

**GUAM AQUACULTURE DEVELOPMENT  
AND TRAINING CENTER**

**FY-2023  
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 and *Claris* catfish 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. Both shrimp and prawn 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. Through shrimp and prawn selective breeding efforts, for fast growth strains were continuously selected for Guam's environment, to maintain genetic diversity and minimize inbreeding of the existing stock population.

## **Program accomplishments and typhoon damage during FY 2023**

GADTC was functioning normally until category-4 typhoon Mawar on May 24, 2023. Shipment of shrimp to restock hatcheries resumed as well as local sales of shrimp and red tilapia. Research on specific-pathogen-free shrimp selective breeding programs, closed cycle aquaculture, high health management of tilapia, microalgae and artemia production, and water quality continued. In addition,

- More than 30,000 red tilapia individuals were raised in the seven raceway tanks.
- High-health and pathogen-free tilapia strains were supplied to 15 local backyard farmers.
- 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.
- The established mating schemes and breeding strategies for producing shrimp and tilapia stocks with better production performance were verified.
- A project proposal titled “Advancing rabbitfish aquaculture in Micronesia: Developing nursery and grow-out Techniques for *Siganus argenteus*” was submitted to the Center for Tropical and Subtropical Aquaculture and was approved for funding. The aim of this

Mr. Miguel Delos Santos, an aquaculture expert with long experience in Micronesia, joint GADTC in January. Dr. Hui Gong, WPTRC aquaculture faculty left for sabbatical leave in February.

When typhoon Mawar hit GADTC the main generator malfunctioned causing the loss of about 95% of the live stocks of shrimp, fish, and prawn with damage estimated to amount to \$1,176,000. The Army Corps of Engineers provided a back-up generator three days after the typhoon. Full power was restored about two weeks after the typhoon. Facility and equipment damages were \$65,500 and \$24,500, respectively, as reported to NIFA. In October, the refurbishment of the electric system of GADTC was initiated by a local company. The total project cost is \$235,000 and is provided by WPTRC. This work will stabilize the power supply reducing the frequent burnt-out of pumps in the hatchery.

GADTC received special appropriated and local budget allotment funds for \$109,661 and \$92,602, respectively. Actual expenses were \$98,306. Two employees were paid with local funds and an additional one was supported with federal funds. All in all, the GADTC infrastructure has been substantially improved thanks to the influx of GovGuam and federal funds, although restoring the fish and shrimp stocks would take time. A link to a recent video about GADTC is below.

[The Guam Aquaculture Development & Training Center at the University of Guam \(June 2022\) - YouTube](#)

