SURVEY OF CURRENT PRACTICES AND PROBLEMS IN THE MISSISSIPPI CATFISH INDUSTRY

ROLAND E. REAGAN, JR., Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS 39762

Abstract: A survey designed to elucidate current farming practices and problems was sent to all known catfish farmers in Mississippi. Most farms are greater than 45.5 ha (100 acres) and stocking rate averaged approximately 7410 fish per ha (3000 per acre). Most farmers use tractor pulled feeders and feed floating feed. The vast majority of respondents sold their fish to processors. The majority of respondents would like to increase their catfish farm acreage. Slightly more respondents produced their own fingerlings than purchased them and most managed their own farm. Few respondents had pesticide kills while about one-third had serious parasite or disease kills and one-fourth had oxygen depletions. Chi square analysis was used to test the relationship between farm size and stocking rate, stocking rate and oxygen depletions, and stocking rate and parasite and disease kills. Only the relationship between farm size and stocking rates was statistically significant.

Proc. Ann. Conf. S.E. Assoc. Fish & Wildl. Agencies 34:127-130

The catfish farming industry is one of the fastest growing segments of Mississippi's farming industry. Between May 1977 and March 1979, catfish farming grew at a rate of 25 percent per year (Wellborn 1979). The estimated value of all farm raised catfish in Mississippi is $45,876,650 (Wellborn 1979). Although the Mississippi catfish industry is the largest in the United States there is a lack of information concerning common management practices and problems. With these concerns in mind a survey was designed to provide information to fill gaps in our knowledge about catfish farming practices.

METHODS

The mail survey (Table 1) with 22 questions was mailed to all catfish farmers on May 1978. Survey forms were not numbered to protect the privacy of individual farmers. For this reason, no follow up letters were sent and percentage return was not as large as it could have been with follow up inquiries.

Tabulations of selected questions used to determine the effects of management practices on farming problems were evaluated by a Chi square contingency table. Relationships examined were the effect of farm size on stocking rate and the effect of stocking rate on disease problems and oxygen problems.

RESULTS AND DISCUSSION

From 122 catfish farmers contacted, 55 returned surveys representing a 45 percent response. Farm size was divided into 3 categories: less than 20.2 ha, 20.2 ha to less than 40.5 ha and 40.5 ha or greater. Farms less than 20.2 ha comprised 23 percent of the total, averaging 6 ha and ranging between 0.81-11.7 ha. Farms 20.2 ha or greater but less than 40.5 ha represented 17 percent of total farms. They averaged 28.3 ha and ranged between 20.2 ha and 36.4 ha. Farms 40.5 ha or greater represented 60 percent of total farms reporting averaging 158.7 ha ranging between 40.5 and 647.4 ha. Average stocking rate was 7267 fish per ha with rates ranging between 1482 and 12350 fish per ha.

The method of feeding fish included tractor pulled feeders (38%), aircraft (2%), hand feeding (25%) and truck mounted feeders (15%). Large farms primarily use tractor pulled feeders while the small producer fed by hand. With regard to feed type used, 78 percent of the respondents felt that floating feed helped them manage their fish better.

Table 1. Mississippi Catfish Farming Research Survey.

1. How many acres do you have in catfish ponds? _____
2. What stocking rate do you use in your production ponds? _____ fish/acre.
3. How many wells do you have for your catfish ponds? _____
4. What is the approximate number of gallons per minute you get per well? _____(average for all wells).
5. What feeding method do you use?
   - 15% Truck mounted feeder
   - 38% Tractor pulled feeder
   - 2% Airplane feeder
   - 25% Hand feeding
6. What type of feed do you use?
   - 78% Floating
   - 22% Sinking
7. Why do you use that type of food?
   - 20% Lower cost
   - 74% Helps you manage ponds better
   - 2% Lower storage space
   - 4% Other
8. What size fish represents your major production?
   - 11% Fingerlings
   - 89% Food fish
9. How do you harvest your fish?
   - 69% Harvest them yourself
   - 31% Custom harvester
10. When harvesting fish do you (check one)
    - 13% drain production ponds in the fall/winter,
    - 20% partial harvest (topping) ponds and leave fish in production ponds over winter, or
    - 67% a combination of the above methods.
11. Where do you sell most of your fish?
    - 4% Other producers (fingerlings)
    - 12% Live haul market
    - 55% Processors
    - 5% Direct to public through pay lakes
    - 24% Direct to public by live or dressed fish
12. If you are also a row crop farmer (cotton, soybeans) and you were going to expand your farming operation, would you prefer (omit this question if you are not a row crop farmer)
    - 89% to expand your catfish pond acreage, or
    - 11% to expand your agricultural acreage.
13. Where do you get most of your fingerlings?
    - 56% Raise them yourself
    - 44% Buy them

Table 1. Cont.

