GUAM AQUACULTURE DEVELOPMENT AND TRAINING CENTER

FY-2026 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 wasoriginally 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.

Program accomplishments during FY 2026

Shrimp Health Surveillance and Genetic Improvement

Strict health surveillance and monitoring protocols have been actively implemented at the facility to maintain shrimp health and biosecurity. The shrimp stocks remained specific pathogen-free (SPF). Through selective breeding for faster growth, shrimp families were continuously evaluated and selected to improve performance under Guam's environmental conditions.

However, the lack of reliable seawater supply was one of the most significant constraints on hatchery operations. Both seawater pumps had failed, and a replacement pump was eventually purchased and installed by Coreseed in October 2025. JMI was engaged by UOG in early 2025 to procure a replacement pump, which arrived on Guam in September 2025. Installation was not completed until early March 2026, and the pump failed again within a few months. Although JMI had agreed to a one-year warranty, the company has not responded to UOG's inquiries regarding the pump failure.

In addition, the freshwater and air pumps experienced repeated failures due to power outages and electrical instability. Tropical storms in 2025 and three typhoons in 2026 resulted in significant shrimp mortality and the loss of valuable genetic resources, further disrupting the selective breeding program.

Transition of Hatchery Operations and Shrimp Stock Maintenance

The contract between Coreseed and UOG ended on December 31, 2025, and hatchery operations returned to UOG on January 1, 2026. To support the continuation of aquaculture research, Coreseed donated several thousand shrimp and over 10,000 tilapia to the College of Natural and Applied Sciences (CNAS) at UOG.

Shrimp stocks were maintained in tanks S2 and S3, while S6 housed tagged shrimp representing selected genetic families. However, shrimp health and condition progressively deteriorated because of inadequate seawater exchange. The recent passage of Typhoon Champi caused mass mortality among the tagged shrimp in S6, threatening the loss of valuable genetic resources developed through the breeding program.

Integrated Multitrophic Aquaculture (IMTA) Research

An integrated multitrophic aquaculture (IMTA) system was tested using Pacific white shrimp, red tilapia, sea grapes (*Caulerpa* spp.), and sea cucumbers. This work explored the potential for integrating multiple species with complementary ecological functions to improve resource utilization and support more sustainable aquaculture systems suitable for Guam and other Pacific islands.

Red Tilapia Production, Outreach, and Community Engagement

Red tilapia production gradually resumed and expanded during 2025–2026, with stocks maintained in raceway systems. High-health tilapia strains were supplied to community aquaponics training programs to support aquaculture development among Guam residents.

Red tilapia was also marketed through local vendors and hospitality businesses, including Pay-Less, Hyatt, and Dusit Thani. In addition, tilapia was supplied for local agricultural exhibitions, culinary student competitions involving Guam and Taiwan, and farmer-focused conferences held at the Hyatt. These activities helped promote locally produced aquaculture products and raise public awareness of the potential for aquaculture to contribute to Guam's food security.

Stakeholder Outreach and Student Training

Tours were organized for stakeholders, government agencies, chefs from local hotels, farmers, and other interested community members to demonstrate hatchery operations and promote aquaculture development on Guam.

The facility also provided training opportunities for UOG students interested in aquaculture, supporting experiential learning and workforce development. From June through July 2026, two visiting students from Puerto Rico received hands-on training and conducted experiments at the hatchery, gaining practical experience in aquaculture research and production systems.

Workshop on Growing Red Tilapia was delivered to 20+ farmers and stakeholders in September 2026.