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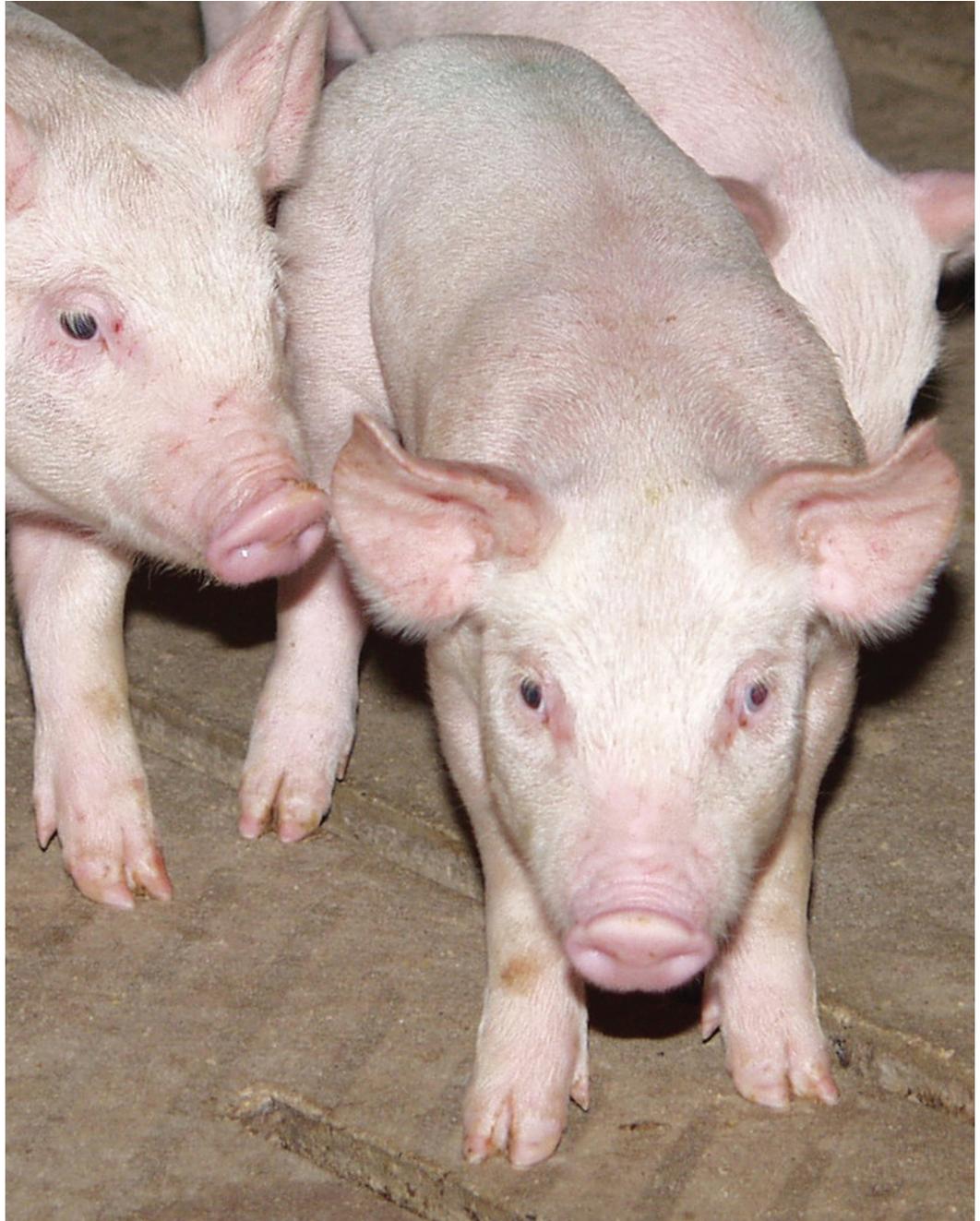
National
Animal Health
Monitoring
System

January 2015

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Swine 2012

Part I: Baseline Reference of Swine Health and Management in the United States, 2012



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Items of Note

Population

The NAHMS Swine 2012 study updates national estimates on the management and productivity of U.S. swine previously collected during the NAHMS Swine 2006 study. One component of the Swine 2012 study was conducted on operations that had 100 or more swine in total inventory on June 1, 2012, and were located in one of 13 States. This report provides national estimates for this population, which includes swine production sites of all types. More than three-fourths of sites had no breeding animals (weaned pigs only), primarily either a grower/finisher unit (42.7 percent) or wean-to-finish unit (19.9 percent). Fewer than 20 percent of sites had a breeding herd with gestation and farrowing.

Breeding herd

Sows and gilts were mated almost exclusively via artificial insemination, with less than 3 percent of either serviced via pen mating. Over 93 percent of sows and gilts serviced in large breeding herds received two or more matings.

Over 97 percent of sows and gilts were housed in gestation facilities with no outside access, and 75.8 percent of all gestating sows and gilts were housed in individual stalls.

Overall, 11.3 piglets were born per litter, of which 10.3 were born alive and 9.4 were weaned; large breeding herds had substantially more pigs born alive per litter and weaned more pigs per litter than medium and small sites. Site average weaning age was 20.8 days.

Nursery phase

Over 99 percent of nursery pigs were housed in facilities with no outside access. Overall, 3.6 percent of weaned pigs that entered a nursery phase died. Nursery pigs originated from different sources, including on-site farrowing (34.0 percent), other sites belonging to the operation (35.0 percent), or other sites not belonging to the operation (29.5 percent).

Grower/finisher phase

Over 99 percent of grower/finisher pigs were housed in facilities with no outside access. Over 96 percent of grower/finisher pigs were managed in an all-in/all-out manner. For pigs that entered the grower/finisher phase, 4.1 percent died. Unlike the nursery sites, the majority of pigs entering the grower/finisher phase came from other sites that belonged to the operation.

Wean-to-finish phase

Almost one-fourth of all sites had a wean-to-finish phase. Over 98 percent of wean-to-finish pigs were housed in facilities with no outside access. Over 98 percent of pigs in the wean-to-finish phase were managed all-in/all-out. Nearly 95 percent of sites with a wean-to-finish phase sourced their pigs off-site, and over 93 percent of those sites used only one off-site source.

Biosecurity

Almost one-fourth of all sites permitted nonbusiness visitors to enter swine facilities, and the majority of those sites required nonbusiness visitors to change into clean boots and coveralls before entering swine areas; nonbusiness visitors were also asked to wait 24 hours after visiting another swine operation before entering the swine area.

More than half of sites with dead preweaned pigs composted them, with the majority of sites doing so on-site. Almost half of sites with weaned-pig deaths composted the carcasses.

More than 80 percent of medium and large sites required employees to change into clean boots and coveralls before entering swine facilities. More than half of large sites required employees to shower before entering swine facilities.

Overall, 95.0 percent of all swine sites used bait or poison for rodent control. Over 15 percent of sites were in a county where feral swine were present.

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All participants are to be commended, particularly the swine producers whose voluntary efforts made the Swine 2012 study possible.

A handwritten signature in cursive script that reads "Bruce Wagner".

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Director
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Feedback:

Feedback, comments, and suggestions regarding Swine 2012 study reports are welcomed. You may submit feedback via online survey at: <http://www.aphis.usda.gov/nahms> (Click on "FEEDBACK on NAHMS reports.")

Introduction

The National Animal Health Monitoring System (NAHMS) is a nonregulatory program of the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service. NAHMS is designed to help meet the Nation's animal-health information needs and has collected data on animal health, productivity, and management practices on U.S. swine operations in five previous studies.

The 1990 National Swine Survey was NAHMS first national study of the U.S. swine industry and provided a snapshot of animal health and management that would serve as a baseline from which to measure industry changes in animal health and management. NAHMS conducted the 1990 National Swine Survey in 18 States, with a target population of operations with at least 1 sow. The States represented 95 percent of the U.S. swine population. National estimates generated from this study are reported in "Morbidity/Mortality and Health Management of Swine in the United States" (November 1991).

Swine '95 was conducted in 16 States, representing 91 percent of the U.S. swine population. The target population for the first phase of Swine '95 was producers with at least one pig. National estimates generated from this study are reported in "Part I: Reference of 1995 Swine Management Practices" (October 1995). The second phase of Swine '95 was conducted on sites with at least 300 market pigs. National estimates generated from this phase of the study are reported in "Part II: Reference of 1995 Grower/Finisher Health and Management" (May 1996).

Swine 2000 was designed to provide both participants and the industry with information on the U.S. swine herd on operations with 100 or more pigs. The National Agricultural Statistics Service (NASS) collaborated with Veterinary Services to select a producer sample statistically designed to provide inferences to the Nation's swine populations on operations with 100 or more pigs. Included in the study were 17 of the major pork-producing States, which accounted for 94 percent of the U.S. pig inventory and 92 percent of U.S. pork producers with 100 or more pigs. Results from this study are reported in "Part I: Reference of Swine Health and Management, 2000" (August 2001); "Part II: Reference of Swine Health and Management, 2000" (March 2002); "Part III: Reference of Swine Health and Environmental Management, 2000" (September 2002); and "Part IV: Changes in the U.S. Pork Industry, 1990–2000" (November 2008).

Swine 2006 used a study design similar to that used for the Swine 2000 study. Seventeen States participated in the Swine 2006 study, accounting for 94 percent of U.S. swine operations and inventory on operations with 100 or more pigs. As with Swine 2000, the Swine 2006 sample referred to the population of operations with 100 or more pigs in 17 selected States. Results from this study are reported in "Part I: Reference of Swine Health and Management, 2006" (October 2007); "Part II: Reference of Swine Health and

Management, 2006” (December 2007); “Part III: Reference of Swine Health, Productivity, and General Management in the United States, 2006” (March 2008); and “Part IV: Changes in the U.S. Pork Industry, 1990-2006” (November 2008).

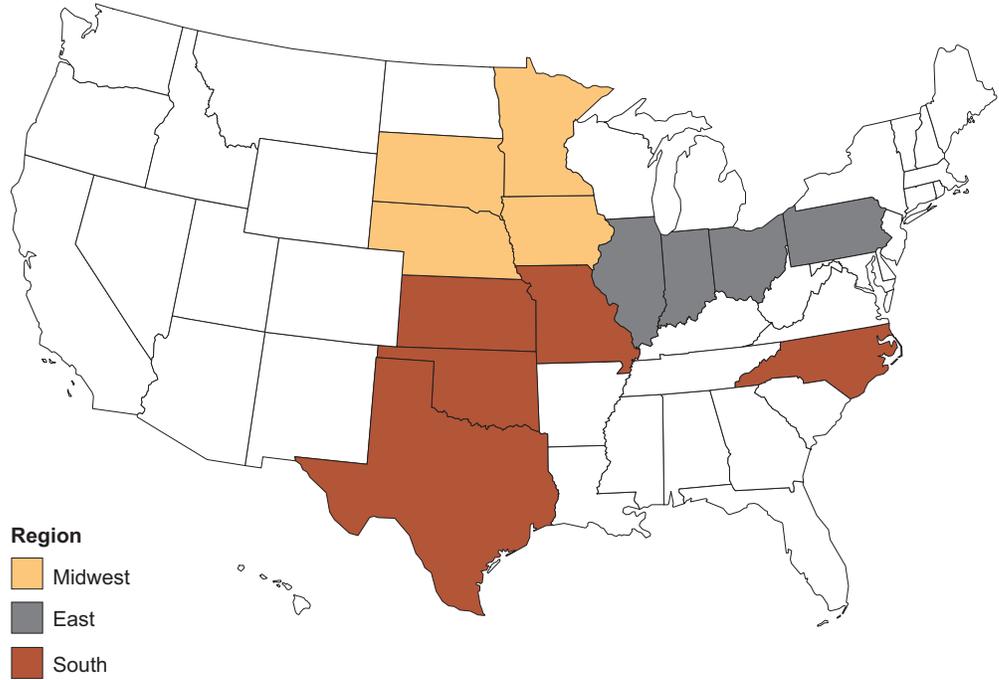
The Small-Enterprise Swine 2007 study described the health and management practices on operations with fewer than 100 pigs. The study covered States that had participated in previous national swine studies plus States considered at risk for exposure to feral swine, and transmission of classical swine fever and pseudorabies. The information gathered in this study provided a more complete picture of small-enterprise swine operations and the risk of introduction of these diseases. 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, according to the 2002 Census of Agriculture.

Swine 2012 comprises two concurrent studies. The core study targeted operations with 100 or more pigs in 13 States (see map on next page). A random sample of 4,600 operations was selected to participate in phase 1 of the study. The questionnaire used in phase 1 had two versions and was administered from July 16 through August 15, 2012. The full version was completed during on-farm interviews, and a shorter version was administered via computer-assisted telephone interview. Producers that completed phase I, either by phone or interview, were asked to continue with phase II of the study. The questionnaire used in phase II was administered by State and Federal veterinarians from September 5 through November 17, 2012. Phase II respondents also had the opportunity to participate in the collection of feed, feces, or blood for diagnostic testing and analysis. This report presents results from phase 1 of the study (NASS data collection).

A small-enterprise swine study was conducted concurrently with the core NAHMS Swine 2012 study. This study targeted operations with fewer than 100 pigs in 31 selected States. A random sample of 2,000 operations was selected for participation from July 17 through September 15, 2012. NASS mailed the questionnaire and then followed-up with nonrespondents via telephone interview. Results from the 2012 small-enterprise swine study are presented in “Reference of Management Practices on Small-enterprise Swine Operations in the United States, 2012.”

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

Swine 2012 Participating States



Terms Used in This Report

All-in/all-out: A management approach in which animals are moved as a group, allowing a facility to be completely empty for a time. Usually, all-in/all-out management also includes complete cleaning and disinfecting of the facility before it is refilled with animals. A facility may be a room, a building, or an entire site.

Artificial insemination: The deliberate introduction via catheter of boar semen into the oviduct or uterus of a sow/gilt.

Hand-mating: Term used when females are individually selected for breeding with a specific boar. Both sow and boar are placed in the same pen, and a stockperson might have to help with the physical aspects of mating.

Operation: The overall business and top-level management unit for a swine farm, which might consist of one or more sites. An operation can encompass all production phases of swine rearing (e.g., gestation, farrowing, nursery, and grower/finisher) on one or more sites (geographic locations), each devoted to a different production phase or a combination of phases (see site definition on next page).

Pen-mating: One or more boars are placed in a pen with one or more breeding females for natural breeding.

Percent animals: The number of animals with a certain attribute divided by the total number of animals on all sites. In some cases, it is assumed that the attribute applies to all animals on the site. The number of animals is defined in each table and may include total inventory, sow inventory, number of pigs that entered the nursery, or other specific pig groups. The percent-animals estimates primarily reflect larger sites, which have the majority of pigs.

Percent sites: The number of sites with a certain attribute divided by the total number of sites. Percentages will sum to 100 where the attributes are mutually exclusive (i.e., percentage of sites located within each region). Percentages will not sum to 100 where the attributes are not mutually exclusive (i.e., the percentage of sites using treatment methods where sites may have used more than one method). The percent-sites estimates primarily reflect smaller sites, since they make up the majority of sites.

Pig-level average: A single site value multiplied by the number of animals on that site; then values are summed across sites and divided by total number of animals on all sites (see table B.7.a).

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. For example, 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). 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 (—).

Production phases:

Farrowing: Production phase with sows or gilts designated for breeding that farrow (gave birth to a litter of piglets).

Gestation: Production phase with sows or gilts designated for breeding that service (breed) and/or farrow sows and gilts.

Grower/Finisher: Production phase in which pigs are fed-out from approximately 60 lb to final market weight for slaughter.

Nursery: Production phase in which newly weaned pigs are managed, fed, and housed until they go into the grower/finisher phase (at approximately 60 lb).

Wean-to-finish: Specialized production site that receives newly weaned pigs that are managed, fed, and housed to final market weight for slaughter.

Regions:

Midwest: Iowa, Minnesota, Nebraska, South Dakota

East: Illinois, Indiana, Ohio, Pennsylvania

South: Kansas, Missouri, North Carolina, Oklahoma, Texas

Sample profile: Information that describes characteristics of the operations from which Swine 2012 data were collected.

Separate site: This term can mean that a facility is at a completely separate geographic location or in the same location but physically separated (no livestock runways or paths joining to other production facilities). It also might be managed as its own site, with separate procedures, biosecurity measures, and workers.

Site: One geographic location or address that functions as a unit to produce one or more production phases in swine rearing. An example would be a gestation/farrowing site or a nursery site. A site can encompass more than one production phase, such as a “farrow-to-finish” site, which has gestation, farrowing, nursery, and grower/finisher pigs at one location. A site can be a part of an operation or it can be the whole operation, if the operation has only one site (see operation definition on previous page).

Site Average: The average value for each site summed over all sites reporting and divided by the number of sites reporting.

Size of site: Size groupings are based on total number of swine present on June 1, 2012. Size of site was categorized as small (fewer than 2,000), medium (2,000 to 4,999), and large (5,000 or more).

For tables relating to breeding herds, size of site was based on the number of sows and gilts on-site: small (fewer than 250), medium (250 to 499), and large (500 or more).

Total inventory: All swine present on-site on June 1, 2012.

Section I: Population Estimates

Note: Where appropriate, column totals are shown as 100.0 to aid in interpretation; however, estimates may not sum to 100.0 due to rounding.

A. Sow and Gilt Management

1. Production phases

More than half of sites (56.0 percent) had a grower/finisher phase, and almost one-fourth (24.4 percent) had a wean-to-finish phase. Many sites had a combination of these production phases (table A.1.c).

A.1.a. Percentage of sites by production phase and by size of site:

Production phase	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Gestation	33.2	(2.3)	8.1	(1.7)	23.3	(6.2)	21.1	(2.6)
Farrowing	32.7	(2.3)	8.0	(1.7)	23.3	(6.2)	20.8	(2.6)
Nursery	28.4	(2.4)	14.9	(3.1)	25.5	(7.7)	22.3	(3.0)
Grower/finisher	51.3	(3.4)	60.5	(6.8)	56.3	(10.9)	56.0	(5.3)
Wean-to-finish	25.0	(3.2)	27.7	(6.3)	15.4	(5.4)	24.4	(4.2)

In the South region, only 5.7 percent of sites had a wean-to-finish phase compared with 31.9 percent of sites in the Midwest region.

A.1.b. Percentage of sites by production phase and by region:

Production phase	Percent Sites					
	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Gestation	17.5	(1.9)	22.8	(7.7)	28.0	(6.2)
Farrowing	17.2	(1.9)	22.6	(7.6)	27.8	(6.2)
Nursery	21.7	(2.6)	17.3	(5.9)	32.4	(6.5)
Grower/finisher	52.6	(4.4)	64.0	(12.5)	51.7	(6.5)
Wean-to-finish	31.9	(4.9)	23.4	(8.8)	5.7	(2.0)

Small sites are less likely to use multisite production; therefore, a higher percentage of small sites had both sows and market pigs compared with medium and large sites. As shown in A.1.a, 56.0 percent of all sites had a grower/finisher phase. Of this 56.0 percent, 42.7 percent had a grower/finisher phase only. So more than three-fourths of sites with a grower/finisher phase (76.2 percent) had no other production phases.

A.1.c. Percentage of sites by combination of production phases and by size of site:

Production phase combination	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Single-site production								
Gestation, farrowing, nursery and grower/finisher	9.8	(0.9)	2.4	(0.5)	5.9	(1.8)	6.0	(0.9)
Gestation and farrowing and wean-to-finish	8.4	(0.8)	0.4	(0.1)	1.0	(0.4)	3.8	(0.6)
Multiple-site production								
Gestation and farrowing only	7.4	(0.8)	4.7	(1.3)	14.6	(4.7)	7.5	(1.2)
Gestation, farrowing, and nursery	3.0	(0.4)	0.6	(0.2)	0.9	(0.4)	1.6	(0.3)
Nursery and grower/finisher only	6.9	(0.8)	5.2	(1.1)	4.0	(1.3)	5.7	(0.8)
Nursery only	7.7	(2.0)	6.4	(2.7)	13.6	(6.6)	8.2	(2.3)
Grower/finisher only	31.9	(3.6)	52.3	(7.6)	45.3	(12.5)	42.7	(6.4)
Wean-to-finish only	15.9	(3.3)	26.7	(6.2)	13.2	(5.2)	19.9	(4.0)
Other combination	9.1	(0.9)	1.4	(0.4)	1.4	(0.5)	4.5	(0.7)
Total	100.0		100.0		100.0		100.0	

B. Breeding Herd Management and Productivity

1. Sites with breeding herd

A higher percentage small sites had a breeding herd compared with medium and large sites.

B.1.a. Percentage of sites with a breeding herd (gestation and/or farrowing phase) from December 1, 2011, through May 31, 2012, by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
33.2	(2.3)	8.1	(1.7)	23.3	(6.2)	21.1	(2.6)

Note: Tables B.1.b. through B.3.i. refer to breeding herds on the 21.1 percent of sites that had a breeding herd from December 1, 2011, through May 31, 2012.

