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**Fellowship in
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IFPTI Fellowship Cohort VIII: Research Presentation

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Major Food Safety Challenges Associated with Retail Sushi Inspections

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and Markets

Background

Retail In-Store Made Sushi



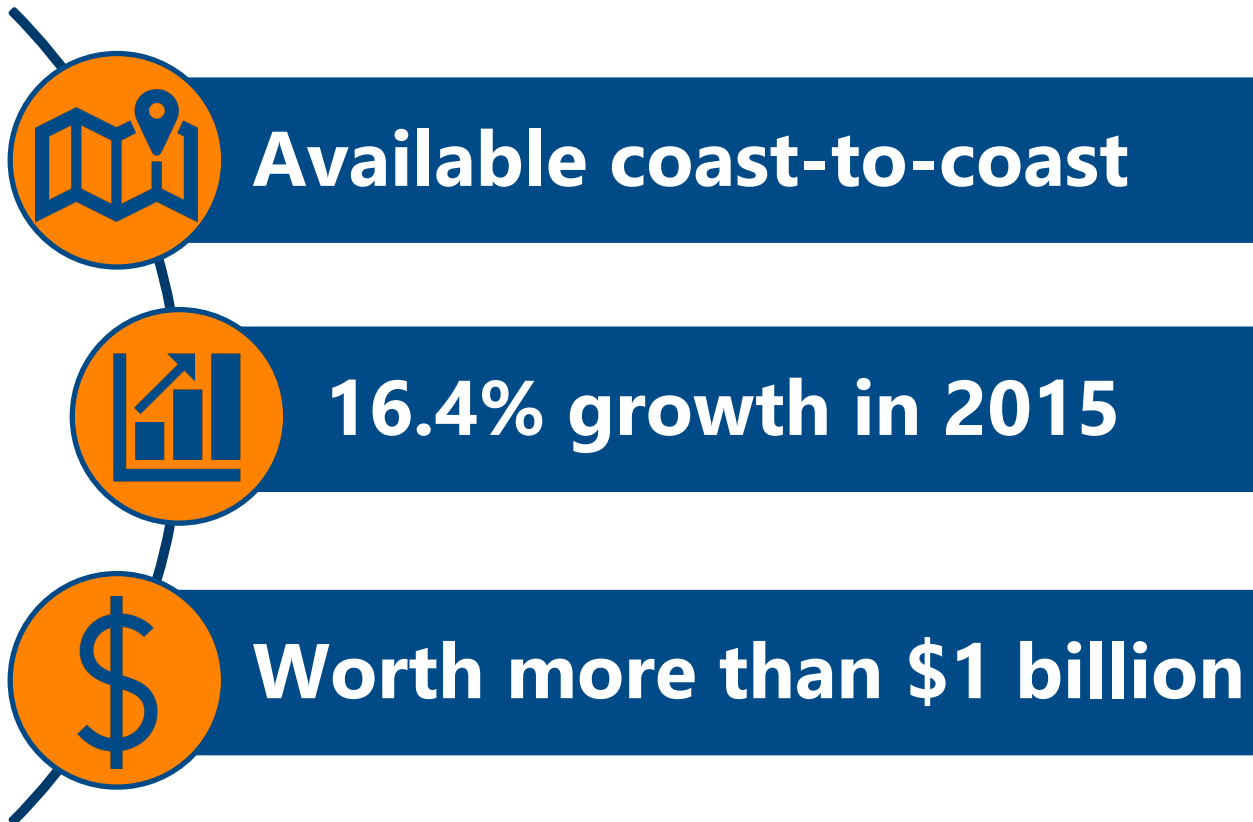
Made on premises by a subcontractor.

Typically licensed separately.

Personnel is hired and trained by a third party.

Background

- Retail in store made sushi is a rapidly growing market:



Background

- For purposes of making sushi, refrigerated rice is not suitable – it becomes impossible to roll.
- Cooked rice is used at room temperature to achieve desired flavor and texture.

Background: Health Risks

- Main pathogen of concern is *Bacillus cereus* (*B. cereus*) associated with rice.
- Spores and toxins are heat resistant; *B. cereus* quickly multiplies at room temperature.
- Once ingested, *B. cereus* causes nausea and vomiting.
- 63,000 cases of illness a year (CDC estimates).

Background: Control Strategy

- *B. cereus* grows when $\text{pH} > 4.3$.
- Acid (vinegar) is added to rice to reduce pH.
- Target pH is < 4.1 .
- pH meter is necessary.



