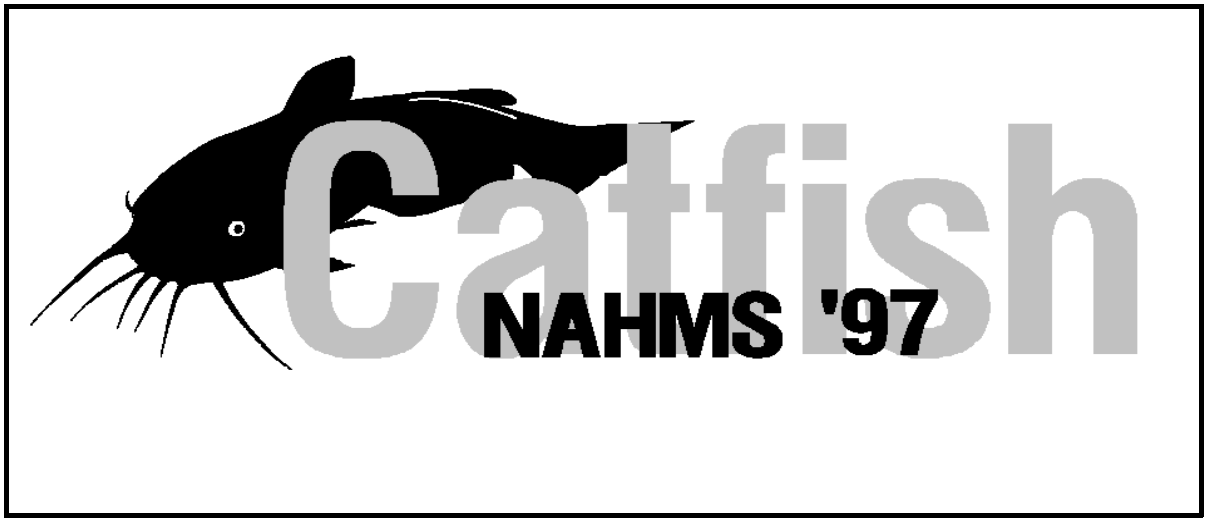
United States
Department
of Agriculture

Animal and
Plant Health
Inspection
Service

**Veterinary
Services**

Part I: Reference of 1996 U.S. Catfish Health & Production Practices



May 1997

Acknowledgments

This report has been prepared from material received and analyzed by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS).

The Catfish '97 study was a cooperative effort between State and Federal agricultural statisticians, animal health officials, university researchers, and extension personnel. We want to thank the National Agricultural Statistics Service (NASS) enumerators who contacted the operations and collected the data for their hard work and dedication to the National Animal Health Monitoring System (NAHMS).

The roles of the producer and NASS enumerator were critical in providing quality data for Catfish '97 reports. All participants are to be commended for their efforts, particularly the producers whose voluntary efforts made the study possible.

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Dr. Nora Wineland, NAHMS Program Leader

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Introduction

The National Animal Health Monitoring System (NAHMS) undertook the Catfish '97 Study to provide the industry with information regarding catfish health and management practices at the national level for education and research. This report is the first release in a series documenting Catfish '97 results.

Catfish '97 is the first NAHMS study of the catfish industry. Four states, Alabama, Arkansas, Louisiana, and Mississippi, were selected to be included in the study. These four states represented 95.9 percent of the total national catfish sales in 1996 and 93.5 percent of the water surface acres to be used for catfish production from January 1 through June 30, 1997. These four states accounted for 68.6 percent of all catfish operations on January 1, 1997.

NAHMS is sponsored by the USDA:APHIS:Veterinary Services (VS). VS collaborated with the USDA's National Agricultural Statistics Service (NASS) to implement a two-part study of foodsize fish producers in the four selected states. During the first part of the study, from January 1 through January 17, 1997, NASS enumerators attempted to contact all known producers either by phone or through a personal visit. There were 571 respondents from the four states surveyed (Alabama n=129, Arkansas n=117, Louisiana n=71, Mississippi n=254) with an overall response rate of 65.6 percent. In April 1997, NASS again contacted a subsample of these foodsize fish producers to participate in the second phase of the project.

This report focuses on aspects of disease and production of foodsize fish. The second phase of the study will describe management practices. Results will be disseminated in a separate report. Data from both phases will be linked to examine relationships between animal health and management practices.

For questions about this report or other Catfish '97 related topics, please contact:

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Terms Used in this Report

Diseases:
- **Anemia**: white lip disease.
- **CCV**: channel catfish virus.
- **ESC/Col**: enteric septicemia of catfish and columnaris (*Edwardsiella ictaluri* and *Flexibacter columnaris*.)[1]
- **Ich**: *Ichthyophthirius multifilis*.
- **PGD**: proliferative gill disease.
- **Winter kill** (fungus): winter mortality syndrome, external fungus infections, Winter saprolegniosis.

