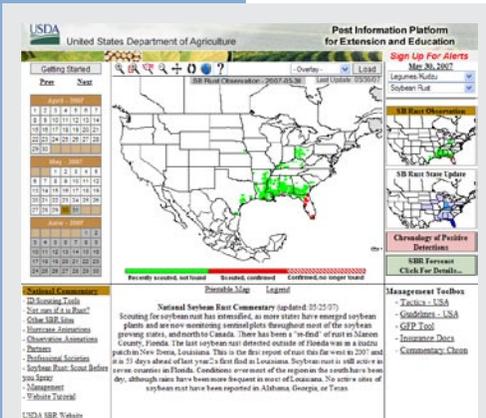


National Updates



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

U.S. Soybean Rust Update

The first confirmation of soybean rust in the 2007 growing season was made on kudzu in south-central Louisiana during the first week of May. The kudzu patch where the soybean rust was discovered was also infected last year. The significance of this finding is that it is 53 days earlier than the first find in the 2006 growing season. The implications of finding rust so early in the season are yet to be

seen. For updates on soybean rust in the U.S., please visit the USDA PIPE web site at www.sbrusa.net.

In other U.S. soybean rust news, the Iowa State Department of Agriculture and Land Stewardship (IDALS) recently issued a press release pertaining to the March 2007 confirmation of soybean rust in Iowa. According to the press release, officials with the IDALS and Iowa State University have found no further evidence of Asian soybean rust in the field where the sample was collected as well as any neighboring fields. Based on examination of materials collected to date, Bill Northley, Iowa Secretary of Agriculture stated that “we believe that

no Asian soybean rust infection occurred during the 2006 growing season in Iowa.”

For the entire Iowa State Department of Agriculture and Land Stewardship press release, please visit on the web: [Iowa Officials Find No Evidence of Asian Soybean Rust; Federal Investigation Continues](http://www.idals.iastate.edu/pressrel/070327_soybean_rust.htm)

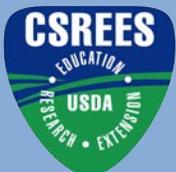
IPM PIPE Training Presentations Now Available Online

A long distance education short course for training pertaining to the IPM PIPE project was held on May 14, 2007.

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Issue Highlights:

- ◆ U.S. Soybean Rust Update
- ◆ IPM PIPE Training Presentations Available Online
- ◆ Soybean Rust Upload Policy
- ◆ Diagnostic Subcommittee Update
- ◆ Diagnostic Tip of the Month: Checking for Bacterial Streaming
- ◆ National Database Subcommittee Update
- ◆ NPDN National Database Web Site: Coming Soon: Incidence Fields
- ◆ NCPDN Regional Meeting A Success!



National Updates

Continued from page 1...

Training sessions included:

- Background information about the IPM PIPE Project.
- Laboratory assay protocols for the Legume IPM PIPE Project.
- IPM PIPE data entry for new users.
- Changes in IPM PIPE Data Entry in 2007, for experienced users.
- Review of specialist tools for soybean rust specialists.

Powerpoint presentations for the sessions above can be accessed on the web at the IPM PIPE web site (<http://www.ipmpipe.org/training.cfm>).

Soybean Rust Upload Policy

For the calendar year of 2007, all soybean (*Glycine max*) samples submitted to NPDN laboratories should be examined for the presence of *Phakopsora pachyrhizi*, the causal agent of Soybean Rust.

This examination needs to be reported when uploading to the National Repository. This examination can include any of the following techniques: visual/microscope examination, ELISA testing, and/or PCR testing.

Additionally, it is strongly suggested that you examine any possible host of *P. pachyrhizi* and report your results to the National Repository.

The most common hosts besides soybean are yellow sweet clover (*Melilotus officinalis*), vetch (*Vicia dasycarpa*), medic (*Medicago arborea*), lupine (*Lupinus hirsutus*), green and kidney bean (*Phaseolus vulgaris*), lima and butter bean (*Phaseolus lunatus*), and cowpea or blackeyed pea (*Vigna unguiculata*) and kudzu (*Pueraria montana* var. *lobata*).

