School of Agriculture, Fisheries & Human Sciences
University of Arkansas at Pine Bluff

Arkansas AQUAFARMING

Cooperative Extension Program

Vol. 26, Fall 2009

Extension Contacts

Larry Dorman
Extension Fisheries Specialist
870-265-5440/870-737-3281
ldorman@uaex.edu

Carole Engle
Professor
Economics/Marketing
870-575-8523/870-489-4259
cengle@uaex.edu

Martha Fitts
Extension Assistant
870-265-5440
mfitts@uaex.edu

Andy Goodwin
Extension Fish Pathologist
870-575-8137/870-489-5997
agoodwin@uaex.edu

David Heikes
Extension Aquaculture Specialist
870-575-8143/870-489-1083
dheikes@uaex.edu

Anita Kelly
Extension Fish Health Specialist
501-676-3124/501-628-2807
akelly@uaex.edu

Sathya Kumaran
Extension Associate
501-676-3124
skumaran@uaex.edu

Emily Marecaux
Extension Associate
870-575-8129
emarecaux@uaex.edu

George Selden
Extension Aquaculture Specialist
870-512-7837/870-540-7805
gselden@uaex.edu

Nathan Stone
Extension Fisheries Specialist
870-575-8138/870-540-7810
nstone@uaex.edu

Hugh Thomforde
Extension Aquaculture Specialist
501-676-3124/501-590-8839
hthomforde@uaex.edu

Web address:
www.uaex.edu/aqfi/

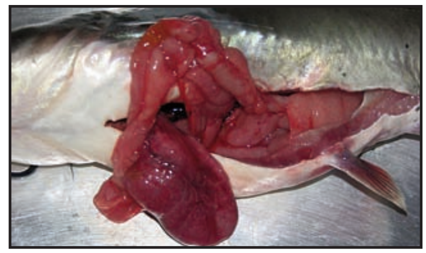
A New Catfish Health Problem?

Andy Goodwin
Professor, Fish Pathologist

On September 8, the CFAR sponsored a conference call for Arkansas catfish farmers. Also invited were fish health Extension specialists from the other catfish producing states. The purpose of the call was to discuss what may be a new catfish disease problem occurring primarily in Alabama. There has also been one suspect case in Mississippi and one in Arkansas.

Most of the information in the call was provided by Bill Hemstreet of the catfish disease lab in Greensboro, Alabama. In the last few months, catfish producers in Alabama have experienced some serious fish kills that cannot be attributed to any of the common causes. These kills have occurred on more than 30 farms and sometimes involve thousands of pounds of fish.

Only catfish have died; shad and green sunfish in the same ponds are apparently unaffected. The disease seems to involve mostly larger fish and it produces a variety of symptoms that include sores on the skin, bulging eyes, ulcers and bright red muscles and internal organs. The disease cannot be diagnosed from symptoms alone. The best evidence thus far, generated from data from Greensboro and from work underway by scientists at Auburn University, is that the disease is related to infections by *Aeromonas hydrophila*. This is a common bacteria normally found on fish skin, in fish guts and infecting any fish skin injuries. Historically it has been considered a secondary problem and not the primary cause of disease. However, in the Alabama cases, Aeromonas infections seem to be occurring without any other obvious predisposing problems. There are two possibilities: 1) that there is a new strain of Aeromonas that is able to cause disease in healthy fish; or 2) that there is some other problem, as yet undetected, that is making the fish susceptible to Aeromonas infections. This "other problem" might be environmental, or it might be another infectious disease that has gone undiscovered.



Hemorrhaging of internal tissue in what may be a new disease. Photo by Bill Hemstreet.

During the call, Bill Hemstreet talked about various treatments tried by Alabama farmers. He reported that the bacteria are generally susceptible to antibiotics labeled for use in fish feeds and that treatments with medicated feed seem to work as long as feed is started early in the outbreak. Some farmers have tried withholding feed, but it seems like reducing, not stopping, feeding may be the best approach.