B.1.b. Percentage of breeding herds by size of herd:

Percent Breeding Herds						
Herd Size (number of sows and gilts)						
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
57.6	(3.0)	6.8	(0.9)	35.6	(3.3)	100.0

2. Replacement gilts and new boars

Just over 40 percent of small breeding herds (40.9 percent) did not introduce any new gilts from December 1, 2011, through May 31, 2012. Almost one-third of small breeding herds (32.5 percent) introduced 1 to 20 new gilts, whereas almost two-thirds of large breeding herds (64.9 percent) introduced more than 300 new gilts. Over 7 percent of large breeding herds were closed to replacement gilts.

B.2.a. Percentage of breeding herds by the number of replacement gilts introduced,* and by size of herd:

Percent Breeding Herds								
Herd size (number sows and gilts)								
Number gilts introduced	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
No replacement gilts introduced	40.9	(2.1)	3.5	(2.1)	7.2	(2.3)	26.3	(1.9)
1–20	32.5	(2.0)	7.0	(2.8)	0.0	(—)	19.1	(1.5)
21–60	22.6	(1.7)	43.1	(6.1)	1.9	(0.7)	16.6	(1.4)
61–300	3.9	(0.9)	46.4	(6.3)	26.0	(4.3)	14.7	(1.4)
301 or more	0.0	(—)	0.0	(—)	64.9	(5.5)	23.3	(4.0)
Total	100.0		100.0		100.0		100.0	

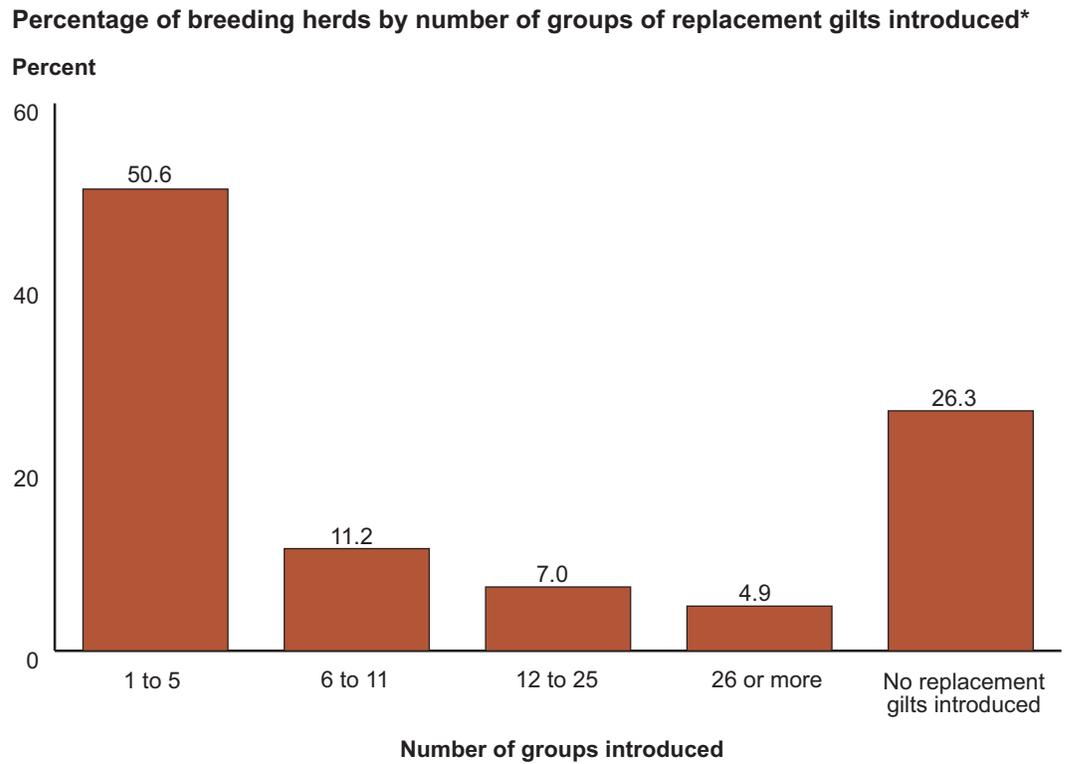
*From December 1, 2011, through May 31, 2012.

More than 30 percent of large breeding herds introduced 12 or more groups of new gilts, indicating that a new group was introduced at least every 2 weeks. More than half of small and medium breeding herds (53.2 and 68.2 percent, respectively) introduced only 1 to 5 groups of new gilts, for an average of less than one new group per month.

B.2.b. Percentage of breeding herds by number of groups of replacement gilts introduced,* and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Number of groups introduced	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1–5	53.2	(2.1)	68.2	(6.4)	43.1	(6.3)	50.6	(2.5)
6–11	4.2	(0.9)	27.1	(6.4)	19.5	(4.1)	11.2	(1.5)
12–25	1.6	(0.5)	1.2	(1.0)	16.7	(5.3)	7.0	(2.1)
26 or more	0.1	(0.1)	0.0	(—)	13.6	(3.5)	4.9	(1.2)
No replacement gilts introduced	40.9	(2.1)	3.5	(2.1)	7.2	(2.3)	26.3	(1.9)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.



*From December 1, 2011, through May 31, 2012.

The average age of replacement gilts entering the breeding herd was similar across all herd sizes.

B.2.c. Average age of replacement gilts (in weeks), by stage of entry into breeding herd and by size of herd:

Average Age (weeks)								
Herd Size (number sows and gilts)								
Stage of entry	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Designated or selected to be part of the breeding herd	22.6	(0.5)	23.5	(1.4)	24.2	(1.0)	23.4	(0.5)
Introduced into the breeding herd (commingled with sows)	31.1	(0.6)	32.1	(0.9)	31.5	(0.4)	31.3	(0.3)

On the majority of breeding herds (55.3 percent), replacement gilts came from a parent herd. Almost 90 percent of small breeding herds (89.4 percent) used replacement gilts from a parent herd or a commercial herd (as terminal cross females). More than one-fourth of medium and large breeding herds (28.7 and 26.3 percent, respectively) used replacement gilts from grandparent herds compared with less than one-tenth of small breeding herds (9.3 percent).

B.2.d. For breeding herds that introduced replacement gilts,¹ percentage of **herds** by source of gilts and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Source of gilts	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Terminal cross females from commercial herd	28.8	(3.7)	29.4	(5.6)	19.0	(3.4)	22.7	(2.6)
Parent herd ²	60.6	(4.0)	42.1	(6.3)	55.6	(6.9)	55.3	(4.5)
Grandparent herd	9.3	(2.4)	28.7	(6.7)	26.3	(5.1)	22.2	(3.2)
Great-grandparent herd	4.0	(1.6)	3.4	(2.1)	7.0	(2.0)	5.8	(1.3)
Other	6.5	(2.0)	4.5	(2.4)	5.6	(1.6)	5.7	(1.1)

¹ From December 1, 2011, through May 31, 2012.

²The commercial tier in the breeding pyramid that crosses parent boar and gilt lines to produce terminal stock, i.e., market hogs intended for slaughter.

Over 70 percent of all replacement gilts introduced to breeding herds were from a parent herd, and over 15 percent were from a grandparent herd.

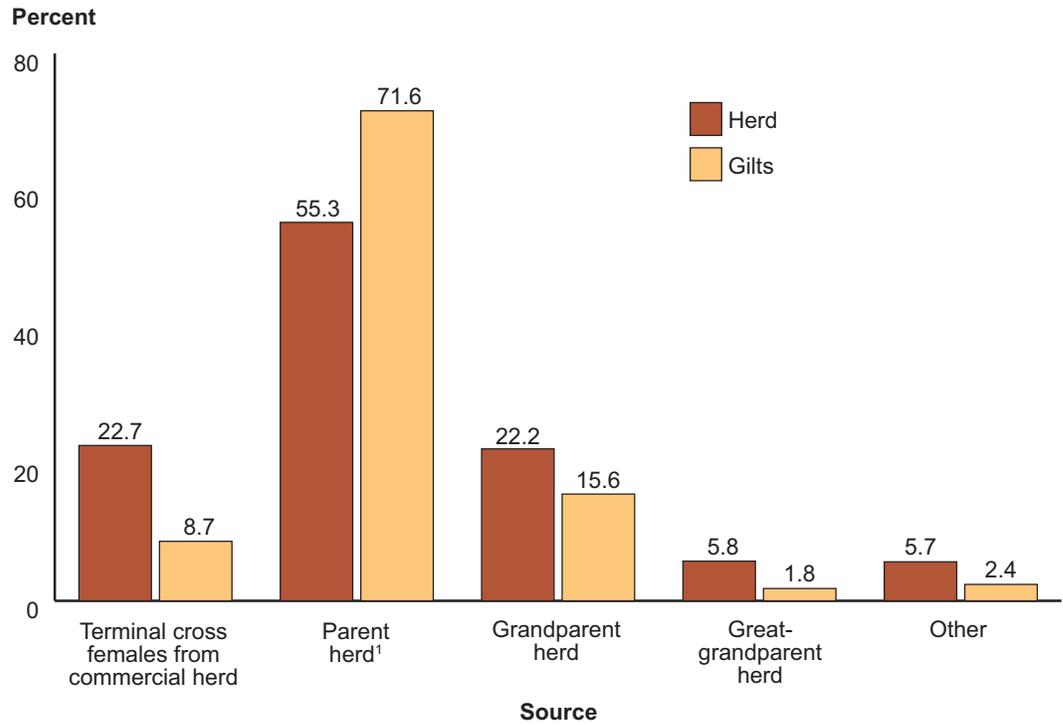
B.2.e. Percentage of **replacement gilts** introduced to the breeding herd,¹ by source of gilts:

Percent Gilts								
Herd Size (number sows and gilts)								
Source of gilts	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Terminal cross females from commercial herd	33.8	(6.2)	25.5	(6.8)	7.9	(3.1)	8.7	(3.2)
Parent herd ²	49.5	(6.4)	39.8	(8.4)	72.6	(10.3)	71.6	(10.2)
Grandparent herd	6.4	(2.7)	28.6	(9.8)	15.5	(6.3)	15.6	(6.1)
Great-grandparent herd	1.5	(0.7)	1.5	(1.0)	1.8	(0.8)	1.8	(0.8)
Other	8.8	(5.8)	4.6	(3.0)	2.2	(1.1)	2.4	(1.1)
Total	100.0		100.0		100.0		100.0	

¹ From December 1, 2011, through May 31, 2012.

²The commercial tier in the breeding pyramid that crosses parent boar and gilt lines to produce terminal stock, i.e., market hogs intended for slaughter.

For breeding herds that introduced replacement gilts,* percentage of herds and percentage of gilts introduced, by source of gilts



*From December 1, 2011, through May 31, 2012.

¹The commercial tier in the breeding pyramid that crosses parent boar and gilt lines to produce terminal stock, i.e., market hogs intended for slaughter.

B.2.f. Percentage of breeding herds that added new breeding males,* by size of site:

Percent Breeding Herds							
Herd Size (number of sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
27.2	(1.9)	37.1	(5.7)	30.6	(9.2)	29.1	(3.5)

*From December 1, 2011, through May 31, 2012.

B.2.g. For breeding herds that introduced new breeding males,* percentage of herds by frequency that new breeding **males** were typically isolated or quarantined, and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Frequency	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Always	58.6	(4.0)	84.5	(6.5)	68.0	(13.9)	64.4	(5.7)
Sometimes	13.1	(2.7)	7.3	(4.4)	0.0	(—)	7.7	(1.9)
Never	28.3	(3.7)	8.2	(5.1)	32.0	(13.9)	27.9	(5.7)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

B.2.h. For breeding herds that always or sometimes isolated new breeding males, herd average number of days new breeding **males** were isolated or quarantined, by size of site:

Breeding Herd Average Number of Days							
Herd Size (number sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
33.9	(1.6)	37.1	(5.0)	44.5	(3.5)	38.1	(2.3)

B.2.i. For breeding herds that introduced new breeding males,* percentage of herds that tested new breeding **males** for disease before introduction to the herd, by proportion of new males tested and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Proportion of new males tested	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
All	33.3	(3.7)	51.5	(9.3)	50.3	(15.7)	41.3	(5.9)
Some	6.3	(2.0)	11.7	(5.8)	44.2	(16.7)	21.0	(8.9)
None	60.5	(3.9)	36.8	(8.7)	5.6	(3.7)	37.7	(6.5)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

In general, a higher percentage of large breeding herds made an effort to acclimate new breeding animals compared with small and medium herds. For example, 46.5 and 55.0 percent of large herds fed back feces to new breeding stock or exposed them to cull females, respectively, compared with 18.3 and 28.1 percent of medium herds and 11.0 and 28.9 percent of small herds, respectively.

B.2.j. For breeding herds that introduced new breeding stock,* percentage of herds by method used to acclimate new arrivals, and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Method	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Fed back feces from other swine	11.0	(2.2)	18.3	(4.6)	46.5	(7.8)	32.8	(5.6)
Fed back mummies, placentas, or stillborn pigs	2.5	(1.0)	8.6	(3.6)	22.3	(5.2)	14.9	(3.3)
Expose to cull females	28.9	(3.2)	28.1	(5.5)	55.0	(5.5)	44.2	(3.7)
Expose to sick pigs	6.5	(1.6)	6.1	(2.7)	14.7	(5.2)	11.3	(3.2)
Give vaccinations	53.8	(3.6)	79.9	(4.4)	88.2	(2.5)	76.9	(2.5)
Other	8.0	(2.0)	4.0	(1.9)	2.2	(0.8)	4.1	(0.9)

*From December 1, 2011, through May 31, 2012.

3. Breeding methods

Over 93 percent of sows serviced on large breeding herds received two or more matings, and less than 1 percent were pen-mated only. On small and medium herds, about 30 and 20 percent of sows, respectively, were serviced via pen-mating. For all sows serviced, less than 2 percent were serviced via pen-mating only. Sows were mated almost exclusively via artificial insemination.

B.3.a. Percentage of **sows** serviced,¹ by number of matings per service² and by size of herd:

Percent Sows								
Herd Size (number sows and gilts)								
Number of matings	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Pen-mating only	30.0	(4.4)	19.6	(8.2)	0.8	(0.5)	1.7	(0.6)
1	11.0	(2.7)	9.2	(3.5)	6.2	(0.9)	6.4	(0.9)
2	53.6	(4.4)	58.5	(7.8)	81.4	(4.3)	80.4	(4.1)
3 or more	5.4	(1.6)	12.8	(3.7)	11.7	(4.4)	11.6	(4.3)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²A service is one or more matings in the same heat cycle or estrus period.

Almost half of sows serviced (48.1 percent) received three or more matings via artificial insemination.

B.3.b. For breeding herds that did not use pen-mating exclusively, percentage of **sows** serviced,* by predominant mating technique used for first, second, and third or more matings:

Mating technique	Percent Sows					
	First mating		Second mating		Third or more matings	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Artificial insemination	98.5	(0.4)	98.1	(0.4)	48.1	(7.8)
Individual hand-mating naturally	0.5	(0.2)	0.6	(0.2)	0.3	(0.2)
Pen-mating with multiple females and one or more boars	1.0	(0.3)	0.8	(0.3)	0.9	(0.4)
NA	0.0	(—)	0.5	(0.2)	50.7	(7.8)
Total	100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

B.3.c. For breeding herds that used a second mating for **sows**, percentage of herds and percentage of sows serviced,* by predominant mating technique used for first and second matings:

Mating technique		Percent breeding herd		Percent sows	
First mating	Second mating	Pct.	Std. error	Pct.	Std. error
Artificial insemination	Artificial insemination	88.4	(1.9)	98.4	(0.4)
Artificial insemination	Hand-mating	0.8	(0.4)	0.0	(0.0)
Artificial insemination	Pen-mating	0.9	(0.4)	0.1	(0.1)
Hand-mating	Artificial insemination	0.5	(0.3)	0.0	(0.0)
Hand-mating	Hand-mating	3.8	(0.9)	0.5	(0.2)
Pen-mating	Any other technique	5.7	(1.3)	1.0	(0.3)
Total		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

B.3.d. For breeding herds that did not use pen-mating exclusively, percentage of herds that used artificial insemination as a predominant mating technique during at least one mating, by size of herd:

Percent Breeding Herds							
Herd Size (number sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
66.9	(4.4)	81.2	(4.9)	94.7	(1.4)	87.2	(1.9)

In total, 93.1 percent of gilts serviced on large breeding herds received two or more matings. Less than 2 percent of gilts were pen-mated only. On small and medium herds, over one-third of gilts were serviced via pen-mating. For all gilts serviced, less than 3 percent were serviced by pen-mating only. Gilts were mated almost exclusively via artificial insemination (table B.3.f).

B.3.e. Percentage of **gilts** serviced,* by number of matings per service and by size of herd:

Percent Gilts								
Herd Size (number sows and gilts)								
Number of matings	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Pen-mating only	34.9	(5.4)	35.9	(11.2)	1.8	(1.3)	2.7	(1.5)
1	9.3	(2.7)	7.3	(3.4)	5.1	(2.0)	5.2	(2.0)
2	50.3	(5.5)	43.7	(8.6)	88.3	(4.9)	87.2	(5.1)
3 or more	5.6	(2.2)	13.1	(5.4)	4.8	(3.0)	4.9	(2.9)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

Only one-fourth of gilts serviced (25.3 percent) received three or more matings via artificial insemination.

B.3.f. For sites that did not use pen-mating exclusively, percentage of **gilts** serviced,* by predominant mating technique used for first, second, and third or more matings:

Mating technique	Percent Gilts					
	First mating		Second mating		Third or more matings	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Artificial insemination	97.6	(1.1)	98.3	(0.8)	25.3	(10.9)
Individual hand-mating naturally	1.2	(0.7)	0.4	(0.2)	0.1	(0.1)
Pen-mating with multiple females and one or more boars	1.2	(0.6)	1.0	(0.5)	0.5	(0.3)
NA (second or third mating not used)	0.0	(—)	0.3	(0.2)	74.1	(11.1)
Total	100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

B.3.g. For breeding herds that used a second mating for **gilts**, percentage of herds and percentage of gilts serviced,* by predominant mating technique used during first and second matings:

Mating technique		Percent herds		Percent gilts	
First mating	Second mating	Pct.	Std. error	Pct.	Std. error
Artificial insemination	Artificial insemination	85.6	(2.5)	97.6	(1.1)
Artificial insemination	Hand-mating	0.5	(0.3)	0.0	(0.0)
Artificial insemination	Pen-mating	0.4	(0.3)	0.0	(0.0)
Hand-mating	Artificial insemination	2.1	(1.1)	0.8	(0.6)
Hand-mating	Hand-mating	4.9	(1.1)	0.4	(0.2)
Pen-mating	Any other technique	6.5	(1.5)	1.2	(0.6)
Total		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

B.3.h. For breeding herds that did not use pen-mating exclusively, percentage of herds that used AI as a predominant mating technique for **gilts** during at least one mating, by size of site:

Percent Breeding Herds							
Herd Size (number sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
55.8	(5.4)	78.3	(5.7)	95.1	(1.3)	86.3	(2.1)

The majority of small and medium breeding herds (84.5 and 91.6 percent, respectively) purchased semen for inseminating sows and gilts. Over 40 percent of large herds collected semen off-site from their own boars. One-fourth of small herds collected semen on-site from their own boars. Note: columns do not add to 100 percent because producers could have used more than one source for semen.

B.3.i. For breeding herds that used artificial insemination, percentage of herds by source of semen and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Semen source	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Purchased	84.5	(4.3)	91.6	(4.4)	55.5	(8.6)	63.5	(7.3)
Collected and processed on-site	25.6	(4.8)	16.4	(5.7)	6.8	(1.6)	10.8	(1.8)
Collected and processed off-site, but not purchased	3.9	(2.5)	5.6	(3.5)	43.3	(8.7)	33.5	(7.6)

4. Gestation housing and pig flow

B.4.a. Percentage of sites that had a gestation phase,* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
33.2	(2.3)	8.1	(1.7)	23.3	(6.2)	21.1	(2.6)

*From December 1, 2011, through May 31, 2012.

Note: Tables B.4.b. through B.4.i. refer to breeding herds on the 21.1 percent of sites that had a gestation phase from December 1, 2011, through May 31, 2012.

Facility types used for gestating sows and gilts differed by size of breeding herd. A total of 98.4 percent of large herds housed gestation sows and gilts in total confinement or in buildings with no outside access compared with 82.1 and 39.7 percent of medium and small herds, respectively. Over 40 percent of small herds housed gestating sows and gilts in open buildings with outdoor access, and almost 20 percent housed gestation sows and gilts in a lot or pasture.

