



INTERNATIONAL FOOD PROTECTION TRAINING INSTITUTE

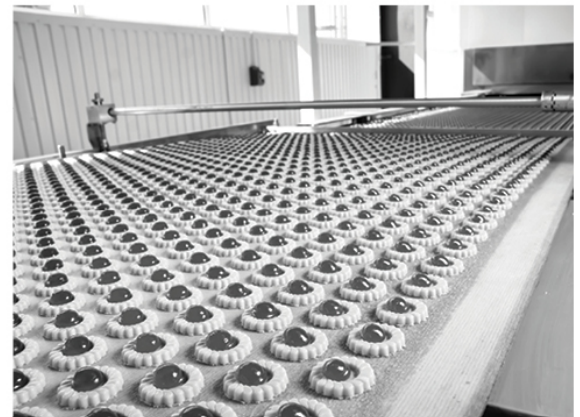
49 W. Michigan Ave. Suite 300
Battle Creek, MI 49017
269.441.2995



IFPTI Fellowship Cohort IV: Research Presentation

EUGENE E. EVANS, CFP

2014-2015



Surface Pathogen Elimination Practices for Ready to Eat Fishery Products

Eugene E. Evans, CFP
IFPTI 2014-2015 Fellow
New York State Department of
Agriculture and Markets

Background

- Commercial fishing not regulated by 21 CFR 123 “Seafood HACCP Regulations”.
- Fishermen not required to have any food safety training.
- Fishing vessels not held to any sanitary standards.
- Surface pathogens (ie *Listeria monocytogenes* (Lm), *Salmonella*, etc)
- 62% waters on fishing grounds and up to 50% of raw fish contaminated with Lm (IFT, 2001)

Background



Problem Statement

- Ready to eat, non-heated treated fishery products may reach the consumer without being treated with a surface pathogen elimination procedure.

Research Questions

- What do fish industry dockside unloaders, wholesale manufacturers, wholesale distributors and retailers know about surface pathogens on RTE non heat treated fish or fishery products?
- What control measure(s) do fish industry dockside unloaders, wholesale manufacturers, wholesale distributors and retailers have in place to control the presence of surface pathogens on non-heat treated fish or fishery products?
- If the RTE NHTFP industry has no control procedures in place, would the industry be willing to institute a surface pathogen elimination step that would be outlined in an official FDA Guidance document?

Methodology

- Interviewed 17 seafood industry establishment representatives with a semi-structured set of predetermined questions.
- Data Collection
 - Personal interviews (1 telephone follow up)
 - NYS Food Lab NHTFP Lm positive samples 2002-2014
 - Response Rate 17/22 (77% agreed to be interviewed)
- Analysis
 - Determine knowledge, training and desire to improve.

Results

- Approximately 73% of establishments lacked knowledge of seafood surface pathogens.
- The remaining 27% were comprised of (2) cold smoked fish processing establishments, (1) wholesale sushi establishment and (1) retail sushi restaurant.
- The cold smoked fish establishments and the wholesale sushi establishment developed structured surface pathogen elimination procedures with the primary target organism being Lm with one establishment not following chemical manufacturer instructions/ regulatory requirements.

Results

- The cold smoked fish establishments did not know they were potentially reviving the deadly CBOT hazard with their surface pathogen elimination.
- The retail sushi restaurant used a surface shaving procedure handed down for several generations that was not scientifically validated.
- After the interviews, 86 % of establishments indicated a desire to implement surface pathogen elimination procedures outlined in an official FDA guidance document.

Conclusions

- The NHTFP establishments overwhelmingly lack knowledge of seafood surface pathogens risks and need to be provided education.
- Most NHTFP establishments lacked procedures in place to significantly reduce/eliminate seafood surface pathogens.
- Cold smoked fish establishments utilizing surface pathogen elimination procedures and significantly reducing spoilage microorganism used as a consumer indicator of CBOT toxin formation need to reevaluate their cold smoking procedures.

Recommendations

- Educate the NHTFP industry while creating an FDA Commercial Fishing/Harvester Sanitation Document.
- All raw fish processed into NHTFP should undergo a surface pathogen elimination procedure.
- Addendums to the FDA Fish and Fishery Products Hazards and Controls Guidance, FDA Food Code, and state seafood processing regulations for surface pathogen elimination.
- Immediately inform cold smoked fish establishments to reevaluate cold smoking procedures ($WPS \geq 5\%$ / $aW \leq 0.97$ / inclusion of nitrates, TTIs on consumer sized packages)

Acknowledgements

- Supervisor Roxanne Hill- New York State Dept of Agriculture and Markets.
- Ms. Alyssa Dickey- New York State Food Laboratory
- Mr. Cameron Smoak- IFPTI Mentor
- Dr. Paul Dezendorf & Dr. Craig Kaml- IFPTI Research Project Subject Matter Experts
- Cohort 4 Fellows and the entire IFPTI Staff.

Questions?

Eugene E. Evans, CFP
eugene.evans@agriculture.ny.gov