There were two take-home messages from the call:

1) If farmers see any unusual fish kills, or even an ESC-like kill that is affecting larger fish, they should contact their local fish health lab for diagnosis and antibiotic sensitivity testing. This is the only way that we will be able to get a handle on the cause and management of this disease and it is the only way that farmers will know what treatments to use.

2) It is important to think about the risks involved in spreading the problem from farm to farm. Anything that moves water or mud from pond to pond has the potential to spread this disease, but some routes are riskier than others. The biggest risks are probably the movement and stocking of infected fish, or the transfer of the disease on seines and equipment used to harvest production ponds. Birds and other animals are a possibility, but are probably a much smaller risk than moving fish and seines. Until we know more, it is best to consider this a new disease than can be spread.

continued on page 2

Upcoming Events

2010 Cool Water Fish Culture Workshop
January 24-26, 2010, Rend Lake Resort, Whittington, IL. Annual educational meeting. For information contact Dave Bergerhouse at dlberger@qconline.com or via phone at (309) 654-2748

Arkansas Aquaculture 2010
January 21-23, 2010, Embassy Suite Hotel, Hot Springs, AR. Annual educational meeting sponsored by Catfish Farmers of Arkansas. For information contact Bo Collins at (870) 672-1716.

Southern Weed Science Society Meeting
January 24-27, 2010, Little Rock, AR. Annual meeting. For information visit http://www.swss.ws

2010 Midcontinent Warm Water Fish Culture Workshop
February 8-10, 2010, Hilton Garden Inn, Independence, Missouri. Provides practicing fish culturists and aquaculture researchers the opportunity to meet, discuss, and learn what public hatcheries, research centers and universities are up to. For more information contact: James Civiello at (417) 348-1305.

2010 Arkansas Bait and Ornamental Fish Growers Meeting
February 11, 2010, Lonoke Agriculture Center, Lonoke, AR. Annual educational meeting sponsored by Arkansas Bait and Ornamental Fish Growers Association. For information contact Sathya Kumaran at (501) 676-3124.

Aquaculture 2010
March 1-5, 2010, San Diego, CA. The International Triennial Meeting of the National Shellfisheries Association, American Fisheries Society Fish Culture Section and the World Aquaculture Society. For information contact the conference manager at (760) 751-5505.

Newsletter Changes

Anita M. Kelly, Extension fish health specialist at UAPB, is the new technical editor of *Arkansas Aquafarming*. The newsletter will now be published quarterly. A color, electronic version (pdf format) is accessible at: www.uaex.edu/aqfi/newsletters. If you wish to receive the newsletter by e-mail, contact Anita at akelly@uaex.edu.

continued from page 1

3) Thus, any fish purchased for stocking on your farm should be screened prior to arriving at your farm. You should check to be certain that any custom harvesters have disinfected their seines before arriving at your farm. If you have any disease outbreaks with the above systems, any equipment used in that pond should be disinfected before using it in another pond.

If you have any questions, contact me or talk to your local fish health experts.

Andy Goodwin
UAPB Aquaculture/Fisheries Center
1-870-575-8137 or
agoodwin@uaex.edu

Hedging Against Rising Feed Costs

Scott Stiles
Instructor of Agricultural Economics
University of Arkansas

All involved in the catfish industry have seen tremendous volatility in production costs over the past 18 months. This volatility can be tied in part to the feed grain and oilseed markets. With feed being the major component of production costs for catfish producers, the recent wide price swings in soybean meal (Fig.1) have greatly increased business risks for many operations. A close evaluation of typical feed buying strategies could be useful in managing volatile feed costs.

