



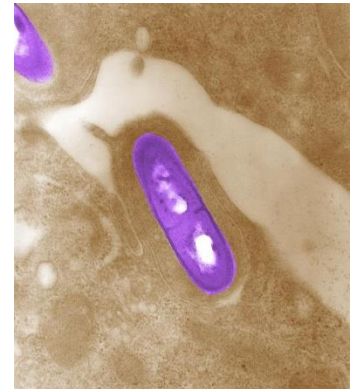
Controlling *Listeria monocytogenes* (*Lm*) in Retail Delicatessens

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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

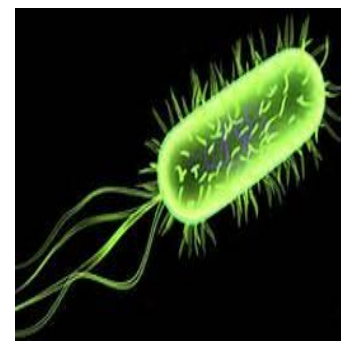
<http://www.cdc.gov/listeria/statistics.html>

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 *Lm* growth were reformulated to include **growth inhibitors**, could prevent **96%** of predicted listeriosis cases

3. Control Cross-Contamination

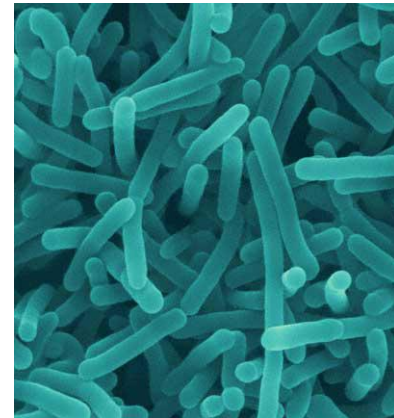
- Eliminating **all points** of cross-contamination would decrease the predicted risk of listeriosis by approximately **34%**

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

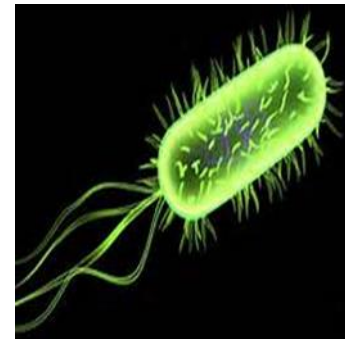
- Use products formulated with antimicrobial agents to eliminate or prevent the growth of *Lm*
- Use products that have been treated to reduce pathogens
- Monitor the shelf life of RTE products
- Do not pre-slice products

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

- FDA Flyer: Keep Commercial Deli Slicers Safe,
<http://www.fda.gov/downloads/Food/GuidanceRegulation/UCM240674.pdf>
- FSIS *Listeria* Guideline
http://www.fsis.usda.gov/PDFwps/wcm/connect/d3373299-50e6-47d6-a577-e74a1e549fde/Controlling_LM_RTE_guideline_0912.pdf?MOD=AJPERES
- 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
<http://www.fmi.org/docs/food-safety-best-practice-guides/listeria-action-plan-for-retail-delis.pdf?sfvrsn=9>

Questions?

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