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AQUATIC FARMING
A Newsletter for Kentuckians Interested in Improving Fish and Shellfish Production, and Pond Management.

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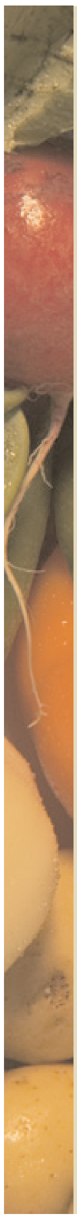

Selling Aquaculture Products in Kentucky's Farmers' Markets:
Results from Marketing Research

Siddhartha Dasgupta, Ph.D., Kentucky State University

Introduction

Kentucky has 111 active farmers' markets which are excellent outlets for locally-produced agricultural products. A survey of Kentucky's farmers' markets had shown that almost 80% allow different meat and fish products to be sold. Kentucky State University, in collaboration with the Kentucky Department of Agriculture, received a USDA market research grant during 2005 to investigate the potential of selling different meat and aquaculture products in Kentucky's farmers' markets. In this study channel catfish, tilapia, and freshwater prawns were evaluated by farmers' market customers. This article outlines some of the important results from farmers' markets at Ashland, Corbin, Erlanger, Frankfort, Lawrenceburg, Lexington, Louisville, Owensboro, and Paducah, which were selected for this project.

Results

Table 1 identifies familiarity of the featured aquaculture products among the respondents. Farmers' markets in Lexington and Paducah had the highest percentage of respondents who indicated familiarity with channel catfish and freshwater prawns, respectively, at the farmers' market. This was followed by patrons of the Corbin farmers' market (for catfish) and Lexington (for prawns). A lower percentage of customers in Frankfort, Lawrenceburg, Louisville, and Paducah indicated witnessing channel catfish and prawns being sold at the farmers' market. Farmers' markets in Ashland, Erlanger, and Owensboro had the least exposure to channel catfish and freshwater prawns.

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Selling Aquaculture Products in Kentucky's Farmers' Markets

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TABLE 1.
Percentage of respondents who have seen the following products sold in farmers' markets.

	Catfish	Freshwater Prawn	Number of Observations
Ashland	0	0	20
Corbin	33	25	12
Lexington	41	33	12
Louisville	15	8	26
Frankfort	15	22	27
Lawrenceburg	20	20	5
Paducah	26	39	31
Erlanger	0	0	10
Owensboro	4	9	23

TABLE 2.
Percentage of respondents from each farmers' market that would purchase the indicated product in a farmers' market, retail grocery store, or directly from farmers.

	Whole dressed Catfish	Catfish Fillets	Whole Prawn	Prawn Tails
Ashland	6	58	53	37
Corbin	11	45	55	58
Lexington	0	40	80	83
Louisville	31	44	68	21
Frankfort	38	48	52	75
Lawrenceburg			40	40
Paducah	18	48	4	73
Erlanger	13	13	67	33
Owensboro	38	67	61	37

Customers in the nine surveyed farmers' markets were asked to indicate their willingness to buy selected product forms of channel catfish and freshwater prawns from any retail outlet. Table 2 reports on the percentages of respondents that exhibited a preference for these products. Taking weighted averages, 52% and 50% of respondents were willing to buy prawn tails and whole prawns, respectively, while only 48% and 22% of respondents were willing to buy catfish fillets and whole catfish, respectively. Clearly, catfish fillets and prawns (tails or whole animals) were popular products, which should be encouraging news for sellers of whole prawns.

Tilapia and prawns were available for consumer evaluation at the Paducah farmers' market, due to the presence of local producers of these products. Paducah farmers' market respondents were asked to indicate the importance that they ascribed to the different attributes of tilapia and prawn products. Table 3 shows that price was an important attribute for 29% and 35% of respondents for tilapia and prawns, respectively. Similarly, 26% and 31% of respondents considered having a locally-grown tilapia and prawns, respectively, to be important. These respondents also picked different attribute levels to construct an "ideal" tilapia product (Table 4). The results show that most respondents considered "ready-to-cook tilapia fillets, packed in 2 lb sections, priced at $6/lb or more" as ideal. Whole tilapia was preferred by a minority of respondents, and they considered a price of $3-$4 /lb for whole tilapia as "fair." Similarly, consumers considered an "ideal" prawn product to be: "marinated, whole animals in 2 lb packages, and priced between $8-$10/lb."

