United States Department of Agriculture

Animal and Plant Health Inspection Service

Veterinary Services

National Animal Health Monitoring System

February 2009

Small-Enterprise Swine 2007

Reference of Management Practices on Small-Enterprise Swine Operations in the United States, 2007

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Acknowledgments

This report was a cooperative effort between two U.S. Department of Agriculture (USDA) agencies: the National Agricultural Statistics Service (NASS) and the Animal and Plant Health Inspection Service (APHIS).

We want to thank the NASS personnel who collected the data. Thanks also to the personnel at APHIS–Veterinary Services' Centers for Epidemiology and Animal Health for their efforts in generating and distributing this report, and to the reviewers for providing valuable expertise through their comments.

All participants are to be commended, particularly the producers whose voluntary efforts made this report possible.

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Suggested bibliographic citation for this report:
USDA. 2009. Small-Enterprise Swine 2007, Reference of Management Practices on Small-Enterprise Swine Operations in the United States, 2007
USDA–APHIS–VS, CEAH. Fort Collins, CO
#N493.0209

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Feedback
Feedback, comments, and suggestions regarding the Small-Enterprise Swine 2007 report are welcomed. Please forward correspondence via e-mail at: NAHMS@aphis.usda.gov. You can also submit feedback via online survey at: http://nahms.aphis.usda.gov (Click on “FEEDBACK on NAHMS reports.”)

Table of Contents

Introduction

The Small-Enterprise Swine 2007 study was conducted jointly by two services of the U.S. Department of Agriculture: the National Agricultural Statistics Service (NASS) and the Animal and Plant Health Inspection Service (APHIS). Within APHIS, two units of Veterinary Services' Centers for Epidemiology and Animal Health had primary responsibility for the study: the National Animal Health Monitoring System (NAHMS) and the National Surveillance Unit (NSU).

Previous NAHMS swine studies in 1990, 1995, 2000, and 2006 examined a wide variety of husbandry practices and biosecurity measures common to swine operations throughout the country. However, these studies focused primarily on swine operations with 100 or more pigs and in States with a significant proportion of the U.S. swine population. The intent of these national swine studies was to provide a snapshot of the health and management practices of the U.S. pork industry.

The objective of the Small-Enterprise Swine 2007 study was to describe the health and management practices of operations with fewer than 100 pigs. The study covered States that participated in previous national swine studies plus those States considered at risk for exposure to feral swine and transmission of classical swine fever (CSF) and pseudorabies (PRV). Although the United States was declared free of CSF in 1978, the disease is present in neighboring countries, such as Cuba, Haiti, the Dominican Republic, and Mexico, and remains a threat to the U.S. pork industry. The information gathered in this study provided a more complete picture of small-enterprise swine operations and the risk of introduction of these diseases. It also furthered the understanding of feral pigs and the risks they present, the role feral pigs play in disease transmission, and the best approaches to minimize the threat they pose to domestic swine.

Thirty-one States participated in the study. These States accounted for 88.3 percent of swine and 84.4 percent of operations with fewer than 100 pigs nationally, according to the 2002 Census of Agriculture. NASS collected study data in two phases. A prescreening phase was conducted between May 14 and June 29, 2007, with a full questionnaire phase conducted August 2 to September 18, 2007.

Methodology and number of respondents can be found at the end of this report.

All NAHMS swine study reports are accessible online at http://nahms.aphis.usda.gov

Terms Used in This Report

Average: For ***operation average***—a single value for each operation summed over all operations reporting, divided by the number of operations reporting (see operation average percentage of pigs that would have to die, p 27). For ***pig-level average***—a single operation value multiplied by the number of animals on that operation; then values are summed across operations and divided by total number of animals on all operations.

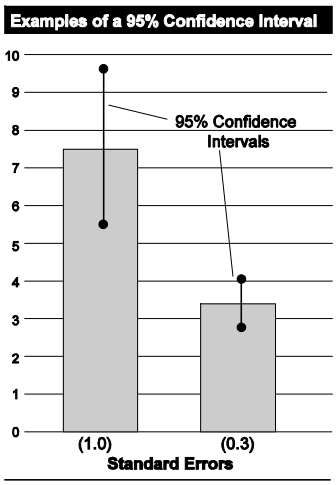
Breeding swine: In this report, the term “breeding swine” refers to sows and/or gilts. Boars and young males for breeding are usually referred to separately.

Feral swine: In this report, this term refers to feral or wild pigs, including wild boars on hunting clubs or captive on operations.

NA: Not applicable.

Operation: The overall business and management unit for raising swine.

Percent operations: The number of operations with a certain attribute divided by the total number of operations. Percentages will sum to 100 when the attributes are mutually exclusive (e.g., percentage of operations located within each region). Percentages will not sum to 100 when the attributes are not mutually exclusive (e.g., the percentage of operations that had veterinary visits during the last 12 months by type of veterinarian that visited, where operations may have been visited by a local veterinarian and/or a State or Federal veterinarian).



Population estimates: Estimates in this report are provided with a measure of precision called the standard error. A 95-percent confidence interval can be approximated with bounds equal to the estimate, plus or minus two standard errors. If the only error is sampling error, the confidence intervals created in this manner will contain the true population mean 95 out of 100 times. In the example to the left, an estimate of 7.5 with a standard error of 1.0 results in limits 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 and results in limits of 2.8 and 4.0. Alternatively, the 90-percent confidence interval would be created by multiplying the standard error by 1.65 instead of 2. Most estimates in this report are rounded to the nearest tenth. If rounded to 0, the standard error was reported (0.0). If there were no reports of the event, no standard error was reported (—).

Regions:

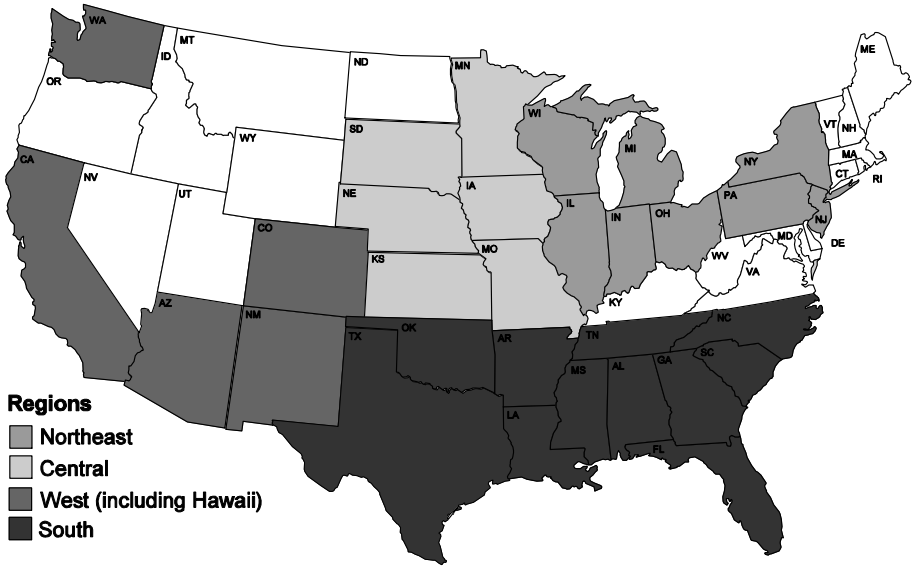
Northeast: Illinois, Indiana, Michigan, New Jersey, New York, Ohio, Pennsylvania, Wisconsin

Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota

West: Arizona, California, Colorado, Hawaii, New Mexico, Washington

South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas

Small-Enterprise Swine 2007 Participating States



Sample profile: Information that describes characteristics of the operations that provided data.

Size of operation:

Peak total inventory is based on maximum inventory between June 1, 2006, and May 31, 2007: small (1-24 head), medium (25-49 head), and large (50-99 head).

Sow and gilt inventory is based on July 1, 2007, inventory: small (1-3 head), medium (4-9 head), and large (10 or more head).

Section I: Population Estimates

A. Operation Demographics

1. Peak total swine inventory

Nearly three-fourths of operations (74.0 percent) had fewer than 25 pigs as the peak total inventory over the previous year, and these operations contained 29.1 percent of the pigs on all operations with fewer than 100 pigs. Almost one-half of the pigs (43.2 percent) on small enterprises were on operations with a peak total inventory of 50 to 99 pigs.

a. Percentage of operations and percentage of peak total pig inventory, by size of operation:

Size of Operation (Peak Total Inventory)	**Percent Operations**	**Std. Error**	**Percent Pigs***	**Std. Error**
Small (1 to 24)	74.0	(1.1)	29.1	(1.3)
Medium (25 to 49)	14.5	(0.9)	27.7	(1.6)
Large (50 to 99)	11.5	(0.7)	43.2	(1.9)
Total	100.0		100.0	

*Based on peak total inventory between June 1, 2006, and May 31, 2007.

Only 15.5 percent of participating small-enterprise swine operations were in the Central region, where much of the commercial swine industry resides. More than one-third of operations were in the Northeast region (37.5 percent), and another one-third of operations were in the South region (37.1 percent).

b. Percentage of operations and percentage of peak total pig inventory, by region:

Region	**Percent Operations**	**Std. Error**	**Percent Pigs***	**Std. Error**
Northeast	37.5	(1.1)	41.9	(1.5)
Central	15.5	(0.8)	22.9	(1.5)
West	9.9	(0.6)	6.3	(0.6)
South	37.1	(1.2)	28.9	(1.3)
Total	100.0		100.0	

*Based on peak total inventory between June 2006 and May 2007.

2. Inventory class on hand—July 1, 2007

Only 28.6 percent of small operations (1 to 24 pigs) had sows or gilts for breeding on July 1, 2007, compared with at least two-thirds of large and medium operations (70.4 and 66.6 percent, respectively). The low percentage of operations with suckling pigs (15.6 percent) compared with operations with sows and gilts for breeding (38.9 percent) might reflect the seasonal timing of farrowing, stage of gestation for gilts and sows, or other uses for sows (e.g., shows/fairs). Nearly two out of three operations (61.5 percent) had market hogs for slaughter on July 1, 2007.

a. Percentage of operations by inventory class on hand July 1, 2007, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Inventory Class*	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Sows and gilts for breeding	28.6	(1.5)	66.6	(3.0)	70.4	(3.2)	38.9	(1.3)
Boars and young males for breeding	19.7	(1.3)	56.5	(3.2)	65.2	(3.3)	30.2	(1.2)
Suckling pigs not yet weaned	7.9	(0.9)	33.3	(3.1)	42.8	(3.2)	15.6	(0.9)
Market hogs for slaughter	59.2	(1.7)	66.8	(3.0)	69.7	(3.2)	61.5	(1.4)

*As of July 1, 2007.

Almost three-fourths of operations in the Northeast region (73.6 percent) had market hogs for slaughter, compared with less than one-half of operations in the South region (45.1 percent). More than one-third of operations in the Central and South regions (35.2 and 34.3 percent, respectively) had at least one boar or young male for breeding, compared with one-fourth of operations in the Northeast region (26.6 percent) and one-fifth in the West region (20.7 percent).

b. Percentage of operations by inventory class on hand July 1, 2007, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Inventory Class*	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Sows and gilts for breeding	35.1	(1.9)	39.2	(2.9)	31.2	(3.5)	44.6	(2.6)
Boars and young males for breeding	26.6	(1.7)	35.2	(2.8)	20.7	(2.9)	34.3	(2.4)
Suckling pigs not yet weaned	14.2	(1.4)	17.4	(2.5)	13.7	(2.5)	16.7	(1.7)
Market hogs for slaughter	73.6	(1.9)	68.9	(2.7)	66.0	(3.8)	45.1	(2.7)

*As of July 1, 2007.

The majority of operations (61.1 percent) did not have sows or gilts for breeding on July 1, 2007. About one-fifth of all operations (18.4 percent, or almost one-half of the 38.9 percent of operations with sows and gilts in table A.2.a) had one to three sows and gilts. Only 7.5 percent of operations had 10 or more sows and gilts. The percentage of operations with four or more sows and gilts ranged from 16.5 percent in the West region to 25.7 percent in the Central region.

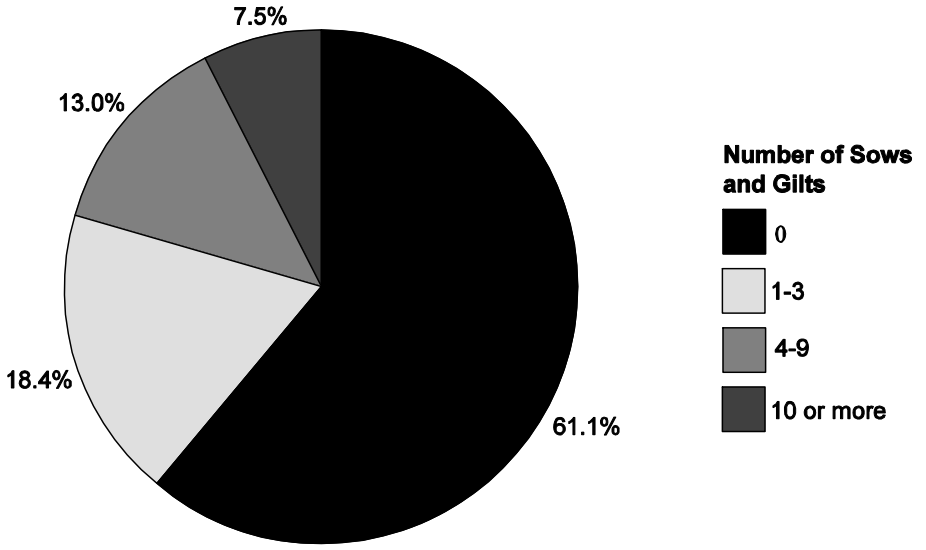
c. Percentage of operations by number of sows and gilts on the operation July 1, 2007, and by region:

Percent Operations

Number of Sows and Gilts*	Region								All Operations	
	Northeast		Central		West		South			
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	64.9	(1.9)	60.8	(2.9)	68.8	(3.5)	55.4	(2.6)	61.1	(1.3)
1 to 3	15.5	(1.5)	13.5	(2.2)	14.7	(2.7)	24.4	(2.3)	18.4	(1.1)
4 to 9	11.6	(1.2)	15.6	(2.0)	10.6	(2.3)	14.0	(1.6)	13.0	(0.8)
10 or more	8.0	(1.0)	10.1	(1.9)	5.9	(1.4)	6.2	(1.0)	7.5	(0.6)
Total	100.0		100.0		100.0		100.0		100.0	

*As of July 1, 2007.

Percentage of Operations by Number of Sows and Gilts on the Operation, July 1, 2007



The majority of operations (69.8 percent) did not have boars or young males for breeding. About one-fifth of all operations (21.3 percent, or more than two-thirds of the 30.2 percent of operations with boars) had only one boar or young male for breeding. Only 3.0 percent of all operations had three or more boars.

d. Percentage of operations by number of boars and young males for breeding on the operation July 1, 2007, and by region:

Percent Operations

Region

Number of Boars*	Northeast		Central		West		South		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	73.4	(1.7)	64.8	(2.8)	79.3	(2.9)	65.7	(2.4)	69.8	(1.2)
1	19.5	(1.6)	26.9	(2.7)	13.0	(2.4)	23.1	(2.1)	21.3	(1.1)
2	4.4	(0.8)	5.5	(1.4)	4.5	(1.4)	7.7	(1.2)	5.9	(0.6)
3	1.5	(0.4)	1.4	(0.6)	1.2	(0.7)	1.6	(0.5)	1.5	(0.3)
4 or more	1.2	(0.4)	1.4	(0.5)	2.0	(1.0)	1.9	(0.7)	1.5	(0.3)
Total	100.0		100.0		100.0		100.0		100.0	

*As of July 1, 2007.