B.4.b. Percentage of breeding herds by facility type used for the gestation phase, and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Facility type	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	14.0	(1.4)	43.4	(6.1)	76.8	(5.0)	38.6	(2.5)
Open building with natural ventilation and no outside access	25.7	(1.8)	38.7	(5.8)	21.6	(5.0)	25.1	(2.1)
Open building with outside access	41.7	(2.0)	15.1	(5.8)	1.0	(0.5)	25.2	(1.8)
Lot with hut or no building	11.0	(1.3)	1.7	(1.5)	0.3	(0.3)	6.5	(0.8)
Pasture with hut or no building	7.6	(1.1)	1.1	(0.9)	0.3	(0.3)	4.6	(0.7)
Total	100.0		100.0		100.0		100.0	

Over 97 percent of all sows and gilts were housed in gestation facilities with no outside access, although only about half the sows and gilts on small breeding herds were housed in such facilities.

B.4.c. Percentage of sows and gilts by facility type used in the gestation phase, and by size of breeding herd:

Percent Sows and Gilts								
Herd Size (number sows and gilts)								
	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Facility type	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	18.3	(2.4)	44.2	(7.6)	79.4	(8.0)	76.7	(7.5)
Open building with natural ventilation and no outside access	30.6	(2.8)	36.7	(6.7)	20.0	(8.0)	20.7	(7.6)
Open building with outside access	37.6	(2.9)	16.3	(8.5)	0.4	(0.2)	2.0	(0.4)
Lot with hut or no building	9.0	(1.5)	2.1	(1.9)	0.0	(0.0)	0.4	(0.1)
Pasture with hut or no building	4.6	(1.0)	0.7	(0.6)	0.1	(0.1)	0.3	(0.1)
Total	100.0		100.0		100.0		100.0	

For gestation facilities with no outside access, partial slats was the flooring type used by the highest percentage of breeding herds (53.4 percent), followed by complete slats (38.1 percent). For open buildings with outside access, solid surface was the flooring type used by the majority of herds (70.9 percent), followed by dirt/pasture (22.6 percent).

B.4.d. Percentage of breeding herds by flooring type used in the gestation phase, and by type of facility:

Flooring type	Percent Breeding Herds							
	Facility Type							
	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Solid surface	8.0	(1.5)	70.9	(5.0)	0.0	(—)	16.1	(2.0)
Partial slats	53.4	(4.2)	5.6	(2.6)	0.0	(—)	44.6	(3.7)
Completely slatted	38.1	(4.1)	0.9	(0.8)	0.0	(—)	31.4	(3.5)
Mesh	0.3	(0.1)	0.0	(—)	0.0	(—)	0.2	(0.1)
Dirt/pasture	0.0	(—)	22.6	(4.5)	100.0	(—)	7.5	(1.2)
Other	0.2	(0.2)	0.0	(—)	0.0	(—)	0.2	(0.1)
Total	100.0		100.0		100.0		100.0	

For the 76.0 percent of breeding herds that used partially or completely slatted floors in the gestation phase (see previous table), 98.0 percent used concrete for slatted flooring materials.

B.4.e. Percentage of breeding herds by slatted flooring material used in the gestation phase, and by type of facility:

Percent Breeding Herds								
Facility Type								
Slatted flooring material	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Concrete	89.9	(1.7)	5.6	(2.6)	0.0	(—)	74.5	(2.7)
Metal	0.8	(0.3)	0.0	(—)	0.0	(—)	0.6	(0.3)
Plastic	0.9	(0.5)	0.9	(0.8)	0.0	(—)	0.9	(0.4)
Mesh or solid floor	8.5	(1.5)	93.5	(2.7)	100.0	(—)	24.0	(2.6)
Total	100.0		100.0		100.0		100.0	

The percentage of breeding herds that housed gestating sows and gilts in individual housing increased as herd size increased. Over three-fourths of the large breeding herds (76.6 percent) used individual housing for gestating sows and gilts, while 69.2 percent of small breeding herds used group housing for gestating sows and gilts.

B.4.f. Percentage of sites by primary type of housing used for the majority of sows and gilts in the gestation phase, and by size of site:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Housing type	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Individual	14.1	(1.4)	49.3	(6.2)	76.6	(4.9)	38.9	(2.5)
Group	69.2	(1.9)	48.0	(6.2)	22.5	(4.9)	51.0	(2.3)
Other	16.7	(1.6)	2.7	(1.7)	0.9	(0.5)	10.1	(1.1)
Total	100.0		100.0		100.0		100.0	

Just over three-fourths of all gestating sows and gilts (75.8 percent) were housed in individual stalls.

B.4.g. Percentage of sows and gilts by type of housing used for sows and gilts in the gestation phase, and by type of facility:

Percent Sows and Gilts								
Facility Type								
Housing type	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Individual	77.6	(8.9)	14.2	(6.7)	0.4	(0.3)	75.8	(8.6)
Group	22.0	(9.0)	76.3	(6.8)	70.2	(7.6)	23.4	(8.6)
Other	0.4	(0.2)	9.5	(2.7)	29.4	(7.5)	0.8	(0.3)
Total	100.0		100.0		100.0		100.0	

More than half of all breeding herds (52.0 percent) had gestation facilities with a pit-holding waste management system compared with 36.1 percent of small herds.

B.4.h. Percentage of breeding herds by primary waste management system used in the gestation facility, and by size of herd:

Percent Breeding Herds									
Herd Size (number sows and gilts)									
Waste management system	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites		
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	
None	10.0	(2.1)	3.6	(2.2)	0.7	(0.6)	3.9	(0.8)	
Pit-holding	36.1	(3.4)	64.1	(6.6)	58.4	(6.2)	52.0	(3.7)	
Mechanical scraper/tractor	27.5	(3.3)	13.3	(6.3)	2.3	(0.6)	11.2	(1.6)	
Hand-cleaned	12.1	(2.3)	4.7	(2.4)	0.0	(—)	4.2	(0.9)	
Flush, under slats	4.6	(1.4)	7.9	(2.5)	35.0	(6.7)	22.9	(4.7)	
Flush, open gutter	2.2	(1.0)	1.7	(1.5)	2.4	(1.2)	2.3	(0.8)	
Other	7.6	(1.9)	4.7	(2.3)	1.2	(0.5)	3.5	(0.8)	
Total	100.0		100.0		100.0		100.0		

More than half of breeding herds in the South region used flush under slats to manage waste.

B.4.i. Percentage of breeding herds by primary waste management system used in the gestation facility, and by region:

Percent Breeding Herds						
Waste management system	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	2.6	(1.1)	3.4	(1.3)	6.2	(2.4)
Pit-holding	52.7	(3.6)	69.5	(3.5)	34.2	(9.5)
Mechanical scraper/tractor	17.8	(2.6)	7.8	(2.1)	4.7	(2.0)
Hand-cleaned	5.9	(1.5)	5.1	(1.6)	0.8	(0.7)
Flush, under slats	13.0	(3.2)	8.0	(1.8)	52.0	(10.4)
Flush, open gutter	2.9	(1.4)	1.5	(1.5)	2.1	(1.1)
Other	5.1	(1.3)	4.7	(1.6)	0.0	(—)
Total	100.0		100.0		100.0	

A total of 73.7 percent of all breeding herds had a continuous flow of pigs in gestation; 9.1 percent practiced all-in/all-out management by room; and 9.0 percent practiced all-in/all-out management by building.

B.4.j. Percentage of breeding herds by pig-flow management used in the gestation phase, and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Pig-flow management	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	65.2	(2.0)	71.6	(5.2)	87.5	(2.3)	73.7	(1.8)
All swine removed without cleaning and disinfecting room	5.2	(0.9)	3.2	(1.9)	0.9	(0.5)	3.5	(0.6)
All-in/all-out by room	9.1	(1.2)	15.3	(3.9)	7.9	(1.7)	9.1	(1.0)
All-in/all-out by building	13.3	(1.4)	5.5	(2.5)	2.7	(0.9)	9.0	(1.0)
All-in/all-out by site	1.2	(0.4)	1.6	(1.4)	0.6	(0.4)	1.0	(0.3)
NA	6.0	(1.0)	2.8	(1.8)	0.3	(0.3)	3.8	(0.6)
Total	100.0		100.0		100.0		100.0	

Over 90 percent of all sows and gilts were in continuous flow gestation facilities.

B.4.k. Percentage of sows and gilts by pig-flow management used for sows and gilts in the gestation phase, and by herd size:

Percent Sows and Gilts								
Herd Size (number sows and gilts)								
Pig-flow management	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	68.7	(2.8)	74.1	(5.7)	92.4	(2.0)	91.2	(2.0)
All swine removed without cleaning and disinfecting	3.6	(0.9)	2.9	(2.0)	0.5	(0.4)	0.7	(0.4)
All-in/all-out by room	11.0	(2.1)	13.4	(4.1)	5.3	(1.6)	5.6	(1.5)
All-in/all-out by building	10.6	(1.9)	5.3	(2.6)	0.9	(0.3)	1.3	(0.4)
All-in/all-out by site	2.0	(0.9)	1.6	(1.5)	0.9	(0.7)	0.9	(0.7)
NA	4.2	(1.0)	2.8	(2.0)	0.0	(—)	0.2	(0.1)
Total	100.0		100.0		100.0		100.0	

5. Farrowing housing and pig flow

B.5.a. Percentage of sites with a farrowing phase* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
32.7	(2.3)	8.0	(1.7)	23.3	(6.2)	20.8	(2.6)

*From December 1, 2011, through May 31, 2012.

Note: Tables B.5.b. through B.5.i. refer to breeding herds on the 20.8 percent of sites that had a farrowing phase from December 1, 2011, through May 31, 2012.

Overall, 85.7 percent of breeding herds farrowed sows in indoor facilities only. This percentage increased to over 95 percent for medium and large herds. Almost one-fourth of small herds had farrowing facilities with some outdoor access.

B.5.b. Percentage of breeding herds by facility type used for sows and gilts in the farrowing phase, and by size of site:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Facility type	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	58.8	(2.1)	81.3	(4.6)	90.4	(5.3)	71.8	(2.1)
Open building with natural ventilation and no outside access	17.0	(1.6)	14.0	(4.0)	9.0	(5.3)	13.9	(2.0)
Open building with outside access	15.1	(1.6)	4.8	(2.4)	0.2	(0.2)	9.0	(1.0)
Lot with hut or no building	3.3	(0.8)	0.0	(—)	0.0	(—)	1.9	(0.4)
Pasture with hut or no building	5.8	(1.0)	0.0	(—)	0.3	(0.3)	3.4	(0.6)
Total	100.0		100.0		100.0		100.0	

Almost all sows and gilts (98.9 percent) farrowed in facilities with no outside access.

B.5.c. Percentage of sows and gilts by facility type used for sows and gilts in the farrowing phase, and by size of site:

Percent Sows and Gilts								
Herd Size (number sows and gilts)								
Facility type	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	71.0	(2.4)	81.7	(4.9)	89.6	(7.5)	88.6	(6.9)
Open building with natural ventilation and no outside access	12.5	(1.7)	13.5	(4.3)	10.1	(7.5)	10.3	(7.0)
Open building with outside access	9.4	(1.4)	4.8	(2.6)	0.1	(0.1)	0.6	(0.1)
Lot with hut or no building	3.5	(1.2)	0.0	(—)	0.0	(—)	0.2	(0.1)
Pasture with hut or no building	3.7	(0.9)	0.0	(—)	0.3	(0.3)	0.4	(0.2)
Total	100.0		100.0		100.0		100.0	

Mesh was the flooring type used by the highest percentages of breeding herd sites with a farrowing phase, regardless of facility type, although more than one-quarter of herds were in farrowing facilities with completely slatted flooring.

B.5.d. Percentage of breeding herds by primary flooring type used for sows and gilts in the farrowing phase, and by type of facility:

Flooring type	Percent Breeding Herds							
	Facility Type							
	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Solid surface	4.1	(1.0)	30.8	(5.7)	14.4	(6.8)	8.2	(1.3)
Partial slats	5.5	(1.1)	3.7	(1.9)	0.0	(—)	5.0	(0.9)
Completely slatted	27.6	(3.8)	19.3	(4.2)	15.2	(6.4)	25.9	(3.2)
Mesh	60.6	(4.0)	39.1	(6.0)	24.8	(7.8)	56.0	(3.5)
Dirt/pasture	0.0	(—)	5.7	(2.5)	45.6	(9.1)	2.8	(0.7)
Other	2.2	(1.6)	1.4	(1.2)	0.0	(—)	2.0	(1.3)
Total	100.0		100.0		100.0		100.0	

For the 30.9 percent of breeding herds that used farrowing facilities with partially or completely slatted floors (see table B.5.d), about half (50.2 percent=15.5/30.9) used metal for slatted flooring material .

B.5.e. Percentage of breeding herds by primary slatted flooring material used for sows and gilts in the farrowing phase, and by type of facility:

Slatted flooring material	Percent Breeding Herds							
	Facility Type							
	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Concrete	5.8	(1.1)	2.3	(1.5)	4.3	(3.7)	5.3	(1.0)
Metal	16.4	(3.9)	13.1	(3.6)	6.1	(3.6)	15.5	(3.2)
Plastic	9.6	(1.5)	5.4	(2.3)	4.9	(4.3)	8.8	(1.3)
Wood	0.3	(0.3)	0.0	(—)	0.0	(—)	0.2	(0.2)
Other	1.0	(0.4)	2.1	(1.3)	0.0	(—)	1.1	(0.4)
Mesh or solid floor	66.9	(3.8)	77.0	(4.5)	84.8	(6.4)	69.1	(3.2)
Total	100.0		100.0		100.0		100.0	

Almost 90 percent of breeding herds with a farrowing phase (88.1 percent) used individual housing for farrowing sows. Almost 15 percent of small sites (14.5 percent) used pen farrowing.

B.5.f. Percentage of breeding herds by primary type of housing used for sows and gilts in the farrowing phase, and by size of site:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Housing type	Small		Medium		Large		All sites	
	(fewer than 250)		(250–499)		(500 or more)			
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Individual	79.8	(1.7)	100.0	(—)	99.0	(0.5)	88.1	(1.2)
Group	14.5	(1.5)	0.0	(—)	1.0	(0.5)	8.6	(1.0)
Other	5.7	(1.0)	0.0	(—)	0.0	(—)	3.3	(0.6)
Total	100.0		100.0		100.0		100.0	

Nearly all sows and gilts (98.6 percent) farrowed in individual housing.

B.5.g. Percentage of sows and gilts in the farrowing phase by primary housing type used for sows and gilts, and by type of facility:

Percent Sows and Gilts								
Facility Type								
Housing type	No outside access		Open building with outside access		Lot or pasture		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Individual	99.4	(0.4)	80.6	(4.3)	55.6	(14.4)	98.6	(0.5)
Group	0.5	(0.4)	13.9	(3.8)	35.8	(16.2)	1.2	(0.5)
Other	0.0	(0.0)	5.5	(2.3)	8.6	(3.6)	0.2	(0.1)
Total	100.0		100.0		100.0		100.0	

Almost half of breeding herds (49.1 percent) used a pit-holding waste management system in farrowing facilities. Similar percentages of small breeding herds used mechanical scraper/tractor, hand-cleaned, or flushed, under slats. A substantial percentage of medium and large breeding herds used flush under slats.

B.5.h. Percentage of breeding herds primary waste management system used in the farrowing facility, and by size of herd:

Percent Breeding Herds								
Herd Size (number of sows and gilts)								
Waste management system	Small (fewer than 250)		Medium (250-499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	5.0	(1.5)	0.0	(—)	0.0	(—)	1.5	(0.5)
Pit-holding	45.4	(3.6)	54.3	(6.3)	50.1	(5.8)	49.1	(3.6)
Mechanical scraper/tractor	14.9	(2.7)	12.0	(3.9)	1.8	(0.9)	6.9	(1.2)
Hand-cleaned	14.9	(2.6)	1.2	(1.0)	0.3	(0.3)	4.9	(0.9)
Flush, under slats	15.6	(2.6)	27.7	(5.6)	44.8	(6.1)	33.9	(4.2)
Flush, open gutter	1.9	(0.9)	4.8	(3.1)	1.7	(0.9)	2.0	(0.7)
Other	2.4	(1.3)	0.0	(—)	1.3	(0.5)	1.5	(0.5)
Total	100.0		100.0		100.0		100.0	

Over half of breeding herds in South region (58.4 percent) used a flush, under slats waste management system in farrowing facilities. A higher percentage of herds in the Midwest and East regions used pit-holding systems (49.5 and 65.3 percent, respectively) compared with breeding herds in the South region (32.9 percent).

B.5.i. Percentage of breeding herds by primary waste management system used in the farrowing facility, and by region:

Waste management system	Percent Sites					
	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	0.4	(0.4)	1.3	(0.8)	3.5	(1.6)
Pit-holding	49.5	(3.7)	65.3	(3.8)	32.9	(9.5)
Mechanical scraper/tractor	12.3	(2.2)	3.3	(1.3)	2.6	(1.3)
Hand cleaned	6.9	(1.6)	4.9	(1.6)	2.1	(1.2)
Flush, under slats	25.6	(3.5)	21.4	(3.3)	58.4	(9.8)
Flush, open gutter	2.2	(1.0)	3.3	(1.7)	0.6	(0.6)
Other	3.1	(1.0)	0.7	(0.6)	0.0	(—)
Total	100.0		100.0		100.0	

A relatively small percentage of breeding herds (27.9 percent) used continuous-flow management in farrowing facilities; small herds accounted for the highest percentage of herds that used continuous-flow management. Over 80 percent of large herds used all-in/all-out by room management, and more than one-fourth of small and medium herds used all-in/all-out by building.

B.5.j. Percentage of breeding herds by pig-flow management used in the farrowing phase, and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Pig-flow management								
Continuous flow	38.4	(2.0)	20.7	(5.9)	12.5	(2.5)	27.9	(2.0)
All swine removed without cleaning and disinfecting room	4.3	(0.8)	2.6	(1.5)	0.4	(0.3)	2.8	(0.5)
All-in/all-out by room	25.4	(1.8)	46.7	(6.0)	81.5	(3.3)	47.0	(2.9)
All-in/all-out by building	25.7	(1.8)	28.3	(5.4)	4.2	(1.3)	18.2	(1.5)
All-in/all-out by site	2.2	(0.6)	1.8	(1.6)	1.0	(0.5)	1.7	(0.4)
NA	4.0	(0.8)	0.0	(—)	0.4	(0.3)	2.4	(0.5)
Total	100.0		100.0		100.0		100.0	

Only 12.0 percent of sows and gilts in the farrowing phase were in continuous-flow facilities. Over 80 percent of sows and gilts were in facilities managed all-in/all-out by room.

B.5.k. Percentage of sows and gilts by pig-flow management used in the farrowing phase, and by size of herd:

Percent Sows and Gilts								
Herd Size (number sows and gilts)								
Pig-flow management	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	33.7	(2.6)	23.2	(7.4)	10.6	(3.1)	12.0	(3.0)
All swine removed without cleaning and disinfecting room	3.9	(1.0)	2.0	(1.3)	0.2	(0.1)	0.4	(0.2)
All-in/all-out by room	32.1	(2.8)	46.4	(7.0)	83.6	(4.3)	80.4	(4.2)
All-in/all-out by building	25.6	(2.5)	26.9	(5.6)	4.7	(2.9)	6.2	(2.7)
All-in/all-out by site	1.6	(0.6)	1.5	(1.4)	0.8	(0.5)	0.9	(0.5)
NA	3.0	(0.8)	0.0	(—)	0.0	(—)	0.1	(0.0)
Total	100.0		100.0		100.0		100.0	

6. Farrowing productivity and preweaning death loss

The average number of litters per sow per year increased as herd size increased.

B.6.a. Breeding herd average litters per sow, per year, by size of herd:

Herd Average Litters per Sow per Year							
Herd Size (number sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
No.	Std. error	No.	Std. error	No.	Std. error	No.	Std. error
2.1	(0.0)	2.3	(0.0)	2.4	(0.0)	2.2	(0.0)

Overall, 11.3 piglets were born per litter, of which 10.3 were born alive and 9.3 were weaned.

B.6.b. Average per litter productivity¹:

Average Per Litter Productivity				
Measure (per litter)	Number	Std. error	Percent²	Std. error
Stillbirths and mummies	1.0	(0.0)	8.6	(0.2)
Born alive	10.3	(0.2)	91.4	(0.2)
Total born	11.2	(0.2)	100.0	(0.0)
Preweaning deaths	1.0	(0.1)	9.7	(0.6)
Weaned	9.3	(0.1)	90.3	(0.6)
Total born alive	10.3	(0.2)	100.0	(0.0)

¹From December 1, 2011, through May 31, 2012.

²Estimated percentages shown differ from percentages calculated from estimates in number column due to rounding.