Diagnostic Updates

Diagnostics Subcommittee Update

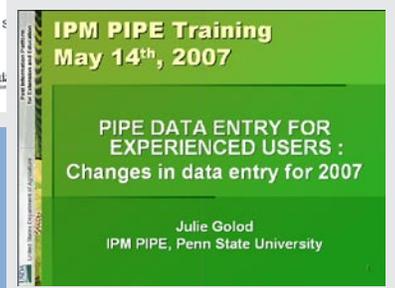
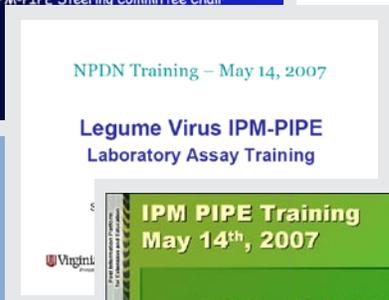
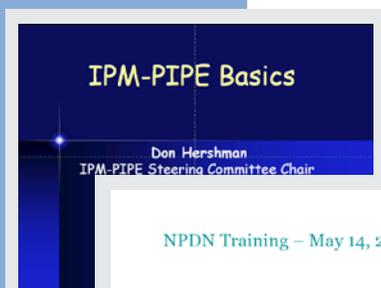
Karen L. Snover-Clift
Committee Chair
Cornell University
Department of Plant Pathology

The NPDN diagnostics subcommittee held a conference call on May 17, 2007. During this meeting a number of issues were addressed. Please refer to the diagnostics subcommittee web page of the [NPDN web site](#) for complete minutes of this meeting (login and password required).

Topics of discussion included:

- Laboratory accreditation update.
- New representative additions to the working group: Pat Shiel (APHIS), Steve Gaimari (Entomologist CDFR), NPB (TBD).

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- Scheduled regional center visits.
- Update on the subcommittee membership structure.
- PIPE update.
- 4th IT-Diagnosticians meeting plans.
- Access to the NPDN Operations Committee web page.

The next meeting will be held on June 14, 2007.

Checking for Bacterial Streaming

Simeon Wright

Plant Diagnostic Clinic Coordinator
Soil Testing and Plant Diagnostic
Laboratories

University of Missouri

Contributing authors:

Karen Rane and Gail Ruhl

Purdue Plant and Pest Diagnostic Lab

When a diagnostician suspects a bacterial disease could be the cause of a water-soaked, necrotic leaf spot (Figure 1), checking for bacterial 'streaming' is an easy first step before attempting to isolate from the plant tissue or proceeding with other testing methods.

To look for bacterial streaming in a small



Figure 1. Water-soaked leaf spot on kudzu. (Photo S. Wright, University of Missouri)

leaf lesion, slice through the middle of the necrotic spot, place the tissue piece containing half of the leaf spot on a glass slide, add a drop of water and a coverslip and view using a compound microscope, beginning with low power.

If the symptomatic area is "v" shaped or a large lesion, cut a piece of tissue to include the margin of the necrotic lesion and healthy plant tissue (Figure 2) and then follow the previously described procedure.

If bacteria are present, a cloud of bacteria can usually be seen 'streaming' from the affected portion of the leaf (Figure 3).

Check several lesions since amounts of 'streaming' often vary from lesion to lesion.

It is important to keep in mind that there will be some cellular debris and plant sap that will also 'ooze' from healthy plant tissue. This aspect becomes less confusing with experience.