TABLE 3.
Importance of product attributes to respondents, expressed as a percentage of respondents.
Blank areas in the table indicate unavailable data.

PRODUCTS AND ATTRIBUTES	PADUCAH FARMER'S MARKET
Tilapia Price:	
Is important	29
Is not important	6
Indifferent to the importance	32
Kentucky Grown Tilapia:	
Is important	26
Is not important	19
Indifferent to the importance	23
Prawn Price:	
Is important	35
Is not important	13
Indifferent to the importance	19
Kentucky Grown Prawn:	
Is important	32
Is not important	23
Indifferent to the importance	13

A product profile is a description that outlines the product's attributes and their respective levels. For example, a prawn product profile could be expressed as "fresh, whole prawns, grown in Kentucky priced at $8/lb"; another product profile could be "frozen prawn tails, not grown in Kentucky, priced at $12/lb". Consumers were asked exhibit their preferences by rating different freshwater prawn product profiles. These rating data were later analyzed to evaluate the relative importance consumers placed on different product attributes of freshwater prawn. Table 5

TABLE 4.
Ideal tilapia product as indicated by respondents. Data from the Paducah farmers' market. Data is in the form of frequency (percentage) of respondents.

Product form:		
Fillets	78%	
Whole	22%	
Product state:		
Ready-to-eat	83%	
Marinated	0%	
Breaded	17%	
Package size:		
1 lb	16%	
2 lb	74%	
5 lb	11%	
>5 lb		
Price ($/lb):	**Fillets**	**Whole**
≥ <$1		
≥ >$1 and <$2	20%	
≥ ≥$2 and <$3		
≥ ≥$3 and <$4		100%
≥ ≥$4 and <$5		
≥ ≥$5 and <$6		
≥ >$6	80%	

TABLE 5.
Relative importance of different freshwater prawn product attributes.

ATTRIBUTE	RELATIVE IMPORTANCE
Price	43%
Form	7%
State	5%
Origin	45%

reports these results which indicate that product origin (Kentucky-grown versus imported prawns) and prices were the two most important attributes, more than product form (processed or not) and state (fresh or frozen).

Conclusions

This article reports results of a study of Kentucky's farmers' markets. The aquaculture products featured in this study, i.e., channel catfish, tilapia, and freshwater prawns, were chosen to represent those products that Kentucky's farmers are currently producing, i.e., these products most likely to be sold in farmers' markets.

Results reported in this article delineate the preferences of farmers' market customers towards catfish, tilapia, and prawns. Customers of Corbin, Lexington and Paducah farmers' markets seem to be most familiar with aquaculture products. Consumers indicated a greater preference for catfish and tilapia fillets over the whole fish, but were relatively indifferent about the product form of freshwater prawns, i.e., whole prawns versus prawn tails. This clearly suggests that whole prawns could be sold as effectively as processed prawns, which would allow many more prawn farmers to sell their product at farmers' markets. A price range of $8-$10/lb for prawns was also most popular among respondents.

Other results suggest that there is definite profit potential in selling filleted catfish and tilapia in farmers' markets. Economics results show that Kentucky farmers can profitably sell these fillets at prices near the retail prices of equivalent imported fillets, while simultaneously capitalizing on having a fresh-harvested product that is locally grown. These attributes are exactly what most consumers seek when shopping at farmers' markets.

PADDLEFISH *Polyodon spathula* POLYCULTURE IN LOW-INPUT SHRIMP *Macrobrachium rosenbergii* PONDS

Presented at: *Aquaculture America 2008*, Feb. 10, Orlando, FL. William A. Wurts*, Steven D. Mims and Richard J. Onders, *Kentucky State University Cooperative Extension Program, P.O. Box 469, 1205 Hopkinsville Street , UK Research and Education Center, Princeton, KY 42445-0469 USA www.ca.uky.edu/wkrec/Wurtspage.htm

Several Kentucky farmers have adopted low-input shrimp farming over the past few years. While inorganic fertilization is optional, organic fertilization with alfalfa pellets is central to this practice. The use of organic fertilization improves pond productivity overall. Increasing pond productivity ensures that a wide variety of natural foods (zooplankton, chironomids, nematodes, organisms colonizing detritus, etc.) is available to shrimp at the beginning of the production season (Wurts, 2005). This is especially beneficial for newly stocked juveniles because it provides an ample supply of high nutrient foods assuring that shrimp have plenty to eat at the outset.

