Division Updates Including Environmental Sampling Program and Reportable Food Registry

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2010 DFID Updates

1) We have initiated strategic planning sessions to guide our division into the future. This to improve DFID’s ability to fulfill their part of MDAs mission of ensuring the integrity of the food supply in MN.

2) Along with MDH, we are moving forward on adoption of new rules to update Minnesota Food Code to be more reflective of FDAs 2009 Retail Food Code.

3) Our Rapid Response Team (DFID and FDA) continues to make progress with applying the Incident Command Systems (ICS) during joint investigations at food manufacturing facilities.

4) We are wrapping up a Listeria investigation in a Minnesota manufacturing firm; Listeria was found in samples of cheese food, spreads and peanut butter, in addition to multiple environmental samples, resulting in a recall.

5) DFID Inspectors are conducting FDA contract manufacturing inspections and facility environmental sampling in MN firms. Sampling is for Listeria and/or Salmonella.
Why do Environmental Sampling?

- *Salmonella* and *Listeria* continue to be a problem in processed foods
- Some in the food industry lack the skills or knowledge to a) properly control pathogenic bacteria or b) test/monitor for them
- PulseNet is identifying more outbreaks than ever before and environmental sampling is our most effective investigative tool
- We can apply scientific principles to determine bacterial contamination in food facilities
Hunting for *Salmonella* and *Listeria*: KSA’s

- Environmental sampling for these bacteria is really “hunting” with a sponge or swab
  - You must know where they like to live and breed
  - You need the right tools
  - You need the time to make a thorough search
  - A positive result is meaningful, a negative result is only meaningful if you made a thorough search
  - If you don’t like looking for these bacteria, you won’t be good at it
Microbial Ecology of Salmonella

• Found globally in soil, water, feces, mammals, reptiles and birds, wide distribution.
• Tolerates dehydration and becomes very heat resistant in a low moisture environment.
• Wet-dry cycles give it a competitive advantage.
• A threat to food processing plants that process in a predominantly dry environment (chocolate, spray-dried milk and cheese, powdered infant formula, peanut butter, tree nut processing, soy powder, etc.)
• An occupier of dry environments that occasionally get wet.
How Salmonella Becomes a Problem

Outside Environment

Growth Niche

Wet – Dry Cycle

Multiplication And Spread

Food & Food Contact Surfaces

Food & Food Contact Surfaces
When do I Look for *Salmonella*?

- There is **no correlation** between the hygienic appearance of a food facility and the probability of finding *Salmonella* in the facility’s environment!
  - Very clean and well-maintained plants can have a *Salmonella* problem
  - Very dirty facilities can be free of *Salmonella*

- How well a firm implements a *Salmonella* control program is a better predictor of a problem than appearances!
Average weekly number of *Salmonella* clusters under investigation, CDC, 2008-2009

Number of clusters

Courtesy David Warnock, CDC
Where Do I Look for *Listeria*?

- Nooks and crannies on conveyor belts
- Floor drains and cracks in the floor if damp
- Hollow-bodies, reciprocating or rotating joints, in areas with grease and food residue combined
- On machinery above areas where food is exposed
- “In” any piece of equipment that is difficult to clean or hard to access
- Air-line outlets, particularly if water is in the line
Salmonella and Listeria Control GMPs

- Creation of “hygiene” zones
- Limiting traffic of people and equipment between hygiene zones
- Control of air pressure between zones
- Designed and maintained to avoid “niche” environments
- Plant-issued and maintained footwear and uniforms or smocks (foot baths are recognized as an effective tool in facilities)
- Cleaning, sanitizing and monitoring programs tailored to the pathogen of concern
“Zoning” the Facility: Examples

• **Zone 1** – Food production area. Direct food contact surfaces such as slicers, mixers, conveyors, utensils, racks, work tables, etc.

• **Zone 2** – Areas adjacent to food contact surfaces (zone 1). All non-food contact surfaces in the processing area such as exteriors of equipment, framework, food carts, equipment housing, gears, ventilation and air handling equipment, and floors.

• **Zone 3** – Corridors and doorways leading into food production areas, areas in large production rooms that are further from food handling equipment than zone 2, walls, phones, and forklifts.

