

Perspectives on RTE and NRTE Foods

The Interplay of Regulatory Policy and Control of *Listeria monocytogenes* in Frozen Foods

Sanjay Gummalla

May 7, 2019 North Carolina Food Safety and Defense Task Force

Vision

Our foods and beverages are proudly chosen to meet the needs of a changing world.

Mission

AFFI is the member-driven national trade association that advances the interest of all segments of the frozen food and beverage industry.

Advance Food Safety

Advocate for Frozen

2017-2020 Strategic Priorities

Increase Consumption

Grow Resources















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SUPER CRISPY CRINKLE CUT FRIES

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McCain

french fries













Overview of Discussion

- 1) Food Recalls
 - RTE vs NRTE food recalls
 - Frozen foods recalls
- 2) Listeria monocytogenes (Lm) in frozen foods
 - *Lm* background and recent outbreaks
 - Lm prevalence and persistence
 - Regulatory policies and landscape
 - Resulting recalls and continued risks posed by *Lm*
- 3) AFFI *Lm* strategy
 - AFFI efforts in science and best practices
 - Frozen food labeling and consumer behaviors
 - AFFI consumer messaging and education campaign





Recent Food Recalls due to Pathogens (April 2019)

1) Frozen Ground Tuna

- Salmonella may be potentially contaminated
- 13 illness being investigated
- Ground Tuna samples were found negative for Salmonella
- 2) Fresh cut watermelon, honeydew, cantaloupe and mixed fruit melons
 - Salmonella may be potentially contaminated
 - Reports of illness linked to these products being investigated
- 3) Ready-to-eat sandwiches, wraps and salads
 - Listeria monocytogenes (Lm) may be potentially contaminated
 - Presence of *Lm* in production line
 - No illness reported
- 4) Raw frozen ground pet foods
 - Lm may be potentially contaminated
 - No illness reported (Pets with Lm infections may be lethargic and have diarrhea, fever, and vomiting; in some, only a decreased appetite, fever and pain)
 - Risk to humans handling contaminated pet food products





- Ready-to-Eat Sandwiches, Wraps and Salads
- Presence of *Lm* on the production line
- Refrigerated supports growth of *Lm*





- Company Voluntarily Recalls Organic Nut Butters
- Ready-to-eat Nut butters
- Facility tested positive for *Listeria spp.*
- Shelf-stable product





- Food Company Recalls Two Production Lot Codes of Unbleached All-Purpose 5lb Flour
- Possible contamination with Salmonella
- Flour is made from wheat that is minimally processed
- Flour should not be considered a ready-to-eat product



Flour Recalls (2016-2019)

Date	Brand Name(s)	Product Description	Reason/Problem	Company Name
03/13/2019	<u>Pillsbury</u>	Flour	Salmonella	Hometown Food
01/23/2019	Gold Medal	Unbleached Flour	Salmonella	General Mills
04/06/2018	Bob's Red Mill	Organic Amaranth Flour	Salmonella	Bob's Red Mill Natural Foods
03/23/2018	King Arthur	Organic Coconut Flour	Salmonella	King Arthur Flour Company
05/31/2017	<u>Golden Temple[®], Swad[®], and</u> <u>Maya[®]</u>	Flour	E.coli 0121	Smucker Foods of Canada Corp.
07/25/2016	<u>Gold Medal, Signature</u> <u>Kitchens</u>	Flour	E.coli O121	General Mills
07/01/2016	<u>Gold Medal, Wondra, and</u> <u>Signature Kitchens</u>	Flour	E.coli 0121	General Mills
05/31/2016	<u>Gold Medal, Gold Medal</u> <u>Wondra, Signature Kitchens</u>	Flour	E.coli O121	General Mills

https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts



Cake and Waffle Mixes (2016-2018)

