Employee Food Safety and Sanitation Training
Dangers in Context

Are these the US’s Most Dangerous Foods?
A new study in the US has compiled a list of the 10 “riskiest” foods. The list, regulated by the Food and Drug Administration (FDA) and released by the Center for Science in the Public Interest (CSPI), has raised significant issues for food producers across the globe.

**Berries**
25 outbreaks, 3,397 cases of illness
The main outbreaks of illness from berries in the US have been caused by contamination at the country of origin, most notably in 1997 when 2.9m pounds of strawberries were contaminated with Hepatitis A.

**Sprouts**
31 outbreaks, 2,022 cases of illness
Raw or undercooked sprouts have been recognized as a source of foodborne illness for over a decade, with the main cause of contamination occurring in the seeds.

**Tobacco**
31 outbreaks, 3,292 cases of illness
Salmonella can enter tobacco plants through numerous avenues and once inside it is difficult to remove without cooking the tomato.

**Ice Cream**
74 outbreaks, 2,594 cases of illness
Almost half of ice cream outbreaks occurred in the home where it is likely that undercooked eggs were used during the making process.

**Cheese**
83 outbreaks, 2,761 cases of illness
Cheese can often become contaminated during the early stage of production, with salmonella being the most common illness contracted.

**Leafy Greens**
363 outbreaks, 13,568 cases of illness
Leafy greens account for 24% of all outbreaks in the FDA top 10 with contamination occurring potentially anywhere the food item is consumed.

**Eggs**
352 outbreaks, 11,163 cases of illness
Eggs are responsible for high numbers of people contracting salmonella, with the majority of outbreaks occurring in restaurants.

**Tuna**
268 outbreaks, 2,341 cases of illness
Scombroid was the most common cause of illness linked with tuna, where the fish was likely not preserved or refrigerated adequately.

**Oysters**
132 outbreaks, 3,409 cases of illness
Illness caused by oysters can often be attributed to the gathering of oysters from waters contaminated with Norovirus, which can cause gastroenteritis.

**Potatoes**
108 outbreaks, 3,659 cases of illness
Illness from potatoes is often caused when they are included in potato salad where other ingredients can contaminate them with their pathogens.

Together these 10 foods account for 40% of all foodborne outbreaks linked to FDA regulated foods since 1990.

Source: The 10 Riskiest Foods Regulated by the US FDA - Report
Why Is Sanitation Important?

- Essential to programs such as HACCP, ServSafe®
- Most cases of foodborne illness are associated with sanitation problems.
- The complete sanitation process will reduce bacteria and viruses that cause foodborne illness.
- Ensures quality and consistency of food products.
- Controls cross-contamination.
Results of Poor Sanitation

- Reduced shelf life
- Poor quality product
- Customer illnesses or death
- Medical claims, lawsuits
- Loss of job
- Food recalls
- Fines or other regulatory action
- Bad publicity
- Loss of customers and business

- It is estimated that there are 76 million cases of foodborne illnesses in the US every year, causing more than 325,000 hospitalizations and 5,000 deaths

Murray’s Cheese © 2014
Allergens

- **Big 8 Allergens**: Dairy, Eggs, Soy, Wheat, Fish, Shellfish, Tree Nuts, Peanuts cause 90% of all allergic reactions
- Care must be taken to prevent cross-contamination between allergens containing products and other products
Biofilms

- A hidden sanitation hazard
- Thin, not visible layer of food and bacteria that builds up on a surface
- Are a result of poor cleaning procedures
- Prevent cleaners and sanitizers from effectively reaching all surfaces
Common Pathogens

- *Listeria monocytogenes*
- Salmonella
- E. Coli, Shiga Toxin producing
- *Staphylococcus aureus*
- Campylobacter
Foodborne Illness Risk Factors

1. Improper Holding
2. Poor Personal Hygiene
3. Inadequate Cooking
4. Contaminated Equipment
5. Food from Unsafe Sources

Key Interventions

1. Demonstration of Knowledge
2. Employee Health
3. Time/Temperature
4. Hands a vehicle of contamination
5. Consumer Advisory
Cleaning vs. Sanitizing

- **Cleaning**: process that removes visible dirt and prevents accumulation of food residues by using detergent/degreaser and water

- **Sanitizing**: process that reduces disease-causing organisms to safe levels
What is Good Sanitation?