Of operations with sows and gilts for breeding, about three-fourths (73.0 percent) had at least one boar or young male for breeding on hand on July 1, 2007. The Central region had the highest percentage of operations with at least one boar or young male (86.8 percent).

e. For operations with sows and gilts for breeding, percentage of operations with one or more boars or young males for breeding on the operation July 1, 2007, and by region:

Percent Operations

Region

Northeast		Central		West		South		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
72.9	(3.1)	86.8	(3.0)	66.3	(6.3)	69.4	(3.6)	73.0	(2.0)

3. Seasonality of production

Almost one-half of all operations (49.0 percent) had at least one pig present in all 12 months. More than three-fourths of medium and large operations (76.9 and 78.8 percent, respectively) had pigs present for all 12 months. Almost one-half of small operations (47.0 percent) had one or more pigs present for 6 months or less.

a. Percentage of operations by number of months during the previous 12 months that at least one pig was present on the operation, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Number of Months	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
1	2.7	(0.6)	2.0	(0.8)	1.9	(1.3)	2.5	(0.5)
2	2.7	(0.6)	0.0	(--)	0.0	(--)	2.0	(0.5)
3	7.2	(0.9)	0.6	(0.4)	0.3	(0.3)	5.4	(0.7)
4	12.2	(1.1)	2.4	(0.7)	2.6	(1.4)	9.7	(0.9)
5	9.4	(1.0)	1.4	(0.7)	2.1	(1.0)	7.4	(0.8)
6	12.8	(1.1)	5.5	(1.7)	5.0	(1.6)	10.8	(0.9)
7	3.5	(0.7)	0.7	(0.3)	0.4	(0.3)	2.7	(0.5)
8	3.8	(0.7)	2.5	(1.0)	4.8	(1.9)	3.7	(0.6)
9	3.6	(0.6)	1.8	(0.6)	0.8	(0.5)	3.0	(0.4)
10	2.4	(0.5)	5.2	(1.7)	0.9	(0.4)	2.7	(0.5)
11	1.0	(0.3)	1.0	(0.4)	2.4	(1.0)	1.1	(0.3)
12	38.7	(1.7)	76.9	(2.7)	78.8	(3.1)	49.0	(1.4)
Total	100.0		100.0		100.0		100.0	

The percentage of operations by number of months in which pigs were present was generally similar across regions.

b. Percentage of operations by number of months during the previous 12 months that at least one pig was present on the operation, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Number of Months	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
1	1.8	(0.6)	1.3	(0.6)	3.3	(1.4)	3.4	(1.0)
2	1.4	(0.5)	1.4	(0.7)	0.0	(--)	3.5	(1.1)
3	5.5	(1.0)	3.2	(1.0)	9.5	(2.6)	5.2	(1.3)
4	12.3	(1.4)	9.0	(1.6)	12.0	(2.7)	6.7	(1.5)
5	9.8	(1.2)	7.6	(1.6)	7.2	(2.2)	4.9	(1.4)
6	11.0	(1.3)	13.2	(2.0)	12.4	(2.8)	9.3	(1.7)
7	2.2	(0.7)	3.2	(1.0)	3.7	(1.6)	2.7	(1.0)
8	5.0	(0.9)	1.5	(0.7)	1.8	(1.1)	3.8	(1.1)
9	3.6	(0.8)	2.4	(0.9)	3.4	(1.5)	2.4	(0.7)
10	2.5	(0.6)	2.8	(0.9)	3.2	(1.4)	2.7	(0.9)
11	1.5	(0.5)	1.1	(0.5)	0.9	(0.7)	0.9	(0.4)
12	43.4	(2.0)	53.3	(2.9)	42.6	(3.9)	54.5	(2.7)
Total	100.0		100.0		100.0		100.0	

B. Health and Productivity

1. Sows and gilts farrowed

About one-third of all operations had at least one farrowing from July 1, 2006, through June 30, 2007.

a. Percentage of all operations that had at least one farrowing from July 1, 2006, through June 30, 2007:

Percent Operations	Standard Error
34.0	(1.3)

For operations that had at least 1 farrowing, the majority of operations (72.6 percent) had fewer than 10 farrowings during the year, and less than 10 percent had 20 or more farrowings.

b. For operations that had at least one sow or gilt farrow, percentage of operations by number of farrowings from July 1, 2006, through June 30, 2007:

Number of Farrowings	Percent Operations	Standard Error
1 to 9	72.6	(1.8)
10 to 19	17.7	(1.5)
20 to 29	4.9	(0.9)
30 or more	4.8	(0.9)
Total	100.0	

Operations with 10 or more sows and gilts for breeding on July 1, 2007, had on hand nearly 6 more sows per breeding boar than did operations with 1 to 3 sows and gilts for breeding.

c. For operations with breeding sows/gilts **and** boars/young males for breeding, average number of sows and gilts per breeding male on the operation July 1, 2007, and by size of operation:

Average Number of Sows and Gilts per Breeding Male

Size of Operation (Sow and Gilt Inventory)							
Small (1-3)		**Medium** (4-9)		**Large** (10 or More)		**All Operations**	
Avg.	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**
1.7	(0.1)	4.0	(0.2)	7.6	(0.5)	4.5	(0.2)

2. Farrowing productivity and preweaning death loss

The number of piglets born and the number of preweaning deaths are measures of reproductive performance. Overall, litters produced from July 2006 through June 2007 contained an average of 8.8 piglets, of which 8.0 were born alive and 7.3 were weaned.

a. Average per-litter productivity (number and percentage) from July 1, 2006, through June 30, 2007:

	Average Per-Litter Productivity			
Measure (per Litter)	**Number**	**Std. Error**	**Pct.**	**Std. Error**
Stillbirths and mummies	0.8	(0.0)	8.8	(0.5)
Born alive	8.0	(0.1)	91.2	(0.5)
Total born	8.8	(0.1)	100.0	
Preweaning deaths	0.7	(0.1)	9.2	(0.8)
Weaned	7.3	(0.1)	90.8	(0.8)
Total born alive	8.0	(0.1)	100.0	

On average, small operations had about twice as many stillbirths and mummies per litter as large operations (1.2 and 0.6 stillbirths and mummies, respectively). The numbers of preweaning deaths and total piglets born on average per litter did not differ by size category.

b. Average per-litter productivity (number and percentage) from July 1, 2006, through June 30, 2007, by size of operation:

Average Per-litter Productivity

Size of Operation (Sow and Gilt Inventory)

	Small (1-3)				**Medium** (4-9)				**Large** (10 or More)			
Measure (per Litter)	**No.**	**Std. Err.**	**Pct.**	**Std. Err.**	**No.**	**Std. Err.**	**Pct.**	**Std. Err.**	**No.**	**Std. Err.**	**Pct.**	**Std. Err.**
Stillbirths and mummies	1.2	(0.1)	13.1	(1.0)	0.8	(0.1)	9.5	(0.6)	0.6	(0.1)	7.2	(0.6)
Born alive	7.7	(0.3)	86.9	(1.0)	7.9	(0.2)	90.5	(0.6)	8.1	(0.1)	92.8	(0.6)
Total born	8.8	(0.3)	100.0		8.7	(0.2)	100.0		8.8	(0.2)	100.0	
Preweaning deaths	0.8	(0.1)	10.4	(1.5)	0.7	(0.1)	9.2	(1.0)	0.7	(0.1)	8.9	(1.3)
Weaned	6.9	(0.2)	89.6	(1.5)	7.2	(0.2)	90.8	(1.0)	7.4	(0.2)	91.1	(1.3)
Total born alive	7.7	(0.3)	100.0		7.9	(0.2)	100.0		8.1	(0.1)	100.0	

3. Overall death loss

More than three-fourths of small operations (77.8 percent) reported no deaths of any swine during the previous 12 months. More than one-half of medium and large operations had fewer than five pigs die (66.0 and 51.2 percent, respectively).

a. Percentage of operations by number of pig deaths* during the previous 12 months, and by size of operation:

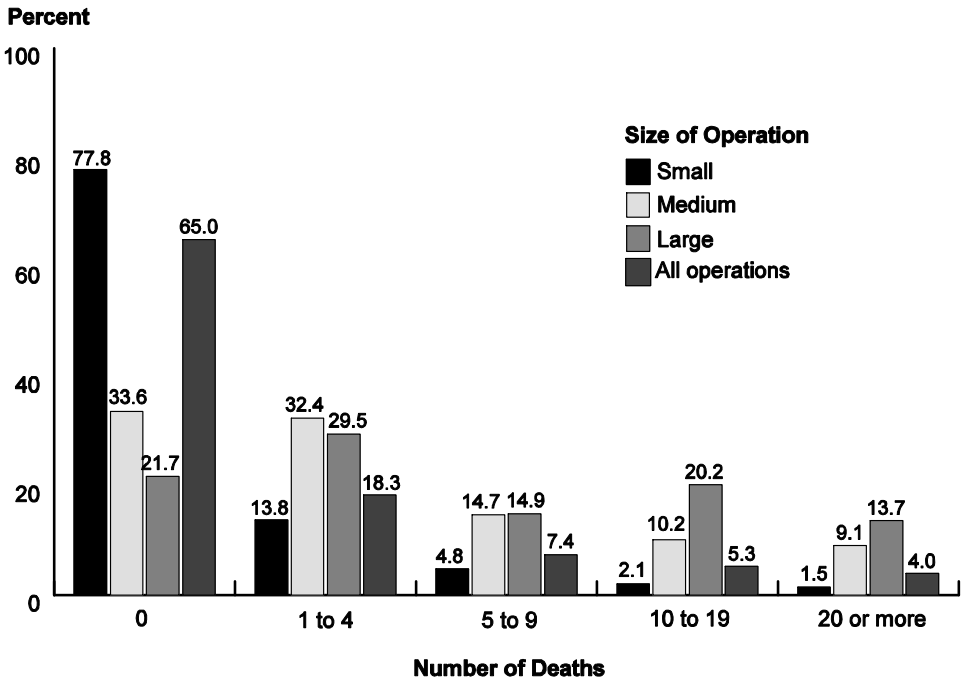
Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Number of Deaths	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
0	77.8	(1.4)	33.6	(3.1)	21.7	(3.0)	65.0	(1.3)
1 to 4	13.8	(1.1)	32.4	(3.0)	29.5	(3.1)	18.3	(1.0)
5 to 9	4.8	(0.7)	14.7	(2.0)	14.9	(2.0)	7.4	(0.6)
10 to 19	2.1	(0.5)	10.2	(1.8)	20.2	(2.5)	5.3	(0.5)
20 or more	1.5	(0.4)	9.1	(2.3)	13.7	(2.1)	4.0	(0.5)
Total	100.0		100.0		100.0		100.0	

*Including breeding swine and weaned and preweaned pigs; excluding home slaughter.

Percentage of Operations by Number of Pig Deaths* During the Previous 12 Months, and by Size of Operation



*Including breeding swine and weaned and preweaned pigs; excluding home slaughter.

Overall, the number of weaned pigs that died during the previous 12 months was about one-tenth (10.3 percent) of the July 1, 2007, weaned pig inventory. The number of weaned pigs that died during the previous 12 months as a percentage of the July 1, 2007, weaned pig inventory did not differ by operation size.

b. Number of weaned pigs that died* during the previous 12 months as a percentage of weaned pig inventory on July 1, 2007, and by size of operation:

Percent Weaned Pigs

Size of Operation (Peak Total Inventory)

Small (1-24)		Medium (25-49)		Large (50-99)		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
11.4	(1.8)	11.9	(2.5)	8.0	(1.4)	10.3	(1.1)

*Including breeding swine and weaned pigs; excluding home slaughter.

About one of four weaned pigs (24.3 percent) in the West region died during the previous 12 months.

c. Number of weaned pigs that died* during the previous 12 months as a percentage of weaned pig inventory on July 1, 2007, by region:

Percent Weaned Pigs

Region

Northeast		Central		West		South	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
9.2	(1.7)	6.4	(1.1)	24.3	(9.8)	13.5	(1.9)

*Including breeding swine and weaned pigs; excluding home slaughter.

4. Disease signs

Producers were asked to report their observations of certain disease signs during the previous 12 months; specific diagnoses were not requested. Only 7.6 percent of all operations had any pigs show any of the listed signs of unusual diseases. Difficulty breathing was the disease sign observed by the highest percentage of operations (3.3 percent of all operations). The percentage of operations that had pigs with any of the listed signs ranged from 6.0 percent of small operations to 13.2 percent of large operations.

a. Percentage of operations that had any pigs show the following disease signs during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Sign	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Combination of skin blotches, matted eyes, and scours (unresponsive to antibiotics)	0.9	(0.3)	2.7	(1.1)	3.1	(0.8)	1.4	(0.3)
Unusually high number of pigs unwilling to eat or stand up	0.6	(0.2)	0.7	(0.5)	0.6	(0.4)	0.6	(0.2)
Unusually high number of pigs that have died	1.7	(0.4)	2.6	(0.8)	3.8	(1.2)	2.1	(0.4)
Difficulty breathing	2.8	(0.5)	4.6	(1.3)	5.1	(1.5)	3.3	(0.5)
Unusually high number of abortions, stillbirths, mummies, or deformed baby pigs	0.7	(0.2)	2.4	(0.8)	1.7	(0.6)	1.0	(0.2)
Lame pigs with reddened areas above the hooves	0.3	(0.1)	0.6	(0.4)	1.4	(0.9)	0.5	(0.2)
Blisters on snout	0.1	(0.1)	0.0	(--)	0.0	(--)	0.1	(0.1)
Any of the above	6.0	(0.8)	10.9	(1.8)	13.2	(2.1)	7.6	(0.7)

A higher percentage of operations in the West region than in the South region had any pigs showing any signs of unusual diseases during the previous 12 months (12.9 and 4.6 percent, respectively).

b. Percentage of operations that had any pigs show the following disease signs during the previous 12 months, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Sign	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Combination of skin blotches, matted eyes, and scours (unresponsive to antibiotics)	2.4	(0.6)	1.9	(0.7)	0.6	(0.3)	0.4	(0.2)
Unusually high number of pigs unwilling to eat or stand up	0.7	(0.3)	0.3	(0.3)	0.2	(0.2)	0.8	(0.3)
Unusually high number of pigs that have died	2.0	(0.5)	1.6	(0.9)	4.7	(1.6)	1.7	(0.6)
Difficulty breathing	3.6	(0.8)	4.1	(1.1)	6.5	(2.1)	1.8	(0.6)
Unusually high number of abortions, stillbirths, mummies, or deformed baby pigs	1.0	(0.4)	0.6	(0.3)	3.2	(1.4)	0.6	(0.3)
Lame pigs with reddened areas above the hooves	0.4	(0.2)	0.5	(0.3)	0.7	(0.6)	0.5	(0.3)
Blisters on snout	0.0	(--)	0.0	(--)	0.0	(--)	0.3	(0.2)
Any of the above	9.3	(1.2)	7.1	(1.6)	12.9	(2.7)	4.6	(0.9)

Of operations that observed unusual signs in pigs, the most common response of small operations (42.9 percent) was to seek veterinarian or diagnostic laboratory assistance, whereas the most common response of large and medium operations was to treat the animals themselves (61.5 and 49.2 percent, respectively).

c. For operations that had any pigs show any of the disease signs above (tables B.4.a and B.4.b), percentage of operations by highest level of response taken, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Level of Response	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Did nothing	22.7	(5.5)	10.6	(5.7)	5.3	(2.9)	16.7	(3.6)
Self-treated on operation	30.3	(5.6)	49.2	(8.9)	61.5	(8.6)	40.4	(4.4)
Sought nonveterinarian assistance off-site	4.1	(2.3)	28.1	(8.4)	1.4	(0.9)	8.6	(2.4)
Sought veterinarian or diagnostic lab assistance	42.9	(6.5)	12.1	(4.8)	31.8	(8.6)	34.3	(4.5)
Total	100.0		100.0		100.0		100.0	

C. General Management

1. Proximity to other swine operations

More than one-third of operations (34.7 percent) were 5 miles or more from the closest known operation with pigs; about one-fourth (25.9 percent) were within 1 mile.