Foodfish: any fish ultimately directed to processing.

Foodsize: fish weighing over 3/4 lb., excluding broodstock.

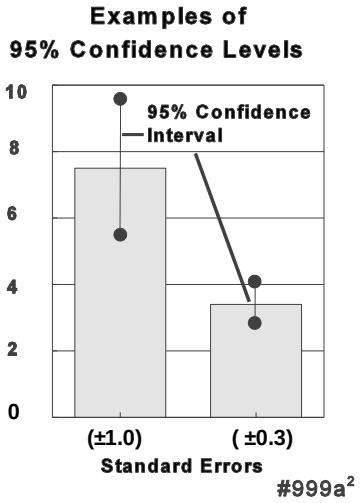
Greatest economic loss: producer-perceived economic loss during the previous 3 years due to a specific disease.

Losses: producer-estimated percent of fish loss.

Operation average: the average value for all operations; a single value for each operation is summed over all operations reporting divided by the number of operations reporting.

Operation size: each reporting operation was classified into one of four size groups based on water surface acres to be used for foodsize fish production from January 1 through June 30, 1997.

Outbreak: individual episodes of apparent disease problems.



Population estimates: averages and proportions are weighted to represent the population. Most of the estimates in this report are provided with a measure of variability called the *standard error* and denoted by (±). In graph #999a[2] at right, chances are 95 out of 100 that the interval created by the estimate plus or minus two standard errors will contain the true population value. In the example at right, an estimate of 7.5 with a standard error of ±1.0 results in a range of 5.5 to 9.5 (two times the standard error above and below the estimate.) The second estimate of 3.4 shows a standard error of ± 0.3 results with a range of 2.8 and 4.0.

Sample profile: information that describes characteristics of the reporting operations from which Catfish '97 data were collected.

Standard error: see population estimates above.

[1] ESC and Columnaris were combined in the questionnaire to aid recall by producers. All ESC and Columnaris estimates were necessarily combined.

[2] Identification numbers are assigned to each graph in this report for public reference.

Section I: Highlights

- The primary cause of losses was disease (45.4 percent of all losses), followed by wildlife (37.4 percent), low dissolved oxygen (12.1 percent), and other/unknown causes (5.1 percent). (Page 4)

- Just above 78 percent (78.1) of all operations reported Enteric Septicemia (ESC)/Columnaris infection. Winter kill infection was the second most reported disease problem (35.8 percent). Proliferative Gill Disease was the third most reported disease (19.8 percent). Percentages of operations reporting these disease problems increased as operation size increased. Percent of operations that experienced losses from Ich, Channel Catfish Virus (CCV), and "other" causes, were all relatively low. (Page 6)

- ESC/Columnaris, winter kill, and PGD caused moderate to severe losses (average losses estimated at 200 or more pounds) on 54.0 percent, 19.2 percent, and 12.5 percent of all operations. (Page 7)

- Slightly over forty-two percent (42.1) of all ponds had reported problems with ESC/Columnaris infection. Winter kill infection was reported in 21.0 percent of all ponds while PGD infection was reported in 5.3 percent of all ponds. (Page 8)

- ESC/Columnaris, winter kill, and PGD caused average losses per outbreak in the moderate to severe categories (losses estimated at 200 or more pounds) of 30.0, 11.4, and 3.4 percent of all ponds respectively. (Page 8)

- A majority (54.1 percent) of operations that reported experiencing disease losses did not submit any samples for disease testing to state, Federal, or university laboratories in 1996. The percent of operations that did submit to such laboratories varied by disease with CCV and winter kill submitted relatively infrequently (20.7 and 27.5 percent of the operations that experienced losses from the disease). PGD and "other" diseases were submitted relatively frequently to laboratories (57.7 and 57.3 percent of operations that experienced loss). (Pages 10-11)

- ESC/Columnaris was cited most often (70.2 percent of all operations) as the disease that caused the greatest economic loss over the previous 3 years. "Other/unknown" causes, winter kill, and PGD were the next most frequently cited diseases causing the greatest economic loss (13.8, 6.4, and 6.4 percent of all operations). (Page 13)

- Foodfish sales per surface acre of foodfish ponds averaged 3,775 pounds per acre with the highest values found on larger operations. Operations with small average pond size (less than 5 acres) and very large average pond size (over 20 acres) had the lowest production averages. (Page 14)