Date	Brand Name(s)	Product Description	Reason/Problem	Company Name
		· · · ·	-	
11/05/2018	Duncan Hines	Cake mixes	Salmonella	Conagra Brands
12/08/2016	Publix Premium	Pancake and Waffle Mix	Salmonella	Publix Super Markets
12/08/2016	Stonewall Kitchen	Pancake and Waffle	Salmonella	Stonewall Kitchen,
		Mix		LLC
07/09/2016	<u>Krusteaz</u>	Pancake Mix	E.coli 0121	Continental Mills

https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts



Not All Cookie Doughs Are Equal







Ready-to-eat cookie dough



- Do not consume raw cookie dough
- Baking Instructions

Not Everything Frozen Is Equal





Fully Cooked Ready-to-Eat

Uncooked



Uncooked Safe Handling/Cooking Instructions



Fully Cooked Heating Instructions







AFF AMERICAN FROZEN FOOD INSTITUTE

Keep Frozen, Cook Thoroughly

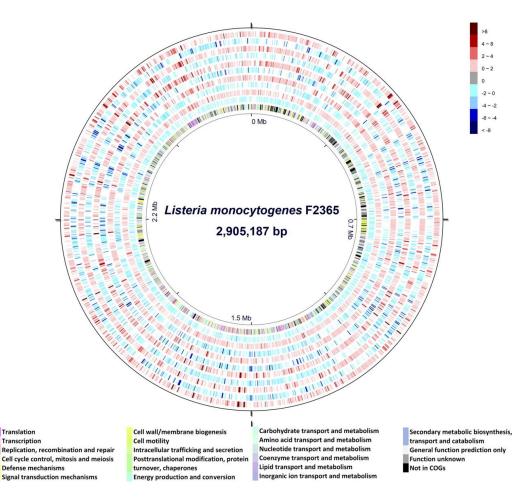
Lm in Frozen Foods (2018)

- 1) Frozen cut green beans and mixed vegetable
 - Recall initiated by 3rd party test result by a downstream customer
 - NRTE frozen food with validated cooking instructions
- 2) Frozen biscuits
 - Product sampling by an outside co-manufacturer/packer
 - NRTE frozen food with baking instructions
- 3) Frozen biscuit dough
 - Regulatory disposition potential to be contaminated with *Lm*
 - NRTE frozen food with baking instructions
- 4) Frozen kernel corn
 - Regulatory disposition potential to be contaminated with *Lm*
 - NRTE frozen food with validated cooking instructions
- 5) Frozen organic whole green beans
 - Routine state sampling program: Dept. of consumer protection (CT)
 - One positive *Lm* finding in one retail product sample
 - NRTE frozen food with validated cooking instructions



Biology of Listeria monocytogenes (Lm)

- 1) A foodborne pathogen Listeriosis
- 2) Diarrhea, fever, vomiting, muscle and headaches, general malaise and weakness
- 3) 1800 illnesses and 250 deaths/yr. in the United States
- 4) >15% mortality rate
- 5) At-risk groups: Immunocompromised, young children and elderly, pregnant women and neonates





Significant Lm foodborne outbreaks

- 2008 Deli Meat (Canada) 57 cases, 24 deaths
- 2010 Pre-cut Celery (US) 10 cases, 3 deaths
- 2011 Cantaloupe (US) 147 cases, 33 deaths
- 2014 Caramel Apple (US, Canada) 5 cases, 2 deaths
- 2014 Stone Fruit (US) 4 cases
- 1998-2014 Soft Cheese (US) 180 cases, 17 deaths
- 2015 Ice Cream (US) 10 cases, 4 deaths
- 2016 Frozen Vegetables (US) 9 cases, 1 death
- 2017-18 RTE Processed Meat (SA) 1060 cases, 216 deaths
- 2018 Frozen Corn (EU) 45 cases, 9 deaths



Prevalence of Listeria monocytogenes

 Grows at refrigeration temperatures – deli/processed meats, soft cheeses, unpasteurized milk, seafood, fruits and vegetables, ice cream, frozen foods