Feed Buying Strategies

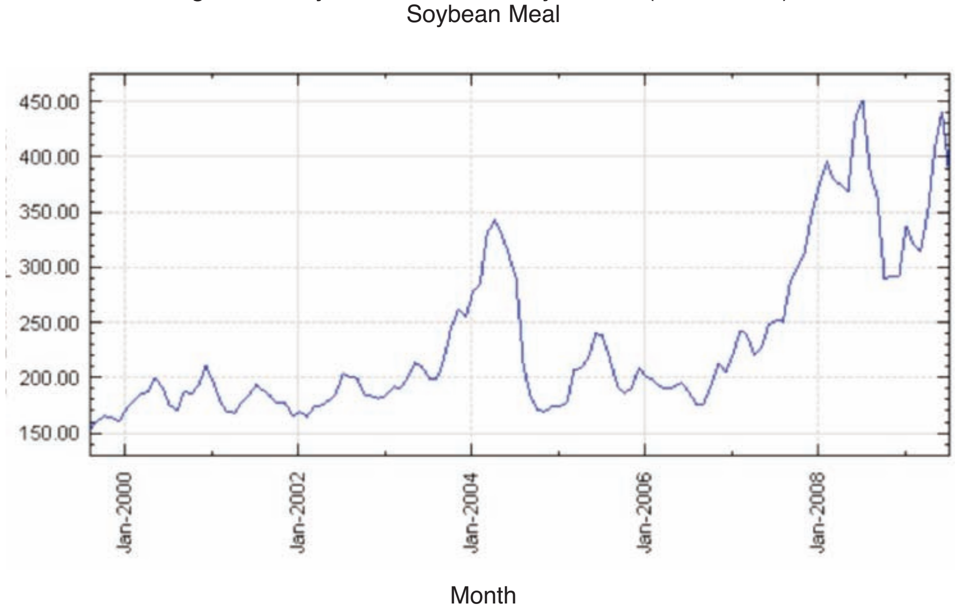
Fish operations can choose among two strategies for feed buying and inventory management:
1. Buy as needed;
2. Buy futures contracts.

Buying as needed does spread an operation's price risk through the season. However, it does not allow a business to take full advantage of periods of low feed prices. The key advantage of this approach is that it is easy to manage and requires a minimum of storage and handling facilities.

The main disadvantage of this

continued on page 3

Figure 1. Soybean Meal Monthly Prices (1999-2009).



continued from page 2

strategy is the risk that a business will face periods of high feed costs. In periods of rising grain prices, average feed costs will be higher under this strategy as opposed to operations with available bulk feed storage.

Buying futures contracts. Typically, soybean meal prices are at their lowest levels in September and October. As an example, a catfish producer could buy a soybean meal futures contract at these seasonally low prices and sell the futures contract when and if prices move higher. There are a number of soybean meal futures contracts traded and a producer could select an expiring futures contract that closely matches the timeframe in which actual cash feed purchases are made. Any profits made from this futures hedge position could be used to offset higher feed costs. This strategy could be a good fit for operations without storage facilities or limited storage. With futures market transactions, there is no physical or actual inventory to manage or store and no interest cost accruals on feed purchases.

One disadvantage of hedging purchases could be the difficulty of matching the number of futures contracts needed with the equivalent cash (actual) feed purchases. A soybean meal futures contract consists of 100 tons. For some operations these standard futures contract sizes may not match well with actual feed purchases. Also, for futures hedging purposes it may be necessary to establish a credit line to cover initial and possibly additional margin requirements.

Lastly, to hedge feed purchases some producers may need additional marketing skills and knowledge of futures markets. For producers with little or no experience in using futures, consulting with a commodity trading advisor would be a wise first step.

Market Outlook

On August 12, the USDA lowered the 2009 U.S. soybean yield from 42.6 bushels per acre (July) to 41.7 bushels per acre (August). This adjustment resulted in total soybean production of 3.2 billion bushels, down 62 million bushels from the previous estimate of 3.26 billion bushels. The new crop (2009 harvest) total usage projection was 3.1 billion bushels. Projected 2009/10 soybean ending stocks are now 210 million bushels, which is a 40 million bushel drop from the July estimate of 250 million bushels. The 2009/10 ending stocks estimates is only 100 million bushels higher than the 2008/09 estimate of 110 million.

