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Veterinary Services

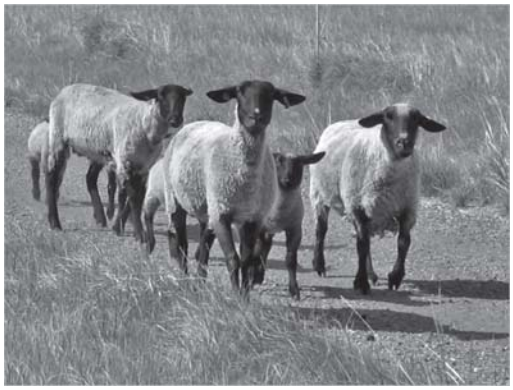
National Animal Health Monitoring System

February 2012

An In-depth Study of Small-scale U.S. Livestock Operations, 2011





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Cover photographs of beef with windmill, dairy cows, and sheep courtesy of Judy Rodriguez; cover photograph of goats courtesy of Anson Eaglin; cover photograph of chickens courtesty of Frank T. Jones; cover photograph of pigs courtesy of U.S. Pork Board

Items of Note

The National Animal Health Monitoring System's (NAHMS) Small-scale Operations Initiative provides statistically valid information on the characteristics of small-scale U.S. livestock operations and a better understanding of the challenges and barriers these important agricultural enterprises face. This report is the fourth in a series of reports resulting from the Initiative.

Information for this report was collected from 8,123 small-scale livestock operations in all 50 States. Small-scale livestock operations were defined as operations with gross annual sales from $10,000 to $499,999 in which the predominant agricultural enterprise was a livestock/animal species such as cattle, poultry, goats, sheep, swine, horses, aquaculture, or other farm animals raised for sale or home use. There are approximately 350,000 farms in the United States that fit this definition of a small-scale livestock operation (see Appendix II, p 121).

Operation and operator characteristics

- Overall, 9 of 10 operations (87.2 percent) had beef cattle in the previous 12 months; 37.7 percent had horses or other equine species, and 16.9 percent had chickens or other poultry.
- Almost half of operations (47.1 percent) kept more than one type of livestock species during the previous 12 months.
- About 7 of 10 operations (72.0 percent) raised at least 1 plant crop during the previous 12 months.
- Two of three operations (66.7 percent) raised hay, the most common crop grown.
- On almost 4 of 10 operations (37.1 percent) the primary operator was 65 years of age or older.
- The majority of primary operators were White (96.2 percent) and male (90.9 percent).
- Overall, 61.7 percent of operations had at least one person in the household who earned income from an off-farm job.

Biosecurity

Information on biosecurity and livestock movement practices is helpful for understanding disease risk and for understanding the role and needs of small-scale operations in the event of an animal disease outbreak. Overall, about 4 of 10 operations (39.3 percent) brought new livestock or poultry onto the operation during the previous 12 months, and 13.9 percent had livestock or poultry move off the operation and return in the previous 12 months.

Of operations that brought on new animals or had animals leave and return during the previous 12 months, 40.3 percent always quarantined the new or returning animals, 11.7 percent sometimes quarantined them, and 48.0 percent rarely or never quarantined them. Of the 48.0 percent of operations that rarely or never quarantined new or returning animals, 64.8 percent did not quarantine

because they trusted the source of the new animals or the place from which animals were returning, and 27.9 percent did not quarantine because they did not have a separate enclosure or extra equipment for isolating animals. Very few operations (5.7 percent) indicated that the reason for not isolating animals was that they did not believe that isolation was beneficial or that it prevents disease.

Livestock disease outbreaks

A major crop or animal disease outbreak could impact many U.S. farms, including small-scale operations. To provide insight into how small-scale operations can best be served in the event of a major animal disease outbreak, information was collected on resources producers would contact in the event of a foreign animal disease and on their opinions about Federal indemnity.

Overall, 92.1 percent of operations would be somewhat or very likely to directly contact a private veterinarian if they had an animal suspected of having a foreign animal disease, and 40.9 percent of would be somewhat or very likely to directly contact the USDA.

Operators on less than half of small-scale operations (47.2 percent) had heard of Federal indemnity. Operators were asked for their opinions on how the Federal government should pay indemnity to farmers for animals removed or euthanized in order to control a regulated disease. The majority (58.5 percent) believed that the government should take into account a livestock owner's biosecurity practices when determining indemnity payments, while the remaining 41.5 percent believed that the government should pay full indemnity regardless of a livestock owner's biosecurity practices.

Availability and use of veterinarians

Animal health is closely tied with productivity and food safety. Veterinarians, as resources on animal health, play a critical role in the productivity of small-scale operations and the safety of the U.S. food supply. The availability of food-animal veterinarians in rural areas is an important issue that has been widely discussed in recent years. All operations were asked about the distance to the nearest veterinarian that worked with their type of livestock, regardless of whether or not the operation actually used that veterinarian. Overall, 82.0 percent of operations had a veterinarian that worked with their type of livestock available within 29 miles of the operation. In the West region, about one of four operations (24.2 percent) was located 30 to 99 miles from the nearest veterinarian that worked with their type of livestock.

Overall, almost two of three operations (62.0 percent) used a veterinarian for their livestock or poultry during the previous 12 months. A higher percentage of operations in the North Central and West regions (72.8 and 71.2 percent, respectively) used a veterinarian during the previous 12 months, compared with operations in the Northeast and South regions (59.0 and 54.8 percent, respectively). Of the 38.0 percent of operations that did not use a veterinarian, 65.8 percent did not

use a veterinarian because they had no disease or other need for a veterinarian, 44.2 percent did not use a veterinarian because they provided their own health care for their animals, and 12.4 percent did not use a veterinarian because of the expense.

Marketing practices

Overall, 88.3 percent of operations used an auction or sales barn to market their animals/animal products. In the previous 12 months, about one of four operations (25.2 percent) marketed animals or animal products directly to individuals or consumers. These sales included, but were not limited to, direct sales to consumers through farmer's markets or Community Supported Agriculture, Internet sales direct to consumers, and sales of live animals to other producers for breeding or other purposes. Direct marketing allows operations to differentiate their products by highlighting product features that appeal to consumers or buyers, rather than competing on price alone.

Overall, about one of four operations (24.5 percent) marketed or advertised agricultural products as pasture-raised livestock; 13.5 percent marketed products as naturally raised livestock; 5.5 percent marketed or advertised products as promoting conservation (eco-friendly); and 1.0 percent marketed USDA certified organic products. A higher percentage of operations in the West region marketed or advertised products as naturally raised livestock compared with operations in the North Central and South regions.

Only 7.5 percent of operations used the Internet to market any agricultural products. The Internet features used most commonly were Web sites for the farm business, email messages, and online message boards or classified sites (e.g., Craigslist).

Mobile slaughter facilities

Access to slaughter facilities might be a challenge for small-scale operations that wish to directly market meat and poultry products to consumers, since some regions of the United States might not have enough stationary slaughter facilities to meet the needs of local small-scale operations. Furthermore, opening a new stationary slaughter facility is very costly (Goodsell et al., 2010). Overall, 38.9 percent of small-scale operations had live animals transported to a stationary slaughter facility.

A mobile slaughter unit is a self-contained slaughter facility that travels from site to site. In the West region, about one-fourth of operations (26.7 percent) used a mobile slaughter service, compared with less than 10 percent of operations in the North Central, Northeast, and South regions (6.2, 4.2, and 1.5 percent, respectively). Operators who wish to learn more about mobile slaughter and/or direct marketing of meat and poultry products can find information from a local extension office or in written publications (e.g., Goodsell, et al., 2010).

Information and training needs

Universities and Federal agencies provide relevant training and informational resources to assist small-scale operations. In this study, operators of small-scale operations were asked to identify the topics that they wanted more training in as well as their preferences for receiving that training.

Operators on over two-thirds of operations indicated that additional training in animal health/diseases, infectious disease management practices, how to transfer the farm to the next generation, tax-related issues, or government programs and regulations would be somewhat or very useful. Operators on about half of operations (51.3 percent) felt that additional training about rules governing interstate or international movement of animals and products would be somewhat or very useful.

For the delivery of training materials, the channels preferred by operators on the highest percentage of operations were a local extension office (56.0 percent of operations) or a written publication (49.4 percent). Operators on a lower percentage of operations preferred to receive training on the Internet (29.9 percent), through a presentation by an expert (24.9 percent), or through a livestock association or club (21.8 percent).

Factors in the decision to continue farming

Overall, operators on 89.4 percent of operations expected to continue farming over the next 5 years. The top three factors contributing to the decision to continue farming were improved farm product prices, stability of farm expenses, and stability of prices for farm products (ranked very necessary factors by 62.8, 58.6, and 57.3 percent of operations, respectively). Half of medium-sales operations ($100,000 to $249,999 gross annual sales) and high-sales operations ($250,000 to $499,999 gross annual sales) considered access to operating loans very necessary to their decision to continue farming (46.1 and 54.2 percent, respectively). The ability to find off-farm employment to supplement income was very necessary to the decision to continue farming for 38.0 percent of low-sales operations (less than $100,000 gross annual sales), compared with 20.7 percent of medium-sales operations and 14.3 percent of high-sales operations.

For the 10.6 percent of operations in which the operator expected to leave farming in the next 5 years, retiring was the reason the operator gave for leaving on the majority of operations (83.8 percent), while on about one of seven operations (14.2 percent) the operator was leaving to pursue a different job or career.

Acknowledgements

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

We would like to thank to the NASS telephone enumerators who contacted small-scale producers and collected the data. Their hard work and dedication were invaluable. Thanks also goes to the personnel at the USDA–APHIS–Veterinary Services' Centers for Epidemiology and Animal Health for their efforts in generating and distributing this report.

All participants are to be commended, particularly the producers whose voluntary efforts made the Small-scale U.S. Livestock Operations 2011 study possible.

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Director
Centers for Epidemiology and Animal Health

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

Table of Contents

Introduction

"Small-scale livestock operations in the United States help create prosperous rural communities and provide safe and nutritious foods for our country and the world. Today, these operations face many challenges, as well as opportunities."

Dr. John Clifford
Deputy Administrator, Veterinary Services
Animal and Plant Health Inspection Service
U.S. Department of Agriculture

The National Animal Health Monitoring System (NAHMS) is an information gathering and disseminating organization within the Animal and Plant Health Inspection Service (APHIS), an agency of the U.S. Department of Agriculture (USDA). The purpose of the NAHMS program is to collect and analyze animal health data to provide scientifically sound and current information on the health status of U.S. livestock and poultry. The information is intended to benefit livestock producers by facilitating efficient production and animal welfare, and the general public by facilitating a safer and higher quality food supply. Special emphasis is placed on obtaining valid estimates of management practices, production levels, and disease status of the national herds.

"An In-depth Study of Small-scale U.S. Livestock Operations, 2011" is the fourth publication in a series of reports from the Small-scale Operations Initiative implemented by NAHMS at the request of the administrator of the USDA–APHIS. The objectives of this report are to:

- Provide a baseline description of animal health, marketing, and management practices on small-scale operations;
- Investigate challenges faced by small-scale operations; and
- Describe management and biosecurity practices important for the control of infectious diseases on small-scale operations.

This report contains information collected from 8,123 small-scale livestock operations. The methods used and sample profile for the study can be found in the Methodology section and Appendix I of this report, respectively.

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Terms Used in This Report

Community-supported agriculture (CSA): A community of consumers who pledge to support a farm operation. A consumer group funds a farm's budget for the farming season in order to get a weekly delivery or pickup of vegetables, fruit, dairy products, and/or meat from the farm.

Farm sales: The total dollar value of agricultural products sold from an operation in 2010 (gross sales).

Farm sales size categories:

Low sales: Less than $100,000
Medium sales: $100,000 to $249,999
High sales: $250,000 to $499,999

Note: The study's sample selection consists of operations on the National Agricultural Statistics Service list sampling frame with sales from $10,000 to $499,999 in 2009. In 2010, however, some of these operations had gross sales under $10,000 or over $499,999. For the purposes of this report, operations with sales under $10,000 in 2010 are included in the low-sales category and operations with sales over $499,999 in 2010 are included in the high-sales category.

Industry:

Respondents were asked if they or anyone in their household earned income from an off-farm job. Those that answered yes were asked to identify their industry of employment by choosing from a list provided on the questionnaire. A number of these respondents had difficulty identifying their industry from the provided list and, as a result, selected the list's "other" category. Respondents who checked the "other" category were asked to write in a specific industry classification. The following list shows how these specific "other" responses were reclassified.

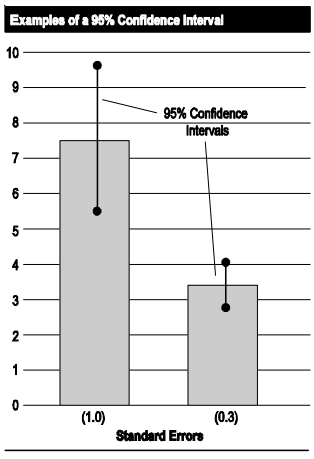
- **Agriculture, forestry, fishing, hunting, or mining:** oil, gas, propane, lumber, and sawmill occupations.
- **Construction:** plumbers, electricians, landscapers, maintenance/janitorial, painters, fencers, heat/air/refrigeration services.
- **Manufacturing:** automotive, industrial supply, foundry, and textiles.
- **Education services:** school/university employees.
- **Healthcare services:** veterinary medicine and pharmaceutical.
- **Other government services:** law enforcement, prison, court system, firefighters, librarians, and all Federal/State/local government employees.
- **Wholesale trade, warehousing, utilities, or transportation:** telecommunications, television, airline employees, and truckers/delivery persons.
- **Finance, insurance, real estate, and other professional services:** engineering, computer/IT, researchers/scientists, auto mechanics, attorneys, supervisors/managers.
- **Recreation/tourism, including restaurants and lodging:** music and entertainment occupations.
- **Retail trade or personal services:** telemarketing, clerical/administrative, marketing/advertising, day care, house cleaning, and grocery store occupations.

Isolate: To prevent nose-to-nose contact and to prevent the sharing of feed, drinking water, and equipment with other animals of the same species already present on the operation.

Livestock: Cattle, poultry, goats, sheep, swine, horses, other equids, aquaculture, and all other farm animals raised for sale or home use.

Operation average: The average value for all operations; a single value for each operation is summed over all operations reporting divided by the number of operations reporting. For example, operation average number days animals were isolated (see p 57) is calculated by summing the average number of days reported by each operation and dividing this by the number of operations.

Population estimates: The estimates in this report make inference to all small-scale U.S. livestock operations (see Methodology, p 115). Data from the operations responding to the survey are weighted to reflect their probability of selection during sampling and to account for survey nonresponse.