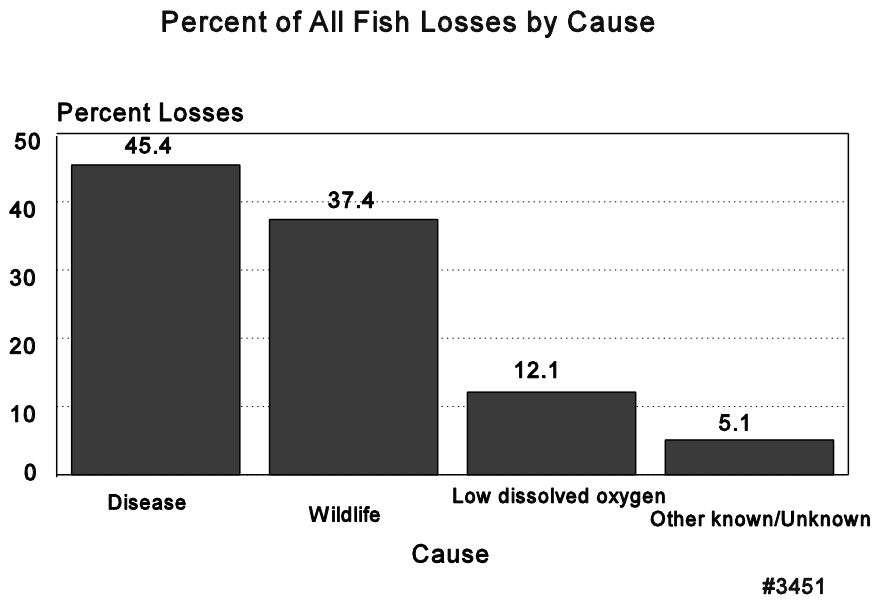
Section II: Population Estimates

A. Cause of loss

1. General causes of fish losses

    a. Percent of all losses by cause:

Cause of Loss	Percent of Losses			
	Operation Average	Standard Error	Weighted by Sales	Standard Error
Wildlife	37.4	(±1.0)	32.9	(±1.3)
Disease	45.4	(±1.0)	49.2	(±2.0)
Low dissolved oxygen	12.1	(±0.7)	12.3	(±0.9)
Other known /Unknown	5.1	(±0.6)	5.6	(±0.8)
Total (all losses)	100.0		100.0	



b. Operation average percent of all losses by cause and operation size:

Cause of Loss	Operation Average Percent of Losses									
	Operation Size (Acres)									
	1-19	Standard Error	20-49	Standard Error	50-149	Standard Error	150 or More	Standard Error	All	Standard Error
Wildlife	41.4	(±3.6)	39.4	(±2.4)	36.7	(±1.6)	34.2	(±1.2)	37.4	(±1.0)
Disease	33.9	(±3.5)	44.7	(±2.4)	50.1	(±1.8)	48.2	(±1.2)	45.4	(±1.0)
Low dissolved oxygen	13.6	(±2.6)	13.5	(±2.0)	9.9	(±1.0)	12.1	(±0.8)	12.1	(±0.7)
Other known/ Unknown	11.1	(±2.6)	2.4	(±0.9)	3.3	(±0.9)	5.5	(±0.6)	5.1	(±0.6)
Total (all losses)	100.0		100.0		100.0		100.0		100.0	

c. Percent of operations by percent of losses and cause of loss:

Cause of Loss	Percent Operations								
	Percent of Losses								
	No Loss	Standard Error	0.1-9.9	Standard Error	10.0-49.9	Standard Error	50.0 or More	Standard Error	Total
Wildlife	16.2	(±1.2)	6.2	(±0.7)	38.2	(±1.3)	39.4	(±1.4)	100.0
Disease	18.9	(±1.1)	3.3	(±0.6)	24.6	(±1.2)	53.2	(±1.4)	100.0
Low dissolved oxygen	63.1	(±1.4)	6.2	(±0.6)	20.8	(±1.1)	9.9	(±1.0)	100.0
Other Known/ Unknown	86.6	(±1.0)	1.5	(±0.4)	7.9	(±0.7)	4.0	(±0.6)	100.0

TABLE TIP: Each row represents the percent of operations categorized by the percent of losses reported due to the specified cause. For example, 38.2 percent of the operations experienced between 10.0 and 49.9 percent of losses due to wildlife.

