What is Agroterrorism?
and
How does it Relate to Our Public Health?

Steve Cain  Purdue Extension Disaster Specialist
What is Agroterrorism?

The deliberate introduction, use, or threatened use, of biological, chemical, toxic, nuclear, radiological, or explosive (CBRNE) agent against one or more components of the food or ag sectors, with the goal of causing mortality & morbidity, generating fear, inducing economic losses, or undermining sector stability and confidence in government.
Agroterrorism

• Lacks the “shock factor” of more traditional terrorist targets
  – A viable second target
  – A low-cost method of destroying the U.S. economy
Why Agroterrorism?

- A means for waging asymmetric warfare
- Gaining publicity by claiming responsibility
- Factual info is available
- Food & Ag are “Soft Targets”
A Unique Sector

• Farms are geographically disbursed
• Routine transportation and commingling in production and processing system
• International trade is often tied to disease-free status
• U.S. vets and scientists lack experience
Agroterrorism Tools

- Weapons of Mass Destruction
  - Chemical
  - Biological
  - Radiological
  - Nuclear
  - Explosive
Possible Agroterrorism Scenarios

- **Chemical** - use of a crop duster for aerial distribution of an irritating agent.
- **Biological** – introduction of a pathogen to contaminate livestock
- **Explosive** – destruction of a anhydrous plant with intent to propel chemical gases into the air
The Biological Preference

- U.S. livestock are more susceptible
  - Success of animal disease elimination
  - Leaving animal unvaccinated or unmonitored
- Certain animal diseases are zoonotic
The Biological Preference

- Cost-effective for agroterrorists to produce
- Can be easy to distribute
- Potential to turn into a widespread disaster
- Potential for high injury & mortality rates
- Potential to disrupt U.S. exports and effect economy
Non-Agroterrorism Examples

- Foot and Mouth
- Ralstonia Race III
- Exotic New Castle Disease
- Soybean Rust
- BSE
Agroterrorism Top Concerns

- Foot and Mouth
- Avian Influenza
- Classical Swine Fever
- Exotic Newcastle Disease
Agrosecurity Challenges

- U.S. Agriculture
  - $1.2 trillion industry (11% of GDP)
  - 2% and 16% of workforce
- 21% of U.S. ag production is exported
- 2.2 million U.S. farms
  - 75% of value of production occurs in just 6.7% (or 143,500) of these farms.

Source: Ag Statistics Board
www.EDEN.lsu.edu
Economic Consequences

- Lost production, cost of destroying products, cost of containment
- Importing countries place restrictions on U.S. products
- Multiplier effects
- Federal and state govts bear significant costs
# Top 5 Weather Related Disasters Post-2012


<table>
<thead>
<tr>
<th>Disaster</th>
<th>Costs in 2012 dollars</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Katrina</td>
<td>$146 billion</td>
<td>1</td>
</tr>
<tr>
<td>Drought/Heat Wave 2012 and 2013</td>
<td>From $79 billion to $151 billion</td>
<td>2</td>
</tr>
<tr>
<td>Drought/Heat Wave 88</td>
<td>$77.6 billion</td>
<td>3</td>
</tr>
<tr>
<td>Hurricane Sandy</td>
<td>$65 billion to $75 billion</td>
<td>4</td>
</tr>
<tr>
<td>Drought/Heat Wave 80</td>
<td>$55.6 billion</td>
<td>5</td>
</tr>
</tbody>
</table>
All Disasters Are Local

- Disasters cost the U.S. about $2 billion per week
- An agroterrorism event could cost from $1-150 billion per event
FBI Investigated Cases

- 1915-1917 Military animals
- 1970 Ashville, Alabama
- 1989 Southern California
- 1996 Florida
- 1996 Berlin, Wisconsin
- 2002 New York dairy farm
Potential FMD Disease Spread
After a simulated terrorist attack at 5 Locations

Day: 30
States Infected: 40
Day 5 Disease First Detected

Potential Impact: Even if a national “stop Movement” of all susceptible animals is ordered on Day 8, by the time the disease is eradicated the nation could lose still 23.6 million animals!
Three types of agroterrorists:
- Domestic criminals as activists
- Domestic criminals for money
- International terrorists
Why Talk About Agroterrorism?

Because they are...

Domestically:

Walter Jefferies
www.nonais.org
Why Talk About Agroterrorism?

PETA

“I openly hope that it comes here.”

—Ingrid Newkirk, PETA Co-Founder, on her desire for a USA bovine and swine epidemic

www.EDEN.lsu.edu
Why Talk About Agroterrorism?

- Domestic Terrorist/Ag Extremists – Responsible for *more than 1,100 terrorist crimes resulting in over $110 million in damage*, including arson, assault, and vandalism against American companies and individuals.
Why Talk About Agroterrorism?

Because they are...

Internationally:

Since 1915, there have been 19 acts of agroterrorism around the world

Five have been in the U.S.
Why Talk About Agroterrorism?

We are talking about hardening infrastructure:

Talking about agroterrorism is the first step in protecting agriculture and food production in the U.S.
Issues Being Faced

• Food Safety and Consumer Confidence
• Security of farms and processing facilities
• Transportation security
• Plant and animal disease outbreak detection
• Public, government, and industry education and preparedness
Public Concerns

Events from FMD in Great Britain showed that failure for agencies to work together:

- Created chaos,
- Distrust of local and federal government, and
- Duress of individual farmers and citizens where FMD resulted in massive carcass disposal problems.
FMD in United Kingdom

From the outset of the foot-and-mouth outbreak last year many farmers knew that things were out of control.

-BBC News (2002)
FMD in United Kingdom
FMD in United Kingdom
FMD in United Kingdom
Exotic Newcastle Disease in California

Ralstonia Race III in Indiana
Plant Biosecurity Course

Developed at: University of Missouri
Animal Biosecurity Course

Animal AgroSecurity and Emergency Management Course

Developed at: University of Kentucky

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National Plant Diagnostic Laboratory Network

- Kansas State University Regional Plant Diagnostic Ctr.
- Cornell University Animal-Satellite Regional Plant Diagnostics Ctr.
- Michigan State University Regional Plant Diagnostic Ctr.
- Purdue University NAPIS
- University of Florida Regional Plant Diagnostics Ctr.
- UC Davis Regional Plant Diagnostics Ctr. Animal-Core
- Texas Tech University Plant Diagnostic Support

Regions:
- Western Region
- Great Plains Region
- North-central Region
- Northeastern Region
- Southern Region

www.EDEN.lsu.edu
Food Biosecurity Detection

Purdue Research

Improved detection techniques for foodborne pathogens (separation techniques component)

– www.cfse.purdue.edu
Purdue Extension provides disaster information and educational materials:

www.ag.purdue.edu/extension/eden
Thank You!

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