CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

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Letter from the Director

Aloha!

Earlier this month, CTSA held our Industry Advisory Council (IAC) and Technical Committee (TC) meeting to discuss and vote on the unprecedented 27 pre-proposals that we received for FY24 funding consideration. I would like to thank all of the research groups that took the time and energy to develop ideas with the goal of advancing regional aquaculture. Based on member voting that took place at the meeting, CTSA will distribute Requests for Proposals this week. We look forward to receiving full proposals in early September, at which time they will be sent out for peer review. I encourage the pre-proposals that did not meet the minimum threshold for member support to continue pursuing intentions of helping develop regional aquaculture, which I appreciate very much. I hope the project work groups will reassess their proposed focus areas in collaboration with regional aquaculture stakeholders, and consider re-submitting their ideas to address the industry-identified critical needs during our next call for pre-proposals.

The annual meeting is one of the most critical steps in the CTSA development process. It is the first round of CTSA project selection, and also an opportunity for aquaculture stakeholders from across the region to gather and discuss industry priorities and steps to achieve shared development goals. Following one of the best and most involved annual meetings we have ever had (attended by almost all IAC and TC members), I would like to express my sincere gratitude to our IAC and TC Chairs, Co-Chairs and members for their continued dedication to the program and regional aquaculture development. The purpose of the TC is to evaluate the scientific merit of the pre-proposals submitted to CTSA, while the IAC provides an open forum through which those involved in the business of aquaculture can provide comments, funding suggestions, and other input. Members from both committees also serve as project liaisons to ensure each CTSA-funded project remains on track to achieve its objectives and anticipated impacts.

As we do each year, CTSA will share the full results of the FY24 development cycle in e-notes next summer, when we anticipate that projects will be approved by the USDA and awarded their funding. I can share at this time that the priority area that received the most FY24 pre-proposals is the development of aquatic feeds. This is a critical issue that continues to impact many of the producers in our remote regional industry. To this end, CTSA has been leading a NOAA-funded project together with UH CTAHR and UH Sea Grant to determine the feasibility of producing aquaculture feeds locally. As part of the grant, the group has been hosting a series of workshops to engage with stakeholders, including a well-attended workshop last week; presentations and discussions from the workshop are highlighted in the article below. In short, the workshop left our team hopeful that there are opportunities to produce some level of aquatic feeds locally, which could reduce operation costs and/or provide other positive impacts for local farmers. That is the ultimate goal of our program, and we thank our stakeholders for your contributions to this process and our regional development. Recordings of the workshop are posted on the CTSA website.

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

Recap of the CTSA Feed Mill Workshop on July 25

Hawai'i is the most remote archipelago on Earth;

close to 90% of its food, including seafood, is imported. Hawai'i has the water resources and favorable climate conditions for aquaculture. However, industry development in the islands has faced several roadblocks, a key one being lack of affordable local feed sources. The limited availability of affordable feed has hindered the expansion of aquaculture in the region, and a key question remains: can feed be feasibly produced in Hawai'i?

To help answer this question, NOAA awarded a grant to an interdisciplinary team from the Center for Tropical and Subtropical Aquaculture (CTSA), UH CTAHR and UH Sea Grant. As part of the project "Feasibility of Feed Mill Operations in Hawai'i," the group has been hosting a series of workshops to engage with stakeholders. The second workshop in the series was held on July 25th as a hybrid event, with presenters and stakeholders joining both in person on the UH Manoa campus (pictured) and virtually via Zoom. The workshop was a continuation of the previous one held in October 2023.

