Regional e-Notes ~ Volume 11, Issue 7 ~ July 2019

Letter from the Director

Aloha,

July has been a busy month for the CTSA team! After our IAC and TC discussed and voted on the pre-proposals we received in response to our 'FY19 Request for Pre-Proposals,' CTSA sent out requests for full proposals. We are looking forward to reading the expanded ideas of the Principal Investigators in the coming weeks. I also just returned from a trip to Majuro, where I checked in with our ongoing CTSA rabbitfish and moi projects. Next month's issue of e-Notes will feature an article highlighting the trip and training activities, but I would like to take a moment now to extend my sincere appreciation to Ryan Murashige, the Majuro-based PI who is leading the current rabbitfish training (pictured), for his dedication to improving lives and aquaculture production in the Pacific Islands.

As we move forward in our FY19 development process and the overall development of our program, my thoughts are centered on the future of seafood. We are all aware that there is growing need for sustainable solutions to feed the world's growing population. Rather than compare aquaculture to fisheries, the two industries need to collaborate to achieve our shared mission to increase the seafood supply.

Together with other innovative methods and technologies, especially those focused on reducing and re-utilizing waste, we can help reach one of the fundamental goals of aquaculture farming: increasing the seafood supply.

Protecting the ocean is another fundamental goal of aquaculture farming. We have many unique opportunities to supply the growing demand for seafood while reducing impacts on precious and finite natural resources. I look forward to continuing discussions and developing,...**Read More**

CTSA Project Update: Aquaculture Workshop for Waianae High School

This past March, twenty-two students, 3 teachers, and 2 chaperons from Waianae High School attended a 3-day aquaculture workshop at the Oceanic Institute of Hawai'i Pacific University. The CTSA-funded hands-on workshop featured activities involving finfish, live larval feeds organisms, marine shrimp, microalgae, environmental DNA (eDNA), an aquaculture business game, a college mini-fair, and a career lunch mingle with industry professionals.

The students and teachers are from Waianae High School's Marine Science Learning Center (WHS MSLC). The classes and activities at the MSLC gives the students a strong familiarity with aquaculture through the projects they conduct at school in their own aquaculture facilities. Since the early 1990s, the school has been culturing ogo and shrimp and seeks to inspire the students to pursue higher education and careers in marine science including aquaculture and related fields. OI-HPU's relationship with the school goes back to the beginning with their then lead teacher, Susan Lum, attending a 10-day aquaculture workshop at OI-HPU's Kona facilities. This led to the school sending students to Kona for an annual workshop for 15 consecutive years.

This year's CTSA- funded workshop allowed OI-HPU and WHS MSLC to restart the relationship providing hands-on experiential education in aquaculture and marine science for the students. During the workshop the students work with OI-HPU scientists and technicians as well as faculty from the College of Natural and Computational Sciences. They are exposed to cutting edge developments in aquaculture and learn techniques they can take back to their school and use including methods to produce live larval feeds to support larval fish culture and how to improve their shrimp growout projects. Students learned how to use hemocytometers to count algal cell density in cultures and background algae in rearing systems. In addition to getting information on better raising the shrimp post-larvae they get from OI-HPU, they learned about the selective breeding process OI-HPU employs to improve their families. This activity included learning how OI-HPU is uses DNA to determine shrimp paternity thereby speeding up and increasing the veracity of the breeding program.

The WHS MSLC students also learned about other molecular techniques employed in marine science including environmental DNA to get information about presence or absence of aquatic and terrestrial organisms in coastal waters and other bodies. During this part of the workshop the students extracted DNA from strawberries using readily available materials like Dawn detergent and isopropyl alcohol. This hands-on activity allowed them to actually see DNA from the strawberries making the microscopic material visible to the naked eye.

During lunch on two of the days, the students were given a chance to learn about opportunities in education and careers after they graduate from high school. On one day a mini-college fair was held that brought representatives from local higher education institutions to the workshop to talk one on one with the students about their programs. On the other day, aquaculture industry professionals were invited to share information on their jobs, how they got there, and advice on pursuing a career in this field. The "casual" format of these sessions allowed....**Read More**

Registration Open for the 2019 Hawai'i Aquaculture and Aquaponics Association Conference on August 12!

The Hawai'i Aquaculture and Aquaponics Association Conference 2019 will take place on August 12, 2019 from 8am-5pm at Kapiolani Community College in the Ohelo Building, Ka 'Ikena Dining Room.

Everyone interested in aquaculture and/or aquaponics in Hawai'i is invited to attend the conference, which features updates on recent research at UH-Manoa, UH-Hilo, Oceanic Institute of HPU, and NELHA. Many of the speakers are CTSA PI's and Co-PI's who will be reporting on CTSA-funded research.

Presentation topics include shrimp, finfish, and shellfish culture, freshwater and marine aquaponics, Hawaiian fishpond revival, emerging tilapia diseases, food safety, and innovation in aquaculture. This year's featured speaker will be Dr. Esteban Soto of U.C. Davis.

Click here for the full agenda and to register for the conference.

AquaClip: Le Gouessant Aquaculture and Innovafeed succeed in 100% fishmeal substitution with insect in rainbow trout feed

The aquaculture industry has been interested for many years in the different alternatives available to substitute marine ingredients in fish feed. Innovative raw materials such as algae, micro-organisms or insect meal are becoming more and more popular.

Following the authorization in July 2017 to integrate insect meal in the diet of fish and shellfish, Le Gouessant, one of the major player in aquaculture nutrition in France and InnovaFeed, a French biotech company that produces a new source of protein from insect rearing for animal feed, decided to launch a joint trial in experimental conditions on rainbow trout (Oncorhynchus mykiss). While there is an increasing number of trials using insect meal, this was the first time that 100% of the fishmeal has been substituted by high quality insect protein derived from black soldier fly larvae (*Hermetia illucens*).

"We were very excited to release the results of the first trial on rainbow trout during the last 'Journées de la Recherche Piscicole', organized by the French Ministry of Agriculture, Itavi and the CIPA, France. This is the first time that we push the percentage of insect protein at this level and on such a large scale," said Guillaume Gras, Co-founder of InnovaFeed.

"The results of the trial confirm the interest for this innovative source of protein and the potential to totally substitute fishmeal by insect meal in a commercial trout feed. These good results are encouraging to launch other studies in the future, on other aquaculture species or to further explore the effects of insect meal on fish health," Gras said.

Source: Aquafeed.com / **Read Original Article**

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The Center for Tropical and Subtropical Aquaculture (CTSA) is one of five regional aquaculture centers in the United States established and funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) under grants 2012-38500-19566, 2014-38500-22241, and 2016-38500-25751. The regional aquaculture centers integrate individual and institutional expertise and resources in support of commercial aquaculture development. CTSA was established in 1986 and is jointly administered by the Oceanic Institute of Hawaii Pacific University and the University of Hawaii.

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