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Aquafeed attractants tested

Aquaculture

with
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PHEROMONES, it seems, can attract more than a mate — at least in fish. These chemical signals can trigger heightened responses relating to shoaling, reproduction, migration and feeding behavior.

Following successful laboratory results to assess the efficacy of pheromone-based feeding attractants in full-scale commercial situations, the U.K. government agency Centre for Environment, Fisheries & Aquaculture Science (CEFAS) has conducted trials in partnership with Kiotech International and local aquaculture and fish institutes in China and Thailand.

CEFAS and Kiotech have already successfully developed a range of pheromone-based feeding attractants for sports angling and commercial fishing. These attractants are currently distributed worldwide in more than 42 countries and are, it seems, contributing to both the capture of record and trophy fish and, indeed, to increasing the overall success of individual fishermen.

However, it is now becoming apparent that this pheromone technology has much wider applications, particularly in improving the efficiency and sustainability of the worldwide aquaculture industry. The development of the pheromone technology now has two principal objectives.

First, it will increase the feeding activity of farmed fish and, therefore, the uptake of feeds. This should lead to an increase in the growth of fish and a reduction in the amount of waste from uneaten feed, which results in additional costs to the fish farmer and significant environmental damage.

The second, and longer-term, objective is that pheromone-based technology will be used to enable the use of more sustainable forms of proteins within feeds, which are not based on fish oils or proteins. This approach will further conserve and protect the wild fish populations and help provide a sustainable base for the large-scale expansion of the aquaculture sector.

Dr. Andrew Moore, head of salmon and freshwater fisheries at CEFAS, will present the results of recent commercial trials that were conducted with tilapia and tradt in Zhouhai, China, and with white shrimp in southeast Thailand, at next month's Aquafeed Horizons Conference to be held alongside Victam International in Utrecht, Netherlands.

They will demonstrate that the application of the pheromone-based product Aquatice produced a 17% increase in the average weight of the tilapia and 30% in shrimp. In the case of tilapia, the farmers started harvesting three weeks earlier and saw significantly faster growth, and the farmers received 50% higher income. For white shrimp, they recorded significantly faster growth and had a lower food conversion rate.

As a result of these trials, CEFAS and Kiotech foresee the potential for significant commercial benefits to farmers operating in the global aquaculture market as well as producing equally important environmental benefits.

The partners are now aiming to obtain full regulatory approval for these products, start commercial sales as soon as possible and are keen to press on with the development of products tailored to other commercially important species.

For more information on Aquafeed Horizons, visit www.aquafeed.info.

U.S. organic regulations

In a historic vote, the U.S. National Organic Standards Board (NOSB) approved a recommendation by the NOSB Livestock Committee that the National Organic Program implement rule changes to allow for the production of organic aquatic animals within the regulation.

The NOSB Aquaculture Working Group is still crafting organic standard recommendations for bivalve shellfish that will likely eventually be presented in the future to the full standards board for consideration.

Two areas, however, were reserved for further public comments and dialogue among stakeholders. These were recommendations on the use of fish meal and fish oil from non-organic marine sources and on the use of net pen culture. This essentially blocks organic certification for fish grown in open-ocean pens.

Kona Blue Water Farms, the first integrated open-ocean fish farm and marine fish hatchery in the U.S., grows sashimi-grade Kona Kampachi (*Seriola rivoliana*) in waters more than 200 ft. deep using sustainable practices, innovative hatchery techniques and advanced ocean engineering.

SERENDIPITOUS FIND: Pheromone-based feeding attractants for sports angling and commercial fishing contribute to the capture of record and trophy fish, and now, it seems that this technology has much wider applications, particularly in improving the efficiency and sustainability of the worldwide aquaculture industry.

"We are committed to environmentally sound aquaculture," said Neil Anthony Sims, Kona Blue president, "and we believe that open-ocean fish farming can and should be organic.

"We believe that this is a lost opportunity," said Sims. "This decision means that fish farmers will not yet have the prospect of an organic premium as an incentive to improve their farming methods, and it means that Americans will not yet have organic seafood products they can consume with confidence."

Kona Blue is the first sustainable fishery in the U.S. to grow fish in the open ocean from an integrated hatchery. Six years ago, the company began culturing the Hawaiian yellowtail fish, Kona Kampachi.

"The fish is nurtured from hatch to harvest, fed sustainable and natural feed and grown in some of the cleanest water on Earth. Kona Kampachi is healthy, pure and rich in omega-3 fatty acids, with no detectable mercury.

Kona Blue is committed to building an environmentally sustainable future through marine fish hatchery technology, natural feeds and deep-ocean aquaculture," Sims said.

On the other hand, questions over the suitability of open-net cages or pens for organic certification lend support to closed-containment systems, and a number of companies are now exploiting this technology.

Neptune Industries Inc. announced that it has installed the first of its patent-pending, scalable, modular Aqua-Sphere seafood production systems at its new site in Florida City, Fla.

The system utilizes alternative energy sources so it can be productive in remote areas that previously could not be utilized.

The company currently operates the Blue Heron Aqua Farms in Florida City and is a leading producer of hybrid striped bass, which it markets internationally as Everglades Striped Bass.

Closed-containment aquaculture has also made it possible for the giant perch barramundi (*Lates calcarifer*), an Australian staple, to start becoming a feature on the menus of Americans, Europeans and, soon, Malaysians.

Cell Aquaculture (whose non-executive chairman is better known to *Feedstuffs* readers as the former Cooperative Bulk Handling Group chairman, Robert Sewell) supplies fish from its own hatchery in Australia, transports them to the country where they are required, builds a land-based recirculating fish farm and then licenses it to the operator, trains its staff and provides assistance in marketing the fish.

Although Cell Aquaculture is focused on barramundi, there is potential for the company to apply its fish farming technology to Australian murray cod, golden perch and several other breeds, thereby expanding the choice of fish consumers can expect to find in the near future.