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Regional e-Notes ~ March 2013

Vol 5, Issue 3



## Letter from the Director

Aloha and Easter Greetings,

As you are likely aware, federal budget negotiations are ongoing in Washington. Although the FY2014 budget for the Regional Aquaculture Center (RAC) program has not yet been finalized, we are optimistic about the federal government's continued support of our program and its contribution to domestic fish farming, a burgeoning source of seafood.

Aquaculture's role as a national seafood source can be expanded with the help of the RAC program, specifically in the resource-abundant CTSA Region. In order for the program to have the greatest impacts possible, you -- our stakeholders -- must express your opinions. We encourage you to review the priorities we included in last year's RFP-P ([click here to view](#)) and send us any new recommendations you may have. We will start our call for FY13 Pre-Proposals shortly.

In the meantime, I hope you enjoy this month's e-notes featuring the latest CTSA video about our sponsored research on aquatic feeds in the Pacific Islands. This universal sector of the aquaculture industry is especially critical in our region, where farmers are desperately seeking alternatives to unaffordable feed from thousands of miles away.

Mahalo,

*Cheng-Sheng Lee*

Executive Director, CTSA

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**\*NEW\* CTSA Video**

**Sustainable Aquaculture Feeds in the Pacific Region**



Aquaculture is a rapidly growing industry that accounts for nearly half of the seafood consumed worldwide. Here in the Pacific Islands, aquaculture can help to relieve pressure on overfished wild seafood stocks and decrease the region's heavy dependence on imported goods. However, the high cost and limited availability of aquatic feed is a barrier to the growth of the industry.

For over 25 years, the Center for Tropical and Subtropical Aquaculture has supported research and extension efforts to break this barrier and harness the abundant resources of these islands to create local, sustainable feeds.

[Click to here watch the video!](#)

## Project Update: New Method to Extract Abalone Pigment Developed at Oceanic Institute

Author: Zhi Yong Ju, Ph.D.

Hawaii Big Island Abalone Corporation (BIAC) has historically produced approximately 60 tons of abalone per year. BIAC utilizes the pristine deep sea water of the Pacific Ocean mixed with surface sea water to culture a Japanese species of abalone, Ezo (*Haliotis discus hannai*). The abalone product has been mainly exported to Japan as a live product, but is also sold at high-end restaurants and resorts on the mainland and on the other islands, as well as local farmers markets. The market is now being expanded to Hong Kong, Taiwan, Korea and Mainland China, and BIAC earned the Governor's Hawaii Exporter Award in 2003.



In recent years BIAC has doubled its production facility; however, the company is constrained by limited algae production on the farm as well as a dependence on imported feeds from as far away as South Africa. Currently, BIAC is experiencing problems because when abalone is fed just the imported feeds, their shells change color from the market desired black color to a yellow, green or blue color. It is speculated that the imported commercial feed might lack the pigments or compounds that result in black shells.

Although much research has been conducted (please see references below), the abalone shell pigment identity is unknown. Abalone shells have super-strong microstructure "nacre", so much so that the military mimics the microstructure to build aircraft and body armor. The strong microstructure prevents pigment extraction and identification. Many scientists have applied Resonance Raman or UV-Vis-NIR spectroscopy to scatter the shell for pigment information and to figure out the pigments

using the detected chemical groups and bounds.

With support from CTSA, the Aquatic Feeds and Nutrition Department of Oceanic Institute developed a method to demineralize an abalone shell and extracted a unique turquoise colored pigment. Four major pigments were separated from the extract using high pressure liquid chromatography. Now, these isolated pigments have been sent to a university to be identified. This research may eventually result in pelleted feed that produces the desired black shell abalone.

Similar to abalone, pigments in colored pearls are unidentified. Pearl nacre structures are as same as their mother shells, Abalone and Oyster. Colored pearls are much more expensive than white. The developed research methods and results will therefore be useful or meaningful for pigment identification of colored Pearls (\$1.25 billion industry).

