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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!

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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.

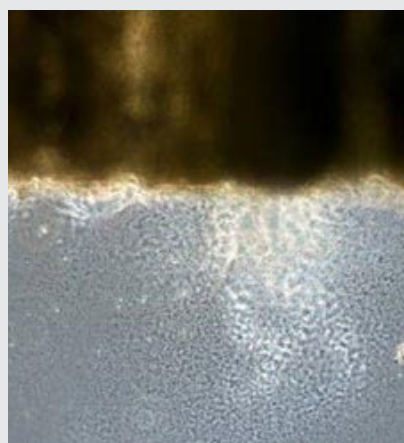


Figure 5. Bacterial streaming from xylem of leaf infected with *Pantoea stewartii*. (Photo G. Ruhl, Purdue University)

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.