Arkansas
AQUAFARMING
Cooperative Extension Program

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# Pyrotechnic Permit Required for Explosive Pest Control Devices

*Anita M. Kelly*
*Extension Fisheries Specialist, UAPB*

On May 1, Federal law will make it unlawful for any person who does not hold a Federal explosives license or permit to transport, ship, cause to be transported or receive any explosive materials. This includes the need for a permit for the use of explosive pest control devices used to protect aquaculture crops from bird depredation. Individuals or companies must obtain a Federal explosives license prior to engaging in the business of manufacturing, importing or dealing in explosive pest control devices (EPCDs). Federal law also prohibits the distribution of explosive materials to, or the receipt of explosive materials by, any person other than a licensee or permittee. Therefore, any individual or company that purchases or otherwise acquires EPCDs must possess a Federal explosives license or permit.

An amendment to the FAA Reauthorization Bill (S.223), which would allow ATF to exempt end-users of explosive pest-control devices from the licensing requirement in the Safe Explosives Act of 2020 has been introduced, but no action has been taken to date. Supporters of the amendment have noted that farmers can purchase shotgun shells to legally kill fish-eating migratory birds under a federal depredation permit but will no longer be able to buy explosive pest-control devices (large firecrackers) to scare those same birds. A shotgun shell has about the same explosive material (gunpowder) as an explosive pest-control device. At a recent Aquaculture Workshop held in Lonoke, Arkansas, APHIS personnel recommend that aquaculture producers file for the permit in case the amendment does not pass.

The following notice and web-link provides guidance on applying for the required new permit and instructions on proper storage. http://www.atf.gov/press/releases/2010/11/111210-openletter-fel-use-of-epcds.html

## Upcoming Events

**Aquaculture 2011**
March 1-5, 2011
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.

**Aquatic Plant and Algae-Control Training Program**
March 11, 2011
Topics to be discussed include aquatic plant and algae identification, methods of control and herbicide and algaecide use. The program will emphasize proper chemical selection and application techniques, applicator safety and recordkeeping. The workshop is free and open to the public. For information contact William Wurts at 270-365-7541, ext. 200 Email: wwurts@uky.edu or Forrest Wynne at 270-247-2334 Email: fwynne@uky.edu.

**International Boston Seafood Show**
March 20-22, 2011
The International Boston Seafood Show is North America's largest seafood event, featuring more than 800 exhibits, offering a vast array of seafood, seafood products, seafood services and seafood equipment from all over the world. The International Boston Seafood Show/Seafood Processing America is where the North American seafood market meets to share ideas, introduce new seafood products and processing equipment, make connections and scoop the news, deals and trends on preparing, delivering and packaging seafood products. For information call 972-943-4726

**Alternative Ingredients in Finfish Aquaculture Short Course**
May 9-13,2011
Fargo, ND
This course will highlight recent advances in the understanding of lipid and protein nutrition in finfish. Of special interest will be demonstrations of feed manufacture with alternative ingredients using extrusion processing, laboratory sensory analysis of fillets, and site visits to fish rearing operations. For information please contact Northern Crops Institute, NDSU Dept. 7400, PO Box 6050, Fargo, ND 58108-6050 Phone: 701-231-7736 Fax: 701-231-7235. E-mail: nci@ndsu.edu

# Results of 2010 UAPB Catfish Feed Study

*Carole Engle, Professor, UAPB; Rebecca Lochmann, Professor, UAPB; Ganesh Kumar, Research Associate, UAPB; Brian Bosworth, Research Geneticist, USDA/ARS*

High ingredient prices in 2008 led feed mills to begin to manufacture new, less expensive feed formulations untested under commercial catfish farming conditions. New feed formulations have been tested at UAPB for the past three years.

In 2008, three 32 percent protein diets (an industry standard, an alternative and a corn gluten feed diet) and a 24 percent protein diet were tested. The 32 percent industry standard diet resulted in significantly greater yield of carryover fish. Feed conversion ratios of the standard and alternative diets were significantly lower than those of the 32 percent corn gluten and 24 percent protein diets, but visceral fat content was higher for the standard and alternate diets. The 32 percent industry standard diet was economically preferable to the alternative diets because the additional revenue from the greater yield of fish fed the 32 percent protein industry standard diet more than offset the reduced cost of the alternative diets evaluated.

