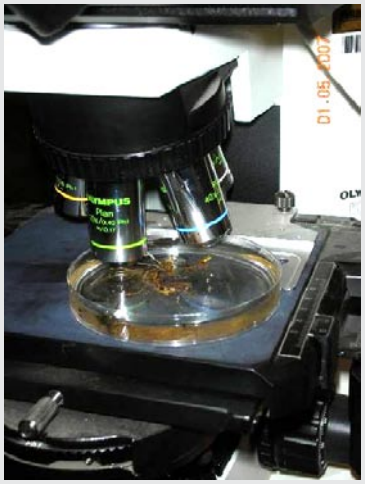
The solution is then poured slowly through a funnel lined with filter paper, into media bottles that are then stored in the refrigerator. When needed, the bottles are removed from the refrigerator and solution is poured into Petri plates containing herbaceous roots, stems and leaves to a depth that just covers the plant material. Covered plates are incubated on the bench top for 24 hours and then examined with a compound microscope, while still floating in the soil extract solution.

One word of caution … there are many protozoans that thrive on herbaceous plant material floating in unsterilized soil extract and to the untrained eye, may be confused with sporangia or zoospores.

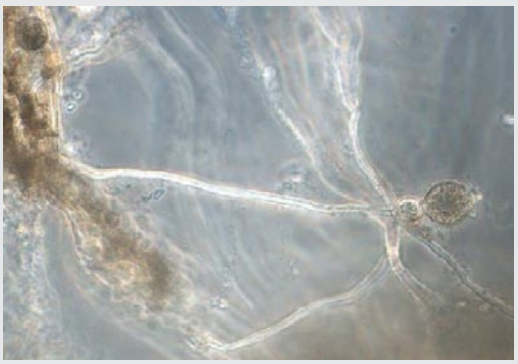
Flotation Technique for Plant Disease Diagnosis



Samples submitted for diagnosis are placed in 1% soil extract and incubated for 24 hours.



Examination of float-incubated plant material under compound scope.



Phytophthora sporangia observed on float-incubated herbaceous tissue.

Photos Gail Ruhl, Purdue University

Education and Training Subcommittee Update

Amanda Hodges
Subcommittee Chair
University of Florida
Department of Entomology and Nematology

The NPDN Training and Education subcommittee met via conference call on Monday, March 19, 2007. Full conference minutes can be found on the NPDN web site on the Training & Education subcommittee webpage (login and password required).

Highlights from the conference call included the following:

- Several new modules are under review and will be available shortly on the First Detector Information Page.
- Authors interested in developing special topic modules are encouraged to contact Mary McKellar mem40@cornell.edu (plant pathogens), Amanda Hodges achodges@ufl.edu (arthropods) or Cassandra Bates dolecass@msu.edu (nematodes).
- A draft First Detector Informational Brochure has been developed and should be available for distribution next month.
- Significant progress towards reviewing content for the online NRI Crop Biosecurity Program has occurred http://cbc.at.ufl.edu/.
- The NPDN, IPM Centers, and EDEN will have a joint informational booth available at the National Master Gardener meeting, May 2-5, 2007 in Little Rock, Arkansas and at the National Association of County Agricultural Agents (NACAA) meeting, July 15-19, 2007 in Grand Rapids, Michigan. Both booths will focus on available extension educational training opportunities or resources. Thanks to Susan Ratcliffe, North Central IPM Center, and Cassandra Bates, North Central Plant Diagnostic Network, for their leadership in coordinating the Master Gardener and NACCA booths, respectively. We are soliciting NPDN volunteers for both booths. If you would like to volunteer for the Master Gardener booth on behalf of the NPDN, please contact Amanda Hodges achodges@ufl.edu . Please contact Cassandra Bates dolecass@msu.edu to volunteer for the NACAA meeting.
- During the NPDN meeting, several members indicated an interest in further exploring the use of AgAlerts. Will Lanier wlanier@montana.edu provided a very useful and informative presentation about AgAlerts at the NPDN meeting. More information about AgAlerts can be found on the NPDN portal as well as from Montana's site at http://diagnostics.montana.edu/ . Please contact Will if you have any questions regarding the information he provided at the NPDN National Meeting in relation to the use of AgAlerts.

The next NPDN Education and Training Conference Call is scheduled for **April 16, 2007**.

