Utilizing Advanced Processing Technologies in Catfish Workshop
April 9-10, 2018
Notes

Co-Hosts:

- USDA Agricultural Research Service:
- Mississippi State University

Steering Committee: Kurt Lawrence, Acting SEA Associate Area Director; Peter Bechtel, Research Leader, Food Processing and Sensory Quality Research Unit; Craig Tucker, Research Leader, Warmwater Aquaculture Research Unit; and Jimmy Avery, Aquaculture Leader, Mississippi State University Extension Service.

39 attendees: industry, academia, professional organizations and ARS leadership and scientists

Quality:

- Improve Shelf-life extension of fresh products beyond 12 days by evaluating microbiology and quality characteristics.
    - Evaluate effects of seasonality and pre-harvesting stress on muscle characteristics.
    - Investigate processing operations and temperature controls to reduce the initial microbial load.
    - Develop novel packaging systems to improve shelf life.
    - Develop coatings and glazes of catfish products to improve shelf life.
- Improve the Shelf life extension of frozen product beyond 6 months for further processed products such as batter and breaded fillets by evaluation of quality characteristics.
    - Evaluate seasonality and pre-harvesting stress on muscle characteristics.
    - Evaluate additives, coatings and glazes that can be added prior to freezing to improve the quality of frozen product during storage.
    - Develop novel packaging systems to improve shelf life.
    - Optimize frozen storage conditions for quality of major products.
- Determine environmental, genetic, processing, and management factors that affect product quality including flavor, color, and texture characteristics.
- Develop new technologies to measure off-flavor that are economical, rapid, and reliable.
- Evaluate alternatives to hauling ice for keeping fish cool during transport.

Processing:

- Improve fillet processing operations to reduce trim and increase fillet yield.
- Adapt processing equipment used in other fisheries, poultry and meat operations for catfish processing. Work with equipment manufactures to adapt and modify fillet machines that automatically adjust to catfish fish size and evaluate imaging systems to optimize catfish fillet cuts.
- Reduce fillet trimming labor and turnover by developing improved trimming systems and ergonomics.
- Develop pre-fillet equipment to removed fin bones.
- Develop different types (grades) of catfish mince for different end uses.

- Develop filleting procedures that can improve the quality of mince such as reducing the content of skin in mince).

New Product Development:

- Develop new and/or improved products from catfish mince.
    - Develop processes and methods to optimize the quality of catfish mince and storage stability.
    - Develop processes and methods to improve mince recovery, such as from frames and heads.
- Creating new value-added products for growing markets such as consumers groups that look for convenience and healthy choices.
- Add value to big fish fillet products by further processing and evaluate real-time filleting machines.
- Develop process and products that utilize commercially available by-products (heads, skin, frames and viscera components) to produce human foods, pet foods and animal feeds.

LIST OF ATTENDEES

Name	Affiliation
Andy Prosser	Simmons Catfish, Mississippi
Archie Tucker	ARS-Southeast Area
Bill Battle	Pride of the Pond, Mississippi
Bill Gidden	Pride of the Pond, Mississippi
Bob Biles	Pride of the Pond, Mississippi
Brian Bosworth	ARS-Warmwater Aquaculture Research Unit, Stoneville
Brian Bowker	ARS-National Poultry Research Center, Athens
Brian Ott	ARS-Warmwater Aquaculture Research Unit, Stoneville
Carl Webster	ARS-Stuttgart National Aquaculture Research Center, Stuttgart
Casey Grimm	ARS-Southern Regional Research Center, New Orleans
Chip Morgan	Delta Council
Chris Sannito	University of Alaska Seafood Lab, Kodiak
Craig Tucker	ARS-Warmwater Aquaculture Research Unit, Stoneville
David Allen	Country Select Catfish, Mississippi
David Farmer	Freshwater Farms, Mississippi
Doug Britton	Georgia Tech Research Institute, Atlanta
Earl Lake	Lake's Catfish, Mississippi
Frank Davis	Country Select Catfish, Mississippi
Gene Lester	ARS-National Program Staff
James Henderson	MSU- Food Science, Nutrition, and Health Promotion
Jeff Buhr	ARS-National Poultry Research Center, Athens
Jeffrey Silverstein	ARS-National Program Staff
Jimmy Avery	MSU-National Warmwater Aquaculture Center, Stoneville
John Bland	ARS-Southern Regional Research Center, New Orleans
Jon Henderson	Harvest Select, Mississippi
Kari Reeves	MSU-Bagley College of Engineering

Name	Affiliation
Keith Miller	Superior Catfish Products, Mississippi
Kurt Lawrence	ARS-Southeast Area
Lee Stewart	Harvest Select, Mississippi
Mart Massey	America's Catch, Mississippi
Mike McCall	Catfish Farmers of America
Mike Miller	SouthFresh Farms, Alabama
Peter Bechtel	ARS-Southern Regional Research Center, New Orleans
Russ McPherson	Harvest Select, Mississippi
Sam Chang	MSU- Food Science, Nutrition, and Health Promotion
Steve Henderson	Harvest Select, Mississippi
Stuart Kinard	Superior Catfish Products, Mississippi
Wes Burger	MSU-Mississippi Agricultural and Forestry Experiment Station
Yang Zhao	MSU-Agricultural and Biological Engineering