As for soybean meal, the USDA currently projects that 2009/10 ending stocks will be unchanged from 2008-09 at 300,000 tons. However, meal prices are projected to fall slightly with a marketing year cash price range of $260 to $320 per ton. The mid-point of this range ($290 per ton) is $35 lower than the 2008/09 average price of $325 per ton.

With lower than expected U.S acreage in 2009 and uncertainty about final yields due to late planting in many areas, soybean supplies remain tight and continue to support historically high soybean prices. Going forward, the projected soybean/corn price ratio favors increased soybean production. This may encourage expansion of both U.S. and South American soybean production over the coming months.

Educational materials on managing feed costs and soybean meal futures contracts can be found at: http://www.cmegroup.com/. For additional information or assistance on this topic, the author can be contacted at sstiles@uaex.edu or by phone at 870.972.2481.

Lin Xie

I am Lin Xie, the new statistician in the Department of Aquaculture and Fisheries at UAPB. I have two Masters of Science degrees–one in Statistics (2002) and one in Food Science, (2000)–both from University of Arkansas (U of A). I am a PhD candidate in the Department of Statistics at Kansas State University (KSU). I expect to earn my degree by the end of this year.

Prior to joining UAPB, I taught statistics at KSU for the last four years. I have experience working with students, faculty and researchers at both U of A and KSU consulting and advising on various research projects. My research interests include experimental design, regression analysis, categorical data analysis, Bayesian analysis, multivariate analysis, mixture distribution and mixed model.

At UAPB, I will provide statistical consulting services for the department as well as serving on university committees. I look forward to learning about the aquaculture and fisheries industries in Arkansas. You can contact me at lxie@uapb.edu or 870-575-8157.

Dairy/Yeast Prebiotic in Golden Shiners Feed Improved Survival

Rebecca Lochmann, Professor
Todd Sink, Postdoctoral Researcher

Recent evidence suggests that prebiotic feed additives can decrease disease susceptibility in some species of fish. Prebiotics are non-living indigestible carbohydrates that can be added to the diet to improve feed conversion, stimulate the immune response, and sometimes improve other functions. Three feeding trials were conducted to determine whether diets with a prebiotic composed of dairy and yeast products could improve performance of golden shiners. The trials were done in indoor systems with no natural foods, and in outdoor pools and ponds. In all trials the diets were similar to a commercial formulation (35-36% protein). However, the treatment diets contained 2% prebiotic (as recommended by the manufacturer), while the control diets contained no prebiotic.

Trial 1 (Tanks)

Golden shiners (size = 3.4 lb/1000 fish) were stocked at 25 fish per 29-gallon tank using four tanks per diet. Fish were fed twice daily to apparent satiation for 14 weeks. After harvest, fish were fed the diets for 2 more weeks before they were exposed to the bacteria that cause Columnaris disease. After the challenge, mortalities were recorded twice daily for 10 days.

Trial 2 (Pools)

Golden shiners (size = 1.0 lb/1000 fish) were stocked in outdoor pools at 400 fish per pool (1069-gallon) using two pools per diet. The pools were fertilized to stimulate plankton growth before stocking. Fish were fed twice daily to apparent satiation for 10 weeks. After harvest, a subset of fish was moved to indoor tanks and the fish were fed the same diets for 2 weeks while acclimating to the tanks. Then a bacterial challenge was performed as in trial 1, except that fish in half of the tanks were stressed by crowding them in a small basket within the tank before exposure to Columnaris bacteria.

Trial 3 (Ponds)

Golden shiners (size = 0.22 lb/1000 fish) were stocked into ten 0.1-acre pond (5 ponds per diet) at a rate of 87,700 fish/acre. Fish were fed to satiation twice daily (4-7% body weight) for 7 weeks. Due to small initial fish size and the relatively low stocking density, growth was very rapid and the study was harvested early to avoid reproduction. After harvest, a subset of fish was moved to indoor tanks and the fish were fed the same diets while they acclimated to the new tanks. Fish were then exposed to a Columnaris bacterial challenge as described for the pool trial.

