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## Studies Confirm that Fish Health Improved by Using Prebiotics

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### Who cares and why?

Commercial production of baitfish is relatively inefficient. Feed comprises a major part of production costs. Producers need feed that can produce a hardy, disease resistant product that will increase profitability.

### What has the project done so far?

To help solve this problem, UAPB scientists are testing new diet ingredients and feeding strategies using prebiotics with golden shiners. In recent studies, fish were fed diets with no added prebiotic or 2 percent of a dairy/yeast prebiotic. Practical diet formulations were fed to fish once daily to satiation. Growth, survival, feed efficiency and survival of fish exposed to the pathogen that causes *Columnaris* disease were measured to assess diet effects. The prebiotic stimulated the specific immune response in golden shiners in response to *Columnaris*, as shown by higher survival of fish fed prebiotic diets.



## Impact Statement

Although there is interest in testing the prebiotic commercially, the baitfish industry currently does not have the economy of scale needed to make this cost-effective for producers, because the prebiotic is more expensive when purchased in smaller quantities. Cost of feed supplements often decrease, however, as they become more widely adopted, and this prebiotic has shown benefits in multiple aquatic species. Additional prebiotic research with catfish and hybrid striped bass is in progress.

### What research is needed?

There is a need to evaluate different commercially available prebiotics and probiotics under conditions simulating commercial aquaculture production. UAPB researchers have submitted a new proposal to the Southern Regional Aquaculture Center to evaluate the effects of several commercial products in golden shiners in ponds for a full production cycle. An economic analysis of the additives also will be conducted based on observed improvements in fish production and disease resistance relative to feed costs associated with including the additives.

### Want to know more?

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**Strategic Priority** - Agricultural Systems

**Additional Links** - <http://srac.msstate.edu/Project%20PDFs/Feed%20Formulation.pdf>,  
<http://www.umes.edu/ard/Default.aspx?id=46285>

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