Percentage of operations by distance (miles) to the nearest known operation with pigs, and by region:

Percent Operations

	Region									
	Northeast		Central		West		South		All Operations	
Distance (Miles)	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Less than 0.5	14.3	(1.5)	5.9	(1.3)	15.6	(3.0)	11.3	(2.0)	12.0	(1.0)
0.5 to 0.9	16.6	(1.7)	15.1	(2.5)	8.0	(2.2)	12.0	(2.0)	13.9	(1.1)
1.0 to 2.9	24.2	(1.8)	29.2	(2.7)	14.3	(3.0)	19.4	(2.4)	22.4	(1.2)
3.0 to 4.9	16.9	(1.7)	16.2	(2.2)	13.3	(3.0)	18.6	(2.3)	17.0	(1.1)
5.0 or more	28.0	(1.9)	33.6	(2.9)	48.8	(4.3)	38.7	(2.9)	34.7	(1.4)
Total	100.0		100.0		100.0		100.0		100.0	

2. Reasons for raising pigs

Small enterprises raise swine for many reasons. The reasons rated most important (either high or extreme) were raising swine for meat for personal consumption (60.5 percent) and raising swine as a learning experience for children (46.4 percent). About one-half of operations reported that club-type activities (53.0 percent) and source of income (46.9 percent) were not important reasons to them for raising swine.

a. Percentage of operations by level of importance of reasons for raising pigs:

	Percent Operations										
	Level of Importance										
	Not Important		Slight		Some		High		Extreme		
Reason	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Total
Family tradition	37.5	(1.4)	9.2	(0.8)	20.5	(1.1)	17.0	(1.1)	15.8	(1.0)	100.0
Fun/hobby	29.7	(1.2)	9.8	(0.8)	20.8	(1.2)	22.6	(1.2)	17.1	(1.1)	100.0
Source of income	46.9	(1.4)	14.5	(1.0)	17.0	(1.0)	12.3	(0.9)	9.3	(0.7)	100.0
Meat for personal consumption	19.1	(1.1)	7.6	(0.7)	13.7	(1.0)	23.3	(1.2)	37.2	(1.3)	100.0
Clubs (e.g., 4-H)	53.0	(1.4)	3.4	(0.5)	5.5	(0.7)	9.6	(0.9)	28.5	(1.3)	100.0
Learning experience for children	37.6	(1.3)	3.8	(0.5)	12.2	(0.9)	15.5	(1.0)	30.9	(1.3)	100.0
Other reasons for raising pigs	93.7	(0.7)	0.2	(0.1)	1.0	(0.3)	1.8	(0.4)	3.4	(0.4)	100.0

The majority of operations in each size group rated raising pigs for meat for personal consumption as highly or extremely important (62.2 percent of small, 57.9 percent of medium, and 52.5 percent of large operations). The importance of other reasons varied with size of operation. Small operations also rated learning experience for children (48.8 percent), fun/hobby (41.2 percent), and clubs (41.0 percent) as highly or extremely important, whereas medium operations also placed high or extreme importance on family tradition (41.8 percent) and learning experience for children (40.4 percent). Raising pigs was highly or extremely important as a source of income and family tradition for almost one-half of large operations (48.4 and 46.1 percent, respectively).

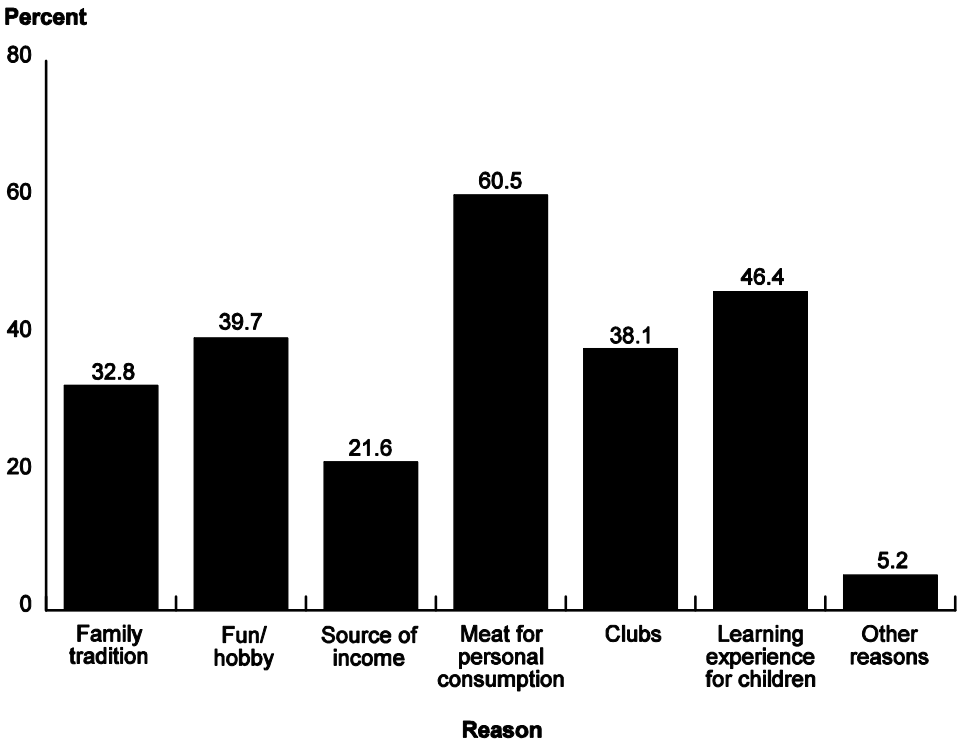
b. Percentage of operations that rated the following reasons for raising pigs as highly or extremely important, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Reason	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Family tradition	29.0	(1.5)	41.8	(3.2)	46.1	(3.3)	32.8	(1.3)
Fun/hobby	41.2	(1.7)	34.5	(3.0)	36.9	(3.1)	39.7	(1.4)
Source of income	15.3	(1.2)	32.2	(3.1)	48.4	(3.3)	21.6	(1.1)
Meat for personal consumption	62.2	(1.7)	57.9	(3.2)	52.5	(3.3)	60.5	(1.4)
Clubs (e.g., 4-H)	41.0	(1.7)	28.5	(3.0)	31.8	(3.2)	38.1	(1.4)
Learning experience for children	48.8	(1.7)	40.4	(3.2)	38.4	(3.2)	46.4	(1.4)
Other reasons for raising pigs	4.8	(0.7)	6.5	(1.8)	5.8	(1.3)	5.2	(0.6)

Percentage of Operations that Rated the Following Reasons for Raising Pigs as Highly or Extremely Important



Raising pigs for personal consumption was highly or extremely important to producers in the Northeast and Central regions (69.2 and 64.4 percent of operations, respectively), compared with producers in the South region (49.4 percent).

c. Percentage of operations that rated the following reasons for raising pigs as highly or extremely important, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Reason	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Family tradition	32.5	(1.9)	34.9	(2.9)	18.0	(3.0)	36.2	(2.5)
Fun/hobby	37.1	(2.0)	36.5	(2.8)	35.3	(3.8)	44.9	(2.7)
Source of income	25.1	(1.7)	26.4	(2.6)	26.9	(3.4)	14.6	(1.8)
Meat for personal consumption	69.2	(1.9)	64.4	(2.8)	62.2	(3.8)	49.4	(2.7)
Clubs (e.g., 4-H)	36.8	(1.9)	33.7	(2.9)	42.7	(4.0)	40.1	(2.7)
Learning experience for children	46.2	(2.0)	39.4	(3.0)	48.0	(4.0)	49.1	(2.7)
Other reasons for raising pigs	4.9	(0.8)	6.3	(1.4)	8.7	(2.2)	4.0	(1.1)

3. Visits by a veterinarian

More than 16 percent of operations (16.4 percent) were visited by a local veterinarian at least twice during the previous 12 months. Only 3.8 percent of operations were visited by a State or Federal veterinarian at least once.

a. Percentage of operations by number of visits by a veterinarian for any purpose during the previous 12 months, and by type of veterinarian:

	Percent Operations								
	Number Visits								
	0		1		2-4		5 or More		
Veterinarian Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Total
Local practitioner	71.0	(1.3)	12.6	(0.9)	12.9	(0.9)	3.5	(0.5)	100.0
State or Federal	96.2	(0.6)	2.2	(0.4)	1.2	(0.4)	0.4	(0.2)	100.0

There were no differences by size for percentage of operations visited at least once by either a local practitioner or a State or Federal veterinarian.

b. Percentage of operations that were visited by a veterinarian at least once during the previous 12 months, by type of veterinarian and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Veterinarian Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Local practitioner	28.4	(1.5)	30.6	(2.9)	30.8	(2.9)	29.0	(1.3)
State or Federal	3.3	(0.7)	5.8	(2.0)	4.5	(1.1)	3.8	(0.6)
Either	30.2	(1.6)	33.6	(3.0)	33.3	(3.0)	31.1	(1.3)

A higher percentage of operations in the Northeast region were visited by a local veterinarian (36.1 percent) compared with operations in the Central and South regions (22.5 and 25.0 percent of operations, respectively). A higher percentage of operations in the South region were visited by a State or Federal veterinarian (7.5 percent) than operations in other regions (1.6 to 1.7 percent).

c. Percentage of operations that were visited by a veterinarian at least once during the previous 12 months, by type of veterinarian, by region:

Percent Operations

Region

	Northeast		**Central**		**West**		**South**	
Veterinarian Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Local practitioner	36.1	(2.0)	22.5	(2.5)	27.0	(3.4)	25.0	(2.3)
State or Federal	1.6	(0.5)	1.7	(0.8)	1.6	(0.7)	7.5	(1.4)
Either	36.5	(2.0)	23.5	(2.5)	27.4	(3.4)	29.7	(2.5)

The average level of mortality that would cause a producer to call a veterinarian did not vary by region for different types of pigs.

d. For operations with the following types of pigs, operation average percentage mortality* that would trigger contact of a veterinarian, and by region:

Operation Average Percent Mortality

Region

	Northeast		Central		West		South		All Operations	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Breeding sow or boar	11.7	(1.6)	12.7	(2.7)	7.2	(1.7)	9.9	(1.6)	10.8	(1.0)
Preweaned piglet	14.4	(1.8)	12.5	(2.1)	9.2	(2.6)	11.5	(1.8)	12.4	(1.0)
Nursery-age pig (weaned to approximately 60 lb)	12.3	(1.4)	9.4	(1.3)	10.5	(2.5)	12.7	(2.5)	11.7	(1.1)
Grower/finisher	11.5	(1.0)	11.0	(1.4)	13.2	(2.9)	14.0	(2.5)	12.3	(0.9)

*Percentage of inventory of that pig type that died.

4. Feed sources

Among small-enterprise swine operations, a variety of feed sources was used. The source used by the highest percentage of operations—one-half of all operations (48.1 percent)—was a purchased commercial diet. The highest percentage of small operations (51.8 percent) used a purchased commercial diet. Almost one-fourth of small operations (23.4 percent) fed table waste to pigs, compared with 15.1 percent of medium and 13.8 percent of large operations. The majority of large and medium operations used home-raised feed sources (62.4 and 57.2 percent, respectively) and purchased feed ingredients that were mixed on the operation (57.6 and 48.7 percent, respectively). Overall, 6.6 percent of operations let pigs out on harvested fields to glean crops and 6.3 percent of operations fed commercial food waste.

a. Percentage of operations by feed source(s) used for hogs and pigs during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Feed Source	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Home-raised sources (e.g., harvested corn or soybeans)	31.2	(1.5)	57.2	(3.2)	62.4	(3.2)	38.6	(1.3)
Purchased feed ingredients mixed on this operation	30.7	(1.6)	48.7	(3.2)	57.6	(3.2)	36.5	(1.3)
Custom feed mixed off operation	27.6	(1.5)	33.5	(2.9)	40.7	(3.3)	29.9	(1.2)
Purchased commercial diet	51.8	(1.7)	35.7	(3.1)	39.6	(3.3)	48.1	(1.4)
Commercial food waste	6.0	(0.8)	7.7	(1.8)	6.3	(1.4)	6.3	(0.6)
Table food waste	23.4	(1.4)	15.1	(2.0)	13.8	(2.3)	21.1	(1.1)
Co-products (e.g., distillers dried grain, wet grain, etc.)	3.5	(0.6)	6.5	(1.6)	3.0	(0.9)	3.9	(0.5)
Crops in fields that pigs have been turned out on	6.4	(0.8)	6.7	(1.3)	7.9	(1.9)	6.6	(0.7)
Wildlife carcasses	0.4	(0.2)	0.5	(0.5)	1.7	(0.7)	0.6	(0.2)

Feed ingredients were purchased and mixed on the operation by a higher percentage of operations in the Central region than in other regions (52.4 percent compared with 30.6 to 36.5 percent). Commercial food waste was fed to pigs during the previous 12 months on a higher percentage of operations in the West region (14.8 percent) than in other regions (2.4 to 6.2 percent). Regional differences may reflect differences in State regulations regarding feeding waste to swine. A higher percentage of operations in the West and South regions (65.5 and 61.8 percent, respectively) used a purchased commercial diet as a feed source than in the Northeast or Central regions (36.1 and 33.0 percent, respectively).

b. Percentage of operations by feed source(s) used for hogs and pigs during the previous 12 months, by region:

Percent Operations

	Region							
	Northeast		Central		West		South	
Feed Source	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Home-raised sources (e.g., harvested corn or soybeans)	50.2	(2.0)	51.8	(2.9)	20.1	(3.2)	26.3	(2.2)
Purchased feed ingredients mixed on this operation	36.5	(1.9)	52.4	(2.9)	33.1	(3.8)	30.6	(2.5)
Custom feed mixed off operation	41.0	(2.0)	32.1	(2.7)	13.5	(2.5)	22.2	(2.1)
Purchased commercial diet	36.1	(2.0)	33.0	(2.8)	65.5	(3.7)	61.8	(2.5)
Commercial food waste	6.2	(1.0)	2.4	(0.8)	14.8	(2.7)	5.6	(1.1)
Table food waste	21.2	(1.7)	19.4	(2.4)	27.8	(3.5)	19.8	(2.1)
Co-products (e.g., distillers dried grain, wet grain, etc.)	3.3	(0.7)	1.9	(0.8)	6.0	(2.0)	4.8	(1.0)
Crops in fields that pigs have been turned out on	3.8	(0.7)	7.2	(1.4)	8.5	(2.1)	8.7	(1.5)
Wildlife carcasses	0.6	(0.3)	0.4	(0.3)	1.6	(1.0)	0.4	(0.3)

