



Enhancing Food Safety in the Frozen Food Industry

A comprehensive approach to food safety culture, IQF sanitation, and environmental control and risk mitigation of *Listeria monocytogenes*



AFFI Food Safety Working Group – February 22, 2025



Listeria Quality Quest

Piloting the Future of Frozen Food Manufacturing

8 am, Sunday, February 23, 2025

Pegasus Ballroom – Hyatt Regency, Dallas

AFFICON 2025

The logo for AFFFI, featuring the letters A, F, F, F, and I in a stylized, bold font. The 'A' is dark red, the first 'F' is dark blue, the second 'F' is green, and the 'I' is orange. The letters are slanted to the right.



Food Safety Framework of Best Practices

- Why relevant – *L. monocytogenes*
- Food safety working group efforts

Food Safety Best Practices

- Food safety culture
- IQF sanitation
- Environmental monitoring

Group Activity

- Working group roundtable

Why We Created Our Lm Control Program

Purpose

To advance food safety within the frozen food industry and beyond.

Foundation

Provides a clear roadmap for companies to assess and improve their food safety control programs.

Industry Impact

Serves as a model for continuous improvement and risk mitigation.

Recent Research: Safety of Frozen Foods and Public Health Impact



Research Paper
Preparation Methods and Per
Among Consumers of Prepack
September 2022

Michelle Canning^{1,2}, Michael Ablan¹
Alexandra Busbee^{1,2}, Misha Robyn¹,

¹ Division of Foodborne, Waterborne, and Environmental Diseases
MS-H24-10, Atlanta, GA 30333, USA
² Oak Ridge Institute for Science and Education, 1299 Bethel Va



Research Paper

Investigation of a Multi
Linked to Frozen Vege
Vegetable Manufacturing Facilities

Ayana Medel^{1,*}, Katherine E. Marshall², Tanya Blomquist¹, Carol Hande¹, Mariana Salter¹, Collin Becker²



Systematic Review

A Systematic Review of *Listeria* Species and *Listeria monocytogenes* Prevalence, Persistence, and Diversity throughout the Fresh Produce Supply Chain

Anna Townsend¹, Laura K. Strawn², Benjamin J. Chapman³ and Laurel L. Dunn^{1,*}



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/ [Outbreak Investigation of Listeria monocytogenes: Frozen Supplemental Shakes \(February 2025\)](#)

Outbreak Investigation of Listeria monocytogenes: Frozen Supplemental Shakes (February 2025)

Do not sell or serve Lyons ReadyCare and Sysco Imperial Frozen Supplemental Shakes. FDA's investigation is ongoing.

Ursula Gonzales-Barron¹, Regis Pouillot², Juliana De Oliveira Mota³, Akio Hasegawa⁴, Ana Allende⁵, Qingli Dong⁶, Matthew J. Stasiewicz⁷, Jovana Kovacevic⁸, Vasco Cadavez^{1,2}, Laurent Guillier⁹ and Moez Sanaa^{4,*}

An Assessment of Listeriosis Risk Associated with a Contaminated Production Lot of Frozen Vegetables Consumed under Alternative Consumer Handling Scenarios

CLAIRE ZOELLNER^{1,*}, MARTIN WIEDMANN² AND RENATA IVANEK¹

Growing Attention to REP strains (CDC)

FSN | Food Safety News

Breaking news for everyone's consumption

Home | Outbreaks | Recalls | Directory | Events | About Us | Media Kit | Contact Us



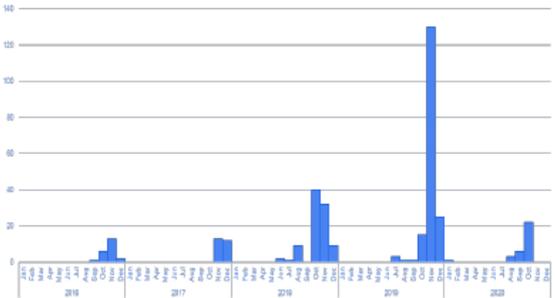
CDC monitoring long-running Listeria strain behind 12 deaths

By Joe Whitworth on August 4, 2023

Persistence of Strain REPGX601: Potatoes?