In 2009, three 28 percent protein feeds (premium, standard or a sub-optimal diet) were tested in ponds. Total yield (gross and net) did not differ between fish fed the premium as compared to the standard diet, but that of the premium diet was significantly higher than that of fish fed the sub-optimal diet. The feed conversion ratio (FCR) did not differ between fish fed the premium and standard diets, but was lower than the FCR of fish fed the sub-optimal diet. There were no differences found in processing yields among treatments. Given the lower cost of the 28 percent standard diet and yields equivalent to those of the 28 percent premium diet, the 28 percent standard diet was economically preferable to the other diets tested.

A multi-state pond study was initiated in April 2010, as an outcome of the regional USDA Catfish Forum, to evaluate alternative (low-cost) feeds as compared with traditional catfish feeds. The 2010 trials were conducted with channel catfish in Mississippi and Arkansas, while Alabama tested the diets with channel-blue hybrid catfish.

The 2010 study evaluated four diets (traditional or alternative 28 percent and 32 percent protein diets). The two traditional diets (28 percent or 32 percent protein) were similar to those used in the industry several years ago when feed prices were relatively low. The traditional diets included soybean meal, cottonseed meal, corn, wheat middlings and animal protein (pork meat and bone/blood meal). The two alternative feeds (28 percent or 32 percent protein) contained corn gluten feed and supplemental lysine, less corn and wheat middlings and no animal protein. All diets were formulated to meet or exceed the known nutrient and energy requirements of channel catfish. The diets were also manufactured by a single feed mill to minimize variations from mill to mill.

In the Arkansas study, channel catfish were stocked April 21-22, 2010 into five 0.25-acre ponds per diet. Each pond was stocked with 6,000 fingerlings per acre (5-8 inches; averaging 65 pounds per 1,000) and 2,000 pounds per acre of larger, carryover fish (0.40-1.50 pounds each). Fish were fed once daily to apparent satiation, and ponds were managed in a manner similar to that of commercial farms.

Subsamples of fish were weighed three times throughout the study to measure growth. Fish were harvested October 19-21, 2010. Gross and net yield, growth, survival, feed conversion ratio, total feed fed, mean daily feed fed and processing (carcass and fillet) yields were determined. Fillet proximate nutrient composition will also be determined.

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A partial budget was used to compare the economics of the various diets fed. It measured the changes in costs and benefits from switching from the 32 percent reference diet to each of the other diets. Feed costs at the time the feed was formulated were: $431 per ton for the 32 percent reference diet; $421 per ton for the 32 percent alternative diet; $409 per ton for the 28 percent reference diet; and $399 per ton for the 28 percent alternative diet. While bagged feed costs more than bulk feed, partial budgets consider only the differences in feed cost per ton across the various diets. The relative differences were approximately $10 per ton. However, since the relative costs of various ingredients change, feed price differentials were also varied from the $10 per ton of the initial prices to $30 per ton, in increments of $5 per ton. Stockers were valued at 80 cents per pound in the initial analysis. Sensitivity analyses of stocker prices were then conducted with stocker prices of 60 cents per pound, 40 cents per pound and 20 cents per pound and a high price of $1 per pound.

## Results

The following tables summarize the results of the 2010 feed study. The values in the tables are the averages of the five ponds fed each diet. The number following the + sign indicates the standard deviation, or how variable the values were across the five ponds that were fed the same diet. The columns in Tables 1, 2 and 3 with the "P-values" heading show results of statistical analyses. A P-value of 10 percent (0.10) as the cutoff was used to decide if the differences are real (due to the diet) or if they are due to normal pond-to-pond variation. Thus, any variable with a P-value less than 0.10 is considered to have a significant effect.

