



EXTENSION

SEAFOOD CONTROL PROCEDURES (SCP) AND BASIC SEAFOOD HACCP

During the summer of 2019, the LSU AgCenter and Louisiana Sea Grant hosted Sanitation Control Procedures (SCP) and Basic Seafood Hazard Analysis Critical Control Points (HACCP) workshops. Thirty-five seafood processors from in and out-of-state attended. A catfish compliance section was added to build greater understanding of USDA/FSIS specific requirements. Six catfish processors attended this catfish-specific section of the class. Based on an impact survey completed by participants, all attendees felt their knowledge of the covered material increased 32% and their confidence in completing duties associated with the presented material increased 42%. The workshops were from July 29 to August 1, 2019 in the Animal and Food Sciences Laboratories Building on LSU's Baton Rouge campus.

MEAT & POULTRY HACCP WORKSHOP

In collaboration with the U.S. Department of Agriculture (USDA) and the Louisiana Department of Agriculture and Forestry (LDAF), the LSU AgCenter hosted a two-and-a-half-day workshop on the seven principles of HACCP to empower processors to develop HACCP plans specific to meat and poultry products. Thirteen processors attended the workshop. Based on an impact survey completed by attendees, all attendees felt their knowledge of the covered material increased 80% and their confidence in completing duties associated with the presented material increased 101%. The workshops were from August 27-29, 2019 in the Animal and Food Sciences Laboratories Building on LSU's Baton Rouge campus.

REDUCED OXYGEN PACKAGING HACCP & SPECIALIZED PROCESSING METHODS

The U.S. Food and Drug Administration (FDA) and the Louisiana Department of Health (LDH)—under the FDA Food Code and LA Administrative Code, respectively—require that all retail facilities using reduced oxygen packaging (ROP) to develop and implement a HACCP plan for the products in ROP. In addition, the FDA and LDH have Variance Requirements for specialized processing methods such as smoking, curing and using additives. To assist the LDH in training inspector supervisors, I created the workshop *ROP HACCP & Specialized Processing Methods* workshop. This training is designed to teach inspector Basics of Food Safety Hazards, Federal and LA code variance requirements and seven principles of HACCP. On April 23-24, 2019, Dr. Wenqing “Wennie” Xu and I taught the ROP and specialized processing methods workshop for 28 sanitarians from the nine LDH regions. The workshop was housed in the LDH offices in Baton Rouge.

GOOD MANUFACTURING PRACTICES VIDEOS

The U.S. Food and Drug Administration (FDA) and the Louisiana Department of Health (LDH) require seafood processors to comply with Good Manufacturing Practices to process seafood products for wholesale and retail. Six videos were created to assist the LA seafood industry in understanding and complying with Federal and State requirements. To access videos, visit [Good Manufacturing Practices](#).

1. Safety of Water
2. Clean Contact Surfaces
3. Cross-contamination Prevention
4. Employee Health & Sanitation
5. Adulterant Protection & Toxic Compound Handling
6. Exclusion of Pests

MAGAZINE ARTICLES

Watts, E. & Parraga, K. 2019. *Making Sense of USDA Siluriformes Inspection*. Aquaculture Magazine, April – May 2019 45(2): 49-61. To access article, visit [USDA Siluriformes Inspection](#)

Watts, E. 2019. *Processing Seafood under Sanitary Conditions*. Aquaculture Magazine, August – September 2019 45(4): 48-52. To access article, visit [Seafood Sanitary Conditions](#)

Watts, E. 2019. *Maintaining Raw Seafood Quality through Freezing*. Aquaculture Magazine, August – September 2019 45(6): 56-61. To access article, visit [Freezing Raw Seafood](#)

RESEARCH

SHELF STABLE SHRIMP QUALITY THERMALLY PROCESSED IN AGITATION AND STATIC MODE

Brown shrimp (*Farfantepenaeus aztecus*) are one of the most common shrimp species found in the Gulf of Mexico where the United States harvests over 60% of the shrimp domestically. In Louisiana, the shrimp industry has a \$137.5 million value. According to the National Fisheries Institute, shrimp is the most popular seafood consumed by Americans with consumer demand including processed forms such as chilled, frozen, smoked or canned product. Shrimp and prawns are in the top three product imports by value in the U.S. with frozen and preserved accounting for \$6.6 billion.

Shelf stable processes make foods safer, prolong the life span of foods and allow for storage at room temperature. The convenience factor is much higher than other processes, which can reduce preparation and cleaning of shrimp when making recipes like étouffée or gumbo. Additionally, shelf stable shrimp could help food service markets with improved shrimp menus and methods of execution planning. Shelf stable shrimp removes the need for fast thawing of frozen product if unexpected high demand occurs. Shelf stable shrimp also provides an easy protein source for retail salads, crackers and other grab-n-go combo snacks.