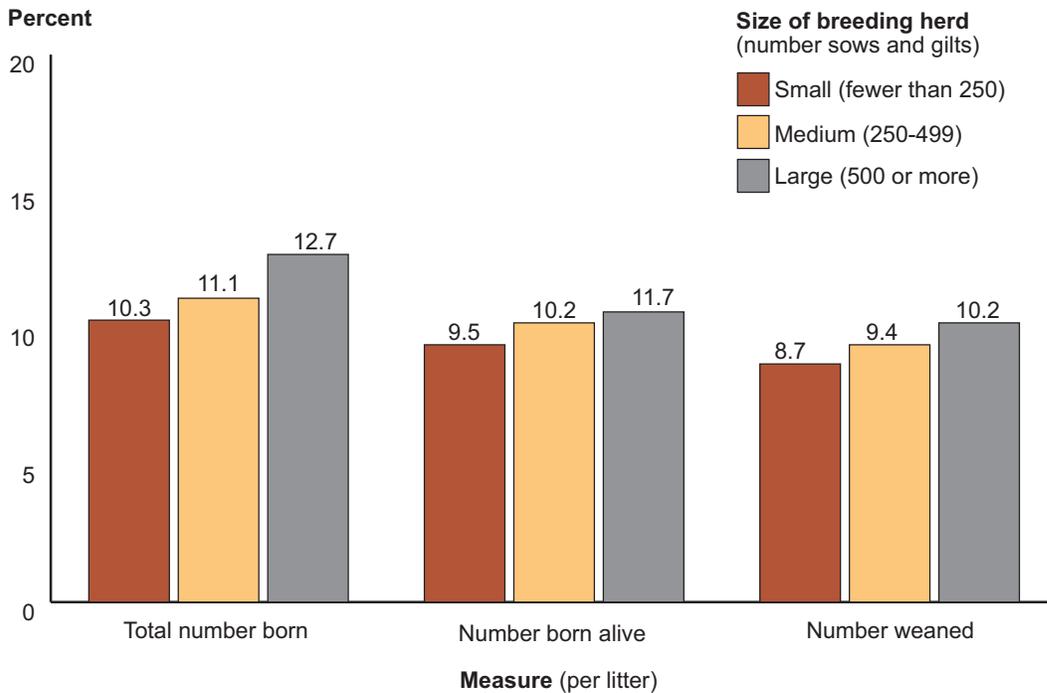
Large breeding herds had substantially more pigs born alive per litter and weaned more pigs per litter than small and medium sites. The number and percentage of preweaning deaths per litter were higher in large herds than in small and medium herds. Note: Some standard errors round to 0. See “Terms Used in This Report” for explanation.

B.6.c. Average per litter productivity* by size of breeding herd:

Average Per Litter Productivity												
Herd Size (number sows and gilts)												
	Small (fewer than 250)				Medium (250–499)				Large (500 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	0.9	(0.0)	8.8	(0.3)	0.9	(0.1)	7.9	(0.6)	1.1	(0.1)	8.5	(0.4)
Born alive	9.4	(0.2)	91.2	(0.3)	10.2	(0.2)	92.1	(0.6)	11.7	(0.2)	91.5	(0.4)
Total born	10.3	(0.2)	100.0	(0.0)	11.1	(0.2)	100.0	(0.0)	12.7	(0.2)	100.0	(0.0)
Preweaning deaths	0.7	(0.0)	7.6	(0.5)	0.9	(0.1)	8.6	(0.6)	1.5	(0.1)	12.6	(0.9)
Weaned	8.7	(0.2)	92.4	(0.5)	9.4	(0.1)	91.4	(0.6)	10.2	(0.1)	87.4	(0.9)
Total born alive	9.4	(0.2)	100.0	(0.0)	10.2	(0.2)	100.0	(0.0)	11.7	(0.2)	100.0	(0.0)

*From December 1, 2011, through May 31, 2012.

Average per litter productivity* by size of breeding herd



*From December 1, 2011, through May 31, 2012.

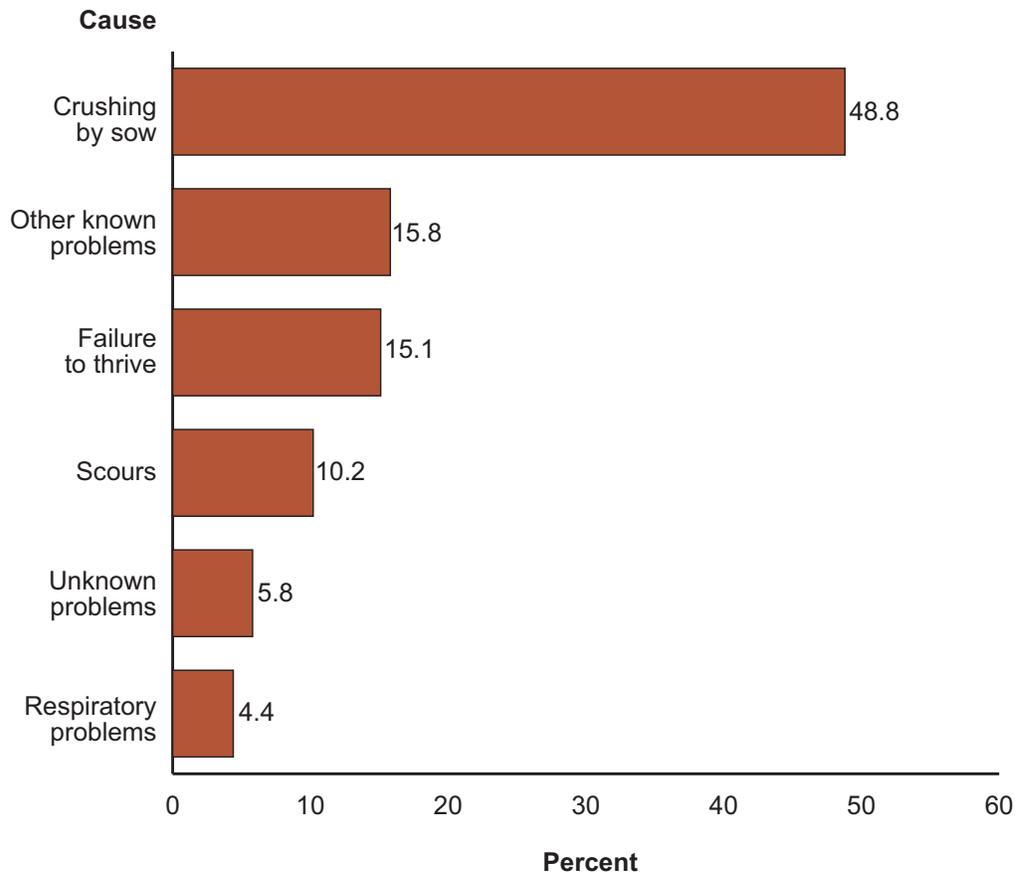
Nearly half of all preweaning deaths were attributed to crushing by sow. Failure to thrive and scours accounted for 15.1 and 10.2 percent of preweaning deaths, respectively. Other known problems mostly consisted of low viability pigs.

B.6.d. Percentage of preweaning deaths*, by producer-identified cause and by size of herd:

Percent Preweaning Deaths								
Herd Size (number sows and gilts)								
Cause	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Scours	13.1	(2.3)	9.3	(2.1)	10.2	(2.2)	10.2	(2.1)
Crushing by sow	52.6	(3.1)	54.7	(3.1)	48.7	(2.4)	48.8	(2.3)
Failure to thrive	15.1	(2.0)	19.4	(2.7)	15.0	(1.9)	15.1	(1.8)
Respiratory problems	6.1	(2.9)	6.7	(1.8)	4.3	(1.3)	4.4	(1.3)
Other known problems	2.6	(0.7)	3.7	(1.3)	16.1	(5.1)	15.8	(5.0)
Unknown problems	10.5	(2.5)	6.1	(1.5)	5.7	(1.4)	5.8	(1.4)
Total	100.0		100.0		100.0		100.0	

*Percentage of preweaning death summed over all sites from December 1, 2011, through May 31, 2012.

Percentage of preweaning deaths,* by producer-identified cause



*Percentage of preweaning death estimate over all sites from December 1, 2011, through May 31, 2012.

7. Weaning

On average, medium and large breeding herds weaned pigs at 22 and 21 days, respectively, whereas small herds did not wean until pigs were over 30 days of age. For all pigs weaned, the average weaning age was 20.8 days.

B.7.a. Site average age (in days) of piglets at weaning, by size of breeding herd:

Site Average Age (days)									
Herd Size (number sows and gilts)									
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites		Pig average	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
30.2	(0.4)	22.0	(0.5)	20.9	(0.2)	26.3	(0.4)	20.8	(0.2)

Nearly 60 percent of small breeding herds weaned pigs at 28 or more days of age, whereas less than 2 percent of large herds weaned at that age. Almost half of large breeding herds and more than one-third of medium herds weaned at 20 days or less.

B.7.b. Percentage of breeding herds by age piglets were weaned, and by size of site:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Weaning age (days)	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 16	0.6	(0.3)	1.2	(1.1)	0.2	(0.1)	0.5	(0.2)
16–20	8.5	(1.2)	34.3	(6.2)	46.2	(6.8)	23.8	(2.0)
21–27	31.7	(1.9)	52.1	(6.2)	51.6	(7.0)	40.3	(3.2)
28–34	29.6	(1.9)	9.1	(3.2)	1.6	(0.6)	18.1	(1.5)
35 or more	29.6	(1.9)	3.3	(2.0)	0.3	(0.3)	17.2	(1.4)
Total	100.0		100.0		100.0		100.0	

8. Sow and gilt management

The average parity in large breeding herds was lower than in small breeding herds.

B.8.a. Site average parity of breeding-age females, by size of herd:

Herd Average Parity							
Herd Size (number sows and gilts)							
Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
3.6	(0.1)	3.5	(0.2)	2.9	(0.2)	3.3	(0.1)

Medium breeding herds had lower sow mortality than small or large herds. Large herds culled a higher percentage of breeding females (25.6 percent) compared with small and medium breeding herds (19.2 and 16.3 percent, respectively) over the 6-month period.

B.8.b. Breeding-age females that died or were culled,* as a percentage of June 1, 2012, sow and gilt inventory, by size of herd:

Percent Breeding-Age Females								
Herd Size (number sows and gilts)								
Reason removed	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Died	3.8	(0.2)	2.8	(0.2)	4.4	(0.3)	4.3	(0.3)
Culled	19.2	(1.0)	16.3	(1.1)	25.6	(1.2)	25.1	(1.1)

*From December 1, 2011, through May 31, 2012.

Though culling rates differed by size of breeding herd, the reasons for culling did not. Across herds sizes, the highest percentages of sows were culled for old age and for reproductive failure. Relatively small percentages of sows were culled for lameness or for injury. Other reasons for culling were mostly unknown.

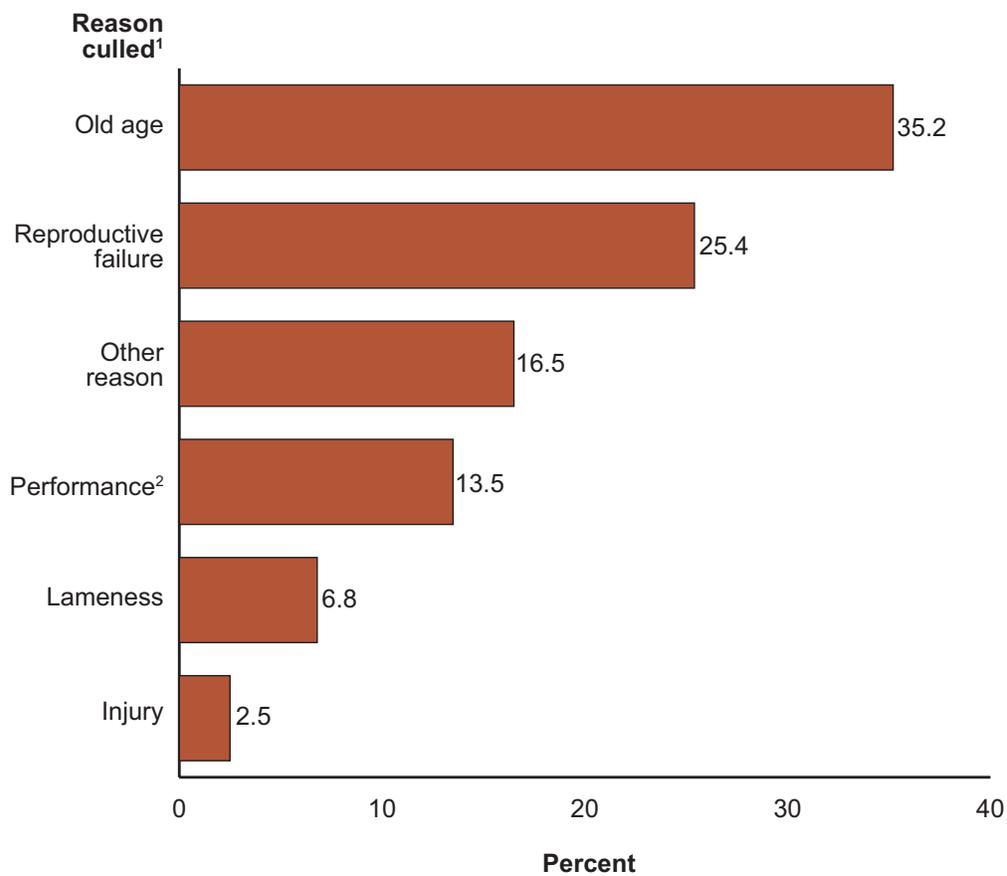
B.8.c. Percentage of culled breeding-age females, by reason culled¹ and by size of site:

Percent Culled Females								
Herd Size (number sows and gilts)								
Reason culled¹	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Old age	40.2	(3.2)	42.6	(4.1)	35.0	(3.7)	35.2	(3.6)
Lameness	8.6	(1.2)	10.3	(1.3)	6.7	(1.2)	6.8	(1.2)
Performance ²	11.7	(1.3)	18.2	(2.5)	13.4	(2.4)	13.5	(2.3)
Reproductive failure	25.8	(3.5)	22.6	(2.4)	25.5	(3.6)	25.4	(3.5)
Injury	3.0	(0.5)	4.5	(0.7)	2.5	(0.6)	2.5	(0.6)
Other reason	10.6	(3.3)	1.9	(0.9)	16.8	(7.1)	16.5	(6.9)
Total	100.0		100.0		100.0		100.0	

¹Percentage of preweaning deaths summed over sites from December 1, 2011, through May 31, 2012.

²Small litter size, high preweaning mortality, or low birth weight.

Percentage of culled breeding-age females, by reason culled



¹Percentage of preweaning deaths summed over sites from December 1, 2011, through May 31, 2012.

²Small litter size, high preweaning mortality, or low birth weight.

More than half of small and medium breeding herds and about one-third of large herds had a sow mortality of less than 3 percent.

B.8.d. Percentage of breeding herds by the percentage of breeding-age females that died,* and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Percent that died	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0	36.8	(2.0)	3.2	(2.0)	1.4	(0.6)	21.8	(1.6)
0.1–2.9	18.5	(1.6)	57.1	(6.3)	32.3	(5.1)	26.1	(1.9)
3.0–4.9	15.8	(1.5)	27.9	(6.4)	28.1	(5.0)	21.1	(2.1)
5.0–9.9	18.9	(1.7)	11.8	(3.2)	36.0	(6.8)	24.5	(3.0)
10.0 or more	10.1	(1.3)	0.0	(—)	2.1	(0.9)	6.5	(0.9)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

Almost one-fourth of small breeding herds (23.2 percent) did not cull any sows from December 1, 2011, through May 31, 2012; 74.9 percent of medium herds and 92.9 percent of large herds culled 10 percent or more breeding-age females during the 6-month period.

B.8.e. Percentage of breeding herds by percentage of breeding-age females culled,* and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Percent culled	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0	23.2	(1.7)	1.6	(1.4)	0.3	(0.3)	13.5	(1.2)
0.1–9.9	15.1	(1.5)	23.6	(5.3)	6.8	(1.5)	12.7	(1.2)
10.0–19.9	27.2	(1.9)	47.4	(6.2)	26.6	(4.7)	28.4	(2.1)
20.0 or more	34.5	(2.0)	27.5	(5.0)	66.3	(5.4)	45.4	(3.0)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

The large majority of breeding herds dewormed sows. A lower percentage of large herds routinely treated sows for mange/lice compared with small and medium herds.

B.8.f. Percentage of breeding herds by preventive treatments administered to **sows**,* and by size of site:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Preventive treatment	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Deworming	85.6	(2.5)	89.6	(3.4)	78.8	(4.6)	82.1	(2.7)
Mange/lice treatment	67.7	(3.2)	56.8	(6.2)	12.0	(2.3)	34.0	(3.3)

*From December 1, 2011, through May 31, 2012.

Nearly three-fourths of breeding herds (72.1 percent) dewormed boars.

B.8.g. Percentage of breeding herds by preventive treatments administered to **boars**,* and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
Preventive treatment	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Deworming	75.9	(3.1)	76.1	(5.2)	69.4	(5.5)	72.1	(3.3)
Mange/lice treatment	62.7	(3.4)	55.4	(6.2)	9.9	(2.0)	31.2	(3.1)

*From December 1, 2011, through May 31, 2012.

Less than 7 percent of large breeding herds routinely dewormed piglets or treated them for mange/lice, compared with more than 37 percent of small and medium herds. Less than 10 percent of all herds provided piglets with oral vitamin D. More than 95 percent of medium and large herds provided iron to piglets.

B.8.h. Percentage of breeding herds by preventive treatments administered to **piglets**,* and by size of herd:

Percent Breeding Herds								
Herd Size (number sows and gilts)								
Preventive treatment	Small (fewer than 250)		Medium (250–499)		Large (500 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Deworming	58.4	(3.6)	43.4	(6.1)	6.9	(1.6)	26.9	(2.7)
Mange/lice treatment	46.2	(3.6)	37.1	(6.5)	3.4	(1.1)	20.3	(2.3)
Oral vitamin D	8.1	(1.1)	15.9	(4.9)	9.5	(1.9)	9.1	(1.0)
Iron (oral/injection)	82.1	(1.6)	95.1	(2.5)	96.5	(1.1)	88.2	(1.1)

*From December 1, 2011, through May 31, 2012.

More than three-fourths of breeding animals were routinely dewormed. Almost all piglets (97.0 percent) received iron.

B.8.i. Percentage of pigs by preventive treatment¹ and by type of pig:

Preventive treatment	Percent Pigs					
	Type of Pig					
	Sows ²		Boars ³		Piglets ⁴	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Deworming	78.3	(4.9)	77.2	(5.0)	4.9	(1.1)
Mange/lice treatment	8.2	(1.5)	22.3	(4.1)	2.4	(0.6)
Oral vitamin D (as young pigs)	NA		NA		9.5	(2.7)
Iron (oral/injection)	NA		NA		97.0	(1.3)

¹From December 1, 2011, through May 31, 2012.

²As a percentage of sow and bred gilt inventory on June 1, 2012.

³As a percentage of boar inventory on June 1, 2012.

⁴As a percentage of pigs born alive (6 months).

C. Nursery Phase

Percentage of sites that had a nursery phase,* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
28.4	(2.4)	14.9	(3.1)	25.5	(7.7)	22.3	(3.0)

*From December 1, 2011, through May 31, 2012.

Note: All remaining tables in this section refer to the 22.3 percent of sites with a nursery phase from December 1, 2011, through May 31, 2012. Site size categories are based on total inventory.

1. Facilities and pig flow

Over 95 percent of all sites with a nursery phase housed nursery pigs in facilities with no outside access.

C.1.a. Percentage of sites by facility type used most for the nursery phase, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Facility type	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	86.3	(1.8)	96.5	(1.4)	98.2	(1.8)	91.5	(1.3)
Open building with natural ventilation and no outside access	7.8	(1.3)	3.5	(1.4)	1.8	(1.8)	5.4	(1.0)
Open building with outside access	4.9	(1.1)	0.0	(—)	0.0	(—)	2.5	(0.6)
Lot with hut or no building	0.6	(0.3)	0.0	(—)	0.0	(—)	0.3	(0.2)
Pasture with hut or no building	0.4	(0.2)	0.0	(—)	0.0	(—)	0.2	(0.1)
Total	100.0		100.0		100.0		100.0	

Over 99 percent of all nursery pigs were housed in facilities with no outside access.

C.1.b. Percentage of nursery pigs by facility type most used on sites with a nursery phase:

Percent Nursery Pigs*								
Size of Site (total inventory)								
Facility type	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	95.6	(1.4)	96.7	(2.1)	97.6	(2.5)	97.1	(1.7)
Open building with natural ventilation and no outside access	2.7	(1.0)	3.3	(2.1)	2.4	(2.5)	2.7	(1.7)
Open building with outside access	1.5	(0.7)	0.0	(—)	0.0	(—)	0.2	(0.1)
Lot with hut or no building	0.1	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Pasture with hut or no building	0.1	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the nursery phase.

For the 96.9 percent of nursery sites with indoor-only facilities, the majority (92.1 percent) used mesh or completely slatted flooring. For the 3.0 percent of sites with nursery facilities that had outdoor access, more than half used solid surface flooring.

