

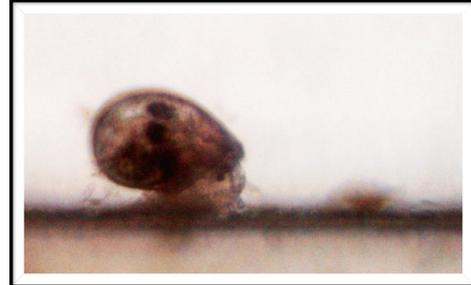


*Regional e-Notes ~ August 2020 ~ Volume 12, Issue 8*

## Letter from the Director

Aloha,

As you are likely aware, Hawai'i entered another pandemic-related lockdown earlier this month. Covid-19 cases are increasing in the islands at an alarming rate, and our hospital emergency rooms are nearing full capacity. Our team at CTSA is sending our condolences and healing thoughts to all who are experiencing hardship during these unprecedented times.



*Pictured: Opihi larvae*

This pandemic is taking a huge toll on Hawai'i's economy and the livelihoods of those who live here. Tourism, the largest contributor to the economy, has understandably slowed to a trickle. Local businesses are closing after decades in service, and over a hundred thousand employees are out of work. Young Brothers, the only inter island cargo company in Hawai'i, has received approval to increase shipping rates by 46%, a move that will impact the price of imported food and other goods throughout the islands and that is sure to be felt by all residents. The latter problem is one that highlights a critical issue that extends beyond the pandemic and one that we must urgently address as a region, nation, and global population: food security.

Hawai'i relies heavily on imports to feed residents, visitors, and livestock. We need to grow more food locally, and with limited land space, the most logical resource to utilize for this purpose is our vast EEZ. In an interview published on August 19, UH system President Lassner commented on how agriculture and aquaculture are part of the equation to repair Hawai'i's economy. There have been many articles recently on the food of the future being from the sea, including [this interview with High Liner Foods](#). People are consuming more seafood now than ever before, and I agree with the High Liner SVP that there is a desperate need for coordination among the industry to safely meet that demand. Sadly, an 'opihi picker died earlier this month while harvesting the popular Hawaiian limpet, which is commonly referred to as "the fish of death" due to precarious placement in dangerous tidal zones. People are willing to risk their lives to harvest seafood, and it shouldn't have to be that way. Increasing aquaculture production can help us safely meet our seafood and protein market demands. CTSA has funded eight years of research on opihi, led by graduate students under the supervision of Dr. Ako and Dr. Bingham. We hope their research findings can encourage opihi farming in the near future to meet local demand and avoid picking tragedies from happening.

On that note, CTSA is in the midst of reviewing the eight full proposals that we received as part of our FY20 development process. Each proposal is currently undergoing both internal and external review before our committee decides which will be selected for inclusion in the FY20 Plan of Work. We are hopeful that the FY20 group of projects will solve industry problems, and build and capitalize on opportunities to grow aquaculture production in our region. It is during tough times such as these that we can clearly see the value and importance of working... [Read More](#)

## Your Participation Can Improve Our New CTSA Website! Join the 'Aquaculture Resource Network' to Connect Producers and Suppliers

As we announced earlier this year, we are expanding on the services we offer for farmers, researchers, and other stakeholders in our region with the creation of the *CTSA Aquaculture Resource Network*.



*Pictured: Oyster spat in Hilo, HI*

The intention of the *Network* is to create a place where farmers and researchers looking for resources such as seedstock can connect with local suppliers, from University hatcheries to private industry. CTSA is often the recipient of requests for seedstock. Farmers often describe a lack of local supply in their town. CTSA is happy to help connect them to the right people.

If you are a seedstock supplier of any species in the CTSA region (Hawaii, American Samoa, Palau, Guam, CNMI, RMI, and FSM), please let us know the species you have and the general quantity available for local distribution. We will add your information to our network. We are creating a form to enter this information on our new CTSA website, and in the meantime request that you please email [mbrooks@ctsa.org](mailto:mbrooks@ctsa.org) with details.

The *Network* is just one feature of the new CTSA website that is currently under development. The new site will include a more robust 'Farmer Outreach' section and other innovative resources to connect stakeholders to each other and important information, all with the goal to further the development of our regional aquaculture industry. Keep an eye out for the release of our new site this Fall!

## CTSA 'Rabbitfish Hatchery and Larval Rearing' Multimedia Package Now Available for Download

As we previously reported, the ongoing CTSA project "Improving Rabbitfish Seed Production Capacity in Palau" held a three-day virtual training workshop in June. The workshop covered the hatchery, nursery, and grow-out protocols for the farming of rabbitfish, a popular food fish throughout the Western Pacific region.



*Pictured: Rabbitfish in Palau*

The workshop was led by researchers and project Co-P.I.'s Miguel de los Santos of Palau Community College (PCC) and Dr. Chatham Callan of the Oceanic Institute of Hawaii Pacific University (OI). Trainees learned basic tools for rabbitfish hatchery, nursery, and grow-out in Palau, as well as broodstock management, spawning, egg incubation, larval rearing, feed production, and more.