1. Hedegaard C, Bardeau J.F, Chateigner asD. (2006). Molluscan shell pigments: An in situ resonance raman study. *J. Molluscan Stud.* 72:157-162.
2. Karampelas, S., Fritsch, E., Mevellec, J.Y., Sklavounos, S., Soldatos, T. (2009). Role of polyenes in the coloration of cultured freshwater pearls. *European Journal of Mineralogy*, 21, 85-97.

## **USDA Microloans up to \$35,000 aim to assist small farmers, veterans, and disadvantaged producers**

Agriculture Secretary Tom Vilsack recently announced a new microloan program from the U.S. Department of Agriculture (USDA) designed to help small and family operations, beginning and socially disadvantaged farmers secure loans under \$35,000. The new micro loan program is aimed at bolstering the progress of producers through their start-up years by providing needed resources and helping to increase equity so that farmers may eventually graduate to commercial credit and expand their operations. The microloan program will also provide a less burdensome, more simplified application process in comparison to traditional farm loans.

"I have met several small and beginning farmers, returning veterans and disadvantaged producers interested in careers in farming who too often must rely on credit cards or personal loans with high interest rates to finance their start-up operations," said Vilsack. "By further expanding access to credit to those just starting to put down roots in farming, USDA continues to help grow a new generation of farmers, while ensuring the strength of an American agriculture sector that drives our economy, creates jobs, and provides the most secure and affordable food supply in the world."

The new microloans, said Vilsack, represent how USDA continues to make year-over-year gains in expanding credit opportunities for minority, socially-disadvantaged and young and beginning farmers and ranchers across the United States. The final rule establishing the microloan program will be published in the Jan. 17 issue of the Federal Register. The interest rate for USDA's new microloan product changes monthly and is currently 1.25 percent.

[Click here to read the full press release.](#)

[Producers interested in applying for a micro loan may click here to contact their local Farm Service Agency office.](#)

## **Pacific Islands Spotlight: New Extension Service Offers Online Assistance -- Beneficial for Remote Islands**



The National Extension Service is offering a new online marine aquaculture resource that can be of particular benefit to farmers and aquaculture stockholders in remote regions, such as the Pacific Islands.

The goal of the Marine Aquaculture Community of Practice (CoP) is to facilitate technology transfer and address emerging issues facing the marine aquaculture industry by providing unbiased research-based information while serving as an online clearinghouse for the public.

Marine aquaculture is diverse in species cultivated, culture techniques utilized, and in its policies and regulations. The CoP Leadership Team has expertise representing all aspects of marine aquaculture including finfish, shellfish (molluscan and crustacean), marine plants, business planning, policy and regulations, and marketing.

**For more information on the service, visit the following link:**

<http://www.extension.org/pages/67185/marine-aquaculture-cop:-fact-sheet>

**To ask an extension question, visit the following link:**

<https://ask.extension.org/groups/1734/ask>

## **AquaClip: Feed Companies in China Increase Prices**

*"China's Feed Companies Up Price"*

by Mark Godfrey, [www.seafoodsource.com](http://www.seafoodsource.com), March 19, 2013.

China's aquafeed companies have upped the prices of feed, with shrimp feed up by as much as CNY 400 per ton and feed for freshwater fish is up by between CNY 50 and CNY 100 per ton, several sources, including feed vendors, told SeafoodSource.

Higher prices for raw materials - including fishmeal and maize - has been blamed for the rise, with chairman of the Guangdong Haid Group Group Xue Huari singling out a jump in fishmeal costs in particular.

While rising feed costs will pressure China's huge aquaculture sector (with almost five million individual producers involved in cultivation nationwide) they will be welcomed by investors in China's thriving aquafeed firms. Earnings forecasts show Haid's revenue in 2012 hitting CNY 15.5 billion, up 29.67 percent year on year, with net profits at CNY 448 million, up 30.17 percent over 2011.

Haid, which will shortly publish full results for 2012, has become a favorite of China's stock pickers, with analysts pointing to growing demand for aquatic feed with demand currently outstripping supply.

According to the China Securities Journal, theoretically the demand for feed in 2011 was 34 million tons but feed production in 2011 was only 15.4 million tons.

[Click here to read the full article](#)

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 2007-38500-18471, 2008-38500-19435, and 2010-38500-20948. 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 and the University of Hawaii.

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