Much of the productivity from fertilization is in the form of zooplankton and phytoplankton which are freely suspended in the water column above the pond bottom. Unfortunately the shrimp primarily feed on the bottom of the pond. The phytoplankton mostly serve as food for the zooplankton. Only the plankton that mature, die and fall to the bottom of the pond are available as food for shrimp.

These plankton populations represent a large, potential source of natural food that is unused in a fertilized, low-input shrimp pond. A free-swimming animal that could filter small particles the size of zooplankton from pond-water would be needed to harvest this food source. Fortunately in Kentucky, we have a native fish that could possibly do the job. The paddlefish or "spoonbill catfish" feeds by swimming through the water with its mouth open, filtering zooplankton with its gill rakers. The 120-day growing season for freshwater shrimp production in Kentucky is too short to produce a food-size paddlefish. However, during a shrimp production season, it might be possible to grow a paddlefish fingerling into a paddlefish that is large enough for stocking lakes and reservoirs. So conceivably, polyculture could be used to produce paddlefish stockers with freshwater shrimp using low-input practices.

An aquaculture demonstration project was conducted in Kentucky during late spring, summer and early autumn of 2006. Ponds were located in Hopkins and Todd Counties. The study examined the feasibility of growing paddlefish stockers in ponds used for low-input, freshwater shrimp production. Each of three, 0.5-acre shrimp ponds was stocked with 200 juvenile paddlefish (400/acre). Paddlefish were 6-8 inches long and weighed approximately 40 g each. Paddlefish were stocked on June 8, 2006. Ponds were fertilized with alfalfa pellets and triple super-phosphate 2 weeks prior to stocking shrimp. Shrimp were fed a 28% protein, pelleted sinking channel catfish feed. No aeration was used in any of the ponds (Wurts, 2007). Juvenile paddlefish were allowed to graze the robust zooplankton populations that developed in the fertilized, low-input shrimp ponds.

Ponds were harvested in September 2006. Paddlefish survival ranged from 10-61 %. Average individual weights and lengths of paddlefish harvested from the three ponds ranged from 261-413 g and 18-20 inches. Paddlefish increased in weight from 653 % to 1,033 % in 106-113 days. The secchi disk measurement in the pond where paddlefish survival was 10 % was greater than 24 inches at harvest (Table 1). Survival was highest (43 and 61 %) in ponds with secchi disk measurements that ranged from 12-14 inches just prior to harvest. Ponds with the lowest secchi disk readings would have had the most zooplankton, promoting better growth of paddlefish. The secchi disk reading greater than 24 inches indicated clear water and that very few zooplankton were available for paddlefish to feed on. Clear water may have made the juvenile paddlefish more vulnerable to bird predation as well. This and a substantial aquatic weed (G. naias) problem could have accounted for poor paddlefish survival in that pond.

Table1
Secchi disk measurements
and paddlefish survival in low-input shrimp ponds.

County	Secchi Disk (cm)	Survival (%)
Hopkins	30-35	43
Todd-A	>60	10
Todd-B	30-35	61

Post larval shrimp were stocked at 16,000/ac in the Hopkins Co pond and 10,000/ac or 12,000/ac in Todd Co ponds. In Hopkins county, 504 lb/ac of shrimp were harvested after 114 days. The average harvest yield from Todd Co ponds was 710 lb/acre after 131 days. Shrimp harvested from ponds stocked with paddlefish grew well. Shrimp from the Hopkins Co pond were approximately 16 count (shrimp/lb) at harvest and those in the Todd Co ponds were 8-10 count. These results were within the range of those previously observed at both sites (Wurts, 2007).

With an overall average individual weight of 346 g, the paddlefish harvested were of suitable size for stocking into lakes, reservoirs and food-fish production facilities. The results of this demonstration suggest that paddlefish might provide a suitable supplemental crop for low-input shrimp farmers and a means to harvest plankton that otherwise would be lost when ponds are drained at harvest. Polyculture of paddlefish with freshwater shrimp could increase pond yields without increasing feed and fertilizer inputs. Assuming an average paddlefish survival of 50 % and a retail price of $3.00 each for stockers, the gross value added through polyculture could be $600/acre. Furthermore, it may be possible to stock paddlefish fingerlings at higher densities while achieving similar survival and growth. Raising and selling paddlefish stockers might provide a supplemental crop and additional income for low-input shrimp producers in Kentucky.