The free virtual workshop was held in place of the project's in-person workshop that was postponed due to the Covid pandemic. The resource package from this workshop, which includes videos and PPT presentations, is now available for download on the CTSA website. [Click here to learn more and download the resource package.](#)

## Regional and National Aquaculture Announcements

## ACOE Releases Pre-publication Revisions to NWP 48 and Proposes New Mariculture NWPs

The US Army Corps of Engineers (ACOE) has posted to a public website a draft notice of proposed rulemaking. This pre-publication allows the public advance notice to examine the proposals and prepare comments for when the notice appears in the Federal Register. In this pre-publication the agency is proposing to reissue certain existing Nationwide Permits (NWPs) and associated general conditions and definitions, with some modifications. They are also proposing to issue five new NWPs. Two of those proposed new NWPs would authorize certain categories of mariculture activities (i.e., seaweed and finfish mariculture) that are not authorized by NWP 48, Commercial Shellfish Aquaculture.

This sneak-peek is 254 pages long. To help with navigation: Pages 7-12 provide the what, why and how for nationwide permits. Pages 14-16, Section D that provides an overview of new NWPs for marine seaweed and finfish aquaculture. Pages 84-113 presents revisions to NWP 48, Commercial Shellfish Aquaculture. Pages 116-124 presents the proposed NWPs for seaweed and finfish aquaculture. To read or download the sneak-peek, [click here](#).

## Aquatic Animal Drug Approval Partnership, AADAP Update

As of August 2020, AADAP will no longer be able to use GovDelivery as a means to deliver the monthly AADAP Updates. Our monthly updates will now be posted on AADAP's website. The August 2020 AADAP Update is now available for viewing on AADAP's website at the link below: <https://www.fws.gov/fisheries/AADAP/aadap-updates/aadap-update-082020.html>

## 2022 Census of Aquaculture

The 2022 Census of Agriculture is right around the corner and USDA NASS is making every effort to count all aquaculture producers in the United States. If you produce any aquaculture products and want to make sure that you are counted in the 2022 Census of Agriculture and the 2023 Census of Aquaculture, please sign up your operation using this online form: <https://www.agcounts.usda.gov/cgi-bin/counts/>

## AquaClip: Researchers successfully replace fishmeal, fish oil in farm-raised carnivorous fish

Researchers in Kona, Hawaii, have made a breakthrough in the quest to develop a cost-effective "fish-free" feed for farm-raised Kampachi, or almaco jack, a carnivorous marine fish prized for its rich, buttery flavor. "This is the first time - to our knowledge - that fishmeal and fish oil have been totally eliminated from the diet of a marine carnivorous fish, with no deleterious consequences," said Neil Anthony Sims, CEO of the Hawaii-based mariculture company, Ocean Era, where the trial was conducted. "Kampachi is a fast-growing, sashimi-grade fish, so this a significant breakthrough for the sustainability and scalability of marine fish farming."



During the three-month trial, 480 juvenile Kampachi (*Seriola rivoliana*) were fed one of four diets. Two of the diets contained no fishmeal and one of these also contained no fish oil. Fishmeal replacement relied primarily on poultry meal from up-cycled poultry trimmings. Fish oil replacement was achieved using Veramaris® natural marine algal oil. A fishmeal and fish oil diet was used as a control, together with an additional commercial control diet. Fish were stocked into 16 tanks for the comparative grow-out trial. The performance was evaluated in terms of growth, feed conversion ratio (FCR), fillet yield and survival.

Fish that were fed the zero fishmeal/zero fish oil diet performed as well as the fish fed with the fishmeal and fish-oil diet. Fish fed the zero fishmeal/zero fish-oil diet also had a more desirable taste compared to the fish fed the commercially available control diet. "The results clearly show

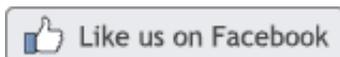
that algal oil can replace fish oil 100% without any reduction in the growth of this marine fish," said Rick Barrows, a fish nutrition expert with Aquatic Feed Technologies and co-principal investigator of the study.

The feed formulations used in this trial are available as open-source formulae through the F3 Feed Innovation Network (F3 FIN) for anyone working to replace wild-caught fish ingredients in animal feed. F3 FIN encourages sustainable innovations in fish-free aquaculture feed ingredients by sharing experimental protocols, testing facilities and ingredient providers.

"Development of diets that use these upcycled ingredients and microalgal oils is critical to the long-term scalability of marine fish culture, and therefore to our ability to sustainably feed a planet of nine billion people with heart-healthy seafood," said Sims.

Source: [Aquafeed.com](http://Aquafeed.com) / [Read Full Article](#)

[www.ctsa.org](http://www.ctsa.org)



This newsletter is written and prepared by the CTSA Information Specialist Meredith Brooks. 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 2016-38500-25751 and 2018-38500-28886. 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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