C.1.c. Percentage of sites by primary flooring type used in the nursery phase, and by type of facility:

Flooring type	Percent Sites					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Solid surface	2.4	(0.6)	51.9	(13.5)	3.2	(0.7)
Partial slats	3.2	(0.7)	0.0	(—)	3.2	(0.7)
Completely slatted	41.3	(5.8)	0.0	(—)	40.6	(5.6)
Mesh	50.8	(6.7)	11.6	(7.5)	50.2	(6.7)
Dirt/pasture	0.0	(—)	36.4	(12.5)	0.6	(0.3)
Other	2.3	(1.0)	0.0	(—)	2.3	(1.0)
Total	100.0		100.0		100.0	

C.1.d. Percentage of sites by primary slatted flooring material used in the nursery phase, and by type of facility:

Slatted flooring material	Percent Sites					
	Facility Type					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Concrete	8.7	(1.9)	0.0	(0.0)	8.6	(1.9)
Metal	5.1	(1.3)	0.0	(0.0)	5.0	(1.3)
Plastic	29.6	(4.4)	0.0	(0.0)	29.1	(4.3)
Other	1.0	(0.4)	0.0	(0.0)	1.0	(0.4)
Mesh or solid floor*	55.6	(6.2)	100.0	(0.0)	56.4	(6.0)

*May not match table C.1.c due to item nonresponse.

The highest percentage of sites used either pit-holding or flush under slats for waste management, regardless of site size.

C.1.e. Percentage of sites by primary waste management system used in the nursery facility, and by size of site:

Waste management system	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	1.5	(0.6)	0.0	(—)	0.3	(0.3)	0.7	(0.3)
Pit-holding	58.8	(6.1)	46.1	(9.5)	78.2	(7.5)	59.3	(4.8)
Mechanical scraper/tractor	8.4	(1.7)	6.8	(2.2)	1.1	(0.6)	6.2	(1.2)
Hand cleaned	3.0	(0.8)	0.3	(0.2)	0.0	(—)	1.4	(0.4)
Flush, under slats	24.4	(7.3)	46.0	(10.9)	20.4	(7.2)	30.4	(5.6)
Flush, open gutter	3.3	(1.1)	0.7	(0.6)	0.0	(—)	1.7	(0.6)
Other	0.6	(0.4)	0.2	(0.2)	0.0	(—)	0.3	(0.2)
Total	100.0		100.0		100.0		100.0	

A higher percentage of nursery sites in the South region used a flush, under slats system compared with sites in the Midwest and East regions. Pit-holding was used by a higher percentage of sites in the Midwest and East regions than in the South region.

C.1.f. Percentage of sites by primary waste management system used in the nursery facility, and by region:

Waste management system	Percent Sites					
	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	0.7	(0.4)	1.1	(0.7)	0.4	(0.4)
Pit-holding	64.5	(3.2)	75.3	(3.5)	38.8	(12.8)
Mechanical scraper/tractor	9.7	(1.6)	4.1	(1.5)	1.8	(1.1)
Hand cleaned	1.2	(0.5)	2.7	(1.1)	0.9	(0.7)
Flush, under slats	20.9	(3.0)	14.9	(2.7)	57.6	(12.9)
Flush, open gutter	2.3	(1.0)	1.8	(1.0)	0.5	(0.5)
Other	0.7	(0.3)	0.0	(—)	0.0	(—)
Total	100.0		100.0		100.0	

Almost 95 percent of large sites with a nursery moved pigs all-in/all-out by room or by building. About one of five small and medium sites used continuous flow management.

C.1.g. Percentage of sites by pig flow management in the nursery phase, and by size of site:

Pig-flow management	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	19.0	(2.2)	17.5	(10.0)	3.2	(1.2)	15.4	(2.9)
All swine removed without cleaning and disinfecting room	3.3	(0.8)	0.3	(0.3)	0.0	(—)	1.8	(0.4)
All-in/all-out by room	25.8	(2.9)	25.6	(5.8)	55.9	(11.3)	31.7	(3.4)
All-in/all-out by building	37.9	(3.6)	50.1	(8.0)	37.8	(11.6)	41.2	(3.7)
All-in/all-out by site	13.6	(5.8)	6.5	(2.5)	3.1	(1.7)	9.6	(3.0)
NA	0.5	(0.3)	0.0	(—)	0.0	(—)	0.3	(0.1)
Total	100.0		100.0		100.0		100.0	

More than 80 percent of nursery pigs were moved all-in/all-out by room or by building.

C.1.h. Percentage of nursery pigs by pig-flow management used in the nursery phase, and by size of site:

Percent Nursery Pigs*								
Size of Site (total inventory)								
Pig-flow management	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	5.0	(1.6)	23.3	(13.5)	2.7	(1.5)	9.4	(4.6)
All swine removed without cleaning and disinfecting room	1.3	(0.5)	0.2	(0.2)	0.0	(—)	0.2	(0.1)
All-in/all-out by room	21.4	(6.4)	19.7	(7.7)	44.2	(13.2)	33.8	(7.8)
All-in/all-out by building	39.0	(11.2)	47.8	(11.8)	49.4	(13.6)	47.4	(8.6)
All-in/all-out by site	32.9	(17.7)	8.9	(4.7)	3.7	(3.0)	9.1	(3.3)
No housing	0.3	(0.3)	0.0	(—)	0.0	(—)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the nursery phase.

2. Sourcing of nursery pigs

Less than 1 percent of sites with a nursery received pigs from an auction or sale barn. A lower percentage of large sites than medium and small sites received nursery pigs from sites not belonging to the operation. The most frequently reported source in the “other” category was sow coops.

C.2.a. Percentage of sites that brought or placed any pigs into the nursery phase,* by source of pigs and by size of site:

Source	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site farrowing	34.8	(4.1)	20.4	(4.6)	46.2	(11.1)	32.8	(3.8)
Other sites belonging to this operation	16.0	(3.8)	22.4	(9.5)	37.5	(11.5)	23.1	(4.7)
Other sites not belonging to this operation	45.4	(5.8)	53.4	(8.1)	15.6	(6.1)	41.0	(4.2)
Auction, sale barn, or livestock market	0.8	(0.4)	0.4	(0.4)	0.0	(—)	0.5	(0.2)
Other	3.9	(1.1)	5.5	(2.0)	1.0	(0.6)	3.7	(0.9)

*From December 1, 2011, through May 31, 2012.

The percentages of weaned pigs entering a nursery were roughly equal between three sources: on-site farrowing (34.0 percent), other sites belonging to the operation (34.9 percent), and other sites not belonging to the operation (29.5 percent).

C.2.b. Percentage of pigs that entered the nursery phase,¹ by source of pigs and by size of site:

Source	Percent Pigs ²							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site	16.1	(4.9)	11.9	(4.4)	49.9	(14.4)	34.0	(9.7)
Other sites belonging to this operation	18.9	(7.7)	31.8	(13.3)	40.1	(13.8)	34.9	(9.0)
Other sites not belonging to this operation	61.1	(11.9)	54.5	(12.7)	8.9	(4.3)	29.5	(7.1)
Auction, sale barn, or livestock market	0.4	(0.3)	0.1	(0.1)	0.0	(—)	0.1	(0.1)
Other	3.5	(1.4)	1.6	(0.8)	0.7	(0.5)	1.3	(0.5)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering the nursery phase.

More than two-thirds of sites with a nursery phase used an off-site source for obtaining nursery pigs.

C.2.c. Percentage of sites that used any off-site sources to obtain nursery pigs,¹ by size of site:

Percent Sites²							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
65.7	(4.1)	80.2	(4.6)	54.1	(11.1)	67.6	(3.8)

¹Placed from December 1, 2011, through May 31, 2012.

²Estimates differ slightly from those calculated from table C.2.a because the two tables are based on two different questions, and there were slight differences in the number of respondents completing the two questions.

More than three-fourths of sites that used an off-site source to obtain pigs used just one source.

C.2.d. For sites that obtained any nursery pigs from an off-site source,* percentage of sites by number of different sources and by size of site:

Percent Sites								
Size of Site (total inventory)								
Number off-site sources	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	87.8	(3.5)	80.3	(13.1)	56.2	(21.0)	78.8	(7.9)
2	6.8	(2.5)	18.1	(13.4)	41.1	(21.8)	17.8	(8.3)
3 or more	5.4	(2.1)	1.7	(1.0)	2.7	(2.3)	3.4	(1.1)
Total	100.0		100.0		100.0		100.0	

*Placed from December 1, 2011, through May 31, 2012.

Only 3.3 percent of sites commingled nursery pigs from multiple sources.

C.2.e. For nursery pigs placed,¹ percentage of sites that commingled (shared airspace) nursery pigs obtained from different sources in the same building or area as existing pigs, by type of site and by size of site.

Site type	Percent Sites							
	Size of Site (total inventory)							
	Small		Medium		Large		All sites	
	(fewer than 2,000)		(2,000–4,999)		(5,000 or more)			
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Single source ²	92.7	(1.8)	84.7	(10.6)	78.1	(13.4)	86.6	(5.4)
Multiple sources and not commingled	2.8	(0.9)	14.5	(10.7)	17.5	(14.0)	10.1	(5.7)
Multiple sources and commingled	4.5	(1.6)	0.9	(0.5)	4.4	(3.1)	3.3	(1.1)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²Either on-site source or one off-site source.

3. Death loss

Of weaned pigs that entered a nursery phase, 3.6 percent died.

C.3.a. Percentage of nursery pigs that died in the nursery phase,¹ by size of site:

Percent Nursery Pigs ²							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
2.7	(0.4)	3.4	(0.9)	3.9	(0.7)	3.6	(0.5)

¹From December 1, 2011, through May 31, 2012.

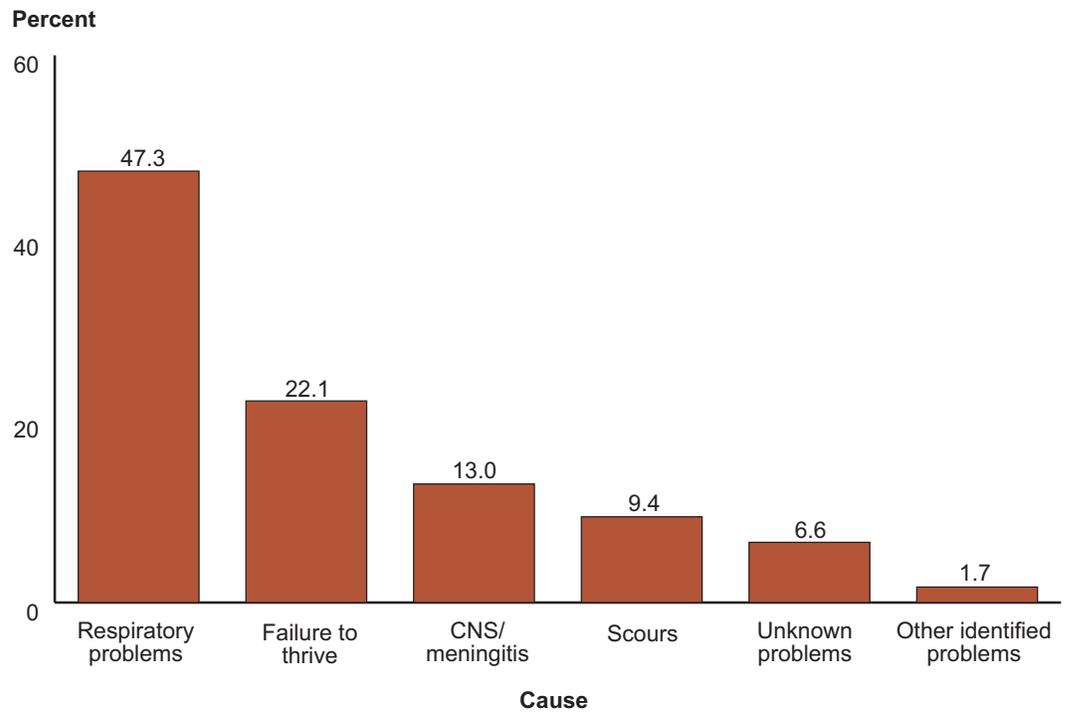
²As a percentage of pigs that entered the nursery phase.

Respiratory problems accounted for almost half of nursery pigs deaths (47.3 percent). Meningitis accounted for 13.0 percent of nursery pigs deaths. More than one-fifth of nursery pig deaths (22.1 percent) were attributed to failure to thrive. Causes of death were not substantially different across size of site.

C.3.b. Percentage of nursery pig deaths* by producer-identified cause and by size of site:

Percent Deaths								
Size of Site (total inventory)								
Cause	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Scours	8.6	(1.9)	9.7	(4.6)	9.3	(2.4)	9.4	(1.9)
Failure to thrive	11.8	(2.8)	12.5	(2.1)	28.1	(9.7)	22.1	(6.7)
Respiratory problems	46.1	(9.8)	62.8	(12.4)	40.1	(4.3)	47.3	(6.3)
CNS/meningitis	16.1	(4.1)	9.3	(3.5)	14.2	(3.7)	13.0	(2.9)
Other identified problems	4.8	(2.4)	0.8	(0.6)	1.7	(1.3)	1.7	(0.9)
Unknown problems	12.5	(3.7)	4.8	(2.8)	6.5	(3.7)	6.6	(2.8)
Total	100.0		100.0		100.0		100.0	

Percentage of nursery pig deaths, by producer-identified cause



4. Nursery pig management

On average, pigs spent 45.6 days in the nursery phase, arriving at 21.4 days of age and leaving at 67.0 days of age.

C.4.a. Site average age of pigs when entering and leaving the nursery phase, by size of site:

Site Average Age (days)										
Size of Site (total inventory)										
Age	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites		Pig average	
	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Entering	24.0	(0.3)	21.1	(0.4)	21.1	(0.4)	22.6	(0.2)	21.4	(0.4)
Leaving	68.1	(0.7)	68.8	(1.3)	64.5	(2.0)	67.6	(0.7)	67.0	(1.5)

C.4.b. Site average number of days pigs spent in the nursery, by size of site:

Site Average Number of Days							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
44.1	(0.6)	47.8	(1.2)	43.4	(2.3)	45.0	(0.7)

C.4.c. Percentage of sites that regularly gave the following treatments to nursery pigs,* by size of site:

Percent Sites								
Size of Site (total inventory)								
Treatment	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	30.4	(4.1)	11.0	(2.8)	2.5	(1.1)	17.7	(2.8)
Oral Vitamin D (as young pigs)	9.7	(2.0)	10.3	(2.8)	7.4	(3.1)	9.4	(1.6)
Mange/lice treatment	16.1	(2.4)	5.0	(1.6)	1.7	(1.2)	9.1	(1.5)

*From December 1, 2011, through May 31, 2012.

C.4.d. Percentage of all nursery pigs that were on sites that regularly gave the following treatments to nursery pigs,¹ by size of site:

Percent Nursery Pigs²								
Size of Site (total inventory)								
Practice	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	14.4	(4.6)	6.4	(2.9)	1.0	(0.6)	4.4	(1.5)
Oral Vitamin D (as young pigs)	9.6	(4.1)	5.6	(2.4)	8.1	(4.9)	7.5	(3.2)
Mange/lice treatment	6.9	(2.3)	1.5	(0.7)	2.9	(2.8)	2.9	(1.7)

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering nursery.

**D. Grower/
Finisher Phase**

Percentage of sites that had a grower/finisher phase,* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
51.3	(3.4)	60.5	(6.8)	56.3	(10.9)	56.0	(5.3)

*From December 1, 2011, through May 31, 2012.

Note: All remaining tables in this section refer to the 56.0 percent of sites that had a grower/finisher phase from December 1, 2011, through May 31, 2012.

1. Facilities and pig flow

All large sites, 99.7 percent of medium sites, and 85.5 percent of small sites that had a grower/finisher phase kept pigs in facilities with no outside access.

D.1.a. Percentage of sites by facility type used for the grower/finisher phase, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Facility type	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	46.1	(5.1)	86.3	(3.8)	88.6	(5.0)	71.6	(5.8)
Open building with natural ventilation and no outside access	39.4	(4.2)	13.4	(3.7)	11.4	(5.0)	22.8	(4.8)
Open building with outside access	12.5	(1.7)	0.3	(0.1)	0.0	(—)	4.8	(1.1)
Lot with hut or no building	1.4	(0.4)	0.0	(—)	0.0	(—)	0.5	(0.2)
Pasture with hut or no building	0.5	(0.2)	0.0	(—)	0.0	(—)	0.2	(0.1)
Total	100.0		100.0		100.0		100.0	

Over 99 percent of all grower/finisher pigs were housed in facilities with no outside access.

D.1.b. Percentage of finishing pigs by facility type used on sites with a grower/finisher phase, and by size of site:

Facility type	Percent Pigs*							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	66.8	(12.5)	92.0	(3.1)	84.7	(9.4)	85.8	(6.0)
Open building with natural ventilation and no outside access	29.9	(11.4)	7.8	(3.1)	15.3	(9.4)	13.7	(5.8)
Open building with outside access	3.1	(1.2)	0.2	(0.1)	0.0	(—)	0.4	(0.2)
Lot with hut or no building	0.1	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Pasture with hut or no building	0.1	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the grower/finisher phase.

Over three-fourths of sites that had grower/finisher facilities with indoor-only facilities (77.9 percent) had completely slatted flooring.

D.1.c. Percentage of sites by flooring type used in the grower/finisher facility, and by type of facility:

Flooring type	Percent Sites					
	Facility Type					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Solid surface	5.7	(2.6)	73.9	(5.4)	7.8	(2.2)
Partial slats	15.9	(4.2)	4.1	(2.1)	15.5	(4.1)
Completely slatted	77.9	(3.1)	3.5	(1.7)	75.5	(3.2)
Mesh	0.2	(0.1)	0.0	(—)	0.2	(0.1)
Dirt/pasture	0.2	(0.1)	15.4	(4.4)	0.7	(0.2)
Other	0.2	(0.1)	3.2	(2.0)	0.3	(0.1)
Total	100.0		100.0		100.0	

D.1.d. Percentage of sites by slatted flooring material in the grower/finisher facility, and by type of facility:

Slatted flooring material	Percent Sites					
	Facility Type					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Concrete	93.1	(2.4)	*		90.4	(2.0)
Metal	0.1	(0.1)	*		0.1	(0.1)
Plastic	0.6	(0.2)	*		0.6	(0.2)
Other	0.0	(—)	*		0.0	(0.0)
No slatted flooring	6.2	(2.5)	*		9.0	(2.1)

*Too few respondents with slatted flooring to estimate.

Over three-fourths of all grower/finisher sites used pit-holding to manage waste. Over 20 percent of medium and large sites used flush, under slats.

D.1.e. Percentage of sites by primary waste management system used in the grower/finisher facility, and by size of site:

Waste management system	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	1.8	(1.3)	1.7	(1.1)	0.1	(0.1)	1.4	(0.9)
Pit-holding	79.2	(2.9)	73.8	(8.8)	74.8	(11.6)	75.8	(6.2)
Mechanical scraper/tractor	9.1	(1.6)	0.6	(0.2)	1.5	(0.8)	3.6	(0.9)
Hand cleaned	2.5	(0.6)	0.0	(—)	0.0	(—)	0.8	(0.3)
Flush, under slats	5.4	(1.4)	22.7	(8.7)	23.0	(11.1)	17.0	(5.4)
Flush, open gutter	1.3	(0.5)	0.8	(0.5)	0.5	(0.4)	0.9	(0.4)
Other	0.5	(0.2)	0.4	(0.3)	0.0	(—)	0.4	(0.2)
Total	100.0		100.0		100.0		100.0	

A higher percentage of sites in the South region used flush under slats than used pit-holding.

D.1.f. Percentage of sites by primary waste management system used in the grower/finisher facility, and by region:

Waste management system	Percent Sites					
	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	2.7	(1.7)	0.2	(0.2)	0.3	(0.3)
Pit-holding	81.0	(4.3)	93.4	(4.1)	26.1	(9.0)
Mechanical scraper/tractor	6.1	(1.2)	1.2	(0.8)	1.3	(0.7)
Hand cleaned	1.4	(0.4)	0.5	(0.4)	0.0	(—)
Flush, under slats	7.7	(4.0)	3.9	(2.7)	69.4	(9.0)
Flush, open gutter	0.9	(0.3)	0.4	(0.3)	2.2	(1.6)
Other	0.3	(0.1)	0.3	(0.4)	0.8	(0.5)
Total	100.0		100.0		100.0	

More than half of all grower/finisher sites moved pigs all-in/all-out by building. About 20 percent of sites moved pigs all-in/all-out by site. A higher percentage of small sites than medium and large sites had a continuous flow of pigs.