B. Disease

1. Operations that experienced disease losses in 1996

a. Percent of operations by disease experienced and operation size:

Disease	Percent Operations									
	Operation Size (Acres)									
	1-19	Standard Error	20-49	Standard Error	50-149	Standard Error	150 or More	Standard Error	All	Standard Error
ESC/Col	47.0	(±4.4)	69.3	(±3.0)	86.3	(±2.0)	95.6	(±0.9)	78.1	(±1.3)
Ich	4.2	(±1.8)	4.9	(±1.4)	6.3	(±1.6)	5.0	(±1.0)	5.2	(±0.7)
PGD	5.5	(±2.0)	7.4	(±1.9)	17.4	(±2.2)	40.9	(±2.3)	19.8	(±1.1)
Anemia	1.3	(±0.8)	6.7	(±1.7)	5.7	(±1.2)	16.1	(±1.7)	8.4	(±0.8)
Winter kill	9.5	(±2.7)	17.9	(±2.4)	37.4	(±2.8)	64.9	(±2.3)	35.8	(±1.3)
CCV	1.2	(±0.8)	2.3	(±0.8)	8.5	(±1.6)	4.9	(±1.0)	4.6	(±0.6)
Other	1.3	(±0.8)	2.4	(±0.9)	2.8	(±1.3)	4.0	(±1.0)	2.8	(±0.5)

TABLE TIP: Each row represents the percent of ponds within an operation size category that experienced losses due to the specific disease. For example, 95.6 percent of operations with 150 or more surface acres experienced losses due to ESC/Columnaris.

b. Percent of operations by disease experienced and percent of ponds that experienced losses:

Disease	Percent Operations										
	Percent Ponds that Experienced Losses										
	No Loss	Standard Error	0.1- 9.9	Standard Error	10.0-24.9	Standard Error	25.0-49.9	Standard Error	50.0 or More	Standard Error	Total
ESC/Col	21.9	(±1.3)	3.9	(±0.5)	12.5	(±0.9)	14.0	(±1.1)	47.7	(±1.5)	100.0
Ich	94.8	(±0.7)	1.4	(±0.3)	1.2	(±0.4)	0.9	(±0.3)	1.7	(±0.4)	100.0
PGD	80.2	(±1.1)	6.9	(±0.6)	5.6	(±0.6)	3.9	(±0.6)	3.4	(±0.6)	100.0
Anemia	91.6	(±0.8)	4.4	(±0.5)	0.8	(±0.2)	2.0	(±0.5)	1.2	(±0.3)	100.0
Winter kill	64.2	(±1.3)	5.2	(±0.6)	8.7	(±0.8)	8.1	(±0.8)	13.8	(±0.1)	100.0
CCV	95.4	(±0.6)	1.1	(±0.3)	0.9	(±0.2)	1.3	(±0.4)	1.3	(±0.3)	100.0
Other	97.2	(±0.5)	0.6	(±0.2)	0.4	(±0.2)	0.7	(±0.3)	1.1	(±0.3)	100.0

TABLE TIP: Each row represents the percent of operations categorized by the percent of ponds that experienced losses due to the specified disease. For example, 47.7 percent of all operations experienced losses due to ESC/Columnaris in 50 percent or more of their ponds.

c. Percent of operations by disease experienced and outbreak loss severity:

Disease	Percent Operations								
	Outbreak Loss Severity (Average Loss per Outbreak)								
	No Loss	Standard Error	Light (Less than 200 lbs)	Standard Error	Moderate (200-2,000 lbs)	Standard Error	Severe (More than 2,000 lbs.)	Standard Error	Total
ESC/Col	21.9	(±1.3)	24.1	(±1.2)	35.7	(±1.5)	18.3	(±1.2)	100.0
Ich	94.8	(±0.7)	1.9	(±0.4)	1.9	(±0.5)	1.4	(±0.3)	100.0
PGD	80.2	(±1.1)	7.3	(±0.8)	5.3	(±0.6)	7.2	(±0.7)	100.0
Anemia	91.6	(±0.8)	3.6	(±0.5)	3.0	(±0.4)	1.8	(±0.4)	100.0
Winter kill	64.2	(±1.3)	16.6	(±1.0)	10.9	(±0.8)	8.3	(±0.8)	100.0
CCV	95.4	(±0.6)	2.3	(±0.4)	1.8	(±0.4)	0.5	(±0.2)	100.0
Other	97.2	(±0.5)	0.2	(±0.1)	1.0	(±0.4)	1.6	(±0.4)	100.0

TABLE TIP: Each row represents the percent of all operations categorized by the average loss per outbreak due to the specified disease. For example, 24.1 percent of all operations experienced average outbreak losses of less than 200 lbs due to ESC/Columnaris.

