

SMALL-SCALE AND HOME-USE CHANNEL CATFISH FARMING IN KENTUCKY

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There are areas in Kentucky that are suitable for large-scale, commercial aquaculture. The Purchase Area of west Kentucky is one such location. However, the vast majority of Kentucky farmers are constrained by the availability of appropriate resources for intensive channel catfish production. They are frequently restricted by limited availability of water, land, money, and/or time. Most of these people can not afford to quit the day job. Nonetheless, many of them are interested or have become involved in aquaculture. They are looking for additional farm enterprises that can be conducted with minimal inputs, that is, a 5-gallon bucket and a pickup truck.

Small-scale, channel catfish farming can be conducted in small or large ponds filled with water from rain or wells. Ponds as small as 0.25 acre or as large as 20 acres are suitable. However, ponds in the 1- to 5-acre range are more practical. A stocking density of 1,500 fish/ac can provide yields as high as 2,000 to 2,300 lb/ac annually. Lower stocking densities and custom feeding tables eliminate the added costs of aeration equipment and pond-side electricity. Additionally, greater individual weight gains are achieved stocking 1,500 catfish fingerlings/ac (Table 1). As a general rule, with small-scale practices one fingerling will produce 1.25-1.5 lb/yr of catfish while under intensive production one fingerling will yield approximately 1.0 lb/yr of fish. With a high level of expertise, careful attention to feeding, and multiple size-selective harvests; small-scale yields might

be increased to 2,500 to 3,000 lb/ac of catfish annually, without aeration.

	Fish/acre	Pounds/acre
Small-scale	1,500	2,000 - 2,300
“Expert” Small-scale	1,500 - 2,000	2,300 - 3,000
Intensive	4,500 - 5,000	4,500 - 5,000

In a few instances, production inputs have been reduced even further. Some Kentucky farmers spawn fingerlings and produce food-size fish in the same pond, year after year. The large broodfish that are accidentally captured during harvest are returned to the pond after seining. Spawning cans are used (2-3/ac) and the catfish are allowed to reproduce in the production pond. Fish are fed to satiation and daily feeding is capped at 25-30 lb/ac. When feeding reaches this level, ponds are selectively harvested with large mesh seines. Selective harvest removes the 1.5- to 2.0-lb fish, allowing the smaller fish to remain for continued growth. This method allows continuous production of 1,000 to 1,500 lb/ac of fish each year. With highly skilled management, it might be possible to achieve annual yields of 2,000 to 2,500 lb/ac using this technique.

Wholesale or bulk sales of catfish are not practical for a small-scale producer. However, local retail sales and niche

markets are more readily accessed by the 1- to 5-acre catfish farm. Direct or live sales, on-site; sales to restaurants and grocery stores; and sales to live-haulers, paylakes, and recreational pond owners provide higher prices per pound than can be achieved when selling to processing plants and wholesale buyers. After subtracting the cost of feed and fingerlings, retail sales in the local area and nearby counties, at \$1.25-1.50/lb live-weight, could provide cash returns as high as \$1,800 to \$2,600/ac. However, these markets are small and easily saturated if there are more than a few producers in close proximity or within the same community.

The potential impacts and value of “home-use” channel catfish farming are commonly overlooked and frequently scoffed at. Home-use production provides the farm family with quality catfish fillets at wholesale prices. Recent retail prices for farm-raised channel catfish fillets have been close to \$4.99/lb at grocery stores in west Kentucky. If we assume that dress-out for fillets equals 40% of live-weight and that production costs are \$0.65-0.80/lb live-weight, the retail value of fillets (over cost) to the home-use producer is between \$2.99-3.36/lb. However, production costs could be significantly lower with small-scale practices. Yields of 1,000 lb/ac annually would have a home-use value of \$1,200 to \$1,340 per acre. At production levels of 2,200 to 2,500 lb/ac annually, the retail value of home-use production is \$2,600 to \$3,000 per acre. Estimating that there are 1,500 ac of home-use catfish ponds in Kentucky, the annual value of this small-scale production would lie between \$1.8 and \$4.4 million dollars depending on

production yields (Table 2). The money saved remains in the farmers’ bank accounts rather than being spent at the local grocery franchise. Furthermore, in many rural areas, farm-raised catfish fillets may not be available for purchase.

Table 2. Value estimates for home-use channel catfish production in Kentucky		
	Estimated	Potential
Acreage	1,500	1,500
Annual yield (lb/ac)	1,000	2,200
Total yield (million lb/yr)	1.5	3.3
Fillets (million lb/yr)	0.6	1.3
Retail Value Over Cost (million \$/yr)	1.8 - 2.0	3.9 - 4.4
Annual Value (\$/ac)	1,200 - 1,300	2,600 - 3,000

Small-scale and home-use catfish farming are significantly more sustainable than intensive production. Because inputs are minimized, small-scale practices can substantially reduce production costs. The savings realized by producing fish for direct consumption reduce the farm family’s cost of living and improve their quality of life. Small-scale catfish production offers Kentucky’s farm families quality food at wholesale prices, a source of supplemental income, and a means of diversifying farm enterprises. These home-use techniques broaden Kentucky’s farm culture and enhance opportunities in rural areas overall.