Education and Training

Update on National Training Program in Crop Biosecurity for First Detectors

Gerald Holmes
North Carolina State University
Howard Beck
University of Florida
Gerry Snyder
Kansas State University

Gerry Snyder (shown) and Howard Beck organized an informational booth for the NPDN National Meeting in January 2007 to show attendees the current status of the online Crop Biosecurity First Detector training.

This article gives a brief update on the current status of the three-year National Research Initiative (NRI) grant, funded through Cooperative State Research, Education, and Extension Service (CSREES).

There continue to be two main areas of emphasis for the project at this time. One is the curriculum development of the six core training modules, and the other is the technology that will manage and display the training in a web browser.

The six training modules are in various stages of progress. Gerry Snyder at Kansas State University, along with a team of writers and graphic specialists, is converting the instructor-led materials into online training. He is using the existing PowerPoint files as well as input from a variety of First Detector trainers and other subject matter experts.

Following is an update on each module:

- Module 1 (Mission of the NPDN) – This module has been through a first-level alpha review by both NPDN and target audience representatives. Changes have been made based on the alpha review and final edits are currently being made to the online display as it awaits beta testing. Thank you to Mary McKellar, Jim Stack, and Amanda Hodges for their help with this module.

- Module 2 (Monitoring for High Risk Pests) – This module has been through a first level alpha review by both NPDN and target audience representatives. Changes have been made based on the alpha review and final edits are currently being made to the online display as it awaits beta testing. Thank you to Dick Hoenisch, Will Lanier, Sandy Perry, Charles Denver, Harold Watters and Jim Shroyer for their help with this module.

- Module 3 (Quality and Secure Sample Submission) – This module has been through a first level alpha review by both NPDN and target audience representatives. Changes have been made based on the alpha review and it will soon be ready for a live beta test. Thank you to Tom Creswell, Judy O'Mara, Will Lanier, Mary McKellar, Keith Rucker, Barry Brennan and Gail Ruhl for their help with this module.

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- Module 4 (The Art and Science of Diagnosis) - This module is in the final stage of being designed, with the guidance of Amanda Hodges and Meg Williamson, and has been organized into a storyboard format. It will be going through a first-level alpha review in the next few weeks.

- Module 5 (NPDN Exercise Scenarios) – This module has been analyzed and is in the process of being designed, with the guidance of Carla Thomas and Mary McKellar, and is being converted to online simulated scenarios. A first draft of the online version has been generated and is currently undergoing review.

- Module 6 (Effective Photos for Digital Sample Submission) – This module has been researched and entered into the online database, and is waiting to be storyboarded and sent for a first-level alpha review.

The technology that will manage and display the training in a web browser has reached a significant level of development. The content management system, Lyra, is a program developed by Howard Beck at University of Florida. The training content is entered in Lyra and is then displayed in a web browser via a Macromedia Flash program that was also developed by Howard Beck. These two technologies work together to create the online training. At this time, Howard continues to work to make the online display of the training look and behave as much like the storyboards as possible. In addition, the online training will be available through a learning management tool (Moodle) which will track the individuals who take the training, the courses they take, and the assessments they take toward First Detector certification.

Regional Updates

Gerald, Gerry and Howard have been busy this year showing the work-in-progress version of the online training. Gerry and Howard gave a presentation of the online training and its supporting technology at the NPDN National Meeting in Orlando in January 2007. In addition, Gerald and Gerry were invited to and attended a National Association of State Universities and Land-Grant Colleges (NASULGC) reception in Washington, D.C. in February 2007. NPDN and the Crop Biosecurity First Detector training program were highlighted at both events.

Gerry Snyder and Gerald Holmes (left to right) represented the NPDN Crop Biosecurity First Detector training program at the NASULGC reception in Washington, D.C. in February 2007. The theme of this year's reception was "Protecting the Homeland."

If you have any questions about the National Training Program in Crop Biosecurity for First Detectors, please contact Gerald Holmes at gerald_holmes@ncsu.edu, Howard Beck at hwb@ufl.edu, or Gerry Snyder at gsnyder@ksu.edu.