D.1.g. Percentage of sites by pig-flow management used in the grower/finisher phase, and by size of site:

Pig-flow management	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	21.7	(2.5)	5.4	(2.9)	1.3	(0.6)	10.8	(2.4)
All swine removed without cleaning and disinfecting room	4.9	(0.9)	0.5	(0.2)	0.8	(0.4)	2.2	(0.6)
All-in/all-out by room	17.2	(3.2)	9.6	(3.4)	13.8	(6.2)	13.2	(3.4)
All-in/all-out by building	40.0	(5.8)	62.0	(10.1)	60.8	(16.7)	53.6	(9.5)
All-in/all-out by site	15.0	(2.6)	22.4	(7.9)	23.2	(13.8)	19.8	(5.9)
NA	1.2	(0.4)	0.1	(0.1)	0.0	(—)	0.5	(0.2)
Total	100.0		100.0		100.0		100.0	

Over 95 percent of grower/finisher pigs were managed all-in/all-out, either by room, building, or site.

D.1.h. Percentage of pigs by pig-flow management used in the grower/finisher phase, and by size of site:

Percent Pigs*								
Size of Site (total inventory)								
Pig-flow management	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	7.3	(2.8)	4.2	(2.9)	0.6	(0.3)	3.0	(1.6)
All swine removed without cleaning and disinfecting room	2.2	(0.9)	0.5	(0.3)	0.4	(0.2)	0.6	(0.3)
All-in/all-out by room	15.1	(6.5)	6.1	(2.9)	23.5	(12.3)	14.8	(6.7)
All-in/all-out by building	63.1	(14.3)	67.1	(12.7)	49.5	(19.1)	58.9	(15.1)
All-in/all-out by site	12.0	(5.2)	22.1	(10.7)	26.0	(15.8)	22.6	(11.7)
NA	0.3	(0.2)	0.1	(0.1)	0.0	(—)	0.1	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the grower/finisher phase.

2. Sourcing of grower/finisher pigs

For large sites with a grower/finisher phase, 81.2 percent obtained pigs from other sites that belonged to the operation compared with 49.0 percent of small sites. Almost one-third of small sites obtained pigs from an on-site nursery.

D.2.a. Percentage of sites that brought or placed any pigs into the grower/finisher phase, by source of pigs and by size of site:

Source	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site nursery	30.6	(3.9)	13.1	(3.6)	17.4	(7.0)	19.7	(4.4)
Other sites belonging to this operation	49.0	(6.3)	71.1	(7.3)	81.2	(7.6)	65.8	(7.5)
Other sites not belonging to this operation	18.0	(2.9)	16.1	(5.3)	2.7	(1.6)	14.2	(3.7)
Auction, sale barn, or livestock market	1.6	(0.6)	0.1	(0.1)	0.0	(—)	0.6	(0.2)
Other	2.4	(0.7)	0.7	(0.3)	0.0	(—)	1.1	(0.4)

*From December 1, 2011, through May 31, 2012.

Over three-fourths of all pigs entering the grower/finisher phase came from other sites that belonged to the operation.

D.2.b. Percentage of pigs that entered the grower/finisher phase,¹ by source of pigs and by size of site:

Percent Pigs²								
Size of Site (total inventory)								
Source	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site	18.3	(7.2)	7.3	(2.7)	19.0	(9.9)	13.7	(5.7)
Other sites belonging to this operation	65.8	(13.3)	79.0	(7.5)	79.3	(10.2)	77.6	(8.1)
Other sites not belonging to this operation	13.6	(5.6)	13.1	(5.6)	1.7	(1.0)	8.1	(3.3)
Auction, sale barn, or livestock market	0.8	(0.5)	0.0	(0.0)	0.0	(—)	0.1	(0.1)
Other	1.5	(0.8)	0.6	(0.3)	0.0	(—)	0.5	(0.2)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering the grower/finisher phase.

About 80 percent of sites with a grower/finisher phase used an off-site source for pigs. Of those sites, about three-fourths used only one off-site source (table D.2.d.). Estimates differ slightly from those calculated from table D.2.a. because the two tables are based on two different questions, and there were slight differences in the number of respondents completing the two questions.

D.2.c. Percentage of sites that used any off-site sources for grower/finisher pigs placed,* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
70.9	(3.8)	87.8	(3.3)	83.9	(6.5)	81.5	(4.1)

*From December 1, 2011, through May 31, 2012.

D.2.d. For sites that used any off-site sources for grower/finisher pigs placed,* percentage of sites by number of off-site sources used and by size of site:

Percent Sites								
Size of Site (total inventory)								
Number off-site sources	Small (fewer than 2,000)		Medium (2,000-4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	88.5	(3.0)	76.4	(8.9)	55.2	(9.9)	75.4	(5.6)
2	8.6	(2.5)	15.9	(6.9)	7.1	(4.7)	12.2	(4.7)
3 or more	2.8	(1.3)	7.6	(4.0)	37.7	(10.0)	12.4	(3.1)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

A higher percentage of small sites (92.6 percent) than large sites (64.6 percent) used a single source for obtaining pigs for the grower/finisher phase.

D.2.e. For grower/finisher pigs placed,¹ percentage of sites that commingled (shared airspace) pigs from different sources in the same building or area as existing pigs, by size of site:

Site type	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Single source ²	92.6	(1.8)	79.5	(7.5)	64.6	(9.4)	80.8	(4.2)
Multiple source and not commingled	3.7	(1.1)	17.5	(7.3)	26.6	(11.0)	14.8	(3.9)
Multiple source and commingled	3.7	(1.3)	3.0	(1.4)	8.8	(4.6)	4.3	(1.4)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²Either on-site source or one off-site source.

3. Death loss

Of pigs that entered the grower/finisher phase, 4.1 percent died.

D.3.a. Percentage of grower/finisher pigs that died during the grower/finisher phase,¹ by size of site:

Percent Grower/Finisher Pigs ²							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
3.5	(0.4)	4.4	(0.5)	4.1	(0.5)	4.1	(0.5)

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs that entered the grower/finisher phase.

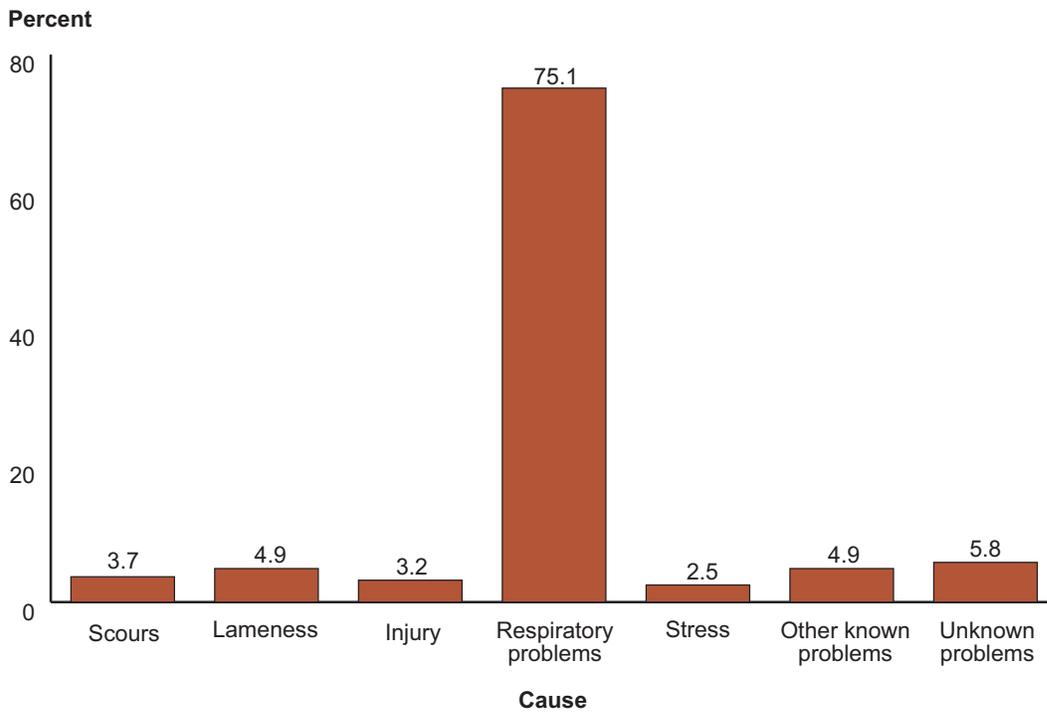
Three-fourths of all grower/finisher pig deaths were attributed to respiratory problems.

D.3.b. Percentage of deaths in the grower/finisher phase,* by producer-identified cause and by size of site:

Percent Deaths								
Size of Site (total inventory)								
Cause	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Scours	5.0	(1.6)	3.0	(1.3)	4.1	(2.2)	3.7	(1.6)
Lameness	6.3	(2.8)	4.3	(1.1)	5.2	(0.7)	4.9	(0.9)
Injury	5.0	(2.2)	2.8	(0.7)	3.1	(0.8)	3.2	(0.8)
Respiratory problems	71.8	(11.9)	79.8	(6.6)	70.3	(11.4)	75.1	(8.5)
Stress	4.0	(1.7)	1.7	(0.2)	3.1	(0.8)	2.5	(0.5)
Other known problems	2.5	(1.4)	3.6	(2.0)	7.0	(5.0)	4.9	(2.8)
Unknown problems	5.4	(2.8)	4.7	(2.0)	7.2	(3.7)	5.8	(2.6)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

Percentage of deaths in the grower/finisher phase,* by producer-identified cause



*From December 1, 2011, through May 31, 2012.

4. Grower/finisher pig management

On average, pigs left the grower/finisher phase at a substantially younger age on small sites (180.6 days) than on large sites (191.8 days).

D.4.a. Site average age of pigs entering and leaving the grower/finisher phase, by size of site:

Site Average Age (days)								
Size of Site (total inventory)								
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Entering	67.1	(0.8)	68.5	(1.1)	67.0	(2.4)	67.7	(0.9)
Leaving	180.6	(1.9)	188.2	(2.9)	190.8	(2.7)	185.9	(2.5)

D.4.b. Percentage of sites and percentage of grower/finisher pigs on these sites, by age of pigs leaving the grower/finisher phase:

Age (days)	Percent sites	Std. error	Percent pigs	Std. error
Less than 160	5.5	(1.7)	2.8	(1.2)
160 to 165	6.5	(1.5)	4.3	(1.7)
166 to 180	33.0	(7.1)	19.7	(7.8)
181 to 209	48.2	(10.1)	63.8	(12.1)
210 or more	6.9	(3.0)	9.5	(5.6)
Total	100.0		100.0	

On average, pigs spent about 118.1 days in the grower/finisher phase.

D.4.c. Site average number of days pigs spent in the grower/finisher phase, by size of site:

Site Average Number of Days							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
113.5	(1.7)	119.7	(2.6)	123.8	(3.1)	118.1	(2.2)

A higher percentage of small sites than medium and large sites dewormed and administered mange/lice treatment to grower/finisher pigs.

D.4.d. Percentage of sites that regularly gave the following treatments to grower/finisher pigs,* by size of site:

Percent Sites								
Size of Site (total inventory)								
Practice	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	30.5	(4.0)	7.5	(2.3)	4.8	(2.2)	14.6	(3.3)
Mange/lice treatment	8.8	(1.6)	1.4	(0.6)	1.6	(0.9)	3.9	(1.0)

*From December 1, 2011, through May 31, 2012.

D.4.e. Percentage of all grower/finisher pigs that were on sites that regularly gave the following treatments to grower/finisher pigs,¹ and by size of site:

Percent Grower/Finisher Pigs²								
Size of Site (total inventory)								
Practice	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	16.7	(6.6)	4.6	(1.9)	2.7	(1.4)	5.1	(1.9)
Mange/lice treatment	4.2	(1.8)	0.6	(0.3)	0.8	(0.5)	1.1	(0.5)

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering the grower/finisher phase.

E. Wean-to-finish Phase

Percentage of sites that had a wean-to-finish phase,* by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
25.0	(3.2)	27.7	(6.3)	15.4	(5.4)	24.4	(4.2)

*From December 1, 2011, through May 31, 2012.

Note: All remaining tables in this section refer to the 24.4 percent of sites with a wean-to-finish phase from December 1, 2011, through May 31, 2012.

1. Facilities and pig flow

Almost one-fourth of all sites had a wean-to-finish phase. Essentially, all medium and large sites with a wean-to-finish phase kept pigs in facilities with no outside access, compared with almost 80 percent of small sites.

E.1.a. Percentage of sites by primary facility type used for the wean-to-finish phase, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Facility type	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	50.1	(4.3)	84.2	(4.8)	93.1	(4.5)	71.0	(3.9)
Open building with natural ventilation and no outside access	29.6	(2.9)	15.6	(4.8)	6.9	(4.5)	20.5	(2.9)
Open building with outside access	17.2	(3.1)	0.2	(0.2)	0.0	(—)	7.3	(1.4)
Lot with hut or no building	1.5	(0.6)	0.0	(—)	0.0	(—)	0.6	(0.3)
Pasture with hut or no building	1.5	(0.7)	0.0	(—)	0.0	(—)	0.6	(0.3)
Total	100.0		100.0		100.0		100.0	

Over 98 percent of all wean-to-finish pigs were housed in facilities with no outside access.

E.1.b. Percentage of wean-to-finish pigs by primary facility type used in the wean-to-finish phase, and by size of site:

Percent Wean-to-Finish Pigs*								
Size of Site (total inventory)								
Facility type	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Total confinement	76.7	(6.1)	86.6	(4.3)	94.9	(3.8)	87.4	(3.1)
Open building with natural ventilation and no outside access	18.3	(5.3)	12.9	(4.3)	5.1	(3.8)	11.4	(3.0)
Open building with outside access	4.5	(1.4)	0.6	(0.6)	0.0	(—)	1.1	(0.4)
Lot with hut or no building	0.2	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Pasture with hut or no building	0.3	(0.2)	0.0	(—)	0.0	(—)	0.1	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the wean-to-finish phase.

Almost 90 percent of wean-to-finish sites with indoor-only facilities had completely slatted floors. In almost all cases, the slatted floors were concrete.

E.1.c. Percentage of sites by primary flooring type used in the wean-to-finish phase, and by type of facility:

Flooring type	Percent Sites					
	Facility Type					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Solid surface	2.2	(1.0)	75.1	(9.7)	3.6	(1.2)
Partial slats	8.5	(2.5)	6.1	(5.2)	8.4	(2.4)
Completely slatted	88.5	(2.7)	0.0	(—)	86.9	(2.8)
Mesh	0.3	(0.2)	0.0	(—)	0.3	(0.2)
Dirt/pasture	0.4	(0.2)	13.6	(8.0)	0.6	(0.3)
Other	0.1	(0.1)	5.2	(4.4)	0.2	(0.1)
Total	100.0		100.0		100.0	

E.1.d. Percentage of sites by primary slatted flooring material used in the wean-to-finish phase, and by type of facility:

Flooring material	Percent Sites					
	Facility Type					
	No outside access		Outside access		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Concrete	96.0	(1.3)	*		94.3	(1.6)
Metal	0.2	(0.1)	*		0.2	(0.1)
Plastic	0.8	(0.3)	*		0.8	(0.3)
No slatted flooring	3.0	(1.2)	93.9	(5.2)	4.6	(1.4)
Total	100.0		100.0		100.0	

*Too few observations to report.

Overstocking involves placing large numbers of young pigs in a housing unit designed for older, larger pigs so that when the pigs have attained a certain size, some will need to be moved as a group—or split—to prevent crowding.

Nearly 75 percent of small sites with a wean-to-finish phase never overstocked, whereas almost 60 percent of large sites sometimes or always overstocked. More than half of all wean-to-finish sites never overstocked.

E.1.e. Percentage of sites by frequency of overstocking in wean-to-finish phase, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Frequency	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Always	3.3	(0.9)	5.8	(2.3)	11.1	(5.7)	5.3	(1.4)
Sometimes	23.0	(6.8)	51.0	(9.3)	48.2	(12.0)	38.9	(7.1)
Never	72.6	(6.3)	42.7	(8.4)	40.0	(12.4)	55.0	(6.3)
Don't know	1.0	(0.5)	0.5	(0.3)	0.7	(0.6)	0.7	(0.3)
Total	100.0		100.0		100.0		100.0	

Overstocking occurred in the South region on about 10 percent of sites compared with about half of sites in the Midwest and East regions.

E.1.f. Percentage of sites by frequency of overstocking in the wean-to-finish phase, and by region:

	Percent Sites					
	Region					
	Midwest		East		South	
Frequency	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Always	4.5	(1.6)	7.9	(3.2)	0.0	(0.0)
Sometimes	38.7	(8.7)	44.0	(13.4)	7.5	(3.8)
Never	56.4	(7.8)	46.8	(11.9)	90.3	(4.2)
Don't know	0.4	(0.2)	1.2	(0.6)	2.2	(1.9)
Total	100.0		100.0		100.0	

Of small sites that overstocked, the highest percentage did so at 150 percent. A higher percentage of large sites than small sites double stocked (200 percent).

E.1.h. For sites that overstocked, percentage of sites by amount of overstocking in the wean-to-finish phase, and by size of site:

	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Percent overstocking	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
150	70.1	(12.2)	38.7	(16.8)	17.3	(8.8)	43.3	(15.2)
200	9.9	(5.1)	53.3	(16.8)	79.4	(9.6)	46.4	(14.7)
Other	20.1	(9.0)	8.0	(4.1)	3.3	(2.0)	10.3	(3.8)
Total	100.0		100.0		100.0		100.0	

Over 90 percent of wean-to-finish sites used pit-holding for waste management.

E.1.i. Percentage of sites by primary waste management system used in the wean-to-finish facility, and by size of site:

Waste management system	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	0.9	(0.6)	0.2	(0.2)	0.6	(0.5)	0.5	(0.2)
Pit-holding	85.5	(4.3)	98.2	(0.9)	88.2	(7.8)	93.1	(1.7)
Mechanical scraper/ tractor	6.6	(2.2)	0.6	(0.3)	0.0	(—)	2.3	(0.7)
Hand cleaned	1.1	(0.6)	0.0	(—)	0.0	(—)	0.3	(0.2)
Flush, under slats	4.0	(2.1)	1.0	(0.8)	11.2	(7.9)	3.3	(1.4)
Flush, open gutter	1.0	(0.7)	0.0	(—)	0.0	(—)	0.3	(0.2)
Other	0.8	(0.6)	0.0	(—)	0.0	(—)	0.3	(0.2)
Total	100.0		100.0		100.0		100.0	

E.1.j. Percentage of sites by primary waste management system used in the wean-to-finish facility, and by region:

Waste management system	Percent Sites					
	Region					
	Midwest		East		South	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	0.2	(0.2)	0.3	(0.2)	*	
Pit-holding	93.1	(2.2)	94.6	(2.3)	*	
Mechanical scraper/tractor	2.6	(0.9)	1.3	(0.7)	*	
Hand cleaned	0.2	(0.2)	0.8	(0.5)	*	
Flush, under slats	3.4	(1.9)	3.1	(1.8)	*	
Flush, open gutter	0.4	(0.3)	0.0	(—)	*	
Other	0.2	(0.2)	0.0	(—)	*	
Total	100.0		100.0			

*Too few observations to report.

Almost one-third of small wean-to-finish sites moved pigs all-in/all-out by building, and almost one-fourth of small sites managed pigs via continuous flow. Almost half of medium wean-to-finish sites managed pigs all-in/all-out by site. Over three-fourths of large wean-to-finish sites managed pigs all-in/all-out by room or building.

E.1.k. Percentage of sites by pig-flow management in the wean-to-finish phase, and by size of site:

Pig-flow management	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	23.8	(4.0)	0.7	(0.3)	0.4	(0.4)	10.3	(1.9)
All swine removed without cleaning and disinfecting room	1.2	(0.5)	0.4	(0.4)	0.0	(—)	0.7	(0.3)
All-in/all-out by room	13.5	(2.6)	24.0	(9.8)	40.1	(16.8)	21.4	(6.5)
All-in/all-out by building	32.7	(5.7)	28.6	(7.5)	37.8	(10.3)	31.3	(5.4)
All-in/all-out by site	27.3	(10.7)	46.3	(11.6)	21.7	(14.8)	35.7	(9.7)
NA	1.3	(0.6)	0.0	(—)	0.0	(—)	0.5	(0.2)
Total	100.0		100.0		100.0		100.0	

Over 98 percent of pigs placed in the wean-to-finish phase were managed all-in/all-out, with roughly one-third by room, one-third by building, and one-third by site.

E.1.I. Percentage of pigs by pig-flow management in the wean-to-finish phase, and by size of site:

Pig-flow management	Percent Pigs*							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Continuous flow	6.8	(2.1)	0.4	(0.2)	0.5	(0.5)	1.5	(0.4)
All swine removed without cleaning and disinfecting room	0.3	(0.2)	0.3	(0.3)	0.0	(—)	0.2	(0.2)
All-in/all-out by room	11.2	(4.1)	28.6	(12.9)	39.0	(17.8)	28.9	(11.0)
All-in/all-out by building	51.0	(14.7)	25.8	(7.4)	38.6	(9.2)	34.1	(7.0)
All-in/all-out by site	30.5	(13.7)	44.9	(13.1)	21.9	(14.2)	35.3	(10.7)
NA	0.2	(0.1)	0.0	(—)	0.0	(—)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0	

*As a percentage of pigs entering the wean-to-finish phase.