The workshop was split into morning and afternoon sessions. The first session started with a presentation by Sajid Alavi (KSU) titled "Production of Floating Aquatic Feeds - Equipment and Technological Considerations." Dr. Alavi discussed the ingredients and equipment required to produce floating feeds with detailed diagrams of the extrusion system, as well as aspects of feed production that are often overlooked such as the impacts of particle size. Dr. Alavi was followed by Dr. Anthony Ostrowski's (ASI) presentation "Potential of the OI/HPU Hilo feed mill" to share the justification for an aquatic feed mill in Hawaii. The presentation cited that all feed in Hawaii is currently imported and accounts for over 60% of production costs, many of which are variable --such as shipping-- and consistently rising. On the other hand, the production of local feeds would help ensure quality and supply, promote sustainability, and the price would be controlled by the local market. Dr. Ostrowski also provided the history of feed mills in Hawaii --including lessons learned-- and discussed the limiting factors to producing feed in Hawaii, before concluding his presentation with strategies to increase feed production.

The next presentation by Ryan Murashige of Diamond Head Seafood (DHS) focused on the work he has been doing to help develop "The Feed Mill at the Campbell Industrial Park." He shared details on the amount of fish waste and fishmeal produced from DHS and Island Commodities totaling 140,000 pounds of fishmeal per month. He also shared production rates for feeds formulated using different protein levels, and discussed how the fish waste is processed for use as fishmeal in feeds. Mr. Murashige was followed by a presentation on the "Status of Aquaculture Production in Hawaii" by Jensen Uyeda (UH) highlighting the current and potential yields of local crops including breadfruit, sweet potato, sweet corn, taro, avocado, cabbage, cow pea, cassava, moringa, and yams.

The afternoon session began with an interactive presentation and demonstration of the*Cost Sheet for Aquatic Feed*, one of the primary deliverables of the NOAA project. The sheet was developed by Co-PI's Dr. Stuart Nakamoto and Andini Ekaputri to provide producers with the realistic cost breakdowns to produce aquatic feeds in Hawaii. During his presentation, Dr. Nakamoto demonstrated the flexibility of the excel-based assessment tool. The sheet provides a framework for users to input data on parameters, capital costs and depreciation, equipment and depreciation, and feed ingredients, leading to the Cost of Production which calculates both variable and fixed costs. The last sheet provides a cost summary that adds the capital costs and costs of production to determine the breakeven analysis. The full description is included in the *afternoon session* video on the CTSA website.

The session continued with a presentation by Dr. Anthony Ostrowski on other potential ingredients that can be used in local feed development, and closed with a robust discussion on strategies for aquatic feed development. A participant mentioned that lack of land space in the island region makes reliability on agriculture products difficult, and recommended the development of a blend of available products. One researcher working on feed development in Hawaii expressed that algae is one of the best alternative ingredients available in Hawaii, and described the work they have done to incorporate it into feeds. Another expressed that macroalgae is the most efficient per pound production that we could achieve with the resources we have in our remote island region. It was mentioned that the high amount of water in macroalgae is costly to remove in processing, and must be considered in feed development. A participant discussed their work to produce local microalgae blends for high protein, high fat, and immune stimulation, while another expressed that is essential to consider the different requirements for each animal, and suggested creating subgroups to develop basic diets for different types of species. The discussion continued with additional strategies, considerations, and questions, including the cost benefit to producers (are we producing enough of a species to warrant a local feed for that species?). **We invite and encourage anyone who was not able to attend the meeting to view both sessions on our website. Click here for the links.** The project work group will present results from the workshop at the next Sea Grant 'Tech and Research Brown Bag' seminar on August 28; check the website link in mid-August for registration information.

Also, our friends at Aquafeed.com have published an article highlighting this project.

Note: this workshop is part of the project funded by NOAA Grant No. NA21OAR4170084. The information

presented and opinions expressed during the workshop are those of the presenters and attendees and do not necessarily reflect the views of the Center for Tropical and Subtropical Aquaculture and the NOAA Office of Sea Grant, U.S. Department of Commerce.

