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## Magazine Article



Small Ponds Serve A Big Fish

With the opening of its new aqua research facility, Cargill Animal Nutrition is better positioned to deliver nutrient-driven feedstocks to aquaculture.


Ryan Lane (l) and Daniel Barziza (r), direct activities at Cargill's new aqua research facility.

To successfully manage multiple feeding trials requires intensive recordkeeping and precise feeding protocols.

All the feed used by the cross-species research teams located at the Cargill Animal Nutrition Innovation Center is milled on-site and designed to meet the specifications of the various feed trials..

From the outside the building looks pretty ordinary.

The white, rectangular steel structure looks as if it would be equally comfortable serving as a farm shop or a shed for young stock. Nevertheless, judging this book by its rather unassuming cover would be doing it — and its mission — a great disservice.

Standing in all its muted glory is the latest jewel in the Cargill Animal Nutrition crown, the newly opened Cargill Animal Nutrition Aqua Research facility, in Elk River, MN. After visiting with Cargill's Ryan Lane, technology deployment manager, Aquaculture, and overseer of the facility, you understand quickly why the motors in the fish tanks aren't the only things about this facility that are creating a buzz.

"The opening of this facility has generated a huge amount of excitement with our customers, suppliers and other partners in the aquaculture industry as well as within Cargill itself," Lane states. "For those of us involved with the aquaculture business, we couldn't be more proud of this facility and the team that's been assembled to run it."

**No stranger to aquaculture**

While the opening of the Aqua Research Facility represents the beginning of a new era of aqua-feeds development, Cargill is no stranger to aquaculture.

Beginning in the 1990s, Cargill Animal Nutrition formed a team dedicated to aquaculture. For nearly a decade, the team operated largely in the Asian market with additional growth in the United States and Honduras. Cargill also introduced the Cargill LiquaLife products (liquid feeds for larval shrimp).

Momentum for the aquaculture team really began building in the new millennium with the purchase of Agribrands International. With an extensive background in the Latin American shrimp market, the purchase allowed Cargill to establish its foothold in two key market regions. And they wouldn't stop there.

As the marketplace continued to grow at a blazing pace, it became apparent that a reliable, consistent supply of custom-designed feedstuffs would be needed to keep pace.

To that end, Cargill acquired Burris Mill and Feed, Inc., of Franklinton, LA and its 50 years of experience serving the aquaculture industry.

With the Asian and the Americas markets staffed and serviced, and production protocols under the aquaculture teams' purview, the focus turned to refining the feedstuffs themselves.

**Nutrient-driven solutions**

The formula for Cargill's success is pretty simple. Find a customer's challenge and design a solution that addresses that challenge.

With vast experience in developing and commercializing feedstocks for a wide array of diverse markets, from poultry and livestock to the companion animal markets, the aquaculture team had the luxury of a deep well of expertise from which to draw ideas and innovation.

"Transferring that equity built in other sectors to the aquaculture sector was important to us," says Daniel Barziza, technology deployment manager, Aquaculture, Cargill Animal Nutrition. "That's why completing the aqua research facility is such a crucial step in growing our business."

With the goal of bringing nutrient-driven feed solutions to the marketplace in its sights, the Aqua Vision team — a six- to 10-member team charged with identifying customers' challenges and opportunities — can now turn to a state-of-the-art R&D facility to assist in meeting that goal.

The environmentally controlled facility houses a unique array of segregated containment systems designed to facilitate a variety of trials, including feeding trials for both fresh and saltwater species under a range of conditions.

Fish are housed in 30- and 100-gallon tanks with water recirculated at a 2.5 times/hour rate — this ensures a consistent trial environment for temperature, oxygen and water quality. The building's ventilation system helps keep inside temperatures at a consistent level, critical for conducting and maintaining trial protocols with sensitive species in Minnesota's wildly variable climate.

While initial trials will focus on tilapia and hybrid striped bass, subsequent, long-term efforts will include catfish, shrimp and other saltwater species. However, using custom developed models and understanding of each species' biology, the team is able to apply research results for one species into solutions for others, too.

