



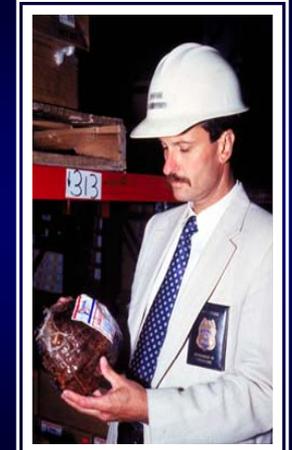
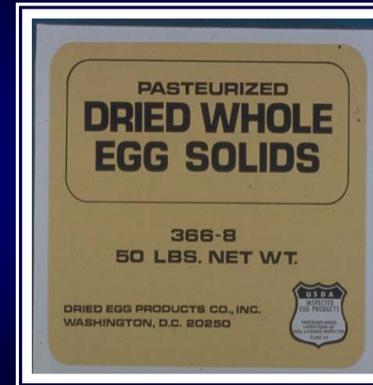
**Food Security Workshop**

**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?

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**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



# 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**

# 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

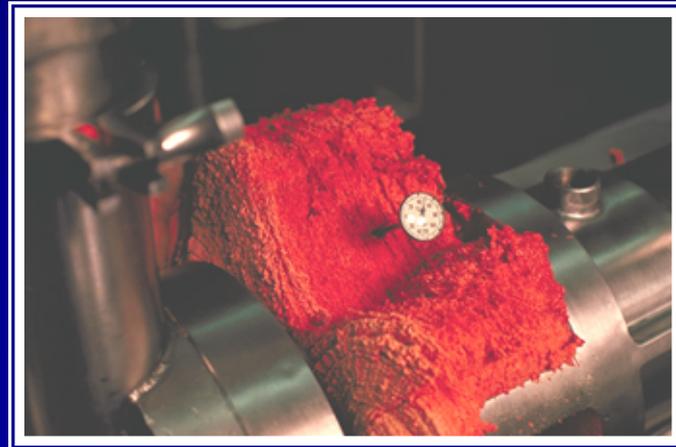
# Unintentional Incidents

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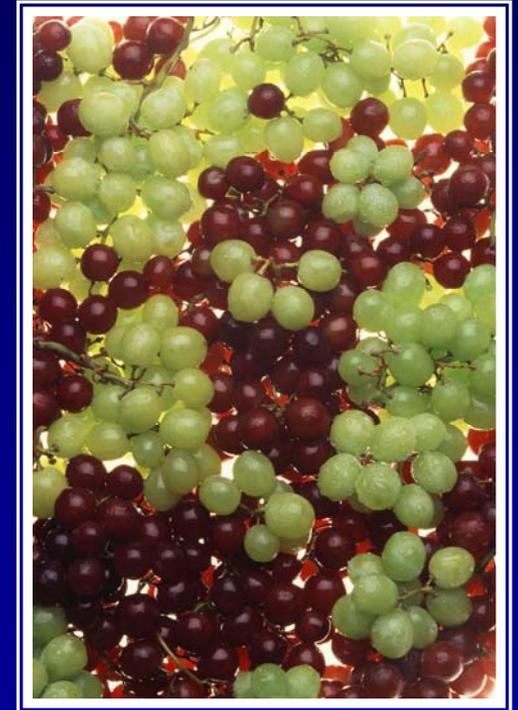
- ✦ **Using threats as a weapon**
- ✦ **Threat of economic or public health impacts**
- ✦ **Threat of tampering**



# 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



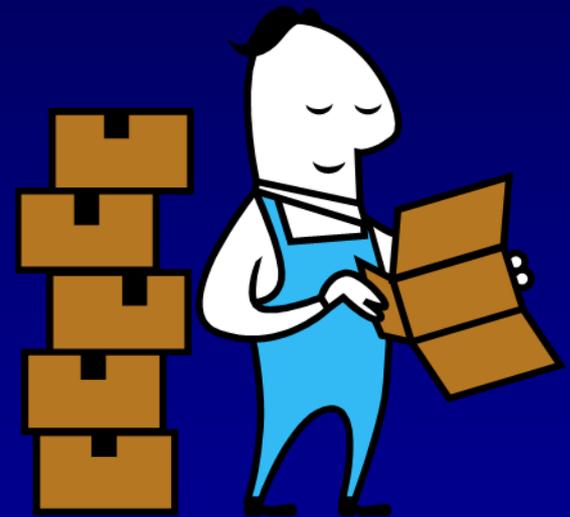
# What Foods Are Most Vulnerable?

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

# Other Factors

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



# Other Factors (cont.)

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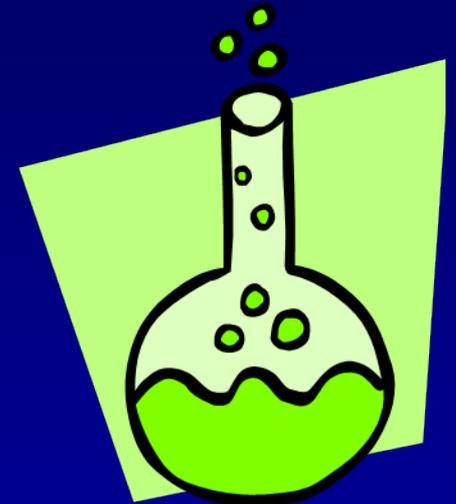
- ◆ **Highly desirable targets for emotional impact**
- ◆ **Country of Origin**
- ◆ **Ready-to-eat foods**



# Potential Agents

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- ✦ **Biological agents**
- ✦ **Chemical agents**
- ✦ **Radiological agents**
- ✦ **Physical agents**



# Attractiveness of Agents

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

# Attractiveness of Agents (cont.)

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

# Aggressors

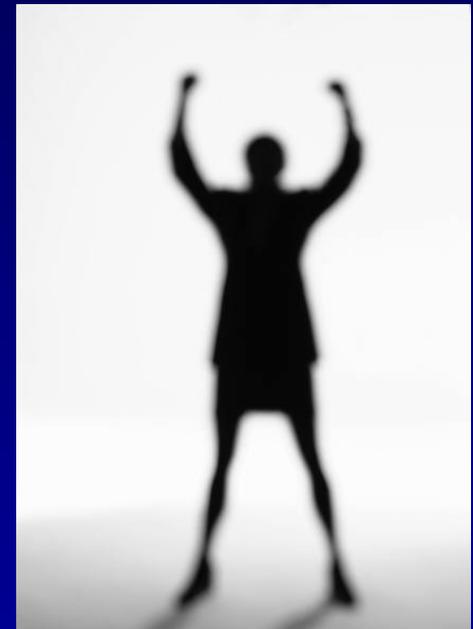
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- ✦ **Adulteration of products requires aggressor have:**
  - Desire
  - Knowledge of product
  - Materials, skills and ability
  - Access to sufficient contaminant

# Types of Aggressors

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



# Tactics of Aggressors

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

# 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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