National Database

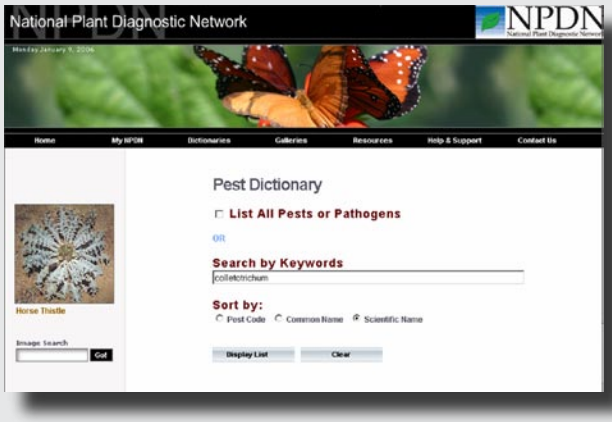
National Database Subcommittee Update

Karen L. Snover-Clift
Subcommittee Chairperson
Cornell University
Department of Plant Pathology

The National Database subcommittee met on March 14, 2007 to continue our work on reviewing the massive EPA Pest and Host lists and creating guidelines for uploading documents that will clarify how sample diagnoses should be transmitted to the National Repository at Purdue University. During this meeting a number of issues were addressed. Please refer to the national database committee page of the NPDN website for complete minutes of this meeting. (login required)

Topics of discussion included:

- How to handle plant identification submission to the National Repository (see separate article in this newsletter).
- Change request submissions.



The next meeting will be held on **April 11, 2007**.

How to Send Plant Identifications to the National Repository

Karen L. Snover-Clift
National Database Subcommittee Chairperson
Cornell University
Department of Plant Pathology

Virginia Russell of CERIS and the NPDN National Repository has been receiving requests to add plant names to the Pest code list. These requests were made in order to enter samples submitted as "Plant Identification Requests" into the National Repository. As you may or may not know, the system is set up as two separate lists, one for host codes and one for pest codes. Because of the impact on the database, these requests were forwarded to and discussed by the members of the NPDN National Database Subcommittee.

The subcommittee members discussed the requests at length and they understand there is a valid argument to submit these samples a number of different ways. However, our goal is to provide information to our members in hopes that all our members will consistently enter data into the National Repository. The decision on how to enter samples was based on minimizing the duplicate entry of plant names in both the host codes and pest codes listings.

The following will describe how a few situations should be handled. More of these descriptions are available in the draft version of the NPDN Upload Guidelines available on the NPDN web site on the National Database Committee web page.

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Correct Plant Identification submission:

Host Field	Pest Field
Japanese Stewartia *(Stewartia pseudocamillia)*	Plant Identification Request

Correct Weed Identification submission (2 ways):

Host Field	Pest Field
Weed Identification	Giant Hogweed (*Heracleum mantegazzianum*)
OR	
Host Field	Pest Field
Kentucky Bluegrass (*Poa pratensis*)	Dandelion (*Taraxacum officinale*)

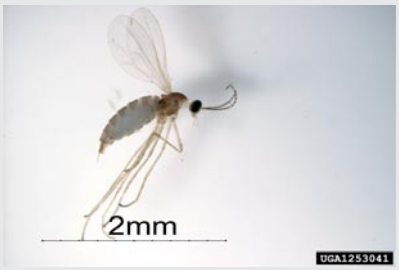
Correct Parasitic Plant Identification submission (2 ways):

Host Field	Pest Field
Weed Identification	Dodder (*Cuscuta* spp.)
OR	
Host Field	Pest Field
Tomato (*Lycopersicon esculatum*)	Dodder (*Cuscuta* spp.)

Northeast Region

Update on Regulated Areas within NY for Swede Midge

Swede midge, *Contarinia nasturtii* (Kieffer), is an important pest of Brassica and other related crucifers. It was first detected in the U.S. in 2004 in Niagara County, NY and subsequently in six additional NY counties in 2005. 2006 survey efforts have resulted in the detection of this pest in seven additional counties in NY State bringing the total number of counties in NY to thirteen.



Swede midge, *Contarinia nasturtii* (Kieffer). (Photo Susan Ellis, www.ipmimages.org)

More information about this update can be found on the web at:
NAPPO Phytosanitary Alert System: Update on Regulated Areas within New York State for Swede Midge – United States

USDA-APHIS Plant Pest Alert on Swede Midge

NPDN and NEPDN Shirts and Sweatshirts Available!!

If you missed your opportunity to purchase a polo shirt or sweatshirt at the NPDN National Meeting in January in Orlando, FL, it is not too late!

We have many shirts and sweatshirts left for sale with the NPDN logo with or without the Northeast Region on them. The polo shirts come in men's and women's sizes in yellow, khaki or white at **$17.75** each and the sweatshirts are in stone at **$13.75** each. Please contact Mary McKellar, NEPDN Education and Training Coordinator, (mem40@cornell.edu or 607-255-4162) if you are interested in purchasing shirts or sweatshirts.