The column labeled "Overall" lists the P-values for a one-way Analysis of Variance that shows if the different diets resulted in any differences in survival, yield, mean weight at harvest, total feed fed, FCR or processing yields. The other columns, labeled "Protein," "Quality" and "Interaction" show results of a two-way factorial analysis that separates and compares results of the 28 percent vs. 32 percent diets ("Protein") and the reference diets vs. the corn gluten feed diets ("Quality"). The "Interaction" heading shows that the protein levels and diet ingredients did not combine to produce significant effects.

Table 1 shows that the overall P-values are all above 0.10 except for the yield of fingerlings (0.06). This means that the only significant effect of the different diets was on the yield of fingerlings. In looking at the P-values for "Protein" and "Quality," it is clear that the difference is due to the protein level, not its composition. In other words, the fingerlings fed the 28 percent diets (both the reference and corn gluten feed) had lower yields (both gross and net) than those fed the 32 percent protein diets. However, there was no difference due to the ingredient composition of the diets. There also was no interaction between protein and quality. There were no differences in the amount of feed fed across the diets (Table 2). FCR had a P-value of 0.09 for protein effects. This is because fewer pounds per acre (of fingerlings) were produced for the same amount of feed.

There were some differences in processing yields (Table 3). The quality of the diet affected the headed-gutted and shank fillet yields and visceral fat content. Fish fed the corn gluten feed diets had lower yields as well as less visceral fat than the fish fed the reference diets.

## Economics

Decisions related to which feed is best to use should be made after considering a number of alternatives. The business' short and long-term goals, financial position and cash flow position must all be considered, in addition to the overall profitability and economic efficiency of the feed used. The "best" feed for a farmer will vary with individual farms depending on their situation with regard to the above-mentioned factors.

In terms of relative profitability, the only change that would be economically preferable would be to switch from the 32 percent reference diet to the 32 percent corn gluten feed diet (only positive net change value in Table 4). While the 28 percent diets are less expensive, the reduced cost of the feed is more than offset by the reduced yield of fingerlings fed the 28 percent as compared to the 32 percent diets. Since there was no reduction in yield measured with the 32 percent corn gluten feed diet as compared to the 32 percent reference diet, the lower cost of the corn gluten feed diet resulted in a positive net change for the partial budget. The sensitivity analyses of the differences in costs among the various diets showed that, regardless of the feed price differential, the 32 percent corn gluten feed diet continued to show the greatest relative economic advantage. When the 28 percent alternative diet was $75 per ton less expensive (an unrealistic difference), it became more profitable than the 32 percent reference, but not the 32 percent corn gluten feed diet. The price of stockers did not affect the results until they reached 20 cents per pound (an unrealistically low price for stockers), at which point the 28 percent reference diet became economically preferable.

It should be noted that this effect on relative profitability will occur in year two; there was no difference in yield of the carryover fish that would be sold in year one. It should also be noted that the partial budget analysis does not indicate overall whether the farm is profitable; only if it would be more or less profitable with the various feeds tested.

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The lower yields of fingerlings fed the 28 percent protein diets will weaken the farm's balance sheet and financial position in year one. The inventory value of fish in ponds at the end of the year will be lower. Thus, current and total asset values will be lower and will reduce net worth and financial ratios that compare assets to liabilities.

However, some farms are faced with serious cash flow problems, and have business goals that are based on surviving the coming year. Since there was no difference in the yield of carryover fish or the amount of feed fed, for a farmer concerned primarily with cash flow in year one, the 28 percent alternative (corn gluten feed) diet will result in the best year one cash flow. The yield of marketable fish would be the same, but at a lower total feed cost. The 28 percent alternate diet would also work well for ponds that have mostly larger fish that are in final growout and have few understocked fingerlings, as long as the fish are fed daily.

## Acknowledgments

We thank the Arkansas Catfish Promotion Board for funding for this study.