5. Sources of swine health information

On 39.8 percent of operations the local veterinary practitioner was a very important source of information on swine health. Pork industry programs and/or meetings, the Internet, and industry publications/magazines were not important sources of swine health information to about one-half of operations (56.6, 54.0, and 45.6 percent, respectively).

a. Percentage of operations by level of importance placed on each of the following sources of swine health information:

	Percent Operations								
	Level of Importance								
	Not Important		Slight		Moderate		Very		
Information Source	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Total
Pork industry publications/ magazines	45.6	(1.4)	18.5	(1.1)	21.7	(1.1)	14.2	(1.0)	100.0
Pork industry programs and/or meetings	56.6	(1.4)	19.7	(1.1)	14.7	(1.0)	9.0	(0.8)	100.0
Local veterinarian	24.7	(1.2)	12.9	(0.9)	22.6	(1.2)	39.8	(1.4)	100.0
Extension service	37.4	(1.4)	19.1	(1.1)	23.4	(1.2)	20.1	(1.2)	100.0
Internet	54.0	(1.4)	14.1	(1.0)	17.8	(1.1)	14.1	(1.0)	100.0
Another pig producer	29.8	(1.3)	15.2	(1.0)	27.8	(1.2)	27.2	(1.3)	100.0
Feed or animal health product supplier (other than veterinarian)	33.6	(1.3)	18.7	(1.1)	26.2	(1.2)	21.5	(1.2)	100.0
Other	98.7	(0.4)	0.3	(0.2)	0.4	(0.2)	0.6	(0.3)	100.0

The local veterinarian, other pig producers, and feed or animal health product suppliers were considered the most important sources of swine health information for operations in each size group. More than 40 percent (43.5 percent) of all operations regarded extension service as a moderately or very important source of swine health information.

b. Percentage of operations that rated the following sources of swine health information as moderately or very important, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

Information Source	Small (1-24) Pct.	Small (1-24) Std. Error	Medium (25-49) Pct.	Medium (25-49) Std. Error	Large (50-99) Pct.	Large (50-99) Std. Error	All Operations Pct.	All Operations Std. Error
Pork industry publications/ magazines	31.8	(1.6)	50.0	(3.2)	45.1	(3.2)	35.9	(1.3)
Pork industry programs and/or meetings	21.3	(1.4)	32.5	(3.1)	28.5	(2.9)	23.7	(1.2)
Local veterinarian	62.2	(1.7)	64.5	(3.1)	61.1	(3.3)	62.4	(1.4)
Extension service	44.3	(1.7)	46.7	(3.2)	34.7	(3.0)	43.5	(1.4)
Internet	32.7	(1.7)	32.3	(3.0)	26.1	(2.8)	31.9	(1.3)
Another pig producer	54.2	(1.7)	59.1	(3.2)	54.8	(3.3)	55.0	(1.4)
Feed or animal health product supplier (other than veterinarian)	45.3	(1.7)	56.0	(3.2)	52.7	(3.3)	47.7	(1.4)
Other	0.9	(0.4)	2.0	(1.3)	0.3	(0.3)	1.0	(0.4)

The sources of swine health information considered to be moderately or very important by the highest percentages of operations across all regions were the local veterinarian and other pig producers.

c. Percentage of operations that rated the following sources of swine health information as moderately or very important, by region:

Percent Operations

	Region							
	Northeast		Central		West		South	
Information Source	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Pork industry publications/ magazines	35.7	(1.9)	36.9	(2.8)	27.1	(3.4)	38.3	(2.6)
Pork industry programs and/or meetings	23.4	(1.7)	21.3	(2.4)	19.0	(2.9)	26.3	(2.4)
Local veterinarian	62.4	(2.0)	61.3	(2.9)	63.5	(3.9)	62.5	(2.6)
Extension service	42.3	(2.0)	37.1	(2.8)	43.8	(4.0)	47.3	(2.7)
Internet	30.5	(1.9)	27.2	(2.6)	36.3	(3.8)	33.9	(2.7)
Another pig producer	58.4	(2.0)	54.8	(2.9)	62.1	(3.9)	49.6	(2.7)
Feed or animal health product supplier (other than veterinarian)	51.7	(2.1)	51.5	(3.0)	41.2	(3.9)	43.8	(2.7)
Other	0.1	(0.1)	0.4	(0.3)	0.0	(--)	2.5	(1.0)

D. Facility Management—Sows and/or Gilts and Weaned Market Hogs

1. Inventory class and housing

The purpose of this table is to characterize the practice of housing sows separately from market hogs or together with market hogs. More than one-half of large operations—55.8 percent, or more than three times the percentage of small operations (15.8 percent)—housed sows and market hogs separately. Almost two-thirds (62.1 percent) of small operations had market hogs only, with no sows or gilts on the premises.

a. Percentage of operations by inventory class and housing situation during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Inventory Class* and Housing	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Sows but no market hogs	12.2	(1.2)	10.6	(2.0)	7.3	(2.0)	11.3	(1.0)
Market hogs but no sows	62.1	(1.7)	24.2	(2.7)	20.6	(2.7)	51.4	(1.4)
Sows and market hogs housed together	9.9	(1.0)	18.9	(2.6)	16.3	(2.3)	12.0	(0.9)
Sows and market hogs housed separately	15.8	(1.2)	46.3	(3.3)	55.8	(3.3)	25.3	(1.2)
Total	100.0		100.0		100.0		100.0	

*During the previous 12 months.

The percentage of operations with sows but no market hogs ranged from 4.3 percent in the Northeast region to 20.6 percent in the South region.

b. Percentage of operations by inventory class and housing situation during the previous 12 months, by region:

Percent Operations

Region

Inventory Class* and Housing	Northeast Pct.	Northeast Std. Error	Central Pct.	Central Std. Error	West Pct.	West Std. Error	South Pct.	South Std. Error
Sows but no market hogs	4.3	(0.8)	7.6	(1.6)	11.3	(2.5)	20.6	(2.3)
Market hogs but no sows	57.8	(2.0)	51.2	(3.0)	55.9	(4.0)	43.2	(2.8)
Sows and market hogs housed together	12.4	(1.3)	9.8	(1.7)	5.5	(1.8)	14.5	(1.7)
Sows and market hogs housed separately	25.5	(1.8)	31.4	(2.8)	27.3	(3.4)	21.7	(2.1)
Total	100.0		100.0		100.0		100.0	

*During the previous 12 months.

2. Facility type

This section describes the use of five broad facility types ranging from total confinement to essentially no facility. Producers were asked to identify which type of facility was used most over the previous year. Results are presented for three different kinds of operations:

a. Operations that housed sows and gilts and weaned market hogs together—facility type used for all pigs;

b. Operations that housed sows and gilts separately from weaned market hogs (includes operations with no weaned market hogs)—facility type used for all sows and gilts; and

c. Operations that housed weaned market hogs separately from sows and gilts (includes operations with no breeding swine)—facility type used for all weaned market hogs.

a. Operations that housed sows and gilts and weaned market hogs together—facility type used for all pigs

Of the small operations that housed breeding swine (sows and gilts) and weaned market hogs together, about one-third kept them in a fenced lot (33.0 percent) and about one-third kept them in an open building with outside access (30.7 percent) during the previous 12 months. The majority of medium and large operations that housed breeding swine and weaned market hogs together did so in total confinement or an open building without or with outside access (71.5 and 58.4 percent, respectively).

i. For operations that housed breeding swine (sows and gilts) **together** with weaned market hogs, percentage of operations by type of facility used most during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Facility Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Total confinement or open-sided building with no outside access	22.7	(4.3)	23.2	(5.9)	22.2	(5.2)	22.7	(3.1)
Open building with outside access	30.7	(4.5)	48.3	(7.9)	36.2	(8.2)	35.8	(3.7)
Fenced lot with or without hut/shelter	33.0	(5.0)	15.5	(5.8)	18.5	(7.0)	26.5	(3.6)
Fenced pasture with or without hut/shelter	11.4	(3.1)	13.0	(4.5)	23.1	(5.1)	13.7	(2.3)
No facilities; hogs roam free	2.2	(1.3)	0.0	(--)	0.0	(--)	1.3	(0.8)
Total	100.0		100.0		100.0		100.0	

The percentage of operations using an open building with outside access ranged from 19.5 percent in the South region to 52.6 percent in the Northeast region.

ii. For operations that housed breeding swine (sows and gilts) **together** with weaned market hogs, percentage of operations by type of facility used most during the previous 12 months, by region:

Percent Operations

	Region							
	Northeast		Central		West		South	
Facility Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Total confinement or open-sided building with no outside access	27.7	(4.7)	25.1	(8.2)	*		18.4	(5.0)
Open building with outside access	52.6	(5.7)	43.9	(9.4)	*		19.5	(5.0)
Fenced lot with or without hut/shelter	13.2	(4.1)	20.7	(7.5)	*		38.4	(6.2)
Fenced pasture with or without hut/shelter	6.5	(2.8)	8.3	(5.3)	*		22.7	(4.4)
No facilities; hogs roam free	0.0	(--)	2.0	(1.9)	*		1.0	(0.9)
Total	100.0		100.0				100.0	

*Sample size too small to estimate.

b. Operations that housed sows and gilts separately from weaned market hogs (includes operations with no weaned market hogs)—facility type used for all sows and gilts

The percentage of operations that used an open building with outside access ranged from 26.8 percent in the South region to 58.8 percent in the Central region. Almost one-fourth (24.7 percent) of operations in the South region housed breeding swine in fenced pasture, higher than in other regions. A higher percentage of operations in the Northeast region used total confinement (29.0 percent) compared with the Central and South regions.

For operations that housed breeding swine (sows and gilts) **separately** from weaned market hogs*, percentage of operations by type of facility used most during the previous 12 months for sows and gilts, and by region:

Percent Operations

	Region									
	Northeast		Central		West		South		All Operations	
Facility Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Total confinement or open-sided building with no outside access	29.0	(3.5)	10.4	(3.4)	14.3	(4.4)	14.5	(3.1)	18.4	(1.9)
Open building with outside access	41.9	(3.7)	58.8	(4.8)	31.1	(5.6)	26.8	(4.0)	37.5	(2.3)
Fenced lot with or without hut/shelter	20.7	(3.1)	22.0	(3.6)	44.7	(6.1)	32.7	(3.9)	28.3	(2.1)
Fenced pasture with or without hut/shelter	8.4	(2.0)	7.7	(2.3)	7.8	(3.4)	24.7	(3.4)	14.8	(1.6)
No facilities; hogs roam free	0.0	(--)	1.1	(0.8)	2.1	(2.0)	1.3	(0.9)	1.0	(0.5)
Total	100.0		100.0		100.0		100.0		100.0	

*Includes operations with no weaned market hogs (table D.1.a).

c. Operations that housed weaned market hogs separately from sows and gilts (includes operations with no breeding swine)—facility type used for all weaned market hogs

More than three of four operations (76.0 percent) in the Northeast region that housed market hogs separately from breeding swine housed market hogs in buildings, either total confinement or open buildings without or with outside access. The majority of operations in the Central region that housed weaned market hogs separately from sows and gilts housed the weaned market hogs in open buildings with outside access (50.3 percent).

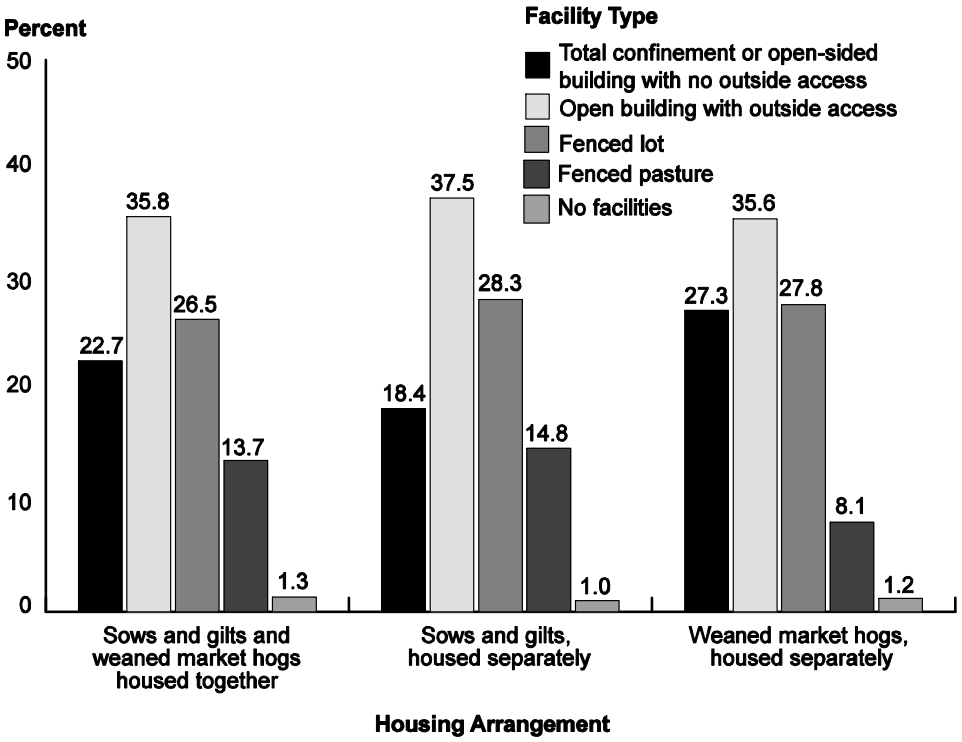
For operations that housed weaned market hogs **separately** from breeding swine (sows and gilts)*, percentage of operations by type of facility used most during the previous 12 months for weaned market hogs, and by region:

Percent Operations

	Region									
	Northeast		Central		West		South		All Operations	
Facility Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Total confinement or open-sided building with no outside access	38.8	(2.2)	14.7	(2.6)	12.2	(2.9)	23.8	(3.0)	27.3	(1.4)
Open building with outside access	37.2	(2.2)	50.3	(3.3)	36.5	(4.3)	24.6	(3.1)	35.6	(1.5)
Fenced lot with or without hut/shelter	16.3	(1.7)	28.4	(2.8)	44.9	(4.5)	37.7	(3.4)	27.8	(1.5)
Fenced pasture with or without hut/shelter	7.4	(1.2)	6.1	(1.6)	5.4	(2.0)	11.2	(1.9)	8.1	(0.8)
No facilities; hogs roam free	0.3	(0.3)	0.5	(0.3)	1.0	(0.9)	2.7	(1.1)	1.2	(0.4)
Total	100.0		100.0		100.0		100.0		100.0	

*Includes operations with no breeding swine (table D.1.a).

