Food Defense Authorities & Response

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Presentation Outline

• Background
• Understanding the Threat: Why Do We Need Food Defense?
• Policy Directives, Statutes, and Authorities
• Promoting Partnerships and Leveraging Resources
• Conclusions
Background
What is Food Defense?

Food defense is the protection of food products from intentional adulteration where there is an intent to cause public health harm.

Potential Sources & Impacts of Intentional Adulteration:
- Disgruntled Employees
- Counterfeit/Diversion/Tampering
- Economic Adulteration
- Outside Contractors
- Foreign and Domestic Extremists
- Psychological Impacts
- Adverse Economic Impacts
- Loss of Confidence in the Safety of Food
- Widespread Public Fear
- Catastrophic Public Health Consequences
The Relationship between Food Defense, Food Safety, and Food Security

**Food defense** – protection of food products from adulteration intended to cause public health harm or economic disruption

**Food safety** – protection of food products from unintentional adulteration (Typically by agents reasonably likely to occur in the food supply (e.g., pathogenic strains of *E. coli, Salmonella, Listeria*)

**Food security** – when all people, at all times, have both physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 2014)
Foodborne Disease

• CDC reports approximately 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths each year from inadvertent contamination of the U.S. food supply

• USDA’s Economic Research Service estimated foodborne diseases cost between $14.6B and $16.3B annually
Foodborne Disease

• Unintentional foodborne outbreaks provide insight into:
  – foods and points in their production where intentional adulteration could have catastrophic consequences
  – magnitude of public health impact of carefully planned intentional attack on food supply
Unintentional Incidents

- March/April 1985 – >16,000 confirmed illnesses and up to 17 deaths in six state area from pasteurized milk contaminated with *Salmonella typhimurium*
- Milk was produced at a single dairy plant in Midwest
Unintentional Incident:
Shows how large an incident could be

- September 1994 – 150 confirmed cases of illness, but it was estimated that there were actually **224,000** ill persons
  - Ice cream contaminated with *Salmonella* Enteritidis
- Ice cream was produced in a single facility
- Most likely cause
  - Post processing contamination during transportation
  - Pasteurized ice cream mix was transported in a truck that had previously carried raw liquid eggs
Understanding the Threat: Why Do We Need Food Defense?
Farm-to-Table Chain

• Food supply is a soft target for terrorism
  – Attacks could be directed at any point from farm to table:
    • Crops, livestock
    • Processing, distribution, storage, transportation
    • Retail (restaurants or supermarkets)

• Challenges
  – Traditional security measures may not be effective
  – Vast and open systems
  – Animal and plant pathogens and pests and possible adulterants readily available
  – Information on their use – available on the Internet
The Well-Traveled Salad. Do You Know Where Your Food Has Been?

As consumers, many of us fail to recognize that even our domestic and local food supplies are part of a global network. The daily activity of consuming food directly links our health as humans to the health of crops and produce, food animals, and the environments in which they are produced.

A "One Health" approach to food safety—bringing together expertise and resources from the clinical, veterinary, wildlife health, and ecology communities—has the potential to reveal the sources, pathways, and factors driving the outbreaks of foodborne illness and possibly prevent them from occurring in the first place.

NOTE: Countries are listed in alphabetical order and not by volume of export.
Why Would Someone Intentionally Adulterate Food?

• Political or ideological motive:
  – Intelligence indicates terrorists have discussed attacking components of the food sector
Intentional Adulteration

• Have been examples of intentional adulteration of the food supply
• Review of these incidents provide insights into vulnerabilities in food defense
Examples of Previous Intentional Contamination Events

- **Shredded Cheese – NC, June 2018**
  - Pizza cook accused of adding rat poison

- **Hot/Cold Food Bar – Whole Foods, Michigan 2016**
  - Person sprayed a mix of chemicals on food bar items

- **Frozen Dumplings – Japan 2013**
  - Disgruntled employee sprayed malathion on product
  - Approx. 2,800 illnesses and 6.4 million packages of frozen product recalled

- **Fresh salsa - August, 2009 – Lenexa, KS**
  - August 11th and 30th - fresh salsa at restaurant was contaminated with a methomyl-based pesticide
  - 12 illnesses from first incident
  - 36 illnesses from second incident
  - Two employees were found guilty of contaminating the salsa and were sentenced to federal prison
Policy Directives, Statutes, and Authorities
Policy Directives, Statutes, and Authorities

Then …

- Homeland Security Act of 2002
- Bioterrorism Preparedness and Response Act of 2002
- Animal Health Protection Act of 2002

Now …

- PPD-8: National Preparedness (2011)
- FDA Food Safety Modernization Act (2011)
- National Disaster Recovery Framework (2011)

- PPD-2: Countering Biological Threats (2009)

- National Preparedness Goal (2011)
- National Planning Frameworks (2013)
- Interagency Operating Plans (2014)
Defense of Agriculture and Food (HSPD-9)

HSPD-9 set a national policy for defending our food and agriculture system against terrorist attacks, major disasters, and other emergencies.