2. Ponds that experienced disease losses in 1996

a. Percent of foodfish ponds by disease experienced and operation size:

Disease	Percent Foodfish Ponds									
	Operation Size (Acres)								All	Standard Error
	1-19	Standard Error	20-49	Standard Error	50-149	Standard Error	150 or More	Standard Error		
ESC/Col	21.2	(±3.2)	47.7	(±3.2)	47.1	(±2.3)	41.4	(±2.1)	42.1	(±1.6)
Ich	3.0	(±1.4)	1.9	(±0.6)	3.8	(±1.1)	1.0	(±0.4)	1.6	(±0.3)
PGD	3.1	(±1.2)	2.8	(±0.8)	4.0	(±0.6)	5.9	(±0.7)	5.3	(±0.5)
Anemia	0.4	(±0.3)	3.0	(±0.8)	2.3	(±0.7)	1.6	(±0.4)	1.8	(±0.3)
Winter kill	4.8	(±1.4)	15.5	(±2.5)	15.3	(±1.7)	23.4	(±2.1)	21.0	(±1.6)
CCV	0.4	(±0.3)	0.5	(±0.2)	3.7	(±1.0)	1.2	(±0.4)	1.5	(±0.4)
Other	3.4	(±2.2)	0.6	(±0.2)	0.8	(±0.4)	1.5	(±0.5)	1.4	(±0.4)

TABLE TIP: Each row represents the percent of ponds within an operation size category that experienced losses due to the specified disease. For example, 21.2 percent of all ponds on operations with 1 to 19 surface acres experienced losses due to EXC/Columnaris.

b. Percent of all foodfish ponds by disease experienced and outbreak loss severity:

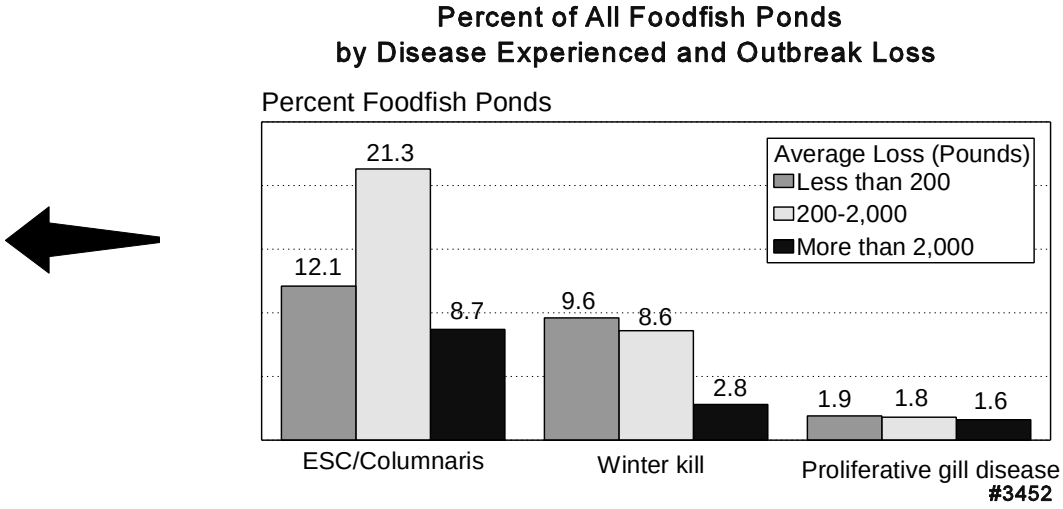
Disease	Percent Foodfish Ponds								
	Outbreak Loss Severity (Average Loss per Outbreak)								Total
	No Loss	Standard Error	Light (Less than 200 lbs)	Standard Error	Moderate (200-2,000 lbs)	Standard Error	Severe (More than 2,000 lbs.)	Standard Error	
ESC/Col	57.9	(±1.6)	12.1	(±1.5)	21.3	(±1.5)	8.7	(±1.2)	100.0
Ich	98.4	(±0.3)	0.6	(±0.2)	0.7	(±0.2)	0.3	(±0.1)	100.0
PGD	94.7	(±0.5)	1.9	(±0.3)	1.8	(±0.4)	1.6	(±0.2)	100.0
Anemia	98.2	(±0.3)	1.0	(±0.3)	0.6	(±0.1)	0.2	(±0.04)	100.0
Winter kill	79.0	(±1.6)	9.6	(±1.2)	8.6	(±1.1)	2.8	(±0.4)	100.0
CCV	98.5	(±0.4)	0.9	(±0.3)	0.5	(±0.2)	0.1	(±0.03)	100.0
Other (specify)	98.6	(±0.4)	0.1	(±0.1)	0.2	(±0.1)	1.1	(±0.4)	100.0