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Diagnostic Tip of the Month



Figure 2. Suspect piece of sample placed on slide. (Photo K. Rane, Purdue University)

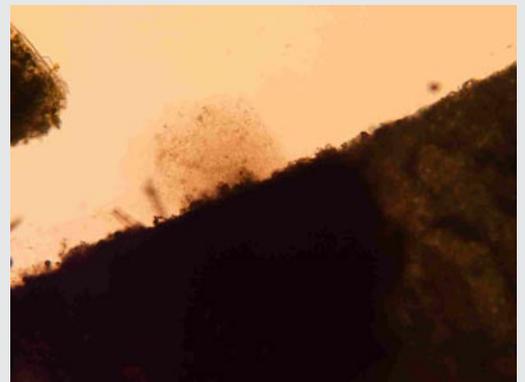


Figure 3. Bacterial streaming from water-soaked leaf spot on kudzu. (Photo S. Wright, University of Missouri)

Diagnostic Tip of the Month



Figure 4. Foliar symptom of Stewart's wilt (*Pantoea stewartii*). (Photo G. Ruhl, Purdue University)

However, by adjusting the condenser and diaphragm of conventional compound microscopes, bacterial ooze can be easily detected as well. Just remember to readjust the microscope correctly for the rest of your microscopy!

Continued from page 3...

When bacteria are involved in a vascular infection, such as bacterial canker on tomato or Stewart's wilt of corn (Figure 4), the bacteria will stream out from distinct areas that correspond to the plant's vascular tissues (Figure 5).

The microscope used for detection can also be important. A compound microscope with phase contrast optics makes bacterial ooze easier to see.

With phase contrast, light that travels slower through a transparent object will cause the image of that object to appear dark, and consequently a small amount of diffuse bacterial ooze is more obvious.

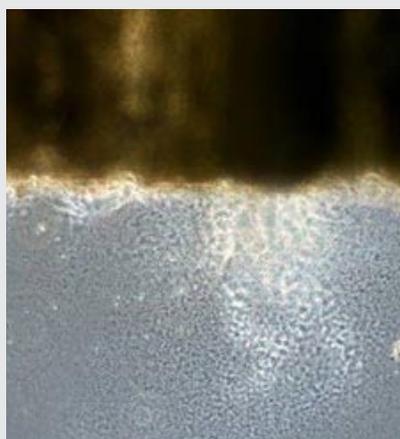


Figure 5. Bacterial streaming from xylem of leaf infected with *Pantoea stewartii*. (Photo G. Ruhl, Purdue University)

National Database

National Database Subcommittee Update

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

The NPDN national database subcommittee met on May 16, 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 subcommittee web page of the [NPDN web site](#) for complete

minutes of this meeting (login and password required).

Topics of discussion during the conference call included:

- The status of changes to the virus pest codes.
- Review of pending change submissions.
- Upload Guidelines Draft version 2.2.
- The 4th IT-Diagnosticians meeting plans.

The next meeting will be held on June 13, 2007.

NPDN National Database Updates: Coming Soon - Incidence Fields

Mike Hill
CERIS Programmer/Analyst
Purdue University

A conference call took place on May 7, 2007 to discuss adding incidence fields to address PIPE data collection. It was determined during this call that incidence can be reported by adding three optional fields to the NPDN National Database. The goal is for all regions to begin uploading these new fields by June 30, 2007.

Listed below are the proposed definitions for these new fields along with an example on how incidence for a legume virus would be uploaded to the National Database.

Proposed Definitions

1. DIAG-INCID-CONF

- a. Data Type: 7 byte numeric field (integer values only)
- b. Values: (0-9,999,999)
- c. Description: Represents the number of confirmations.

2. DIAG-INCID-TESTED

- a. Data Type: 7 byte numeric field (integer values only)
- b. Values: (1 – 9,999,9999)
- c. Description: Represents the number of samples or units tested.

3. DIAG-INCID-UNIT

- a. Data Type: 60 byte alpha field
- b. Values: From published list (leaves, plants, pods, containers, stems, acres and other with a fill in the blank field).
- c. Description: Describes the units tested.

Legume Virus Upload Example

This example is based on uploading legume virus data for a unique PIPE site identifier.

In this scenario the diagnostician tested 45 leaves for legume virus and found that 9 of the leaves were confirmed positive for a certain virus.