• **Zone 4** – Employee locker rooms not immediately adjacent to food production areas, dry goods storage warehouse, finished products warehouse, cafeterias, hallways and loading dock areas.
DFID Sampling Team

1) Sampler #1
2) Sampler #2
3) Recorder
4) Photographer
Swabbing Zone 1 – food contact surface
Sponging Zone 2 – Nonfood contact surface
Sponging Zone 3 – Nonfood contact surface
<table>
<thead>
<tr>
<th>Sample #</th>
<th>Description (area swabbed, etc)</th>
<th>Code:</th>
<th>FCS (Y/N)</th>
<th>Photo Y/N</th>
<th>Photo #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control - sponge</td>
<td></td>
<td>N</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>Control - broth</td>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Control - swab</td>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Control - gloves</td>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Roaster 1 - Infeed Hopper (Side)</td>
<td></td>
<td>N</td>
<td>Y</td>
<td>122-2298</td>
</tr>
<tr>
<td>6</td>
<td>Roaster 1 - Bottom of Infeed Hopper</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>122-2299</td>
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<tr>
<td>7</td>
<td>Roaster 1 - Inside Infeed Hopper (North hopper seams)</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>122-2303</td>
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<tr>
<td>8</td>
<td>Roaster 1 - Inside Infeed Hopper (South hopper seams)</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>122-2304</td>
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<tr>
<td>9</td>
<td>Roaster 1 - Ledge along South Side</td>
<td></td>
<td>N</td>
<td>Y</td>
<td>122-2306</td>
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<tr>
<td>10</td>
<td>Hand Scraper on top of Roaster 1</td>
<td></td>
<td>N</td>
<td>Y</td>
<td>122-2308</td>
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<td>11</td>
<td>Rubber gloves on top of Roaster 1</td>
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<td>N</td>
<td>Y</td>
<td>122-2309</td>
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Reportable Food Registry

The congressionally-identified purpose of the Reportable Food Registry is to provide a "reliable mechanism to track patterns of adulteration in food [which] would support efforts by the Food and Drug Administration to target limited inspection resources to protect the public health" (Pub. L. 110-085, section 1005(a)(4)).
Reportable Food Registry for Industry

For Industry:
Submit a Report

For Consumers:
Contact FDA

- About the Reportable Food Registry
- Who Should Use the Reportable Food Registry?
- Where Should Consumers, Food Retailers and Food Service Operators Report a Problem with Food?
- More Information

About the Reportable Food Registry

The Reportable Food Registry (RFR or the Registry) is an electronic portal for Industry to report when there is reasonable probability that an article of food will cause serious adverse health consequences. The Registry helps the FDA better protect public health by tracking patterns and targeting inspections. The Food and Drug Administration Amendments Act of 2007 (Pub. L.110-085), section 1005 directs the FDA to establish a Reportable Food Registry for Industry.

The RFR applies to all FDA-regulated categories of food and feed, except dietary supplements and infant formula.

Who Should Use the Reportable Food Registry?
Sampling Result Question?

I received a positive microbiological test result indicating the presence of a pathogen in food. Based on this test result, the food would be "reportable."

However, I retested the food for the pathogen and the second test result did not indicate the presence of the pathogen. Should I still consider the food to be reportable?
Sampling Result Answer:

YES!

When rapid screening for pathogens, any presumptive positives must be confirmed out using traditional culture methods.

It is NOT acceptable to take a presumptive positive sample off of ELFA and run it on PCR to confirm or disprove the results of ELFA (or vise versa!!!).
Who else may submit instances of reportable food to FDA?

• A federal, state or local public health official who identifies a reportable food as part of inspection or regulatory activities, can inform the facility that they may be required to submit a report.

• Federal, state and local public health officials may submit instances of reportable food to FDA through the Reportable Food electronic portal.

• For effective collaboration, MDH & local health agencies: contact the MDA DFID prior to reporting an instance.
An Effective Food / Environmental Sampling System

- Monitoring for presence of bacteria and foodborne illness outbreak epidemiology
- Scientifically sampling for targeted organisms, laboratory testing for results
- Effective corrective actions and intervention strategies to include reporting
Reference sources:

CONTROL OF SALMONELLA IN LOW-MOISTURE FOODS:

Reportable Food Registry for Industry:
http://www.fda.gov/food/foodsafety/FoodSafetyPrograms/RFR/default.htm
Need more Info? Reference Guide used by FDA for Recommended Sampling Protocol:

“Swabbing Techniques for Sampling the Environment and Equipment Technician Training Program”

will assist you in providing effective training to technicians that collect environmental samples for APC and Listeria.
Questions?