Table 1. Survival, yield, and mean weight at harvest of catfish fed four different diets, Arkansas.

| Production parameter | Unit | 32% protein | | 28% protein | | P-values | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Reference | Alternative | Reference | Alternative | Overall | Protein | Quality | Interaction |
| Survival | | | | | | | | | |
| Fingerling | % | 65.5 ± 13.4 | 76.0 ± 10.1 | 62.8 ± 12.3 | 63.4 ± 11.7 | 0.38 | 0.19 | 0.36 | 0.39 |
| Carryover | % | 94.6 ± 6.8 | 94.9 ± 6.4 | 99.7 ± 2.8 | 100.4 ± 6.2 | 0.29 | 0.06 | 0.86 | 0.93 |
| Gross yields | | | | | | | | | |
| Fingerling | lb/ac | 2,362 ± 406 | 2,562 ± 95 | 2,047 ± 355 | 1,947 ± 381 | 0.06 | 0.01 | 0.79 | 0.36 |
| Carryover | lb/ac | 6,278 ± 810 | 6,082 ± 312 | 6,018 ± 1,112 | 5,881 ± 206 | 0.86 | 0.51 | 0.63 | 0.93 |
| Total gross | lb/ac | 8,640 ± 887 | 8,644 ± 226 | 8,065 ± 1,209 | 7,828 ± 388 | 0.36 | 0.09 | 0.75 | 0.76 |
| Net yields | lb/ac | | | | | | | | |
| Fingerling | lb/ac | 1,972 ± 406 | 2,172 ± 95 | 1,657 ± 355 | 1,558 ± 381 | 0.06 | 0.01 | 0.79 | 0.36 |
| Carryover | lb/ac | 4,298 ± 817 | 4,081 ± 313 | 4,017 ± 1,111 | 3,879 ± 207 | 0.84 | 0.49 | 0.61 | 0.91 |
| Total net | lb/ac | 6,270 ± 900 | 6,253 ± 226 | 5,674 ± 1,289 | 5,437 ± 388 | 0.35 | 0.09 | 0.74 | 0.78 |
| Mean weight at harvest | | | | | | | | | |
| Fingerling | lb | 0.61 ± 0.15 | 0.57 ± 0.07 | 0.55 ± 0.05 | 0.52 ± 0.18 | 0.21 | 0.08 | 0.28 | 0.91 |
| Carryover | lb | 2.7 ± 0.2 | 2.6 ± 0.1 | 2.6 ± 0.5 | 2.5 ± 0.1 | 0.67 | 0.30 | 0.56 | 0.92 |

Table 2. Total feed fed, mean daily feed rate, and feed conversion ratio of catfish fed three different diets, Arkansas.

| Production parameter | Unit | 32% protein | | 28% protein | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Reference | Alternative | Reference | Alternative | Overall | Protein | Quality | Interaction |
| Total feed fed | lb/ac | 9,984 ± 815 | 10,504 ± 197 | 10,006 ± 695 | 10,005 ± 550 | 0.60 | 0.47 | 0.36 | 0.43 |
| Mean daily feed | lb/ac/d | 61 ± 5 | 64 ± 1 | 61 ± 4 | 61 ± 3 | 0.60 | 0.47 | 0.36 | 0.43 |
| FCR[a] | lb/ac | 1.61 ± 0.13 | 1.68 ± 0.03 | 1.84 ± 0.42 | 1.85 ± 0.12 | 0.33 | 0.09 | 0.67 | 0.79 |

[a]Calculated by dividing the quantity of feed fed by the net yield.

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Table 3. Processing yields of catfish fed four different diets, Arkansas.

| Production parameter | Unit | 32% protein | | 28% protein | | P-value | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Reference | Alternative | Reference | Alternative | Overall | Protein | Quality | Interaction |
| Mean whole body | lb | 2.01 ± 0.13 | 1.92 ± 0.06 | 2.05 ± 0.07 | 1.99 ± 0.03 | 0.15 | 0.15 | 0.07 | 0.59 |
| Headed-gutted yield | % | 67.17 ± 1.05 | 66.52 ± 0.43 | 66.90 ± 0.37 | 66.31 ± 0.57 | 0.23 | 0.44 | 0.06 | 0.92 |
| Shank fillet yield | % | 38.13 ± 4.56 | 37.36 ± 0.45 | 37.47 ± 0.56 | 36.47 ± 0.67 | 0.09 | 0.10 | 0.06 | 0.80 |
| Nugget yield | % | 10.02 ± 1.00 | 9.22 ± 0.62 | 9.61 ± 0.41 | 9.45 ± 0.36 | 0.34 | 0.77 | 0.14 | 0.31 |
| Visceral fat | % | 4.44 ± 0.51 | 4.32 ± 0.36 | 4.72 ± 0.37 | 3.99 ± 0.46 | 0.10 | 0.90 | 0.04 | 0.14 |