2. Sourcing of wean-to-finish pigs

Only 6.0 percent of sites sourced pigs on-site for the wean-to-finish phase. About two-thirds of medium and large sites sourced pigs from other sites that belonged to the operation, compared with about one-third of small sites. Almost half of small sites sourced wean-to-finish pigs from other sites that did not belong to the operation.

E.2.a. Percentage of sites that brought or placed any pigs into the wean-to-finish phase,* by source of pigs and by size of site:

Source	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site	13.4	(3.9)	1.3	(0.5)	9.4	(4.2)	6.0	(1.4)
Other sites belonging to this operation	34.1	(6.5)	63.7	(7.7)	67.7	(12.9)	55.4	(7.3)
Other sites not belonging to this operation	46.4	(7.3)	35.9	(8.2)	22.9	(10.8)	37.3	(7.0)
Auction, sale barn, or livestock market	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)
Other	9.9	(4.1)	4.4	(1.9)	0.6	(0.5)	5.5	(1.9)

*From December 1, 2011, through May 31, 2012.

E.2.b. Percentage of pigs that entered the wean-to-finish phase,¹ by source of pigs and by size of site:

Source	Percent Pigs ²							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
On-site	6.4	(3.1)	1.2	(0.6)	16.4	(8.0)	6.8	(2.5)
Other site belonging to this operation	31.1	(10.5)	63.9	(8.2)	66.0	(14.1)	59.2	(9.3)
Other site not belonging to this operation	51.3	(8.5)	31.6	(7.6)	17.7	(9.2)	30.4	(7.6)
Auction, sale barn, or livestock market	0.0	(—)	0.0	(—)	0.0	(—)	0.0	(—)
Other	11.2	(4.1)	3.3	(1.5)	0.0	(0.0)	3.6	(1.4)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering the wean-to-finish phase.

Nearly 95 percent of sites that had a wean-to-finish phase sourced their pigs off-site, and over 90 percent of these sites used only one off-site source.

E.2.c. Percentage of sites that used any off-site source for wean-to-finish pigs placed,* by size of site:

	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
	87.7	(3.7)	98.9	(0.5)	91.2	(4.0)	94.5	(1.4)

*From December 1, 2011, through May 31, 2012.

E.2.d. For sites that used any off-site sources for wean-to-finish pigs placed,* percentage of sites by number of off-site sources and by size of site:

Number off-site sources	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	93.7	(4.2)	92.6	(5.0)	98.8	(1.1)	93.7	(3.4)
2	5.8	(4.1)	7.4	(5.0)	0.0	(0.0)	5.9	(3.3)
3 or more	0.5	(0.5)	0.0	(0.0)	1.2	(1.1)	0.3	(0.2)
Total	100.0		100.0		100.0		100.0	

*From December 1, 2011, through May 31, 2012.

E.2.e. For wean-to-finish pigs placed,¹ percentage of sites that commingled (shared airspace) pigs from different sources in the same building or area as existing pigs, by size of site:

Site type	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Single source ²	94.9	(3.3)	93.5	(4.4)	99.1	(0.9)	94.7	(2.8)
Multiple source and not commingled	3.6	(2.9)	5.4	(4.4)	0.9	(0.9)	4.2	(2.7)
Multiple source and commingled	1.6	(1.5)	1.1	(0.8)	0.0	(—)	1.1	(0.8)
Total	100.0		100.0		100.0		100.0	

¹From December 1, 2011, through May 31, 2012.

²Either on-site or one off-site source.

3. Death loss

Just 1.4 percent of wean-to-finish pigs died before the split. Nearly two-thirds of the deaths before the split were attributed to respiratory problems. On large sites, more than 20 percent of deaths prior to the split were attributed to scours.

E.3.a. For sites that overstocked, percentage of wean-to-finish pigs that entered the wean-to-finish phase* and died **before** the split, by size of site:

Percent Wean-to-finish Pigs*							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1.7	(0.2)	1.4	(0.4)	1.3	(0.3)	1.4	(0.3)

*As a percentage of pigs that entered the wean-to-finish phase.

E.3.b. Percentage of deaths in wean-to-finish pigs that occurred **before** the split, by producer-identified cause and by size of site:

Cause	Percent Deaths							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Scours	5.4	(3.7)	9.1	(5.7)	22.4	(5.0)	12.1	(5.9)
Starvation, refusal to eat	6.8	(4.8)	1.8	(1.2)	9.2	(4.5)	4.2	(1.9)
Lameness	1.4	(0.9)	1.3	(1.0)	5.0	(2.7)	2.2	(1.1)
Respiratory problems	66.2	(8.4)	67.6	(7.1)	45.7	(10.0)	61.9	(6.8)
CNS/meningitis	9.1	(1.0)	9.0	(1.9)	8.3	(4.4)	8.8	(2.0)
Stress	3.3	(2.3)	2.8	(1.9)	1.0	(0.7)	2.4	(1.5)
Other known problems	0.8	(0.8)	1.9	(1.5)	0.7	(0.6)	1.5	(1.0)
Unknown problems	7.0	(2.5)	6.6	(2.4)	7.7	(4.3)	6.9	(2.2)
Total	100.0		100.0		100.0		100.0	

Overall, 4.2 percent of pigs in the wean-to-finish phase died after the split. Almost 60 percent of the deaths after the split were attributed to respiratory problems.

E.3.c. Percentage of wean-to-finish pigs that entered the wean-to-finish phase* and died **after** the split (or during the whole phase if no split) by size of site:

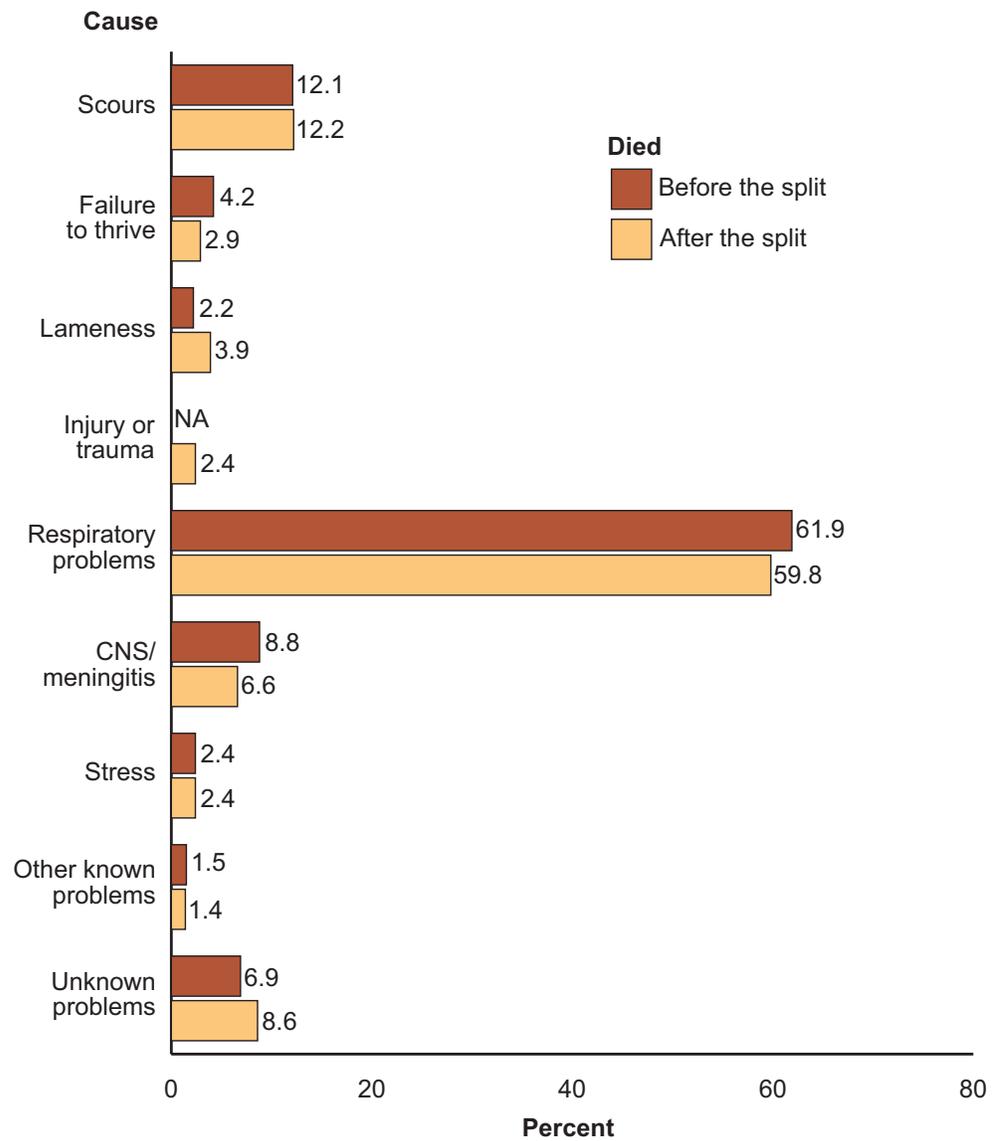
Percent Wean-to-finish Pigs*							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
2.4	(0.5)	3.9	(0.5)	5.8	(1.6)	4.2	(0.9)

*As a percentage of pigs that entered the wean-to-finish phase.

E.3.d. Percentage of deaths in wean-to-finish pigs that occurred **after** the split (or during the whole phase if no split), by producer-identified cause and by size of site:

Percent Deaths								
Size of Site (total inventory)								
Cause	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Scours	6.6	(2.8)	17.6	(8.9)	7.3	(2.7)	12.2	(3.6)
Starvation, refusal to eat	4.8	(1.7)	4.2	(1.2)	0.9	(0.6)	2.9	(0.7)
Lameness	4.7	(1.5)	4.5	(1.5)	3.0	(1.9)	3.9	(1.5)
Injury or trauma	1.7	(0.7)	3.9	(1.6)	0.9	(0.6)	2.4	(1.1)
Respiratory problems	54.6	(7.4)	44.6	(5.9)	77.8	(11.4)	59.8	(8.1)
CNS/meningitis	12.3	(3.1)	8.8	(2.3)	3.0	(2.0)	6.6	(2.4)
Stress	2.7	(0.9)	3.9	(1.4)	0.6	(0.4)	2.4	(1.0)
Other known problems	2.9	(1.2)	0.9	(0.4)	1.6	(1.3)	1.4	(0.7)
Unknown problems	9.7	(2.1)	11.6	(4.0)	4.9	(3.6)	8.6	(3.6)
Total	100.0		100.0		100.0		100.0	

Percentage of wean-to-finish pig deaths* before and after the split, by producer-identified cause



*From December 1, 2011, through May 31, 2012.

4. Wean-to-finish pig management

The age pigs entered the wean-to-finish unit varied by size of site, ranging from an average of almost 28 days of age on small sites to 19 days of age on large sites.

E.4.a. Site average age of pigs entering and leaving the wean-to-finish phase, by size of site:

	Site Average Age (days)							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Entering	27.8	(1.4)	20.3	(0.7)	19.3	(0.7)	23.2	(0.8)
Leaving	173.5	(1.7)	172.8	(3.1)	181.2	(3.5)	174.1	(2.2)

E.4.b. Percentage of sites and percentage of wean-to-finish pigs* on these sites, by age of pigs leaving the wean-to-finish phase:

Age (days)	Percent sites	Std. error	Percent pigs	Std. error
Less than 160	13.2	(4.9)	13.3	(7.8)
160–165	24.2	(7.8)	19.3	(8.5)
166–180	39.7	(6.2)	39.5	(10.7)
181–209	20.9	(7.7)	27.6	(13.6)
210 or more	2.0	(0.6)	0.4	(0.2)
Total	100.0		100.0	

*As a percentage of pigs entering the wean-to-finish phase.

E.4.c. Site average number of days pigs spent in the wean-to-finish phase, by size of site:

Site Average Number of Days							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
145.7	(1.2)	152.5	(3.3)	161.9	(4.1)	150.9	(2.5)

For wean-to-finish sites that overstocked, pigs were split at an average age of 59.0 days. These pigs were slightly younger than the pigs that left a conventional nursery (67 days of age; table C.4.a).

E.4.d. For sites that overstocked, site average age of pigs in the wean-to-finish phase when the split occurred, by size of site:

Site Average Age (days)							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
61.7	(4.3)	56.3	(3.0)	64.5	(3.2)	59.0	(2.8)

A higher percentage of small sites than medium or large sites dewormed pigs and treated them for mange/lice while in the wean-to-finish phase. Almost 20 percent of large sites provided young pigs with oral vitamin D.

E.4.e. Percentage of sites by treatment used for wean-to-finish pigs,* and by size of site:

Percent Sites								
Size of Site (total inventory)								
Treatment	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	25.3	(7.0)	6.5	(2.2)	3.8	(1.9)	11.8	(2.8)
Oral vitamin D (as young pigs)	6.0	(1.5)	11.2	(6.8)	18.5	(14.1)	9.8	(4.8)
Mange/lice treatment	10.3	(3.3)	1.6	(0.7)	0.0	(—)	4.0	(1.1)

*From December 1, 2011, through May 31, 2012.

E.4.f. Percentage of all wean-to-finish pigs on sites that regularly gave the following treatments to wean-to-finish pigs,¹ and by size of site:

Percent Wean-to-Finish Pigs²								
Size of Site (total inventory)								
Practice	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Dewormer	37.9	(17.3)	6.7	(2.6)	3.1	(1.8)	10.7	(4.7)
Oral vitamin D (as young pigs)	3.7	(1.7)	12.9	(9.7)	19.6	(13.3)	13.3	(8.6)
Mange/lice treatment	5.7	(3.1)	1.4	(0.8)	0.0	(—)	1.7	(0.7)

¹From December 1, 2011, through May 31, 2012.

²As a percentage of pigs entering the wean-to-finish phase.

F. Biosecurity and Other Farm Characteristics

1. Restrictions to entry

Almost one-fourth of all sites permitted nonbusiness visitors to enter swine facilities.

F.1.a. Percentage of sites by type of visitor allowed to enter pig facilities, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Visitor type*	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Business	40.4	(4.8)	61.0	(9.0)	65.0	(14.0)	55.0	(7.6)
Nonbusiness	25.7	(6.2)	23.6	(5.3)	23.2	(7.8)	24.2	(4.2)

*Business visitors were those on-site for business purposes, e.g., electrician. Nonbusiness visitors were those on-site for other purposes other than business, e.g., education.

The highest percentage of sites required business visitors to change into clean boots and coveralls before entering swine facilities. Over two-thirds of large sites required business visitors to wait for 24 hours after visiting another swine site before entering their swine facilities; 35.0 percent of sites did not allow business visitors.

F.1.b. Percentage of sites by preventive measure required of **business** visitors before entering swine facilities, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Preventive measure	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Shower before entering site	9.3	(4.7)	25.6	(6.6)	55.0	(13.0)	26.2	(5.6)
Change to clean boots and coveralls	35.4	(4.9)	57.9	(8.7)	51.5	(12.2)	49.2	(7.2)
Use the Danish Entry (“Bench”) system	1.4	(0.5)	4.0	(1.7)	5.4	(1.8)	3.5	(1.0)
Wait 24 hr or longer after visiting another swine site	17.5	(4.5)	31.2	(7.1)	45.7	(11.7)	29.6	(5.7)
No business visitors	59.6	(4.8)	39.0	(9.0)	35.0	(14.0)	45.0	(7.6)

Over three-fourths of sites did not allow nonbusiness visitors to enter swine facilities. Of sites that did allow nonbusiness visitors, 20.7 percent required the visitors to change into clean boots and coveralls; 18.9 percent of sites required nonbusiness visitors that had visited another swine site to wait at least 24 hours before entering the facility.

F.1.c. Percentage of sites by preventive measure required of **nonbusiness** visitors before entering swine facilities, and by size of site:

Preventive measure	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Shower before entering site	6.6	(4.6)	14.3	(5.2)	20.4	(7.6)	13.0	(4.4)
Change to clean boots and coveralls	19.8	(6.5)	22.2	(5.3)	18.5	(7.4)	20.7	(4.3)
Use the Danish Entry (“Bench”) system	0.7	(0.3)	2.8	(1.5)	1.6	(0.6)	1.8	(0.8)
Wait 24 hr or longer after visiting another swine site	17.6	(6.7)	19.5	(5.3)	19.5	(7.5)	18.9	(4.4)
No nonbusiness visitors	74.3	(6.2)	76.4	(5.3)	76.8	(7.8)	75.8	(4.2)

More than 80 percent of medium and large sites required employees to change into clean boots and coveralls before entering swine facilities. More than half of large sites (57.5 percent) required employees to shower before entering swine facilities.

F.1.d. Percentage of sites by preventive measure required of **employees** before entering swine facilities, and by size of site:

Preventive measure	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Shower before entering site	14.7	(4.7)	26.4	(6.6)	57.5	(13.3)	28.8	(5.7)
Change to clean boots and coveralls	68.7	(3.2)	90.0	(2.4)	83.9	(5.4)	81.8	(2.8)
Use the Danish Entry (“Bench”) system	5.2	(1.1)	6.0	(1.9)	6.8	(1.9)	5.9	(1.3)
Wait 24 hr or longer after visiting another swine site	41.1	(5.3)	49.1	(9.0)	48.3	(7.3)	46.3	(6.0)
No employees	11.2	(1.5)	1.8	(0.5)	1.2	(0.7)	4.7	(0.8)

2. Trucking

F.2.a. Percentage of sites that allowed trucks or trailers from commercial livestock transporters or animal haulers to enter the swine area, by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
43.9	(3.6)	73.6	(5.0)	65.3	(10.1)	59.9	(5.0)

About 60 percent of large sites required that the outside of the truck and the animal area inside the truck be cleaned and disinfected before coming on-site. Approximately one-fourth of small sites had these requirements.

F.2.b. Percentage of sites by required cleaning and disinfecting practices for livestock trucks or trailers, and by size of site:

Percent Sites								
Size of Site (total inventory)								
Required practices	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Animal area inside truck cleaned	31.6	(3.7)	59.6	(7.3)	63.0	(10.4)	48.7	(6.4)
Animal area inside truck be disinfected	25.6	(3.9)	52.7	(7.9)	60.2	(10.9)	43.0	(6.9)
Outside of truck cleaned	25.8	(3.8)	52.2	(7.9)	59.1	(11.1)	42.6	(6.9)
Outside of truck be disinfected	20.6	(4.1)	47.3	(8.5)	56.7	(11.6)	38.0	(7.5)
Trucks/trailers not allowed to enter pig area	56.1	(3.6)	26.4	(5.0)	34.7	(10.1)	40.1	(5.0)

3. Proximity to other swine sites

More than half the sites in the South region were within a half-mile of another swine site; in the East and Midwest regions, only 8.9 and 15.4 percent, respectively, were within a half-mile of another swine site.

F.3.a. Percentage of swine sites by distance (in miles) to the nearest known swine site, and by region:

Distance (miles)	Percent Sites							
	Region							
	Midwest		East		South		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 0.50	15.4	(1.7)	8.9	(4.0)	53.1	(9.7)	20.6	(4.4)
0.50–0.99	28.6	(2.2)	27.2	(8.4)	23.1	(5.4)	27.1	(3.0)
1.00–2.99	47.2	(2.2)	47.8	(3.8)	13.7	(4.9)	41.0	(3.2)
3.00–4.99	2.8	(0.4)	5.1	(2.2)	1.8	(0.8)	3.3	(0.6)
5.00 or more	6.0	(0.9)	10.9	(4.0)	8.2	(2.9)	7.9	(1.2)
Total	100.0		100.0		100.0		100.0	

Half the sites in the South region had seven or more swine sites within 3 miles of another swine site, compared with less than one-fourth of sites in the Midwest region and less than 5 percent in the East region.

F.3.b. Percentage of sites by number of swine sites within 3 miles, and by region:

	Percent Sites							
	Region							
	Midwest		East		South		All sites	
Number of sites	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0	8.8	(1.1)	16.0	(5.8)	10.0	(3.4)	11.3	(1.6)
1–3	24.9	(2.7)	56.9	(4.7)	23.8	(5.9)	39.5	(4.0)
4–6	32.6	(3.2)	22.9	(5.0)	16.2	(5.0)	26.5	(2.5)
7–9	10.0	(2.0)	2.5	(1.3)	6.1	(3.6)	6.9	(1.5)
10 or more	13.8	(2.0)	1.6	(0.9)	44.0	(9.9)	15.8	(3.9)
Total	100.0		100.0		100.0		100.0	

A higher percentage of small sites than medium or large sites had no other swine sites within 3 miles. Almost two-thirds of small sites had fewer than four swine sites within 3 miles.

