



## Food Security Workshop

# Awareness

# *Protecting the Food Supply*

## Food Security Awareness in the 21<sup>st</sup> Century

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## Food Security vs. Food Safety

### ◆ Food Security

- protection of food products from intentional adulteration

### ◆ Food Safety

- protection of food products from unintentional contamination



## Why the Food Supply?

Deliberate contamination could have significant consequences:

- Economic
- Public Health
- Psychological & Political



## Potential Impacts

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### ✦ Economic:

- \$1.24 trillion or 13% of GDP
- 2% of jobs relate to agriculture
- \$60 billion in U.S. exports



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## Potential Impacts

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### ✦ Economic affects: Farm-to-Table

- 2.2 million farms located across the U.S.
- More than 57,000 food processors, including 6,500 process meat, poultry, and egg products
- 164 import establishments
- More than 1.2 million retail food facilities nationwide

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## Potential Impacts

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### ◆ Public Health:

- Consequences of Foodborne Disease Incidents from unintentional contamination of the U.S. food supply – CDC reports annually
  - > 76 million illnesses; 325,000 hospitalizations; 5,000 deaths



## Potential Impacts

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### ◆ Psychological and Political



## Lessons Learned

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- ◆ **Foodborne disease outbreaks provide insight into:**
  - Foods more vulnerable to terrorism
  - Points in the production where vulnerabilities exist
  - Public health impact



## Unintentional Incidents

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- ◆ **In 1985 > 16,000 confirmed illnesses; 17 deaths in six states from *Salmonella typhimurium***
- ◆ **Product:** Milk produced at a single dairy plant
- ◆ **Cause:** Recontamination of pasteurized milk



## Unintentional Incidents

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- ◆ In 1994: 150 confirmed illnesses from *Salmonella enteritidis*
- ◆ **Product:** Ice cream produced in a single facility
- ◆ **Cause:** Cross contamination of pasteurized ice cream mix



## Intentional Adulteration

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## Intentional Incidents

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- ◆ In 1984: Oregon cult members added *Salmonella* to restaurant salad bars
- ◆ Intent: Affect outcome of local election
- ◆ Result: 751 illnesses, 45 hospitalized, no fatalities



## Intentional Incidents

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- ◆ In 1996: Contaminated tray of doughnuts and muffins with *Shigella dysenteriae* Type 2
- ◆ Intent: Disgruntled former employee
- ◆ Result: 12 employees suffered severe gastrointestinal illness; 4 hospitalized; no fatalities



## Intentional Incidents

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- ◆ **In 2003: 200 pounds of ground beef contaminated at supermarket with a nicotine-based pesticide**
- ◆ **Intent:** Disgruntled current employee
- ◆ **Result:** 92 individuals reported becoming ill after consuming the ground beef



## Let's Think Globally

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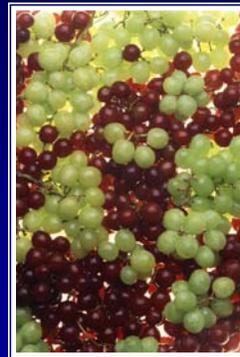
- ◆ **Using threats as a weapon**
- ◆ **Threat of economic or public health impacts**
- ◆ **Threat of tampering**



## Threat Incident

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- ◆ **In 1989: Threat of cyanide contaminated Chilean grapes imported into the U.S.**
- ◆ **Intent:** Economic and political gain by terrorist group
- ◆ **Result:** Incident cost \$200 million in lost revenue



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## What Foods Are Most Vulnerable?

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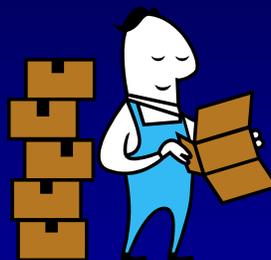
- ◆ **Factors associated with foods more vulnerable to terrorism:**
  - Large batches
  - Uniform mixing
  - Short shelf life
  - Ease of access

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## Other Factors

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- ✦ Large serving size
- ✦ Ease to disguise a contaminant
- ✦ Absence of tamper evident packaging



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## Other Factors (cont.)

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- ✦ Highly desirable targets for emotional impact
- ✦ Country of Origin
- ✦ Ready-to-eat foods



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## Potential Agents

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- ◆ Biological agents
- ◆ Chemical agents
- ◆ Radiological agents
- ◆ Physical agents



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## Attractiveness of Agents

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- ◆ Incubation period
- ◆ Heat sensitivity
- ◆ Potency
- ◆ History of use

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## Attractiveness of Agents (cont.)

- ◆ **Stability in food conditions**
- ◆ **Availability**
- ◆ **Physical form of material**
- ◆ **Traceable**



## Aggressors

- ◆ **Adulteration of products requires aggressor have:**
  - **Desire**
  - **Knowledge of product**
  - **Materials, skills and ability**
  - **Access to sufficient contaminant**



## Types of Aggressors

- ◆ Disgruntled insiders
- ◆ Criminals
- ◆ Protestors
- ◆ Subversives
- ◆ Terrorists



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## Tactics of Aggressors

- ◆ Insider compromise
- ◆ Exterior attack
- ◆ Forced entry
- ◆ Covert entry

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## **Employee Attitudes**

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- ◆ **Apathy**
- ◆ **Too few resources**
- ◆ **Lack of knowledge**
- ◆ **Lack of commitment**



## **Your Responsibilities**

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- ◆ **Awareness**
- ◆ **Decrease vulnerabilities**
- ◆ **Decrease availability of potential contaminants**
- ◆ **Identify possible aggressors**
- ◆ **Encourage employee vigilance**
- ◆ **Communication**



# Any Questions?

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