Results

Overall, the prebiotics had limited effects on growth, condition index ("plumpness") or feed conversion ratio of golden shiners. However, the prebiotic significantly improved survival of golden shiners exposed to the bacterium that causes Columnaris disease (Table 1). In systems with natural foods (pools or ponds), it was necessary to impose a stressor (crowding) on the fish before exposure to bacteria to get a statistically significant increase in survival of fish fed prebiotics. Since it is not possible to avoid all potential sources of stress in baitfish production (holding, grading, hauling, etc.), and the use of a safe product like a prebiotic in the diet should be an effective method of improving survival after harvest. In addition, the prebiotic was effective in ponds even at a low fish stocking density, where natural foods become a major portion of the fish diet. Based on a partial budget analysis of the pond data, prophylactic use of the prebiotic should be economically beneficial for golden shiners producers.

However, a number of factors prevent the tested prebiotic from being adopted by the baitfish industry. The first obstacle is that no small quantities of that prebiotic can be purchased. The minimum order of raw prebiotic material would produce 250 tons of feed. Obviously, no farmer wants to commit to purchasing such large quantities of feed with prebiotic. The second obstacle to the adoption of the prebiotic is the increased feed cost. In this period of high feed prices, farmers seek ways to reduce their feed costs, not increase them. There are a number of other prebiotic products on the market that may be more accessible but new replicated scientific trials would need to be conducted to assess their efficacy in baitfish.

Table 1. Effect of diets formulated with 2% prebiotics on selected golden shiner production parameters when compared to control diets without prebiotics.

			Survival		
				After *Columnaris* bacteria exposure	
Trial	FCR	Growth	Standard	Unstressed	Stressed
1) Tank	↓	=	=	↑	
2) Pool	=	=	=	=	↑
3) Pond	=	=	=	=	↑

↓Deceased, ↑increased, = no change

Effect of Feed Formula and Feeding Frequency on Catfish Production Costs

Steeve Pomerleau, former Extension Aquaculture Specialist
Carole Engle, Professor
Rebecca Lochmann, Professor

With catfish feed prices soaring in 2008, feed mills developed several new feed formulations in an attempt to lower feed costs. Many of those formulations had the same percentages of crude protein, but farmers, researchers, and feed mill personnel had little reliable data from which to make decisions and recommendations about which feed would be the most profitable for catfish farmers. In an attempt to help farmers with their choice of feeds, a tank and a pond study were conducted in 2008 comparing the performance of a number of commercially available feeds.

The tank study compared three feed formulations (32% Premium, 32% Standard, and 24% Premium) produced by ARKAT on catfish fingerling growth and feed conversion ratio (FCR). The FCR was similar for the 32% Premium and Standard diets, and both were significantly lower than that of the 24% Premium diet. The highest quality and most expensive feed (32% Premium) was in fact the most cost effective feed in terms of dollars per pound of fish produced or pound of gain (Table 1). Interestingly, the fingerlings fed the 32% Premium diet also had the most fat in the fillet, which might enhance survival through the winter

A subsequent study conducted in ponds compared the same three commercial diets plus a 32% corn gluten diet in a multiple-batch production scenario. Sixteen 0.25-acre ponds were stocked (May 8, 2008) with 6,000 fingerlings/acre (5 inches) and 1,800 head/acre (0.75 lb) of carryover fish. At harvest (Sept. 23-26, 2008), yields varied significantly with the diet fed, the 32% premium diet resulting in the greatest yields and the 24% Premium feed resulting in the lowest yield (Table 2). The 32% premium and 32% standard feed treatments had FCR that were similar and that were significantly lower than the FCRs of the 32% corn gluten feed and the 24% premium feed. There was no difference in shank fillet yield among treatments but the catfish fed 32% corn gluten diet had significantly less visceral fat. The economic analysis suggests that the higher yield from 32% premium feed more than offset its higher cost and that it was more profitable to feed the highest quality more expensive 32% premium feed.