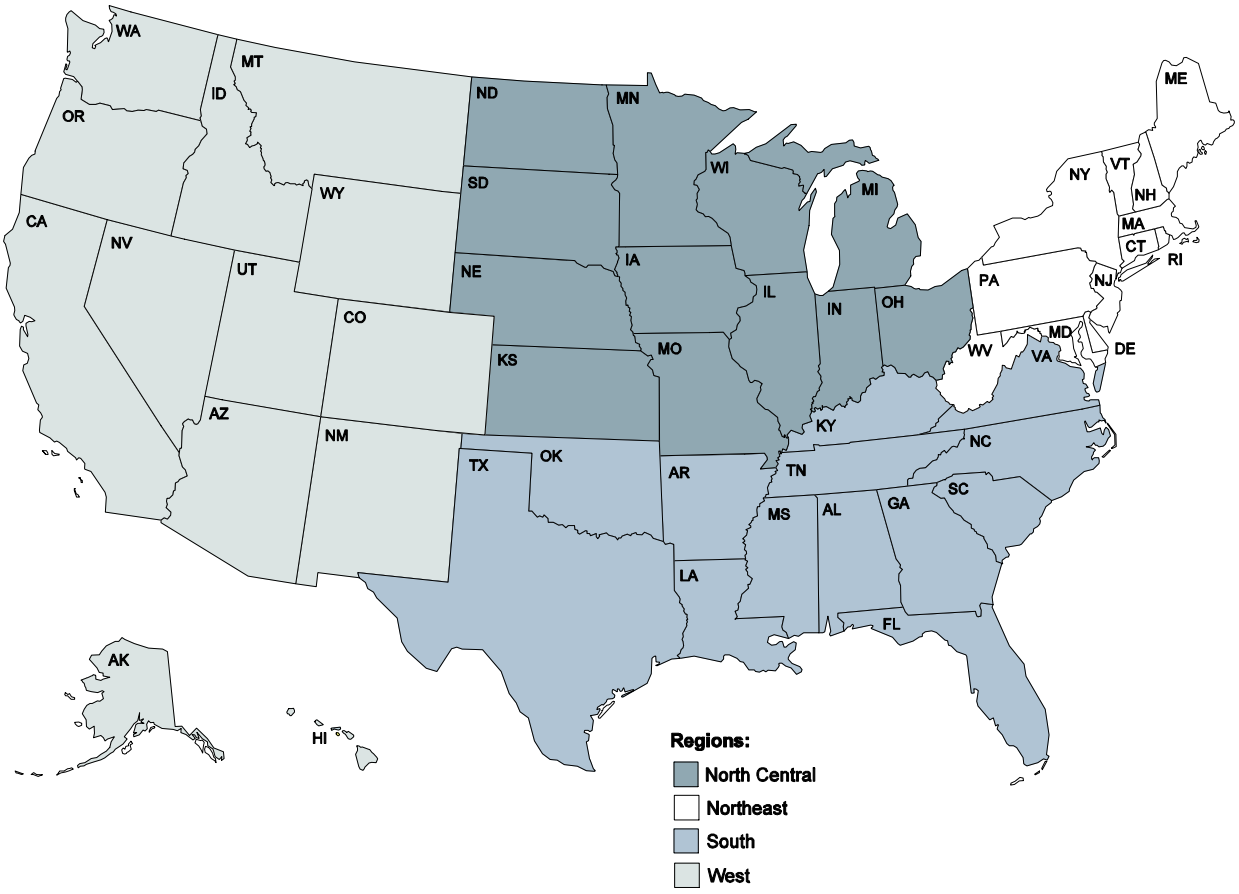


Precision of estimates: Estimates in this report are provided with a measure of precision called the standard error. A 95-percent confidence interval can be created with bounds equal to the estimate, plus or minus two standard errors. If the only error is sampling error, the confidence intervals created in this manner will contain the true population mean 95 out of 100 times. In the example to the left, an estimate of 7.5 with a standard error of 1.0 results in limits of 5.5 to 9.5 (two times the standard error above and below the estimate). The second estimate of 3.4 shows a standard error of 0.3 and results in limits of 2.8 and 4.0. Alternatively, the 90-percent confidence interval would be created by multiplying the standard error by 1.65 instead of 2. Most estimates in this report are rounded to the nearest tenth. If rounded to 0, the standard error was reported (0.0). If there were no reports of the event, no standard error was reported (—). References to estimates being higher or lower than other estimates are based on the 95-percent confidence intervals not overlapping.

Poultry: Domesticated birds, including chickens, turkeys, ducks, emus, geese, ostriches, pheasants, pigeons, quail, guineas, rheas, peacocks, etc.

Regions: Based on Sustainable Agriculture Research and Education regions:

NAHMS Small-scale Livestock 2011 regions



Rural/urban continuum codes: A classification scheme that distinguishes metropolitan (metro) counties by the population size of the metro area, and nonmetropolitan (nonmetro) counties by degree of urbanization and adjacency to a metro area or areas.

Nonmetro counties are classified according to the aggregate size of their urban populations and further identified by whether or not they have some functional adjacency to a metro area or areas. A nonmetro county is defined as adjacent if it physically adjoins one or more metro areas and has at least 2 percent of its employed labor force commuting to central metro counties.

As defined by the Census Bureau, a metropolitan area contains at least one urbanized area of 50,000 or more people. All U.S. counties are assigned a rural/urban continuum code by the Office of Management and Budget based on census data. The codes used in this report are from 2003 and based on 2000 Census data. New codes will be available in 2013. See http://www.ers.usda.gov/briefing/rurality/ruralurbcon/ for more information.

Rural-urban classification (codes 1-9)	
Metro counties	
1	Counties in metro areas of 1 million population or more
2	Counties in metro areas of 250,000–999,999 population
3	Counties in metro areas of 50,000–249,999 population
Nonmetro counties	
4	Urban population of 20,000–49,999, adjacent to a metro area
5	Urban population of 20,000–49,999, not adjacent to a metro area
6	Urban population of 2,500–19,999, adjacent to a metro area
7	Urban population of 2,500–19,999, not adjacent to a metro area
8	Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area

Small-scale livestock operation: An operation with total annual farm sales from $10,000 to $499,999 in which the highest percentage of the total sales was derived from a livestock species at the time of sample selection, per the NASS list sampling frame. When determining which livestock/crops comprised the highest percentage of sales on an operation, eight livestock categories and eight crop categories were considered:

Livestock

1. Hogs and pigs
2. Milk and dairy
3. Cattle and calves
4. Sheep and goats
5. Horses and other equids
6. Poultry and eggs
7. Aquaculture
8. Other animals (e.g., fur-bearing animals).

Crops

1. Grains, oilseeds, dry beans, dry peas
2. Tobacco
3. Cotton and cottonseed
4. Vegetables, melons, potatoes, sweet potatoes
5. Fruit, tree nuts, and berries
6. Nursery, greenhouse, floriculture, and sod;
7. Cut Christmas trees and short rotation woody crops
8. Other crops and hay

Section I: Characteristics of Small-scale Livestock Operations

A. Diverse Products

The target population for this study was small-scale operations in which the predominant agricultural enterprise was a livestock species, such as cattle, poultry, goats, sheep, swine, horses, aquaculture, or other farm animals raised for sale or home use. Small-scale operations were defined as operations with annual gross sales of agricultural products from $10,000 to $499,999 at the time of sample selection. There are approximately 350,000 farms in the United States that fit this definition of small-scale livestock operations (see Appendix II, p 121).

Some small-scale operations diversify to reduce economic risk by raising multiple livestock species or agricultural commodities. Operations that diversify might be less vulnerable to difficult market or weather conditions; a better year in one commodity could balance a bad year in another commodity. Diversification may also have environmental benefits; for example, successfully managed crop diversification can reduce soil erosion and the need for fertilizers, and mitigate weed and/or pest problems (SARE, 2004). It should be noted, however, that the relationship between diversification and economic success is complex. For some operations, specialization may be preferable (raising only one or two species/commodities). For example, poultry operations often specialize because production contract arrangements with poultry companies are a method for managing economic risk. Also, the increased labor and equipment costs required for diversification can make diversification economically unfeasible for some operations (ERS, 1999b).

Beyond the economic aspects of diversification, the presence of multiple livestock species on an operation can also have implications for disease transmission. For instance, several important domestic and foreign animal diseases can infect multiple ruminant species, and some influenza virus strains might be able to cross over between swine and avian species.

1. Types of livestock species

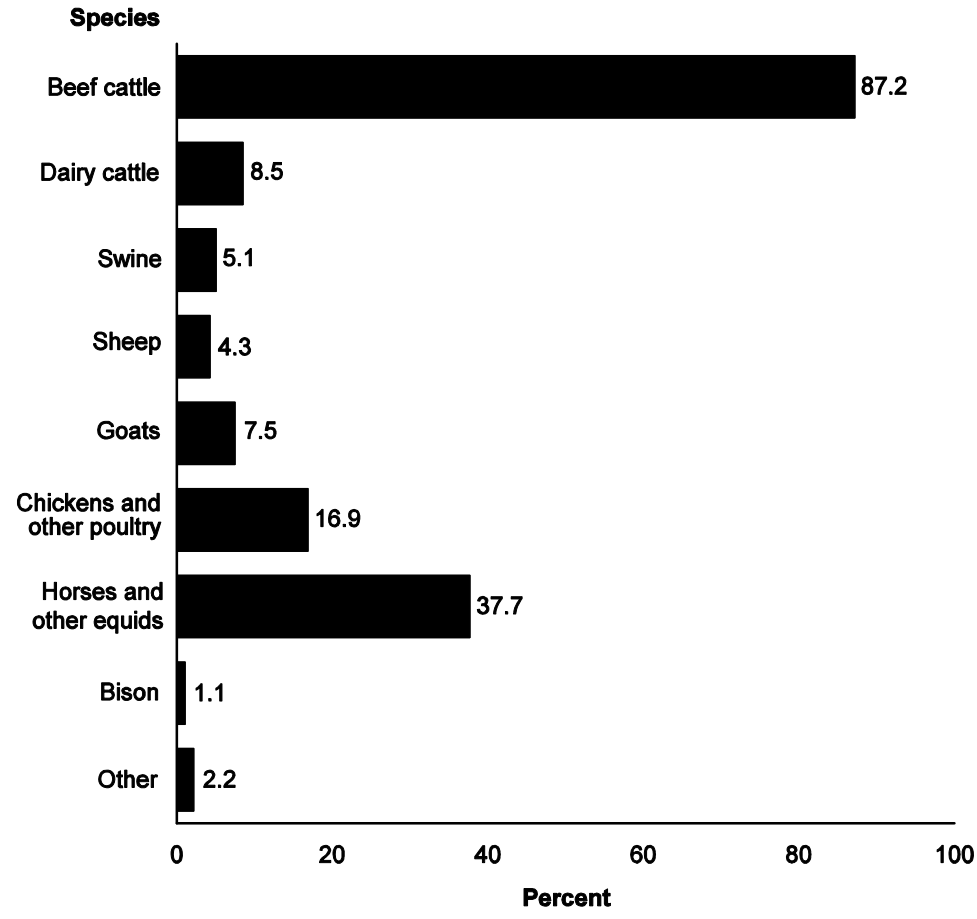
As has been previously reported (NASS, 2007), a high percentage of small-scale livestock operations are in the beef-cattle business. Overall, 87.2 percent of small-scale livestock operations had beef cattle in the previous 12 months; 37.7 percent had horses or other equids; and 16.9 percent had chickens or other poultry. Less than 10 percent of all operations had any dairy cattle, swine, sheep, goats, bison, or other livestock species in the previous 12 months. "Other" livestock species were mostly camelids, rabbits, aquaculture, bees, captive cervids, and fur-bearing animals.

Horses were present on a higher percentage of operations in the West region than in the other regions. In the Northeast region, a lower percentage of operations had beef cattle and a higher percentage had dairy cattle or poultry, compared with operations in the North Central, South, and West regions. A concentration of commercial broiler production is located within the Northeast region in the Delmarva Peninsula (Delaware and portions of Maryland and Virginia). Pennsylvania and New York, which are in the Northeast region, are among the Nation's top-five States for dairy production (NASS 2007 Census of Agriculture). Dairy operations in the West region tend to have large herds and would not be expected to fall into our definition of small-scale operations, whereas dairy operations in the Northeast region tend to have smaller herds and would be expected to fall into our definition of small-scale operations.

a. Percentage of operations by livestock species present during the previous 12 months, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Species	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Beef cattle	82.5	(0.7)	62.6	(1.7)	92.9	(0.4)	85.9	(1.3)	87.2	(0.4)
Dairy cattle	14.8	(0.5)	36.2	(1.6)	2.4	(0.2)	5.4	(0.8)	8.5	(0.2)
Swine	7.8	(0.5)	10.1	(1.3)	2.9	(0.3)	5.8	(0.8)	5.1	(0.2)
Sheep	5.0	(0.4)	7.7	(1.1)	2.4	(0.2)	10.1	(1.0)	4.3	(0.2)
Goats	7.0	(0.5)	10.6	(1.3)	7.2	(0.4)	8.1	(1.0)	7.5	(0.3)
Chickens and other poultry	17.8	(0.8)	27.3	(1.7)	14.7	(0.6)	18.8	(1.4)	16.9	(0.4)
Horses and other equids	31.7	(1.0)	29.4	(1.8)	36.5	(0.8)	64.1	(1.7)	37.7	(0.6)
Bison	1.5	(0.3)	1.5	(0.6)	0.9	(0.2)	0.8	(0.3)	1.1	(0.1)
Other	1.8	(0.3)	3.9	(0.8)	1.7	(0.2)	4.6	(0.8)	2.2	(0.2)

Percentage of operations by livestock species present during the previous 12 months



A higher percentage of low-sales operations had beef cattle (89.6 percent) than medium-sales operations and high-sales operations (67.5 and 63.3 percent, respectively). About one of three medium-sales operations (34.6 percent) had dairy cattle, compared with 5.7 percent of low-sales operations.

b. Percentage of operations by livestock species present during the previous 12 months, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Species	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Beef cattle	89.6	(0.4)	67.5	(1.5)	63.3	(2.8)
Dairy cattle	5.7	(0.3)	34.6	(1.4)	27.7	(2.6)
Swine	4.6	(0.3)	7.6	(0.9)	13.6	(2.0)
Sheep	4.3	(0.2)	4.9	(0.8)	4.2	(1.2)
Goats	7.7	(0.3)	5.3	(0.7)	4.7	(1.3)
Chickens and other poultry	16.9	(0.5)	16.9	(1.2)	17.2	(2.2)
Horses and other equids	37.8	(0.6)	37.4	(1.7)	35.9	(2.9)
Bison	1.1	(0.1)	1.4	(0.5)	1.8	(0.9)
Other	2.0	(0.2)	2.2	(0.5)	5.7	(1.4)

Among operations that had beef cattle, the peak beef-cattle inventory during the previous 12 months was largest in the West region (119 head on average) and smallest in the Northeast region (44 head on average), likely because operations in the West region have larger acreage sizes, and because cow-calf production may be a smaller component of total production for operations in regions other than the West region (Short, 2001).

