Controlling *Listeria monocytogenes* (*Lm*) in Retail Delicatessens

Larry Hortert, SE Regional Director

Compliance and Investigations Division
Office of Investigation, Enforcement and Audit
Food Safety Inspection Service
United States Department of Agriculture
What is *Lm*?

- Bacterium found in moist environments, soil, and decaying vegetation

- Transfer of the bacteria is a particular hazard of concern in ready-to-eat (RTE) foods
Listeriosis

- Serious infection caused by eating food contaminated with the bacterium *Lm*

- Rare, but high fatality rate (16% compared to 0.5% for *Salmonella* or *E. coli* O157:H7)

- Affects older adults, pregnant women, newborns, and adults with weakened immune systems

http://www.cdc.gov/listeria/statistics.html
Listeriosis

- Symptoms: Fever, muscle aches, fatigue,

- Estimated 1,600 illnesses, 1,500 hospitalizations, and 260 deaths in the United States each year

http://www.cdc.gov/listeria/statistics.html
Regulation of Meat and Poultry Products at Retail

• Food Safety Inspection Service (FSIS) shares jurisdiction at retail

• The Federal Meat Inspection Act (FMIA) and Poultry Products Inspection Act (PPIA)

• FDA makes recommendations regarding retail practices through the FDA Food Code
The Interagency Retail *Lm* Risk Assessment

No single action or practice will control *Lm* contamination of retail foods.
Key Findings from The Interagency Retail *Lm* Risk Assessment

1. Storage Temperature
2. Growth Inhibitors
3. Control Cross-Contamination
4. Control Contamination at its Source
5. Continue Sanitation
1. Storage Temperature

• If all refrigerated RTE foods are stored at 41°F (5°C) or below, approximately 9% of predicted Lm cases could be prevented
2. Growth Inhibitors

If all deli products that support \textit{Lm} growth were reformulated to include \textbf{growth inhibitors}, could prevent \textbf{96\%} of predicted listeriosis cases.
3. Control Cross-Contamination

• Eliminating all points of cross-contamination would decrease the predicted risk of listeriosis by approximately 34%
4. Control Contamination at its Source

• **Elimination** of environmental niches in the deli area will **reduce** the predicted risk of listeriosis in the retail deli
5. Continue Sanitation

- Sanitation practices that eliminate *Lm* from food contact surfaces result in a reduction in the predicted risk of illness
Key Findings from The Interagency Retail Lm Risk Assessment

1. Storage Temperature – 41°F (5°C) or below – 9%
2. Growth Inhibitors – 96%
3. Control Cross-Contamination – 34%
4. Control Contamination at its Source – decrease
5. Continue Sanitation – gloves – 5%
Product Handling
Product Handling

• Use products formulated with antimicrobial agents to eliminate or prevent the growth of \textit{Lm}.

• Use products that have been treated to reduce pathogens.

• Monitor the shelf life of RTE products.

• Do not pre-slice products.
Product Handling

• Remove products that are likely to be considered adulterated

• Promptly return RTE products to refrigeration

• Maintain refrigeration units at or below 41°F

• Store and handle RTE and raw products separately
Cleaning and Sanitizing
Cleaning and Sanitizing

- Eliminate insanitary conditions
- Develop written sanitation procedures
- Document daily sanitation actions
- Clean and sanitize frequently
Cleaning and Sanitizing

• Clean and sanitize items routinely handled
• Disassemble equipment to clean and sanitize
• Follow the manufacturer’s recommendations for sanitizer strength and application
• Change sanitizers to provide bacterial control
Cleaning and Sanitizing

• Develop a procedure to sanitize cleaning aids
• Use low water pressure
• Use separate sinks
• Eliminate or remove unnecessary items
Facility and Equipment Controls
Facility and Equipment Controls

• Monitor conditions that could cause adulteration
• No construction when exposed RTE product is present
• Assure food contact surfaces are easily cleanable
• Keep water from pooling
• Keep overhead structures clean
Employee Practices
Employee Practices

• Ensure that employees wear gloves
• Train employees in sanitation practices
• Provide adequate facilities for hand washing
• Ensure ill employees do not work with open food items
• Limit traffic in the deli area
• Ensure employees change clothing when soiled
Resources


• FSIS *Listeria* Guideline

• Penn State Control of *Listeria monocytogenes* in Retail Establishments
  http://pubs.cas.psu.edu/freepubs/pdfs/uk137.pdf

• FMI *Listeria* Action Plan for Retail Delis
Questions?

Contact Info
Larry Hortert, SER Director
Compliance and Investigations Division
larry.hortert@fsis.usda.gov