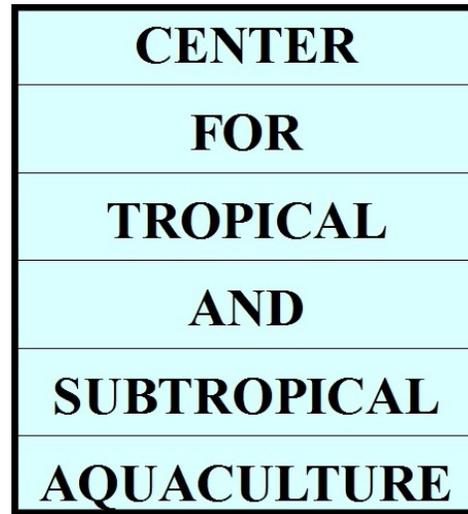




Letter from the Director

Aloha,

For the last several years, CTSA has been working closely with researchers in our region to look for under-utilized agriculture by-products, and/or waste products generated from food processing, that can be converted to usable ingredients for aquatic feed. Recent discussions in the media about the impacts of agriculture waste on our environment have prompted me to think about the ways that we can and should be utilizing "waste." Many aquaculture practices in use today emphasize disposing waste instead of recapturing the nutrients found inside; this results in a lost opportunity to reuse those valuable resources. I am reminded of the famous quote by French chemist Antoine-Laurent de Lavoisier: "Nothing is created, nothing is lost, everything is transformed." We must embrace this idea as an industry, and employ solutions to transform and utilize all of the nutrients available in aquaculture systems.



Recently, there has been an increase in attention towards employing the practice of Integrated Multi-trophic Aquaculture (IMTA) to achieve ecosystem balance. IMTA is a new term for an ancient farming technique that grows multiple species in a proximate area in order to recycle the nutrients generated within the system. Nutrient-rich diets that are used to feed fish at the top of system eventually become nutrient-rich excrement, which then feeds the plants and shellfish in the proximate body of water. The traditional Hawaiian ahupua'a system is a good... [Read More](#)

New CTSA Video: Aquaculture in Palau

CTSA recently traveled to Palau to participate in a marine aquaculture workshop at the Palau Community College Aquaculture Hatchery.

During the trip, CTSA interviewed several aquaculture stakeholders from the local community, including researchers, farmers, conservation officials, and more to produce a series of short films on the current and potential future aquaculture activities in this small yet resilient Pacific Island nation.



The first video in the series is now available online... [Watch Video](#)

Hawaii Board of Agriculture Approves Tilapia Rule Change

On September 26, the Hawaii Board of Agriculture voted to move *Oreochromis niloticus*, also known as Nile Tilapia, from Restricted List A (for research only) to List B (for commercial production). This rule change is being hailed as a major victory for tilapia producers in the state.



Several Oahu farmers and aquaculture industry stakeholders presented testimony to the Board in favor of the rule change, including CTSA Industry Advisory Chairman (IAC) Ron Weidenbach, IAC member Fred Mencher and CTSA Technical Committee member Tom Iwai.

"We are thankful for finally having the Nile tilapia listed on the Restricted B List for commercial culture as we have been advocating for this rule change for more than 20 years," exclaimed Mr. Weidenbach, whose family owns and operates a tilapia farm on Oahu's North Shore and also leads the Hawaii Aquaculture and Aquaponics Association. "The Nile tilapia is the preferred tilapia species for freshwater aquaculture worldwide due to its fast growth and lower-cost, plant-based diet. Allowing their importation for commercial farming will help to improve our local production efforts, which, in turn, can help increase Hawaii's food security."...[Read More](#)

National Aquaculture Extension Conference Proceedings Now Online

Presentations and conference proceedings from the National Aquaculture Extension Conference, held June 6-8 in Idaho, are now available online. 41 oral and nine poster presentations are posted on the Western Regional Aquaculture Center (WRAC) website. Presentations are available in PDF and video formats.



Held approximately every five years since 1992, this unique conference has provided a forum for professional development and growth for all levels of experience and years of service in aquaculture extension education. This year's conference was supported by WRAC and Sea Grant.

Included in the proceedings are presentations from CTSA researchers Miguel de los Santos and Dr. Harry Ako, who shared the results of their respective research and extension efforts in the Pacific Islands, and CTSA Information Specialist Meredith Brooks, who discussed... [Read More](#)

AquaClip: Finnish researchers aim to transform wood into fish feed

A new project led by Luke Natural Resources Institute researcher Risto Korpinen is investigating the possibility of using sawdust as a protein ingredient in fish feeds. The project, called "MonoCell - High-quality single cell protein for fish feed," is aiming to make high quality single-cell protein out of sawdust, which could later on be developed into fish feed.

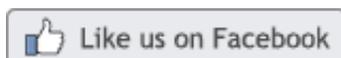
"There has been a lot of discussion about the challenges that food production has to face in the future," stated Korpinen. "That is also one of the reasons why I came up with this idea. The use of wild fish in feeding has led to the collapse of global fish stocks, and in Finland we use a lot of imported feed like soy. The industry is lacking a sustainable domestic option for fish feed."

The MonoCell project got off the ground in August when the first experiments were conducted. Utilizing sawdust in protein production is a sophisticated process that includes several stages. The aim is for the team of ten researchers from all over Finland to carry out the primary experiments in the next couple of months.

Korpinen believes that wood-based protein has a realistic chance of becoming a serious option for fish feed. Pulp mills have the right facilities to develop and use the MonoCell innovation and, thus, create new business for themselves.

Source: [Aquafeed](#) / [Read 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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