

Vision

The USMSFP vision is a diverse, integrated, and mature U.S. marine shrimp farming industry that provides economically competitive products produced in an environmentally sound and sustainable way to provide wholesome, healthy seafood to the consumer.

The USMSFP, through the work of the seven Consortium institutions, has provided U.S. producers with direct access to reliable captive supplies of high health and genetically improved shrimp stocks and advanced disease diagnostic and treatment methods.

The **Oceanic Institute** (HI) has principal responsibility for genetic improvement of shrimp stocks, including resistance to disease.



The **University of Southern Mississippi** (MS) and the **University of Arizona** (AZ) are the principal disease research, diagnostic, and treatment centers.

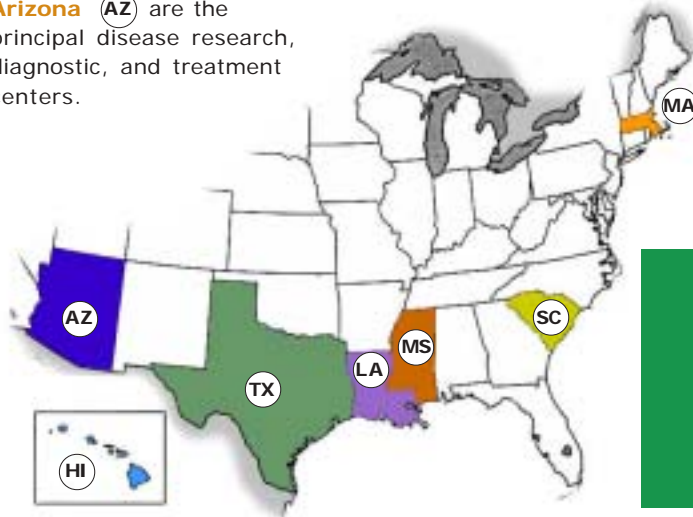


The **Texas Agricultural Experiment Station** (TX) works on a variety of pond production issues and has primary lead in nutrition and feeds management research.

Tufts University (MA) has the lead in quantitative genetics, gene markers and microsatellites and provides quality control to the breeding program through pedigree and inbreeding analysis.



The **Waddell Mariculture Center** (SC) and **Nicholls State University** (LA) work together on resolving environmental issues associated with pond production and high-density culture, including waste management and sludge bioremediation.



U.S. Marine Shrimp Farming Program

Director:
Dr. Anthony C. Ostrowski
41-202 Kalaniana'ole Highway
Waimanalo, HI 96795 USA
Telephone: (808) 259-3109

United States Marine Shrimp Farming Program

Moving forward...



...in the right direction!

The United States Marine Shrimp Farming Program (USMSFP) is an integrated, multi-state research consortium that develops and transfers technologies, products, and services necessary for domestic shrimp farming to become competitive in the world market.

USMSFP ...guaranteeing the future of the domestic seafood supply

Shrimp is the number one consumed seafood product in the U.S., at over 1 billion pounds annually. USMSFP research and technologies focus on sustainable, competitive strategies that promote the health and safety of consumers and the environment.

Selective Breeding

Selective breeding research for disease-resistant broodstock lines is arguably one of the most important factors contributing to the success of the domestic shrimp farming industry in recent years. Over 90% of broodstock used to produce postlarvae in the U.S. can be traced back to USMSFP lines. Recent efforts have targeted lines for rapid growth in high density systems for U.S. advantage. Genomics research monitors pedigrees and guides genetic management, while forging sophisticated breeding approaches.



*USMSFP scientists pioneered genetic improvement of the Pacific white shrimp, *Litopenaeus vannamei*.*

Disease Control

The identification and control of diseases is of utmost concern to the \$9 billion world shrimp farming industry. The USMSFP protects the domestic industry through development of improved diagnostic methods and tools, and efforts to discern the mechanisms and compile models on the epidemiology and transmission of diseases. This has led to the creation of advanced, biosecure technologies to safeguard the health of both cultured and native, wild shrimp stocks. The U.S. is among a selected group of nations that can boast a virus-free shrimp farming status.



Specific Pathogen Free (SPF) shrimp form the basis of biosecure production technologies in the U.S.

Production Technology

The USMSFP cultivates new technologies and approaches that add further dimension and competitiveness to the domestic shrimp farming industry. Domestic concerns include the environmental impact of effluents on receiving waters. USMSFP guidelines and best management practices have been implemented nationwide, resulting in twenty-fold reductions in water usage, with magnitude decreases in pollutants. New, biosecure, water-reuse, superintensive production systems promise minimal impact and the ability to expand production into nontraditional shrimp farming communities for economic development.



High-density, recirculating production systems provide a competitive edge for U.S. farmers.

Advancing science...

- Established the world's first and most advanced breeding and genetic selection program for marine shrimp
- Supplied U.S. industry with genetically improved and disease resistant stocks that save an estimated \$6 million annually in potential crop loss
- Initiated research into the genetic basis of disease resistance

Protecting industry...

- Processed over 400 disease diagnostic cases for industry in 2003
- Described the etiology of all major shrimp diseases associated with viral pathogens
- Led the establishment of international "country of origin labeling" requirements to reduce threats of imported viral pathogens, later adopted in the 2002 USDA Farm Bill

Moving forward...

- Fostered shrimp production at near-shore, desert, and inland/rural farm sites responsible for the geographic expansion of shrimp farming from three to seven states in the last 10 years
- Developed new feed formulations to minimize environmental impact
- Advanced shrimp nursery and double-cropping harvest strategies used industrywide