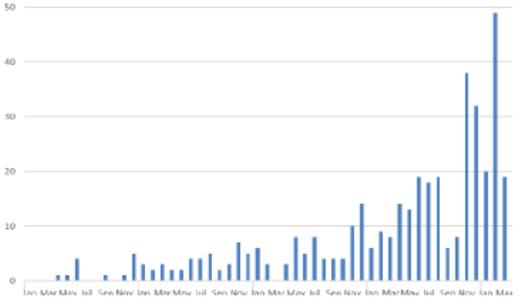
- Currently there are 32 potato isolates collected between July, 2015 and November, 2018
- Raw potatoes have to be cooked to be consumed
- Were multiple facilities that make processed foods contaminated by the raw potatoes?
- Lack of exposure data for any type of potato products
- Supplemental deployed – focused on potatoes and frozen foods that include potatoes
- REP Code officially assigned in June 2021 with 66 illnesses from 21 states

Reoccurring Strain



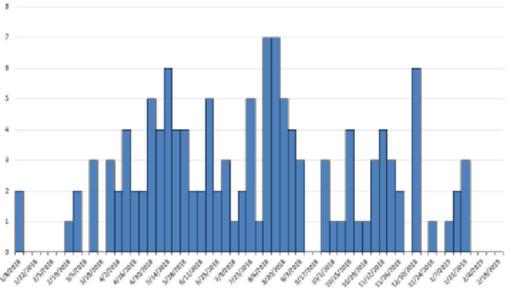
Strain that periodically causes a substantial number of illnesses, typically in outbreaks, separated by periods when it is not isolated from people or it causes very few illnesses

Emerging Strain



Strain that causes illnesses that have increased in frequency, or have the potential to increase in frequency, over time

Persisting Strain



Strain that causes illnesses consistently over time, although the frequency of illnesses may fluctuate

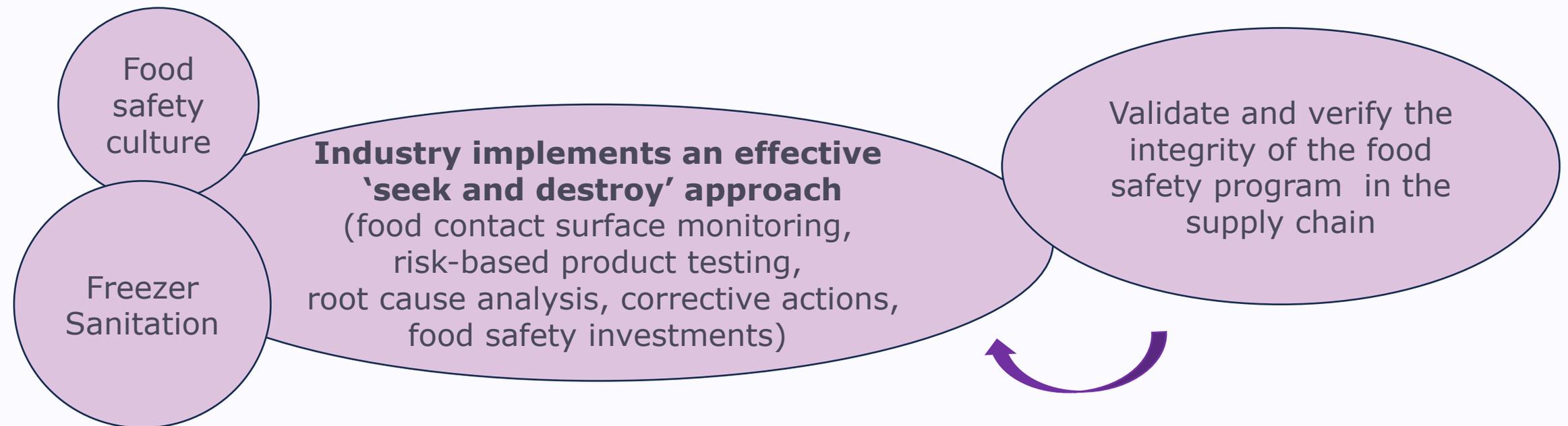
Preparing the Frozen Food Industry for the Future

