



United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

Veterinary
Services

**Part II:
Reference of 1995 U.S.
Grower/Finisher Health &
Management Practices**

SWINE '95:
GROWER/FINISHER 

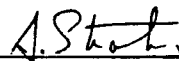
June 1996

Acknowledgements

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The Swine '95: Grower/Finisher 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 and State and Federal Veterinary Medical Officers (VMO's) who visited the farms and collected the data for their hard work and dedication to the National Animal Health Monitoring System (NAHMS).

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Dr. Al Strating, Director
Centers for Epidemiology & Animal Health

This report was reviewed prior to release by the National Pork Producers Council, private veterinarians, and other industry affiliates. NAHMS appreciates the continued support of these industry members.

Table of Contents

Introduction	1
Terms Used in This Report	2
Section 1: Population Estimates	
A. Feed Management	3
1. Diets fed to grower/finisher pigs	3
2. Mixing of grower/finisher diets	3
3. Split-sex feeding	4
4. Feed delivery	4
5. Feed storage management	5
6. Cleaning feeders	5
7. Preventive antibiotics/growth promotants	6
8. Feeding of food waste	7
B. Waste Management	8
1. Flooring	8
2. Waste storage system	9
3. Waste disposal	10
C. Health and Productivity	12
1. Sources of pigs entering grower/finisher phase	12
2. Handling of sick pigs	13
3. Conditions diagnosed	14
4. Removal of pigs from herd	15
5. Average daily gain	16
6. Feed efficiency	16
7. Method of <u>Salmonella</u> vaccination	17
D. Marketing	18
1. Determining when to market	18
2. Grouping for market	18
3. Method sold	19
4. Distance to slaughter	19
5. Operation identification of slaughter pigs	20

E. Quality Control - Biosecurity	21
1. Employee training	21
2. Testing prior to slaughter	21
3. Transportation	22
4. Information producers receive from slaughter plants	23
5. Testing of groundwater, manure, and air quality	23
Section II: Sample Profile	24
A. Number of responding operations by number of hogs & pigs sold	24
B. Type of operation	24
C. Type of farrowing management	24

Introduction

As part of the National Animal Health Monitoring System (NAHMS), the USDA:APHIS:Veterinary Services (VS) conducted its first National study of the pork industry with the 1990 National Swine Survey. Study results provided an overview of swine health, productivity, and management for 95 percent of the U.S. swine herd. The 1990 study focused on farrowing sows and preweaning piglets.

This report is the second of a two-part release of National information resulting from NAHMS' second National swine study, the Swine '95. The USDA's National Agricultural Statistics Service (NASS) collaborated with VS to select a producer sample that was statistically designed to provide inferences to the nation's swine population. Included in the study were the top 16 pork States (shown below) that accounted for nearly 91 percent of the U.S. hog inventory and nearly three-fourths of the U.S. pork producers.

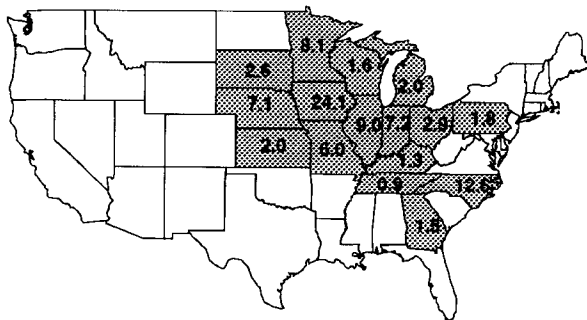
Part I: Reference of 1995 U.S. Swine Management Practices was released in October 1995. Data for Part I were collected from 1,477 producers and contained information on all phases of swine production (farrowing, nursery, and grower/finisher) for operations with at least one hog. NASS interviewers contacted producers from June 1 through June 23, 1995.

Data for *Part II: Reference of 1995 U.S. Grower/Finisher Health and Management Practices* were collected from 418 producers whose operations had 300 or more market hogs, at least one of 120 or more pounds. State and Federal Veterinary Medical Officers and Animal Health Technicians collected data on two visits from July 17 through September 15, 1995, and November 6, 1995, through January 17, 1996. Coverage of the U.S. inventory target population represented by this sample did not vary appreciably from the percentages mentioned above.

A subsequent report will describe trends in swine health and management derived from both the 1990 National Swine Survey and Swine '95 study.

Discussions of Swine '95:Grower/Finisher results can be accessed on the Internet through gopher.aphis.usda.gov (menu choices: APHIS Information; Animal Health Information; Animal Health Monitoring, Risk Assessments, and Emerging Issues.) Topics available on release of this report: preventive practices, biosecurity measures, environmental practices and management,

Percent of U.S. Swine Inventory, June 1, 1995, for States Participating in the NAHMS Swine '95 Study



antibiotic usage, feed management, marketing and pig sources.

For further detail on Swine '95: Grower/Finisher data or questions on this report, contact the address shown below:

Centers for Epidemiology and Animal Health
USDA:APHIS:VS, Attn. NAHMS
 2150 Centre Ave., Bldg. B, MS 2E7
 Fort Collins, CO 80526-8117
 (970) 494-7000
NAHMSweb@aphis.usda.gov

Total = 90.7 percent of the U.S. swine inventory. #2974¹

¹ Identification numbers are assigned to each graph in this report for public reference.

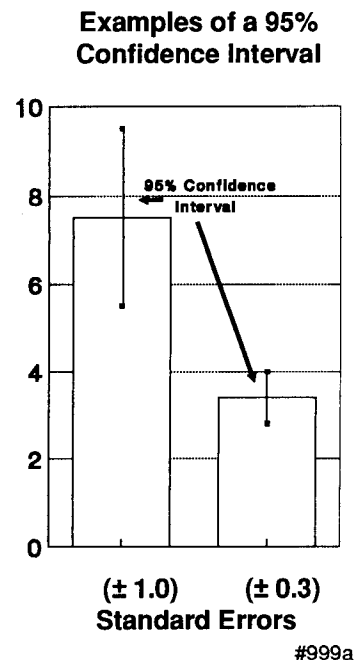
Terms Used in This Report

Population estimates: averages and proportions calculated from the reported data were 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 (\pm). 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.

Operation average: a single value for each operation is summed over all operations and divided by the total number of operations. For instance, operation average daily gain (shown on page 16) is calculated by summing reported average daily gain over all operations divided by the number of operations.

Pig average: a single value for each swine operation multiplied by the number of pigs on that operation is summed over all operations reporting divided by the number of pigs on all operations. This way, the result is adjusted for the number of pigs on each operation. For the above example from page 16, the reported average daily gain is multiplied by the reported number of pigs that entered the grower/finisher phase. This product is then summed over all operations and divided by the sum of pigs entered over all operations. The result is the average daily gain of all pigs.

Sample Profile: information that describes reported data from the operations participating in the Swine '95 study. Reported data in Section II were not weighted prior to inclusion in this report.



