

Entomology in the National Plant Diagnostic Network

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Abstract

Although NPDN's initial programmatic activities were focused on plant pathogens, more extensive efforts to address arthropod pest issues have occurred since 2004. Several entomology diagnostic labs are now incorporated and provide data to the NPDN database, entomology-specific priorities have been budgeted into several NPDN-state programs, and numerous workshops (including multiple day conferences) have been conducted at the national, regional, and local levels dealing with various arthropod pest taxa and using pest-specific, First Detector training modules and multiple delivery tools. Nationwide, at least 170 participants have attended intensive, multiple day taxonomic training sessions.

More recently in 2006, a temporary Ad-Hoc NPDN Entomology Working Group was formed to further enhance the network's reach into entomological issues, define future entomology goals, objectives and methodologies, and to increase overall participation of entomology experts in national NPDN subcommittees.



WPDN 'Homoptera' Workshop



Why are Arthropods Important?

- In 2004 and 2005, 64% of the 78 organisms presented to the New Pest Advisory Group (NPAG) as new or imminent threats to North America were arthropods.
- Awareness of potential threats and how these exotic pests differ from our endemic fauna is vital to early detection and recognition of new introduced exotic species.
- Examples of Recent High Impact Exotic Arthropod Introductions include Emerald Ash Borer, Asian Longhorned Beetle, Pink Hibiscus Mealybug, and Soybean Aphid.
- NPDN entomology labs can assist in safeguarding our agricultural and natural resources.

Entomology Diagnostic Funding

- Travel to Diagnostic Workshops
- Additional Support for Entomology Diagnostic Staff
- Equipment Laboratory Upgrades
- Purchase of Additional Diagnostic Resources

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Accomplishments - Diagnostics

- Enhanced entomology diagnostic capabilities and collaborations built with specialists.
- Seven Intensive Taxonomic Workshops, 2004-06.
 - SPDN 'Homoptera' Workshop, December 2004 <http://conference.ifas.ufl.edu/homoptera/>, and proceedings of new taxonomic keys available in the December 2005 issue of the Florida Entomologist <http://www.fcla.edu/FlaEnt/fe884.htm>
 - National Pink Hibiscus Mealybug Workshop, June 2005 <http://conference.ifas.ufl.edu/phm/index.html>
 - GPDN Insect Vector Workshop, September 2005 <http://diagnostics.montana.edu/GPDN/IVDW/index.htm>
 - WPDN Aphid and Coccoidea Specimen Preparation Training, January 2006
 - WPDN 'Homoptera' Workshop, March 2006 https://www.wpdn.org/Program_for_WPDN_wkshps2.pdf
- SPDN Thrips Sampling and Identification Workshop, March 2006 http://spdn.ifas.ufl.edu/Thrips_sampling_ID_workshop.htm
- SPDN Coleoptera Workshop <http://conference.ifas.ufl.edu/coleoptera/>



SPDN Coleoptera Workshop



First Detector Training-National and Regional Products

- Approximately 23% of sessions conducted included special topic training on an arthropod pest.
- Entomology included in NPDN core training modules.
- 10-15 special topic modules released (October 2006-February 2007)
- Lobate Lac Scale, Cycad Scale, and Pink Hibiscus Mealybug Pest Alerts prepared in conjunction with the National IPM Centers.

The Redbay Ambrosia Beetle, *Xyleborus glabratus* Eichhoff (Scolytinae: Curculionidae)



First Detector Training - Local Products

- Emergency Chilli Thrips Training held in December 2005 in Florida via videoconference. Two other regional states participated, and a CD-ROM was produced.
- Extensive Africanized Honeybee education program conducted in Oklahoma. Materials and response DVD delivered to participants.
- AgAlerts for Communication with First Detectors



Currently Identified Issues to be Addressed if Entomologists are to Continue Efforts to Assist in the Safeguarding of Resources

- NPDN Ad-Hoc Entomology Working Group

- Significant state variability in diagnostic lab resources. It would be useful in some cases if NPDN-related funds could be used for additional leverage of existing extension funds to support an Agricultural Crop Diagnostician.
- PDIS is currently too cumbersome for entomology diagnosticians.
- For regions that have not purchased PDIS, additional efforts are needed to connect entomology efforts to the NPDN database.
- Involving more entomologists in relevant scenario exercises could be beneficial.
- Entomology diagnosticians have not had access or were not aware of available funds in some states.
- Efforts to improve networking with other groups focusing on invasive pests, such as the Cooperative Agriculture Pest Survey program (CAPS) as well as offshore efforts need to be enhanced.
- Improve networking and connection with specialists.

Overall Future Plans

- Continue survey and assessment of NPDN entomology issues during early 2007.
- Conclude efforts of the NPDN Ad-Hoc Entomology Working Group and report to NPDN Operations Committee, summer 2007.
- Further Integration of entomologists needed at the state, regional and national level.

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