



Listeria Control in the Fresh Produce Industry

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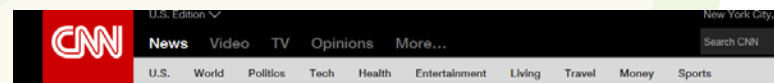




Listeria Events in the Fresh Produce Industry

Outbreaks

- Cabbage Outbreak: 1981
- Celery Outbreak: 2010
- Cantaloupe 2011
- Caramel Apples: 2014



At sentencing, cantaloupe growers apologize for deadly listeria outbreak

public health

Texas Shuts Down Celery Plant After Five Deadly Listeria Cases Reported

OCTOBER 21, 2010 3:50 PM ET

**Caramel apples from
Bakersfield plant linked to
listeria outbreak**

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Listeria Events in the Fresh Produce Industry

Recalls (no illnesses):

- Multiple leafy greens
- Onions
- Stone Fruit
- Sprouts
- Mangos
- Green Chiles
- Apple Slices



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What Can *Listeria* Do to My Business?

- Consumer illness
- Consumer litigation
- Customer litigation (shortages, further recalls)
- Temporary closure
- Brand/Image Damage
- Loss of employees
- Loss of customers
- Permanent shut down
- Criminal prosecution

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Timeline of a Listeria Event

A vertical blue line with circular endpoints at the top and bottom, serving as a timeline axis. Four green horizontal brackets extend from this axis to the right, each pointing to a stage of the Listeria event.

One or more *Listeria* findings in product or epidemiological link to illnesses

FDA/State investigation, swabbing of facility, testing of product

Potential product recall(s)

If the Agencies find pervasive issues, more investigation and potentially larger scope of recall

Recovery, including corrective actions, rebuilding business, and brand image
Or...no recovery

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The Gills Onions Example*

Gills Onions:

- Vertically integrated: Nursery, farming, fresh cut operation, transportation
- SQF III Certified
- At least 25 customer audits the prior year (all passed)
- Several regulatory findings of LM in processed onions 2012
 - May, June and September
 - No illnesses

*Permission provided by Gills Onions

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The Gills Onions Example

Root Cause Analysis

- Sanitary design of equipment and facility: complete operational shut down for several weeks
- Cleaning and sanitation
- GMPs and traffic flow
- Environmental monitoring changes



Symptom of
the problem

The underlying
cause of the
problem

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Listeria Does Not Discriminate



- Most everyone in the RTE business from poultry to produce to seafood has sagas to tell
- No one is immune, but situations are preventable.

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How *Listeria* is Introduced to Product

1. *Listeria* is a Soil-Borne Microorganism
 - Naturally inherent to the soil at a certain rate (may be different based on soil type, local climate and geography, etc)
2. *Listeria* can form a niche within processing plants and packing houses with the right environment and conditions
 - Niche locations can lead to continuous contamination at high numbers

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A Tale of Two Bacterium...

WHERE OTHER
BACTERIA MAY BE
TRANSIENT



LISTERIA MOVES IN



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Key Problem Areas that Can Contribute to Listeria Issues

1. Sanitation
 2. GMP controls (traffic, hygiene, etc)
 3. Sanitary Design
 4. Ineffective *Listeria* monitoring program
- **Do Not** rely on solely on results of your third party audits or customer audits
 - Even when you think you are doing everything “right”, you may not be.

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Recommendations to the Fresh Produce Industry

Management
Commitment Leads
to Cultural Change

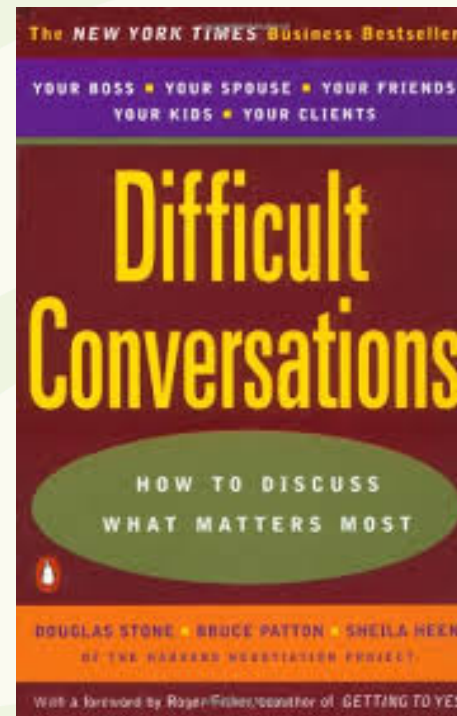
"You have my full commitment.
Apart from time, money, and
effort & just so long as I don't
have to be involved!"



No management
commitment

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Recommendations to the Fresh Produce Industry

It is valuable to consult with *Listeria* control experts before situations occur

- Someone who has fought the war on *Listeria*
- Experience in meat, dairy and seafood industries
- Subject matter experts in sanitary design
- Resource intensive recommendations should not be easily disregarded



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Recommendations to the Fresh Produce Industry

Sanitation is a complex process and should be treated with high priority

- The entire team should understand the who, what, and why of sanitation
 - Regular assessment and verification of sanitation practices are essential
 - Management should be aware of sanitation metrics



ag. Every single day.





Recommendations to the Fresh Produce Industry

Every employee needs to understand their role in the prevention of *Listeria* in the facility

- Regular training of all employees: hourly staff to management
- Each employee should understand people, equipment, and utensil traffic flow impacts on microbial control in the facility
- Limit traffic flow and isolate high care and low care areas where possible

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Recommendations to the Fresh Produce Industry

Develop a robust environmental monitoring program

- Don't fall prey to "copy/paste" syndrome. Develop a program based on your process and environment
- Understand potential "hot spots" in your facility as well as those in other ready-to-eat plants
- Aggressive root cause analysis and follow up is essential to every positive

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Resources

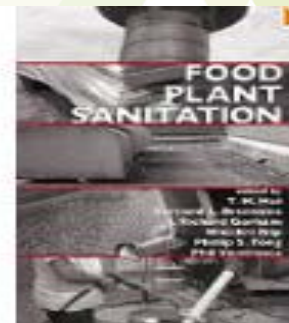


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Guidelines for Controlling *Listeria monocytogenes* in Small- to Medium-Scale Packing and Fresh-Cut Operations

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LINDA HARRIS, Extension Specialist UC Davis. The assistance of Shantana
George is gratefully acknowledged.



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Recommendations to the Fresh Produce Industry

START NOW!

- This is not an issue that will be going away
- Regulatory Agencies are focused on *Listeria*
- Preventative controls are not inexpensive...but they are cheaper than risks created by not implementing
 - Prepare for initial investments AND ongoing preventative maintenance

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