Among operations that had swine, the average peak inventory of swine was higher in the North Central region (514 head) compared with operations in the South and West regions (127 and 16 head, respectively). U.S. swine production is concentrated in the North Central region, with both Iowa and Minnesota being among the Nation's top three States for swine inventory (NASS 2007 Census of Agriculture).

Among operations that had chickens and other poultry, the average peak inventory of poultry was higher in the Northeast and South regions (4,804 and 8,170 birds, respectively), compared with operations in the North Central and West regions (597 and 453 birds, respectively). Commercial broiler chicken production occurs primarily in the South and Northeast regions, and commercial chicken flocks often contain over 10,000 birds. Many operations in the North Central and West regions are probably noncommercial poultry flocks.

Large standard errors for peak inventory of swine and poultry reflect a high variability between operations. Some operations function under production contracts and have large herds or flock sizes, while other operations keep only a few swine or poultry for home use or local marketing.

c. For operations with the respective livestock species, average peak inventory* during the previous 12 months, by species and by region

	Average Peak Inventory									
	Region									
	North Central		Northeast		South		West		All operations	
Species	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Beef cattle	83	(3)	44	(3)	63	(2)	119	(5)	74	(1)
Dairy cattle	78	(3)	73	(3)	42	(10)	29	(6)	67	(2)
Swine	514	(71)	397	(154)	127	(39)	16	(4)	315	(39)
Sheep	77	(10)	55	(18)	61	(9)	104	(23)	77	(8)
Goats	30	(6)	14	(3)	32	(3)	21	(6)	28	(2)
Chickens and other poultry	597	(169)	4,804	(1,751)	8,170	(1,239)	453	(268)	4,615	(619)
Horses and other equids	7	(1)	7	(1)	6	(0)	10	(1)	7	(0)
Bison	28	(9)	**		9	(4)	**		21	(5)

*Includes animals of all ages in the respective species.
**Too few respondents to report.

As would be expected, average peak inventory generally increased as farm sales increased. High-sales operations with beef cattle had a peak inventory of 474 head on average, compared with 229 head for medium-sales operations and 55 head for low-sales operations. High-sales operations with dairy cattle had a peak inventory of 161 head on average, compared with 96 head for medium-sales operations and 38 head for low-sales operations.

The average peak inventory for operations with goats was 26 head for low-sales operations and 59 head for medium-sales operations. The relatively small number of goats on medium-sales operations is unlikely to provide $100,000 to $249,999 in farm sales, so it is likely that most medium-sales operations with goats earned additional income from other agricultural species or commodities. In fact, 96.4 percent of all operations with goats also had an additional livestock species(s) (see table A.1.g.).

d. For operations with the respective livestock species, average peak inventory* during the previous 12 months, by species and by farm sales

	Average Peak Inventory					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Species	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Beef cattle	55	(1)	229	(7)	474	(49)
Dairy cattle	38	(2)	96	(2)	161	(17)
Swine	92	(16)	1,019	(215)	1,689	(282)
Sheep	64	(7)	203	(46)	*	
Goats	26	(2)	59	(19)	*	
Chickens and other poultry	2,556	(406)	14,671	(2,920)	42,707	(15,094)
Horses and other equids	7	(0)	9	(1)	19	(5)
Bison	15	(4)	**		**	

*Includes animals of all ages in the respective species.
**Too few respondents to report.

About half of operations (52.9 percent) had only one livestock species during the previous 12 months, and 31.5 percent had two livestock species. The West region had a higher percentage of operations with more than one livestock species (66.9 percent) compared with operations in the other regions. Operations in the West region commonly kept both beef cattle and horses (data not shown).

e. Percentage of operations by number of livestock species* present during the previous 12 months, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Number of species	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	54.9	(1.0)	49.6	(2.0)	56.4	(0.8)	33.1	(1.7)	52.9	(0.6)
2	28.3	(1.0)	27.7	(1.8)	31.4	(0.8)	42.8	(1.8)	31.5	(0.6)
3	11.0	(0.6)	12.6	(1.3)	8.3	(0.4)	15.8	(1.3)	10.2	(0.3)
4 or more	5.8	(0.5)	10.1	(1.2)	3.9	(0.3)	8.3	(0.9)	5.4	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	

*Maximum number of nine livestock-species categories (see table A.1.a.).

The number of livestock species kept during the previous 12 months did not differ substantially by farm sales.

f. Percentage of operations by number of livestock species* present during the previous 12 months, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Number of species	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1	53.5	(0.6)	47.4	(1.7)	49.6	(3.0)
2	31.2	(0.6)	35.4	(1.6)	32.5	(2.8)
3	10.0	(0.4)	11.3	(1.1)	14.5	(2.1)
4 or more	5.3	(0.3)	5.9	(0.8)	3.4	(1.1)
Total	100.0		100.0		100.0	

*Maximum number of nine livestock-species categories (see table A.1.a).

Among operations that had any beef cattle during the previous 12 months, 36.7 percent also had horses, and 49.1 percent had at least one additional species of livestock. The presence of a species on an operation does not imply that it made an important economic contribution. Knowing the combinations of species kept on operations, however, may be useful for understanding diversification of small-scale operations and for assessing disease risk for pathogens that can spread between species.

Some livestock species were more likely than other species to be kept together on the same operation. For example, 34.8 percent of operations with sheep also had goats. Only 6.6 percent of all operations with beef cattle also had goats. Among operations that had swine during the previous 12 months, 45.5 percent also had chickens and/or other poultry. Over three-fourths of operations with swine, sheep, goats, poultry, or horses also kept beef cattle, and 40.2 percent of operations with dairy cattle also kept beef cattle. About half of operations (49.7 percent) with "other" livestock also kept beef cattle. "Other" livestock species were mostly camelids, rabbits, aquaculture, bees, captive cervids, and fur-bearing animals.

g. For operations that had the respective livestock species during the previous 12 months, percentage of operations by additional livestock species present

	Percent Operations									
	Additional Species									
	Beef cattle	Dairy cattle	Swine	Sheep	Goats	Chickens and other poultry	Horses and other equids	Bison	Other	Any
For operations that had. . .	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)
Beef cattle		3.9 (0.2)	4.6 (0.3)	3.8 (0.2)	6.6 (0.3)	15.5 (0.4)	36.7 (0.6)	0.9 (0.1)	1.2 (0.1)	49.1 (0.6)
Dairy cattle	40.2 (1.7)		9.1 (1.0)	6.1 (0.8)	9.6 (1.0)	27.3 (1.5)	33.0 (1.6)	0.3 (0.1)	1.5 (0.5)	62.6 (1.6)
Swine	77.8 (2.0)	15.1 (1.6)		16.1 (1.8)	25.0 (2.1)	45.5 (2.5)	50.3 (2.5)	1.7 (0.7)	3.5 (0.9)	90.1 (1.5)
Sheep	76.8 (2.4)	12.0 (1.6)	19.1 (2.1)		34.8 (2.6)	45.7 (2.7)	55.4 (2.7)	1.8 (0.7)	6.6 (1.4)	93.9 (1.5)
Goats	77.0 (1.8)	10.9 (1.2)	17.1 (1.6)	20.1 (1.7)		47.1 (2.1)	60.6 (2.1)	1.7 (0.6)	6.0 (1.0)	96.4 (0.8)
Chickens and other poultry	80.0 (1.1)	13.7 (0.8)	13.8 (0.9)	11.7 (0.9)	20.8 (1.1)		53.1 (1.4)	1.4 (0.3)	4.3 (0.6)	94.6 (0.6)
Horses and other equids	84.8 (0.7)	7.4 (0.4)	6.8 (0.5)	6.3 (0.4)	12.0 (0.6)	23.7 (0.8)		1.3 (0.2)	2.3 (0.3)	92.8 (0.5)
Bison	73.8 (5.2)	2.0 (1.0)	8.0 (3.1)	6.9 (2.8)	11.4 (3.6)	20.8 (4.5)	46.1 (5.7)		10.8 (3.7)	86.6 (4.2)
Other	49.7 (4.0)	5.8 (1.8)	8.2 (2.2)	13.1 (2.7)	20.7 (3.2)	33.8 (3.7)	40.6 (3.9)	5.5 (2.0)		73.0 (3.5)

2. Crops raised on operation

About 7 of 10 operations in this study (72.0 percent) grew some type of plant crop in addition to raising livestock. Almost 9 of 10 operations in the Northeast region (87.1 percent) had grown some type of crop during the previous 12 months, compared with about 8 of 10 operations in the North Central region (81.6 percent), 7 of 10 operations in the South region (68.0 percent), and 6 of 10 operations in the West region (58.3 percent).

Overall, two of three operations (66.7 percent) grew hay during the previous 12 months. About 4 of 10 operations in the Northeast and North Central regions (42.4 and 37.3 percent, respectively) grew corn, barley, oats, or rye, compared with about 1 of 10 operations in the South and West regions (8.1 and 12.2 percent, respectively). Soybeans/oil bearing crops/ oilseeds were grown on about 2 of 10 operations in the North Central region (20.2 percent) but were on very few operations in the South and West regions (1.8 and 0.3 percent of operations, respectively). A higher percentage of operations in the Northeast region than in the other regions grew vegetables and/or melons. “Other” crops were primarily peanuts, maple syrup, and beans.

a. Percentage of operations by crops grown during the previous 12 months, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Crop	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Hay	75.9	(1.0)	83.1	(1.6)	62.8	(0.8)	52.9	(1.8)	66.7	(0.6)
Wheat	9.9	(0.6)	6.8	(0.9)	6.9	(0.4)	6.6	(0.8)	7.7	(0.3)
Corn, barley, oats, or rye*	37.3	(0.9)	42.4	(1.7)	8.1	(0.4)	12.2	(1.0)	19.1	(0.4)
Soybeans and other oil-bearing crops and/or oilseeds	20.2	(0.8)	12.0	(1.2)	1.8	(0.2)	0.3	(0.2)	7.5	(0.3)
Tobacco	0.3	(0.1)	0.9	(0.3)	1.3	(0.1)	0.0	(—)	0.9	(0.1)
Cotton and/or cottonseed	0.1	(0.1)	0.2	(0.2)	0.5	(0.1)	0.2	(0.1)	0.3	(0.1)
Vegetables and/or melons	6.4	(0.5)	15.0	(1.4)	8.9	(0.5)	4.6	(0.8)	8.1	(0.3)
Fruits, berries, and/or tree nuts	4.8	(0.5)	9.5	(1.2)	7.6	(0.4)	6.0	(0.9)	6.7	(0.3)
Other	0.4	(0.1)	1.7	(0.6)	0.5	(0.1)	0.5	(0.3)	0.6	(0.1)
Any	81.6	(0.9)	87.1	(1.4)	68.0	(0.8)	58.3	(1.8)	72.0	(0.5)

*Includes sorghum (milo) and other grains.

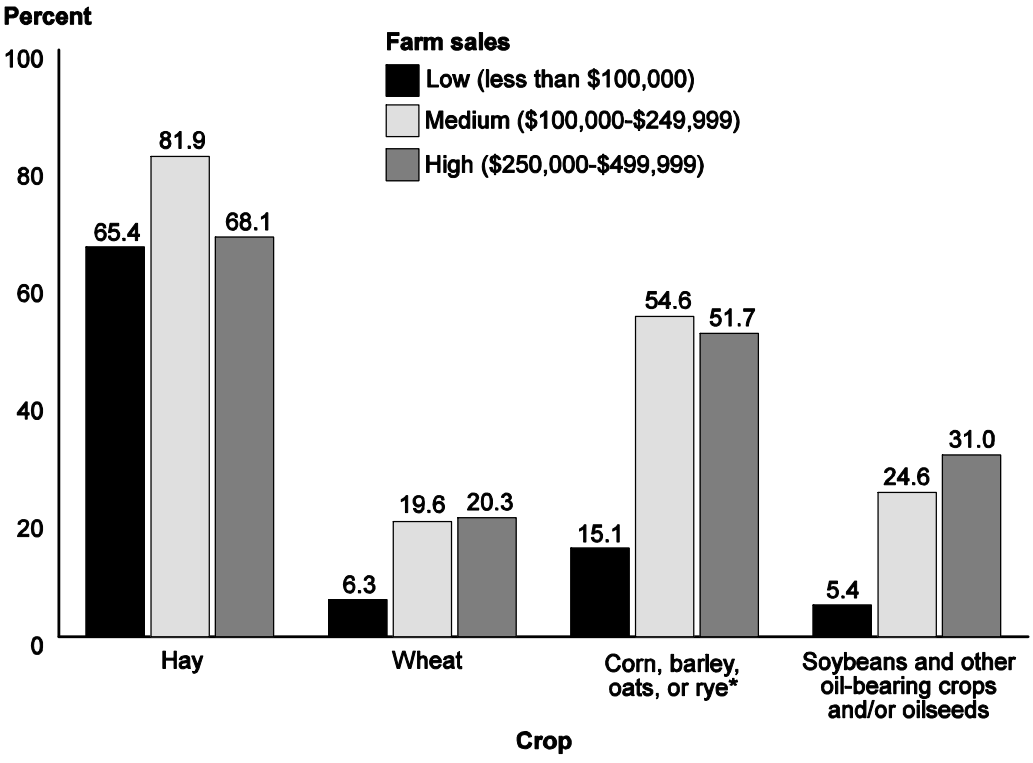
About 8 of 10 medium-sales operations (81.9 percent) had grown hay during the previous 12 months compared with about 2 of 3 low- and high-sales operations (65.4 and 68.1 percent, respectively). About half of medium- and high-sales operations grew corn, barley, oats, or rye (54.6 and 51.7 percent, respectively). Medium- and high-sales operations were more likely than low-sales operations to grow wheat, corn, barley, oats, or rye; or soybeans/oil-bearing crops/oilseeds. These crops generally require more equipment and acreage for cost-effective production.

b. Percentage of operations by crops grown during the previous 12 months, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Crop	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Hay	65.4	(0.6)	81.9	(1.3)	68.1	(2.9)
Wheat	6.3	(0.3)	19.6	(1.4)	20.3	(2.4)
Corn, barley, oats, or rye*	15.1	(0.4)	54.6	(1.6)	51.7	(2.9)
Soybeans and other oil-bearing crops and/or oilseeds	5.4	(0.3)	24.6	(1.4)	31.0	(2.7)
Tobacco	0.8	(0.1)	1.6	(0.4)	1.6	(0.8)
Cotton and/or cottonseed	0.3	(0.1)	1.2	(0.4)	0.5	(0.5)
Vegetables and/or melons	8.4	(0.4)	6.2	(0.8)	5.0	(1.3)
Fruits, berries, and/or tree nuts	7.0	(0.3)	4.2	(0.7)	3.6	(1.1)
Other	0.5	(0.1)	0.8	(0.3)	1.2	(0.6)
Any	70.7	(0.6)	86.2	(1.2)	77.7	(2.6)

*Includes sorghum (milo) and other grains.

