GUAM AQUACULTURE DEVELOPMENT AND TRAINING CENTER

FY-2024 ANNUAL REPORT

The Guam Aquaculture Development and Training Center (GADTC), also known as the Fadian Hatchery, is the largest and oldest aquaculture center in the Western Pacific. It was originally built as a private facility designed to produce fish and eel fry for the Asian market and was transferred to the Government of Guam in 1986 and to the University of Guam in 2001 by Public Law 26-35. The GADTC is now housed within the Western Pacific Tropical Research Center of the College of Natural and Applied Sciences.

GADTC serves to accomplish UOG's mission as the lead agency for aquaculture development in Guam. It strives to support aquaculture development on Guam and the Western Pacific through research, education, direct farmer support and service. The GADTC was neglected for a long time with a minimum maintenance effort, but it has been upgraded recently using local, federal, and private funds. Improvements include dormitories, laundry facility, small conference room, and laboratory among others. The caretaker home was repaired as well as tanks, water ways and electric facilities.

The goals of the GADTC are:

• to conduct applied research in aquaculture

• to provide public information on aquaculture production

• to serve the needs of farmers regarding technology transfer and extension service including environmentally sound practices

• to produce fish fry and shrimp post-larvae on island reducing the reliance on imported stocks of animals

The hatchery is a bio-secure facility on a five-acre site, fully fenced on three sides and bordered by a rugged coast on the fourth side. It is only 10 minutes away from UOG campus. Facilities include an indoor hatchery with larval and artemia (aquatic crustaceans known as brine shrimp) hatching tanks, a phytoplankton laboratory, a feed preparation room, and a tool/work room. The facility also has both fresh and saltwater supplies, an automatic generator back-up system, a separate office building, a duplex of two-bedroom living quarters and a refrigerated feed storage container. There are 14 concrete ponds on the site, including six 200 sq. meter Swedish ponds and four 200 sq. meter raceways. Numerous fiberglass tanks fill the area ranging in size from 0.5 to 20 metric tons. Current products of the hatchery include high-health pathogen free shrimp post-larvae and brood stock, improved strains of tilapia fry.

GADTC maintains a collection of more than 20 virus-free Pacific white shrimp families. Shrimp are tested for virus quarterly at the University of Arizona Aquaculture Pathology Laboratory which is a USDA approved ISO 17025:2017 and 17043:2010 accredited and

Organization for Animal Health (OIE) reference laboratory. Strict health surveillance and monitoring regimes have been actively in place for the facility and its operations. Shrimp stocks remained specific pathogen-free (SPF) from the many viruses that plague the industry by far, this is a much more comprehensive SPF list than the OIE list, which includes all significant pathogens, both known and emerging ones. Through selective breeding efforts for fast growth strains, shrimp families were continuously selected for Guam's environment, to maintain genetic diversity and minimize inbreeding of the existing stock population.

Program accomplishments during FY 2024

The recovery continued in 2024 after GADTC suffered a tremendous loss (95% live stocks) during category-4 typhoon Mawar on May 24, 2023. Repopulation and research on specific-pathogen-free shrimp selective breeding programs, closed-cycle aquaculture, high health management of tilapia, microalgae and artemia production, and water quality management resumed.

• The population size of tilapia gradually increased in 2024, and the stock was reared in the raceway systems.

• High-health tilapia strains were supplied to aquaponic training programs for Guam communities.

• Fish feeds were supplied to local backyard aquaponic operations.

• The health management of the white shrimp continued to be demonstrated as a model to promote similar practices in other aquaculture facilities in the region through biosecurity implementation, disease screening/monitoring, and stock health surveillance.

• New mating schemes and breeding strategies for producing shrimp and tilapia stocks for better production performance were reinitiated.

• Public tours for stakeholders, government agencies, chefs from several hotels, farmers and other interested local communities, etc. to promote aquaculture.

• The Hatchery continued to serve as a training site for UOG ALS and SAFNR students in aquaculture.

GADTC received special appropriated and local budget allotment funds for $ 114,000; actual expenses were $97,714.64. Because of many episodes of electricity instabilities/outages due to weather conditions, there is an urgent need to purchase a new generator 200KW as a reliable backup electric supply during an emergency. The current over-30-year-old generator is not only energy-inefficient, but it also breaks down after a few hours of operation.

Therefore, we would like to respectfully request approval from the Guam Legislature so that we can reallocate some of the funds from salary to capital outlay/equipment to cover essential replacements as such.