Table 4. Partial budget of experimental pond results of catfish fed four different diets (32% and 28% protein with and without corn gluten feed). The 32% reference diet (without corn gluten feed) was used as the base. Analysis was done on a per-acre basis.

| | Comparison of switching from 32% reference diet to | | |
|---|---|---|---|
| | 32% alternative | 28% reference | 28% alternative |
| BENEFITS | | | |
| Additional revenue | 0[a] | 0[a] | 0[a] |
| Reduced cost of feed | $51/acre[b] | $112/acre[b] | $162/acre[b] |
| TOTAL BENEFITS | $51/acre | $112/acre | $162/acre |
| COSTS | | | |
| Additional costs | 0 | 0 | 0 |
| Reduced revenue from decreased fingerling yields | 0[c] | $372/acre[d] | $372/acre[d] |
| TOTAL COSTS | | $372/acre | $372/acre |
| NET CHANGE (Total Benefits – Total Costs) | $51/acre | -$260/acre | -$210/acre |

[a]There was no increase in yield when switching from the 32% reference diet (base) to any of the other diets.
[b]There was no difference in the quantity of total feed fed across diets. Bagged feed costs at the time the feed was formulated were: $431/ton for the 32% reference diet; $421/ton for the 32% alternative diet; $409/ton for the 28% reference diet; and $399/ton for the 28% alternative diet. Total feed averaged 5.062 tons/acre.
[c]There was no significant difference in fingerling yields between the two 32% protein diets.
[d]The average difference in yields between the 32% and 28% diets was 465 lb/acre. Stocker price used in the base analysis was $0.80/lb.

# Effects of Traditional and Alternative Diets with 28 or 32 Percent Protein on Performance of Golden Shiners in Pools

*Rebecca Lochmann, Professor, UAPB and Harold Phillips, Research Associate, UAPB*

Golden shiner is the most popular baitfish species in the United States. Feeds are a lower percentage of variable costs in baitfish production (compared to catfish), but the high cost of feeds over the past few years have reduced profits in baitfish production. Reducing the feeding rate or frequency also reduces yield and profits. Alternative diets have been developed recently for catfish to try and maintain profitability while using cheaper feeds. Results for catfish have been mixed, but there may be more potential to use cheaper feeds in baitfish, which consume natural foods throughout production. A feeding trial was conducted in outdoor pools with golden shiners fed 28 or 32 percent protein diets in traditional formulas with animal protein or alternative formulas with corn gluten feed. The objective was to see if the cheaper alternative diets could support growth, survival and feed conversion of golden shiners as well as traditional diets.

Four diets were commercially extruded by ARKAT, Inc. All diets were designed to meet the nutrient requirements of channel catfish, which are similar to those of golden shiner. Two diets contained 28 percent protein and two contained 32 percent protein. At each protein level one diet was "traditional" (with 5 percent porcine meat, bone and blood meal) and one was "alternative" (with 20 percent corn gluten feed and no animal protein). Within a protein level, the alternative diets were cheaper than the traditional diets.

Two hundred fish (size: 0.4 pounds per 1,000) were stocked in each of four replicate 4.1 m3 aerated pools filled with reservoir water. Pools were not fertilized before stocking, and were managed as static systems. Fish were fed twice daily on weekdays and once daily on weekends at 6 – 8 percent body weight (8 percent initially). Subsamples of 50 fish per pool were weighed once every two weeks to monitor growth and adjust feed rations. Chlorophyll a was measured to estimate algae abundance, and zooplankton was identified and quantified twice during the study. After eight weeks, all fish were counted and weighed. Individual weights and lengths of 50 fish in each pool were measured to calculate Relative weight and Fulton's K condition index (measures of "plumpness"). Total lipid of whole fish was also analyzed.

