

Foodborne Illness Overview and Food Safety Risks



Presented by:
Suzanne Driessen
driessen@umn.edu

University of Minnesota Extension Food Safety Educator
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FDA Training Committee Found...

“80% of all foodborne illnesses can be traced to a procedural problem due to the action of employees who either did not know or understand the value of using designated procedures to keep food from becoming contaminated.”

Source: Employee Education. Rhode Island Food Safety Education, Cooperative Extension.

Food Safety Employee Training for Aquaponic Farms

- Foodborne Illness Overview
- Contaminants and Risk Factors
- Preventive Control Measures
 1. Employee Health & Hygiene
 2. Prevent Cross-contamination
 3. Cleaning and Sanitizing



Today's Agenda & Objectives



Foodborne Illness Overview

- Define foodborne illness
- Name 2 most common symptoms of foodborne illness
- List customers at greater risk

Leading Risk Factors

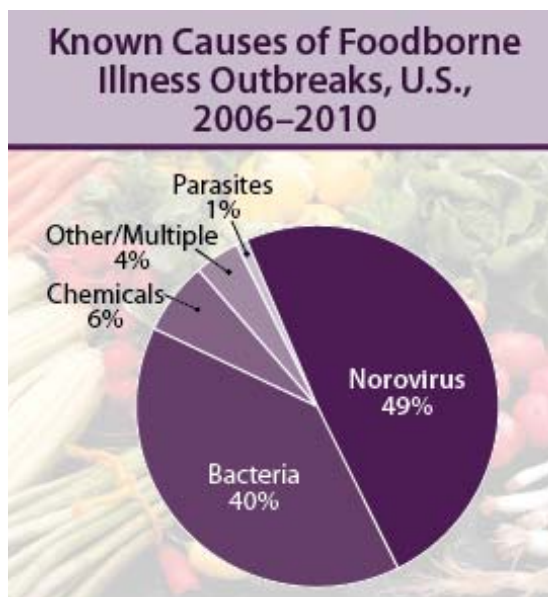
- Recognize risk factors that lead to foodborne illness

Prevention Matters

- Describe 3 benefits of safe food

What is Foodborne Illness? (Food Poisoning)

- **Illness caused by consuming food or beverage that contained a contaminant**
 - Chemical = ex: cleaners, lubricants, nail polish
 - Physical = ex: foreign objects - hair, insects, pens, metal fragments, fish bones
 - Biological = ex: virus, bacteria, parasites, fish toxins, fungi



Source: Centers for Disease Control, December 10, 2012
<http://www.cdc.gov/features/dsnorovirus/figure1.html>

Name That Contaminant Matching Quiz

Match the type of contaminant to the correct description.

- | | | |
|-------|---|-------------------|
| _____ | Glass, wood chips, stones, plastic, shells, pits, insect, dirt, hair | Physical |
| _____ | Bacteria, viruses, parasites, yeast, mold | Chemical |
| _____ | Herbicides, pesticides, fertilizers, antibiotics, hormones, lubricants, paint, cleaners, sanitizers | Biological |

Foodborne Illness in the U.S.



- 128,000 hospitalizations or 350/day
- 3,000 deaths or 8 per day
- 2-3% = long-term illnesses
 - *Shigella*, *Salmonella* can cause chronic arthritis
 - *Listeria* can cause brain and nerve damage

Source: Stueven, H. Food Safety Edigest, 1/21/14

Foodborne Illness In Minnesota



Statistics:

- 1999-2011: 656 outbreaks
- 3 deaths in MN in 2009

Most don't get reported!
For every reported case of *Salmonella* there are 30 unreported cases



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What are the TWO Most Common Symptoms of Foodborne Illness?

- Diarrhea
- Vomiting
- It's not the stomach 'flu'
- Symptoms appear ½ hour to 6 weeks after eating unsafe food
- Symptoms last 1-7 days
- Minnesota Foodborne Illness Hotline
 - 1-877- FOOD ILL

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Who Are Your Customers?