Percentage of operations by crops grown during the previous 12 months, and by farm sales



*Includes sorghum (milo) and other grains.

Operations in the North Central and Northeast regions were more likely to have any crops and more likely to grow two or more different types of crops than operations in the South and West regions. About 2 of 10 operations in the North Central and Northeast regions (15.5+6.7=22.2 and 14.4+8.5=22.9 percent, respectively) raised 3 or more types of crops during the previous 12 months, compared with fewer than 1 of 10 operations in the South and West regions (8.0 and 4.7 percent of operations, respectively). Operations that grew two or more crops may have grown them simultaneously or sequentially (i.e., crop rotation).

c. Percentage of operations by number of crop types* raised during the previous 12 months, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Number of crops	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	18.4	(0.9)	12.9	(1.4)	32.0	(0.8)	41.7	(1.8)	28.0	(0.5)
1	37.9	(1.0)	36.1	(1.9)	48.3	(0.8)	39.1	(1.8)	43.5	(0.6)
2	21.5	(0.8)	28.1	(1.8)	11.7	(0.5)	14.5	(1.2)	15.9	(0.4)
3	15.5	(0.7)	14.4	(1.4)	6.0	(0.4)	4.0	(0.6)	9.0	(0.3)
4 or more	6.7	(0.5)	8.5	(1.0)	2.0	(0.2)	0.7	(0.3)	3.6	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	

*Maximum number of nine crop types (see table A.2.a.).

Medium- and high-sales operations were more likely to have grown three or more types of crops during the previous 12 months (33.3 and 34.7 of percent of operations, respectively) than low-sales operations (10.3 percent). Almost half of low-sales operations (45.7 percent) grew only one crop type during the previous 12 months.

d. Percentage of operations by number of crop types* raised during the previous 12 months, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Number of crops	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
None	29.3	(0.6)	13.8	(1.2)	22.3	(2.6)
1	45.7	(0.6)	24.7	(1.5)	23.3	(2.5)
2	14.7	(0.4)	28.2	(1.5)	19.7	(2.3)
3	7.5	(0.3)	22.7	(1.4)	21.5	(2.4)
4 or more	2.8	(0.2)	10.6	(1.0)	13.2	(2.1)
Total	100.0		100.0		100.0	

*Maximum number of nine crop types (see table A.2.a.).

The crops grown during the previous 12 months differed in some instances based on the type of livestock species kept on the operation. For example, it is not uncommon for dairy operations to raise their own corn, hay, and/or soybeans for cattle feed. Of operations with dairy cattle, 59.9 percent raised corn, barley, oats, or rye during the previous 12 months, and 83.4 percent raised hay. Of operations with beef cattle, 16.6 percent raised corn, barley, oats, or rye, and 68.2 percent raised hay. About 2 of 10 operations with dairy cattle (19.9 percent) and 1 of 6 operations with swine (17.1 percent) raised soybeans/oil-bearing crops/oilseeds. About half the operations with an "other" livestock species (56.6 percent) raised any crops. "Other" livestock species were mostly camelids, rabbits, aquaculture, bees, captive cervids, and fur-bearing animals.

e. For operations that had the respective livestock species during the previous 12 months, percentage of operations that raised the following crops during the previous 12 months

	Percent Operations									
	Crop									
Livestock species	Hay	Wheat	Corn, barley, oats, or rye*	Soybeans and other oil-bearing crops and/or oilseeds	Tobacco	Cotton and/or cotton-seed	Vege-tables and/or melons	Fruits, berries, and/or tree nuts	Other	Any
	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)	Pct. (SE)
Beef cattle	68.2 (0.6)	7.7 (0.3)	16.6 (0.4)	6.8 (0.3)	0.9 (0.1)	0.4 (0.1)	8.0 (0.3)	6.8 (0.3)	0.5 (0.1)	73.0 (0.6)
Dairy cattle	83.4 (1.4)	11.0 (1.0)	59.9 (1.7)	19.9 (1.3)	1.3 (0.3)	0.1 (0.1)	10.5 (1.0)	7.0 (0.9)	0.8 (0.3)	87.8 (1.3)
Swine	61.4 (2.5)	9.6 (1.3)	36.5 (2.3)	17.1 (1.7)	0.6 (0.3)	0.2 (0.2)	19.1 (2.0)	12.9 (1.7)	1.3 (0.6)	75.9 (2.2)
Sheep	61.4 (2.8)	7.0 (1.3)	23.1 (2.2)	8.2 (1.3)	0.6 (0.3)	0.7 (0.5)	12.2 (1.7)	11.2 (1.6)	0.1 (0.1)	68.0 (2.7)
Goats	58.1 (2.1)	7.2 (1.0)	17.3 (1.5)	5.3 (0.9)	0.9 (0.4)	0.8 (0.4)	14.9 (1.5)	12.0 (1.3)	0.7 (0.4)	66.1 (2.0)
Chickens and other poultry	63.9 (1.4)	7.1 (0.7)	23.4 (1.1)	7.7 (0.7)	0.5 (0.1)	0.2 (0.1)	19.9 (1.1)	17.3 (1.1)	0.8 (0.3)	72.5 (1.3)
Horses and other equids	62.7 (0.9)	7.2 (0.4)	15.7 (0.6)	5.1 (0.4)	0.8 (0.1)	0.3 (0.1)	10.4 (0.6)	9.0 (0.5)	0.6 (0.1)	68.2 (0.9)
Bison	63.1 (5.7)	9.3 (3.3)	15.3 (3.9)	6.5 (2.6)	0.5 (0.5)	0.0 (—)	15.5 (4.3)	13.2 (3.9)	1.8 (1.7)	70.6 (5.4)
Other	43.2 (4.0)	5.1 (1.7)	12.2 (2.5)	3.0 (1.2)	0.0 (—)	0.5 (0.5)	17.6 (3.0)	16.3 (3.1)	0.5 (0.4)	56.6 (4.0)

*Includes sorghum (milo) and other grains.

B. Marketing

Small-scale operations can retain a higher share of their dollars by using direct-marketing strategies and by marketing specialty products. Examples of direct marketing include: sales through farmer-owned cooperatives; sales to consumers through farmer's markets, the Internet, or Community Supported Agriculture (CSA); and direct sales to specialty food stores, restaurants, and schools.

Specialty products are one way that small-scale operations can differentiate their products. Specialty products usually carry a label or description about how the product was produced. Examples of specialty products include natural, organic, grass fed, pasture raised, cage free, certified humane, and eco-friendly.

1. Specialty products

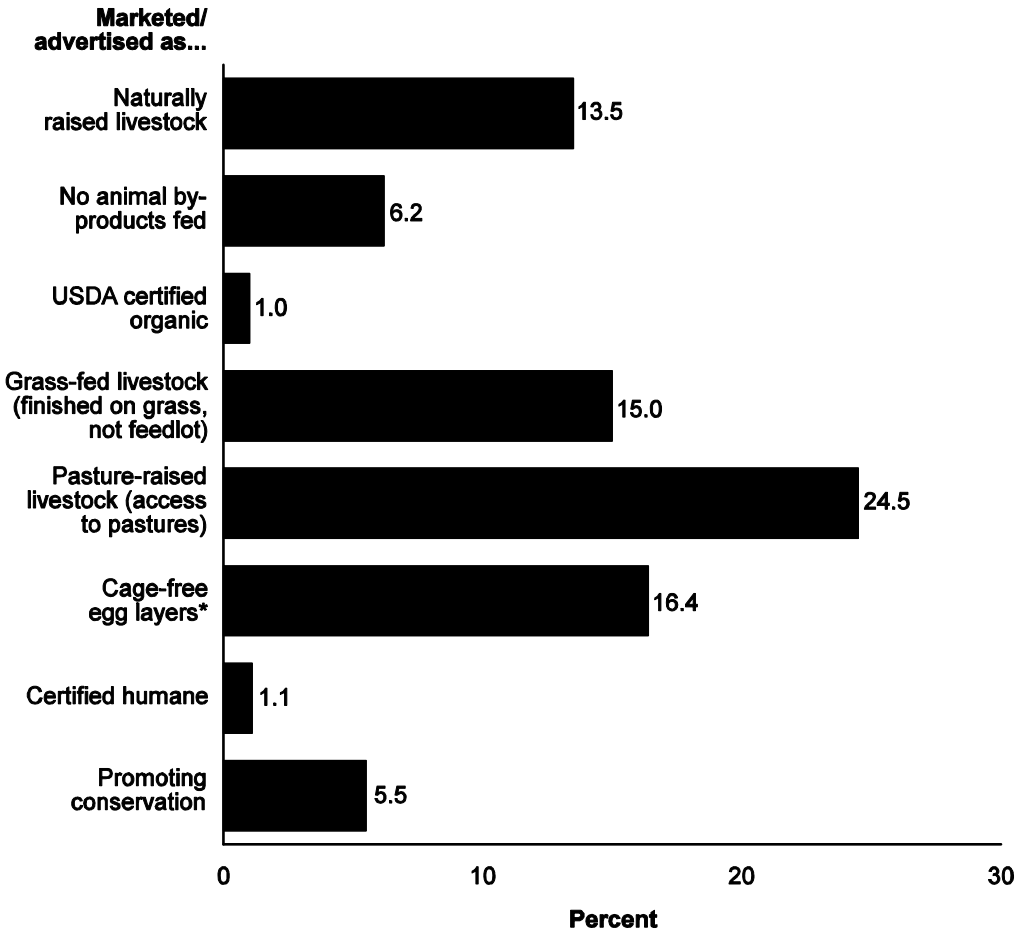
Overall, less than 25 percent of all operations used any of the marketing labels or claims in the following table. About one of four operations (24.5 percent) marketed or advertised agricultural products as pasture-raised livestock. Of operations that had chickens and/or other poultry, about one of six operations (16.4 percent) marketed or advertised agricultural products as produced by cage-free egg layers. Across regions, less than 10 percent of operations marketed or advertised products as USDA certified organic, certified humane, or promoting conservation. A higher percentage of operations in the West region (20.0 percent) than in the North Central or South regions (13.8 and 11.8 percent, respectively) marketed or advertised products as naturally raised livestock. The term "naturally raised livestock" was based on individual producer's definition of "natural," which may vary among different producers.

a. Percentage of operations that marketed or advertised agricultural products in the following ways, by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Marketed/ advertised as. . .	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Naturally raised livestock	13.8	(0.7)	14.8	(1.6)	11.8	(0.6)	20.0	(1.4)	13.5	(0.4)
No animal by-products fed	7.9	(0.6)	8.5	(1.2)	3.9	(0.3)	11.8	(1.1)	6.2	(0.3)
USDA certified organic	1.3	(0.2)	1.8	(0.5)	0.8	(0.2)	0.9	(0.3)	1.0	(0.1)
Grass-fed livestock (finished on grass, not feedlot)	12.1	(0.7)	14.9	(1.5)	15.7	(0.6)	19.5	(1.4)	15.0	(0.4)
Pasture-raised livestock (access to pastures)	23.8	(0.9)	22.2	(1.8)	24.8	(0.7)	26.8	(1.6)	24.5	(0.5)
Cage-free egg layers*	17.3	(1.9)	16.9	(2.8)	14.8	(1.5)	19.7	(3.3)	16.4	(1.0)
Certified humane by American Humane Association, Humane Farm Animal Care Program, or Animal Welfare Institute	0.9	(0.2)	1.6	(0.5)	1.1	(0.2)	1.3	(0.4)	1.1	(0.1)
Promoting conservation (e.g., land preservation, Predator Friendly Certification, eco-friendly, etc.)	6.5	(0.5)	8.8	(1.2)	4.5	(0.3)	6.0	(0.8)	5.5	(0.3)

*For the subset of operations that had any chickens and/or other poultry.

Percentage of operations that marketed or advertised agricultural products in the following ways



*For the subset of operations that had any chickens and/or other poultry.

A slightly higher percentage of low-sales operations than medium- or high-sales operations marketed or advertised livestock as pasture-raised and grass-fed.

b. Percentage of operations that marketed or advertised agricultural products in the following ways, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Marketed/ advertised as. . .	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Naturally raised livestock	13.8	(0.4)	11.3	(1.1)	10.0	(1.8)
No animal by-products fed	5.8	(0.3)	9.7	(1.0)	10.3	(1.7)
USDA certified organic	0.9	(0.1)	2.0	(0.5)	3.0	(1.0)
Grass-fed livestock (finished on grass, not feedlot)	15.9	(0.5)	7.6	(0.9)	6.3	(1.5)
Pasture-raised livestock (access to pastures)	25.4	(0.6)	17.0	(1.3)	17.3	(2.3)
Cage-free egg layers*	17.0	(1.1)	10.0	(2.3)	14.4	(5.0)
Certified humane by American Humane Association, Humane Farm Animal Care Program, or Animal Welfare Institute	1.0	(0.1)	1.6	(0.4)	2.9	(0.9)
Promoting conservation (e.g., land preservation, Predator Friendly Certification, eco-friendly, etc.)	5.2	(0.3)	7.6	(0.9)	9.2	(1.7)

*For the subset of operations that had any chickens and/or other poultry.

2. Marketing channels

Small-scale operations used a variety of channels for marketing animals and animal products. Overall, almost 9 of 10 operations (88.3 percent) marketed at least some animals through an auction or sales barn during the previous 12 months. This high percentage is likely related to the high percentage of operations with beef cattle, since calves from cow-calf beef operations are commonly marketed via auction. Culled cows from dairy operations are also frequently marketed through auctions.

About one of four operations (25.2 percent) marketed animals or animal products directly to individuals or consumers in the previous 12 months. These sales include, but are not limited to, direct sales to consumers through farmer's markets or CSAs, Internet sales direct to consumers, and sales of live animals to other producers for breeding or other purposes.

A small percentage of operations marketed any animals or animal products directly to restaurants/institutions, directly to health food stores, or through a farmer-owned cooperative wholesale distribution channel (0.4, 0.4, and 2.4 percent of operations, respectively). The Northeast region had the highest percentage of operations that marketed as a member of a cooperative distribution channel. This finding might be related to the high percentage of operations with dairy cattle in the Northeast region (see Table A.1.a.), since dairy producers often use cooperative distribution channels to sell milk.

It appears that some dairy operations inadvertently excluded the marketing channels they used for milk and reported marketing channels used for animals only. Data inspection revealed that 6.6 percent of all operations and 32.4 percent of operations in the Northeast region had 10 or more dairy cattle during the previous 12 months. Of these operations with 10 or more dairy cattle, 41.3 percent reported only marketing through an auction or sales barn during the previous 12 months. Therefore, the percentage of operations that used direct marketing, marketed products as a member of a cooperative distribution channel, or marketed through a wholesaler/distributor might be higher than reported in the following table, particularly for the Northeast region.