Overall, golden shiner performance was very similar on traditional or alternative diets with 28 or 32 percent protein. There were no statistical differences in weight gain, survival, total yield or feed conversion (Table 1). Relative weight and whole-body fat were higher in fish fed traditional diets with animal protein compared to the alternative diets.

Natural foods clearly contributed to fish performance. Pools with more zooplankton had larger fish, regardless of the diet fed. Consumption of this live animal protein (zooplankton) helped reduce differences in fish fed pelleted diets of different quality.

Based on total yield alone, it appears that cheaper diets are effective for golden shiner production. However, "plump fish" could have a survival advantage after production when feed is withheld, such as during transport or retail display. Cost-of-gain was lowest in fish fed the traditional 28 percent protein diet (39 cents per pound), and highest in fish fed the 28 percent alternative diet (50 cents per pound). Bagged feed prices were used for the calculations - bulk prices would be lower.

Table 1. Performance of golden shiners fed 28- or 32% protein diets in traditional formulas with animal protein or alternative formulas with corn gluten feed for 8 weeks.

| Indicator | Traditional (28%) | Alternative (28%) | Traditional (32%) | Alternative (32%) |
|---|---|---|---|---|
| Mean weight gain (g) | 0.64 | 0.64 | 0.79 | 0.66 |
| Feed Conversion (fed/gain) | 1.90 | 2.5 | 2.0 | 2.0 |
| Survival (%) | 94.0 | 96.0 | 94.0 | 97.0 |
| Relative weight (Wr)* | 128 | 119 | 123 | 114 |
| Total lipid (%)* | 9.9 | 8.5 | 9.2 | 8.5 |
| Cost of gain (cents/lb) | 39 | 50 | 43 | 42 |

*Means were significantly different ($P<0.05$) based on 2-way ANOVA and Fisher's LSD tests.

# Changes to the Arkansas State Bait and Ornamental Fish Certification Program

*Andy Goodwin, Professor / Associate Director - Fish Health, Pathology, UAPB*

Arkansas is unique in that we have a stringent fish certification program designed at the request of fish producers and overseen by the Arkansas Agriculture Department. Almost all of the Arkansas bait and ornamental fish production acreage is enrolled in this voluntary program. The program is nationally recognized and provides very clear benefits to participating farms, and for the Arkansas industry as a whole.

The main focus of the program is State certification of freedom from important diseases (according to strict international standards) and freedom from nuisance aquatic species like zebra mussels, hydrilla and sticklebacks (verified by on-site inspections). That part of the program remains unchanged, but a third focus has now been added. The certification program now includes a new category – "Controlled Species." Currently, the mosquito fish (*Gambusia spp*.) is the only organism on the controlled species list.

The new wording for organisms on the Controlled Species list is that "Commercial bait and ornamental fish meeting program standards are certified to be produced using Arkansas Plant Board approved best management practices that reduce the likelihood that the [listed] species will be present in any shipment of certified fish." The program thus now includes two lists, the new "Controlled Species" and the longstanding "Certified Pathogens and Aquatic Nuisance Species (ANS)." The difference is that for organisms on the Controlled Species list, the state is not certifying that they are absent from the farm, but is instead certifying that every reasonable precaution has been taken to reduce the probability of the listed organism being present in a load of fish. Under the revised program, the State will certify that fish are free of listed important diseases and ANS species and that best management practices have been followed to reduce the probability that mosquito fish will be present.

The changes to the program were made at the request of the Arkansas baitfish industry and the mosquito fish best management practices were developed with industry input. Final approval of the changes occurred at the Plant Board meeting on December 16, 2010. Copies of the best management practices are available from the Plant Board or from the UAPB Fish Disease Laboratories.

# Update of the New Catfish Aeromonas Disease

*Andy Goodwin, Professor / Associate Director - Fish Health, Pathology, UAPB*

First a quick review: A new catfish disease, caused by a previously unseen strain of the Aeromonas hydrophila bacteria, appeared in Alabama in the summer of 2009. During the summer, it spread from pond-to-pond and farm-to-farm and final losses for the season were over 3,000,000 pounds. The disease reappeared in the summer of 2010 producing major losses across that production region. The disease has also been seen on two farms in Southwestern Arkansas. The UAPB Extension folks have been working with the farms, harvesters, haulers and processors to insure that the disease does not spread to our major catfish production areas in Southeastern Arkansas.