Percentage of Operations by Type of Facility Used Most to House Pigs During the Previous 12 Months, by Housing Arrangement



3. Barrier type

Most operations that housed breeding swine (sows and gilts) and market hogs together used barriers to contain the animals; only 1.8 percent of operations used no barrier. The first or only barrier used is the primary barrier; an additional barrier used on some operations is the secondary barrier. The highest percentage of operations (50.0 percent) that housed breeding swine and market swine together used an open barrier (e.g., a wire fence, bars, or some type of mesh curtain) to contain the animals. In the South region, more than one-half of operations (61.7 percent) used this type of primary barrier. Solid loose barriers and open barriers served as the primary barrier on roughly equal percentages of operations in the Central region (47.4 and 44.9 percent, respectively) and West region (41.9 and 43.6 percent, respectively).

a. For operations that housed breeding swine (sows and gilts) **together** with weaned market hogs, percentage of operations by type of **primary** barrier that contained the swine, and by region:

Percent Operations

Region

	Northeast		Central		West		South		All Operations	
Primary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	25.4	(5.1)	47.4	(9.4)	41.9	(17.2)	24.5	(5.2)	28.6	(3.4)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	34.2	(5.4)	5.7	(4.3)	0.0	(--)	12.3	(4.5)	19.6	(3.0)
Open barrier (e.g., wire fence or mesh curtain)	39.7	(5.7)	44.9	(9.6)	43.6	(16.7)	61.7	(6.0)	50.0	(3.8)
No barrier	0.7	(0.7)	2.0	(1.9)	14.5	(12.8)	1.5	(1.0)	1.8	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

For operations that housed breeding swine (sows and gilts) and market hogs separately, a higher percentage of operations in the Northeast region (23.6 percent) than in the Central region (10.4 percent) used a firm solid barrier as the primary containment for breeding swine. More than one-half of operations in the Central region (54.0 percent) used a solid loose barrier as the primary containment for breeding animals, whereas the highest percentage of operations in the other regions used an open barrier as the primary containment for breeding swine (41.3 to 52.4 percent).

b. For operations that housed breeding swine (sows and gilts) **separately** from weaned market hogs*, percentage of operations by type of **primary** barrier that contained the breeding animals, and by region:

Percent Operations

Region

	Northeast		Central		West		South		All Operations	
Primary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	26.3	(3.5)	54.0	(5.0)	31.5	(5.5)	29.0	(3.9)	32.7	(2.2)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	23.6	(3.0)	10.4	(2.9)	22.6	(5.3)	17.3	(3.5)	18.7	(1.9)
Open barrier (e.g., wire fence or mesh curtain)	50.1	(3.8)	34.5	(4.6)	41.3	(6.0)	52.4	(4.2)	47.4	(2.3)
No barrier	0.0	(--)	1.1	(0.8)	4.6	(2.8)	1.3	(0.9)	1.2	(0.5)
Total	100.0		100.0		100.0		100.0		100.0	

*Includes operations with no weaned market hogs.

For operations that housed breeding swine (sows and gilts) and market hogs separately, a higher percentage of operations in the Northeast region (30.9 percent) than in the other regions used a solid firm barrier as the primary barrier to contain weaned market hogs. Almost one-half of operations in the Central region (47.0 percent) used a solid loose barrier as the primary containment for weaned market hogs.

c. [0205] For operations that housed weaned market hogs **separately** from breeding swine (sows and gilts)*, percentage of operations by type of **primary** barrier that contained the weaned market hogs, and by region:

Percent Operations

	Region								All Operations	
	Northeast		Central		West		South			
Primary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	28.8	(2.1)	47.0	(3.3)	34.5	(4.2)	35.1	(3.4)	34.4	(1.5)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	30.9	(2.1)	15.3	(2.8)	16.0	(3.2)	19.4	(3.0)	23.2	(1.4)
Open barrier (e.g., wire fence or mesh curtain)	39.6	(2.3)	37.1	(3.1)	48.5	(4.5)	42.7	(3.4)	41.0	(1.6)
No barrier	0.7	(0.4)	0.6	(0.3)	0.9	(0.9)	2.8	(1.1)	1.4	(0.4)
Other	0.0	(--)	0.0	(--)	0.1	(0.0)	0.0	(--)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0		100.0	

*Includes operations with no breeding swine.

Whether an operation housed breeding swine (sows and gilts) together with weaned market pigs in a building or fenced outside area, most operations that used a primary barrier to separate the animals did not use a secondary or backup barrier.

d. For operations that housed breeding swine (sows and gilts) **together** with weaned market hogs in buildings or fenced areas and used a primary barrier to contain animals, percentage of operations by facility type and by type of **secondary** barrier used:

	Percent Operations			
	Facility Type			
	Building[1]		Fenced Area[2]	
Secondary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	6.9	(2.2)	4.3	(2.3)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	7.6	(2.3)	3.6	(1.9)
Open barrier (e.g., wire fence or mesh curtain)	21.4	(4.3)	16.1	(4.5)
No secondary barrier	64.1	(4.7)	76.0	(5.1)
Total	100.0		100.0	

[1]Includes total confinement or open-sided building with no outside access and open building with outside access.
[2]Includes fenced lot with or without hut/shelter and fenced pasture with or without hut/shelter.

Most operations that housed sows and gilts separately from weaned market hogs in buildings or fenced outside areas and that also used a primary barrier to contain pigs did not use a secondary or backup barrier to provide further containment.

e. For operations that housed breeding swine (sows and gilts) **separately** from weaned market hogs[1] in buildings or fenced areas and used a primary barrier to contain animals, percentage of operations by facility type and by type of **secondary** barrier used to contain sows and gilts:

	Percent Operations			
	Facility Type			
	Building[2]		Fenced Area[3]	
Secondary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	15.0	(2.6)	9.0	(2.0)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	10.8	(2.0)	3.1	(1.0)
Open barrier (e.g., wire fence or mesh curtain)	24.6	(2.6)	25.2	(3.0)
No secondary barrier	49.6	(3.2)	62.7	(3.3)
Total	100.0		100.0	

[1]Includes operations with no weaned market hogs.
[2]Includes total confinement or open-sided building with no outside access and open building with outside access.
[3]Includes fenced lot with or without hut/shelter and fenced pasture with or without hut/shelter.

f. For operations that housed weaned market hogs **separately** from breeding swine (sows and gilts)[1] in buildings or fenced areas and used a primary barrier to contain animals, percentage of operations by facility type and by type of **secondary** barrier used to contain weaned market hogs:

	Percent Operations			
	Facility Type			
	Building[2]		Fenced Area[3]	
Secondary Barrier Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Solid barrier but loose (e.g., hog panel or curtain)	10.4	(1.3)	3.5	(0.8)
Solid barrier (of any type of material) and firm (e.g., concrete wall)	11.2	(1.3)	3.9	(1.0)
Open barrier (e.g., wire fence or mesh curtain)	19.9	(1.7)	19.8	(2.2)
No secondary barrier	58.5	(2.0)	72.8	(2.4)
Other	0.0	(0.0)	0.0	(--)
Total	100.0		100.0	

[1]Includes operations with no breeding swine.
[2]Includes total confinement or open-sided building with no outside access and open building with outside access.
[3]Includes fenced lot with or without hut/shelter and fenced pasture with or without hut/shelter.

About two-thirds of operations (67.7 percent) that housed breeding swine (sows and gilts) and weaned market hogs together used a solid or open primary barrier with no secondary barrier. For those operations that used a primary and a secondary barrier, the highest percentage of operations used a solid primary barrier and an open secondary barrier (13.2 percent).

g. For operations that housed breeding swine (sows and gilts) **together** with weaned market hogs, percentage of operations by combination of primary and secondary barrier types:

Primary Barrier	Secondary Barrier	Percent Operations	Standard Error
Solid	Solid	6.1	(1.6)
Solid	Open	13.2	(2.5)
Solid	None	28.9	(3.4)
Open	Solid	5.5	(1.5)
Open	Open	5.7	(2.1)
Open	None	38.8	(3.7)
None	None	1.8	(0.8)
Total		100.0	

For operations that housed breeding swine (sows and gilts) and weaned market hogs separately, 13.8 percent of operations used solid primary and secondary barriers to contain sows and gilts, and 12.8 percent used the same combination to contain weaned market hogs (table D.3.i).

h. For operations that housed breeding swine (sows and gilts) **separately** from weaned market hogs*, percentage of operations by combination of primary and secondary barrier types used to contain sows and gilts:

Primary Barrier	Secondary Barrier	Percent Operations	Standard Error
Solid	Solid	13.8	(1.8)
Solid	Open	12.9	(1.4)
Solid	None	24.7	(2.1)
Open	Solid	5.9	(1.0)
Open	Open	11.6	(1.5)
Open	None	29.9	(2.1)
None	None	1.2	(0.5)
Total		100.0	

*Includes operations with no weaned market hogs.

i. For operations that housed weaned market hogs **separately** from breeding swine (sows and gilts)*, percentage of operations by combination of primary and secondary barrier types used to contain weaned market hogs:

Primary Barrier	Secondary Barrier	Percent Operations	Standard Error
Solid	Solid	12.8	(1.1)
Solid	Open	11.1	(1.1)
Solid	None	33.7	(1.5)
Open	Solid	3.3	(0.6)
Open	Open	8.5	(0.9)
Open	None	29.2	(1.4)
None	None	1.4	(0.4)
Total		100.0	

*Includes operations with no breeding swine.

E. Exposure to Feral Swine

1. Presence of feral swine

Producers were asked if feral swine were present in their county and, if present, how many times feral swine had been seen on the operation during the previous 12 months. One-half of operations in the South region (50.0 percent) indicated the presence of feral swine in their county, a much higher percentage than in any other region. About 6 percent of operations in both the Northeast and Central regions (6.3 and 5.9 percent, respectively) indicated feral swine were present in their county, including wild boars on enclosed hunting clubs.

a. Percentage of operations indicating that feral swine were present in the county (including wild boars on hunting clubs or captive on operations), and by region:

Percent Operations

Region

Northeast		Central		West		South		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
6.3	(1.0)	5.9	(1.2)	20.5	(3.0)	50.0	(2.7)	23.9	(1.3)

For operations that had feral swine present in the county, feral swine were seen on more than one-third of operations in the South region (35.0 percent). Feral swine were seen on 6.3 to 11.5 percent of operations in other regions.

b. For operations with feral swine present in the county, percentage of operations that had seen feral swine on the operation* during the previous 12 months, and by region:

Percent Operations

Region

Northeast		Central		West		South		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
6.3	(3.1)	8.8	(8.0)	11.5	(6.0)	35.0	(3.9)	29.1	(3.2)

*May or may not have had contact with domestic swine.

For operations on which feral swine were seen during the previous 12 months, feral swine were seen three or more times on more than one-half of operations (58.6 percent) and were seen seven or more times on 20.5 percent of operations.

c. For operations that had seen feral swine on the operation* during the previous 12 months, percentage of operations by number of times feral swine were seen:

Number of Times Seen	Percent Operations	Standard Error
1 to 2	41.4	(6.7)
3 to 4	18.9	(5.4)
5 to 6	19.2	(5.5)
7 or more	20.5	(4.8)
Total	100.0	

*May or may not have had contact with domestic swine.

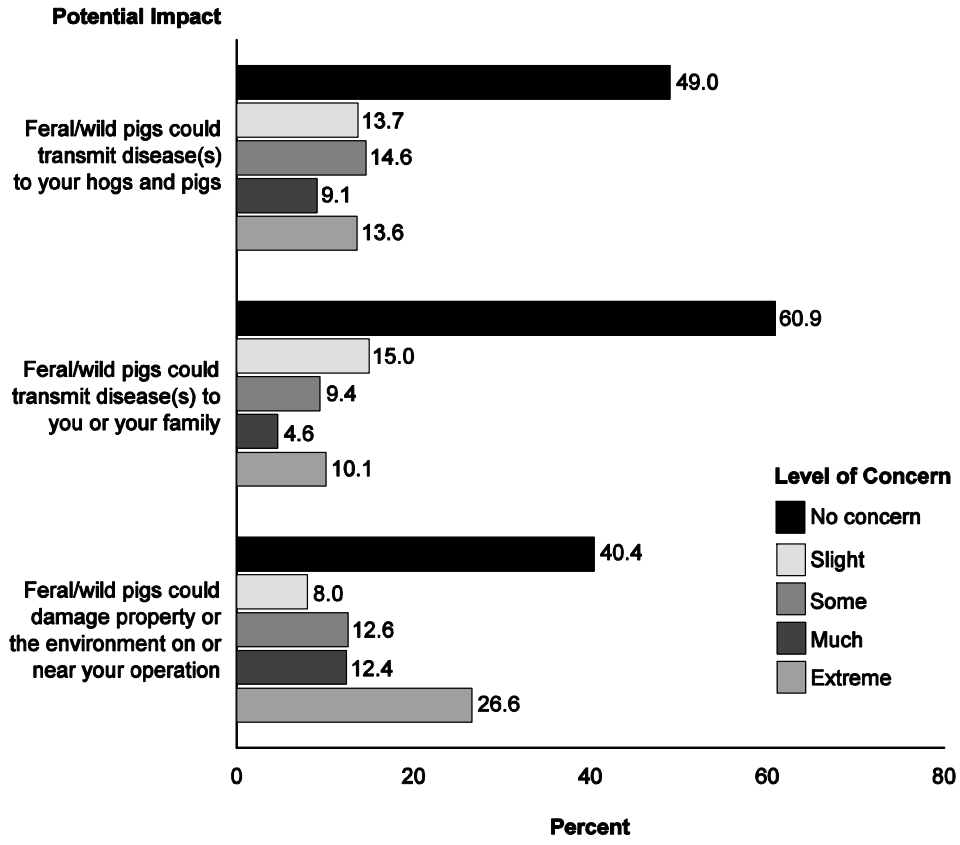
2. Level of concern about feral swine

For operations in a county with feral swine, less than 40 percent of operators had some, much, or extreme concern regarding diseases transmitted by feral swine, either to their pigs (37.3 percent of operations) or to people (24.1 percent). In contrast, more than one-half of operators (51.6 percent) had some, much, or extreme concern about the risk feral swine posed to property or the environment on or near the operation.

a. For operations **with** feral swine present in the county, percentage of operations by level of concern about potential impacts of feral swine:

	Percent Operations										
	Level of Concern										
	No Concern		Slight		Some		Much		Extreme		
Potential Impact: Feral/wild pigs could...	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Total
... transmit disease(s) to your hogs and pigs	49.0	(3.4)	13.7	(2.5)	14.6	(2.4)	9.1	(1.9)	13.6	(2.2)	100.0
... transmit disease(s) to you or your family	60.9	(3.3)	15.0	(2.4)	9.4	(1.9)	4.6	(1.2)	10.1	(2.1)	100.0
... damage property or the environment on or near your operation	40.4	(3.3)	8.0	(1.7)	12.6	(2.3)	12.4	(2.3)	26.6	(3.1)	100.0

For Operations With Feral Swine Present in the County, Percentage of Operations by Level of Concern About Potential Impacts of Feral Swine



For operations that did not have feral swine in the county, more than three-fourths of operators had no or only slight concern that feral pigs could transmit disease to their hogs (80.8 percent), transmit disease to the operator or the operator's family (83.9 percent), or damage property or the environment on or near the operation (79.3 percent).

b. For operations that **did not have** feral swine present in the county, percentage of operations by level of concern about potential impacts of feral swine:

	Percent Operations										
	Level of Concern										
	No Concern		Slight		Some		Much		Extreme		
Potential Impact: Feral/wild pigs could...	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Total**
...transmit disease(s) to your hogs and pigs	75.2	(1.5)	5.6	(0.7)	8.9	(1.1)	4.5	(0.7)	5.8	(0.8)	100.0
...transmit disease(s) to you or your family	77.4	(1.4)	6.5	(0.8)	7.2	(0.9)	3.5	(0.6)	5.4	(0.8)	100.0
... damage property or the environment on or near your operation	74.1	(1.5)	5.2	(0.7)	9.0	(1.1)	4.5	(0.7)	7.2	(0.9)	100.0

For all operations, the level of concern for the risk of feral swine transmitting disease to the operation's swine was highest in the South region and lowest in the West region.

c. For all operations, regardless of whether feral swine were present in the county, percentage of operations by level of concern that feral pigs could **transmit disease to pigs** on the operation, and by region:

Percent Operations

Region

	Northeast		Central		West		South		All Operations	
Level of Concern	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
No concern	68.2	(1.9)	70.5	(2.7)	84.0	(2.9)	58.4	(2.7)	66.5	(1.4)
Slight	6.9	(1.0)	8.5	(1.6)	3.6	(1.5)	9.7	(1.7)	7.9	(0.8)
Some	10.9	(1.3)	8.2	(1.5)	6.1	(1.9)	13.0	(2.0)	10.8	(0.9)
Much	6.5	(1.0)	4.6	(1.5)	4.0	(1.5)	6.7	(1.4)	6.0	(0.7)
Extreme	7.5	(1.1)	8.2	(1.5)	2.3	(1.0)	12.2	(1.7)	8.8	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

The level of concern for the risk of feral swine transmitting disease to the operator or the operator's family was highest in the South region and lowest in the West region.

d. For all operations, regardless of whether feral swine were present in the county, percentage of operations by level of concern that feral pigs could **transmit disease to the operator** or the operator's family, and by region:

Percent Operations

	Region									
	Northeast		Central		West		South		All Operations	
Level of Concern	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
No concern	70.8	(1.9)	72.2	(2.7)	85.2	(2.8)	66.0	(2.6)	70.6	(1.3)
Slight	7.0	(1.0)	8.3	(1.6)	5.4	(1.7)	12.5	(1.9)	9.1	(0.9)
Some	9.2	(1.2)	8.9	(1.9)	4.5	(1.7)	7.5	(1.5)	8.1	(0.8)
Much	5.8	(1.0)	4.6	(1.3)	2.5	(1.2)	4.3	(0.9)	4.7	(0.6)
Extreme	7.2	(1.1)	6.0	(1.2)	2.4	(1.2)	9.7	(1.7)	7.5	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

The level of concern for the risk of feral swine damaging property or the environment also was highest in the South region and lowest in the West region.

e. For all operations, regardless of whether feral swine were present in the county, percentage of operations by level of concern that feral pigs could **damage property or the environment** on or near the operation, and by region:

Percent Operations

	Region								All Operations	
	Northeast		Central		West		South			
Level of Concern	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
No concern	66.3	(1.9)	69.4	(2.7)	81.2	(3.1)	51.7	(2.7)	62.8	(1.4)
Slight	6.5	(1.0)	6.9	(1.4)	5.0	(1.7)	6.1	(1.2)	6.3	(0.6)
Some	9.9	(1.2)	8.7	(1.7)	5.7	(1.9)	12.2	(1.9)	10.2	(0.9)
Much	6.3	(1.0)	5.7	(1.3)	3.4	(1.4)	9.6	(1.6)	7.1	(0.7)
Extreme	11.0	(1.3)	9.3	(1.8)	4.7	(1.6)	20.4	(2.3)	13.6	(1.0)
Total	100.0		100.0		100.0		100.0		100.0	

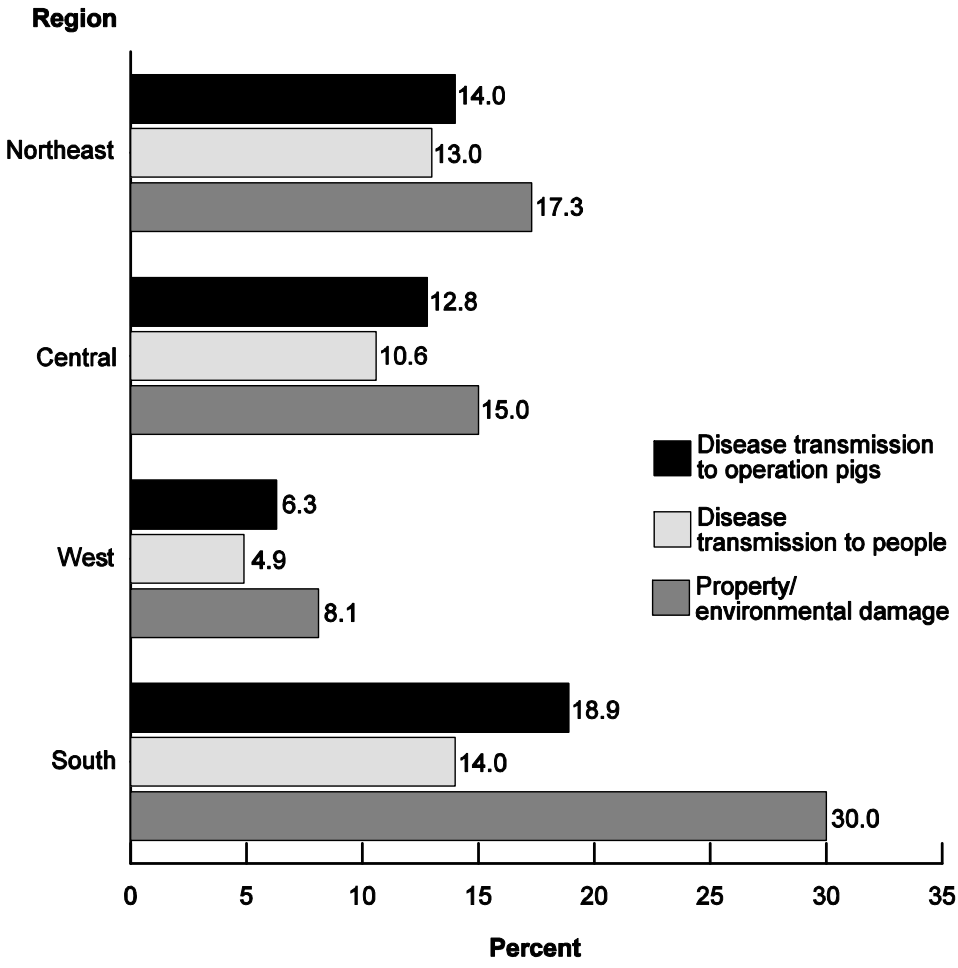
About one-third of operations in the South region (30.0 percent) had much or extreme concern that feral/wild pigs could damage property or the environment on or near the operation.

f. For all operations, regardless of whether feral swine were present in the county, percentage of operations with much or extreme concern about disease-transmission or environmental risks posed by feral swine, and by region:

Percent Operations

	Region								All Operations	
	Northeast		Central		West		South			
Potential Impact: Feral/wild pigs could...	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
... transmit disease(s) to your hogs and pigs	14.0	(1.4)	12.8	(2.1)	6.3	(1.8)	18.9	(2.1)	14.8	(1.0)
... transmit disease(s) to you or your family	13.0	(1.4)	10.6	(1.7)	4.9	(1.6)	14.0	(1.8)	12.2	(0.9)
... damage property or the environment on or near your operation	17.3	(1.6)	15.0	(2.1)	8.1	(2.1)	30.0	(2.6)	20.7	(1.2)

Percentage of Operations with Much or Extreme Concern About Disease-transmission or Environmental Risks Posed by Feral Swine, by Region



F. Swine Movement Onto and Off of the Operation

1. Pigs brought onto the operation

Overall, more than two-thirds of operations (69.5 percent) brought pigs onto the operation, either temporarily or permanently, during the previous 12 months. A higher percentage of small operations (74.0 percent) than medium or large operations (53.5 and 60.5 percent, respectively) brought pigs onto the operation. Small operations brought fewer animals onto the operation, however, with more than one-third (39.4 percent) bringing on two to five swine. Almost one-third of medium and large operations brought on 10 or more swine (30.5 and 30.2 percent, respectively).

a. Percentage of operations by number of hogs or pigs brought onto the operation (temporarily or permanently) during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Number Brought On	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
0	26.0	(1.5)	46.5	(3.2)	39.5	(3.1)	30.5	(1.3)
1	7.1	(0.9)	6.2	(1.4)	9.0	(1.6)	7.2	(0.7)
2 to 5	39.4	(1.7)	12.8	(2.3)	17.5	(2.7)	33.1	(1.4)
6 to 9	13.3	(1.1)	4.0	(1.1)	3.8	(1.4)	10.8	(0.9)
10 or more	14.2	(1.1)	30.5	(2.9)	30.2	(3.1)	18.4	(1.0)
Total	100.0		100.0		100.0		100.0	

A higher percentage of operations in the South region than in other regions brought no pigs onto the operation during the previous 12 months (41.5 percent compared with a range of 21.3 to 30.7 percent). A higher percentage of operations in the Central region (29.6 percent) than in the West or South regions (12.0 and 9.4 percent, respectively) brought 10 or more pigs onto the operation during the previous 12 months.

b. Percentage of operations by number of hogs or pigs brought onto the operation (temporarily or permanently) during the previous 12 months, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Number Brought On	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	21.3	(1.6)	30.7	(2.7)	23.5	(3.2)	41.5	(2.6)
1	7.2	(1.0)	5.3	(1.1)	10.8	(2.4)	7.1	(1.4)
2 to 5	34.0	(2.0)	22.2	(2.5)	44.2	(4.0)	33.7	(2.7)
6 to 9	13.1	(1.4)	12.2	(2.0)	9.5	(2.4)	8.3	(1.6)
10 or more	24.4	(1.7)	29.6	(2.6)	12.0	(2.4)	9.4	(1.5)
Total	100.0		100.0		100.0		100.0	

More than three-fourths (78.8 percent) of small operations that brought swine onto the premises during the previous 12 months brought on weaned or feeder pigs. Of the large operations that brought swine onto the operation during the previous 12 months, about one-half brought on weaned market swine (48.5 percent of operations) or one or more boars for breeding (48.0 percent).

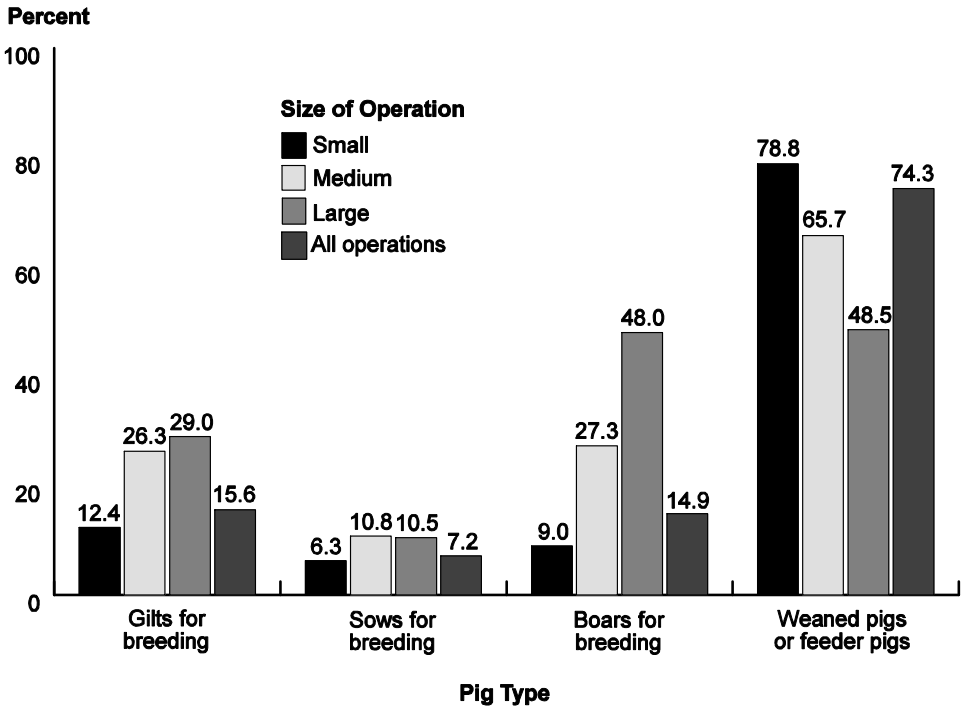
c. For operations that brought swine onto the operation (temporarily or permanently) during the previous 12 months, percentage of operations that brought on the following pig types, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	12.4	(1.4)	26.3	(3.9)	29.0	(4.0)	15.6	(1.2)
Sows for breeding	6.3	(1.0)	10.8	(3.1)	10.5	(2.9)	7.2	(0.9)
Boars for breeding	9.0	(1.1)	27.3	(3.7)	48.0	(4.4)	14.9	(1.1)
Weaned pigs or feeder pigs	78.8	(1.7)	65.7	(4.1)	48.5	(4.4)	74.3	(1.5)
Other	3.7	(0.8)	1.3	(0.5)	0.3	(0.3)	3.1	(0.7)

For Operations that Brought Swine onto the Operation (Temporarily or Permanently) During the Previous 12 Months, Percentage of Operations that Brought on the Following Pig Types, and by Size of Operation



A lower percentage of operations in the South region (62.0 percent) brought on weaned or feeder pigs than operations in other regions. Also, a higher percentage of operations in the South region brought on gilts for breeding than operations in other regions.

d. For operations that brought swine onto the operation (temporarily or permanently) during the previous 12 months, percentage of operations that brought on the following pig types, by region:

Percent Operations

	Region							
	Northeast		Central		West		South	
Pig Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Gilts for breeding	13.3	(1.5)	12.2	(2.2)	7.5	(2.0)	23.2	(3.0)
Sows for breeding	5.1	(1.1)	4.7	(1.8)	10.0	(2.5)	10.3	(2.2)
Boars for breeding	15.1	(1.6)	19.3	(2.9)	12.2	(2.7)	13.5	(2.1)
Weaned pigs or feeder pigs	81.0	(1.8)	78.0	(2.9)	78.5	(3.6)	62.0	(3.6)
Other	0.7	(0.4)	1.0	(0.5)	5.7	(2.4)	6.5	(1.9)

Nearly 9 of 10 pigs (89.1 percent) brought onto all operations during the previous 12 months were weaned or feeder pigs.

e. For operations that brought swine onto the operation (temporarily or permanently) during the previous 12 months, percentage of pigs brought onto the operation by pig type, and by size of operation:

Percent Pigs

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	6.1	(0.9)	3.4	(0.7)	3.2	(1.1)	4.4	(0.6)
Sows for breeding	4.6	(2.6)	1.5	(0.5)	0.9	(0.4)	2.6	(1.1)
Boars for breeding	2.3	(0.5)	1.4	(0.3)	1.8	(0.6)	1.9	(0.3)
Weaned pigs or feeder pigs	84.9	(2.7)	88.9	(3.5)	93.9	(1.8)	89.1	(1.7)
Other	2.1	(0.6)	4.8	(3.4)	0.2	(0.1)	2.0	(0.8)
Total	100.0		100.0		100.0		100.0	

A higher percentage of pigs brought onto operations in the South region (12.2 percent of pigs) than operations in other regions (2.6 to 3.2 percent) were gilts for breeding.

