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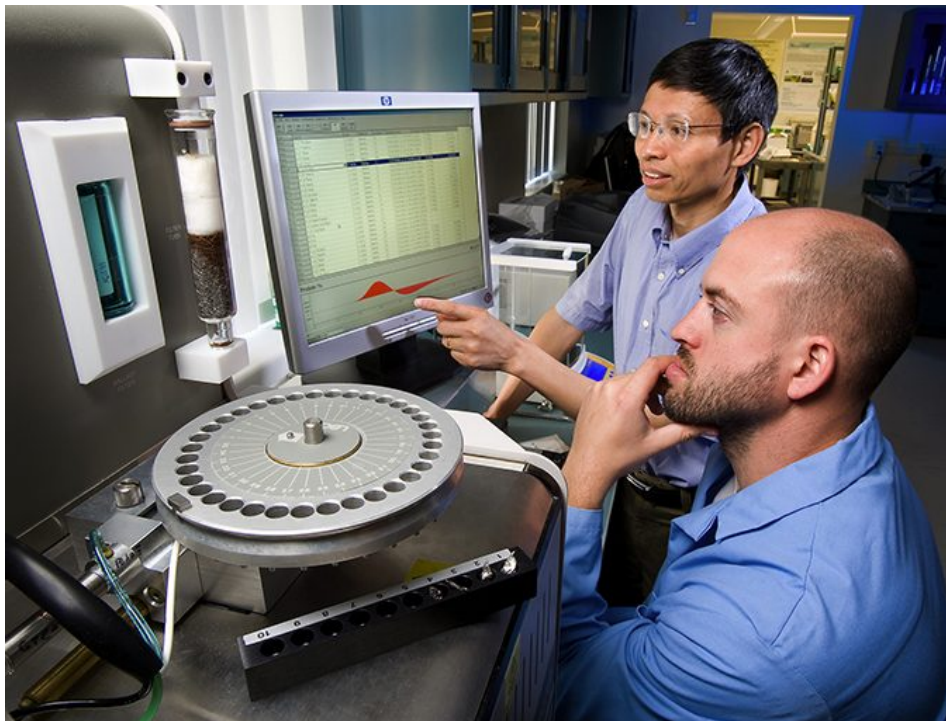
Aquafeeds

Alternative feed ingredient universe to convene at F3 meeting

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By James Wright

Fish-free feed contest an example of the 'new way to give money'



At the Aberdeen, Idaho, unit of the USDA Agricultural Research Service, cereal grain chemist Keshun Liu (left) and technician Michael Woolman measure protein content in newly developed grain-based fish feeds. Photo by Steve Ausmus, courtesy of USDA/ARS.

Next week in San Francisco, eight teams will vie for a prize of \$200,000 and, more importantly, a new and unique recognition as a global leader in seafood sustainability.

What started out in November 2015 a simple yet ambitious contest to drive innovation in the aquafeed sector has evolved into a global competition attracting ingredient suppliers, feed manufacturers and aquaculture producers, while inspiring many entrants to form unique partnerships. Participants in the **F3 Challenge** (<https://www.aquaculturealliance.org/advocate/f3-prize-putting-money-where-fishs-mouths-are/>) – an **X Prize** (<http://www.xprize.org/about/what-is-an-xprize>) contest geared to drive world-improving innovations via “audacious but achievable” competitions with crowd-funded prize purses – has reached its first reporting stage.

While at the invite-only meeting in San Francisco and Monterey, Calif., from Jan. 9 to 11, the F3 contestants will gather for a conference, consult privately with the Monterey Bay Aquarium’s expert staff, pitch to potential investors, watch presentations from feed executives at companies like Marine Harvest and trade groups like the U.S. Soybean Export Council, and generally explore potential new markets for their businesses.

The contestants will come from all over the globe – Thailand, Indonesia, China, South Africa, Australia, Pakistan, Myanmar, the Netherlands, Belgium and the United States. The teams are, in several cases, groups of individual companies that have joined forces to meet the challenge of not only devising a fish or shrimp feed formula that has zero marine ingredients but also manufacturing and selling 100,000 metric tons of it.

One aquaculture innovation expert says the contest format gets more out of participants, in terms of collaboration, than awarding a grant.

“The X Prize is the new way to give money,” said Michael Tlusty, director of ocean sustainability science at the New England Aquarium in Boston, one of the competition’s three sponsors.

“The cross-talk between the groups is what’s really important. If you’re trying to drive this forward, the group-learning is really what it’s about,” he added. “The last thing you want to do, if you’re getting all these smart people together, is to not have them interact with each other.”



Agriprotein is a Cape Town, South Africa, business that produces an insect-based protein feed called MagMeal™.

Ambitious, and shared, goals

According to Tlusty, 16 companies entered the competition after it was initially announced at the Global Aquaculture Alliance's 2015 GOAL conference held in Vancouver, British Columbia, Canada. Eight teams ultimately submitted feeds; four of them are partnerships involving a feed ingredient supplier, feed manufacturer, aquaculture producer, or all of the above.