Limited Spots Left for KSU Extrusion Workshop: Click Here to Learn More and Register

Course Outline

Day 1 – August 13 (Tuesday)

7:30 a.m. Registration
8:00 a.m.
- Ingredient Functionality
- Extrusion Hardware and Design
- Extrusion Operation and Process Variables
- Extrusion Applications – Food

12:30 p.m. Group Luncheon
1:00 p.m.
- Extrusion Applications – Feed and Pet Food
- Hands-on Session on Pilot-Scale Extruders

6:00 p.m. Banquet

Day 2 – August 14 (Wednesday)

8:00 a.m.
- Business Plan: Capital Decision Making
- Business Plan: Strategic Planing
- Business Plan: Case Study and Active Interaction
- Principles of Die Design

12:30 p.m. Group Luncheon
1:00 p.m.
- Extrusion Troubleshooting
- Hands-on Session on Pilot-Scale Extruders

Day 3 – August 15 (Thursday)

7:15 a.m. Field trip to Wenger Manufacturing
- Textured Protein/Plant-based Meat Ingredients
- Extrusion Application – Textured Protein/Plant-based Meat Products
- Wenger Plant Tour

3:00 p.m. Hands-on session
- Pilot-scale Extrusion for Textured Protein/ Plant-based Meat

Day 4 – August 16 (Friday)

8:00 a.m.
- Sensory Aspects of Extrusion Products
- Drying and Toasting
- Instrumental/Analytical Techniques and
- Troubleshooting
- Overview of the Product Development Process

12:30 p.m. Group Luncheon and Certificate Distribution

New Aquaculture Journal: Critical Insights in Aquaculture

Critical Insights in Aquaculture (CIAQ) is a selective, Open Access, interdisciplinary journal that publishes quality, forward-thinking, impactful scientific research on aquaculture. CIAQ brings together the best research from across the breadth of aquaculture dealing with critical issues facing the sector alongside cross disciplinary research from the natural, social and applied sciences. Click here to learn more. The scope of the journal is split into these three sections:

- *Natural Sciences including articles on nutrition, breeding, genetics, microbiology and the environment.*
- *Social Sciences with a focus on aquaculture policy, economics, history, law, anthropology, sociology, media and communication.*

- *Applied Sciences addressing aquatic diseases, feed technology, health and safety, farming systems, modelling, robotics and engineering.*

NSF SBIR/STTR Webinar on August 14

Germinate by HIplan will be hosting an NSF SBIR/STTR webinar on Wednesday, August 14, 2024, at 12 pm HST. Dr. Erik Pierstorff, Director of the NSF SBIR/STTR program will be streaming in to give the webinar. The webinar will cover the ins and outs of the NSF SBIR/STTR Programs, applications tips, and much more! The webinar is free and open to the public. If interested, please register using this link.

Cyanotech is Hiring

Cyanotech is looking to hire people for multiple positions in Kailua-Kona, Hawaii.Please click on this link to see the offerings.

AquaClip: Guam Government Establishes New Division of Aquaculture

In an effort to grow the island's sustainable seafood industry and preserve the health of our ocean, Governor Lou Leon Guerrero signed Executive Order 2024-01, creating a Division of Aquaculture within the Department of Agriculture.

Interest in aquaculture has surged worldwide in recent years, with over fifty percent of the world's seafood consumption coming from aquaculture, according to a press release from the Office of the Governor.

The release states the new division is meant to ensure parity with other agency objectives, by facilitating the allocation of necessary agency resources and personnel to related programs, and enable the DOAG to respond to opportunities for grant funding and programs.

The order rescinds Executive Order No. 2019-12, which established the Guam Aquaculture Task Force back in April 2019.

The new order also establishes an Aquaculture Advisory Board to advise the Division of Aquaculture.

Source: KUAM News // Read Original 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 2020-38500-32559 and 2022-38500-38099. The regional aquaculture centers integrate individual and institutional expertise and resources in support of commercial aquaculture development.
CTSA was established in 1986 and is administered by the University of Hawaii.

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