What is food?
What is food?

NOURISHMENT
Your body needs sustenance

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What is food?

NOURISHMENT
Your body needs sustenance

SOCIAL
Connects friends & family
What is food?

**NOURISHMENT**
Your body needs sustenance

**SOCIAL**
Connects friends & family

**CULTURAL**
Aligns us to customs and beliefs

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FOODPROTECTION.UMN.EDU
DEFINING OUR WORK TO PROVIDE SAFE AND SUFFICIENT CALORIES
FOOD SECURITY

“When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”.

World Health Organization
FOOD SAFETY

SYSTEM RELIABILITY – Reducing Exposure To Natural Hazards/Errors/Failures

• Regular incidents
• Standard processes exist to keep food safe
• Regulation exists
• Globally recognized
Current Foodborne Illness Reality

SOUTHEAST ASIA
150 million cases
175,000 deaths

AFRICA
91 million cases
137,000 deaths

AMERICAS
77 million cases
9,000 deaths

GLOBAL
600 million cases
420,000 deaths

Courtesy of WHO 2015

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FOOD DEFENSE

SYSTEM RESILIENCY – Reducing The Impact Of System Attacks

• Not always called food defense; called tampering
• Do not have standard practices
• Regulation is new
• Not globally recognized
<table>
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<tr>
<th>FOOD SAFETY</th>
<th>FOOD DEFENSE</th>
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<td><strong>System Attack</strong></td>
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<td>Microbial &amp; Chemical Agents</td>
<td>Microbial &amp; Chemical Agents</td>
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<td>Known Agents</td>
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<td>Low levels/ concentration</td>
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<td>Regulatory authority enforcement</td>
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<td>Regulation exists</td>
<td>Recent regulation put in place</td>
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FOOD PROTECTION

FOOD SAFETY VS FOOD DEFENSE

UNINTENTIONAL ADULTERATION INTENTIONAL ADULTERATION
FOOD DEFENSE
Why is it Important?
Everybody eats
Obligatory, can’t opt out
Hard to detect
Hard to track
SIZE & COMPLEXITY
means more opportunities
for vulnerability

INTERCONNECTEDNESS
means consequences
will spread through
the system

Making the System
Impervious is Implausible

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TERRORISM

INTENT
- Terrorize
- Create Fear
- Disrupt Normal Way of Living

ISSUE
- Existing Cells
- Have Considered Before
Islamic State Video Threatened Jihad on France

“Even poison is available, so poison the water and food of at least one of the enemies of Allah. Kill them and spit in their faces and run over them with your cars.” -2015

SABOTAGE

INTENT
Brand Damage, Attack Colleagues, Revenge

ISSUE
Internal Access, Familiar with Processes
Intentional Chicken Adulteration

Gold n’ Plump
Cold Spring, MN
2016

- Employee added sand, dirt and extraneous material from the facility parking lot
- Internal inspections identified contamination
- First consumer recall in GNP Company history- 55,608 lbs. recalled, >$200K in damages
- Charged with felony criminal damage to property
Customer Attack
Ann Arbor, MI
April 2016

• Kyle Bessemer admitted to spraying a mixture of hand sanitizer, water, and mouse poison onto produce at three grocery stores

• Ruled incompetent Jul 2016 and sent for psychiatric treatment

• Ruled competent to stand trial in Feb 2017
Intent to Cause Illnesses/Deaths

- TERRORISM
- PERSONAL DISPUTES

Intent to Cause Economic Consequences

- SABOTAGE
- ECONOMICALLY MOTIVATED ADULTERATION
ECONOMICALLY MOTIVATED ADULTERATION

INTENT
Deliberate adulteration/misrepresentation for economic gain

ISSUE
Designed to be difficult to detect
Methods

Dilution
Partial replacement

Substitution
Complete replacement

Artificial enhancement
Unapproved additives

Mislabeling
Quality, harvesting, processing

Transshipment or origin
masking
Fraudulent geographic origin

Counterfeit
Fraudulent brand-name

Theft and resale
Re-introduction into commerce

Intentional distribution of a
contaminated product
Unintentional contamination

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Olive Color Enhancement

Italy

2016

- 85 tons seized by Italian police
- Previous olive harvests lost color
- Copper sulphate solution stain to mask blemishes, increase intensity and uniformity of color
- 19 people charged with selling food containing banned chemicals.
FOOD DEFENSE

What’s being done?
Food Safety Modernization Act

Preventive Controls
  EMA

Intentional Adulteration
  Food Defense Plan
  Training
Food Defense Systems and Programs

- Hazard and Risk Assessment
- Foreign Supply Verification
- Supply Chain Assessment
- Surveillance
- Rapid Response and Recovery
- Risk Management & Mitigation
- Monitoring, Verification, Corrective Action
- Emergency Response Planning
- Record Keeping
- Training
- Risk Communication
Food Defense Plan

Vulnerability Assessment
• High priority in food defense planning
• Current process flow diagrams
• All facility and production specific points and steps
• Align for both PC and IA rule compliance
Food Safety Plan Impacts

How does the Food Defense Plan affect
Recall Plan?
Emergency and Disaster Recovery Plan?
Food Safety Plan Impacts

How does the Food Defense Plan affect
Recall Plan?
Emergency and Disaster Recovery Plan?

How do you manage the criminal element?
Questions?

Need Training on IA Rule? Connect with us