Section I: Population Estimates

A. Feed Management

1. Diets Fed to Grower/Finisher Pigs

- a. Percent of operations by number of diets routinely fed from the time of entry to the grower/finisher phase until marketed for slaughter by number head marketed for slaughter¹:

Number of Diets Fed	<u>Percent Operations by Number Head Marketed for Slaughter</u>							
	All Operations	Standard Error	Less Than 2,000	Standard Error	2,000-9,999	Standard Error	10,000 or More	Standard Error
1	3.8	(± 1.7)	4.9	(± 2.3)	0.5	(± 0.4)	1.1	(± 0.8)
2	29.1	(± 3.6)	33.1	(± 4.5)	16.7	(± 3.8)	4.0	(± 3.0)
3	32.2	(± 3.7)	34.2	(± 4.6)	25.7	(± 4.7)	21.0	(± 11.9)
4	18.1	(± 2.4)	15.2	(± 2.8)	27.3	(± 5.1)	32.3	(± 10.3)
5	9.1	(± 2.4)	7.6	(± 2.7)	14.0	(± 5.4)	17.3	(± 8.4)
6 or More	<u>7.7</u>	(± 2.0)	<u>5.0</u>	(± 2.1)	<u>15.8</u>	(± 4.9)	<u>24.3</u>	(± 8.7)
Total	100.0		100.0		100.0		100.0	

- b. For operations feeding more than one diet, percent of operations by primary reason for progression from one diet type to the next for pigs during the entire grower/finisher phase (until marketed for slaughter):

<u>Reason</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Weight	63.4	(± 3.8)
Length of time on feed or age	5.3	(± 1.5)
Weight and time equally considered	30.0	(± 3.7)
Other	<u>1.3</u>	(± 0.4)
Total	100.0	

2. Mixing of Grower/Finisher Diets

- a. Percent of operations mixing at least one diet on farm (premise):

<u>Percent Operations</u>	<u>Standard Error</u>
82.0	(± 3.1)

- b. Percent of operations mixing all diets on farm (premise):

<u>Percent Operations</u>	<u>Standard Error</u>
76.4	(± 3.4)

- c. Percent of diets mixed on farm (premise) by number marketed for slaughter¹:

<u>Number Head Marketed for Slaughter</u>	<u>Percent Diets</u>	<u>Standard Error</u>	<u>Operation Average</u>	<u>Standard Error</u>
Less than 2,000	81.7	(± 3.6)	81.3	(± 3.7)
2,000-9,999	70.2	(± 7.5)	75.2	(± 5.7)
10,000 or more	55.9	(± 10.1)	45.8	(± 10.8)
All operations	78.0	(± 3.4)	79.6	(± 3.1)

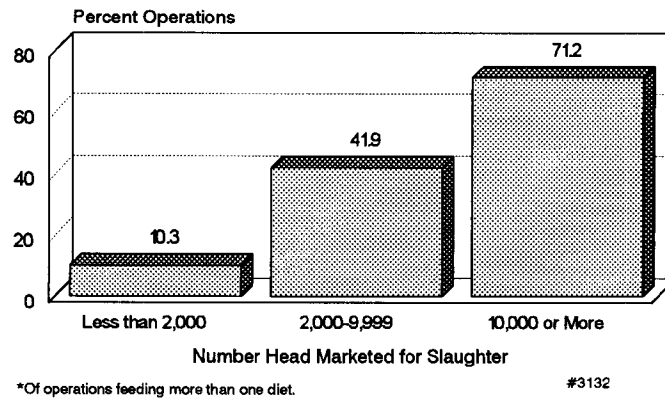
¹ Number marketed for slaughter during the 12-month period beginning December 1, 1994.

3. Split-sex Feeding

a. For operations feeding more than one diet, percent of operations that fed males and females different diets (split-sex feeding) by number head marketed for slaughter¹:

<u>Number Head Marketed for Slaughter</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Less than 2,000	10.3	(± 2.6)
2,000-9,999	41.9	(± 6.0)
10,000 or More	71.2	(± 11.9)
All operations feeding more than one diet	18.3	(± 2.7)

Percent of Operations* Split Sex Feeding by Herd Size



4. Feed Delivery

a. Percent of operations (and percent of grower/finisher pigs on those operations²) with the following feed delivery systems:

<u>Facility Description</u>	<u>Percent Operations</u>		<u>Percent Grower/ Finisher Pigs</u>	
	<u>Percent</u>	<u>Standard Error</u>	<u>Percent</u>	<u>Standard Error</u>
Building with a single bulk bin to the building	27.1	(± 3.4)	17.7	(± 2.2)
Building with multiple bulk bins to the building	39.3	(± 3.7)	54.4	(± 3.9)
Building or outside with grinder/mixer directly to feeders	55.0	(± 3.9)	26.7	(± 3.0)
Facility with other feed sources	3.0	(± 1.0)	1.2	(± 0.4)
Total			100.0	

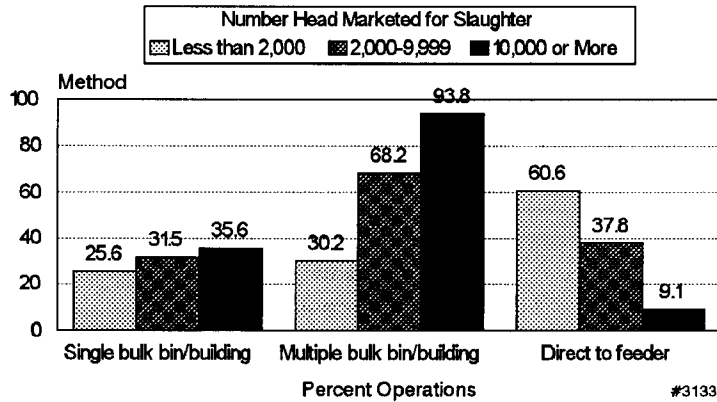
1 Number marketed for slaughter during the 12-month period beginning December 1, 1994.

2 Grower/finisher pigs on hand on day of the Swine '95 interview (see Introduction).

b. Percent of operations with the following feed delivery systems by herd size:

Facility Description	Percent Operations by Number Head Marketed for Slaughter					
	Less Than 2,000 Head	Stand. Error	2,000-9,999 Head	Stand. Error	10,000 or More Head	Stand. Error
Building with a single bulk bin to the building	25.6	(± 4.2)	31.5	(± 5.1)	35.6	(± 11.6)
Building with multiple bulk bins to the building	30.2	(± 4.2)	68.2	(± 5.4)	93.8	(± 2.3)
Building or outside with grinder/mixer directly to feeders	60.6	(± 4.6)	37.8	(± 5.7)	9.1	(± 4.6)
Facility with other feed sources	3.6	(± 1.3)	1.3	(± 1.0)	0.4	(± 0.3)

Percent of Operations with the Following Feed Delivery Systems by Herd Size



5. Feed Storage Management

a. Percent of operations with at least one feed storage unit (and percent of feed storage units [bulk bins] on those operations):

Description	Percent Operations	Standard Error	Percent Feed	
			Storage Units	Standard Error
Dedicated to one diet only	60.5	(± 3.9)	48.3	(± 3.3)
Filled with different types of diets and completely emptied and cleaned between diets	14.0	(± 2.6)	13.2	(± 2.5)
Filled with different types of diets and contain a 1-day supply or less of old diet	34.9	(± 3.7)	32.9	(± 3.1)
Filled with different types of diets regardless of amount of old diet	4.8	(± 1.5)	5.6	(± 1.7)
Total			100.0	

6. Cleaning Feeders

a. Percent of operations using the following method of cleaning feeders in the grower/finisher facility:

Method	Percent Operations	Standard Error
Feed cleaned out of feeders after group moved out of pens and before new group moved in	36.5	(± 3.7)
Feeders are cleaned out only when the room/building is cleaned/disinfected	16.8	(± 2.9)
Feeders are never, or rarely, cleaned out	39.7	(± 3.8)
Other	7.0	(± 1.8)
Total	100.0	

7. Preventive Antibiotics/Growth Promotants

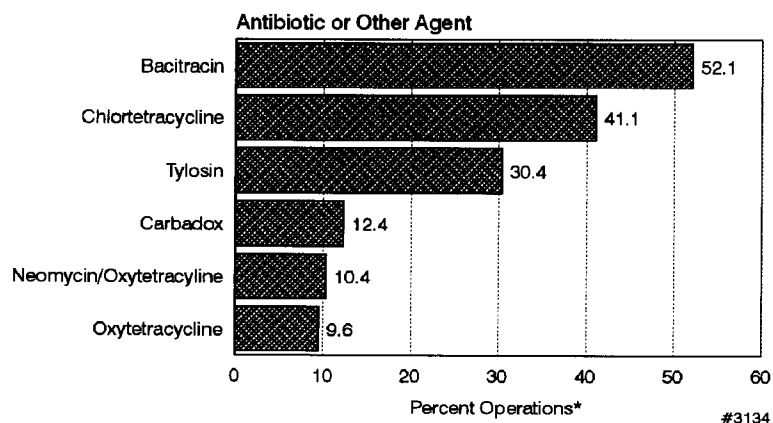
a. Percent of operations (and percent of grower/finisher pigs on those operations) that typically give antibiotics or other agents to grower/finisher pigs as a disease preventive or growth promotant in:

<u>Method of Delivery</u>	<u>Percent Operations</u>	<u>Standard Error</u>	<u>Percent Grower/Finisher Pigs¹</u>	<u>Standard Error</u>
Feed	91.3	(± 2.0)	92.7	(± 1.5)
Water	3.2	(± 1.4)	4.5	(± 1.7)

i. Of operations giving antibiotics or other agents as a disease preventive or growth promotant in feed, percent which used the following and average total days the following were used:

<u>Antibiotic/Agent in Feed</u>	<u>Percent Operations</u>	<u>Standard Error</u>	<u>Average Total Number Days²</u>	<u>Standard Error</u>
Chlortetracycline/Sulfathiazole/Penicillin	6.7	(± 2.1)	33.8	(± 5.3)
Chlortetracycline/Sulfamethazine/Penicillin	6.4	(± 2.0)	23.6	(± 3.6)
Tylosin/Sulfamethazine	4.8	(± 2.1)	45.6	(± 4.1)
Carbadox	12.4	(± 2.5)	31.2	(± 2.1)
Lincomycin	4.3	(± 1.4)	60.3	(± 17.6)
Apramycin	2.8	(± 1.2)	50.9	(± 22.7)
Chlortetracycline	41.1	(± 4.0)	58.1	(± 4.6)
Oxytetracycline	9.6	(± 2.2)	39.2	(± 6.6)
Neomycin/Oxytetracycline	10.4	(± 3.0)	55.3	(± 14.6)
Tylosin	30.4	(± 3.7)	57.4	(± 5.1)
Bacitracin (BMD)	52.1	(± 4.1)	72.2	(± 4.0)
Virginiamycin	3.8	(± 1.3)	65.1	(± 11.6)
Zinc oxide	5.0	(± 2.1)	81.2	(± 22.9)
Copper sulfate	6.1	(± 1.9)	62.8	(± 11.3)
Other	4.6	(± 2.2)	97.6	(± 11.8)

Percent of Operations* Giving Most Common Antibiotics or Agents to Grower/Finisher Pigs in Feed



*Percent of operations giving agent as a disease preventive or growth promotant.

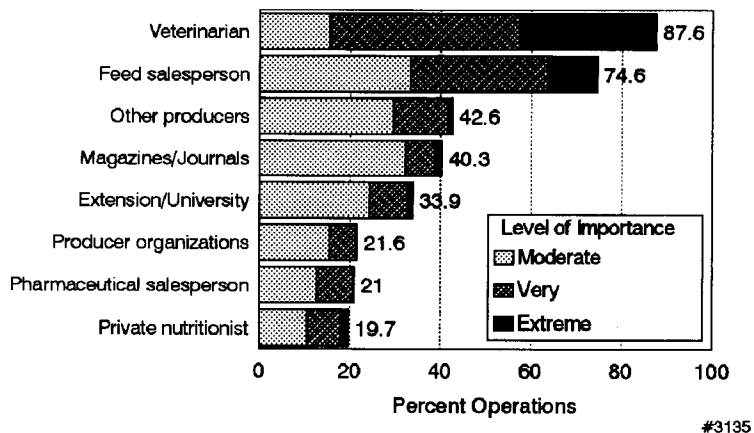
1 Number of pigs that entered the grower/finisher unit between December 1, 1994, and May 31, 1995.

2 Average of the total number of days a specific agent was used during the grower/finisher phase.

b. Percent of operations by importance of the following sources of antibiotic information:

Record	Importance of Source									
	Percent Operations									
	Not Important	Stand. Error	Slightly Important	Stand. Error	Moderately Important	Stand. Error	Very Important	Stand. Error	Extremely Important	Stand. Error
Private nutritionist	70.3	(± 3.5)	10.0	(± 2.5)	10.7	(± 2.2)	7.3	(± 2.0)	1.7	(± 0.7)
Feed salesperson or feed retailer	14.1	(± 2.3)	11.3	(± 2.3)	33.5	(± 3.6)	30.3	(± 3.8)	10.8	(± 2.4)
Cooperative Extension Service or university specialist	46.1	(± 3.9)	20.0	(± 3.3)	24.4	(± 3.3)	8.3	(± 2.1)	1.2	(± 0.4)
Veterinarian	7.4	(± 1.7)	5.0	(± 1.3)	15.6	(± 2.9)	41.7	(± 3.9)	30.3	(± 3.5)
Pharmaceutical salesperson	65.2	(± 3.6)	13.8	(± 2.6)	12.7	(± 2.6)	8.1	(± 2.0)	0.2	(± 0.1)
Producer magazines or agriculture journals	25.0	(± 3.2)	34.7	(± 3.7)	32.3	(± 3.6)	6.3	(± 1.6)	1.7	(± 1.2)
Producer organizations	56.2	(± 3.8)	22.2	(± 3.4)	15.6	(± 2.3)	5.8	(± 2.2)	0.2	(± 0.1)
Other producers	32.1	(± 3.4)	25.3	(± 3.5)	29.6	(± 3.7)	11.9	(± 2.3)	1.1	(± 0.5)
Other (such as the owner or contractor)	0.0	(± 0.0)	0.0	(± 0.0)	40.4	(± 24.9)	7.4	(± 5.4)	52.2	(± 22.8)

Cumulative Percent of Operations by Importance of Antibiotic Information Sources



8. Feeding of Food Waste

a. Percent of operations that fed food waste (garbage) in the previous 12 months:

Percent Operations	Standard Error
3.9	(± 1.7)

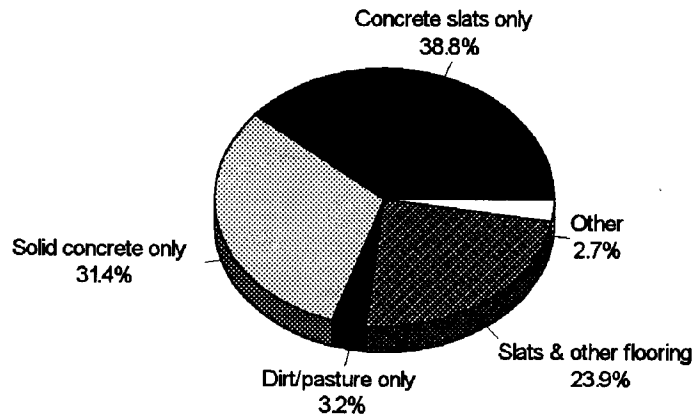
B. Waste Management

1. Flooring

a. Percent of operations with grower/finisher pigs (and percent of grower/finisher pigs on those operations) located in facilities with the following types of flooring:

Flooring Type	Percent Operations	Standard Error	Percent Grower/Finisher Pigs ¹	
			Percent	Standard Error
Concrete slats only	26.3	(± 2.9)	38.8	(± 4.5)
Metal slats only	3.6	(± 1.3)	0.8	(± 0.3)
Fiberglass or plastic slats only	2.7	(± 1.1)	0.8	(± 0.4)
Slats and other flooring combined (partial slats)	33.0	(± 3.3)	23.9	(± 2.7)
Solid concrete only	61.6	(± 3.6)	31.4	(± 3.2)
Dirt/pasture only	12.1	(± 2.6)	3.2	(± 0.9)
Wood only	0.0	(± 0.0)	0.0	(± 0.0)
Other	1.9	(± 1.2)	1.1	(± 0.7)
Total			100.0	

Percent of Grower/Finisher Pigs* in Facilities by Flooring Type



*On operations with grower/finisher pigs.

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1 Grower/finisher pigs on hand on day of Swine '95 interview.