"Other" marketing channels were mostly contract arrangements for vertically integrated poultry or swine operations.

a. Percentage of operations by marketing channels used for animals or animal products during the previous 12 months, and by region

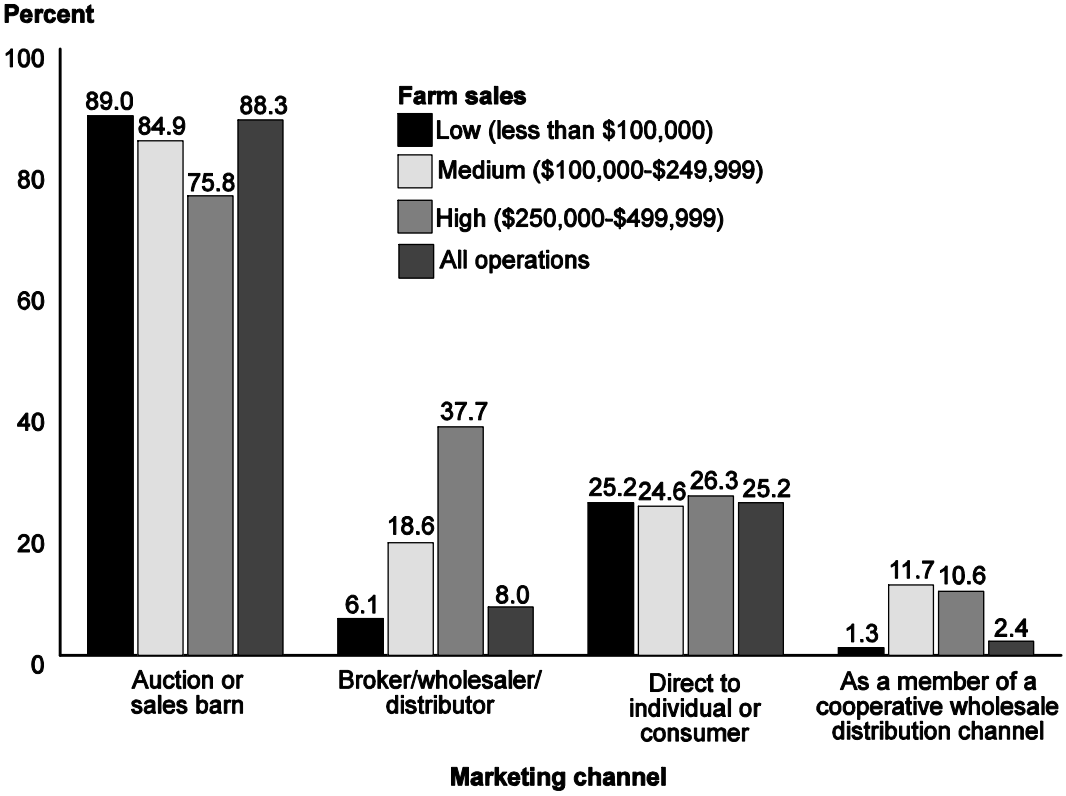
	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Marketing channel	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Auction or sales barn	85.8	(0.8)	74.7	(1.9)	92.6	(0.4)	80.8	(1.5)	88.3	(0.4)
Broker/wholesaler/ distributor	9.9	(0.6)	15.0	(1.5)	4.7	(0.4)	15.7	(1.3)	8.0	(0.3)
Direct to individual or consumer (e.g., farmer's market, community supported agriculture (CSA), private sales, etc.)	29.2	(1.0)	38.6	(2.1)	18.7	(0.7)	38.8	(1.8)	25.2	(0.5)
Direct to health food/specialty food stores (e.g., Whole Foods, etc.)	0.5	(0.1)	1.4	(0.5)	0.2	(0.1)	0.8	(0.3)	0.4	(0.1)
Direct to restaurants/ institutions (farm to school)	0.2	(0.1)	2.5	(0.6)	0.2	(0.1)	0.6	(0.3)	0.4	(0.1)
As a member of a cooperative wholesale distribution channel (farmer owned)	4.4	(0.4)	9.4	(1.1)	0.8	(0.1)	1.2	(0.4)	2.4	(0.2)
Other	0.9	(0.2)	3.3	(0.6)	1.7	(0.2)	1.2	(0.5)	1.5	(0.1)

The percentage of operations that marketed at least some animals through an auction or sales barn during the previous 12 months ranged from 75.8 percent of high-sales operations to 89.0 percent of low-sales operations. The percentage of operations that marketed through a broker/wholesaler/distributor increased as farm sales increased, ranging from 6.1 percent of low-sales operations to 37.7 percent of high-sales operations. A higher percentage of medium- and high-sales operations marketed animals or animal products as a member of a farmer-owned cooperative wholesale distribution channel (11.7 and 10.6 percent, respectively) than low sales operations (1.3 percent).

b. Percentage of operations by marketing channels used for animals or animal products during the previous 12 months, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Marketing channel	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Auction or sales barn	89.0	(0.4)	84.9	(1.2)	75.8	(2.6)
Broker/wholesaler/ distributor	6.1	(0.3)	18.6	(1.4)	37.7	(2.9)
Direct to individual or consumer (e.g., farmer's market, community supported agriculture (CSA), private sales, etc.)	25.2	(0.6)	24.6	(1.5)	26.3	(2.7)
Direct to health food/specialty food stores (e.g., Whole Foods, etc.)	0.3	(0.1)	1.2	(0.4)	0.7	(0.5)
Direct to restaurants/ institutions (farm to school)	0.4	(0.1)	0.4	(0.3)	0.8	(0.5)
As a member of a cooperative wholesale distribution channel (farmer owned)	1.3	(0.1)	11.7	(1.1)	10.6	(1.8)
Other	1.1	(0.1)	4.6	(0.7)	6.3	(1.4)

Percentage of operations by marketing channels used for animals or animal products during the previous 12 months, and by farm sales



3. Internet marketing

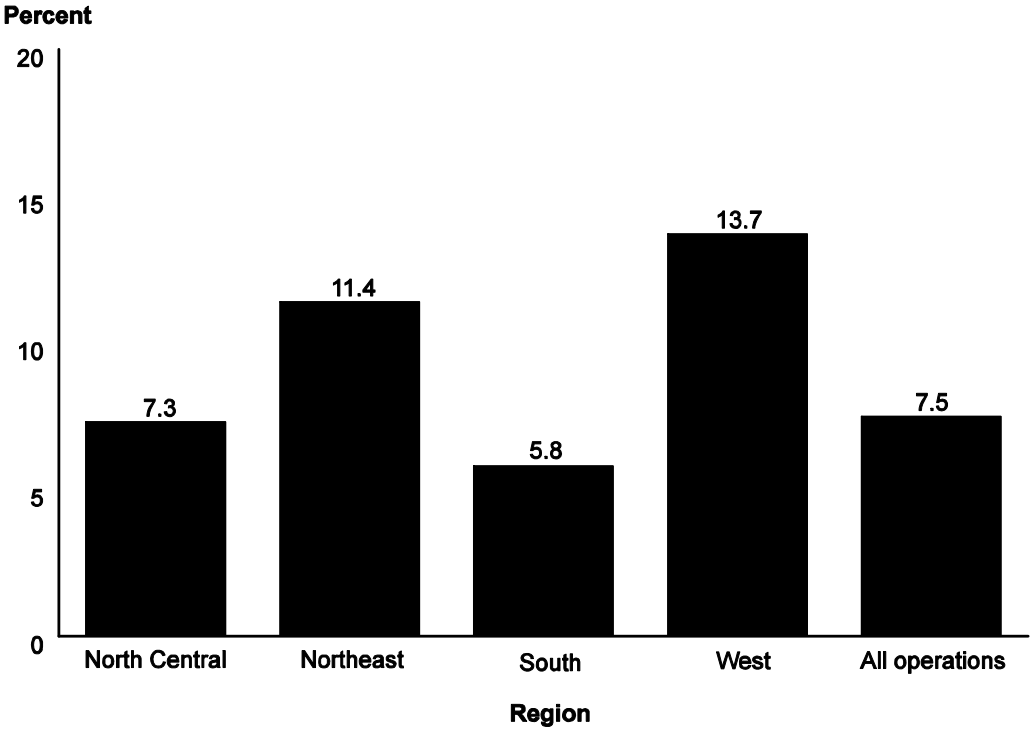
Only a small percentage of all operations (7.5 percent) used the Internet to market any agricultural products. The Internet features used most commonly for marketing agricultural products were Web sites for farm business (used by 3.9 percent of operations), email messages (3.2 percent of operations), and online message boards or classified sites (i.e., Craigslist) [2.7 percent of operations]. The most common "other" Internet feature was online livestock auctions. A higher percentage of operations in the Northeast and West regions used the Internet to market products (11.4 and 13.7 percent, respectively) compared with operations in the North Central and South regions (7.3 and 5.8 percent, respectively).

a. Percentage of operations that used the following Internet features to market any agricultural products, by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Internet feature	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Web site for farm business	3.7	(0.4)	7.7	(1.1)	3.0	(0.3)	6.3	(0.9)	3.9	(0.2)
Email messages	3.4	(0.4)	5.0	(1.0)	2.4	(0.3)	5.1	(0.8)	3.2	(0.2)
Online farm directory[1]	1.6	(0.3)	3.6	(0.9)	1.2	(0.2)	2.0	(0.5)	1.6	(0.2)
Facebook	1.0	(0.2)	2.0	(0.6)	1.1	(0.2)	2.5	(0.6)	1.3	(0.1)
Online message board (Craigslist, etc.)[2]	2.9	(0.4)	1.6	(0.5)	2.3	(0.3)	5.2	(0.8)	2.7	(0.2)
Other	0.3	(0.1)	0.9	(0.4)	0.4	(0.1)	1.7	(0.4)	0.5	(0.1)
Any	7.3	(0.6)	11.4	(1.3)	5.8	(0.4)	13.7	(1.2)	7.5	(0.3)

[1] A list of local farms on a Web site.
[2] Includes classified Web sites.

Percentage of operations that used any Internet feature to market any agricultural products, by region



A higher percentage of medium- and high-sales operations (10.7 and 6.2 percent, respectively) used a Web site to market agricultural products compared with low-sales operations (3.5 percent).

b. Percentage of operations that used the following Internet features to market any agricultural products, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Internet feature	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Web site for farm business	3.5	(0.2)	6.2	(0.9)	10.7	(1.9)
Email messages	3.0	(0.2)	4.4	(0.7)	6.0	(1.5)
Online farm directory[1]	1.5	(0.2)	2.4	(0.6)	2.8	(1.0)
Facebook	1.3	(0.2)	1.2	(0.3)	3.2	(1.1)
Online message board (Craigslist, etc.)[2]	2.8	(0.2)	2.1	(0.5)	2.7	(1.0)
Other	0.4	(0.1)	1.4	(0.5)	3.4	(1.1)
Any	7.0	(0.3)	10.2	(1.1)	15.4	(2.2)

[1] A list of local farms on a Web site.
[2] Includes classified Web sites.

C. Reasons for Farming

Although income is an important reason for farming, many small-scale operators consider other reasons, such as enjoyment of the farming or ranching lifestyle, to be equally or more important. For example, the USDA's Agricultural Resource Management Study (ARMS) found that, for certain types of small-scale farms, "operation provides a rural lifestyle" was more important to operators as a measure of success than "operation provides adequate income" (ERS, 1999a).

Lifestyle, maintaining the farm for the next generation, and family tradition/heritage were very important reasons for farming on 63.7, 61.0, and 60.5 percent of operations, respectively. Source of income was very important to 41.0 percent of operations; tax benefits were very important to 33.3 percent of operations; and products for personal consumption were very important to 34.5 percent of operations. The most common "other" reasons for farming were personal enjoyment, for exercise/physical activity, and pride in acting as stewards of the land and producing food for people.

a. Percentage of operations by importance level of the following reasons for farming

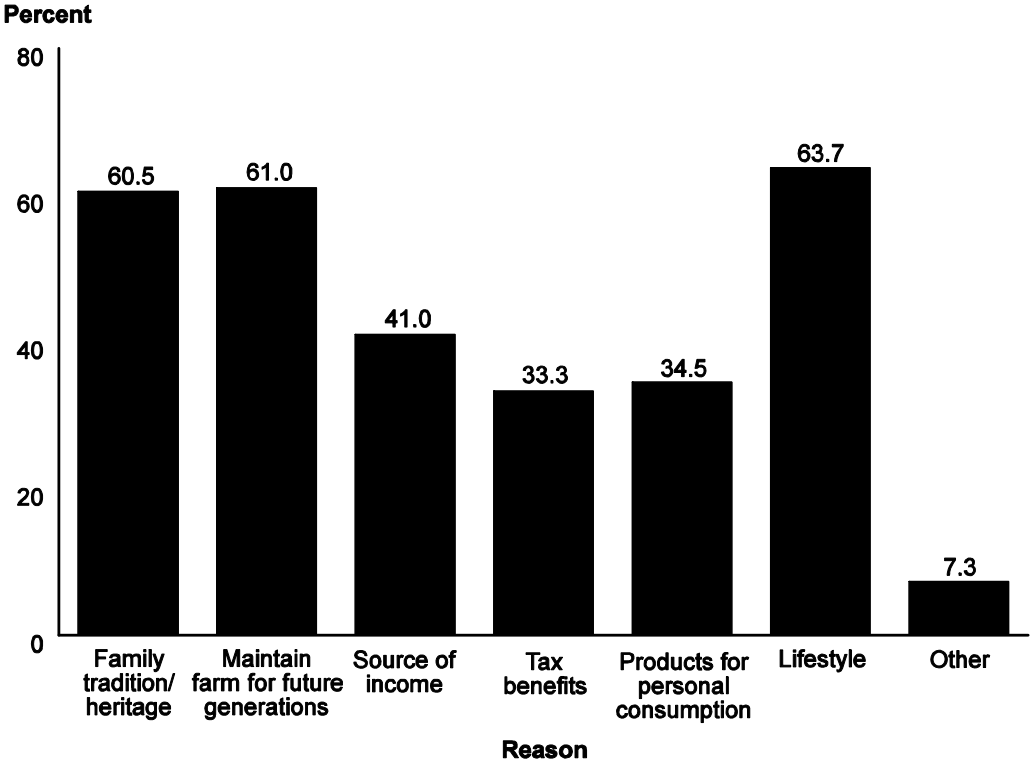
	Percent Operations						
	Importance Level						
	Not		Somewhat		Very		
Reason	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
Family tradition/heritage	13.6	(0.4)	25.9	(0.5)	60.5	(0.6)	100.0
Maintain farm for future generations	15.1	(0.4)	23.9	(0.5)	61.0	(0.6)	100.0
Source of income	20.3	(0.5)	38.7	(0.6)	41.0	(0.6)	100.0
Tax benefits	27.6	(0.5)	39.1	(0.6)	33.3	(0.6)	100.0
Products for personal consumption	35.9	(0.6)	29.6	(0.6)	34.5	(0.6)	100.0
Lifestyle	10.5	(0.4)	25.8	(0.5)	63.7	(0.6)	100.0
Other	91.0	(0.3)	1.7	(0.2)	7.3	(0.3)	100.0