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Wurts, W.A. 2007. Low Input Shrimp Farming in Kentucky, Macrobrachium rosenbergii. *World Aquaculture,* 38(4): 44-49.

Freshwater Prawn Harvest Dates

Information provided by:

Angela Caporelli

Kentucky Department of Agriculture

Rocky Allen
4111 S.Highway 53
Crestwood, KY 40014
(502) 222-2352
SEPTEMBER 13, 20

Tim Alexander
Double A Farms
9489 US 41 A
Henderson, KY 42420
(270)869-0942
SEPTEMBER 20TH

Glenn Berger
G & R Freshwater Shrimp
3972 Levee Road
Mt. Sterling, KY 40353
(859) 498-4158
CALL FOR DATE

Tom Britz
(606)723-6363
CALL FOR DATE

Tim Buck
880 McDonald Road
Fountain Run, KY 42133
(270) 434-3000
SEPTEMBER 27, OCTOBER 4

Shawn Coyle
Thoroughbred Shrimp Co
3095 Flat Creek Rd.
Frankfort, KY 40601
(502) 875-2461
SALE OF SHRIMP FOR STOCKING
Billy Doolin
(859)576-9806
CALL FOR DATE

Susan G. Harkins
Bubbasue Shrimp
Dunreath, 4954 Paris Pike
Lexington, KY 40511
(859) 299-2254
SEPTEMBER 26
SALE AND PROCESSING OF FRESHWATER PRAWN

Nat & Hoppy Henton
Henton Farms Inc.
6749 Frankfort Road
Versailles, KY 40383
(859) 983-8148
SEPTEMBER 20

Mark Lowe
(859)432-0318
CALL FOR DATE

Sheila & Joe McCord, Jr.
Avalon Farm
4258 Lexington Road
Winchester, KY 40391
(859) 744-4860
SALE AND PROCESSING OF FRESHWATER PRAWN
SEPTEMBER 6,13,18,20,27

Stephen or Kyle Price
Bluegrass Shrimp & Fish Farm
4425 Ernst Bridge Road
Covington, KY 41015
(859) 356-6485
(859) 356-8662
(859) 635-9046
SEPTEMBER 12, 13, 14

Daniel R. Moreland
Route 2 Box 245
Butler, KY 41006
(859) 472-2622
SEPTEMBER 27

Shuckman Fish Co.
3001 West Main St.
Louisville, KY 40212
(502) 775-6478
SALE AND PROCESSING OF FRESHWATER PRAWN

Charlie Stuckwisch
Richard Deye
Springwater Shrimp Farm
1220 Clark Road
Morgantown, KY 42261
(270) 526-6090
(270) 526-3313
SEPTEMBER 13, 20

Brian Terry
2850 Union Temple Rd.
St. Charles, KY 42453
(270) 669-4475
SEPTEMBER 20TH
CALL TO CONFIRM
John Vanhorn
1070 Tabb Rd.
Cecilia, KY 42724
(270)862-2701
CALL FOR DATE

Truman Thurston
North Point Corrections
(859)583-7523
SEPTEMBER 12TH

David Willson
402 Danville St.
Lancaster, KY 40444
859-792-3232
CALL FOR DATE

Mark Zerger
5586 Bradford Rd.
West Paducah, KY 42086
(270)488-2967
OCTOBER 4TH

**** PLEASE NOTE**
Most growers sell whole on the pond bank on the day of harvest. Sale and Processing of freshwater prawn is done in certified facilities under strict Department of Health and FDA standards for HACCP.

Toxicity of Rotenone to Freshwater Prawn Juveniles *Macrobrachium rosenbergii*

Tiffany Ogunsanya, Robert Durborow, Carl Webster, Ken Thompson, Linda Metts, Michael Huang, David Straus, Hank Jarboe, and Shawn Coyle

Rotenone is a popular piscicide used to eradicate unwanted fish species such as bluegill, *Lepomis macrochirus*, and green sunfish, *Lepomis cyanellus*, from ponds. This chemical has been used in North America since the 1930's (Finlayson et al., 2000). Rotenone, derived from the roots of *Derris* plant species, kills fish by first entering the gills then traveling to the blood stream. Once rotenone enters the blood stream, the chemical interferes with oxygen uptake processes causing the fish to suffocate (Ling, 2003). Approximately 1 to 2 parts per million (ppm, which is the same as milligrams per liter or mg/L) of Prentox® Prenfish™ (which is 5% active ingredients of rotenone) are required to kill bluegills and green sunfish. Although, freshwater prawns *(Macrobrachium rosenbergii)* are typically stocked in ponds 2-3 weeks after a rotenone application (D'Abramo et al., 2006) there is no information in the literature indicating the rotenone concentrations that prawns can tolerate.