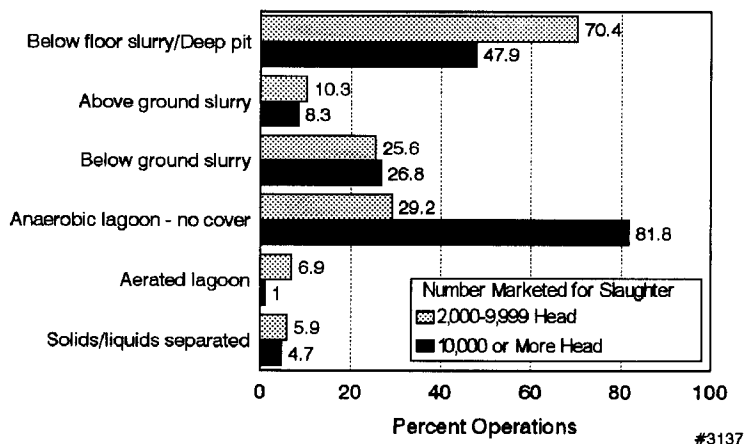
2. Waste Storage System

a. Percent of operations that used any of the following waste-storage systems by size of operation (number marketed for slaughter¹):

Percent Operations by Number Head Marketed for Slaughter

System	All	Stand.	Less Than	Stand.	2,000-9,999	Stand.	10,000 or	Stand.
	Operations	Error	2,000 Head	Error	Head	Error	More Head	Error
Below floor slurry or deep pit	49.9	(± 3.8)	43.6	(± 4.6)	70.4	(± 5.6)	47.9	(± 10.8)
Above ground slurry storage	5.6	(± 1.2)	4.1	(± 1.2)	10.3	(± 3.0)	8.3	(± 4.1)
Below ground slurry storage	19.4	(± 3.1)	17.3	(± 3.8)	25.6	(± 5.7)	26.8	(± 9.4)
Anaerobic lagoon with cover	1.8	(± 1.1)	2.2	(± 1.4)	0.5	(± 0.3)	2.0	(± 1.2)
Anaerobic lagoon without cover	20.9	(± 2.5)	17.4	(± 3.0)	29.2	(± 4.9)	81.8	(± 4.8)
Aerated lagoon	2.6	(± 1.2)	1.3	(± 1.0)	6.9	(± 4.0)	1.0	(± 0.7)
Oxidation ditch	2.2	(± 1.2)	2.9	(± 1.6)	0.1	(± 0.0)	0.0	(± 0.0)
Solids separated from liquids	4.6	(± 1.6)	4.1	(± 2.1)	5.9	(± 2.2)	4.7	(± 3.6)
Other	0.4	(± 0.2)	0.6	(± 0.3)	0.0	(± 0.0)	1.1	(± 0.5)

Percent of Operations that Used the Following Waste Storage Systems by Herd Size



¹ Number marketed for slaughter during the 12-month period beginning December 1, 1994.

3. Waste Disposal

a. Percent of operations which disposed of waste as separated liquids and solids and unseparated:

<u>Waste Type</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Separated liquids and solids	4.3	(± 1.3)
Unseparated	96.2	(± 1.3)

b. Percent of operations that used the following methods to dispose of waste by method of disposal:

<u>Method</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Placed on owned or rented land	97.3	(± 1.1)
Sold	0.8	(± 0.4)
Given away	4.2	(± 1.4)
Pay someone to take it	0.5	(± 0.3)
Other	1.0	(± 0.7)

i. For the 96.2 percent of operations which disposed of waste not separated into liquids and solids, operation average percent of unseparated waste disposed of by the following methods:

<u>Method</u>	<u>Operation Average Percent</u>	<u>Standard Error</u>
Placed on owned or rented land	95.7	(± 1.3)
Sold	0.3	(± 0.2)
Given away	2.7	(± 1.1)
Pay someone to take it	0.3	(± 0.2)
Other	<u>1.0</u>	(± 0.7)
Total	100.0	

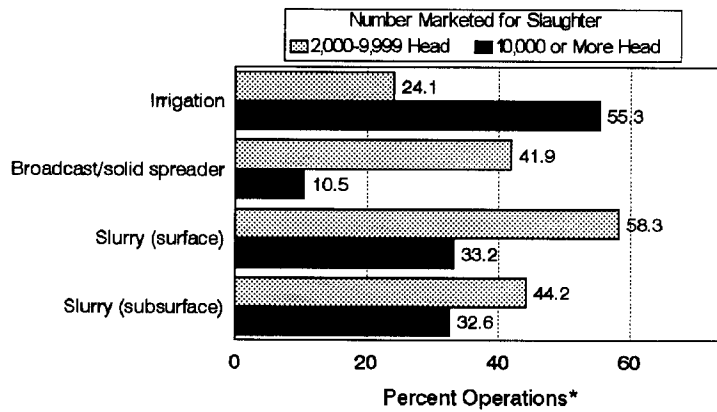
ii. For the 4.3 percent of operations which disposed of separated waste, operation average percent of separated solid and liquid waste disposed of by the following methods:

<u>Method</u>	<u>Solids</u>		<u>Liquids</u>	
	<u>Operation Average Percent</u>	<u>Standard Error</u>	<u>Operation Average Percent</u>	<u>Standard Error</u>
Placed on owned or rented land	94.2	(± 4.1)	95.4	(± 3.3)
Sold	0.3	(± 0.3)	0.3	(± 0.2)
Given away	5.5	(± 4.1)	4.3	(± 3.3)
Pay someone to take it	0.0	(± 0.0)	0.0	(± 0.0)
Other	<u>0.0</u>	(± 0.0)	<u>0.0</u>	(± 0.0)
Total	100.0		100.0	

iii. For operations which disposed of waste on owned or rented land, percent of operations using the following methods to dispose of waste:

Method	Percent Operations by Number Head Marketed for Slaughter ¹							
	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
Irrigation	12.8	(± 2.2)	8.8	(± 2.3)	24.1	(± 5.3)	55.3	(± 11.3)
Broadcast/solid spreader	57.9	(± 3.7)	63.3	(± 4.4)	41.9	(± 5.9)	10.5	(± 4.8)
Slurry (surface application)	46.0	(± 3.8)	42.6	(± 4.6)	58.3	(± 6.2)	33.2	(± 10.4)
Slurry (subsurface injection)	21.9	(± 3.0)	15.1	(± 3.3)	44.2	(± 6.1)	32.6	(± 9.9)
Other	0.0	(± 0.0)	0.0	(± 0.0)	0.0	(± 0.0)	0.0	(± 0.0)

Percent of Operations* Using the Following Methods to Dispose of Waste by Herd Size



*Percent of operations which disposed of waste on owned or rented land. #3138

¹ Number marketed for slaughter during the 12-month period beginning December 1, 1994.

C. Health and Productivity

1. Sources of Pigs Entering Grower/Finisher Phase

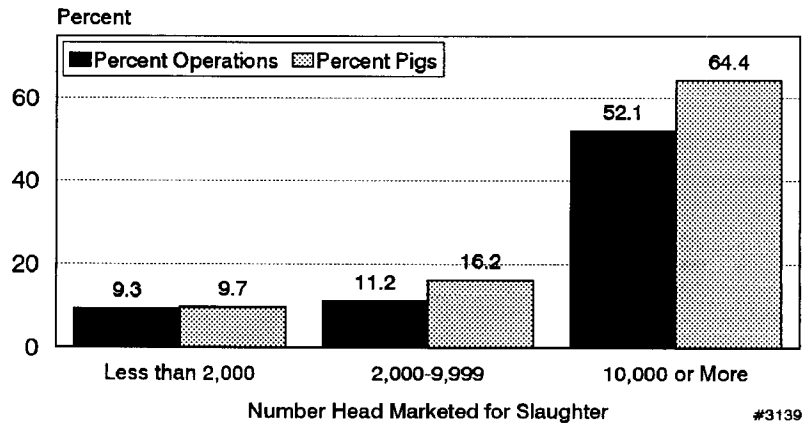
a. Percent of *operations* that brought pigs into the grower/finisher phase during the previous 6 months that originated from the following sources:

Source	Percent Operations by Number Head Marketed for Slaughter ¹							
	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
On-site farrowing and nursery units	76.7	(± 3.6)	76.2	(± 4.5)	79.8	(± 5.3)	52.2	(± 11.3)
Off-site farrowing and nursery units	10.2	(± 2.3)	9.3	(± 2.9)	11.2	(± 2.8)	52.1	(± 11.3)
Feeder pig producer(s) (both contract & noncontract)	13.8	(± 2.8)	13.2	(± 3.2)	16.2	(± 5.7)	4.2	(± 2.0)
Auction, sale barn, or livestock market	5.9	(± 2.4)	7.8	(± 3.1)	0.0	(± 0.0)	0.0	(± 0.0)
Other	0.2	(± 0.2)	0.3	(± 0.2)	0.0	(± 0.0)	0.0	(± 0.0)

b. Percent of *pigs* entering the grower/finisher phase during the previous 6 months that originated from the following sources:

Source	Percent Pigs by Number Head Marketed for Slaughter ¹							
	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
On-site farrowing and nursery units	65.3	(± 3.9)	72.9	(± 4.4)	70.2	(± 5.2)	34.5	(± 12.3)
Off-site farrowing and nursery units	21.6	(± 3.8)	9.7	(± 3.2)	16.2	(± 4.0)	64.4	(± 12.3)
Feeder pig producer(s) (both contract & noncontract)	11.3	(± 2.4)	13.0	(± 3.3)	13.6	(± 4.4)	1.1	(± 0.7)
Auction, sale barn, or livestock market	1.6	(± 0.6)	4.0	(± 1.6)	0.0	(± 0.0)	0.0	(± 0.0)
Other	0.2	(± 0.2)	0.4	(± 0.4)	0.0	(± 0.0)	0.0	(± 0.0)
Total	100.0		100.0		100.0		100.0	

Percent of Operations that Brought Pigs onto Operation (& Percent Pigs) from Off-site Farrowing & Nursery Units by Herd Size

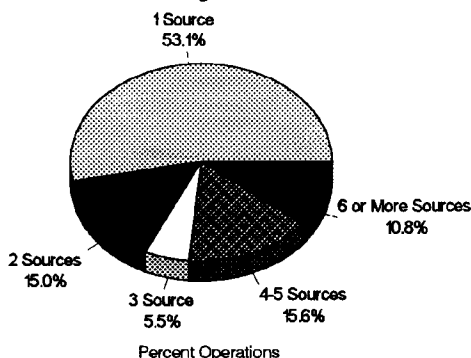


¹ Number marketed for slaughter during the 12-month period beginning December 1, 1994.

i. For operations that obtained feeder pigs from other producers, percent of operations by reported number of sources:

<u>Number of Sources</u>	<u>Percent Operations</u>	<u>Standard Error</u>
1	53.1	(± 10.8)
2	15.0	(± 5.8)
3	5.5	(± 3.3)
4-5	15.6	(± 8.1)
6 or more	<u>10.8</u>	(± 7.2)
Total	100.0	

Percent of Operations* by Reported Number of Feeder Pig Sources



*Of operations that received feeder pigs from other producers. #3140

ii. For operations that obtained feeder pigs from other producers, average number of sources by number head marketed for slaughter:

<u>Number Head Marketed for Slaughter</u>	<u>Average Number</u>	<u>Standard Error</u>
Less than 2,000	2.1	(± 0.5)
2,000-9,999	3.0	(± 1.0)
10,000 or More	3.9	(± 0.7)
All operations	2.4	(± 0.4)

iii. Of operations that received feeder pigs from more than one source, percent of operations that commingled pigs from different sources:

	<u>Percent Operations</u>	<u>Standard Error</u>
Commingled	36.3	(± 12.5)

2. Handling of Sick Pigs

a. Percent of operations that used the following health management practices in handling sick pigs during the previous 12 months:

<u>System</u>	<u>Percent Operations</u>							
	<u>Never</u>	<u>Standard Error</u>	<u>Sometimes</u>	<u>Standard Error</u>	<u>Most of Time</u>	<u>Standard Error</u>	<u>Always</u>	<u>Standard Error</u>
Treat individual pigs and leave in existing pen	4.8	(± 1.4)	31.2	(± 3.7)	53.9	(± 4.0)	10.1	(± 2.3)
Treat individual pigs and remove to a 'sickpen'	24.6	(± 3.4)	64.7	(± 3.8)	9.9	(± 2.3)	0.8	(± 0.4)
Treat entire pen when signs of sickness are shown by a few individual pens	30.4	(± 3.6)	55.3	(± 4.0)	12.3	(± 2.8)	2.0	(± 0.7)

3. Conditions Diagnosed

a. Percent of operations where the following diseases were diagnosed in the herd by a veterinarian or laboratory during the previous 12 months by phase of production:

Disease	Breeding Herd		Nursery Pigs	
	Percent Operations	Standard Error	Percent Operations	Standard Error
Transmissible gastroenteritis (TGE)	5.2	(± 1.4)	3.8	(± 1.3)
Porcine reproductive and respiratory syndrome (PRRS)	16.7	(± 2.6)	9.7	(± 1.9)
<u>Salmonella</u>	4.6	(± 1.9)	8.6	(± 2.1)
Swine dysentery	5.2	(± 2.1)	1.2	(± 0.6)
<u>Escherichia coli</u>	16.1	(± 3.1)	21.1	(± 3.3)
Pseudorabies virus (PRV) ¹	11.1	(± 2.6)	2.8	(± 1.4)
Actinobacillus (<u>Haemophilus</u>)	5.3	(± 2.0)	6.0	(± 2.0)
Other ²	5.7	(± 1.6)	7.8	(± 2.1)

b. Percent of operations where the following diseases were diagnosed in grower/finisher pigs by a veterinarian or laboratory during the previous 12 months by herd size:

Disease/Condition	Percent Operations by Number Head Marketed for Slaughter							
	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
Transmissible gastroenteritis (TGE)	3.9	(± 1.3)	3.0	(± 1.5)	6.4	(± 2.4)	10.6	(± 5.0)
Porcine reproductive and respiratory syndrome (PRRS)	12.2	(± 2.1)	6.5	(± 1.8)	28.8	(± 5.7)	70.7	(± 11.9)
<u>Salmonella</u>	9.6	(± 2.5)	7.2	(± 3.0)	16.7	(± 3.9)	33.7	(± 11.5)
Swine dysentery	5.3	(± 1.7)	4.9	(± 2.0)	6.7	(± 2.7)	0.0	(± 0.0)
<u>Escherichia coli</u>	6.5	(± 2.4)	7.4	(± 3.0)	2.9	(± 1.7)	15.9	(± 8.2)
Pseudorabies virus (PRV) ¹	5.2	(± 1.7)	3.4	(± 1.9)	11.6	(± 4.4)	1.4	(± 1.3)
Actinobacillus (<u>Haemophilus</u>)	9.6	(± 2.1)	6.9	(± 2.2)	17.7	(± 5.0)	32.6	(± 9.6)
Other ²	16.8	(± 3.0)	16.8	(± 3.7)	15.9	(± 3.7)	33.5	(± 12.0)
Ileitis	6.5	(± 2.1)	6.7	(± 2.8)	5.3	(± 2.0)	18.5	(± 11.1)
Swine influenza	2.7	(± 1.3)	3.1	(± 1.7)	1.4	(± 1.0)	2.8	(± 1.5)
Pneumonia	2.7	(± 0.9)	1.9	(± 0.9)	4.9	(± 2.2)	5.1	(± 3.7)
Streptococcus	2.0	(± 1.0)	1.8	(± 1.2)	2.4	(± 1.8)	5.1	(± 3.0)

1 Estimates may differ from other figures due to a more restrictive target population defined by study criteria of location (16 states), size of operation (≥300 market hogs), and type of operation

2 The four most common diseases/conditions reported under 'other' are noted below, but do not represent the total.

4. Removal of Pigs From Herd

a. Percent of pigs held back (throwbacks, poor doers) in the previous 6 months and not marketed with the group:

<u>Percent Pigs</u>	<u>Standard Error</u>
4.8	(± 0.3)

