



*Regional e-Notes ~ March 2018 ~ Volume 10, Issue 3*

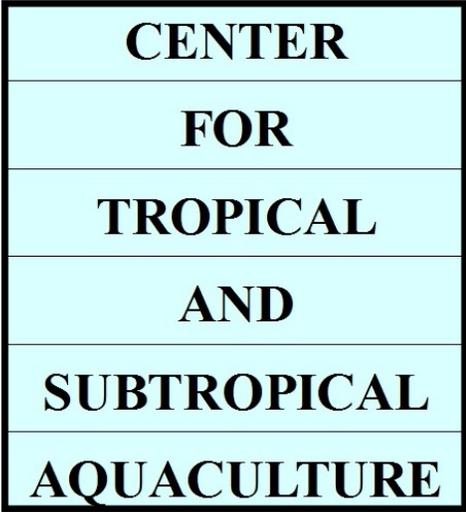
## Letter from the Director

Aloha,

CTSA held its annual Board of Director's meeting last week to discuss and approve the FY17 Plan of Work. I would like to express our sincere appreciation to NOAA for allowing us to use their conference room at Pier 38 in downtown Honolulu. It was our first meeting in this comfortable and convenient location, and we are grateful for our partnership with NOAA and ability to use their facilities.

This year, we welcomed a new Board Chairman: Nicholas Comerford, Dean of CTAHR. I am thankful for his input at our meeting, and I look forward to working with him in this new capacity. At the meeting, the Board reviewed and approved the proposals submitted for inclusion in the FY17 Plan of Work. In addition, they discussed the trajectory of our program and the manner in which our funding is allocated. Each year, our IAC, TC and Board are tasked with the important job of looking for projects that will have a significant impact on our local aquaculture industry. Often times, CTSA funds are used as seed money for projects to prove their feasibility and leveraged to obtain larger grants from other funding organizations. While we are not a large organization, we have an opportunity to improve regional food security and conservation efforts through our funded projects. I applaud our committees and Board for taking their tasks seriously each year and seeking innovative ways to create meaningful impacts.

With the FY17 development cycle completed, CTSA is beginning preparations for the next round of development and is seeking input on industry identified priority areas for the FY18 Request for Pre-Proposals (RFP-P to be released in May). CTSA is unique among other funding programs, as we are industry driven and rely on a wide range of stakeholders across the Pacific region to develop our annual priority areas and subsequent... [Read More](#)



## **CTSA Project Update: Culturing Black Soldier Fly (*Hermetia illucens*) and Producing Feed from Its Larvae Meal**

*Written by Bell Lin, HPU Graduate Student*

The increase of aquatic feed production is facing the challenge of rising cost and decreasing availability of

feed ingredients, such as fishmeal. Feed cost usually accounts for more than 50% of aquaculture production cost. Therefore, it is important to find alternative feed ingredients to substitute fishmeal to support sustainable aquaculture.



In the Pacific islands, aquaculture relies heavily on imported feeds, which account for the major costs of aquaculture. The rising costs of transportation and the unstable supplies of imported ingredients and feeds can threaten the security of the local aquaculture industry. On the other hand, food waste is one of the major components in landfill and could cause environmental pollution if not properly treated.

Consequently, assuming that for resource-limited island communities converting food waste into feed ingredients will provide local feed industry is a viable alternative.

BSFL has high contents of protein and lipid and has been shown to be a promising feed ingredient for poultry and aquaculture production. Our goal is to produce BSFL as a feed ingredient on the utilization of BSFL in tropical fish or shrimp diets.

The experiment was conducted at Oceanic Institute, an affiliate of Hawaii Pacific University. Mature wild female BSF with fertilized eggs (300 - 600 eggs) was attracted by a specific odor during daylight with a special formula. Optimal mating condition was observed under a unique environmental factor. Adult fly will die after mating. Female BSF will lay eggs in small slots that close to the source of the odor, but not directly on the food waste, which is very different from common housefly. Eggs will hatch after three to four days of incubation depends on the environment temperature. BSFL were fed with two different food sources, one with fruits and vegetables household food waste (FV) and the other with grounded poultry commercial corn feed. BSFL were collected at two different life stages: white-color larvae and black-color pupae. The samples collected were freeze-dried and then ground with a grinder.

Crude protein, crude lipid, fatty acids, moisture and ash content for the different feed treatments and BSFL stages were determined following the procedures of the Association of Official Analytical Chemists. The test results showed that crude protein content in our collected BSFL was affected by different life stages (Table 1). The crude protein content was higher for larvae-white stage than pupae-black stage in the both food source treatments ( $P < 0.05$ ). BSFL's crude lipids content was also affected by different life stages and... [Read More](#)

## **AFS2018 'Aquaculture to Inform and Support Fisheries' Symposium**

The "Aquaculture to Inform and Support Fisheries" symposium, initiated by the AFS Fish Culture Section, will focus on the continuing contributions of aquaculture to fisheries. The symposium will be held during the 148th Annual Meeting of the American Fisheries Society in Atlantic City, New Jersey, August 19-23, 2018.

Abstracts for oral and poster presentations are solicited from representatives of communities, the aquaculture and wild-capture fishing industries, policy and management agencies, research institutions, non-governmental organizations, and academia. Descriptions of stock replenishment, restoration, and industry re-training programs that support local communities and economies are encouraged. Studies are welcomed on fecundity, reproductive cycles, spawning, egg/larval development, dispersal, behavior, impacts of a changing climate, etc., motivated from either an aquaculture or fisheries science and management context. A panel discussion will be held following presentations to further discuss how aquaculture and fisheries can jointly promote sustainable fisheries, communities, and marine resource economies.

## AquaClip: Opihi picker dies after being swept off Kau cliff by big wave

*The following is an excerpt from an article about another tragic death as the result of gathering opihi in Hawaii. CTSA is currently funding a project to close the life cycle of opihi and eventually begin commercial aquaculture of this culturally important and locally popular species. It is one of our program goals to fund projects that extend beyond science to support the traditional cultures of our region. If successful, aquaculture of opihi may help increase access to opihi and at the same time alleviate the need to partake in the dangerous activity of gathering the limpets from wave-battered shorelines. Our thoughts are with the family of Mr. Breithaupt at this time.*

Big Island police say a family saw their loved one get swept into the ocean on Wednesday afternoon.

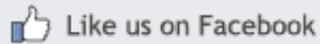
Police say Duane Breithaupt, 54, of Naalehu was with about ten family members at Kahakahakea Point in Kau.

They say he went to pick opihi from a cliff area when family members saw a large wave sweep him into the ocean where he struggled before disappearing.

The fire department's helicopter found his body about four to five miles offshore.

Source: KHON / [Read Article](#)

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



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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