TABLE TIP: Each row represents the percent of all foodfish ponds categorized by the average loss per outbreak due to the specified disease. For example, 9.6 percent of all foodfish ponds experienced light outbreak losses due to winter kill.

c. Of foodfish ponds that experienced disease losses, percent of foodfish ponds by disease experienced and outbreak loss severity:

Disease	Percent Foodfish Ponds						
	Outbreak Loss Severity (Average Loss per Outbreak)						
	Light (Less than 200 lbs)	Standard Error	Moderate (200-2,000 lbs)	Standard Error	Severe (More than 2,000 lbs.)	Standard Error	Total
ESC/Col	28.7	(±3.3)	50.6	(±3.2)	20.7	(±2.6)	100.0
Ich	38.5	(±11.0)	46.2	(±10.4)	15.3	(±4.6)	100.0
PGD	34.8	(±5.2)	34.7	(±5.6)	30.5	(±4.7)	100.0
Anemia	55.7	(±8.2)	32.8	(±7.4)	11.5	(±2.9)	100.0
Winter kill	45.5	(±4.3)	40.9	(±4.3)	13.6	(±2.0)	100.0
CCV	62.4	(±10.4)	33.0	(±9.9)	4.6	(±2.2)	100.0
Other	7.8	(±5.2)	11.8	(±5.6)	80.4	(±7.8)	100.0

TABLE TIP: Each row represents the percent of only ponds that experienced losses categorized by the average loss per outbreak due to the specified disease. For example, 28.7 percent of ponds experiencing ESC/Columnaris losses had an average loss per outbreak of less than 200 lbs.



C. Disease testing in 1996

1. Operation-level fish sample testing patterns

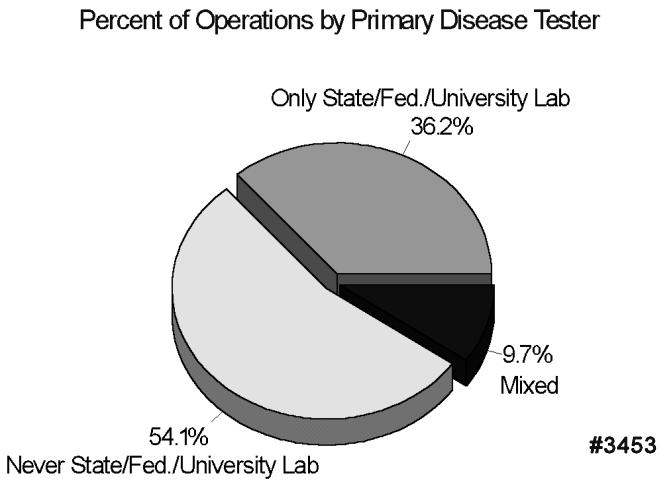
a. Of operations that experienced disease losses in 1996, percent of operations by disease and primary tester:

Disease	Percent Operations								
	Primary Tester								
	State/Federal/ University Lab	Standard Error	Service Provider	Standard Error	Owner/ Operator	Standard Error	Not Tested	Standard Error	Total
ESC/Col	44.0	(±1.8)	15.4	(±1.3)	24.5	(±1.6)	16.1	(±1.3)	100.0
Ich	49.1	(±10.9)	14.9	(±7.3)	17.7	(±7.5)	18.3	(±8.1)	100.0
PGD	57.7	(±4.2)	22.4	(±3.8)	9.3	(±2.5)	10.6	(±2.7)	100.0
Anemia	44.9	(±7.3)	21.1	(±5.3)	22.5	(±6.2)	11.5	(±4.6)	100.0
Winter kill	27.5	(±2.8)	16.7	(±2.2)	33.2	(±3.0)	22.6	(±2.5)	100.0
CCV	20.7	(±5.3)	16.2	(±7.5)	20.6	(±8.3)	42.5	(±10.6)	100.0
Other (specify)	57.3	(±13.0)	6.7	(±6.7)	7.5	(±7.4)	28.5	(±12.2)	100.0

b. Percent of operations which reported having disease problems in 1996 by primary disease tester and operation size:

Primary Tester in 1996	Percent Operations									
	Operation Size (Acres)									
	1-19	Standard Error	20-49	Standard Error	50-149	Standard Error	150 or More	Standard Error	All	Standard Error
Only State/Fed/Univ. laboratory	30.7	(±6.2)	46.3	(±4.0)	34.3	(±3.3)	32.7	(±2.4)	36.2	(±1.7)
Never by State/Fed/Univ. laboratory	67.0	(±6.3)	51.6	(±4.0)	55.1	(±3.3)	51.1	(±2.5)	54.1	(±1.7)
Mixed [1]	2.3	(±1.6)	2.1	(±1.0)	10.6	(±1.9)	16.2	(±1.8)	9.7	(±0.9)
Total	100.0		100.0		100.0		100.0		100.0	