One notable team that formed during this process will have a home-court advantage. TwoXSea, a California rainbow trout producer, has worked closely with Star Milling Co., also of California, for years on aquafeeds. For the F3 contest, the TwoXSea team submitted a trout feed in collaboration with Kentucky-based Alltech and TerraVia, a U.S.-based marine algae producer with a production facility in Brazil that's collocated with a sugar mill.

"We were not expecting new businesses to form, only to put likeminded people in a room together to find solutions and drive them forward," said Tlusty.

The companies on the TwoXSea team see F3 as an avenue to greater exposure to the marketplace. For example, TerraVia, which is contributing its innovative omega-3 **AlgaPrime DHA** (<http://algaprime.com>), product, is a relatively new player in the aquafeeds industry. The company ferments marine algae using sugar as the carbon input, or energy source to grow the single-cell organisms.

"For a small company looking to get its message out, this is a great way for people to know about us," said Jill Kauffman Johnson, VP-global sustainability and external Affairs at TerraVia. "Especially as it's positioned in front of an industry looking for alternatives."

Sasha Tozzi, technical manager of Alltech Algae, said its whole cell high fat and DHA powder has a proven track record as a reliable, sustainable and high quality source of DHA and fat for fish feeds.

"We would like to see our involvement in the F3 contest raise awareness within the industry on the availability and necessity to adopt these sustainable alternative ingredients for fish feed," said Tozzi.

Agriprotein, a Cape Town, South Africa business that produces an insect-based protein feed called MagMeal™, sees its products as a “natural and sustainable alternative to fishmeal,” said Jason Drew, one of the company executives. Drew, whose brother David “Wilco” Drew is another company executive, is passionate in his belief that insect meal is a worthy solution to the environmental challenges facing protein production. He even co-authored the books **“The Protein Crunch – Civilisation on the Brink”** (<https://www.amazon.com/Protein-Crunch-Jason-Drew/dp/0986997625>), and **“The Story of the Fly and How It Could Save the World”** (<https://www.amazon.com/Story-Fly-Could-Save-World/dp/0980274281>).



Photo courtesy of Alltech.

“We have to start saving our seas one fish at a time,” Drew told the *Advocate*. “We will, in the coming year, help create the world’s first “ZFIFO” – Zero Fish In To Fish Out – farm at one of our clients, who will replace fishmeal with MagMeal as soon as our new enlarged facility comes online.”



AlgaPrime™ DHA

Finish line in sight

The F3 Challenge is sponsored by the Monterey Bay Aquarium, the New England Aquarium, the University of Arizona and World Bank, with additional donations to support the administrative costs of running the contest.

Here are the rules, in a nutshell: The first company to produce and sell 100,000 metric tons (MT) of aquafeeds that do not contain marine animal meal or oil will be awarded a prize (**one that started at \$100,000 but now exceeds \$200,000** (<https://www.aquaculturealliance.org/advocate/f3-blows-past-funding-goals-as-fishmeal-alternatives-proliferate/>)) to support their business. If none of the contestants have met the 100,000 MT target by Sept. 15, 2017, the prize money – sourced largely via the HeroX crowdfunding website – will go to the company closest to the target.

“Some people, including myself, felt the goal of 100,000 tons of fish oil and fishmeal free feed was unaffordable and unachievable so nobody would win,” said **Rick Barrows** (<https://www.aquaculturealliance.org/advocate/aquaculture-exchange-rick-barrows/>), Aquatic Feed Technologies, retired from USDA Agricultural Research Service. “Now I think

the winner is who produces the most.”

But as Tlusty is quick to point out, the true vision and value of F3 is collaboration it spawned, and the incentive to drive innovation in the sector.

“The idea is not to look for a product that can be brought to market and say, ‘Job is done.’ It’s to generate a buzz in this industry to create solutions. That’s what the meeting is. It’s about creating solutions.”

And while this is indeed a competition, there is clearly a precompetitive aspect to F3 that has the entrants keeping their eyes on the true prize: a more sustainable and efficient aquaculture industry.

“You want everyone to succeed in sustainability goals, because we all win,” said Kauffman Johnson.

Team 1 – Rainbow trout diet: **Agriprotein** (Gibraltar) and **Abagold** (South Africa)

Team 2 – Tilapia, carp and dace diets: **Guangdong Evergreen Feed Industry Co.** (China)

Team 3 – Tilapia and carp diets: **Htoo Thit Co.** (Myanmar) and **Biomin** (Australia)

Team 4 – Tilapia diet: **JAPFA Feeds** (Singapore/Indonesia)

Team 5 – Two tilapia diets: **Oryza Organics** (Pakistan)

Team 6 – Shrimp diet: **Ridley** (Australia) and **Sureerath Prawns** (Thailand)

Team 7 – Shrimp diet: **TomAlgae** (Belgium)

Team 8 – Trout diet: **TwoXSea** (California), **Star Milling Co.** (California), **Alltech** (Kentucky) and **TerraVia** (California)

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