



New Technology In Aquaculture for Raising Yellow Perch

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Raising fish on fish farms—aquaculture—and in particular, yellow perch aquaculture, has been attracting a great deal of commercial interest in the Great Lakes region. Why this interest? Because consumer demand for the fish is growing and because aquaculture offers an alternative way of diversifying agricultural operations.

Research shows that the current market for yellow perch could easily absorb 50 million to 100 million pounds of perch per year. Current wholesale prices range from \$2.30 to \$3 a pound. This represents the potential of a \$3 billion industry.

One of the challenges associated with intensively farming yellow perch involves providing an easy, consistent and successful feeding program for fish at the larval stage. At this stage, fish are very minute, and feeding with an easy-to-use commercial food is problematic because of the size of the fish.

Currently, in order to raise fish from the larval stage successfully, a costly infrastructure must be in place to provide them with the special requirements necessary so they can reach an adequate (juvenile) size. As juveniles, the fish are ready and able to be raised to a marketable size using a diet of pellets to meet their nutritional needs. ►

The possibility of delivering a complex mixture of nutrients to fish in the larval stage was studied. The proposed way of delivering these nutrients was to make use of a capsule that would contain the proper nutrients. Such a capsule would need to retain the nutrients needed by the larvae until the capsule is ingested and then release its contents completely within the larvae. In addition, the capsule would need to attract and enhance the feeding behavior of the larvae.

It was found that it is possible to feed fish in the larval stage by making use of encapsulation technology, which creates the desired capsule and infuses it with the proper nutrients. However, fine-tuning is needed to pinpoint the exact nutritionally sound capsule. This is a very promising and very important discovery to the aquaculture industry.

OBJECTIVES

The objective of this study was to look at the possibility of using encapsulation technology to successfully deliver the nutritional needs to larval-stage yellow perch.

CHALLENGES

Aquaculture of yellow perch is of great commercial interest in the Great Lakes region. One of the larger expenses associated with aquaculture is easily raising fish that are in the larval stages to fish that are of a size that can be easily managed until they reach a marketable size.

ACHIEVEMENTS

It was found that it is possible to successfully feed fish in the larval stage by the use of an encapsulated diet of pellets. Having an easy-to-use food for yellow perch in the larval stage will eliminate the need for the expensive infrastructure required to raise the fish from the larval stage through to a marketable size.

During this research, a discovery was made in the area of nutrition that would work with the encapsulation technology to provide a sound diet for the larval fish. An invention disclosure has been filed with The Ohio State University Office of Technology Licensing and a patent application has been filed with the U.S. Patent Office.

THE FUTURE

A grant to the National Science Foundation to expand on this technology is being prepared. Additional funding in the amount of \$45,000 was received from an external-funding source.



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