- 20% of U.S. population at risk for serious illnesses



- Diabetics:
 - *Salmonella* (3x more likely to be affected)
 - *Listeria* (25x more likely to be affected)

Source: University of California, Food Safety for Volunteers

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Higher Risk Populations Should Not Eat:

- Raw (unpasteurized) milk or milk products
- Raw or partially cooked eggs and foods containing raw eggs
- Raw and undercooked meat, poultry, fish, shellfish

- Unpasteurized juices

- Raw sprouts



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Why do Foodborne Illnesses Occur? What are the Contributing Factors?

1. Ill food workers
 - 1 out of 3 outbreaks linked to infected food handler
2. Poor personal hygiene
3. Time and temperature abuse
 - Foods not heated to a safe temperature or kept at a safe temperature
4. Contaminated raw product
 - Pathogens on food or added during handling
 - Can't see them
 - Food doesn't smell or taste bad
5. Using contaminated equipment
 - Poor cleaning and sanitizing

Food contamination: How does it happen?



Extension prevents food contamination by teaching producers, food processors and food service workers how to harvest, store, process and prepare food safely.

Who Am I?

- I'm found in human hair, nose, throat, sores and cuts.
- I transfer to food by unwashed hands.
- I produce toxins not killed by heat.
- Cover cuts and wear gloves to prevent me.

- A. *Salmonella*
- B. *Staphylococcus aureus*
- C. *Bacillus cereus*
- D. *Listeria*

Safe Food Handling Practices To Prevent *Staphylococcus Aureus*

- Good personal hygiene
- Daily inspection of hands/arms for cuts
- Cover cuts
- Don't pick your nose
- Limit jewelry on hands
- Hair restraint
- Barriers to avoid bare hand contact



Who Am I?

- I cause yellowing of skin called jaundice.
- It may take weeks for my symptoms to appear.
- I spread to food by infected food handlers.
- I tolerate heat but do die at boiling temps.

- A. *E.Coli 0157:H7*
- B. *Clostridium perfringens*
- C. *Hepatitis A*
- D. *Bacillus cereus*

Safe Food Handling Practices To Prevent *Hepatitis A*

- Hand washing
- Barriers to avoid bare hand contact
- Don't work with jaundice and/or diagnosis
- Vaccinations

Who Am I?

- People I infect become contagious within 12 to 48 hours of ingesting me.
- Diarrhea and vomiting are my main symptoms.
- Infected food handlers transfer me to food via bare hand contact with ready-to-eat food.
- I can contaminate shellfish if I'm in the water.

- A. *Giardia*
- B. *Mold*
- C. *Norovirus*
- D. *Listeria*

Norovirus

- Low infectious dose
- Very contagious--oral/fecal route and airborne
- Incubation period 12-48 hours
- Rapid onset vomiting and watery, non-bloody diarrhea w/ abdominal cramps
- Symptoms last 24-60 hours

Source: Norovirus in Healthcare Facilities Fact Sheet, Centers for Disease Control

What Is The Top Contributing Factor Of A Norovirus Foodborne Illness Outbreak?

1. Ill food workers
2. Time and temperature abuse
3. Contaminated raw product
4. Cross-contamination

Don't Let What Happened to Me, Happen to You



My name is David. One day, while at work, I started feeling sick and ran for the bathroom.



I felt better, so I returned to finish my shift. I needed the money. An order came in for a salad. I forgot to wash my hands or wear gloves.



I did not know I had germs on my hands. I passed my germs to the tomatoes ...



... and to the cucumbers ...



... and to the entire salad ...



... and to a little girl named Ashlynn who ate the salad that I prepared.



The next day, Ashlynn got so sick with stomach cramps and vomiting. In fact, dozens of people got sick because I continued to prepare food that day.



I could have prevented this from happening.

Protect People Everywhere: Wash Your Hands, Use Gloves or Utensils, and Never Work When You Are Sick.



Prevention Matters

Commitment to food safety:

- Protects public health
- Protects your business
- Prevents expensive problems
- Improves quality



Summary

Foodborne illness:

- Happens more often than reported
- Can cause long-term effects
- Most are preventable!
- Most caused by human error
- Ill or infected food workers responsible in 1 out of 3 outbreaks
- You can protect public health and prevent foodborne illness

THANK YOU

Contact Info:

Suzanne Driessen

driessen@umn.edu

(320) 203-6057

University of Minnesota

Extension Educator, Food Safety

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