Goals

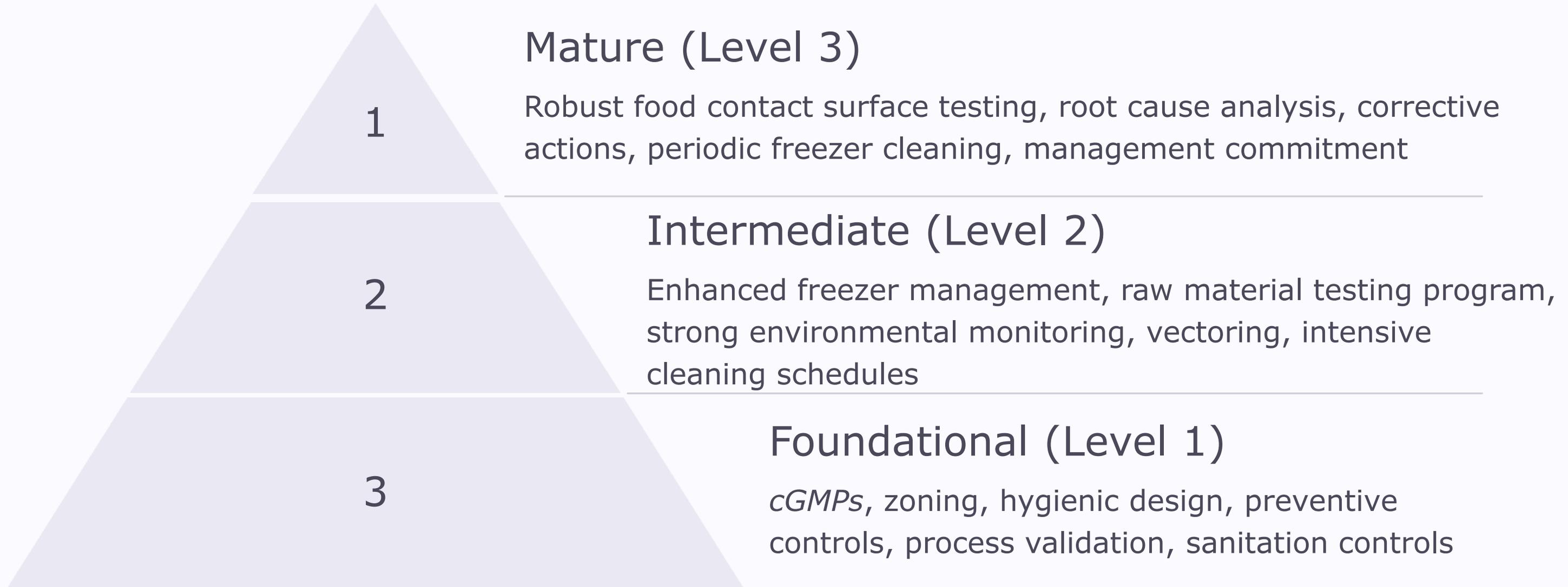


- Incorporate key production practices and infrastructural needs to address *Listeria monocytogenes* in frozen food facilities that give industry partners and regulators food safety assurance in our supply chain
- Advocate move towards 'non-zero' regulatory action limit for frozen foods (low-risk foods)
- Guidelines for continuous improvement in food safety practices in frozen food facilities

Journey: Future Frozen Food Industry



Framework for Continuous Improvement



Food Safety Culture – Levels of Maturity

Behaviors, recognition, communication, KPIs



IQF Sanitation

Freezer Management (examples)