Table 1 below represents the incidence fields that would be uploaded to the National Database:

Table 1: Example of incidence fields uploaded to National Database.

DIAG-INCID-CONF	DIAG-INCID-TESTED	DIAG-INCID-UNIT
9	45	leaves

National Database

Regional Updates



North Central Region Annual Meeting of NCPDN a Success!

Diagnosticians from the North Central region gathered in Indiana for the NCPDN annual meeting on April 30 to May 3, 2007.

The meeting began with an informal dinner the evening of April 30th in Elkhart, IN.

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Regional Updates

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The following morning the group visited Agdia, Inc. Chet Sutula served as host for a program that included a tour of Agdia's production, shipping and virus testing facilities.

Agdia research scientists presented information on new developments in pathogen diagnostics, and detection of transgenics and microcystins (algal toxins).

A demonstration of the new Legume PIPE virus detection cards was also included. The people at Agdia provided an outstanding program, which really got the NCPDN meeting off to a great start!

After lunch, the group traveled to Purdue University in West Lafayette, IN to begin the second phase of the meeting.

A round-table discussion, including individual state reports, was held the evening of May 1. The next day, weed scientists Glenn Nice (Purdue University) and Dawn Nordby (University of Illinois) gave a 3 hour, hands-on workshop on diagnosis of herbicide injury.

The workshop began with presentations and handouts on herbicide mode of action groups and the diagnostic process. After this introduction, diagnosticians were "quizzed" using flats of symptomatic

crop plants and weeds treated with various herbicides – an excellent way to practice diagnosing this type of damage.

A cyst nematode identification workshop was organized and presented by nematologists Cassandra Bates (also

NCPDN Education and Training Coordinator) and Fred Warner (Michigan State University). Jamal Faghihi (Purdue University) contributed information on soybean cyst nematode work in Indiana.



Diagnosticians from the North Central region gathered in Indiana for the NCPDN annual meeting on April 30 to May 3, 2007.

Diagnosticians learned extraction techniques, as well as the characteristics used to differentiate cyst nematode genera. The workshop included examination of prepared slides of various cyst nematodes, which allowed participants to actually see distinguishing characteristics.

Following the nematode session, the group traveled to an off-campus site for a hands-on workshop/presentation on the NDPN National Data Repository, conducted by Mike Hill of CERIS.

Each diagnostician, using a laptop computer and secure password was able to access their own clinic data that had been forwarded to the National Repository.

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Mike's presentation assisted diagnosticians with generating maps of the data. Keith Watson of CERIAS spoke to the group on data security awareness issues.

The final day of the meeting (May 3rd) included a presentation entitled "Invasive and Emerging Insect Pest Issues" by Cliff Sadof, extension entomologist at Purdue University. Emerald ash borer, European chafer, Asiatic garden beetle, and granulated ambrosia beetle were a few of the exotic insect pests covered in this session.

Karen Rane gave a presentation on "Diagnosing Bacterial Diseases", and the meeting concluded with Ray Hammerschmidt providing an update on NCPDN regional matters.

The meeting was organized by Gail Ruhl and Karen Rane of Purdue University.

Our sincere thanks to all the presenters, who were so generous with their time and expertise, and were instrumental in the meeting's success. Our thanks go as well to the NCPDN diagnosticians who attended – a better audience would be hard to find!

Regional Updates



A hands-on herbicide damage workshop conducted by Glenn Nice (Purdue University) and Dawn Nordby (University of Illinois) was held at the most recent NCPDN annual meeting.

Upcoming Events

National Events

July 11-13, 2007, [SPDN Soybean Rust Identification Short Course](#), Quincy, FL

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

December 12-14, 2007, [2007 National Soybean Rust Symposium](#), Louisville, KY

March 24-26, 2009, [Sixth International IPM Symposium](#), Portland, OR

[Mary McKellar](#), Editor
NEPDN
Cornell University