f. For operations that brought swine onto the operation (temporarily or permanently) during the previous 12 months, percentage of pigs brought onto the operation by pig type, by region:

Percent Pigs

Region

	Northeast		Central		West		South	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	2.9	(0.8)	2.6	(0.8)	3.2	(1.0)	12.2	(2.3)
Sows for breeding	3.1	(2.2)	0.7	(0.4)	4.2	(1.7)	3.5	(0.9)
Boars for breeding	1.3	(0.3)	2.4	(0.9)	2.4	(0.7)	3.1	(0.7)
Weaned pigs or feeder pigs	92.5	(2.5)	93.5	(1.6)	86.8	(3.4)	72.7	(4.9)
Other	0.2	(0.2)	0.8	(0.4)	3.4	(1.9)	8.5	(4.3)
Total	100.0		100.0		100.0		100.0	

2. Pigs removed from the operation

More than three-fourths of operations (78.7 percent) permanently removed at least one pig from the operation for commercial slaughter, slaughter for home consumption, or another reason during the previous 12 months. Almost three-fourths of small operations (74.9 percent) permanently removed at least one pig; most of the small operations (38.3 percent) removed two to five swine. The majority of large and medium operations permanently removed 10 or more pigs during the previous 12 months (83.1 and 76.5 percent, respectively).

a. Percentage of operations by number of hogs or pigs sold for commercial slaughter, slaughtered for home consumption, or permanently removed from the operation for another reason during the previous 12 months, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

Number Hogs and Pigs Removed	Small (1-24)		Medium (25-49)		Large (50-99)		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	25.1	(1.6)	12.1	(2.1)	8.2	(1.7)	21.3	(1.2)
1	5.2	(0.8)	0.6	(0.3)	0.3	(0.2)	4.0	(0.6)
2 to 5	38.3	(1.7)	4.4	(1.3)	5.6	(1.8)	29.7	(1.3)
6 to 9	12.8	(1.1)	6.4	(1.7)	2.8	(1.1)	10.8	(0.8)
10 or more	18.6	(1.2)	76.5	(2.7)	83.1	(2.6)	34.2	(1.2)
Total	100.0		100.0		100.0		100.0	

A higher percentage of operations permanently removed at least one pig during the previous 12 months in the Northeast and Central regions (88.5 and 86.0 percent, respectively) than in the West and South regions (74.1 and 66.9 percent, respectively). A higher percentage of operations permanently removed 10 or more swine in the Central and Northeast regions (52.1 and 40.6 percent, respectively) than in the South and West regions (24.0 and 21.1 percent, respectively).

b. Percentage of operations by number of hogs or pigs sold for commercial slaughter, slaughtered for home consumption, or permanently removed from the operation for another reason during the previous 12 months, by region:

Percent Operations

Region

	Northeast		Central		West		South	
Number Hogs and Pigs Removed	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
0	11.5	(1.4)	14.0	(1.9)	25.9	(3.6)	33.1	(2.6)
1	2.4	(0.6)	2.5	(0.9)	4.7	(1.7)	5.9	(1.5)
2 to 5	32.9	(2.0)	19.2	(2.3)	38.4	(4.0)	28.5	(2.5)
6 to 9	12.6	(1.4)	12.2	(1.9)	9.9	(2.4)	8.5	(1.4)
10 or more	40.6	(1.9)	52.1	(2.9)	21.1	(3.0)	24.0	(2.0)
Total	100.0		100.0		100.0		100.0	

Of all operations that permanently removed pigs, more than three-fourths of operations (77.1 percent) removed market-weight slaughter hogs. Culled breeding stock were removed on a higher percentage of large and medium operations (35.5 and 26.0 percent, respectively) than small operations (8.7 percent).

c. For operations that removed pigs* during the previous 12 months, percentage of operations by type of pig permanently removed, and by size of operation:

Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	12.3	(1.3)	13.9	(2.4)	14.5	(2.6)	12.8	(1.1)
Boars for breeding	6.1	(0.9)	11.2	(2.1)	13.4	(2.3)	7.9	(0.8)
Culled breeding stock (sows or boars)	8.7	(1.1)	26.0	(3.1)	35.5	(3.3)	15.0	(1.0)
Weaned pigs or feeder pigs	20.1	(1.6)	33.9	(3.3)	38.6	(3.3)	24.8	(1.3)
Market-weight slaughter hogs	75.9	(1.7)	80.9	(2.9)	79.0	(3.0)	77.1	(1.4)
Other	0.9	(0.4)	3.3	(1.2)	0.9	(0.8)	1.3	(0.3)

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

Of operations that removed pigs, a higher percentage of operations removed market-weight hogs in the Central and Northeast regions (90.5 and 84.3 percent, respectively) than in the West and South regions (67.4 and 63.3 percent, respectively). A higher percentage of operations sold or otherwise removed weaned or feeder pigs in the West and South regions (35.7 and 27.9 percent, respectively) than in the Central region (15.1 percent).

d. For operations that removed pigs* during the previous 12 months, percentage of operations by type of pig permanently removed, by region:

Percent Operations

Region

	Northeast		Central		West		South	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	6.8	(1.0)	12.9	(2.4)	10.2	(2.6)	21.6	(2.6)
Boars for breeding	6.8	(1.1)	6.9	(1.4)	6.4	(2.2)	10.4	(1.7)
Culled breeding stock (sows or boars)	14.2	(1.5)	14.4	(2.1)	19.9	(3.5)	15.1	(2.2)
Weaned pigs or feeder pigs	23.9	(1.8)	15.1	(2.3)	35.7	(4.4)	27.9	(2.8)
Market-weight slaughter hogs	84.3	(1.6)	90.5	(1.9)	67.4	(4.3)	63.3	(3.2)
Other	0.3	(0.2)	2.0	(0.9)	1.3	(1.0)	2.1	(0.9)

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

More than one-half of the pigs (56.2 percent) were removed as market-weight slaughter hogs, while nearly 4 of 10 pigs (37.1 percent) were weaned pigs or feeder pigs. There were few differences in type of pig permanently removed by operation size.

e. For operations that removed pigs* during the previous 12 months, percentage of pigs permanently removed from the operation by type of pig removed, and by size of operation:

Percent Pigs

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	3.7	(0.7)	1.8	(0.4)	1.4	(0.3)	2.3	(0.3)
Boars for breeding	1.3	(0.3)	0.8	(0.3)	0.5	(0.1)	0.8	(0.1)
Culled breeding stock (sows or boars)	4.6	(2.5)	2.2	(0.4)	2.4	(0.4)	3.1	(0.8)
Weaned pigs or feeder pigs	29.8	(5.8)	41.0	(5.2)	40.6	(4.1)	37.1	(2.9)
Market-weight slaughter hogs	60.4	(6.3)	52.3	(4.9)	55.1	(4.2)	56.2	(3.0)
Other	0.2	(0.1)	1.9	(1.4)	0.0	(0.0)	0.5	(0.4)
Total	100.0		100.0		100.0		100.0	

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

The percentage of removed pigs that were market-weight hogs ranged from 35.1 percent in the West region to 66.9 percent in the Central region.

f. For operations that removed pigs* during the previous 12 months, percentage of pigs permanently removed from the operation by type of pig removed, by region:

Percent Pigs

Region

	Northeast		Central		West		South	
Pig Type	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Gilts for breeding	1.1	(0.3)	1.6	(0.4)	3.1	(1.2)	5.9	(0.9)
Boars for breeding	0.7	(0.2)	0.3	(0.1)	0.8	(0.3)	1.9	(0.5)
Culled breeding stock (sows or boars)	1.8	(0.3)	1.9	(0.5)	3.1	(0.6)	8.0	(4.1)
Weaned pigs or feeder pigs	39.1	(5.0)	29.2	(5.5)	51.6	(6.9)	38.0	(4.1)
Market-weight slaughter hogs	57.3	(5.1)	66.9	(5.5)	35.1	(6.6)	45.6	(4.2)
Other	0.0	(0.0)	0.1	(0.0)	6.3	(5.8)	0.6	(0.3)
Total	100.0		100.0		100.0		100.0	

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

3. Destination of swine removed from the operation

Of the operations that permanently removed at least one pig during the previous 12 months, the highest percentage of operations slaughtered pigs for home consumption (54.0 percent). Similar percentages of all operations moved pigs to commercial slaughter (25.6 percent) and to custom slaughter (24.6 percent). A higher percentage of small operations than large operations slaughtered pigs for home consumption (56.6 and 43.9 percent, respectively) and sold pigs at a fair or show (26.8 and 10.3 percent, respectively). A higher percentage of large and medium operations moved pigs directly to commercial slaughter (42.0 and 34.1 percent, respectively) or sold pigs via auction (42.8 and 34.2 percent, respectively) than small operations (20.6 and 10.4 percent, respectively).

a. For operations that removed pigs* during the previous 12 months, percentage of operations that moved at least one pig to the following destinations, and by size of operation:

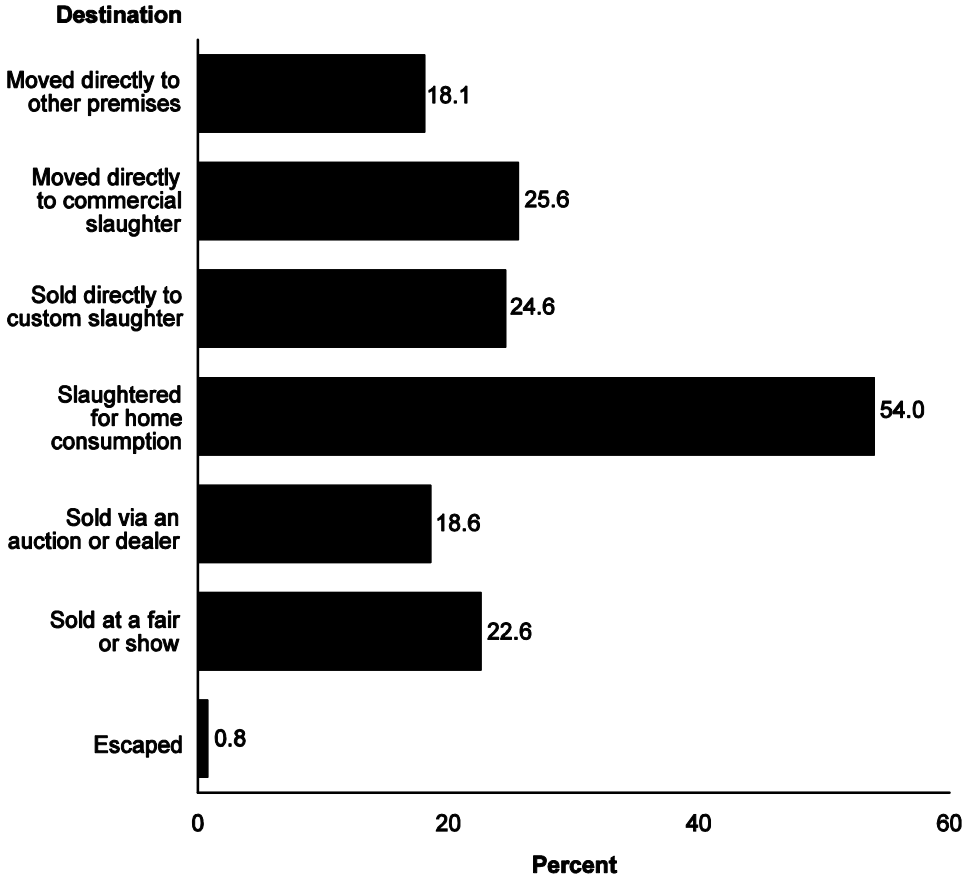
Percent Operations

Size of Operation (Peak Total Inventory)

	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Destination	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Moved directly to other premises (either part of this operation or sold to another producer)	13.5	(1.3)	32.0	(3.4)	25.8	(2.7)	18.1	(1.1)
Moved directly to commercial slaughter (e.g., commercial slaughterhouse)	20.6	(1.5)	34.1	(3.2)	42.0	(3.4)	25.6	(1.3)
Sold directly to custom slaughter (e.g., local butcher) for someone else	23.7	(1.6)	26.8	(2.9)	26.8	(2.8)	24.6	(1.3)
Slaughtered for home consumption	56.6	(1.9)	50.8	(3.5)	43.9	(3.4)	54.0	(1.5)
Sold via an auction or dealer	10.4	(1.1)	34.2	(3.4)	42.8	(3.5)	18.6	(1.2)
Sold at a fair or show	26.8	(1.7)	13.9	(2.4)	10.3	(1.8)	22.6	(1.3)
Escaped	1.0	(0.4)	0.6	(0.5)	0.5	(0.4)	0.8	(0.3)

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

For Operations that had at Least One Pig Sold for Commercial Slaughter, Slaughtered for Home Consumption, or Permanently Removed for Another Reason During the Previous 12 Months, Percentage of Operations Moving at Least One Pig to the Following Destinations



Of operations that permanently removed at least one pig during the previous 12 months, a higher percentage of operations in the Central region (35.3 percent) moved pigs directly to commercial slaughter than in the South or West regions (19.2 and 12.3 percent, respectively). A fair or show was a destination on a higher percentage of operations in the Northeast region (27.6 percent) than operations in the Central region (15.1 percent) or South region (18.1 percent).

b. For operations that removed pigs* during the previous 12 months, percentage of operations that moved at least one pig to the following destinations, by region:

Percent Operations

	Region							
	Northeast		Central		West		South	
Destination	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Moved directly to other premises (either part of this operation or sold to another producer)	16.6	(1.5)	13.3	(2.1)	19.3	(3.3)	22.3	(2.6)
Moved directly to commercial slaughter (e.g., commercial slaughterhouse)	29.5	(1.9)	35.3	(3.1)	12.3	(2.9)	19.2	(2.5)
Sold directly to custom slaughter (e.g., local butcher) for someone else	28.2	(1.9)	27.4	(2.9)	25.9	(4.1)	18.1	(2.3)
Slaughtered for home consumption	57.3	(2.1)	48.6	(3.3)	54.9	(4.5)	52.2	(3.2)
Sold via an auction or dealer	16.9	(1.6)	25.1	(3.0)	14.9	(3.1)	18.3	(2.3)
Sold at a fair or show	27.6	(1.9)	15.1	(2.1)	28.5	(4.2)	18.1	(2.8)
Escaped	0.3	(0.2)	0.0	(--)	1.5	(1.0)	1.8	(1.0)

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

The destination of the pigs removed varied with the type of pig being removed/ sold. More than one-half of weaned or feeder pigs moved went directly to other premises, either part of the responding operation or to another producer (51.7 percent of weaned or feeder pigs removed). Almost one-half of market-weight slaughter pigs moved directly to commercial slaughter (47.5 percent of market hogs). The highest percentage of culled breeding stock (39.1 percent) moved directly to custom slaughter, such as a local butcher.

c. For operations that removed pigs* during the previous 12 months, percentage of pigs removed from the operation during the previous 12 months, by destination and by pig type:

Percent Pigs

Pig Type

	Gilts for Breeding		Boars for Breeding		Culled Breeding Stock		Weaned or Feeder Pigs		Market-weight Slaughter Hogs		All Pig Types	
Destination	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
Moved directly to other premises (either part of this operation or sold to another producer)	28.1	(4.5)	28.3	(6.5)	5.5	(2.1)	51.7	(5.1)	5.7	(1.2)	23.8	(2.8)
Moved directly to commercial slaughter (e.g., commercial slaughterhouse)	16.3	(4.1)	10.2	(4.0)	18.9	(6.5)	6.9	(1.5)	47.5	(4.5)	30.6	(3.5)
Sold directly to custom slaughter (e.g., local butcher) for someone else	11.1	(4.1)	4.7	(2.2)	39.1	(16.9)	3.5	(1.3)	16.0	(2.0)	11.2	(1.2)
Slaughtered for home consumption	12.6	(2.5)	13.4	(3.6)	11.1	(3.4)	2.6	(0.5)	9.3	(1.0)	7.2	(0.6)
Sold via an auction or dealer	14.5	(3.3)	14.6	(4.8)	19.8	(6.0)	32.2	(4.4)	16.2	(2.2)	23.0	(2.2)
Sold at a fair or show	11.8	(3.4)	18.0	(7.6)	0.3	(0.2)	2.0	(0.5)	4.9	(0.7)	4.1	(0.5)
Escaped	1.0	(0.6)	0.0	(0.0)	0.0	(--)	0.0	(0.0)	0.1	(0.1)	0.1	(0.0)
Unknown destination	4.6	(1.4)	10.8	(5.9)	5.3	(2.1)	1.1	(0.5)	0.3	(0.1)	NA	
Total	100.0		100.0		100.0		100.0		100.0		100.0	

*Sold for commercial slaughter, slaughtered for home consumption, or permanently removed for another reason.

