



Food Microbiology & Food Safety

Land-grant Research

The Food Microbiology laboratory at Delaware State University has been committed to strengthening undergraduate and graduate research projects in Food Safety and Microbiology in order to meet national and international demands. Research projects funded by United States Department of Agriculture (USDA), National Science Foundation (NSF), Experimental Program to Stimulate Competitive Research (EPS-CoR) grant programs, etc., are being conducted at the Food Microbiology laboratory at DSU.

Our research projects focus on two priority subjects: Food safety for fishery and poultry products.

Food Safety: Fishery Products—

The U.S. is the third largest global consumer of fishery products. Bacterial fish spoilage results in billions of dollars in direct economic losses. In total, bacterial spoilage of fishery products results in the loss of one-quarter to one-third of fishery and agricultural products annually. Furthermore, pathogenic bacteria in spoiled fish can be a cause of foodborne illness, and represents a risk to public health.

Food Safety: Poultry Products—The U.S. is the world's largest producer and market place of poultry and egg products. About 10% of the annual outbreaks of human foodborne illnesses can be traced to con-

taminated poultry products. The economic loss from these illnesses is \$3 billion annually.

Based upon these two priority areas, we have conducted several research projects regarding: 1) spoilage/pathogenic bacteria isolation and identification from fish products, 2) development of rapid methodology for detecting pathogens from seafood and water by using molecular biological assays, 3) development of probiotics for poultry products' safety, 4) metagenomics in foods and environments, 5) commercial developments, etc.

The nature of our research is highly multidisciplinary, encompassing the fields of food science and molecular biology in academia, and the public and private sectors. The research will provide an integrated multidisciplinary approach toward developing a new

detection methodology and solving important agricultural problems: controlling potential hazardous bacteria prior to selling products to the market for food industries, improving fishery quality and poultry products for farmers, and extending food shelf life for consumers.

Food poisoning and outbreaks are annually reported and have increased in the United States as well as in other countries.

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