2) Ubiquitous in occurrence

- Soil, vegetation, water, food facilities
- Food processing environments, raw ingredients, human and equipment traffic, water
 - Cool, moist and humid conditions
- Survives freezing and frozen storage
- 3) Food processing facilities seek and destroy approach
- 4) Understanding regulatory dynamics



Lm Harborages, Niches and Transfer points in Food Manufacturing Facilities

- 1) Floors and Drains
- 2) Cracks in the walls and equipment, floors
- 3) Wet and rusting hollow framework
- 4) Walls and crevices of spiral freezers
- 5) Ceilings, overhead structures and cat-walks
- 6) Fibrous or porous conveyor belts and hollow rollers
- 7) Damp insulation and rubber seals around doors
- 8) Cracked hoses
- 9) Cleaning tools such as mops and sponges, buckets10)Personnel and vehicle traffic in the facility



Federal Regulatory Policies

- 1) FDA *Lm* guidance documents and current thinking
 - Zero-tolerance for presence of Lm in Ready-to-Eat foods (RTE)
 - Absence of GMPs or positive Lm finding in the manufacturing environment – Insanitary conditions
 - Preventive controls hazards guide; Lm CPG; RTE/NRTE guidance
- 2) USDA Listeria rule
 - Zero-tolerance in RTE foods
 - Not-Ready-to-Eat foods have validated cooking instructions on the package
- 3) AFFI: Not-Ready-to-Eat (NRTE) frozen foods
 - Bear validated cooking instructions on the package
 - Maintain frozen state during storage and product shelf life
 - Follow best food safety and manufacturing practices
 - Opportunity for consumer education



AFFI Listeria monocytogenes Goals

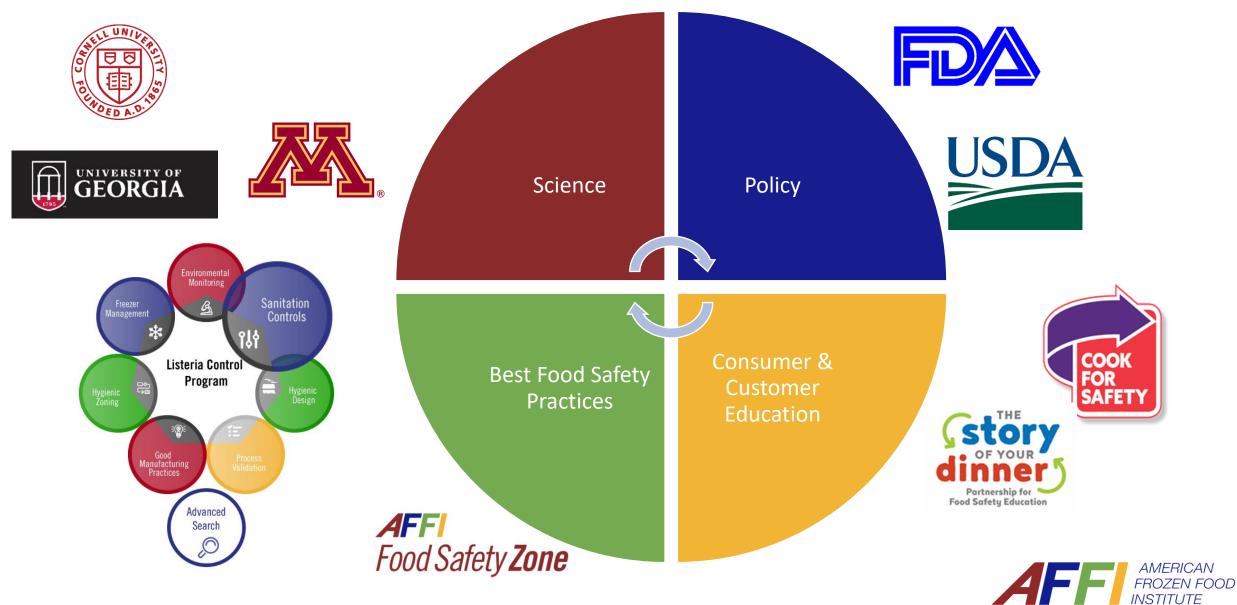
Minimize incidence of *Listeria monocytogenes (Lm*) in frozen foods.

