


National Plant Diagnostic Network 

## Mission of the National Plant Diagnostic Network

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## Need for Plant Biosecurity




Maintain profitability of crop production



Invasive species cost \$ billions/year




Maintain security of food production

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## Impact of Introduced Pathogens


### Historical High Impact Epidemics



Late Blight of Potato in Ireland



Dutch Elm Disease and Chestnut Blight in North America

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## Impact of Introduced Insects

### Recently Introduced Insects

- Asian Longhorn Beetle
  - Its impact could surpass Dutch Elm Disease and Chestnut Blight
- Emerald Ash Borer
- Soybean Aphid

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## Is Ag Bio-Terrorism a Real Threat?

U.S. developed agricultural bioweapons until 1969

USSR: production capability for plant and animal pathogens

Britain: extensive anticrop research 1940's-60's

1915-1917 Germans allegedly attempted to use a wheat fungus during WWI

1962-1997/Cuba (21 accusations; one formal complaint)  
Tobacco blue mold  
Sugarcane rust

**Agricultural bio-weapons programs are not new: the threat is real**

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## 9/11 and Aftermath

Dept. of Homeland Security (DHS) formed in 2002.

Photo Andrea Beeber www.photostory.com

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## Agricultural Bioterrorism Act of 2002

- Federal Register, December 13, 2002
- Possession, Use and Transfer of Biological Agents and Toxins.
- Lists Select Agent Pathogens for Animals and Plants.
  - 7 CFR Part 331
    - Agricultural research, Laboratories, Plant diseases and pests, Reporting and record keeping requirements.
  - 9 CFR Part 121
    - Agricultural research, Animal diseases, Laboratories, Medical research, Reporting and record keeping requirements.

## National Animal & Plant Diagnostic Laboratory Networks

Animal Network | Plant Network | Information Center

Regions: Western, North-central, Southern, Northeastern

Key Laboratories:

- Kansas State University Regional Plant Diagnostic Hub
- Iowa State University Animal-Satellite
- NVSL
- University of Wisconsin Animal-Core
- Michigan State University Regional Plant Diagnostic Hub
- Cornell University Animal-Satellite Regional Plant Diagnostic Hub
- Washington State University Animal-Satellite
- Colorado State University Animal-Core
- UC Davis Regional Plant Diagnostic Hub Animal-Core
- University of Arizona Animal-Satellite
- Texas Tech University Plant Diagnostic Support
- Texas A&M University Animal-Core
- Oklahoma State University Animal Diagnostic Support
- Florida Diagnostic Laboratory Animal-Satellite
- Louisiana State University Animal-Satellite
- University of Georgia Animal-Core
- University of Florida Regional Plant Diagnostic Hub
- Rotins Laboratory, North Carolina Animal-Satellite
- NAPIS

NVSL - Nat'l Vet Science Lab  
NAPIS - Nat'l Ag Pest Info System

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**What Does NPDN Look Like?**  
Apologies to Alaska, Hawaii, PR and Guam

**NPDN:**  
Founded 6/2002 USDA/H  
USDA/CSREES

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**NPDN Mission**

Enhance national agricultural security by quickly detecting and identifying introduced pests and pathogens.

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**Method**

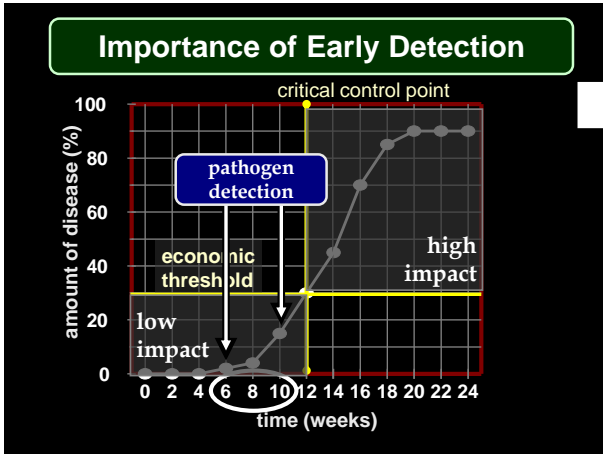
- Create a nationwide network of land-grant universities
- Provide training to first detectors and diagnosticians
- Establish protocols for reporting to responders and decision makers

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**Network Responsibilities**

- Outbreak detection and identification
- Secure communications system
- Information storage and management
- Data analysis
- Reporting and alerts
- Training

Minimize Impact



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**Your role as a First Detector**

- Be alert to the unusual or different
- Receive NPDN First Detector or First Detector Educator training
- Be placed on a national notification registry of First Detectors
- Receive pest alerts and other relevant updates

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- Some of the material for this presentation was adapted from the NPDN core Module 1
  - Holmes, G., K. Wright, H. Beck, and T. Creswell. (February 2004, updated 2006). Module 1: The NPDN Mission and Agricultural Biosecurity. Available currently on the NPDN Training and Education Subcommittee page <http://www.npdn.org/> login and password required.
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