Fewer than 3 of 10 operations in the South region (28.1 percent) rated products for personal consumption a very important reason for farming, compared with about 4 of 10 operations in the North Central and West regions (40.2 and 42.6 percent, respectively) and about 5 of 10 operations in the Northeast region (49.0 percent). Additionally, a lower percentage of operations in the South region rated income a very important reason for farming (35.3 percent) compared with the other regions. About three of four operations in the West region (74.9 percent) rated lifestyle a very important reason for farming.

b. Percentage of operations in which the following reasons for farming were rated very important, by region

	Percent Operations							
	Region							
	North Central		Northeast		South		West	
Reason	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Family tradition/ heritage	61.4	(1.1)	62.6	(2.0)	59.3	(0.8)	62.7	(1.8)
Maintain farm for future generations	59.9	(1.1)	61.0	(2.0)	61.5	(0.8)	60.8	(1.8)
Source of income	49.8	(1.0)	46.6	(1.9)	35.3	(0.8)	43.3	(1.8)
Tax benefits	29.9	(1.0)	32.3	(2.0)	35.4	(0.8)	32.2	(1.7)
Products for personal consumption	40.2	(1.1)	49.0	(2.1)	28.1	(0.8)	42.6	(1.8)
Lifestyle	68.2	(1.0)	66.3	(2.0)	58.8	(0.8)	74.9	(1.6)
Other	7.1	(0.6)	11.8	(1.4)	6.9	(0.4)	7.1	(0.9)

Percentage of operations in which the following reasons for farming were rated very important



For high-sales operations, the top ranked reason for farming was income (84.4 percent of operations considered income very important), while only 36.8 percent of low-sales operations considered income very important. There were no substantial differences across farm-sales categories in the percentage of operations that considered family tradition, tax benefits, or products for personal consumption very important reasons for farming.

c. Percentage of operations in which the following reasons for farming were rated very important, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Reason	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Family tradition/ heritage	60.1	(0.6)	64.0	(1.7)	63.8	(2.9)
Maintain farm for future generations	60.2	(0.6)	66.3	(1.6)	69.9	(2.8)
Source of income	36.8	(0.6)	74.6	(1.5)	84.4	(2.1)
Tax benefits	33.3	(0.6)	32.7	(1.6)	34.0	(2.9)
Products for personal consumption	34.8	(0.6)	33.1	(1.6)	28.6	(2.7)
Lifestyle	62.6	(0.6)	73.0	(1.5)	73.5	(2.7)
Other	7.2	(0.3)	7.7	(0.9)	8.3	(1.7)

D. Future Plans

1. Operations in which the operator expected to continue farming for the next 5 years

Regardless of region, operators on about 9 of 10 operations expected to continue farming for the next 5 years.

a. Percentage of operations in which the operator expected to continue farming for the next 5 years, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
89.3	(0.7)	89.6	(1.3)	89.5	(0.5)	88.8	(1.2)	89.4	(0.4)

A higher percentage of operators on high-sales operations (94.1 percent) than low-sales operations (89.1 percent) expected to continue farming for the next 5 years.

b. Percentage of operations in which the operator expected to continue farming for the next 5 years, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
89.1	(0.4)	91.4	(1.0)	94.1	(1.4)

2. Factors in the decision to continue farming

For operators that expected to continue farming for the next 5 years, the top-three very necessary factors for continuing to farm were improved farm product prices, stable cost of farm expenses, and greater stability of prices for farm products (ranked very necessary by 62.8, 58.6, and 57.3 percent of operations, respectively). Access to operating loans and the ability to find off-farm employment to supplement income were not necessary to about half of operators (49.8 and 45.8 percent, respectively). A low percentage of operators elected to write in "other" factors necessary to their decision to continue farming, the most common of which were the health of the operator or family members, fuel prices, and weather conditions.

a. For operations in which the operator expected to continue farming for the next 5 years, percentage of operations by level of necessity of the following factors to the decision to continue farming

	Percent Operations						
	Level of Necessity						
	Not		Somewhat		Very		
Factor	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
Stable cost of farm expenses	11.7	(0.4)	29.7	(0.6)	58.6	(0.6)	100.0
Improved farm product prices	9.5	(0.4)	27.7	(0.6)	62.8	(0.6)	100.0
Greater stability of prices for products	11.5	(0.4)	31.2	(0.6)	57.3	(0.6)	100.0
Interest rates on debt remain low	38.2	(0.6)	20.2	(0.5)	41.6	(0.6)	100.0
Access to operating loans	49.8	(0.6)	23.4	(0.5)	26.8	(0.6)	100.0
Ability to find off-farm employment to supplement income	45.8	(0.6)	18.3	(0.5)	35.9	(0.6)	100.0

Almost one of three operators that expected to continue farming in the North Central region (32.8 percent) considered access to operating loans very necessary to their decision to continue farming for the next 5 years, compared with less than one of four operators in the Northeast and South regions (22.7 and 23.7 percent, respectively). The percentages of operators that considered improved farm product prices, stable cost of farm expenses, or greater stability of prices for farm products very necessary were similar by region.

b. For operations in which the operator expected to continue farming for the next 5 years, percentage of operations by factors considered very necessary to the decision to continue farming, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Factor	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Stable cost of farm expenses	58.0	(1.2)	57.7	(2.2)	59.1	(0.9)	58.4	(2.0)	58.6	(0.6)
Improved farm product prices	62.5	(1.1)	59.7	(2.2)	63.7	(0.9)	60.8	(2.0)	62.8	(0.6)
Greater stability of prices for products	57.9	(1.2)	55.3	(2.2)	57.7	(0.9)	55.2	(2.0)	57.3	(0.6)
Interest rates on debt remain low	45.6	(1.1)	40.3	(2.1)	39.1	(0.9)	44.6	(1.9)	41.6	(0.6)
Access to operating loans	32.8	(1.1)	22.7	(1.8)	23.7	(0.8)	29.5	(1.7)	26.8	(0.6)
Ability to find off-farm employment to supplement income	36.3	(1.1)	30.9	(2.1)	36.0	(0.9)	37.5	(1.9)	35.9	(0.6)

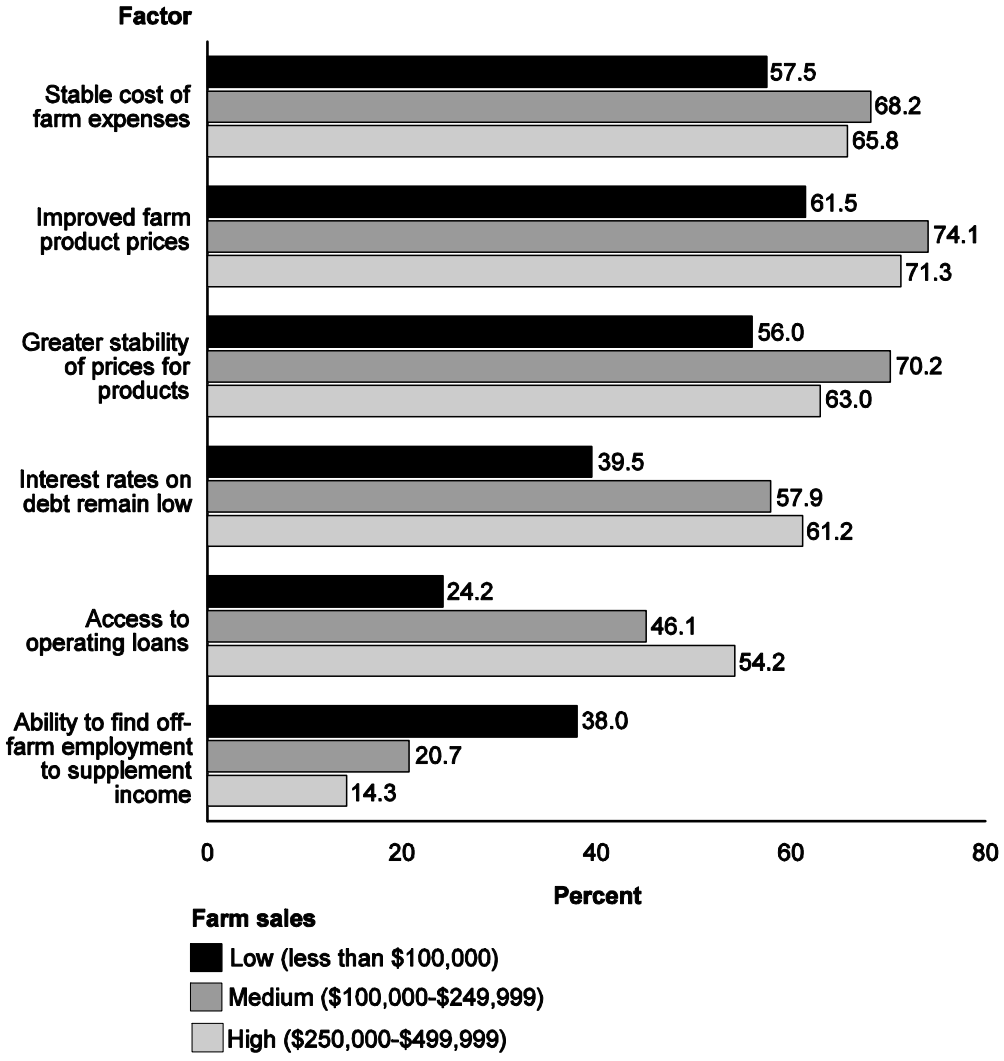
As might be expected, access to operating loans was more important to larger operations and access to supplemental income from off-farm employment was more important to smaller operations. For operations in which the operator expected to continue farming for the next 5 years, about half of operators on medium- and high-sales operations (46.1 and 54.2 percent, respectively) considered access to operating loans very necessary to their decision to continue farming. A similar response was seen for the need to have interest rates remain low. The ability to find off-farm employment to supplement income was very necessary to the decision to continue farming for 38.0 percent of operators on low-sales operations, compared with 20.7 percent on medium-sales operations and 14.3 percent high-sales operations.

Of operations in which the operator expected to continue farming for the next 5 years, improved farm product prices were very necessary to the decision to continue farming on about three of four medium- and high-sales operations (74.1 and 71.3 percent, respectively). A smaller percentage of operators on low-sales operations (61.5 percent) considered improved farm product prices very necessary to their decision to continue farming.

c. For operations in which the operator expected to continue farming for the next 5 years, percentage of operations by factors considered very necessary to the decision to continue farming, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Factor	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Stable cost of farm expenses	57.5	(0.7)	68.2	(1.7)	65.8	(2.9)
Improved farm product prices	61.5	(0.7)	74.1	(1.6)	71.3	(2.8)
Greater stability of prices for products	56.0	(0.7)	70.2	(1.7)	63.0	(3.0)
Interest rates on debt remain low	39.5	(0.7)	57.9	(1.8)	61.2	(3.0)
Access to operating loans	24.2	(0.6)	46.1	(1.8)	54.2	(3.1)
Ability to find off-farm employment to supplement income	38.0	(0.7)	20.7	(1.5)	14.3	(2.1)

For operations in which the operator expected to continue farming for the next 5 years, percentage of operations by factors considered very necessary to the decision to continue farming, and by farm sales



E. Farm Exits

According to the Economic Research Service (ERS), about 9 to 10 percent of all U.S. farms go out of business each year, which is similar to the percentage of nonfarm small businesses that go out of business in the United States. ERS found that farms were less likely to exit farming as farm sales increased, and beef cattle operations were less likely to exit than cash grain or hog farms. Operator demographics also played a role in farm exits; farms operated by Blacks were more likely to exit than farms operated by Whites, and operators 65 years of age or older were more likely to leave farming than younger operators (Hoppe and Korb, 2006).

1. Operations in which the operator expected to leave farming in the next 5 years

Across regions, about 1 of 10 operators expected to leave farming in the next 5 years. It is difficult to compare the exit rate in this study to the exit rate reported by ERS, since the ERS exit percentage (9 to 10 percent per year) is for a 1-year period and this study is for a 5-year period. However, it appears that the exit rate for the population in this study might be lower than the overall rate for all U.S. farms.

a. Percentage of operations in which the operator expected to leave farming in the next 5 years, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
10.7	(0.7)	10.4	(1.3)	10.5	(0.5)	11.2	(1.2)	10.6	(0.4)

Operators on a higher percentage of low-sales operations than high-sales operations expected to leave farming in the next 5 years (10.9 and 5.9 percent of operations, respectively), which is consistent with ERS findings.

b. Percentage of operations in which the operator expected to leave farming in the next 5 years, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
10.9	(0.4)	8.6	(1.0)	5.9	(1.4)

A higher percentage of operators who were 65 years of age or older expected to leave farming in the next 5 years (18.3 percent), compared with operators less than 65 years old.

c. Percentage of operations in which the operator expected to leave farming in the next 5 years, by age of primary operator

Percent Operations					
Age (years)					
Less than 45		45–64		65 or more	
Percent	Std. error	Percent	Std. error	Percent	Std. error
4.5	(0.7)	6.5	(0.4)	18.3	(0.8)

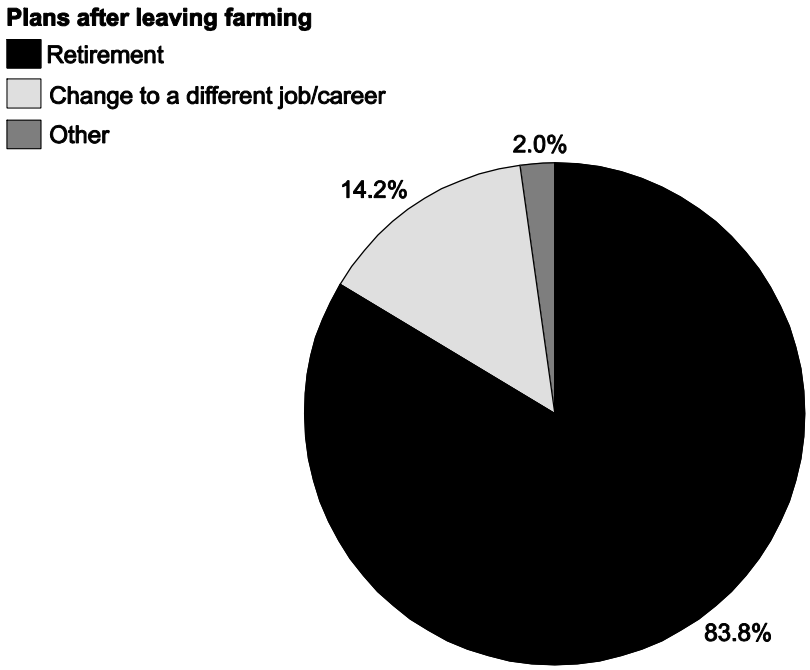
2. Plans after leaving farming

The majority of operators that planned to leave farming in the next 5 years planned to retire (83.8 percent of operations). Operators that expected to leave farming on 14.2 percent of operations planned to pursue a different job or career. Most operators with "other" plans after leaving farming were unsure of their plans.

a. For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by operators' plans after leaving farming, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Plans after leaving farming	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Retirement	81.5	(2.7)	76.9	(5.6)	86.2	(1.8)	82.8	(4.5)	83.8	(1.4)
Change to a different job/career	17.0	(2.6)	21.1	(5.5)	12.6	(1.8)	10.6	(3.9)	14.2	(1.3)
Other	1.5	(0.8)	2.0	(1.4)	1.2	(0.5)	6.6	(2.8)	2.0	(0.5)
Total	100.0		100.0		100.0		100.0		100.0	

For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by operators' plans after leaving farming



Plans after leaving farming did not differ substantially by farm sales; about 8 of 10 farm exits for both low- and medium-sales operations were due to retirement of the farm operator(s).

b. For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by operators' plans after leaving farming, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High* ($250,000–$499,999)	
Plans after leaving farming	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Retirement	84.2	(1.5)	83.8	(4.2)		
Change to a different job/career	13.8	(1.4)	15.2	(4.1)		
Other	2.0	(0.5)	1.0	(1.0)		
Total	100.0		100.0			

*Too few respondents to report.