[1] Mixed was any combination of state/federal/university laboratory, service provider, owner/operator, and not tested.



c. Percent of operations that tested fish samples at state, federal, or university laboratories in 1996 by disease and outbreak loss severity:

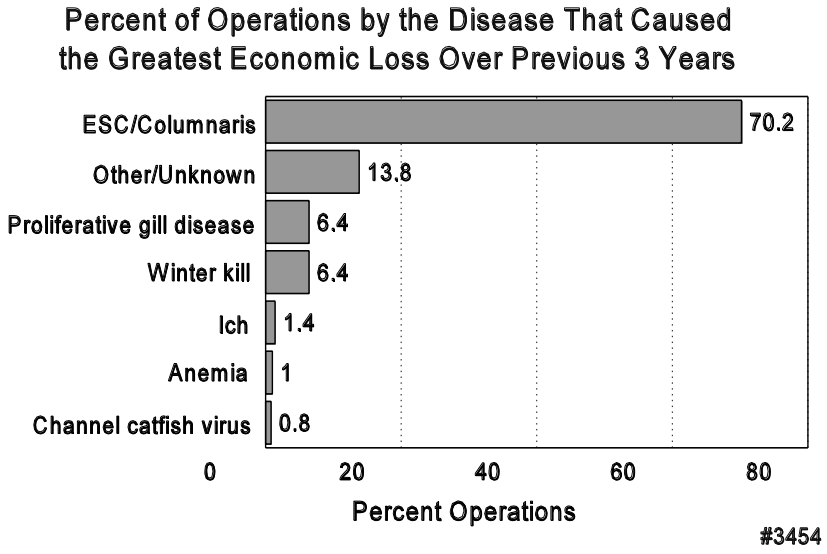
Disease	Percent Operations							
	Outbreak Loss Category (Average Loss per Outbreak)						All	Standard Error
	Light (<200 lbs.)	Standard Error	Moderate (200-2,000 lbs.)	Standard Error	Severe (More than 2,000 lbs.)	Standard Error		
ESC/Col	28.3	(±3.0)	47.9	(±2.7)	57.1	(±4.0)	44.0	(±1.8)
Ich	55.8	(±14.2)	38.0	(±18.4)	54.8	(±20.8)	49.1	(±10.9)
PGD	42.0	(±7.0)	64.5	(±8.4)	68.3	(±6.9)	57.7	(±4.2)
Anemia	21.1	(±8.2)	60.6	(±11.7)	66.4	(±15.4)	44.9	(±7.3)
Winter kill	21.2	(±3.7)	24.4	(±4.8)	44.1	(±7.1)	27.5	(±2.8)
CCV	9.6	(±8.8)	31.6	(±10.8)	33.4	(±26.6)	20.7	(±5.3)
Other	0	(±0.0)	100.0	(±0.0)	39.1	(±16.2)	57.3	(±13.0)

D. Economic loss

1. Diseases causing the greatest economic loss

a. Percent of operations by the disease that caused the greatest economic loss over the previous 3 years (1994-1996) and operation size:

Disease	Percent Operations									
	Operation Size (Acres)									
	1-19	Standard Error	20 to 49	Standard Error	50 to 149	Standard Error	150 or More	Standard Error	All	Standard Error
ESC/Col	56.9	(±3.4)	70.3	(±2.6)	77.8	(±2.2)	72.9	(±1.8)	70.2	(±1.2)
Ich	2.9	(±1.3)	3.0	(±1.0)	0	(±0.0)	0	(±0.0)	1.4	(±0.4)
PGD	7.9	(±1.8)	4.8	(±1.3)	5.5	(±1.1)	7.4	(±1.1)	6.4	(±0.6)
Anemia	0	(±0.0)	1.3	(±0.6)	0.6	(±0.4)	1.7	(±0.5)	1.0	(±0.2)
Winter kill	3.0	(±1.3)	2.4	(±1.0)	5.6	(±1.2)	13.3	(±1.4)	6.4	(±0.6)
CCV	0	(±0.0)	0.7	(±0.4)	1.8	(±0.5)	0.6	(±0.3)	0.8	(±0.2)
Other/ Unknown	29.3	(±3.3)	17.5	(±2.3)	8.7	(±1.6)	4.1	(±0.8)	13.8	(±1.0)
Total	100.0		100.0		100.0		100.0		100.0	