Besides feed performance, other factors may influence a farmer's choice of feed. Being able to maintain positive cash flow is crucial for farm survival. Farmers are encouraged to develop a monthly cash flow budget before the start of the growing season to forecast their cash inputs and fish sales for the year. UAPB offered financial workshops in Arkansas this spring to assist fish farmers with this task. Besides, a number of financial planning tools on computer spreadsheets are accessible on our website (www.uaex.edu/aqfi). Farmers this past year used these financial planning tools. Combined with information on the total operating line of credit available for a farm, these tools can be used to find the stocking density and feeding rate that would work best for your farm in these difficult times.

Table 1. Tank study comparing the performance of three commercial diets on fingerling growth.

Diet	Final Size (lb/1,000)	FCR	Feed Cost ($/ton)	Feed Cost ($/lb of fish gain)
32% Premium	237.9	1.5	415	0.313
32% Standard	234.5	1.6	398	0.324
24% Premium	221.8	1.8	378	0.346

Table 2. Pond study comparing the performance of four commercial diets in a multiple-batch production scenario.

Diet	Gross Yield (lb/acre) Fingerlings	Gross Yield (lb/acre) Carryover Fish	Gross Yield (lb/acre) Total	FCR	Feed Cost ($/ton)	Increase in Break Even Price Above Variable Costs
32% Premium	1,868 a	3,888 a	5,756 a	1.65 b	Baseline Price	-
32% Standard	1,869 a	3,570 a	5,439 a,b	1.72 b	$32 less	$0.04
32% Corn gluten	1,573 a	3,379 c	4,951 b,c	1.91 a	$51 less	$0.05
24% Premium	1,560 a	3,006 d	4,566 c	2.04 a	$60 less	$0.09

Feeding vs. Fertilization for Baitfish Farming: Which is more Profitable when Feed Prices are High?

Carole Engle, Professor, Economics/Marketing
Nathan Stone, Extension Fisheries Specialist
Larry Dorman, Extension Fisheries Specialist

Fish feed prices have increased by about 55% since 2007. Additional increases in fuel and electricity rates, fertilizer prices and other input costs have continued to increase production cost in baitfish farming. As a result, some baitfish farmers have cut back on key operating inputs such as feed during these times of high prices.

We conducted an economic analysis of the trade-offs between continuing to feed with the current high feed prices as compared to not feeding and relying only on fertilization to provide natural food for growth of golden shiners. The specific objectives of this analysis were: 1) to evaluate the effect on baitfish farm profits of different yields of golden shiners, holding feed prices at 2007 levels; 2) to evaluate the effect on baitfish farm profits of different feed prices, holding yield at 450 lb/acre; and 3) to evaluate the combined effect of varying feed prices and yields on baitfish farm profits.

Golden shiner enterprise budgets (Stone et al. 2008; available at http://tinyurl.com/SRAC122) were used as the base template to run sensitivity analyses that varied yields and feed prices. A partial budget was done to evaluate the effect of substituting fertilization for feed on a 160-acre golden shiner farm. A partial budget itemizes the additional benefits and the additional costs from a proposed change on the farm.

Figure 1 shows that farm yields of baitfish below 450 lb/acre were not profitable, even with 2007 feed prices. Profits (net returns) increased by $200/acre for every 50-lb increase in baitfish yield. Figure 2 shows that baitfish production is not profitable at feed prices of $300/ton and higher, at a yield of 450 lb/acre. At feed prices of $300/ton and above, baitfish farms must produce yields of at least 500 lb/acre to be profitable (Table 1).

Profits on baitfish farms are sensitive to the yield (lb/acre) of fish produced, more so than catfish farms. This is because the fixed costs associated with the ponds, grading sheds, hatchery, and equipment, are high relative to the yields. Increasing yields reduces the proportion of fixed costs per pound of fish produced by spreading those fixed costs over higher levels of production.