Of operators 65 years of age or older that expected to leave farming in the next 5 years, 96.9 percent planned to retire. Of operators less than 45 years of age who planned to leave farming, 55.3 percent planned to change to a different job or career.

c. For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by operators' plans after leaving farming, and by age of primary operator

	Percent Operations					
	Age (years)					
	Less than 45		45–64		65 or more	
Plans after leaving farming	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Retirement	42.1	(8.5)	64.2	(3.4)	96.9	(0.8)
Change to a different job/career	55.3	(8.5)	31.4	(3.3)	2.4	(0.7)
Other	2.6	(1.8)	4.4	(1.3)	0.7	(0.4)
Total	100.0		100.0		100.0	

3. Reasons for farm exits

For operations in which the operator planned to leave farming in the next 5 years, the most important factors in the decision to leave farming were related to input costs and output revenues. About half of operators that expected to leave farming in the next 5 years considered the cost of farm expenses or farm product prices to be very important factors in the decision to leave farming. Access to operating loans, interest rates on debt, difficulty finding off-farm employment, or the opportunity to sell land for nonfarm purposes were **not** important factors in the decision for over two-thirds of operations. The most common "other" very important factor in the decision to leave farming was the age/health of the operator or family members.

a. For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by importance level of the following factors in the decision to leave farming

	Percent Operations						
	Importance Level						
	Not		Somewhat		Very		
Factor	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
Cost of farm expenses	30.3	(1.8)	17.9	(1.5)	51.8	(1.9)	100.0
Farm product prices	35.5	(1.9)	20.9	(1.6)	43.6	(1.9)	100.0
Instability of product prices	39.4	(1.9)	19.8	(1.6)	40.8	(1.9)	100.0
Access to markets	63.0	(1.9)	19.5	(1.5)	17.5	(1.5)	100.0
Interest rates on debt	72.0	(1.7)	11.2	(1.2)	16.8	(1.4)	100.0
Access to operating loans	76.4	(1.6)	11.2	(1.2)	12.4	(1.3)	100.0
Difficulty finding off-farm employment to supplement income	75.3	(1.7)	10.3	(1.1)	14.4	(1.4)	100.0
Lack of interest from future generations (no farm successor)	54.9	(1.9)	18.3	(1.5)	26.8	(1.7)	100.0
Opportunity to sell land for nonfarm purpose (e.g., urban development, preservation project, etc.)	74.8	(1.7)	13.8	(1.3)	11.4	(1.2)	100.0
Burden of government regulations	49.4	(1.9)	21.9	(1.6)	28.7	(1.7)	100.0
Other	78.1	(1.6)	0.0	(—)	21.9	(1.6)	100.0

For operations in which the operator expected to leave farming for a reason other than retirement, the cost of farm expenses and farm product prices were very important factors in the decision to leave farming on 70.0 and 65.0 percent of operations, respectively.

b. For operations in which the operator expected to leave farming in the next 5 years, percentage of operations by factors considered very important in the decision to leave farming, and by plans after leaving farming

	Percent Operations			
	Plan			
	Retirement		Change to a different job/career or other plans	
Factor	Pct.	Std. error	Pct.	Std. error
Cost of farm expenses	48.0	(2.2)	70.0	(4.5)
Farm product prices	38.9	(2.1)	65.0	(4.6)
Instability of product prices	37.0	(2.1)	58.0	(4.7)
Access to markets	16.7	(1.6)	21.6	(3.8)
Interest rates on debt	14.5	(1.5)	25.8	(4.1)
Access to operating loans	10.7	(1.3)	19.2	(3.8)
Difficulty finding off-farm employment to supplement income	12.3	(1.4)	24.6	(4.2)
Lack of interest from future generations (no farm successor)	26.4	(1.9)	31.7	(4.4)
Opportunity to sell land for nonfarm purpose (e.g., urban development, preservation project, etc.)	11.0	(1.3)	11.9	(3.0)
Burden of government regulations	26.5	(1.9)	38.6	(4.6)
Other	22.1	(1.8)	21.6	(4.0)

Section II. Animal Health Practices

A. Biosecurity

Animal health is closely related to profitability, since healthy animals are more productive. Furthermore, introduction of disease to a naive herd or flock can have devastating economic consequences. Information on livestock movement practices is helpful for understanding disease risk on small-scale operations and for understanding the role and needs of small farms in the event of an animal disease outbreak.

1. Livestock movement and quarantine

The addition of new animals to an operation is a common route for disease introduction. Animals that leave the operation and have contact with other animals and then return also present the risk of introducing new diseases.

Overall, about 4 of 10 operations (39.3 percent) brought new livestock or poultry onto the operation during the previous 12 months, and 13.9 percent of operations had livestock or poultry move off the operation and return in the previous 12 months. A higher percentage of operations in the West region (22.0 percent) had livestock or poultry move off the operation and return compared with operations in the North Central, Northeast, or South regions (16.1, 14.2, and 11.1 percent, respectively). It is not uncommon for operations in the West region to move animals for grazing and return them.

a. Percentage of operations that brought on new livestock or poultry or that had livestock or poultry leave the operation and return during the previous 12 months, by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
New livestock or poultry brought onto operation	43.5	(1.1)	40.6	(2.0)	36.2	(0.8)	43.0	(1.8)	39.3	(0.6)
Livestock or poultry moved off operation and then returned*	16.1	(0.8)	14.2	(1.4)	11.1	(0.5)	22.0	(1.5)	13.9	(0.4)
Either of the above	48.2	(1.1)	44.9	(2.0)	39.1	(0.8)	50.1	(1.8)	43.3	(0.6)

*E.g., taken to fair, bred elsewhere, etc.

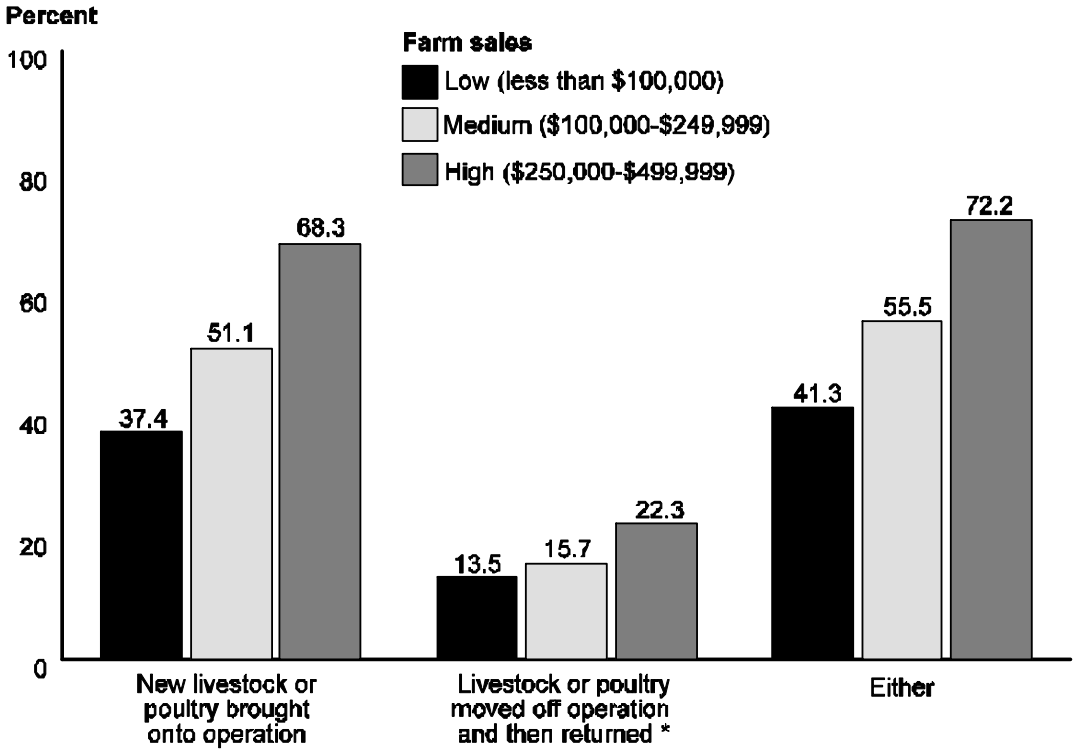
The percentage of operations that brought new livestock or poultry onto the operation during the previous 12 months increased as farm sales increased, ranging from 37.4 percent of low-sales operations to 68.3 percent of high-sales operations. High-sales operations were more likely to have had livestock or poultry move off the operation and return in the previous 12 months (22.3 percent of operations) than low-sales operationsthen (13.5 percent).

b. Percentage of operations that brought on new livestock or poultry or that had livestock or poultry leave the operation and return during the previous 12 months, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
New livestock or poultry brought onto operation	37.4	(0.6)	51.1	(1.7)	68.3	(2.8)
Livestock or poultry moved off operation and then returned*	13.5	(0.4)	15.7	(1.3)	22.3	(2.6)
Either of the above	41.3	(0.6)	55.5	(1.7)	72.2	(2.7)

*E.g., taken to fair, bred elsewhere, etc.

Percentage of operations that brought on new livestock or poultry or that had livestock or poultry move off the operation and return during the previous 12 months, by farm sales



*E.g., taken to fair, bred elsewhere, etc.

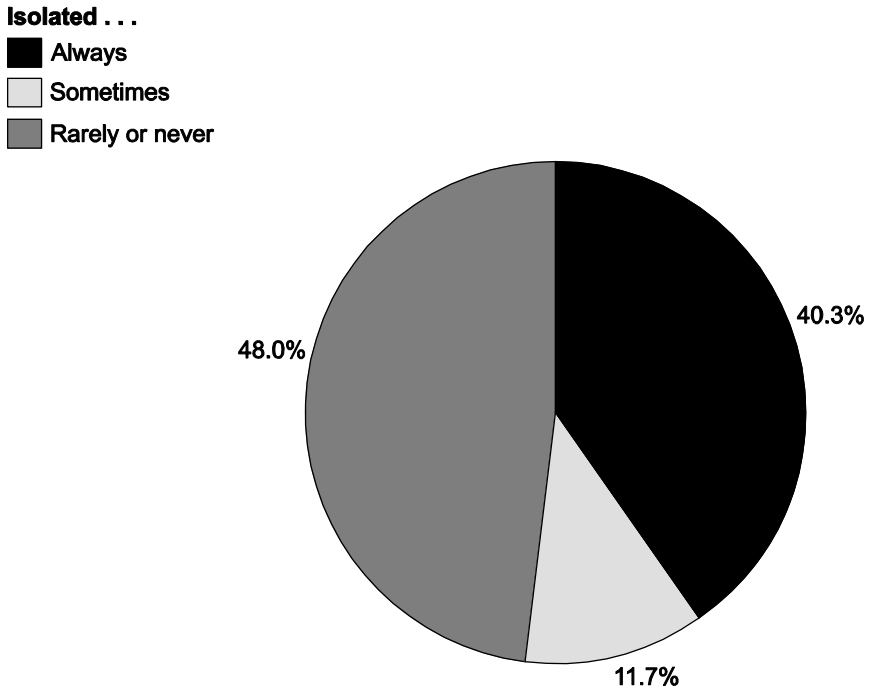
Proper quarantine or isolation of new or returning animals can prevent the introduction of acute infectious diseases to the herd or flock. During quarantine, animals should be kept separate from the remainder of the herd or flock and be observed regularly for disease symptoms or fever. Separate equipment and clothing should be used when caring for quarantined animals. Producers may find it easiest to care for the established animals first and care for the new (isolated) animals last. Some diseases that do not have acute clinical signs, such as Johne's disease in cattle, cannot be effectively prevented by temporary quarantine. For these diseases, laboratory testing or other techniques can be utilized to help prevent disease introduction.

