CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

Regional e-Notes ~ June 2023 ~ Volume 15, Issue 6

Letter from the Director

Aloha,

Summer is here and the FY23 CTSA development process is in full swing! We are looking forward to our annual IAC/TC meeting on July 6, where members will discuss critical regional research needs and vote on the 20 pre-proposals we received in response to our FY23 Request. I would like to extend my sincere appreciation to each member for their support and advice in this process. My appreciation also extends to all of the researchers who submitted pre-proposal concepts to help industry development in our region.

As we prepare for this annual discussion on our regional development, I am pleased to see more support for national aquaculture development in the U.S. Congress. According to reports in recent weeks, U.S. lawmakers are trying once again to pass the Advancing the Quality and Understanding of American Aquaculture (AQUAA) Act. Among other goals, the legislation is aimed at establishing national standards for offshore aquaculture and streamlining its development. I am even more pleased to see that the latest push for AQUAA is co-led by Hawaii Senator Brian Schatz. Other legislation in support of aquaculture has also been introduced including a bill to establish a USDA Office of Aquaculture, seafood-related provisions in the Senate Agriculture funding bill, and another bill to increase funding for federal aquaculture assistance through R&D, introduced by Hawaii legislators Rep. Jill Tokunda and Senator Mazie Hirono.

The 2023 Hawaii State legislative session also considered many bills to support aquaculture development, including an urgent bill to provide critical funding for the UH/HDOA disease diagnostics lab. Unfortunately, none of the bills made it through to law, but their introductions were a good start, and I am hopeful that we will see a strong commitment from the state during the next legislative session. Communication and collaboration between organizations and governments at the local, State, regional and national levels is essential to the growth and future success of our industry.

I recently traveled to Palau, and I am in full agreement with Palau Community College President Dr. Patrick Tellei's idea that after decades of talk, the time is now to take action and support local aquaculture farmers through hatchery production. CTSA remains committed to supporting those actions and building capacity for aquaculture in the Western Pacific Islands. We look forward to seeing the people of these communities managing hatcheries on their own without reliance on foreign experts. During my visit, I was thrilled to see that our industry collaborator Biota Inc. has hired Ms. Aldrienne Iyoul Aldrin as their General Manager. Her local leadership is setting a wonderful example that I would like to see across all islands in the Pacific.

Mahalo,
Dr. Cheng-Sheng Lee
Executive Director, CTSA

Survey: CTSA-funded 'Macroalgae' Project Seeks Consumer Feedback on *Limu*

The CTSA project "Next Steps in Culture of Native Hawaiian Macroalgae: Scale-up and Market Analysis" is growing several species of native *limu* at the Pacific Aquaculture and Coastal Resources Center in Hilo, Hawaii. In addition to scaling up production capacity, a critical part of the project is gauging interest and market acceptance of these seaweed species.

The project research group has prepared a survey to help

determine the market's potential for edible native Hawaiian *limu* products and guide the project as research continues. All responses are anonymous, and the survey should take a total of about 10 minutes to complete.

We encourage you to respond honestly and appreciate your participation in this project.
Click here to participate in the survey.

New Publication from CTSA 'Fungal Filters' Project

The ongoing CTSA project "Developing a Biofiltration System with Fungal Filters for Sustainable and Economical Harvesting of Microalgae" has published a review article in the journal Energies (*full citation below). Several authors of the article "Microalgal Consortia for Waste Treatment and Valuable Byproducts" are supported under the CTSA grant. The following is the abstract:

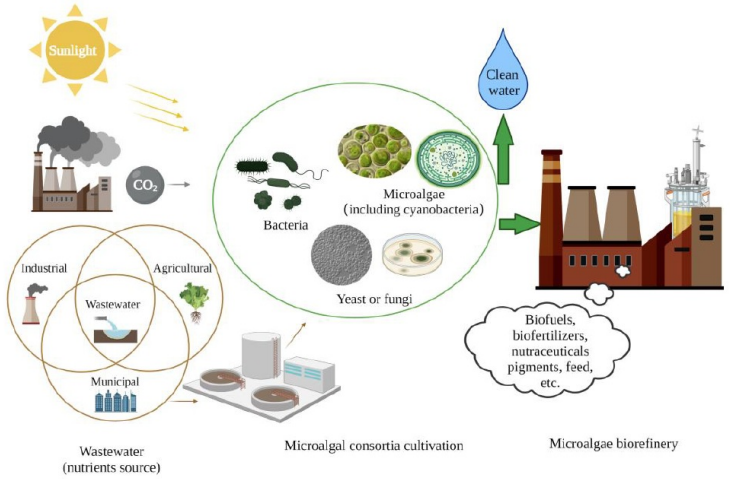


Figure 2. Microalgal consortia in wastewater treatment. Microalgal consortia (**center**) can be used to treat various wastewater (**left**) for clean water and valuable products, such as biofuels, biofertilizers, nutraceuticals, pigments, and feed (**right**).