In the partial budget, the base scenario was assumed to be a farm that was feeding as budgeted in the Stone et al. (2008) baitfish budgets. The change analyzed was to stop feeding and double the number of fertilizer applications to provide natural food for growth of golden shiners. This would result in a reduced cost of the feed not fed. This cost was calculated using the quantity of feed from the Stone et al. (2008) budgets, but the cost was inflated by 55% (to account for higher feed prices). The total reduced cost would be $38,992 across the farm for the year. Doubling the number of fertilizer applications would result in an additional cost of $16,860. Thus, if the only consideration is the reduced cost of the feed compared to the additional cost of the fertilizer, the savings from the feed not fed is greater.

However, yields of baitfish will be substantially lower by not feeding. Felts (1979) showed that yields of baitfish from ponds that were only fertilized were 208 to 250 lb/acre less than yields of baitfish when fed. A conservative value of 200 lb/acre lower yield was used to calculate the reduced revenue from not feeding. A 200 lb/acre reduction in yield means that the 160-acre farm would produce

continued on page 7

Table 1. Combined effects of feed price fluctuations and varying levels of yield on net returns, 160-acre golden shiner farm with hatchery.

Yields	Feed Prices ($/ton)						
(lb/ac)	250	275	300	325	350	375	400
250	-$770	-$785	-$801	-$816	-$832	-$847	-$863
300	-$570	-$585	-$601	-$616	-$632	-$647	-$663
350	-$370	-$385	-$401	-$416	-$432	-$447	-$463
400	-$170	-$185	-$201	-$216	-$232	-$247	-$263
450	30	$15	-$1	-$16	-$32	-$47	-$63
500	230	215	199	184	168	153	137
550	430	415	399	384	368	353	337
600	630	615	599	584	568	553	537

Table 2. Partial budget of switching from feeding to fertilization only.

ITEM			TOTAL COST
BENEFITS			
Reduced costs			
Feed	Feed prices assumed to be 55% higher than 2007 feed prices.		$38,992
Additional revenue			$0
TOTAL BENEFITS			**$38,992**
COSTS			
Additional costs			
Fertilizer	Increasing from 3 to 6 applications per year	Cottonseed meal & inorganic fertilizer	$16,860
Reduced revenue	200 lb/ac	32,000 lb/farm @ $4.00/lb	$128,000
TOTAL COSTS			**$144,860**
NET BENEFITS			**-$105,868**

continued from page 6

32,000 fewer pounds of fish. At $4.00/lb, the total reduced revenue is $128,000. Thus, total additional costs are $144,860 ($128,000 in lost revenue and $16,860 of additional fertilizer cost). Subtracting the additional costs ($144,860) from the total benefits ($38,992) results in a farm-wide loss of $105,868. Thus, the farm-wide losses that result primarily from the reduced revenue from lower yields are greater than the savings from not feeding. It appears to be more economical to feed baitfish ponds enough to achieve yields of at least 500 lb/acre, even with the current high feed prices.

Literature Cited

Felts, S. 1979. Evaluation of supplemental diets for golden shiners. Ph.D. dissertation, Auburn University, Auburn, Alabama.

Stone, N., C.R. Engle, and E. Park. 2008. Production enterprise budget for golden shiners. Southern Regional Aquaculture Center Publication No. 122, Stoneville, Mississippi.

Figure 1. Net Returns for Golden Shiner Production at Various Yields, 160-acre Golden Shiner Farm with Hatchery (2007 feed price of $245/ton).