Key Components:

- Awareness & Warning
- Vulnerability Assessments
- Mitigation Strategies
- Response Planning & Recovery
- Outreach & Professional Development
- Research & Development
Protecting Critical Infrastructure (HSPD-7)

- National policy for Federal departments and agencies to identify and prioritize U.S. critical infrastructure and key resources and to protect them from terrorist attacks
- Defines roles and responsibilities for DHS and designated Sector Specific Agencies
- Key Activities:
  - National Infrastructure Protection Plan
  - Sector Specific Plans
  - National and Sector Annual Reports

USDA and FDA are the designated Sector Specific Agencies for the Food and Agriculture Sector.
Critical Infrastructure Security & Resilience (PPD-21)

• Refocuses efforts based on:
  – Threats and hazards of greatest risk
  – Critical infrastructure resilience
  – Improved coordination and integration of physical and cyber security initiatives

• Addresses strategic imperatives:
  – Refine and clarify critical infrastructure initiatives across the Federal government
  – Enable effective information exchange
  – Implement an integration and analysis function to inform planning and operations decisions
Critical Infrastructure Sectors

- Chemical
- Communications
- Dams
- Emergency Services
- Financial Services
- Government Facilities
- Information Technology
- Nuclear Reactors, Materials and Waste
- Water and Wastewater Systems
- Commercial Facilities
- Critical Manufacturing
- Defense Industrial base
- Energy
- **Food and Agriculture**
- Healthcare and Public Health
- Transportation Systems
National Preparedness: PPD-8

• Aimed at “strengthening the security and resilience” of the U.S. through “systematic preparation for the threats that pose the greatest risk to the security of the Nation”

• Linking together of the national efforts, organized around key elements
  – the ends we wish to achieve (the National Preparedness Goal)
  – the means to achieve it (the National Preparedness System)
  – the delivery; how we use what we build (National Frameworks; Federal Interagency Operational Plans)
  – the reporting of our progress (Annual National Preparedness Report)
  – the sustained engagement (Build and Sustain Preparedness - Ongoing)
National Preparedness Goal

A secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.

Defined by the capability target measures of the core capabilities within the mission areas of prevent, protect, mitigate, respond, and recover.
National Preparedness System

- Outlines an organized process for everyone in the whole community to move forward with their preparedness activities and achieve the National Preparedness Goal.
Promoting Partnerships and Leveraging Resources
Food and Agriculture Sector Partnership
Food & Agriculture Coordinating Councils

• Government Coordinating Council (GCC)
• Sector Coordinating Council (SCC)

• Stated Goal:
  – A public-private effort that protects public health and that builds and sustains a protected national food supply chain where the U.S. Food and Agriculture Infrastructure is secure, resilient and prepared.
Food and Agriculture Government Coordinating Council (GCC)

- Department of Agriculture*
- Department of Health and Human Services - Food and Drug Administration*
- Department of Homeland Security
- Department of Defense
- Environmental Protection Agency
- Department of Commerce
- Department of Justice
- Department of Interior
- American Assoc. of Veterinary Laboratory Diagnosticians
- Assoc. of Food & Drug Officials
- Assoc. of Public Health Laboratories
- Assoc. of State & Territorial Health Officials
- Intertribal Agriculture Council
- Multi-State Partnership for Agriculture Security
- Nat’l Assembly of State Chief Livestock Health Officials
- Nat’l Assoc. of City & County Health Officials
- Nat’l Assoc. of State Depts of Agriculture
- National Environmental Health Association
- National Plant Board
- Southern Agriculture and Animal Disaster Response Alliance (SAADRA)
- State, Local, Tribal, and Territorial GCC

Food and Agriculture Sector Coordinating Council (SCC)

- Producers/Plant firms and associations
- Producers/Animal firms and associations
- Processors/Manufacturers firms and associations
- Restaurants/Food Service associations
- Retail associations
- Warehousing and Logistic associations
- Agriculture Production Inputs and Services firms and associations
Food & Agriculture Coordinating Councils

2015-2019 FA Sector Goals

1. Continue to promote the combined Federal, SLTT, and private sector capabilities to prevent, protect against, mitigate, respond to, and recover from manmade and natural disasters that threaten the national food and agriculture infrastructure.

2. Improve sector situational awareness through enhanced intelligence communications and information sharing among all sector partners.

3. Assess all-hazards risks, including cybersecurity, to the FA Sector.

4. Support response and recovery at the sector level.

5. Improve analytical methods to bolster prevention and response efforts, as well as increase resilience in the FA Sector.
Sector Tabletop Exercises

- 2006 – Raleigh, NC – Intentional contamination of bottled water
- 2006 – Washington, DC – Foreign Animal Disease
- 2007 – Harrisburg, PA – Intentional contamination of animal feed resulting in human food contamination (primarily early response)
- 2009 – Oklahoma City, OK – Intentional contamination of animal feed resulting in human food contamination (more focused on late response and recovery issues)
- 2009 – Crystal City, VA – Federal follow-on to Oklahoma exercise.
- 2010 and 2011 – Arlington, VA – Intentional contamination at food retail/food service locations in several major cities
- 2013 – Nuclear Reactors, Materials & Waste and Food & Agriculture Cross-Sector Workshop and Tabletop Exercise
- 2015 – Southern Exposure Nuclear Incident – Hartsville, SC – Full Scale
- 2016 – Food/Ag/Vet Response Exercise (FAVRE)
Response to Intentional Adulteration of Food

• Many federal government agencies may be involved – including law enforcement and intelligence community

• Additional stakeholders include:
  – Food industry
  – Public health system
  – Academia
  – State and local food agencies
Conclusions

• Need to prevent, detect, and respond to intentional contamination of the food supply
  – Threat awareness
  – Reduce vulnerability through implementation of mitigation strategies
  – Understand characteristics and tactics of aggressors, including disgruntled employees
  – Strengthen communication between industry and government
  – Everyone eats therefore everyone is a potential target
Conclusions

• Possible to have significant public health consequences, economic impact and psychological damage from an intentional contamination event.

• Food and agriculture are vital to the economies of all countries and the health and well being of everyone.