F.3.c. Percentage of sites by number of swine sites within 3 miles, and by size of site:

Percent Sites						
Size of Site (total inventory)						
Number of sites	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0	19.8	(1.6)	5.1	(1.3)	6.8	(2.0)
1–3	46.3	(3.3)	33.3	(6.2)	39.1	(6.3)
4–6	18.6	(2.5)	33.2	(4.0)	28.1	(6.3)
7–9	4.9	(1.2)	8.7	(2.3)	7.3	(3.6)
10 or more	10.5	(2.2)	19.6	(6.4)	18.6	(6.7)
Total	100.0		100.0		100.0	

4. Rodent control

Overall, 95.0 percent of all swine sites used bait or poison to control rodents. Nearly half of small sites used cats for rodent control. Cats can spread *Toxoplasma gondii* to pigs. *Toxoplasma gondii* is a foodborne pathogen with public health consequences. One-fourth of large sites used cats for rodent control; however, note the large standard error.

F.4. Percentage of sites by rodent control method used and by size of site:

Rodent control method	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Cats	45.0	(3.2)	18.3	(5.3)	25.0	(9.3)	30.4	(4.7)
Dogs	23.8	(2.2)	14.6	(5.1)	22.7	(9.2)	19.8	(4.0)
Traps	28.1	(3.8)	17.6	(5.0)	15.0	(7.0)	21.4	(3.2)
Bait or poison	90.0	(1.0)	98.1	(0.7)	99.4	(0.4)	95.0	(0.8)
Professional exterminator	7.4	(2.2)	9.8	(3.1)	12.2	(4.9)	9.2	(2.2)
Other	3.2	(1.5)	4.2	(3.3)	6.1	(3.2)	4.2	(2.4)
Any	98.7	(0.4)	99.9	(0.0)	99.8	(0.2)	99.4	(0.2)

5. Feral swine

Overall, 16.9 percent of sites were in a county where feral swine were present. Almost three-fourths of sites in the South region reported that feral swine were in the county. Just over 2 percent of sites in the Midwest region reported that feral swine were in the county.

F.5.a. Percentage of sites in counties where feral swine were present (including pigs on hunting clubs or captive on farms), by size of site:

Feral swine present	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Yes	9.2	(1.9)	23.4	(7.8)	19.3	(7.9)	16.9	(4.7)
No	82.4	(2.1)	67.9	(7.8)	66.0	(10.2)	73.5	(5.2)
Don't know	8.4	(1.4)	8.7	(3.4)	14.7	(6.3)	9.6	(2.5)

F.5.b. Percentage of sites in counties where feral swine were present (including pigs on hunting clubs or captive on farms), by region:

Feral swine present	Percent Sites					
	Region					
	Midwest		East		South	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	
Yes	2.3	(0.5)	6.6	(3.1)	74.0	(6.3)
No	87.5	(3.7)	82.0	(7.2)	21.2	(5.7)
Don't know	10.2	(3.8)	11.5	(5.4)	4.8	(2.2)

Feral pigs were seen on less than 1 percent of all sites during the previous 12 months.

F.5.c. Percentage of sites in which feral/wild pigs were seen on-site during the previous 12 months, by size of site:

Percent Sites							
Size of Site (total inventory)							
Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0.3	(0.1)	0.3	(0.2)	1.8	(1.0)	0.6	(0.2)

F.5.d. Percentage of sites in which feral/wild pigs were seen on-site during the previous 12 months, by region:

Percent Sites					
Region					
Midwest		East		South	
Percent	Std. error	Percent	Std. error	Percent	Std. error
0.0	(—)	0.1	(0.1)	2.9	(1.4)

For the 3.0 percent of sites in which feral pigs had been seen on-site, over 10 percent reported that feral pigs had accessed facilities or feed storage.

F.5.e. For sites in which feral/wild pigs had been seen on-site during the previous 12 months, percentage of sites in which there was any evidence that feral swine had entered or gained access to facilities used to house swine or store feed:

Percent sites	Std. error
11.7	(6.7)

G. General Management

1. Environmental testing

Almost 90 percent of sites had tested the nutrient content of manure at least once during the previous 3 years. Of these sites, the majority tested once a year, on average. Just 14 percent of sites tested air quality, usually only once every 3 years.

G.1. Percentage of sites by number of times the following environmental tests were conducted during the previous 3 years:

Tested	Percent Sites										
	Number of Tests Conducted										
	0		1		2		3		4 or more		Total
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error		
Groundwater ¹	70.3	(3.9)	16.8	(2.9)	2.3	(0.5)	7.0	(1.9)	3.7	(1.4)	100.0
Nutrient content of manure (such as nitrogen level)	10.7	(1.8)	7.8	(1.7)	3.8	(1.0)	52.4	(7.3)	25.2	(6.1)	100.0
Air quality ²	86.0	(3.7)	11.6	(3.7)	0.8	(0.3)	1.5	(0.6)	0.2	(0.1)	100.0

¹Such as for nitrates or pathogens.

²Such as ammonia or hydrogen sulfide levels.

2. Carcass disposal

About half the sites with dead preweaned pigs composted the pigs, with the majority doing so on-site. More than one-fifth of sites buried dead preweaned pigs, and almost half of sites with weaned-pig deaths composted carcasses. When all deaths are combined, almost 30 percent of sites had a renderer come on-site to pick up carcasses.

G.2.a. For sites with deaths in preweaned or weaned pigs, percentage of sites by method of carcass disposal:

Carcass disposal method	Percent Sites					
	Preweaned		Weaned		All deaths	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Burial on-site	22.8	(2.0)	10.4	(1.5)	10.8	(1.5)
Burning on-site	10.3	(1.9)	5.1	(1.1)	5.8	(1.2)
Renderer pickup on-site	13.4	(3.7)	27.9	(5.0)	29.1	(5.2)
Renderer pickup outside site	6.4	(1.0)	11.1	(2.0)	11.2	(2.0)
Composting on-site	45.9	(2.8)	39.8	(7.2)	40.9	(7.0)
Composting off-site	4.6	(1.0)	5.4	(1.0)	5.4	(1.0)
Other	1.8	(0.4)	1.2	(0.4)	1.2	(0.4)

Over 40 percent of all dead pigs (43.1 percent) were picked up by a renderer, and a similar percentage (45.2 percent) were composted.

G.2.b. Percentage of dead pigs, by pig type and by method of carcass disposal:

Carcass disposal method	Percent Dead Pigs					
	Pig Type					
	Preweaned		Weaned		All deaths	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Burial on-site	2.4	(0.8)	2.4	(1.1)	2.4	(0.6)
Burning on-site	10.3	(4.7)	7.4	(4.5)	9.0	(3.3)
Renderer pickup on-site	31.9	(12.8)	32.4	(9.7)	32.1	(8.6)
Renderer pickup outside site	10.3	(4.1)	11.8	(4.1)	11.0	(2.9)
Composting on-site	38.6	(9.3)	43.5	(14.5)	40.7	(9.1)
Composting off-site	6.2	(4.4)	2.4	(0.8)	4.5	(2.6)
Other	0.2	(0.1)	0.2	(0.1)	0.2	(0.1)
Total	100.0		100.0		100.0	

3. Use of a veterinarian

More than half of large sites had a veterinarian employed by the operation visit the site during the previous 12 months. Almost 60 percent of small sites had a local veterinarian visit the site. Overall, three-fourths of all sites were visited by some type of veterinarian.

G.3.a. Percentage of sites in which a veterinarian visited for any purpose during the previous 12 months, by type of veterinarian and by size of site:

Veterinarian	Percent Sites							
	Size of Site (total inventory)							
	Small (fewer than 2,000)		Medium (2,000–4,999)		Large (5,000 or more)		All sites	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Local practitioner	59.3	(3.5)	35.7	(6.8)	39.1	(7.1)	45.9	(4.2)
Consulting or second-opinion	9.2	(1.3)	19.4	(5.1)	23.3	(8.8)	15.9	(3.5)
On-staff	11.9	(3.8)	34.8	(7.9)	52.0	(7.1)	28.2	(4.9)
State or Federal	1.2	(0.3)	0.3	(0.1)	0.7	(0.4)	0.7	(0.2)
Other type	0.5	(0.3)	0.8	(0.3)	2.1	(1.5)	0.9	(0.3)
Any type	73.5	(2.2)	73.5	(9.9)	83.6	(7.8)	75.3	(4.8)

Over half of sites (55.9 percent) were visited by a veterinarian two or more times during the previous 12 months.

G.3.b. Percentage of sites by number of times a veterinarian visited for any purpose during the previous 12 months, and by type of veterinarian:

Veterinarian	Percent Sites								Total
	Number of Visits								
	0		1		2–4		5 or more		
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	
Local practitioner	54.1	(4.2)	14.9	(2.5)	20.7	(3.0)	10.3	(1.5)	100.0
Consulting or second-opinion	84.1	(3.5)	7.3	(2.1)	6.8	(1.4)	1.8	(0.5)	100.0
On-staff	71.8	(4.9)	9.1	(2.3)	14.6	(4.0)	4.5	(1.6)	100.0
State or Federal	99.3	(0.2)	0.5	(0.1)	0.1	(0.0)	0.2	(0.1)	100.0
Other type	99.1	(0.3)	0.2	(0.1)	0.1	(0.1)	0.5	(0.3)	100.0
Any type	24.7	(4.8)	19.4	(2.2)	35.9	(3.7)	20.0	(2.6)	100.0

Section II: Methodology

A. Needs Assessment and Study Objectives

NAHMS develops study objectives by exploring existing literature and contacting stakeholders about their informational needs and priorities during a needs assessment phase. Stakeholders for NAHMS studies include industry members, allied industry representatives, government agencies, animal health officials, and many others. The purpose of the needs assessment for the NAHMS Swine 2012 study was to collect information about the most important swine health and production management issues facing the swine industry. A driving force for the needs assessment was for NAHMS to receive input from a variety of producers, as well as from industry experts and representatives; Federal, State, and private veterinarians; extension specialists; universities; and swine organizations. Information was collected via interviews and through a needs assessment survey.

Once the most important issues were identified, the study objectives were created by prioritizing the needs garnered throughout the needs assessment phase.

The study objectives for the NAHMS Swine 2012 study were:

1. Describe current U.S. swine production practices including general management practices, housing practices, productivity, disease prevention, and mortality for five phases of production: gestation, farrowing, nursery, grower/finisher, and wean-to-finish.
2. Describe trends in swine health and management practices.
3. Determine the prevalence and associated risk factors for select respiratory, neurologic, gastrointestinal, systemic, and foodborne pathogens found in weaned market pigs.
4. Describe antibiotic usage patterns in pigs postweaning to market to control and treat disease and promote growth.
5. Evaluate presence of or exposure to select pathogens and characterize isolated organisms from biological specimens (feces, sera, feed).
6. Update estimates of the economic cost of select respiratory, neurologic, gastrointestinal, systemic, and foodborne pathogens found in commercial swine herds and create estimates of the economic cost of different treatment approaches.

B. Sampling and Estimation

1. State selection

The preliminary selection of States to be included in the study was done using the NASS 2007 Census of Agriculture and the December 1, 2010, quarterly “Hogs and Pigs” report. A goal for NAHMS national studies is to include States that account for at least 70 percent of the animal and producer populations in the United States. Factors that influenced State selection were a high proportion of U.S. farms or animals, demographic trends, and regional representation. The 13 States recommended for inclusion in the study were: Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota, and Texas. The selection criteria for operations in these States were 100 or more pigs.

2. Operation selection

The sample design was a multistage design in which the operation was the primary sampling unit and the site was the analysis unit. (See “Terms Used in this Report” for a definition of operation and site).

The list frame used for sampling operations was provided by NASS. Within each State, a stratified random sample was selected in which the size stratum was based on operation inventory on the NASS list frame. Size strata were: 100 to 999 head, 1,000 to 1,999 head, 2,000 to 4,999 head, and 5,000 or more head in total inventory. The sample of 4,600 operations was drawn in 5 replicates to facilitate mixed-mode data collection, with 2,000 operations being used for the computer assisted telephone interview (CATI) and 2,600 operations used for the on-farm personal interview. The CATI sample was chosen from operations with fewer than 1,000 pigs (according to the list frame) to minimize the number of operations with multiple sites in the CATI sample.

The State-level allocation was based on a weighted percentage of the number of operations in the State and the pig inventory relative to the U.S. levels for swine farms with 100 or more pigs. The percentage of the 13-State total for the population of 100+ swine farms in the State was given a 0.4 weighting and the percentage of pigs was given a 0.6 weighting. For example, Iowa had 31.6 percent of pigs and 34.2 percent of the farms in the United States. Iowa was initially assigned 32.6 percent ($31.6 \times 0.6 + 34.2 \times 0.4 = 32.6$) of the sample of 4,600 operations drawn in replicates. The allocation was adjusted to move some of the sample from States with a large number of operations to other States with fewer operations. Within States, the number of operations was allocated to each size stratum using the same strategy as for the State-level allocation.

3. Site selection

Some producers on the NASS list frame represented swine operations in which pigs were raised on multiple sites. A subsample of sites was selected for operations with multiple sites in a State. The number of sites selected depended on the size of the operation. If the operation had fewer than 20 sites, 1 sow site and 2 non-sow sites were randomly selected. If the operation had 20 to 49 sites, 2 sow sites and 6 nonsow sites were randomly selected. If the operation had 50 or more sites, 3 sow sites and 12 nonsow sites were randomly selected.

4. Population inferences

Data collected from the sampled producers were used to generate national estimates. 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 State and size group. Site-level weights were then calculated for sow sites and nonsow sites, so that sow sites only represented other sites with sows, and nonsow sites only represented other sites without sows. The site-level weights were also adjusted for nonresponse.

Inferences are to the population of swine operations with 100 or more pigs in the 13 participating States. According to the 2007 Census of Agriculture, these States accounted for 88.9 percent of U.S. swine operations with 100 or more swine and 90.8 percent of swine on operations with 100 or more swine.

C. Data Collection

Two methods were used to collect data for the Swine 2012 study. For the 2,600 producers selected to complete the survey via face-to-face interview, producers were contacted by a NASS enumerator to set up a convenient time for an on-farm visit. The NASS enumerator administered the general swine farm questionnaire (GSFQ) via face-to-face interviews conducted from July 16 through August 15, 2012. For the 2,000 producers selected to complete the survey via CATI, a shorter version of the GSFQ was completed during the same time period.

Upon completion of the interviews (CATI and on-farm), respondents with 100 or more pigs were asked to sign a consent form allowing NASS to turn their names over to APHIS for further consideration in the study, which completed phase I of the study. NASS provided the list of producers willing to participate in the study's second phase to NAHMS coordinators in each State. NASS sent a dataset to NAHMS along with completed questionnaires via mail.

D. Data Analysis

Initial data entry and validation were performed in individual NASS State offices for the on-farm questionnaire and in a centralized NASS call center for the CATI questionnaire. Data were entered into a SAS dataset. NAHMS staff performed additional data validation after data from all States were combined.

Data analysis was performed using SAS and SUDAAN software. Responses were weighted to make inference back to the population from which the sample was selected. Sites were nested within operations and strata to account for clustering. SUDAAN uses a Taylor series expansion to estimate appropriate variances for the data that are stratified, clustered, and weighted.

E. Sample Evaluation

The purpose of this section is to provide various performance measurement parameters. Historically, the term “response rate” was used as a catch-all parameter, but there are many ways to define and calculate response rates. Therefore, the following table presents an evaluation based upon a number of measurement parameters, which are defined with an “x” in categories that contribute to the measurement.

Phase I: General Swine Management Questionnaire					
Response category	Number sites	Percent sites	Contacts	Usable¹	Complete²
Survey complete and VMO consent	944	18.0	x	x	x
Survey complete, refused VMO consent	1,175	22.4	x	x	x
No hogs on June 1, 2012	915	17.5	x	x	
Out of business	33	0.6	x	x	
Out of scope	17	0.3			
Refusal of GSMQ	908	17.3	x		
Office hold (NASS elected not to contact)	151	2.9			
Inaccessible	1,094	20.9			
Total	5,237	100.0	3,975	3,067	2,119
Percent of total sites			75.9	58.6	40.5
Percent of total sites weighted ³			71.2	55.5	32.4

¹Usable sites—respondent provided answers to inventory questions for the site (either zero or positive number on hand).

²Survey complete site—respondent provided answers to all or nearly all questions.

³Weighted response—the rate was calculated using the initial selection weights.

Appendix I: Sample Profile

A. Responding Sites

1. Total inventory

Size of site (total inventory)	Number of responding sites
100 to 1,999	1,230
2,000 to 4,999	617
5,000 or more	272
Total	2,119

2. Sow inventory

Size of site (sow inventory)	Number of responding sites
No sows or gilts	1,273
1 to 249	501
250 to 499	66
500 or more	279
Total	2,119

3. Region

Region	Number of responding sites
Midwest (IA, MN, NE, SD)	1,308
East (IL, IN, OH, PA)	574
South (KS, MO, NC, OK, TX)	237
Total	2,119

Appendix II: U.S. Swine Inventory and Number of Farms*

Region	State	Number of hogs and pigs		Number of farms	
		All farms	Farms with 100 or more pigs (x1,000)	All farms	Farms with 100 or more pigs
Midwest	Iowa	19,295,092	19,256	8,330	6,965
	Minnesota	7,652,284	7,623	4,382	2,892
	Nebraska	3,268,544	3,251	2,213	1,517
	South Dakota	1,490,034	1,481	959	582
	Total	31,705,954	31,611	15,884	11,956
East	Illinois	4,298,716	4,273	2,864	1,661
	Indiana	3,669,057	3,637	3,420	1,581
	Ohio	1,831,084	1,797	3,718	1,032
	Pennsylvania	1,167,449	1,136	3,637	730
	Total	10,966,306	10,843	13,639	5,004
South	Kansas	1,885,252	1,867	1,454	466
	Missouri	3,101,469	3,067	2,999	965
	North Carolina	10,134,004	10,121	2,836	1,741
	Oklahoma	2,398,372	2,376	2,702	151
	Texas	1,155,790	1,124	4,471	102
	Total	18,674,887	18,555	14,462	3,425
Total (13 States)		61,347,147	61,009	43,985	20,385
Total U.S.(50 States)		67,786,318	67,164	75,442	22,921

*NASS 2007 Census of Agriculture.

Appendix III: Study Objectives and Related Outputs

1. Describe current U.S. swine production practices including general management practices, housing practices, productivity, disease prevention, and mortality for five phases of production: gestation, farrowing, nursery, grow/finish, and wean-to-finish.

- **Part I: Baseline Reference of Swine Health and Management**

- Part II: Reference of Swine Health and Health Management in the United States, 2012, expected summer 2015
- Reference of Management Practices on Small-enterprise Swine Operations in the United States, 2012, February 2014
- Sow Productivity, info sheet, expected spring 2015
- Sow Gestation Housing, info sheet, expected spring 2015
- Biosecurity and Risk Management, info sheet, expected spring 2015
- Wean-to-finish Production, info sheet, expected fall 2015
- Vaccine Use, info sheet, expected fall 2015
- Porcine Reproductive and Respiratory Syndrome (PRRS) Control in Breeding Herds, info sheet, expected fall 2015
- Feed Management, info sheet, expected fall 2015
- Vitamin D Supplementation, info sheet, expected fall 2015

2. Describe trends in swine health and management practices.

- Part III: Changes in the U.S. Pork Industry, 1995–2012, expected summer 2015
- Sow Productivity, info sheet, expected spring 2015
- Sow Gestation Housing, info sheet, expected spring 2015
- Biosecurity and Risk Management, info sheet, expected spring 2015

3. Determine the prevalence and associated risk factors for select respiratory, neurologic, gastrointestinal, systemic, and foodborne pathogens found in weaned market pigs.

- Swine Dysentery, info sheet, expected fall 2015
- Toxoplasma, info sheet, expected fall 2015
- Trichinae, info sheet, expected fall 2015
- Porcine Reproductive and Respiratory Syndrome (PRRS) Prevalence, info sheet, expected fall 2015
- *Salmonella*, info sheet, expected fall 2015
- *Enterococcus*, info sheet, expected fall 2015
- Generic *E. coli*, info sheet, expected fall 2015

4. Describe antibiotic usage patterns in pigs postweaning to market to control and treat disease and promote growth.

- Part II: Reference of Swine Health and Health Management in the United States, 2012, expected summer 2015
- Antibiotic Use, info sheet, expected fall 2015

5. Evaluate presence of or exposure to select pathogens and characterize isolated organisms from biological specimens (feces, sera, feed).

- Toxoplasma, info sheet, expected fall 2015
- Trichinae, info sheet, expected fall 2015
- Porcine Reproductive and Respiratory Syndrome (PRRS) Prevalence, info sheet, expected fall 2015
- *Salmonella*, info sheet, expected fall 2015
- *Enterococcus*, info sheet, expected fall 2015
- Generic *E. coli*, info sheet, expected fall 2015

6. Update estimates of the economic cost of select respiratory, neurologic, gastrointestinal, systemic, and foodborne pathogens found in commercial swine herds and create estimates of the economic cost of different treatment approaches.

- **Part I: Baseline Reference of Swine Health and Management**
- Part II: Reference of Swine Health and Health Management in the United States, 2012, expected summer 2015
- Swine Dysentery, info sheet, expected fall 2015

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