



On January 1, 2017, I started as a Seafood Extension Specialist under the LSU AgCenter School of Nutrition and Food Sciences and Louisiana Sea Grant, with a 70% extension, 25% research, and 5% teaching appointment. My extension efforts have focused on three main areas: USDA/FSIS catfish compliance, crawfish weight and measures, and training and workshops. In addition, I have created and reviewed several fact sheets, participated in multiple exhibits and displays, presented seminars, and visited over 20 seafood processors along the coast of Louisiana. Through my research appointment, I am assessing Siluriformes Fish Regulations, studying packaging technologies, and evaluating crawfish tail meat. Under my teaching appointment, I taught an undergraduate course and assisted on a graduate course in the spring 2017 semester. I am involved in different advisory committees and am a member of Louisiana Sea Grant Marine Extension Project, AFDO Seafood Committee, and Chain of Custody Technical Advisory Committee (CoC TAC) for the Audubon Gulf United for Lasting Fisheries (G.U.L.F.) Responsible Fisheries Management Certification program.

### Extension

Since March 1, 2016, the catfish industry has been under USDA/FSIS inspection. Since then, all catfish processors had to transition from FDA to USDA standards. In Louisiana, several wild-caught catfish processors contacted Louisiana Sea Grant requesting support. One of their main issues is developing writing protocols and records associated with Sanitation Standards (SSOP's) and HACCP. I am working with ten wild catfish processors in Louisiana. I have visited each of them multiples times. First, I identified their needs and level of compliance. Then I helped them establish SSOP documentation and monitoring, and finally developed and implemented HACCP. Even though some processors participated in Seafood HACCP workshops in the late 90's, most of them had a limited understanding of HACCP. Therefore, I created a training curriculum, adapting Association of Food and Drug Officials Basic Seafood HACCP curriculum to USDA regulations, and applied the curriculum to catfish. This curriculum complies with USDA/FSIS training requirements. I also developed a food safety model for catfish processing, including multiple flow diagrams, product and process descriptions, hazard analyses, and prerequisite programs. Since September 1, full enforcement has been in place and all processors I assisted complied with USDA. I am now starting to visit processors to validate their systems.





In June 2017, Louisiana Crawfish processors contacted me because Weights & Measures, Louisiana Department of Agriculture and Forestry (LDAF) put several pounds of frozen crawfish tail meat on hold at retail stores. The reason for the hold was that product did not pass fat content evaluations done by inspectors at multiple retail stores. I participated in various meetings between the state agency and crawfish processors. At these meetings, my role was to provide technical advice and facilitate discussion between industry and regulatory agency. We concluded that the protocol used by LDAF was developed to evaluate fresh crawfish tail meat, and it does not take drip loss of frozen tail meat into consideration. We all agreed that research is necessary to update the standards and protocols. LSU AgCenter & LA Sea Grant, LDAF, and Louisiana Crawfish Processors Alliance will work together to complete a short and a long-term study to review and update fat content evaluation protocols for fresh and frozen crawfish tail meat, review and update standards for fresh and frozen crawfish tail meat, and develop best packaging practices for crawfish tail meat processors.



During 2017, I have lead two Basic Seafood HACCP workshops and two Sanitation Control Procedures for Fish and Fishery Products workshops. Sixty-nine seafood processors participated in the four workshops. In addition to these workshops, we offered two *USDA/FSIS Catfish compliance workshops*. The first workshop was hosted on the LSU campus, and the second one in Mansura, LA, at an AgCenter facility. Nine processors participated in the two workshops. I also lead one Better Process Control School in January and assisted teaching one in July.

## Research

During my extension work with catfish processors, I have been collecting data through observation and surveys to assess the impact of the USDA Siluriformes regulation in the wild catfish industry in Louisiana. The goal of this study is to assess facility standard compliance, implementation of food safety systems, and changes in behavior and attitude. For the packaging innovations, I am starting to evaluate the impact of Reduced Oxygen Packaging (ROP) on Melanosis development in Plate Frozen Gulf Shrimp. The objective of this study is to evaluate melanosis inhibition on frozen shrimp during thawing, comparing different ROP technologies. Additionally, we will evaluate shelf life of multiple Louisiana seafood products, comparing three packaging technologies. Moreover, during next crawfish season, we will start evaluating domestic crawfish tail meat. The objective of this study is to review and update weight-loss evaluation protocols for fresh and frozen crawfish tail meat, review and update standards for fresh and frozen crawfish tail meat, and develop best crawfish tail meat packaging practices.



## Teaching

In spring 2017, I taught NFS 2000 – Fundamentals of Food Science (76 students), and assisted a couple of lectures of NFS 7071 - Graduate Seminar Nutrition and Food Sciences.

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