<https://www.kenyt.com/details/thm166701/ro-service-ph-meter-with-temperature-display-water-purity-tester-plastic-care-box-bath-thermometer-yellow>

Background: Control Strategy

Each batch of sushi rice requires:

- Calibration
- Proper ratio of rice to water
- Distilled water
- Records of pH meter readings



Problem Statement

The extent of sushi specific food safety training for retail sushi manufacturers` staff is unknown.

Research Questions

1. What are the top five critical deficiencies associated with inspections of retail sushi firms by New York State Department of Agriculture and Markets (NYS DAM) in the downstate regions of New York?
2. What sort of training do retail sushi firms provide to their employees?
3. What are the training requirements for in-store retail sushi manufactures in other jurisdictions?

Methodology

Phase 1: Analyze inspection data



Phase 2: Interview individual retail sushi operators



Phase 3: Contact retail sushi chains



Phase 4: Survey retail sushi chain coordinators

Methodology: Phase 1



- Five Boroughs (Manhattan, Brooklyn, The Bronx, Queens, and Staten Island), Nassau and Suffolk Counties
- **75%** of the state's population
- >200 in store retail sushi establishments

Methodology: Phase 1 (continued)

- Inspection data from 2018-2019 two-year calendar period.
- Filter/sort using key words such as “sushi”, “fish”, and “seafood”.
- Review individual reports and tally up critical deficiencies by major categories.

Methodology: Phase 2

In-person surveys conducted after retail sushi inspections.

- Voluntary and anonymous
- Yes/No questions

Methodology: Phase 3

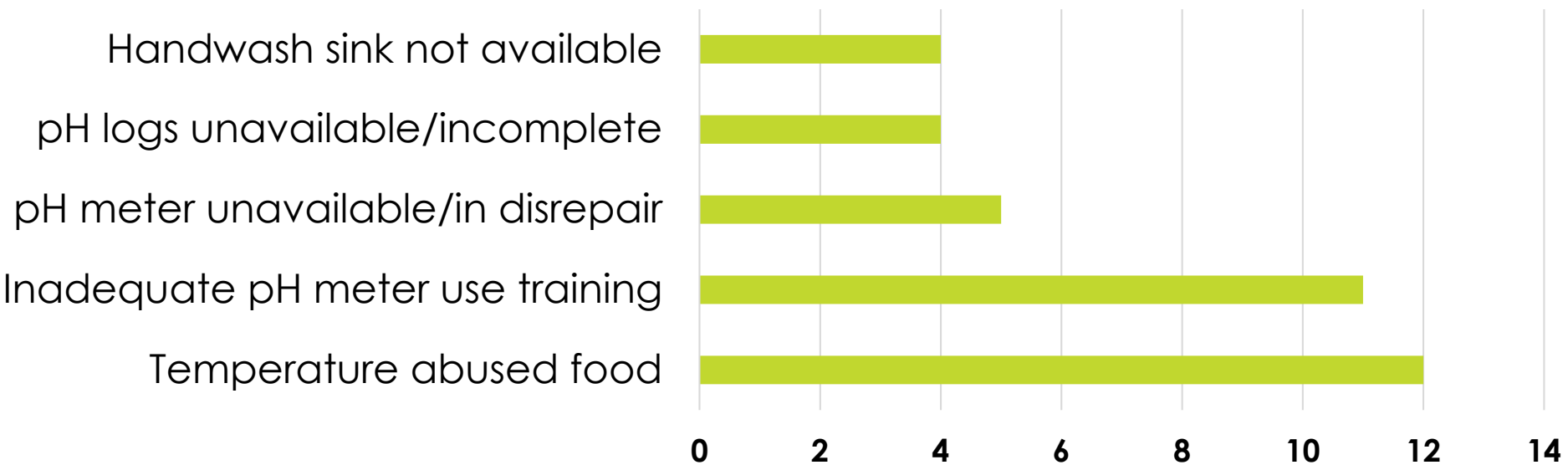
- Contacted other jurisdictions using AFDO Directory of State and Local Officials (DSLLO) to determine their training requirements for retail sushi operations.

Methodology: Phase 4

- E-mail surveys were sent out to retail sushi chain representatives to gather information about training trends in the industry.