E. Productivity

1. Pounds of foodsize fish sold per acre

a. Average pounds of foodsize fish sold in 1996 per water surface acre of foodfish ponds by average foodfish pond size:

Average Pond Size (Surface Acres)	Average Pounds Foodsize Fish Sold per Acre	
	Pounds	Standard Error
Less than 5	2,711	(±166)
5-7	3,627	(±218)
7-10	3,948	(±128)
10-13	3,610	(±121)
13-15	4,196	(±284)
15-17	3,956	(±229)
17-20	3,476	(±360)
More than 20	2,555	(±214)
All	3,775	(±75)

b. Average pounds of foodsize fish sold in 1996 per water surface acre by operation size:

Average Pounds Foodsize Fish Sold per Acre									
Surface Acres of Foodfish Production									
Less than 20	Standard Error	20-49	Standard Error	50-149	Standard Error	150 or More	Standard Error	All	Standard Error
2,271	(±212)	2,789	(±131)	3,493	(±150)	3,889	(±87)	3,775	(±75)

2. Number of foodfish ponds per operation

a. Percent of operations by number of ponds:

Number Ponds	Percent Operations	Standard Error
1-3	26.1	(±1.2)
4-5	16.7	(±1.1)
6-10	23.0	(±1.2)
11-15	8.4	(±0.7)
16-20	6.0	(±0.6)
20-30	9.2	(±0.6)
31 or More	10.6	(±0.6)
Total	100.0	

Section III: Sample Profile

A. Catfish '97 Phase I Respondents

1. Respondents by operation size (acres):

Operation Size (Acres)	Number Respondents	Percent Respondents
1-19	118	20.7
20 to 49	140	24.5
50 to 149	142	24.9
150 or more	171	29.9
Total	571	100.0

Section IV: Selected USDA Catfish Population Estimates[1]

A. Population estimates for the four states* surveyed with National comparisons

1. Number of operations, water surface acres, and sales:

Population Parameter	Population Estimate	
	Four States*	National
Number of operations on January 1, 1997	893	1,302
Water surface acres intended for foodsize fish production from January 1 through June 30, 1997	138,000	145,265
Water surface acres used for production from January 1 through June 30 (1997 estimate)	165,800	177,360
Foodsize fish sales in 1996	$381,898,000	$396,907,000
Total sales in 1996	$406,841,000	$424,447,000

*Alabama, Arkansas, Louisiana, and Mississippi.

[1] NASS, Agricultural Statistics Board, USDA Catfish Production, 4/28/97.

National Animal Health Monitoring System (NAHMS):
Background

The Animal Industry Act of 1884 directed the Animal and Plant Health Inspection Services' (APHIS) predecessor, the Bureau of Animal Industry, to "collect such information...as shall be valuable to the agricultural and commercial interests of the country." The Bureau effected this mandate to eradicate diseases such as bovine contagious pleuropneumonia. Hog cholera, bovine brucellosis, tuberculosis, and pseudorabies were more recent targets.

In the mid-1970's, the National Academy of Science sparked APHIS to reassess its responsibilities toward the industry's information needs in light of the modern food animal industry that is affected by such issues as world trade, product safety, and product quality. APHIS identified the need for proactive information to become even more timely, accurate, and user-friendly in the latter quarter of the 20th century than it had been in 1884. The Agency recognized its responsibility to collect and provide information beyond the existing level. Veterinary Services' (VS) network of federal veterinarians; their knowledge, training, and locations across the U.S.; and their collaboration with State animal health officials brought the monitoring program to VS.

NAHMS makes use of existing data by compiling statistics and information and serves as the impetus for federal, state, industry, and university collaboration to gather fresh information to fill data gaps. Through national studies such as the Catfish '97, these multi-disciplinary resources gather data and generate descriptive statistics on animal health, productivity, and management. By 1997, a total of 41 states had participated in at least one of NAHMS national studies with on-farm data collection:

Date/Study Name	# Producers	U.S. Population Represented by Core Data
1989-90 National Swine Survey	1,661	95% swine
1990-91 National Dairy Heifer Evaluation Project (NDHEP)	1,811	78% milk cows
1993-94 Cow/Calf Health & Productivity Audit (CHAPA)	2,539	100% cow/calf operations
1994-95 Cattle on Feed Evaluation (COFE)	3,214	85.8% cattle on feed
Swine '95: Grower/Finisher	1,661	91% hogs
Dairy '96	2,542	83% milk cows
Sheep '96	5,174	100% sheep in 48 states
Beef '97	2,713	86% beef cows
Catfish '97	571	96% foodfish sales

For more information about Catfish '97 or other NAHMS projects, please contact:

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