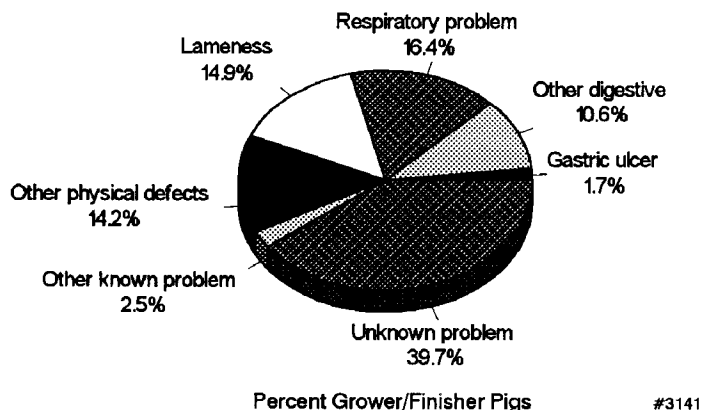
b. Percent of pigs that entered the grower/finisher phase that were removed from the herd for the following reasons:

<u>Reason</u>	<u>Percent Pigs</u>	<u>Standard Error</u>
Marketed at slaughter weight	86.4	(± 1.9)
Culled and marketed prior to reaching slaughter weight	1.7	(± 0.2)
Died	2.3	(± 0.1)

c. Of grower/finisher pigs culled and marketed prior to slaughter weight, percent culled or marketed for the following producer-identified reasons:

<u>Producer-identified Reason</u>	<u>Percent Pigs</u>	<u>Standard Error</u>
Gastric ulcer	1.7	(± 0.4)
Other digestive problem	10.6	(± 5.2)
Respiratory problem	16.4	(± 2.8)
Lameness	14.9	(± 1.9)
Other physical defects (ruptures, prolapses)	14.2	(± 3.3)
Other known problem	2.5	(± 1.4)
Poor doer with unknown problem	<u>39.7</u>	(± 5.3)
Total deaths	100.0	

Percent of Grower/Finisher Pigs Culled/Marketed Prior to Slaughter Weight by Producer-identified Reason



d. Percent of deaths in the grower/finisher unit during the previous 6 months by producer-identified cause of death:

<u>Producer-identified Cause</u>	<u>Percent of Deaths</u>	<u>Standard Error</u>
Scours	6.1	(± 1.4)
Lameness	10.4	(± 1.1)
Trauma/heat stress	6.4	(± 1.0)
Respiratory problems	38.4	(± 3.5)
Other known problem ¹	15.3	(± 4.3)
Ileitis	7.5 (± 4.5)	
Streptococcus	2.1 (± 0.9)	
Ulcer	2.7 (± 0.9)	
Unknown problem	23.4	(± 2.7)
Total	100.0	

5. Average Daily Gain

a. Average daily weight gain in pounds per pig per day during the grower/finisher phase (in previous 6 months)²:

Average Daily Gain (lbs/pig/day) by Number Head Marketed for Slaughter³

	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
Operation average	1.65	(± 0.04)	1.66	(± 0.05)	1.64	(± 0.03)	1.64	(± 0.03)
Pig average ⁴	1.69	(± 0.03)	1.70	(± 0.05)	1.64	(± 0.03)	1.78	(± 0.08)

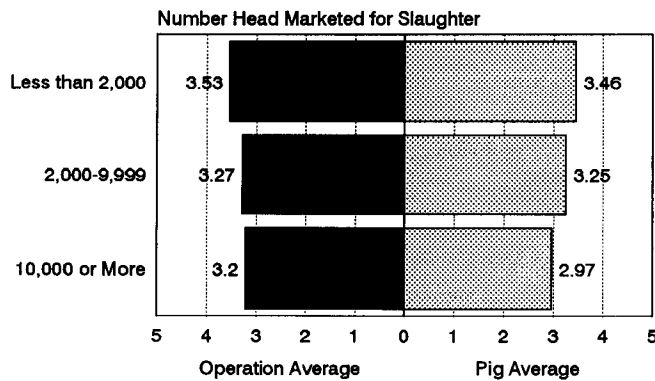
6. Feed Efficiency

a. Average pounds of feed fed in the grower/finisher phase for each pound gained:

Average Feed Efficiency (lbs fed/lbs gained) by Number Head Marketed for Slaughter

	All Operations	Stand. Error	Less Than 2,000	Stand. Error	2,000-9,999	Stand. Error	10,000 or More	Stand. Error
Operation average	3.43	(± 0.10)	3.53	(± 0.14)	3.27	(± 0.08)	3.20	(± 0.14)
Pig average ³	3.24	(± 0.06)	3.46	(± 0.10)	3.25	(± 0.07)	2.97	(± 0.07)

Feed Efficiency (lbs Fed/lbs Gained)
in the Grower/Finisher Phase by Herd Size



#3142

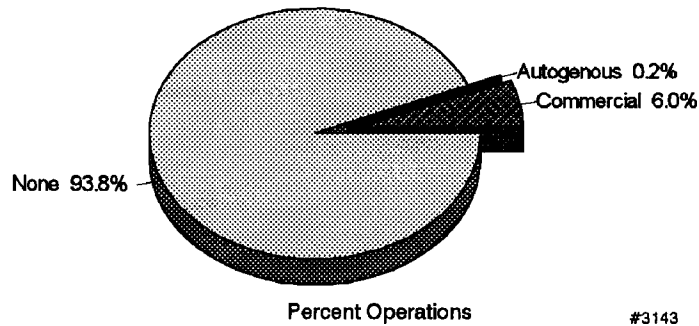
- 1 The three most common diseases/conditions reported under 'other known problem' are noted below.
- 2 In 6 months prior to Swine '95 interview.
- 3 Number marketed for slaughter during the 12-month period beginning December 1, 1994.
- 4 Calculation based on number of pigs that entered the grower/finisher phase during the 6 months prior to the second Swine '95 interview (see Introduction).

7. Method of Salmonella Vaccination

a. Percent of operations that used the following method of Salmonella vaccination by production phase:

<u>Method</u>	<u>Breeding Phase</u>		<u>Nursery Phase</u>		<u>Grower/Finisher Phase</u>	
	Percent	Standard	Percent	Standard	Percent	Standard
	<u>Operations</u>	<u>Error</u>	<u>Operations</u>	<u>Error</u>	<u>Operations</u>	<u>Error</u>
Commercial vaccine	6.6	(± 2.2)	4.1	(± 1.1)	6.0	(± 2.4)
Autogenous process	0.2	(± 0.2)	0.4	(± 0.3)	0.2	(± 0.2)
None/did not vaccinate against <u>Salmonella</u>	<u>93.2</u>	(± 2.2)	<u>95.5</u>	(± 1.2)	<u>93.8</u>	(± 2.4)
Total	100.0		100.0		100.0	

Percent of Operations by Method of Salmonella Vaccination in the Grower/Finisher Phase



D. Marketing

1. Determining When to Market

a. Percent of operations by relative importance of factors in determining when to send finisher pigs to market:

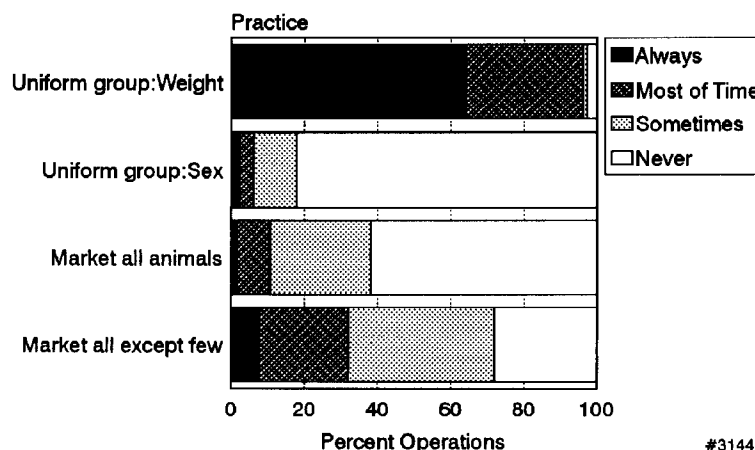
Factor	Percent Operations										Total
	Not Important	Stand. Error	Slightly Important	Stand. Error	Moderately Important	Stand. Error	Very Important	Stand. Error	Extremely Important	Stand. Error	
Length of time on feed or age	36.5	(± 4.0)	30.9	(± 3.8)	16.5	(± 2.8)	13.1	(± 2.5)	3.0	(± 1.2)	100.0
Market price	17.1	(± 2.3)	24.1	(± 3.4)	32.1	(± 3.9)	16.5	(± 3.1)	10.2	(± 2.7)	100.0
Weight (estimated or measured)	0.4	(± 0.2)	0.1	(± 0.1)	5.1	(± 1.8)	47.5	(± 4.0)	46.9	(± 3.9)	100.0
Need space for incoming group of pigs	23.9	(± 3.5)	25.9	(± 3.6)	25.5	(± 3.5)	16.2	(± 2.7)	8.5	(± 2.3)	100.0
Other	3.2	(± 3.1)	26.5	(± 10.3)	32.3	(± 10.7)	21.6	(± 9.0)	16.4	(± 9.0)	100.0

2. Grouping for Market

a. Percent of operations by frequency of management practices for sending pigs to slaughter market:

Practice	Percent Operations								Total
	Never	Standard Error	Standard Sometimes	Standard Error	Most of the Time	Standard Error	Always	Standard Error	
Assemble uniform group based on weight	2.8	(± 1.3)	1.0	(± 0.5)	32.0	(± 3.8)	64.2	(± 3.8)	100.0
Assemble uniform group based on sex	82.0	(± 2.9)	11.8	(± 2.2)	3.7	(± 1.8)	2.5	(± 1.2)	100.0
Market all animals in pen or building	61.8	(± 3.8)	27.4	(± 3.4)	9.1	(± 2.4)	1.7	(± 0.5)	100.0
Market all except few animals in a pen or building, keeping back a few for additional feeding	28.0	(± 3.6)	39.9	(± 3.9)	24.5	(± 3.4)	7.6	(± 2.1)	100.0

Percent of Operations by Frequency of Management Practices for Sending Pigs to Slaughter Market



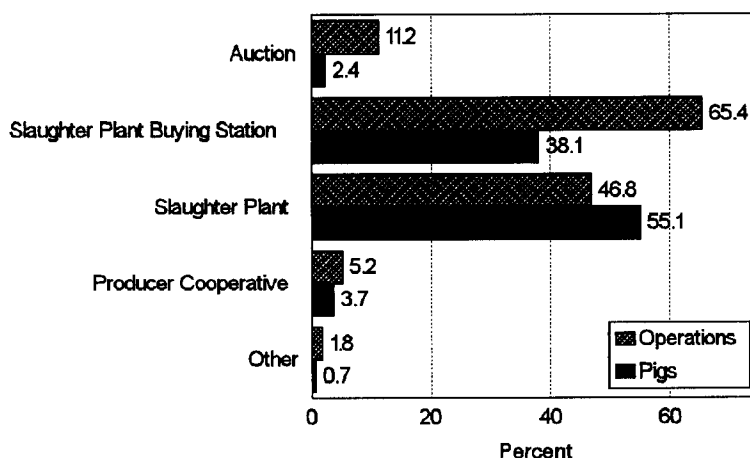
#3144

3. Method Sold

a. Percent of operations and percent pigs marketed for slaughter in the previous 6 months¹ by method sold:

Method	Percent Operations		Percent Pigs	
	Percent	Standard Error	Percent	Standard Error
Auction	11.2	(± 2.6)	2.4	(± 1.3)
Direct to slaughter plant buying station	65.4	(± 3.7)	38.1	(± 3.4)
Direct to slaughter plant	46.8	(± 4.0)	55.1	(± 3.6)
Through a producer cooperative	5.2	(± 1.2)	3.7	(± 0.9)
Other	1.8	(± 0.7)	0.7	(± 0.4)
Total			100.0	

Method of Selling Grower/Finisher Pigs to Market



#3127

4. Distance to Slaughter

a. Operation average percent of pigs marketed in the previous 6 months (and percent of pigs) by distance travelled to slaughter plant¹:

Distance in Miles	Operation Average Percent		Percent Pigs	
	Percent	Standard Error	Percent	Standard Error
1-49	40.1	(± 3.9)	31.1	(± 3.5)
50-99	23.5	(± 3.4)	24.3	(± 3.1)
100-199	21.8	(± 2.9)	29.5	(± 4.0)
200-499	11.0	(± 2.1)	12.5	(± 1.9)
500 or more miles	1.3	(± 0.5)	1.4	(± 0.6)
Unknown	2.3	(± 0.7)	1.2	(± 0.4)
Total	100.0		100.0	

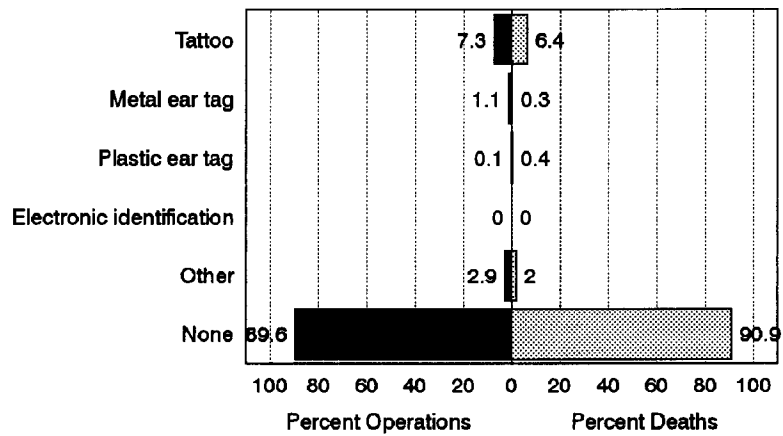
¹ Marketed 6 months prior to Swine '95 interview.

5. Operation Identification of Slaughter Pigs

a. Percent of operations and percent of pigs marketed for slaughter during the previous 6 months on these operations that applied the following type of herd identification at the operation:

<u>Method¹</u>	<u>Percent Operations</u>	<u>Standard Error</u>	<u>Percent Pigs</u>	<u>Standard Error</u>
Tattoo	7.3	(± 2.1)	6.4	(± 1.6)
Metal ear tag	1.1	(± 0.6)	0.3	(± 0.2)
Plastic ear tag	0.1	(± 0.1)	0.4	(± 0.2)
Electronic identification	0.0	(± 0.0)	0.0	(± 0.0)
Other	2.9	(± 1.1)	2.0	(± 0.6)
None	89.6	(± 2.3)	90.9	(± 1.7)

Percent of Operations (and Percent of Pigs Marketed for Slaughter) by Type of Herd Identification Applied at Operation



#3145

1 Producers may have used more than one method.

E. Quality Control - Biosecurity

1. Employee Training

a. Percent of operations with paid employees:	<u>Percent Operations</u>	<u>Standard Error</u>
	44.3	(± 3.9)

b. Of operations with paid employees, percent that provided employees with training in previous 2 years for the following reasons:

<u>Reason</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Reduction of animal stress during moving, handling, and/or shipping	30.8	(± 4.9)
Proper handling of drugs/medications	34.7	(± 5.0)

2. Testing Prior to Slaughter

a. Percent of operations that tested pigs marketed for slaughter (and percentage of pigs tested) in the previous 6 months for drug residues in the 30 days prior to slaughter¹:

<u>Percent Operations</u>	<u>Standard Error</u>	<u>Percent Pigs</u>	<u>Standard Error</u>
1.4	(± 1.1)	0.2	(± 0.1)

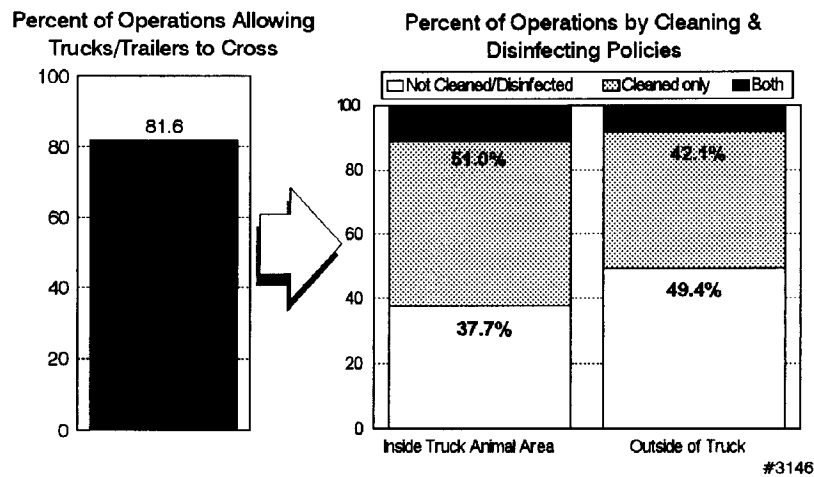
1 Prior to Swine '95 interview.