A 96-hour toxicity test was conducted at the Kentucky State University Aquaculture Research Center which exposed juvenile freshwater prawn to Prentox® Prenfish™ rotenone. The prawns were exposed to the following treatments of Prentox® Prenfish™ rotenone; 0.0 mg/L, 2.2 mg/L (0.11 mg/L active ingredient), 3.6 mg/L (0.18 mg/L a. i.), 6.0 mg/L (0.30 mg/L a. i.), 10.0 mg/L (0.50 mg/L a. i.), and 16.7 mg/L (0.84 mg/L a. i.). The results indicated that the prawns could tolerate rotenone concentrations of 0.0 mg/L, 2.2 mg/L, and 3.6 mg/L. The findings of this study suggest that prawn juveniles can tolerate rotenone concentrations that have been documented to eradicate fish species such as bluegills and green sunfish. And even when carp, *Cyprinus sp.,* and bullhead, *Ameiurus sp.* (Brunson, 2007) need to be eradicated with as much as 4 ppm of Prentox®, the 2-week wait before stocking prawn juveniles would most likely be enough time for the rotenone toxicity to decrease to levels that are not lethal to the prawns.

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Finlayson B.J., Schnick, R.A., Cailteux, R.L., De Mong, L., Horton, W.D., Mc Clay, W., Thompson, C.W., Tichacek, G.J. 2000. *Rotenone use in Fisheries Management Administrative and Technical Guidelines Manual.* American Fisheries Society, Bethesda, MD.

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Marking, L.L. and Bills, T.D. 1976 *Toxicity of Rotenone to Fish in Standardized Laboratory Tests.* Invest. Fish Control No. 72, Fish and Wildlife Service, Bur. Sport Fish. Wildl., U.S.D.I., Washington, D.C.

Ponds in Drought

Forrest Wynne, State Extension Specialist for Aquaculture, Kentucky State University Aquaculture Program, 251 Housman Street, Mayfield, KY 42066 phone 270-247-2334, FAX 270-247-5193 e mail fwynne@email.uky.edu

WATER VOLUME AND DEPTH

Watershed or runoff ponds must be constructed with the proper amount of watershed to fill them under normal weather conditions. Average annual rainfall, soil types, land slope, vegetative cover and climate are some of the factors that will determine how much watershed will be required to provide an acre foot of water. The watershed must be able to provide enough water volume to fill the capacity of the pond basin.

Watershed ponds are affected by drought in a number of ways. The loss of water volume and diminished pond depth during extended drought is most obvious. Deep watershed ponds (12 feet maximum depth, or greater) may be built to contain extra water capacity to compensate for anticipated water loss during hot, dry weather. Relative to surface area, many runoff ponds contain inherently large water volumes and are deep due to hilly topography.

Most warm water fish production occurs in the 4 to 6 feet of water located near the surface. Under normal conditions, ponds with a maximum depth of more than 8 feet offers little benefit to fish production. However, extra water volume may be

desirable where ponds are exposed to prolonged dry weather. Ponds located in arid lands may be constructed to maximum depths of 12 or 14 feet (USDA 1997). During drought, shallow ponds may dry up or fish may die due to compromised water quality. Shallow ponds that can be readily topped off with ground or surface water may not need the extra capacity. The capacity of irrigation, livestock, hydrants and some reservoirs may be maximized relative to the pond's surface area in order to supply large amounts of water during dry conditions.

SEEPAGE AND EVAPORATIVE WATER LOSS

Many ponds leak small volumes of water either constantly or periodically. Excessive pond seepage may result when ponds are constructed in inadequate or poor locations, or they are improperly built. Poor sub soils containing too much sand, gravel, silt, rock formations or too little clay may allow for excessive seepage under normal weather conditions. Water may seep through the basin of ponds where the clay barrier is not adequate to provide water retention. Some pond dams are constructed without adequate topsoil removal which prevents proper sealing and compaction at the base. Water may leak from under the dam and in severe cases may cause a collapse. Some soil types require the construction of a core trench to anchor the dam into the sub soils. Quality clay soil is compacted into the trench and core of the dam to prevent seepage and possible dam failure. Ponds may lose water around plumbing structures such as drain and overflow pipes installed in the dam. Anti-seep collars should be placed on all drain pipes and other plumbing built into dams. These barriers prevent water movement along the outside of pipes which may compromise the dams' integrity. Large trees and shrubs growing on dams may cause seepage by the piping of water along root structures and may eventually weaken the embankment. Woody vegetation growth should be prevented on dams.