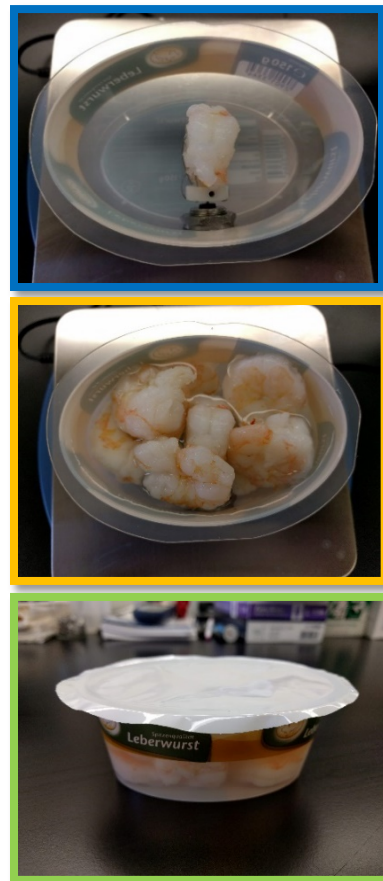


Figure 1. Shrimp package preparation; shrimp probing, container filling and CGMC sealing. Photo: Sharon Hymel.

Reciprocal agitating retort technology is a promising technology, which can reduce processing times and improve quality of shelf stable food products. Compared to other retort technologies, it is an understudied retort thermal process. In collaboration with Dr. Louise Wicker and her team, we aimed to elucidate the differences between reciprocal agitation and static retort thermal processing by observing process times, F_0 values, cook yields and texture using brown shrimp to measure quality and retort process utilization. This is one of the first studies investigating reciprocal agitation on shrimp quality.

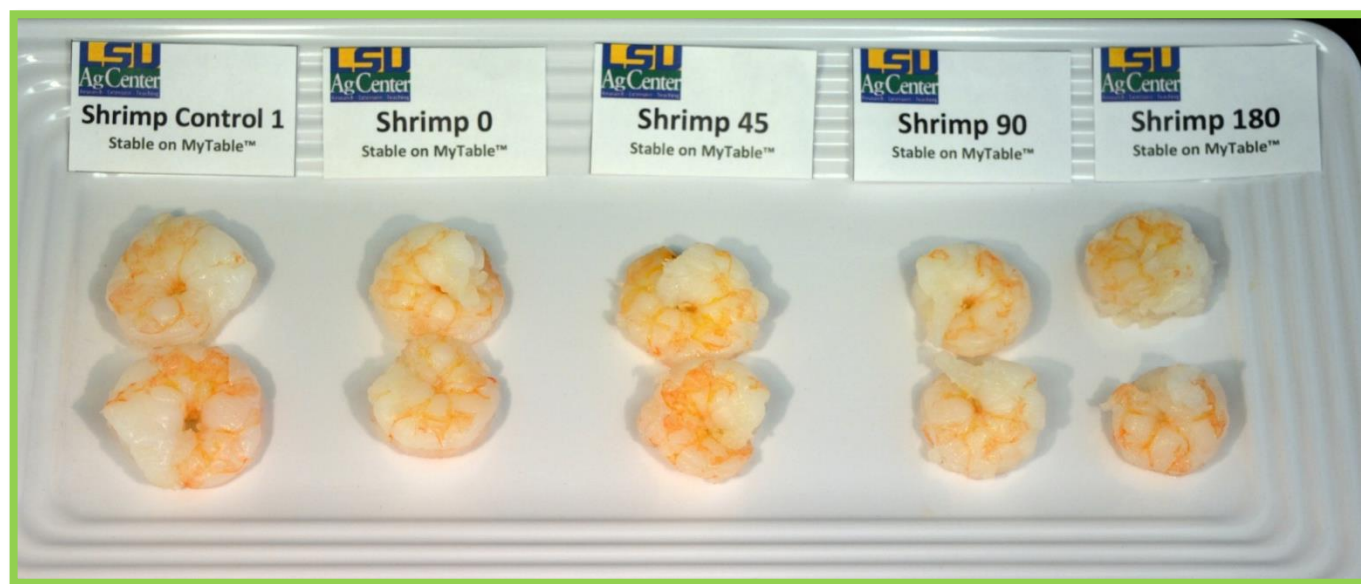


Figure 2. Shrimp processed at four agitation speeds; zero, 45, 90 and 180 spm. Photo Sharon Hymel.

