National Crop Biosecurity

Prevention, Preparedness, Response, and Recovery

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Agenda....

► Background; USDA-APHIS-PPQ
► Pest & Disease Pathways
► PPQ – National Crop Biosecurity
► Case Study: Potato Cyst Nematode (PCN)
United States Department of Agriculture

Animal & Plant Health Inspection Service

Plant Protection & Quarantine

Biotechnology Regulatory Service

Veterinary Services

Animal Care

International Services

Wildlife Services
PPQ safeguards agriculture and natural resources from the risks associated with the entry, establishment, or spread of animal and plant pests and noxious weeds to ensure an abundant, high-quality, and varied food supply.

Plant Protection Act, 2000
Agriculture Bioterrorism Protection Act, 2002
Pest and Disease Pathways

Unintentional

- Natural Movement
- Accidental Introduction

Intentional

- Smuggling
- Bioterrorism
American Agriculture

~13% of the Gross Domestic Product
~17% of all U.S. employment
~25 million Americans are employed in agricultural-related industries

• Agricultural industries valued at $230 billion
• Agricultural Exports account for $140 billion & 860,000 jobs
Why Target Agriculture?

Ramifications & Consequences:

- Devastating impact on U.S. agriculture economy
- Loss of nation’s supply of food & fiber
- Disruption of trade & commerce
- Increased dependency on imports
- Impact on environment / quality of life
Asian Long-horned Beetle
Asian Long-horned Beetle
Asian Long-horned Beetle
# Emergency Response and Recovery

*Plant Health vs. All Hazards*

<table>
<thead>
<tr>
<th></th>
<th>Plant Health</th>
<th>All Hazards</th>
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<tr>
<td><strong>Lead Agency</strong></td>
<td>APHIS-PPQ</td>
<td>FEMA</td>
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<td><strong>Authority</strong></td>
<td>Plant Protection Act</td>
<td>Homeland Security Act</td>
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<td><strong>Policy</strong></td>
<td>NIMS-ICS</td>
<td>National Response Framework NIMS-ICS</td>
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<td><strong>APHIS’ Role</strong></td>
<td>Primary</td>
<td>Lead – ESF11</td>
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<tr>
<td><strong>Presidential Declaration</strong></td>
<td>Not required</td>
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National Crop Biosecurity

PPQ Vision

Highly Coordinated Systems:

- Science-based
- Maximum protection
- Minimum adverse impacts
- Inclusive
National Framework for Crop Biosecurity: Four Elements

1. Prevention
2. Preparedness
3. Response
4. Recovery
National Framework for Crop Biosecurity: Four Elements

1. Prevention
   - Off-Shore Pre-Clearance Program
   - Agricultural Quarantine Inspection

2. Preparedness
   - Permits
   - Surveillance
   - Diagnostics

3. Response
   - Mitigations
   - Critical Infrastructure

4. Recovery
   - Vulnerability Assessment
Prevention

National Framework for Crop Biosecurity: Four Elements

Agricultural Quarantine Inspection

Support to DHS Customs and Border Protection:

• Policies, Rules, and Regulations
• Pest identification at 25 ports-of-entry
• Technical training
• Inspect plant material
• Animal products (Veterinary Regulatory Services)
National Framework for Crop Biosecurity: Four Elements

Prevention

• Agricultural Quarantine Inspection
United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

National Framework for Crop Biosecurity: Four Elements

1. Prevention
   • Off-Shore Pest Information System
   • NAPPO Phytosanitary Alert System

2. Preparedness
   • Risk Assessment
   • Science Panels

3. Response
   • New Pest Response Guidelines
   • Diagnostics \(\text{(development, validation, capacity)}\)
   • Survey – Detection \(\text{(CAPS, NAPIS, NBIS)}\)
   • Treatment \(\text{(mitigation)}\)
   • Training \(\text{(ICS, survey, diagnostics, data management, mitigation, exercises, etc.)}\)

4. Recovery
   • Infrastructure
National Framework for Crop Biosecurity: Four Elements

Preparedness

Diagnostic Networks & Data Management

United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

Western Region
North-central Region
Southern Region
Northeastern Region

Washington State
Colorado State University
Iowa State University
University of Wisconsin
Cornell University
Michigan State
Purdue University
North Carolina
University of Georgia
UC Davis
University of Arizona
Kansas State
Texas A&M
Louisiana State University
University of Florida
Preparedness and Response

Training:

- ICS 100/200 (Mandatory APHIS Employee Training)
- ICS 300 (Mandatory for All State Plant Health Directors)
- Full-Scale Exercises
- Workshops/Seminars
- Table Top Exercises
- Functional Exercises
United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine

ICS - Command Staff

Unified Command
SPHD & SPRO

- Technical Working Group
- Intelligence Officer

Public Information Officer
- Liaison Officers
- Safety Officer

Planning Chief
Operations Chief
Logistics Chief
Admin/Finance Chief
National Framework for Crop Biosecurity: Four Elements

1. Prevention
   • Implementation Plan
     Generic and Sector-Specific Elements

2. Preparedness
   • Incident Command System
     Federal and State Unified Command
   • e-Resource Allocation and Tracking
     Human, Fiscal, and Physical Resources

3. Response
   • Survey - Detection
     Adequate – Timely
   • Diagnostics
     Accurate and Timely
   • Mitigations
     Timely – containment, control, and eradication

4. Recovery
National Framework for Crop Biosecurity

- Incident Command System
  Federal and State Unified Command

- Emerald Ash Borer (MI, IN, IL, OH)
- Plum Pox Virus (NY, MI, PA)
- Citrus Greening & Canker (FL)
- Sirex noctilio (NY)
- Fruit Fly Outbreaks (CA, FL, MX)
- Potato Cyst Nematode (ID)
National Framework for Crop Biosecurity: Four Elements

Recovery

• National Plant Disease Recovery System
• Prevention Elements
• Survey and Detection
• Long-Term Pest Control Systems
Thank You