Secure a practical, science-based regulatory approach that:

- Protects public health
- Reduces regulatory jeopardy; Maintain NRTE
- Affords companies time to invest and implement best practices
- Develop science-based standards



AFFI *Lm* **Strategy**



COOKING INSTRUCTIONS: Do Not Thaw. Keep Frozen Until Ready To Use. Due to variations in ALL ovens, cooking times and/or temperature may requ temperature may require adjustment.

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Microwave cooking instructions based on 1100W appliance. For 1250W microwaves reduce cooking time.

- Remove entrée from carton, place on a microwaveable plate and place in microwave.
- · Cook on HIGH with film on for 4-6 minutes.
- · Carefully remove film, let stand for 5 mins. before serving.

CONVENTIONAL OVEN:

Preheat oven to 400°F.

- Remove entrée from carton, place tray on cookie sheet (for added support) on center rack (at least 6"-8" from heating elements).
- · Leave film on during cooking.
- Bake 35-40 minutes.
- Remove from oven on cookie sheet (for added support).
- Carefully remove film and let stand
 - 5 minutes before serving.

DO NOT COOK IN TOASTER OVENS

For Safety, Must be Cooked to an Internal Temperature of 160°F as Measured by Use of a Thermometer.



Cook thoroughly Microwave wattage



Product needs to be thoroughly cooked

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Nutrition Facts	SALE, TAGAN, RICH VIRIEAR, ACTIC ACID, MUNIFIER I MAN
Serving Size 1 tray (255g)	TIRACH, MALTODONIAN, SICKAF THE BU SAM SHEEP
No. of Concession, Name	CHERA DE STREAME BATER CORREGADA SPOT BALA.
Amount Per Serving	BATURAL FLAVORING, BROWN SOCAR, GARLIC POINTER, Carries Color, Whitear, Viaci Inimacii, Winferd Corr
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% Daily Value*	FLAUDE (DERFORATE BETTER, BUTTERMELK MONITER,
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- 4. Pull back film and stir each component, replace film.
- 5. Continue cooking on HIGH for an additional 11/2 - 2 minutes.
- 6. Carefully remove tray from microwave.
- 7. Let sit 1-2 minutes, for best flavor stir before serving. *Preferred method.

- Conventional Oven **Coak From Frozen**
- 1. Preheat oven to 350°F. Do not exceed 350°F.
- 2. Remove tray from outer packaging.
- 3. Pierce film 3-4 times to vent.
- 4. Place tray on a baking sheet on center rack in oven.
- 5. Cook 30-35 minutes.
- 6. Remove baking sheet with tray from oven and let stand on baking sheet 3-5 minutes.
- 7. Carefully remove cover and stir before serving.

Cook thoroughly to an internal temperature of 165°F as measured by a food thermometer. Since cooking appliances vary, these instructions are guidelines only.

COMMITMENT TO QUALITY

Signature SELECT* is an exclusive line of premium products specifically designed to turn the ordinary into the extraordinary. Bringing world flavors to your table, we carefully craft and test each product to deliver a sensational taste experience. We strive each day to innovate with special culinary twists to tantalize your taste buds, because our products should be worthy of your life's celebrations. We invite you to discover the