Brown shrimp from the Gulf of Mexico was processed at four agitation speeds; zero, 45, 90 and 180 shakes per minute (spm). Blanched shrimp was probed and placed in injection in-mold-label (IML) oxygen barrier containers. The containers were sealed with a control GMC and flushed with nitrogen (Figure 1). The study findings showed that the targeted F_0 value was achieved 42% faster with agitation compared to static. Agitation decreased process time by 23%. Agitation increased TA shear force by 62%. From the findings of this study, a 90 spm agitation speed is recommended for optimal shrimp quality and processing efficiency (Figure 2).

POSTERS PRESENTED AT PROFESSIONAL CONFERENCES

1. Parraga, K. & **Watts, E.** *Chilling Rates and Cooling Curves in Black Drum Comparing Slurry Ice and Flake Ice*. Poster at Atlantic and Gulf Seafood Technology Conference Annual Meeting. Boston MA. March 16, 2019.
2. Parraga, K. & **Watts, E.** *Quantification of Fat Naturally Adhered to Fresh Crawfish Tail Meat*. Poster at Institute of Food Technologists Annual Conference. New Orleans, LA. June 5, 2019.
3. Parraga, K. & **Watts, E.** *Drip loss in Frozen Crawfish Tail Meat*. Poster at Institute of Food Technologists Annual Conference. New Orleans, LA. June 5, 2019.
4. Parraga, K. & **Watts, E.** *Louisiana Wild-caught Catfish under USDA/FSIS inspection*. Poster at International Association of Food Protection Annual Meeting. Louisville KY. July 2019.
5. Cobar, J. & **Watts, E.** *Black Drum (Pogonias cromis) Shelf Life Comparing Four Packaging Methods*. Poster at International Association of Food Protection Annual Meeting. Louisville KY. July 2019.

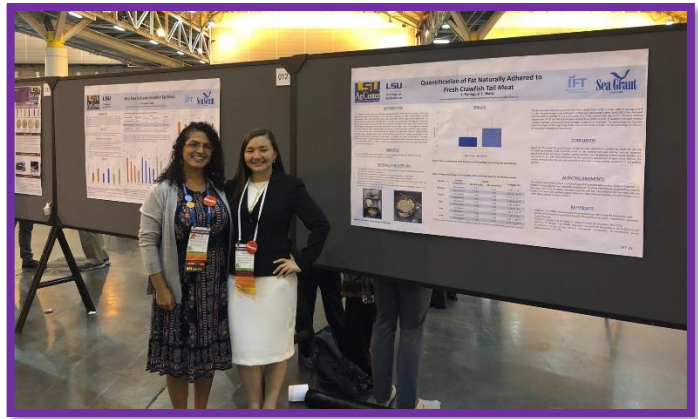
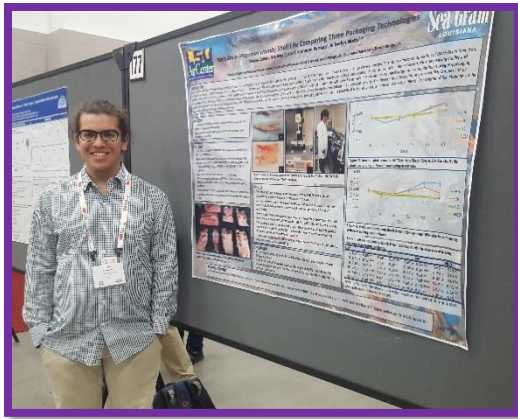


Figure 3. Joshua Cobar presenting poster at IAFP 2019, Louisville, KY. And Katheryn Parraga presenting posters at IFT 2019, New Orleans, LA.

TEACHING

In the summer 2019 semester, I taught the class Seafood Safety and Technology. In the fall 2019, I participated as guest lecturer in the Food Safety class (NFS 3000), presenting a one-hour lecture on “Food Toxins.”

UPCOMING EVENTS

AFDO Sanitation Control Procedures (SCP) For Fish and Fishery Products

January 27, 2020
Efferson Hall 212

AFDO Basic Seafood HACCP

January 28-30, 2020
Efferson Hall 212

USDA/FSIS Catfish Compliance Workshop

January 28-30, 2020
Efferson Hall 212

Louisiana Fisheries Forward Summit

March 11, 2020
The Pontchartrain Center, Kenner, LA

Curso Básico HACCP para Mariscos y Pescados en Español

12-14 de mayo, 2020
Virginia Tech Seafood AREC

Evelyn Watts

Assistant Professor – Seafood Extension Specialist

School of Nutrition and Food Sciences

LSU AgCenter & LA Sea Grant

Website: www.lsu.edu/departments/nfs/Seafood-Quality/index.htm