A group of scientists from across the Southeast are working together to learn more about this new disease, its treatment and its prevention. What we have learned is that the new strain of Aeromonas is indeed new and different from those that we have had in the past. This new strain is able to cause disease in healthy fish during the summer when temperatures are high. Farmers should consider it a dangerous new disease and make every effort to make sure not to bring in onto their farms. The main routes of infection would be harvest equipment and infected fish. It is important that everybody is careful because your best protection is to make sure that your neighbor's farm does not get infected.

If you do bring the bacteria onto your farm, it will be hard to eradicate. It is very likely that all types and strains of Aeromonas bacteria are able to live free in the environment, and they are part of the bacteria community seen on the skin and in the gut of healthy fish. This means that the new bacteria would probably persist for a very long time on a farm once it is introduced. Whenever conditions are right in the pond, the disease would be likely to pop up again and kill fish.

In the short term, some of the most important scientific work underway is to develop a method to detect this new strain of Aeromonas in healthy-looking fish and in pond water and sediments. Once we have this tool in hand, hopefully by this summer, we will be able to do a much better job of answering the critical "where is it now and how is it moving?" questions. In the meantime, the best guess is that the bacteria are still present during the winter months and farms need to continue to be extremely careful about biosecurity. If you bring it onto your farm it will be very difficult to get rid of it. It can be treated by antibiotics, but the medicated feeds are very expensive and would have a very big impact on your farm's profitability. If you have any questions about how to protect your farm from Aeromonas, please contact the UAPB Fish Disease Laboratories.

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# FSA Programs for Aquaculture Producers

*Anita M. Kelly, Extension Fisheries Specialist, UAPB*

FSA offers several types of assistance programs to aquaculture producers. Below is a list of the assistance programs and some of the important information needed to qualify for these programs.

◗ **NAP (Noninsured Crop Disaster Assistance Program)** – Coverage is available for catfish and other species listed in Exhibit 7.4 of 1-NAP (Rev. 1) under FINFISH. Coverage for 2011 crop year (Oct 1, 2010-Sept 30, 2011) must have been purchased no later than September 1, 2010. (AR Notice NAP-38)

◗ **ELAP (Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish Program) – Physical Losses** – Physical losses of farm-raised fish include losses of game fish (stockers) and bait fish (not raised as food for food fish) ONLY. Physical losses of all other aquatic species are covered under NAP and are not eligible under ELAP (par. 271 E, 1-LDAP).

◗ **ELAP - Feed Losses** – Under ELAP, catfish and crawfish are considered farm-raised fish for eligible feed losses (par. 271 A. 1-LDAP). Eligible farm-raised fish, for feed loss, are any aquatic species that are propagated and reared in a controlled environment to be harvested for sale as part of a commercial farming operation. (par. 271 D, 1-LDAP).

◗ **ELAP – Signup & Eligibility** – (par. 241 B, 1-LDAP) For 2010 and subsequent calendar year losses, producers that suffer eligible farm-raised fish losses shall file: A notice of loss the earlier of 30 calendar days:

- of when the loss is apparent to the participant
- after the end of the calendar year in which the loss occurred
- an application for payment no later than 30 calendar days after the end of the calendar year in which the loss occurred.

Important: There are no late-filed provisions for ELAP. Other eligibility criteria in paragraph 242, of 1-LDAP must also be met for ELAP.

◗ **SURE (Supplemental Revenue Assistance Payment Program)** – Aquaculture can be an approved crop for the SURE Program. However, 1-SURE, Para 32 explains that species for which an Aquaculture Grant Program payment was received cannot be included in the "farm" acreage for calculation. If there was no grant money received aquaculture is treated as a value loss crop.

Questions? Contact Carroll Brown or Tony Franco for NAP and ELAP Programs and the Production Adjustment/Compliance/GIS Division for the SURE Program.
Arkansas State FSA Office
Phone: 501-301-3052
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