

# National Plant Diagnostic Network

## The Diagnostics Subcommittee

Sponsored by the NPDN Diagnostics Subcommittee



### Abstract

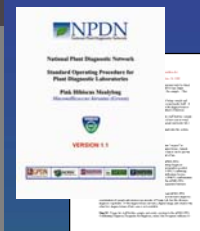
Established in January of 2003, the initial goals of the subcommittee were to coordinate websites, create a list-serve, create objectives, coordinate permit acquisition, compile lists of regionally significant agents, create standard operating procedures (SOPs) and to coordinate select agent workshops. The committee has grown to include two representatives from each of the NPDN Regions plus industry and other organizations and disciplines.

The committee has developed a national working group that strives to keep diagnostic information and procedures for introduction of hazardous pests and pathogens.

### Standard Operating Procedures

Standard Operating Procedures (SOPs) are documents that encompass pathogen and pest backgrounds, importance, protocols, communication trees, confirmation information, worksheets and forms. The SOPs undergo revisions regularly on the basis of lessons learned during exercises and actual events.

The committee has developed national SOPs that cover plant pathogens and entomology agents.



## Diagnostics Timeline of Events 2002 to Present

2002

- NPDN Diagnostics Committee established
- Regional websites created
- Compiled Action points listing and created communication flowchart

2003

- Compiled Significant Agent List for each region
- Subcommittee objectives drafted
- NPDN National website created
- Soybean Rust diagnostic training in Maryland, 10 representatives from across the Nation trained
- Funding for regional based PCR equipment distributed
- Acquired permits to comply with Ag. Bioterrorism act of 2002
- Released 1<sup>st</sup> and 2<sup>nd</sup> drafts of SOPs and picture clues for *Ralstonia solanacearum* R3B2

2004

- National R3B2 outbreak announced- SOPs updated, posters and presentations made available to members; alert via email, website postings, and announced at meetings
- 1<sup>st</sup> IT-Diagnostician meeting held in West Lafayette, IN
- Coordinated diagnostic trainings for Soybean Rust, Plum Pox Virus, R3B2, and *Phytophthora ramorum* identification
- Notification of Soybean Rust introduction- SOPs updated, posters and presentations made available to members; alert via email, website postings, and announced at meetings
- Created SOPs for Brown Stripe Downy Mildew and *P. ramorum*

2005

- Created and/or Updated SOPs and Picture Clues for Soybean Rust, Plum Pox Virus, *P. ramorum*, R3B2, Southern Wilt, Brown Rot, Soybean aphid, Pink Hibiscus mealybug, and Potato Wart
- Policy created for handling of Soybean samples
- Coordinated training for *P. ramorum* and Citrus Greening identification

2006

- Coordinated additional molecular and morphological identification trainings for Soybean Rust and *P. ramorum*, and conducted new training for Citrus Greening
- Conducted multiple PCR trainings
- Discussed NPDN-PIPE interactions with the Soybean Sentinel Plot Survey



### Training Sessions and Workshops

The NPDN and the Diagnostics Subcommittee have sponsored a number of training sessions in collaboration with USDA. Sessions have focused on *Ralstonia solanacearum* R3B2, Soybean Rust, *Phytophthora ramorum*, Plum Pox Virus, and Citrus Greening. The entomology group, lead by the SPDN, has organized workshops on Hemiptera: Auchenorrhyncha/ Sternrhyncha and Coleoptera.

The committee works closely with our USDA counterparts to ensure NPDN members are trained and prepared to provide diagnostic testing of potentially significant pathogens and pests.

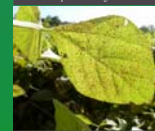
### Notable Events

The first test of the system occurred in February of 2003 when *R. solanacearum* R3 B2 was discovered on geraniums. This find prompted holds of plant material in 489 nurseries across the country. Subsequent finds in January and December of 2004 were handled following the same protocol. As of this date, there have been no finds of movement of this pathogen to potatoes in the United States. Additional events included the *P. ramorum* outbreak in March of 2004 and the introduction of the Soybean Rust pathogen in November of 2004.

Members of the NPDN diagnostic network work together to process samples in a timely manner using valid and protocols put forth by USDA-APHIS-PPQ-CPHST-NPGBL.



Geranium infected with *Ralstonia solanacearum* R3 B2. Photo Courtesy of the Wisconsin Department of Agriculture



Soybean infected with *Phialophora perniciosa*. Photo Courtesy of the Kitty Cadwell

### Diagnostics Subcommittee Membership

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| Karen Snover-Clift, Chair, Cornell University      | Laurene Levy, USDA/APHIS/PPQ/CPHST/NPGBL |
| Joy Pierzynski, Secretary, Kansas State University | Amanda Hodges, University of Florida     |
| Clarissa Balbalian, Mississippi State University   | Judy O'Mara, Kansas State University     |
| Phil Berger, USDA/APHIS/PPQ/CHPST                  | Sara May, Penn State University          |
| Tamla Blunt, Colorado State University             | Mary Palm, USDA/APHIS/PPQ/PHP/PSPI       |
| Jan Byrne, Michigan State University               | Melodie Putnam, Oregon State University  |
| Tom Creswell, North Carolina State University      | Karen Rane, Purdue University            |
| Rick Grantham, Oklahoma State University           | Timothy Tidwell, CDFA                    |
| Frank Hale, University of Tennessee                | Mike Tiffany, Agdia, Inc.                |
| Carrie Harmon, University of Florida               | Ned Tisserat, Colorado State University  |