Product needs to be thoroughly cooked

o Facts 417 % Bally Value 1010 10100 Saturmult Fat 2.5g 13 COOKING Trans Fat 0 g INSTRUCTIONS: Polyunsaturated Fat 1g Monounsaturated Fat 1g MICROWAVE OVEN ONLY Cholesterol 35mg 12% 1. Remove Tray 22% Sodium 530mg No Preservatives from outer carton; pull back Total Carbohydrate 35g 12% corner of film to vent. Dietary Fiber 2g 2% Sugars 6g 2. Cook On High Freezing is a simple way to keep foods fresh. Protein 11g 22% That's why we don't add preservatives to this 2 minutes. Pull back film and stir until all 1100 Vitamin A 4% Vitamin C 0% WATT entrée and you can ravioli are coated with Calcium 20% from 10% have delicious cuisine souce. Replace film. Cook on Parcaret Daity Values are based to a 2,000 HIGH for 2 minutes and calone thet. Your staly sature may be lighter all year long! or lower depanding on your sature reacher. 30 seconds. Catarian 2 200 2 540 Time Fac 3 minutes. Pull back film and stir until all LHA THAT THE 22194 WATT LHETHER 201 Choiestand Loss That 202mg | 202mg ravioli are coated with sauce. Replace film, Cook on HIGH for 3 minutes. Sedun Lata that 2.400mg 2.400mg Total Carbonettrata 104 5758 **Cletary Film** Be l 314 Proble 3. Stir And Let Stand FOR YORN GAVETY AND AND DURITY, VILLOW THIS! for 1 minute. NUMBER OF THE PARTY OF THE PART · ADDRESS OF BUILDING When removing from microwove, ALLOWING IS INCOME. INC. M. MICHAEL MICH. hold onto the tray's side handles. A MONTRE N & HOCANA MORE Remove film. Stir and Enjoy! III Taw OF METRICS CONCERNANT OF TAXUET MAN Learn more & sign-up for savings at -165 F NOT THE PEOPLE I eatyourbest.com TAUS THROUGHT RECEIVE TOPPET/PERCHANCE IN MARK MET all bely to mark as f P IMPORTANT: KEEL DO NOT REFLY



Not-Ready-to-Eat Foods that appear to be RTE

Examples of Breaded, Pre-browned Chicken Cordon Bleu Chicken Kiev Chicken stuffed with Broccoli & Cheese

Do no Microwave



Microwave Wattage and Power Level



"What kills me is the wattage [of my microwave] – I don't know what the wattage is." – Young mom

"You have to look at the wattage [guidelines] and most of them don't have it on there. They just say put it in your microwave and [cook]. So I've learned that if it doesn't have the wattage, I'm going to first cook the food a little just to see how it turns out." – General consumer

> "I didn't know you could [adjust the power setting of a microwave]." – Young mom



LACK OF UNIFORMITY

There is no *uniform, industry-wide practice* for informing consumers on package.



Inconsistent language:

- "Cook thoroughly"
- "RAW"
- "Not ready to eat"
- "Cook fully"

"I never understood why they can't just be direct and say, ['Cook for Safety.']." – Older consumer



EXPLORING CONSUMER MESSAGES

Including a symbol can effectively shift behavior, but is most effective for frozen vegetables.











KEEP FROZEN. FOR SAFETY, COOK AS DIRECTED.



Why include "Cook for Safety' on Package Remember the "P's"

Protective

- Products bearing symbol have the ability to influence which foods are considered and regulated as NRTE
- Products bearing the symbol may be less likely to be selected for testing at the retail level by state inspectors
- Reduces risk of recall
 - Early costs of Greenyard listeria-related recall was estimated at \$35 million
 - Cost of production downtime and lost business
 - Impact on brand reputation with consumers and customers

Proactive

- Empower consumers with confidence to use your products while reducing risk of misuse
- In the event of a recall, provides offensive public relations strategy



WHAT'S YOUR RESPONSIBILITY?



Be a leader: learn more!





Raising the bar on food safety.



AFFI's new Food Safety Zone is aimed at *Listeria monocytogenes (Lm)* control and prevention throughout the entire supply chain. Frozen food manufacturers of all sizes, domestic and international, can search for, access and incorporate best food safety practices, created by food safety professionals FOR food safety professionals. THIS is how we raise the bar on food safety.



Visit AFFI's Food Safety Zone at www.AFFIFoodsafety.org



THANK YOU