Regional Updates

APS Potomac Update

Nancy Gregory
University of Delaware

The Potomac Division of the American Phytopathological Society met March 21st through 23rd in Blackburg, Virginia. Included in the program was a session entitled "Diagnostics and Detection: New Directions", chaired by Nancy Gregory (University of Delaware).

The session was the third in three years to deal with new diagnostic techniques and efforts. Guest speakers included Eileen Luke from CERIS talking about the NPDN database and Mary Palm from APHIS/PPQ presenting information about the National Identification Service lab in Beltsville. They were followed by Vessela Mavrodieva from the APHIS/PPQ CPHST Lab in Beltsville, updating the group on diagnostic protocols for regulatory pathogens, verification and standards, as well as the status of lab accreditation. Our final speaker was Marty Draper from CSREES, who gave us some perspective on the First Detector program, IPM PIPE and other outreach and communication efforts.

The session was an excellent update for all pathologists at the regional level, especially those not involved with the NPDN on a regular basis, and a good bridge to highlight detection and interpretation at the national level.

WPDN
Western Plant Diagnostic Network

Western Region

Chrysanthemum White Rust Detected at Two Cut Flower Nurseries in California

Chrysanthemum white rust (CWR), *Puccinia horiana* P. Henn, was detected on outdoor, ground planted chrysanthemums at a cut flower nursery in San Diego County, California.

Confirmation of this finding was made by the California Department of Food and Agriculture on February 14, 2007.

A second detection of CWR was made on February 27, 2007 at an outdoor field of mums at a cut flower nursery in Santa Barbara County, California.

White colored pusturl of chrysanthemum white rust, *Puccinia horiana* P. Hennings (Photo John W. Dooley, USDA-APHIS-PPQ, www.ipmimages.org)

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CWR is considered a quarantine significant pathogen in the United States. When CWR is found in the U.S., control of the disease is accomplished through cooperative eradication efforts by both the States and APHIS.

More information about these detections can be found on the web at:
NAPPO Phytosanitary Alert System: Chrysanthemum White Rust (CWR) in California – United States

Light Brown Apple Moth Detected in Two Counties in California

Official notification was made on March 16, 2007 that an outbreak of light brown apple moth (LBAM), *Epiphyas postvittana*, was confirmed in Alameda and Contra Costa Counties, California. Confirmation of the pest was made through diagnostic testing by the Agricultural Research Service's Systematic Entomology Laboratory in Washington, D.C.

LBAM has a wide host range with hosts of major concern in the U.S. consisting of stone fruits, apples, pears, grapes and citrus. Cooperative efforts between APHIS, the California Department of Agriculture and local county agricultural commissioner are underway to carry out delimiting surveys.

More information on this outbreak can be found on the web at:
NAPPO Phytosanitary Alert System: Light Brown Apple Moth in Alameda and Contra Costa Counties, California – United States

Regional Updates

California Senators Propose Moving Ag Inspections Back to USDA

Light brown apple moth (photo NZ Government).

Prior to March 2003 all agricultural inspections were controlled through APHIS. However, as part of the Homeland Security Act, the responsibility was transferred to the Department of Homeland Security. As a result of this transfer, agricultural inspection was combined with the inspection activities of several other departments including the Department of Treasury's Custom Service, the Department of Justice's Immigration and Naturalization Service and USDA's APHIS. The combined inspection activities resulted in the creation of a new department which is now called Customs and Borders.

In light of recent governmental reports showing a decrease in the number of agricultural inspections at U.S. ports of entry, Senators Dianne Feinstein, D-Calif., and Dick Durbin, D-Ill., have introduced a bill that would mandate the transfer of inspections back to the U.S. Department of Agriculture's Animal and Plant Health Inspection Service from the Department of Homeland Security. A similar proposal has been introduced in the House as well.

For full text of this article, please visit on the web:
California Farm Bureau Federation: Bill would Move Ag Inspections Back to USDA

Upcoming Events

National Events

July 28-August 1, 2007, APS-SON Joint Meeting, San Diego, CA

August 19-23, 2007, National Plant Board Meeting, Honolulu, HI

December 9-12, 2007, ESA Annual Meeting, San Diego, CA

March 24-26, 2009, Sixth International IPM Symposium, Portland, OR

Regional Events

May 7-9, 2007, SPDN Invasive Arthropod Workshop, Clemson, SC

Mary McKellar, Editor
NEPDN
Cornell University