Food Safety: PEM & Beyond

Staci Richardson
Food Safety Team Leader, Schreiber Foods Inc
Agenda

• Schreiber Foods Overview
• Food Safety Overview
• Pathogen Environmental Monitoring (PEM)
• HACCP & Quality Management Systems (QMS)
Schreiber Foods History

Founded in 1945 as a Processed Cheese company

Since added:

- Natural Cheese
- Cream Cheese
- Yogurt
Food Safety Overview

2011 CDC Annual Estimates on Foodborne Illness

- 1 in 6 Americans affected
- 48 Million get sick
- 128,000 hospitalized
- 3,000 deaths

Food Safety Overview

2011 CDC Annual Estimates on Foodborne Illness

• Over 1,000,000 Americans become ill with foodborne *Salmonella* each year
• Listeriosis has a mortality rate >18%
• *E. coli* (STEC) O157:H7 puts over 2000 Americans in the hospital each year, leaving some of them on long term dialysis from hemolytic uremic syndrome
Food Safety Overview

1. Separate Raw From RTE
2. GMP’s Followed
3. Controlled Floor Conditions
4. Sanitary Design Equipment and Building
5. Effective Sanitation Procedures and Controls
6. Environmental Monitoring

= Pathogen Control
Pathogen Environmental Monitoring (PEM) Program

- Targets pathogens of concern
- Actively detects presence of pathogens
- Based on history, experience, science
- Responsibilities clearly defined
- Training given to PEM performers
Pathogen Environmental Monitoring (PEM) Program

- Special events are monitored
- Plant conditions are considered
- Samples collected at least weekly
- Routine & random sites
- Static & rotating sites
- Maps and zones drive site selection
- Data is trended
Perform more environmental tests here.

Zone 4
Remote:
e.g. doorways, walls, drains (non-processing)

Zone 3
Non-Food Contact:
e.g. table legs, floors, drains (processing)

Zone 2
Non-Food Contact:
e.g. equipment panels, aprons

Zone 1
Food Contact
e.g. utensils, conveyors, people
(Hands, feet, things on walls could come in contact with zone1)

To prevent food contamination here.
Corrective Action:

• Required for all positive pathogen findings

• Immediate actions to correct an issue
  • i.e. cleaning & sanitizing
  • i.e. re-route traffic

• Secondary actions to prevent recurrence
  • i.e. re-grout between tiles
  • i.e. procedure change
Corrective Actions:

- Must be effective
- Documented
- Activities in the area are considered
- Zone can influence urgency
Pathogen Environmental Monitoring

Corrective Action:

- Includes re-swabbing of positive site(s)
  - At least 3 consecutive negatives

- Includes investigation
  - Vectoring
  - Potential causes
  - Nearby sites in all directions
  - Transient and stationary items
Corrective Action:

• Repeat positives are caused by:
  • Ineffective immediate actions
  • Inadequate preventative actions
  • Inaccurate root cause

• Corrective actions must be progressively more aggressive

• Aggressive, patterned swabbing continues
Microbiological Profile:

- History of plant over time
- Usually 24 months
- Accounts for changing seasons, vacations, production volume swings, etc.
- Includes yearly validation by someone outside the facility (i.e. corporate)
Pathogen Environmental Monitoring

Microbiological Profile:

• Provides relevant history & experience
• Basis for future PEM modifications
• Re-starts with game-changers
  • Major environmental contamination
  • Major plant expansions
  • Major degradation of equipment or infrastructure
  • Drastic production changes (i.e. volume increase)
Pathogens in the RTE Environment

- All types of Drains
- Hollow rollers on conveyors
- On-off valves and switches
- Worn or cracked seals around doors
- Vacuum/air pressure pumps, lines, hoses, filters
- Air filters
- Floors
- Ceilings and overhead pipes, rails, trolleys
- Roller guards
- Pallets
Pathogens in the RTE Environment

- Door handles
- Boots
- Trolley and forklifts
- Trash cans & trash carts
- Rusting or hollow framework
- Walls that are cracked, pitted, or covered with inadequately sealed panels
- Maintenance and cleaning tools
- Space between close fitting metal to metal and metal to plastic parts
Pathogens in the RTE Environment

- Listeria
  - Condensate from refrigeration units
  - Standing water
  - Chiller passageway, walls, doors, and shelving
  - Ice makers
  - Saturated insulation (wet or moldy)

- Salmonella
  - Dried product build-up
  - Ledges
  - Corners
  - Roof leaks
  - Near exterior doors
HACCP & QMS

- HACCP
  - Current
  - Validated
  - FSMA compliant
- Quality Management Systems (QMS)
  - GFSI or others
  - Internal auditing
Dairy Industry Pathogen Control Workshops

www.usdairy.com/foodsafety

• Click on Pathogen Control
• 4-6 workshops are offered each year
• Remaining 2013 workshops:
  • Portland, July 17-18
  • Denver, Aug 6-7
  • Chicago, Nov 5-6
Questions