14. Please put a one (1) by the 3 areas you think need top priority for catfish research. Place a two (2) by the 3 second priority research items and a three (3) by the 3 third priority research items.

_____ Weed Control	_____ Polyculture
_____ Improved Feeds	_____ Pond Designs
_____ Water Quality	_____ Trashfish Control
_____ Marketing	

Parasite and Disease Control

_____ Harvesting Methods	_____
_____ Economics	_____
_____ Other	_____
_____	

15. What do you think is the best pond size for production of food fish?

0%	80 acre	19%	10 acre
4%	40 acre	15%	Other
62%	20 acre		

16. Who manages your catfish ponds?

60% Yourself 30% Paid manager 2% Relative

17. Have you lost any fish to pesticide poisoning this past production season?

10% Yes
90% No

18. Do you raise any other species of food fish other than the channel catfish?

3	Tilapia	1	Bullheads
5	Buffalofish	1	Flathead catfish
6	Grass carp	1	Blue catfish
1	Chinese carp		
	Other		
	Sunfish		

19. Did you have an oxygen depletion this past year in a pond where you lost at least half of the fish in the pond?

38% Yes
62% No

20. Did you have a parasite or disease problem this past year in a pond where you lost at least half of the fish in the pond?

25% Yes
75% No

Table 1. Cont.

21. Where do you get the most ideas to help you improve your fish farming operation?

26%	Think of them yourself
34%	Other farmers
8%	Research workshops
21%	State extension personnel
5%	The Commercial Fish Farmer magazine
	Other

22. You may use this space to comment on particular problems you think need solving or your comments about this survey or other research projects you think are important.

The vast majority of respondents (89%) raised food fish with 11 percent primarily raising fingerlings. Most farmers did their own harvesting (69%) with 31 percent using custom harvesting services. Few farmers (13%) used the clean-harvest-in-the-fall method. Most farmers (67%) used a combination of selective harvest and clean harvest.

The market for catfish depend on several factors. A smaller producer can sell most of his fish to local consumers. The large producer has several market options but most respondents sold to processors (55%). Another smaller market for farmers located in the northern part of the Mississippi Delta was the live haul market (12%).

Most farmers saw a growing future for the catfish industry (89%) and would like to expand their operations. Only 11 percent of the respondents said they did not want to expand.

Sources for fingerlings were divided closely between the producers who raised their own (56%) and those producers who purchased them (44%). Many respondents (62%) thought that a 8.1 ha pond was best for production of food fish. Fewer thought a 4 ha or smaller pond was the best (34%).

More respondents managed their own farm (86%), while 32 percent had a paid manager.

Only 10 percent of the respondents has pesticide poisoning problems on their farm; whereas, 38 percent had a serious parasite or disease problem and 25 percent had losses from oxygen depletions.

Most respondents felt they or other farmers provided most new ideas on improved farming methods (60%).

Using the information provided by the survey, an analysis of the strength of 3 relationships was performed using Chi square contingency table analysis. The relationship between farm size and stocking rate ($X^2 = 23.5$, $P \leq 0.05$) may mean that as farm size increases the operators may be willing to take more chances to increase profit. Calculated X^2 for the relationship between stocking rate and oxygen problems ($X^2 = 4.14$, $P \geq 0.25$) and stocking rate and parasite and disease problems were ($X^2 = 9.84$, $P \geq 0.25$) not significant.

Surveys cannot solve research problems but they can provide information about a segment of the industry that can point the way to solutions through research.

LITERATURE CITED

WELLBORN, T. L., JR. 1979. Commercial fish farming in Mississippi. Coop. Ext. Service, Miss. State Univ. 11pp. (Mimeo.)