



SC Shrimp Fishery Assistance Quality Assurance Research Progress Report

The Quality Assurance Research Team is actively conducting research that will help increase the price point potential of South Atlantic Shrimp. Shrimp, like other seafood products, is highly perishable and rapidly loses quality and safety with improper handling and storage. Developing a niche market for South Carolina-caught and regional-caught shrimp not only requires marketing but a product that meets a defined consumer need (i.e. quality, freshness, flavor, locally produced, value, etc.). Meeting this consumer need can result in higher-valued products that demand a higher price paid to the shrimp fisherman. Our initial research has focused on measuring the quality differences in domestic and imported shrimp by microbiological and chemical measures. Domestic and imported frozen shrimp samples were obtained from local markets and through direct contact with a local wholesaler. **Our research results indicate that...**

- 1. Imported shrimp products carry higher levels of antibiotic resistant bacteria than wild-caught South Carolina shrimp.**
- 2. Chemical profiles show little difference between imported and South Carolina wild-caught shrimp that have had the heads removed.**
- 3. The shelf-life of fresh unfrozen shrimp may be significantly extended through a combination of modified atmosphere packaging and processing treatments.**

Accomplishments:

- Ten shrimp samples were analyzed for total bacteria counts, antibiotic resistant bacteria (ceftriaxone, tetracycline, and chloramphenicol), total coliforms, *E. coli*, *V. parahaemolyticus*, *Listeria* and *Salmonella*. Imported shrimp samples had higher total counts of bacteria that are resistant to the antibiotic tetracycline. The average total coliform counts for imported shrimp were higher than South Carolina shrimp samples. Some imported samples showed positive results in preliminary testing for the presence of *E. coli*, *V. parahaemolyticus* and *Listeria*. Further testing is being done for conformation. *Salmonella* was present in one of the imported samples.
- Four samples of headless shrimp were analyzed for the presence of the antibiotics ampicillin, chloramphenicol and gentamicin. There were no detectable differences between imported and South Carolina shrimp. This work will be repeated with heads-on shrimp. These chemicals are most likely concentrated in the tissues and organs contained in the head.
- Several studies are being prepared to investigate the potential for extending the shelf-life of fresh unfrozen shrimp through the use of modified atmosphere packaging and processing treatments. These studies depend on the availability of freshly caught shrimp and will begin with the first landings of 2004. Domestic caught shrimp has an established competitive advantage over imports if a “fresh never frozen” niche market can be established.