3. Transportation

a. Operation average percent of pigs sold for the slaughter market in the previous 6 months (and percent of pigs sold) that were transported by specified means:

<u>Method</u>	<u>Operation</u>	<u>Standard</u>	<u>Pig</u>	<u>Standard</u>
	<u>Average Percent</u>	<u>Error</u>	<u>Average</u>	<u>Error</u>
In truck/trailer(s) not allowed inside the perimeter (loaded outside perimeter)	10.7	(± 2.1)	15.3	(± 3.4)
In operation-owned truck/trailer(s) allowed to cross into the perimeter	69.6	(± 3.4)	54.9	(± 3.5)
In non-owned truck/trailer(s) allowed to cross into the perimeter	19.7	(± 3.0)	29.8	(± 3.5)
Other	<u>0.0</u>	(± 0.0)	<u>0.0</u>	(± 0.0)
Total	100.0		100.0	

Policies of Operations that Allowed Livestock-hauling Trucks/Trailers to Cross Operation Perimeter



b. Percent of operations that allowed trucks or trailers transporting livestock to cross the perimeter of the operation by herd size:

<u>Number Head Marketed for Slaughter</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Less than 2,000	84.5	(± 3.0)
2,000-9,999	72.6	(± 4.8)
10,000 or More	67.9	(± 11.7)
All operations	81.6	(± 2.5)

c. Of operations that allow trucks or trailers to cross perimeter, percent of operations that used the following policies regarding cleaning and disinfecting of livestock-hauling trucks and trailers entering the operation:

<u>Requirement</u>	<u>Inside Truck Animal Area</u>		<u>Outside of Truck</u>	
	<u>Percent Operations</u>	<u>Standard Error</u>	<u>Percent Operations</u>	<u>Standard Error</u>
Not cleaned or disinfected	37.7	(± 4.5)	49.4	(± 4.5)
Cleaned only	51.0	(± 4.6)	42.1	(± 4.5)
Cleaned and disinfected	<u>11.3</u>	(± 1.9)	<u>8.5</u>	(± 2.3)
Total	100.0		100.0	

4. Information Producers Receive from Slaughter Plants

a. Percent of operations (and percent of pigs marketed by those operations) that received specified information from the slaughter plant in the previous 6 months by type of information:

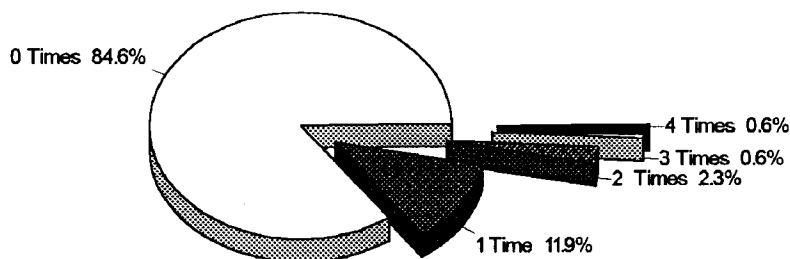
Type of Information	Percent Operations		Percent Pigs	
	Percent	Standard Error	Percent	Standard Error
Dressed weight (average carcass weight)	84.3	(± 2.8)	91.0	(± 1.5)
Number of carcasses with reason(s) for condemnation	60.0	(± 3.9)	71.3	(± 3.1)
Fat-free lean index	60.7	(± 3.9)	65.6	(± 4.0)
Percentage lean	69.4	(± 3.7)	79.7	(± 2.5)
Pale Soft Exudative (PSE) indicator	8.8	(± 2.3)	8.4	(± 2.0)
Back fat	83.3	(± 2.9)	89.8	(± 1.7)
Yield and grade	83.0	(± 2.9)	89.0	(± 1.8)
Other	11.3	(± 2.1)	14.1	(± 2.4)

5. Testing Groundwater, Manure, and Air Quality

a. Percent of operations performing tests of groundwater, nutrient content of manure, and air quality during the previous 12 months by number of times tested:

Record	Number of Times Tested									
	0		1		2		3		4 or More	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
Groundwater (for nitrates or pathogens)	84.6	(± 2.8)	11.9	(± 2.5)	2.3	(± 1.2)	0.6	(± 0.3)	0.6	(± 0.4)
Nutrient content of manure (such as nitrogen level)	92.2	(± 1.3)	5.8	(± 1.1)	1.5	(± 0.6)	0.2	(± 0.2)	0.3	(± 0.2)
Air quality (such as ammonia or hydrogen sulfide)	97.8	(± 0.7)	1.6	(± 0.6)	0.4	(± 0.3)	0.2	(± 0.2)	0.0	(± 0.0)

Percent of Operations by Number of Times Groundwater Tests Were Performed in Previous 12 Months



Percent Operations

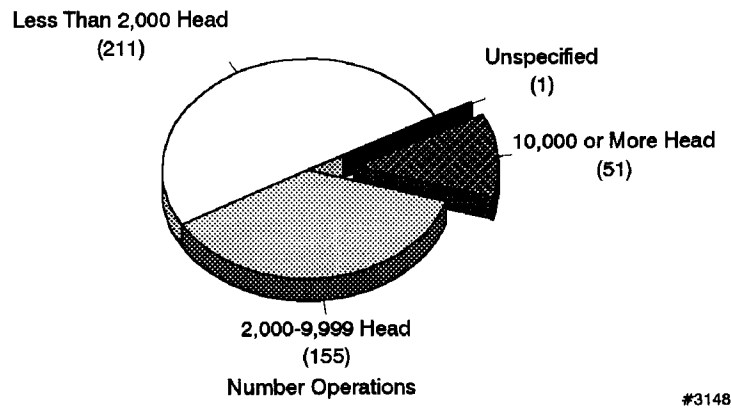
#3147

Section II: Sample Profile

1. Number of responding operations by number of market hogs sold for slaughter during the 12 months beginning December 1, 1994:

<u>Number of Hogs & Pigs Sold</u>	<u>Number of Responding Operations</u>
Less than 2,000	211
2,000 - 9,999	155
10,000 or more	51
Unspecified ¹	<u>1</u>
Total	418

Number of Responding Operations by Number of Market Hogs Sold for Slaughter 12/1/94 - 11/30/95



2. Type of operation:	<u>Number of Responding Operations</u>
Farrow-to-finish	345
Grower/finisher only	59
Producer of feeder pigs	10
Producer of weaned pigs	2
Producer of breeding stock	<u>2</u>
Total	418

3. Type of management:	<u>Farrowing Phase</u>	<u>Nursery Phase</u>	<u>Grower/Finisher Phase</u>
All-in/all-out	255	247	182
Continuous farrowing	102	93	228
No specified phase	60	77	6
Unspecified ¹	<u>1</u>	<u>1</u>	<u>2</u>
Total	418	418	418

¹ These operations were not included in analyses specific to the categorizing shown above.