While Lane, Barziza and the rest of the aquaculture group are excited about the potential benefits the research facility brings, they fully understand that with great potential, comes great expectations.

"We realize there's a lot of attention cast our way, but we're no different than other teams in that we have a singular mission of being the 'partner of choice,' to the aquaculture industry," says Lane. "That's our supreme motivation. Having the aqua research facility up and running allows us to serve the mission more quickly and efficiently than ever before."

**The 'Cargill Way'**

The location of the aqua research facility itself offers a glimpse into the Cargill methodology behind its development of feed solutions.

The aqua facility is just one of several research facilities which make up the Cargill Animal Nutrition Innovation Center in Elk River. Alongside the aquaculture research facility, one can find similar facilities conducting research and developing proprietary laboratory technologies for swine, livestock, poultry and other markets. The close proximity to other research teams not only lends itself for easier milling and production of a wide variety of feed stocks, but it also offers access to cross-species and laboratory technology teams.

"All of us have an understanding of meeting the needs of the enduser, so we borrow from each other tools and processes which can add value to the trials and ultimately, our feed solutions," says Lane. "For example, we use models created for both pork and poultry to create baseline trials for aqua, since similarities exist among these species in how they process certain nutrients.

"We are better able to utilize our time, resources and energy when critical data is shared between teams," Lane adds. "The connectivity we have between species teams is reflected with our customer relationships as well."

**Making the connection**

In any discussion of the aqua team's current or future success with both Lane and Barziza, the concept of connectivity is a recurring theme.

"Connectivity allows us to work with our grain and milling experts to determine ingredient performance under exacting conditions," Barziza points out. "It enhances our ability to fine tune our protocols and move forward on opportunities that show promise, and discard those that won't return value to our customers."

Lane adds the following, "This approach allows us to operate in a small personal way with our customers, with the support and tools of a large, global entity. It's really the best of both worlds."

Barziza is quick to point out that throughout the euphoria of opening the facility significant challenges still face the aqua vision team — the most pressing of which is sorting through all the projects in the hopper and dedicating funding to those projects which hold the most promise.

Despite that, the future looks very bright for both aquaculture and Cargill.

"Trends and issues dominating the industry landscape include addressing the availability of raw materials, food safety issues of traceability and verification, and meeting the needs of new customers with new products," says Barziza. "However, having the opportunity to have a meaningful stake in shaping how the industry responds to those issues and trends is what this facility is all about."

**Cargill Animal Nutrition Aquaculture History**

- **1990-2000** Cargill Animal Nutrition dedicates and grows full-time Aquaculture staff, primarily focused in Asia.
- **1996** Cargill launches LiquaLife™ feed, the first liquid larval shrimp feed on the market.
- **2001** Cargill purchases Agribrands International with its 20 years of experience in the aquaculture industry and extensive knowledge of the Latin American shrimp market.
- **2004** Cargill acquires Burris Mill and Feed Inc, adding starter feed manufacturing capability and 50 years of recognized leadership in the aquaculture feed industry.
- **Feb 2006** Cargill purchases controlling interest in Matrix Biosciences and combines its own nutritional technology and management systems with Matrix Biosciences' strong customer base and market presence. The venture is Cargill Animal Nutrition's first fully dedicated shrimp mill in Asia and also its first operation in India.
- **May 2006** The AQUAXCELTM product line is launched and offers specialized feed portfolios for warm-water fish, cold-water and marine species. Floating or slow-sinking extruded micro-particles come as small as 0.8, 1.5 and 2.2 mm, sizes which are easily consumed.
- **May 2006** Cargill grants a royalty-bearing license to Ziegler Bros, Inc., which permits Ziegler to manufacture and sell products using Cargill's proprietary technology.
- **Sept 2006** Cargill Animal Nutrition constructs Aquaculture facility at its Elk River, Minn., Innovation Center, enabling nutrition research on multiple aquatic species with different life stages and environmental requirements.

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