Results: Phase 1

Most Common Critical Deficiencies Cited at Downstate Retail Sushi Firms by NYS DAM 2018-2019

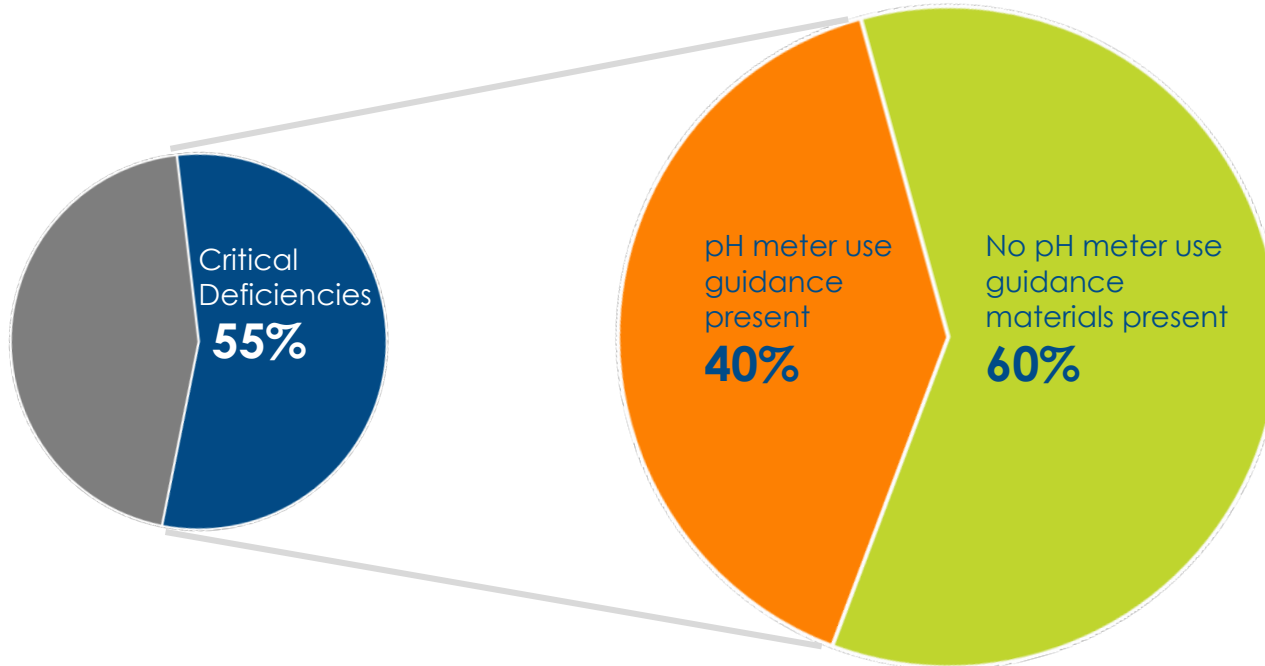


56%

Critical deficiencies cited can be attributed to improper use of a pH meter.

Results: Phase 2

Retail Sushi Operators Survey Results



60%

Inspections that resulted in critical deficiencies due to the lack of pH meter use instructions.

Results: Phase 3

Jurisdictional Surveys	Results
Food Safety Training	4
Sushi Specific Food Safety Training	0

100%

Four out of four DSLO members that have taken jurisdictional surveys responded negative to having a sushi specific training requirement in their jurisdiction.

Results: Phase 4

- Zero retail firms responded to an e-mail survey.

Conclusions

1. A majority of food safety violations at retail sushi firms are sushi specific.
2. Training and guidance documents vary greatly between different retail sushi firms.
3. While various jurisdictions throughout the United States acknowledge having basic food safety training requirements, retail sushi firms are free to determine their own training standards.

Recommendations

1. Food safety risks associated with retail sushi establishments should be reassessed. An increase in inspection frequency of retail sushi firms should be considered.
2. When inspections at retail sushi firms are conducted, a greater focus needs to be placed on individual operators' skillset. Operators should be able to demonstrate proficiency with a pH meter during an inspection.

Recommendations (continued)

3. Prior to beginning operations, retail sushi firms need to demonstrate to regulatory agencies that they have an adequate food safety training program in place.
4. All stakeholders – regulators, industry, and food safety experts – should contribute towards a development of a comprehensive food safety training curriculum for retail sushi operators. This training would be standardized and include a practical hand-on component dealing with proper use of pH meter.

Recommendations (continued)

5. Require individual sushi operators to complete the newly developed standardized sushi training before beginning operations.

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Questions?

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