4. Pigs that left the operation and returned

The vast majority of operations (82.4 percent) did not have any pigs transported off the operation and then returned during the previous 12 months (e.g., going to a show or providing stud service to another operation). The percentage of operations that had any pigs transported off the operation and then returned did not differ substantially by size of operation.

a. Percentage of operations by number of times any pigs were transported off the operation and returned during the previous 12 months, and by size of operation:

Percent Operations

	Size of Operation (Peak Total Inventory)							
	Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Number Times	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**	**Pct.**	**Std. Error**
0	81.4	(1.4)	84.5	(2.3)	86.2	(2.4)	82.4	(1.1)
1	5.7	(0.8)	7.0	(1.7)	4.7	(1.6)	5.8	(0.7)
2	5.7	(0.9)	3.4	(1.0)	3.5	(1.4)	5.1	(0.7)
3 or more	7.2	(1.0)	5.1	(1.3)	5.6	(1.3)	6.7	(0.8)
Total	100.0		100.0		100.0		100.0	

A higher percentage of operations in the South region (12.6 percent) than in the Northeast or Central regions (3.1 and 2.5 percent, respectively) had any pigs transported off the operation and then returned on three or more occasions during the previous 12 months.

b. Percentage of operations by number of times any pigs were transported off the operation and returned during the previous 12 months, by region:

	Percent Operations							
	Region							
	Northeast		Central		West		South	
Number Times	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	86.0	(1.4)	87.0	(2.0)	85.7	(2.8)	75.9	(2.4)
1	6.7	(1.0)	6.2	(1.6)	5.1	(1.7)	4.8	(1.2)
2	4.2	(0.9)	4.3	(1.2)	4.0	(1.6)	6.7	(1.5)
3 or more	3.1	(0.6)	2.5	(0.8)	5.2	(1.8)	12.6	(1.9)
Total	100.0		100.0		100.0		100.0	

For operations that had any pigs transported off the operation and returned during the previous 12 months, pigs were transported off the operation and returned an average of 3.8 times per operation during the previous 12 months. The number of times any pigs left an operation and returned did not vary substantially by size of operation.

c. For operations that had any pigs transported off the operation and returned, average number of times pigs were transported off the operation and returned during the previous 12 months, and by size of operation:

Average Number of Times

Size of Operation (Peak Total Inventory)

Small (1-24)		**Medium** (25-49)		**Large** (50-99)		**All Operations**	
Avg.	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**
3.8	(0.7)	4.4	(0.9)	3.3	(0.4)	3.8	(0.6)

The number of times any pigs left an operation and returned during the previous 12 months varied by region. Operations in the South region had pigs transported off the operation and returned an average of 5.3 times, compared with 2.2 times for operations in the Northeast region and 1.9 times for operations in the Central region.

d. For operations that had any pigs transported off the operation and returned, average number of times pigs were transported off the operation and returned during the previous 12 months, by region:

Average Number of Times

Region

Northeast		**Central**		**West**		**South**	
Avg.	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**	**Avg.**	**Std. Error**
2.2	(0.2)	1.9	(0.2)	3.2	(0.6)	5.3	(1.1)

Section II: Methodology

A. Needs Assessment

The Small-Enterprise Swine 2007 study was conducted for two primary reasons:

1. to provide production and management population estimates for a previously unsurveyed segment of the swine industry—operations with fewer than 100 pigs onsite; and
2. to describe risks related to feral swine, including the reintroduction of pseudorabies and classical swine fever (CSF) into the overall national herd. Pseudorabies and CSF have many common risk factors, and exposure of small-enterprise herds to feral swine is an undocumented risk for reintroduction and transmission of these two diseases and possibly other foreign animal diseases.

During the initial consultation phase of the Small-Enterprise Swine 2007 study, study developers sought input from stakeholders regarding the critical swine production and health information needs of the small-enterprise segment of the swine industry. These stakeholders primarily included industry associations, researchers, and government agencies.

B. Sampling and Estimation

1. State selection

A goal for NAHMS national studies is to include States that represent at least 70 percent of the animal and producer populations in the United States. This study focused on operations with fewer than 100 pigs. Information from the National Agricultural Statistics Service (NASS) 2002 Census of Agriculture for number of operations with 99 or fewer hogs was used to select States. Thirty-one States representing 84.4 percent of the total number of operations with 99 or fewer hogs nationally at the time of the Census were selected. (See Appendix II for data on individual States.) These States were included primarily because of their geographic location, as well as potential risk for the two diseases identified in the needs assessment.

2. Operation selection

NASS maintains a list sampling frame for all hog operations based on best available information. Because the small-enterprise segment of the industry is always changing as producers go in and out of business and perhaps sell their entire inventory, a prescreening questionnaire was used on a relatively large sample.

NASS selected a stratified random sample of 8,038 operations for the prescreening, composed of independent and contract producers. Operations reporting no hogs, out of business, or peak inventory of more than 100 head during prescreening were not eligible for further study. Stratification was based on State and herd size.

3. Population inferences

Inferences cover the population of swine operations with fewer than 100 pigs in the 31 participating States. These States accounted for 84.4 percent of operations with fewer than 100 pigs and 88.3 percent of the U.S. pig inventory on operations with fewer than 100 pigs (based on 2002 Census data). All respondent data were statistically weighted to reflect the population from which they were selected. The inverse of the probability of selection for each operation was the initial selection weight. This selection weight was adjusted for nonresponse within each region and size group to allow for inferences back to the original population from which the sample was selected.

C. Data Collection

1. Prescreening

Selected operations were mailed a prescreening questionnaire in 2007 (May 14—first mailing; May 29—second mailing) to determine if they had any pigs from June 1, 2006, through May 31, 2007. Those who did not respond to this prescreening questionnaire received a computer-assisted telephone interview (CATI) followup call (June 11 to 29, 2007) to obtain the relevant inventory information.

2. General Swine Farm Report (GSFR)

Operations from the prescreening questionnaire with fewer than 100 pigs from June 1, 2006, through May 31, 2007, were eligible to be mailed a GSFR questionnaire. Respondents filled out the GSFR and mailed it back to NASS State offices, or NASS enumerators administered the GSFR questionnaire via CATI with each selected producer. The first mailing was on August 2 and the second on August 16, 2007. Phone followup was conducted August 30 through September 18, 2007.

D. Data Analysis

1. Validation and estimation

NASS performed initial data entry and validation. Data from mail-ins and CATI administration were entered into a SAS data set, and the edit and validation programs were executed. NAHMS staff performed additional data validation on the entire data set after data from all States were combined, and then used SUDAAN to complete the statistical estimation. SUDAAN uses a Taylor series expansion to estimate appropriate variances for the stratified/clustered, weighted data.

E. Sample Evaluation

1. Prescreening

Of the 8,038 records selected for prescreening, 2,567 operations (31.9 percent) were eligible for the next phase.

2. General Swine Farm Report

The purpose of this section is to provide various performance measurement parameters. Historically, the term “response rate” was used as a catchall parameter, but there are many ways to define and calculate response rates. Therefore, the table below presents an evaluation based upon a number of measurement parameters, which are defined with an “x” in those categories that contribute to the measurement. Of the 2,567 operations eligible for the GSFR, 2,050 (79.9 percent) provided usable inventory information. There were 1,778 operations, or 69.3 percent of the sample, that provided “complete” information for the questionnaire. About 9 of 10 eligible operations (88.4 percent) were actually contacted for the study.

Operation (site) level response:

			Evaluation Parameters	
Response Category	**Number Operations**	**Percent Operations**	**Contacts**	**Usable[1]**
Survey complete[2]	1,778	69.3	x	x
No hogs or pigs	272	10.6	x	x
Refusal of GSFR	219	8.5	x	
Inaccessible	294	11.4		
Office hold (NASS elected not to contact)	4	0.2		
Total	2,567	100.0	2,269	2,050
Percent of total operations			88.4	79.9
Percent of total operations weighted[3]			88.7	80.8

[1]Usable operation = respondent provided answers to inventory questions for the operation (either zero or positive number on hand June 1, 2006, through May 31, 2007).
[2]Survey complete operation = respondent provided answers to all or nearly all questions.
[3]Weighted response = the rate was calculated using the final adjusted weights.

Appendix I: Sample Profile

A. Responding Operations

1. Number of responding operations by total inventory

Size of Operation (Total Inventory on July 1)	Number Responding Operations
0	287
1 to 10	751
11 to 24	324
25 to 49	248
50 to 99	168
Total	1,778

2. Number of responding operations by region

Region	Number Responding Operations
Northeast	702
Central	352
West	193
South	531
Total	1,778

3. Sow inventory

Size of Operation (Total Sows and Gilts)	Number Responding Operations
No sows or gilts on July 1, 2007	945
1 to 3	317
4 to 9	322
10 or more	194
Total	1,778

4. Weaned pig inventory

Size of Operation (Total Weaned Pigs)	**Number Responding Operations**
No weaned pigs on July 1, 2007	598
1 to 5	502
6 to 12	308
13 or more	370
Total	1,778

5. Number of operations by mode of data collection

Data Collection Mode	**Number Responding Operations**
Mail	891
CATI	837
Other	50
Total	1,778

Appendix II: U.S. Swine Population and Operations

		2002 Census of Agriculture				June 1, 2007, Inventory and 2006 Operations			
		Number of Hogs and Pigs (1,000 Head)		Number of Farms		Number of Hogs and Pigs (1,000 Head)		Number of Operations	
Region	**State**	**All Farms**	**Farms with 1-99 Head**	**All Farms with 1 or More Head**	**Farms with 1-99 Head**	**All Opera-tions**	**Opera-tions with 1-99 Head[1]**	**All Opera-tions**	**Opera-tions with 1-99 Head**
Northeast	Illinois	4,095	35.8	3,929	1,288	4,000	20.0	2,900	820
	Indiana	3,479	40.5	4,087	1,758	3,350	30.2	2,800	1,300
	Michigan	927	25.9	2,180	1,626	1,030	15.5	2,100	1,540
	New Jersey	14	2.2	357	332	NA	NA	300	NA
	New York	82	15.6	1,527	1,458	NA	NA	1,200	NA
	Ohio	1,423	54.0	4,286	2,921	1,670	83.5	4,000	2,700
	Pennsylvania	1,227	39.6	3,825	2,938	1,120	33.6	3,200	2,400
	Wisconsin	535	39.1	2,993	2,252	410	28.7	2,200	1,540
	Total	**11,782**	**252.7**	**23,184**	**14,573**	**--**	**--**	**18,700**	**--**
Central	Iowa	15,487	47.9	10,205	1,550	18,200	54.6	8,700	1,030
	Kansas	1,521	18.4	1,648	1,077	1,900	13.3	1,400	860
	Minnesota	6,440	41.0	5,628	1,934	7,000	35.0	4,800	1,200
	Missouri	2,910	43.5	3,449	1,997	3,050	30.5	2,000	930
	Nebraska	2,934	31.4	3,075	961	3,150	22.1	2,500	800
	South Dakota	1,376	19.2	1,506	581	1,290	12.9	1,100	370
	Total	**30,668**	**201.4**	**25,511**	**8,100**	**34,590**	**168.4**	**20,500**	**5,190**
West	Arizona	D	D	208	202	NA	NA	150	NA
	California	163	15.9	1,521	1,426	NA	NA	800	NA
	Colorado	783	10.4	989	791	840	5.9	800	740
	Hawaii	23	3.0	204	154	NA	NA	230	NA
	New Mexico	3	2.1	346	337	NA	NA	350	NA
	Washington	30	7.7	961	911	NA	NA	900	NA
	Total	**1,002[2]**	**39.1[2]**	**4,229**	**3,821**	**--**	**--**	**3,230**	**--**

		2002 Census of Agriculture				June 1, 2007, Inventory and 2006 Operations			
		Number of Hogs and Pigs (1,000 Head)		Number of Farms		Number of Hogs and Pigs (1,000 Head)		Number of Operations	
Region	State	All Farms	Farms with 1-99 Head	All Farms with 1 or More Head	Farms with 1-99 Head	All Opera-tions	Opera-tions with 1-99 Head[1]	All Opera-tions	Opera-tions with 1-99 Head
South	Alabama	168	6.4	576	491	NA	NA	450	NA
	Arkansas	306	9.7	846	683	290	8.7	750	600
	Florida	33	20.0	1,471	1,416	NA	NA	1,100	NA
	Georgia	348	17.9	1,148	900	NA	NA	700	NA
	Louisiana	18	6.3	680	651	NA	NA	600	NA
	Mississippi	302	6.5	692	628	NA	NA	1,000	NA
	North Carolina	9,887	15.2	2,542	959	9,700	9.7	2,300	790
	Oklahoma	2,247	25.3	2,491	2,297	2,320	23.2	2,600	2,300
	South Carolina	292	13.9	900	765	NA	NA	1,100	NA
	Tennessee	231	17.7	1,491	1,302	NA	NA	1,100	NA
	Texas	953	52.6	4,671	4,457	1,000	30.0	3,700	3,532
	Total	**14,785**	**191.5**	**17,508**	**14,549**	**--**	**--**	**15,400**	**--**
Total (31 States)		58,237[2] (96.4% of U.S.)	684.7[2] (88.3% of U.S.)	70,432 (89.3% of U.S.)	41,043 (84.4% of U.S.)	--	--	57,830 (87.7% of U.S.)	--
Total U.S. (50 States)		60,405	775.2	78,895	48,635	63,951	639.5	65,940	39,882

[1]Derived from published percentages in NASS Farm, Land in Farms, and Livestock Operations 2007 Summary, February 2008.
[2]Excludes Arizona.
D = Withheld to avoid disclosing data for individual farms.

Source: NASS.

Appendix III: Study Objectives

1. Describe swine health management practices related to disease prevention and mortality

2. Describe biosecurity practices in use

3. Establish a baseline for small-enterprise production practices