GUAM AQUACULTURE DEVELOPMENT AND TRAINING CENTER

FY-2022
STATUS REPORT

December 2022

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 goals of the GADTC are:

- to conduct applied research in aquaculture
- to be the center for public information on the aquaculture industry, its products, and its potential
- 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 15 minutes away from the airport by car. Facilities include the outdoor nursery and grow-out tanks, an indoor hatchery with larval and artemia hatching tanks, a microalgae 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 one concrete outdoor grow-out 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 capacity. Current products of the hatchery include the high-health (Specific Pathogen Free) Pacific white shrimp (*Penaeus vannamei)* and Giant freshwater prawn (*Macrobrachium rosenbergii*) post-larvae and broodstock, and improved strains of tilapia.

The University of Guam was provided with two special appropriations for the GADTC of $109,661 and a local budget allotment of $96,759.00 for fiscal year 2022. The facility spent $97,347.91, and carried over $109,072.09. Please see attached spreadsheet. There were three employees paid from the appropriated funds with a total FTE of 2.10. Mrs. Chasy Cayton resigned because her husband was deployed overseas.

Program accomplishments during FY 2022

GADTC continued to maintain a valuable collection of more than xx virus-free Pacific white shrimp families. Shrimp was evaluated 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 including WSSV, IHHNV, TSV, YHV, IMNV, LSNV, CMNV, MrNV, BP, HPV, SMV, AHPND/EMS, EHP, NHP-B, and SHIV/DIV1. 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, Jiang and her team continuously select for fast growth strains were continuously selected for Guam's environment, to maintain genetic diversity and minimize inbreeding of the existing stock population.

In addition, studies were initiated to evaluate the co-culturing of these species for the best combination in terms of production performance. Shrimp and prawn co-culture experiments were conducted to evaluate different ratios on the performance. Shrimp and tilapia polyculture was also trialed, and native sea grapes (*Caulpera racemose*) were also considered as a potential candidate for polyculture with shrimp or other marine species. A multistate project is also carried out to investigate ways to expand and diversify U.S. aquaculture production by combining the analyses of consumers' preferences and production challenges and opportunities.

In 2022, hands-on training opportunities and education for graduate students (3) from AL536 class and undergraduate students (18) from AL136. GADTC provided the research platform with seedstock was provided to support Steven-Young-Uhk, the first UOG SAFNR master student in aquaculture who conducted his experiment for his thesis and J-1 exchange scholar Jarupan Channarong for polyculture trials. Live tilapia fingerlings were also provided to support the aquaculture lab (AL136L) usage and help stock the sea-grant aquaponics system, and triton farm aquaponics operations. It was also the source for shrimp/fish to the Underwater World for display and the fingerlings to several local farmers for their backyard aquaculture operations.

FY2022 Allotment & Expenditures for GADTC

FY2022 Allotment received as of 9/30/22		Total
Special Appropriated funds	$ 109,661.00	
Local Budget Allotment	96,759.00	$ 206,420.00
Less: FY2022 Actual Expenses		
Salaries and wages	$ 52,642.80	
Fringe Benefits	24,149.61	
Repairs and maintenance	9,050.00	
Supplies/Materials	539.40	
Administrative Fees	10,966.10	$ 97,347.91
Net Balance		$ 109,072.09
Number of Employees		
Chasy Cayton (295.50/2080)	0.14	
Conlee Mongami (2080/2080)	1.00	
Matthew Paulino (1998/2080)	0.96	2.10
Service Contract - Liang Construction	7,800.00	7,800.00