- Process of creating conditions that promote safe handling of food
- Covers many aspects of an operation
  - Employee practices, maintenance of the facilities, cleaning procedures, storage, etc.
- Divided into 2 components:
  - Good Retail Practices/Good Manufacturing Practices
  - Sanitation Standard Operating Procedures
Good Retail Practices (GRPs)/
Good Manufacturing Practices (GMPs)

- Basic requirements to ensure production of wholesome food including employee practices, buildings/facilities, equipment/utensils, and production/process controls.
- Protect against product adulteration
- Ensure products have been prepared, packaged, and held under sanitary conditions so they do not become contaminated.
Pre-Requisite Programs

- Good Manufacturing Procedures (GMPs)/Good Retail Practices (GRPs)
  - Employee practices
  - Buildings and facilities
  - Equipment and utensils
  - Production and Process controls
Good Retail Practices of Importance

• Food contact surfaces sanitized prior to use and every 4 hours after that
• Allergen containing products get special care
  • Nuts packed in a separate location using new gloves and different uniform
• No jewelry is to be worn in the Caves, No hand jewelry is to be worn behind the counter
• Chemical Safety
  • DO NOT MIX CHEMICALS
Sanitation Standard Operating Procedures (SSOPs)

- The specific steps taken to perform sanitation tasks including the details of your sanitation procedures and frequency.
- Help ensure good sanitation results
- Assist with consistency
- Make training easier
- Assist with quality
SSOP’s

- Sanitation Standard Operating Procedures (SSOPs)
  - Quality and Consistency
  - Sanitation Tasks
  - Cleaning and sanitizing is a 5-steps process:
    1. Pre-cleaning
    2. Washing
    3. Rinsing
    4. Sanitizing
    5. Air Drying
Examples of SSOPs

- First-in First-out Rotation
- Uniform Laundering
- Hand Washing & Sanitizing
- Bare Hand Contact
- Cheese Cutting & Wrapping (retail)
- Slicing Cured Meats
- Packaging Allergen Containing Products
- Consumer Complaint Logs
- Storage of Chemicals
- Employee Health
- Counter Sanitation Program
- Retail Scales & Slicers Sanitation Program
- Receiving & Unpacking Product Protocol
- Facilities Cleaning Protocol
What is HACCP?

- Hazard Analysis and Critical Control Points
- Assessment of food safety through analysis and control of biological, chemical, and physical hazards
- **Prevention** of hazards rather than reaction to problems
- Focuses only on health safety issues, not quality
First-In-First-Out

- Way of controlling inventory items that have expiration dates so no product is left to waste
- Oldest product towards front of rotation (pulled first)
- Newest product towards back of rotation (pulled last)
- Products can be moved to front of rotation as dictated by manager if they are in danger of perishing
How degreaser works

- Soap is an emulsifier
- Oil/grease (nonpolar compounds) are insoluble in water
- Nonpolar “tails” break up oil/grease molecules
- Oil/grease is caught inside the micelle and is rinsed away
How sanitizer works

- Quat-based sanitizers carry a positive charge
- Bacteria, viruses and fungi carry a negative charge
- When applied, the charge distribution of the microbial cell changes from negative to positive
- Disruption of microbe cell wall leads to death
## Using Cleaning Agents

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>CONCENTRATION</th>
<th>CONTACT TIME</th>
<th>ADVANTAGE</th>
<th>DISADVANTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>50 ppm in water between 75 and 100°F</td>
<td>7 seconds</td>
<td>Effective on a wide variety of bacteria; highly effective; not affected by hard water; generally inexpensive</td>
<td>Corrosive, irritating to the skin, effectiveness decreases with increasing pH of solution; deteriorates during storage and when exposed to light; dissipates rapidly; loses activity in the presence of organic matter</td>
</tr>
<tr>
<td>Iodine</td>
<td>12.5-25 ppm in water that is at least 75°F</td>
<td>30 seconds</td>
<td>Forms brown color that indicates strength; not affected by hard water; less irritating to the skin than is chlorine; and activity not lost rapidly in the presence of organic matter</td>
<td>Effectiveness decreases greatly with an increase in pH (most active at pH 3.0; very low acting at pH 7.0); should not be used in water that is at 120°F or hotter; and might discolor equipment and surfaces.</td>
</tr>
<tr>
<td>Quaternary Ammonium Compounds</td>
<td>U to 200 ppm in water that is at least 75°F</td>
<td>30 seconds to several minutes</td>
<td>Nontoxic, odorless, colorless, noncorrosive, nonirritating; stable to heat and relatively stable in the presence of organic matter; active over a wide pH range</td>
<td>Slow destruction of some microorganisms; not compatible with some detergents and hard water</td>
</tr>
<tr>
<td>Acid Sanitizer</td>
<td>1 oz in 10 gallons</td>
<td>2 minutes</td>
<td>Effective in presence of organic matter. Leaves surface in an acid state, thus residual sanitizing effect.</td>
<td>Expensive, moderately corrosive (metal)</td>
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Importance of Monitoring

- Critical in identifying sanitation failures
- Provides documentation for verification
- Employees responsible for monitoring must be properly trained so that they fully understand the purpose and importance of monitoring, and be accurate and unbiased when taking measurements.
- If monitoring indicates that there is a trend toward loss of control, then action can be taken to bring the process into control before a deviation from a critical limit occurs.