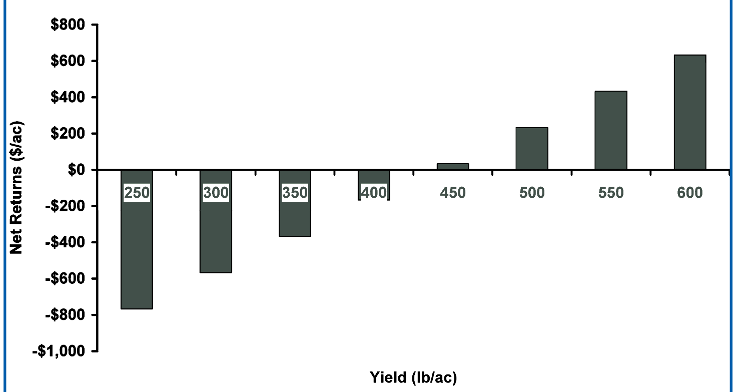
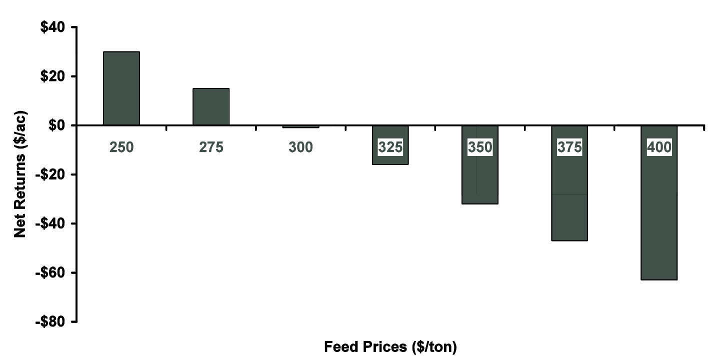


Figure 2. Net Returns for Golden Shiners at Various Feed Prices, 160-acre Golden Shiner Farm with Hatchery (Yield of 450 lb/ac).



COOPERATIVE EXTENSION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF ARKANSAS
P.O. BOX 391
LITTLE ROCK, ARKANSAS 72203

OFFICIAL BUSINESS

NON-PROFIT ORGANIZATION
US POSTAGE PAID
LITTLE ROCK, AR 72203
PERMIT NO. 502

Arkansas Bait and Ornamental Fish Farm Certification Program Update

Andy Goodwin, Professor and Fish Pathologist

Recently, snakehead fish (Family Channideae) and Quagga mussel (*Dreissena rostriformis bugensis*) were added to the Arkansas Pathogenic and Aquatic Nuisance Species (ANS) list and added to the certification program list of prohibited items.

The Arkansas Bait and Ornamental Fish Certification Program became fully underway in the spring of 2007. This program is based on independent third party verification of fish health inspections, biosecurity, and aquatic nuisance species by the Arkansas Department of Agriculture. Participating farms pay for semi-annual fish health inspections, and also pay a $1/acre fee to the Department of Agriculture. In turn, they are able to provide formal, verifiable certification that their farm is free of exotic diseases and undesirable species of plants and animals. One difficult aspect of the program is that full participation requires a two-year history of negative farm-level testing for diseases. A number of Arkansas farms were able to meet that qualification when the program began in spring 2007. Other farms are working now to establish disease free testing histories.

Farmers not yet involved in the Program should consider the benefits. Participation provides bullet-proof documentation that your farm is free of the VHS virus and other big-name diseases. When regulators ask you about zebra mussels, you can provide formal proof, backed up with inspections by the Arkansas Department of Agriculture, that your farm is clean. When fish are moving through supply chains, only Arkansas Certified fish are accompanied by unique, dated, numbered, unalterable certificates that are far more difficult for unethical shippers to misuse. Most importantly, all Arkansas farmers should recognize that the very fact that we have a strict pro-active Certification Program has protected market access for all Arkansas farmers. Our ability to move fish is largely dependant on our State's reputation as a leader in fish health verification.

A document entitled *Circular 21* with the complete details on the Arkansas Bait and Ornamental Fish Farm Certification Program can be downloaded from the Arkansas State Plant Board web site (www.plantboard.org). For more information, contact one of the UAPB fish disease diagnostic laboratories. Inspection and certification requirements can be very complex, but we are here to help.

Anita M. Kelly
Extension Fish Heath Specialist
Technical Editor

County Extension Agent

Debbie Archer
Communications Specialist
Layout and Design

Arkansas Aquafarming is published quarterly. Web address: www.uaex.edu/aqfi/newsletters
The purpose is to advance aquaculture production in Arkansas by providing reliable, practical, timely information.