During most years, evaporative water loss may be compensated by direct rainfall into the pond in humid environments (Boyd 1990). However, dry season water loss may not be replenished with direct rainfall until months later. Ultimately, watershed runoff must supply the most timely water replacement during the warm season and the majority of the volume throughout the year.

PHYSICAL AND BIOLOGICAL EFFECTS OF LOW WATER LEVELS

Pond shorelines exposed by receding water levels during drought may create a number of pond management problems along with a few opportunities for pond managers. With large portions of the pond basin exposed, the clay basin liner may develop deep cracks. Marginal clay barriers may become damaged and seep upon re-flooding, or seepage problems in ponds that already leak may become more severe. Low pool levels offer some opportunities to renovate dams and remove some silt and debris once the basin can support heavy equipment. Care should be taken to avoid damaging the clay liner during such renovations. Properly repair any damaged areas of the basin with compacted blankets of quality clay soil.

Water quality should be carefully monitored during low water conditions in order to maintain fish populations. Dissolved oxygen depletions may become more frequent and more severe due to the elevated temperature of shallow water and as organic material such as plants and algae decompose. Aeration devices may be required to maintain adequate dissolved oxygen concentrations (>5 mg/L) particularly in ponds where fish are heavily stocked and fed (> 1,000 lbs per acre). Increased water temperature, pH and reduced water volume may lead to elevated concentrations of toxic un-ionized ammonia gas (NH_3). Feeding should be restricted and supplemental water added to the pond if available until un-ionized ammonia concentrations decrease.

Low water levels may reduce or eliminate shallow water nursery habitat used by young game and forage fish species. Concentrated predation by larger fish may positively or negatively affect future sport fish population balance in a pond or lake. Beneficial predation may occur when carnivorous fish reduce over abundant forage. However, excessive predation of young game and forage fish could limit food availability to larger fish and delay their recruitment into the fishery. Predators such as water snakes, fish eating birds and river otter may prey more readily on concentrated fish populations confined in shallow water.

Aquatic plants and filamentous algae may have more shallow water habitat (< 3 feet in depth) to extend their growth and increase density during low water levels. Increased vegetation growth in shallow water may interfere with fish feeding, seining and sport fishing activities. Ponds filled with aquatic plant and algae growth may increase the habitat in which small game and forage fish species hide and avoid predation by larger fish. Such conditions could contribute to an overabundance of small fish and cause a future imbalance in pond fish populations. Lake managers may struggle to control aquatic vegetation growth in shallow waters. Contact herbicides and algaecides should be used with care to prevent chemical toxicity to fish and to avoid oxygen depletions.

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KENTUCKY AQUACULTURE ASSOCIATION
Membership Application

Do you give permission to display the following information in an Agricultural Directory? ❑ ***Yes*** ❑ ***No***

AQUACULTURE BACKGROUND *(check more than one where appropriate):*
❑ Producer ❑ Live Hauler ❑ Processor ❑ Pay Lake Owner
❑ Feed Mill ❑ Extension/Research
❑ Other (explain) ______________________

SPECIES
❑ trout ❑ minnows ❑ largemouth bass ❑ catfish ❑ bluegill
❑ hybrid striped bass ❑ freshwater shrimp ❑ red claw crayfish
❑ paddlefish
❑ Other (explain) ______________________

WATER SOURCE *(if applicable):*
❑ well ❑ spring ❑ watershed pond ❑ stream or lake
❑ Other (explain) ______________________
Number of ponds or raceways: ____________
Total acreage (if ponds) ____________
Comments (e.g. issues you want the Association to address): ____________
____

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Kentucky Aquaculture Association Dues: $25.00
Student KAA Dues: $5.00 School: ______________________
Current Project: ______________________

Please return this application to the address listed below:
Kentucky Aquaculture Association
c/o Shiela McCord
4258 Lexington Road
Winchester, KY 40391