Microalgae have been considered a promising and sustainable candidate for wastewater treatment and valuable bioproducts, such as feedstocks for food, nutrients, and energy. However, many challenging bottlenecks, such as low biomass productivity, expensive biomass harvesting tech-niques, and inefficient extraction of biofuels restrict its large-scale commercial production. Symbiotic relationships between microalgae and bacteria, also known as microalgal consortia, have proven to be effective solutions for mitigating technical and economic limitations. The natural and artificial symbiotic microalgal consortia combine microorganisms with various metabolic activities, which leads to valuable biomass production and the removal of nutrients, pharmaceuticals, and personal care products (PPCP) from wastewater. Many microalgal consortia have been applied for various wastewater treatments with reduced energy costs and higher efficiency in recovering valuable re-sources. In this study we review the present research status and prospects of microalgal consortia, emphasizing the associated mechanism of microalgae consortia cooperative symbiosis and its studies on diverse environmental and biotechnological applications.

Click here to read the article

Zhu, S., Higa, L., Barela, A., Lee, C., Chen, Y., Du, Z. 2023. Microalgal Consortia for Waste Treatment and Valuable Bioproducts. Energies 16: 884.

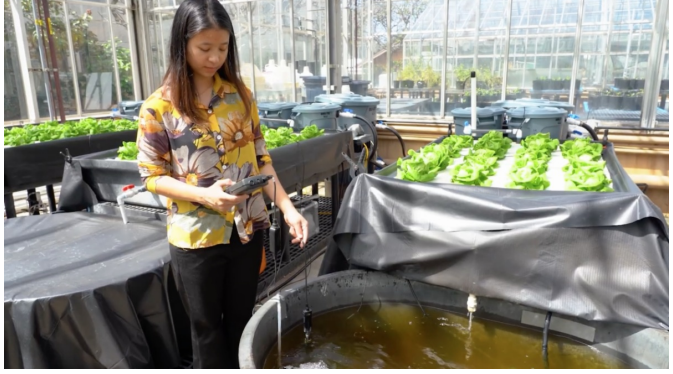
New Video from CTSA 'Nanobubble Aquaponics' Project

The CTSA project "Development of a State-of-the-art Aquaculture and Aquaponic System: Integrating Biochar Filtration and Nanobubble Technology" recently produced a short informational video highlighting the work of the project.

The goal of the project is to develop a state-of-the-art aquaponic system marrying

two innovative strategies: nanobubble technology and biochar, which the research group hypothesizes could significantly increase plant and fish yields, and stocking densities through amelioration of aqueous phase DO and improvement in water quality. This innovative research and technology development project is being tested in a bench-scale setting (as shown in the video), to be followed by testing in commercial-scale aquaponic systems.

Click here to watch the video



AquaClip: Hawaii Lends A Helping Hand In The Pacific Northwest

While the crew on the voyaging canoe Hokulea sailed around Alaska, meeting with various Alaska Natives before a four-year circumnavigation of the Pacific, there was another meeting of Indigenous peoples, including those from Hawaii, in Washington state.

About two dozen people from Hawaii — mostly aquaculture practitioners from various fishponds — traveled to Kukutali Preserve, about a 90-minute drive north of Seattle. They helped build a wall for a traditional clam garden, a mariculture practice used by the Swinomish Indian Tribal Community to optimize clam production and increase species diversity. The garden is similar to the Native Hawaiian aquaculture practice of loko ia kuapa, or rock-walled fishponds.

Last week dozens of people representing nearly 30 tribes — from Hawaii, Washington, British Columbia, Alaska, Guam and Palau — showed up to help the Swinomish tribe complete the wall encircling the clam garden as part of the 2023 Salish Summit, a multi-day event that brings together tribes in the Cross-Pacific Indigenous Aquaculture Collaborative.

Working during low tide on a beach on Kiket Island, the volunteers — many wearing shorts and boots — placed about 10 tons of stones on a porous 200-foot-long, knee-high wall. Others worked on “fluffing” the sediment. Using pitchforks and shovels, they aerated the sediment to create a better environment for the butter clams and littleneck clams that grow here.

The garden can attract other marine life, too, including sea cucumbers, sea urchins, starfish, crabs and octopus. This is thought to be one of the first clam gardens to be built in the U.S. in 200 years.

There’s a familiar saying among Native communities on the Northwest coast of the U.S.: “When the tide goes out, the table’s set.” This highlights the importance of shellfish to Native cultures in this part of the world — and how vital these intertidal marine habitats are to growing this traditional food source for generations.

“It was my first time ever seeing a clam garden,” says Wally Ito, head of the Ewa Limu Project and founder of the Limu Hui — a Hawaii limu expert — who attended the summit. “My vision was that we were going to build something more like a loko ia — higher, taller, more substantial. But it wasn’t that at all.”

This was the second gathering of this collaborative, a group of Pacific-region research organizations and Indigenous communities with the goal of sharing cultural knowledge and advancing indigenous aquaculture. In February 2020 — right before the Covid-19 pandemic shut down travel — more than 170 people convened at the 800-year-old Heeia fishpond on Oahu to help restore the rock wall and learn about Native Hawaiian aquaculture practices. The group is already planning its third gathering, this time to Alaska.

Source: Honolulu Civil Beat // Full Article

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 active grants 2018-38500-28886, and 2020-38500-32559. 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 University of Hawaii and the Oceanic Institute of Hawaii Pacific University.

Center for Tropical and Subtropical Aquaculture | University of Hawaii at Manoa, 1955 East West Road, Ag. Sci. 216, Honolulu, HI 96822

Unsubscribe myma@hawaii.edu

Update Profile |Constant Contact Data Notice

Sent bymbrooks@ctsa.orgpowered by

Constant Contact

Try email marketing for free today!