1

Infrastructure

Progress from basic hygienic design to advanced zoning controls and materials

2

Environmental Monitoring

Expand from limited freezer monitoring to full coverage across all zone

3

Sanitation

Advance from validated protocols to optimized, real-time monitored CIP systems

4

Corrective Actions

Evolve from basic action to multi-functional RCA with preventive plans



Strategies for IQF Sanitation

1

Robust Protocols

Combine cleaning and sanitation with targeted environmental monitoring

2

Modern CIP Systems

Use real-time data logging to ensure comprehensive freezer hygiene

3

Continuous Improvement

Enhance corrective actions through formal RCA efforts

Environmental Monitoring Program –

Finding Harborage - FCS sampling, RCA, corrective actions

Risk Categories

Entry, Transfer, Harborage,
Growth, Contamination, Detection,
RCA, Corrective Actions

Mature

Integrated systems, continuous
monitoring, formalized
management reviews



Foundational

Reactive measures, basic
cleaning, minimal monitoring

Intermediate

Structured controls, periodic
testing, multi-functional
RCA teams

Implementation Strategies

Raw Materials & Equipment

Implement robust supply chain controls and eliminate poor hygienic design

Facility Infrastructure

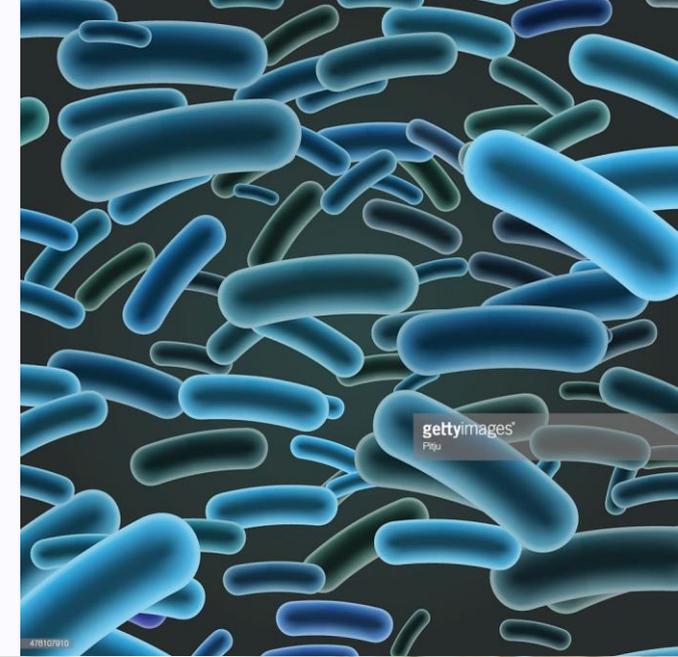
Adopt strict hygienic design principles; ensure all zones are monitored

Water, Air & Moisture

Maintain quality through validated systems; minimize condensation

Personnel & Sanitation

Enforce strict GMPs with dedicated training and controlled traffic





Next Steps

Comprehensive Approach

Embrace multi-level strategies for food safety culture, sanitation, and risk management

AFFI Leadership

Continue advocacy efforts to integrate best practices and drive regulatory improvements

Internal Review

Evaluate frameworks and plan collaborative initiatives with industry stakeholders

KPI Development

Determine best approach for measuring implementation in the industry

Q&A



Open Discussion

Floor open for questions and feedback from AFFI members



Expert Insights

Addressing specific concerns and providing clarification on presented strategies



Collaborative Exchange

Encouraging dialogue and sharing of best practices among industry peers

Listeria Quality Quest

Piloting the Future of Frozen Food Manufacturing

8 am, Sunday, February 23, 2025

EViews

Enteric Virus Risk Management Program

8 am, Monday, February 24, 2025

AFFICON 2025 - Pegasus Ballroom – Hyatt Regency, Dallas

Our Collective Effort To Elevate The Industry

We Need Your Input!



Roundtable Topics

- How does AFFI assess industry progress?
 - What are improvements
 - What are gaps and challenges
 - What else is needed
- How do individual companies use the framework
 - measuring progress
 - metrics
 - adjust strategies
- How does AFFI communicate progress?
 - Capturing and analyzing company information



Thank You



Contact Us

For further inquiries or support



Resources

Access additional materials and guidelines



Feedback

Share your thoughts on today's presentation