Overall, 40.3 percent of operations that brought on new animals or had animals leave and return in the previous 12 months always isolated the new or returning animals, but almost half of operations (48.0 percent) rarely or never isolated the new or returning animals. In the West region, 32.4 percent of operations that brought on new animals or had animals leave and return always isolated new or returning animals, compared with 42.7 percent of operations in the South region.

c. For operations that brought on new livestock or poultry or that had livestock or poultry leave the operation and return during the previous 12 months, percentage of operations by how often new or returning animals were isolated, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Isolated. . .	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Always	39.8	(1.5)	40.7	(3.0)	42.7	(1.3)	32.4	(2.4)	40.3	(0.9)
Sometimes	12.2	(1.0)	11.5	(2.0)	11.4	(0.9)	11.4	(1.8)	11.7	(0.6)
Rarely or never	48.0	(1.6)	47.8	(3.1)	45.9	(1.4)	56.2	(2.6)	48.0	(0.9)
Total	100.0		100.0		100.0		100.0		100.0	

For operations that brought on new livestock or poultry or that had livestock or poultry leave the operation and return during the previous 12 months, percentage of operations by how often new or returning animals were isolated



The percentage of operations that had always isolated new or returning animals during the previous 12 months did not differ substantially by farm sales.

d. For operations that brought on new livestock or poultry or that had livestock or poultry leave the operation and return during the previous 12 months, percentage of operations by how often new or returning animals were isolated, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Isolated. . .	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Always	39.9	(1.0)	42.7	(2.3)	43.0	(3.6)
Sometimes	11.9	(0.7)	11.5	(1.5)	7.8	(2.0)
Rarely or never	48.2	(1.0)	45.8	(2.3)	49.2	(3.6)
Total	100.0		100.0		100.0	

A quarantine period of at least 21 to 30 days for new or returning animals is recommended for most livestock species. Operations that had **always** isolated new or returning animals during the previous 12 months kept the animals isolated for a longer period (25.3 days, on average) than operations that **sometimes** isolated new or returning animals (17.5 days, on average). Among operations that isolated new or returning animals, the average number of days animals spent in isolation did not differ substantially by region.

e. For operations that ever isolated new or returning livestock or poultry during the previous 12 months, operation average number of days animals were isolated, by isolation practice and by region

	Operation Average Number Days									
	Region									
	North Central		Northeast		South		West		All operations	
Isolation practice	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Always	27.1	(1.6)	22.5	(2.5)	24.6	(1.2)	25.5	(2.3)	25.3	(0.8)
Sometimes	17.6	(1.6)	13.8	(2.8)	16.4	(1.4)	23.5	(4.7)	17.5	(1.1)

The average number of days animals spent in isolation did not differ substantially by farm sales.

f. For operations that ever isolated new or returning livestock or poultry during the previous 12 months, operation average number of days animals were isolated, by isolation practice and by farm sales

	Operation Average Number Days					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Isolation practice	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
Always	24.8	(1.0)	27.7	(2.0)	29.0	(2.8)
Sometimes	17.9	(1.2)	15.3	(1.9)	15.1	(2.7)

For operations that had **always** isolated new or returning livestock or poultry during the previous 12 months, almost half (44.1 percent) isolated the animals an average of 21 days or more. The percentages of operations within the number-of-days categories did not differ substantially by region.

g. For operations that always isolated new or returning livestock or poultry during the previous 12 months, percentage of operations by average number of days animals were isolated, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Average number days	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1–7	25.9	(2.3)	24.1	(4.6)	23.7	(1.8)	26.0	(4.3)	24.6	(1.3)
8–14	21.9	(2.1)	33.2	(4.8)	28.6	(1.9)	25.8	(4.3)	26.6	(1.3)
15–20	4.2	(1.1)	2.4	(1.4)	5.7	(1.0)	2.7	(1.4)	4.7	(0.6)
21 or more	48.0	(2.6)	40.3	(4.9)	42.0	(2.1)	45.5	(4.7)	44.1	(1.5)
Total	100.0		100.0		100.0		100.0		100.0	

For operations that **always** isolated new or returning livestock during the previous 12 months, 58.5 percent of high-sales operations kept animals isolated for at least 21 days, compared with 42.2 percent of low-sales operations. One of four low-sales operations that always isolated animals (25.7 percent) did so for an average of 1 to 7 days.

h. For operations that always isolated new or returning livestock or poultry during the previous 12 months, percentage of operations by average number of days animals were isolated, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Average number days	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
1–7	25.7	(1.5)	21.4	(3.3)	12.7	(3.6)
8–14	27.7	(1.5)	21.0	(3.0)	18.2	(4.4)
15–20	4.4	(0.7)	5.0	(2.0)	10.6	(3.7)
21 or more	42.2	(1.6)	52.6	(3.9)	58.5	(5.7)
Total	100.0		100.0		100.0	

2. Barriers to implementing quarantine

Although the introduction of disease can be very costly, about half of operations that added animals or had animals leave the operation and return in the previous 12 months rarely or never isolated the new or returning animals (table A.1.c., Section II). Inadequate labor or time was cited as a reason for not isolating animals by a higher percentage of operations that sometimes isolated animals (18.1 percent) than operations that rarely or never isolated them (9.0 percent). This finding might mean that operations that sometimes isolated animals strive to isolate all new or returning animals but find it difficult to maintain this practice during busy times of the year.

"Trust the source of the new animals or the place from which animals are returning" was given as a reason for not isolating animals by a similar percentage of operations that sometimes isolated new or returning animals and operations that rarely or never isolated animals (67.5 and 64.8 percent of operations, respectively).

Lack of a separate enclosure or extra equipment was a reason for not isolating animals on 27.9 percent of operations that rarely or never isolated new or returning animals. A low percentage of respondents cited "I don't believe isolation is beneficial or prevents disease" as a reason for not isolating animals. About 1 of 10 operations that rarely or never isolated new or returning animals (11.4 percent) had "other" reasons for not isolating animals. The most commonly cited other reasons were use of all-in, all-out production; health certificates/veterinary exams/treatments on arriving animals; and the belief that isolation was not necessary considering the circumstances. All-in, all-out production refers to a management practice in which all animals are removed from the operation, barn, room, or pen before new animals are brought in. The practice is common in poultry and swine production.

All-in, all-out production is an effective biosecurity measure for preventing disease spread, especially when barns and equipment are cleaned and disinfected before new animals are introduced. Interestingly, a low percentage of respondents believed that isolation is not beneficial, but some felt that it did not apply to their situation.

For operations that sometimes or rarely or never isolated new or returning livestock or poultry during the previous 12 months, percentage of operations by reason animals were not isolated

	Isolated. . .			
	Sometimes		Rarely or never	
Reason	**Percent**	**Std. error**	**Percent**	**Std. error**
Do not have a separate enclosure or extra equipment for isolating animals	29.5	(2.7)	27.9	(1.2)
Trust the source of the new animals or the place from which the animals are returning	67.5	(2.8)	64.8	(1.3)
Have inadequate labor or time to implement isolation	18.1	(2.4)	9.0	(0.8)
Don't believe isolation is beneficial or prevents disease	4.1	(1.2)	5.7	(0.6)
Other	5.6	(1.4)	11.4	(0.9)

3. Contact with animals from other operations

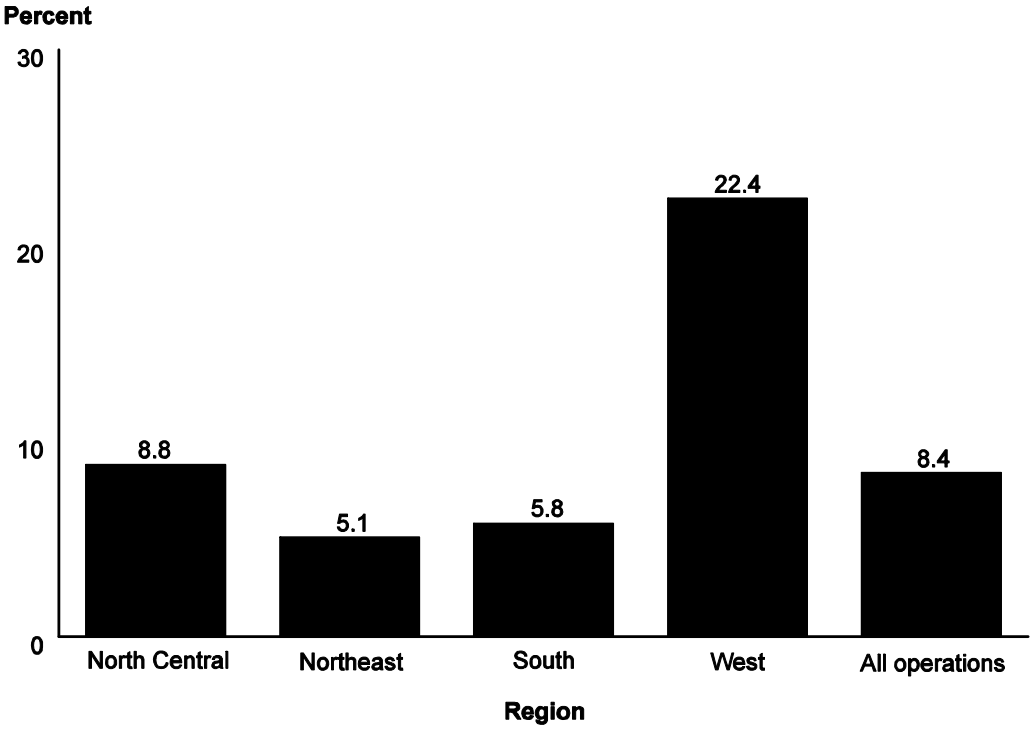
Exposure to livestock from other operations is another route for introducing disease to a herd or flock. Exposure can happen when animals from more than one operation are commingled in the same pasture or when animals from different operations have fence-line contact.

Overall, only 8.4 percent of operations had livestock or poultry share a pasture at the same time with livestock or poultry from another operation during the previous 12 months. The percentage of operations in which animals shared a pasture with animals from another operation was higher in the West region than in the other regions. This finding may be related to the type of grazing lands used by cow-calf operations. Based on the NAHMS 2007–08 Beef Cow-calf study, a higher percentage of cow-calf operations in the West region used public land or grazing association land for grazing compared with other regions in the United States. It is not uncommon for cattle to be commingled with cattle from other operations for grazing on public or grazing association land (USDA, 2008).

a. Percentage of operations in which livestock or poultry ever shared a pasture at the same time with livestock or poultry from another operation during the previous 12 months, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
8.8	(0.6)	5.1	(0.9)	5.8	(0.4)	22.4	(1.5)	8.4	(0.3)

Percentage of operations in which livestock or poultry ever shared a pasture at the same time with livestock or poultry from another operation during the previous 12 months, by region



The percentage of operations in which livestock or poultry shared a pasture at the same time with livestock or poultry from another operation during the previous 12 months was similar, regardless of farm sales.

b. Percentage of operations in which livestock or poultry ever shared a pasture at the same time with livestock or poultry from another operation during the previous 12 months, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
8.2	(0.4)	10.4	(1.1)	10.2	(1.7)

Having a perimeter fence and preventing fence-line contact with livestock from other operations reduces the risk of introducing infectious diseases on livestock operations. For the purposes of this report, a perimeter fence was defined as a fence around the entire perimeter of the livestock or poultry area that served to keep out animals from other operations. Fence-line contact was defined as having nose-to-nose contact with the same species of livestock from another operation anywhere along the perimeter fence.

Overall, about half of operations (51.8 percent) had a perimeter fence and no fence-line contact between their livestock and livestock from other operations. About 7 of 10 operations in the Northeast region (70.1 percent) had a perimeter fence and no fence-line contact with other livestock, while only 38.2 percent of operations in the West region did. On the majority of operations in the West region (53.8 percent), the livestock area had a perimeter fence, but there was fence-line contact with other livestock along the fence. Fence-line contact with other livestock is not always preventable, since producers have no control over whether or not their neighbors have livestock. Although a second fence can be constructed to prevent fence-line contact with neighbors' animals, it can be very expensive, especially when the fenced area is large. Furthermore, perimeter fences are not infallible; animals can escape, and trees or other objects can damage fences, leading to contact with other animals. Overall, very few operations (6.3 percent) had no perimeter fence for the livestock area.

c. Percentage of operations by perimeter fencing and fenceline contact with other livestock, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Fencing/ fenceline contact	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
No perimeter fence	8.2	(0.6)	12.7	(1.3)	4.3	(0.3)	8.0	(1.0)	6.3	(0.3)
Have perimeter fence[1] and livestock have fence-line contact[2] with livestock from other operations	36.1	(1.0)	17.2	(1.5)	45.5	(0.8)	53.8	(1.8)	41.9	(0.6)
Have perimeter fence[1] and livestock do not have fenceline contact[2] with livestock from other operations	55.7	(1.0)	70.1	(1.8)	50.2	(0.8)	38.2	(1.8)	51.8	(0.6)
Total	100.0		100.0		100.0		100.0		100.0	

[1]A fence around the entire perimeter of the livestock or poultry area that keeps out animals from other operations.
[2]Nose-to-nose contact with the same species of livestock from other operations.

Almost 2 of 10 high-sales operations (17.3 percent) had no perimeter fence for the livestock area, compared with only 5.5 percent of low-sales operations. However, fencing is a more important biosecurity feature for some livestock species than for others. For example, swine and poultry operations often use a barn as a barrier for keeping out other animals, rather than fencing. Barns are more effective than fences for preventing wildlife and other animals access. Additionally, fencing is not very relevant to biosecurity on some operations with "other" livestock species, such as aquaculture or bees. As shown in table A.1.b. (Section I), high-sales operations were more likely to have swine or "other" livestock species than low-sales operations. Therefore, the differences in fencing might reflect differences in the types of species raised rather than differences in the quality of the biosecurity on these operations.

d. Percentage of operations by perimeter fencing and fenceline contact with other livestock, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Fencing/ fenceline contact	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
No perimeter fence	5.5	(0.3)	11.8	(1.1)	17.3	(2.3)
Have perimeter fence[1] and livestock have fence-line contact[2] with livestock from other operations	41.8	(0.6)	44.2	(1.7)	38.4	(2.9)
Have perimeter fence[1] and livestock **do not** have fence-line contact[2] with livestock from other operations	52.7	(0.6)	44.0	(1.7)	44.3	(3.0)
Total	100.0		100.0		100.0	

[1]A fence around the entire perimeter of the livestock or poultry area that keeps out animals from other operations.
[2]Nose-to-nose contact with the same species of livestock from other operations.

B. Use of Alternative Treatments

Producers were asked if they had used natural or alternative treatments for their livestock or poultry during the previous 12 months. The following examples of natural or alternative treatments were provided in the questionnaire: holistic, herbal or homeopathic treatments, garlic for parasites, Echinacea, chiropractic, and acupuncture, etc. Overall, 5.8 percent of operations had used natural or alternative treatments for their livestock or poultry. A higher percentage of operations in the Northeast region used natural or alternative medicine compared with the other regions.

a. Percentage of operations that used natural or alternative treatments* for their livestock or poultry during the previous 12 months, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
5.6	(0.5)	11.4	(1.2)	5.0	(0.4)	6.9	(1.0)	5.8	(0.3)

*E.g., holistic, herbal or homeopathic treatments, garlic for parasites, Echinacea, chiropractic, acupuncture, etc.

Medium- and high-sales operations were more likely to use natural or alternative treatments for their livestock or poultry during the previous 12 months than low-sales operations.

b. Percentage of operations that used natural or alternative treatments* for their livestock or poultry during the previous 12 months, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
5.4	(0.3)	9.1	(1.0)	10.3	(1.9)

*E.g., holistic, herbal or homeopathic treatments, garlic for parasites, Echinacea, chiropractic, acupuncture, etc.

Section III: Challenges for Small-scale Livestock Operations

A. Access to Veterinarians

Animal health is closely tied with productivity and food safety. Veterinarians, as resources for animal health, play a critical role in the productivity of small-scale operations and the safety of the U.S. food supply. A shortage of food-animal veterinarians in rural areas is an important issue that has been discussed in recent years. In 2010, the USDA implemented a plan to address veterinary shortages in rural areas by repaying the student loans of some veterinarians who practice food-animal medicine in underserved areas.

1. Distance to nearest veterinarian

All operators were asked about the distance to the nearest veterinarian that worked with their type of livestock, regardless of whether or not the operation actually used that veterinarian. Overall, 82.0 percent of operations had a veterinarian that worked with their type of livestock available within 29 miles of the operation. In the West region, about one of four operations (24.2 percent) was located 30 to 99 miles from the nearest veterinarian that worked with their type of livestock. For 0.9 percent of operations, no veterinarian was available or the nearest veterinarian was 300 or more miles away from the operation. Considering that there are about 350,000 small-scale livestock operations in the United States (see Appendix II), this means that about 3,150 operations (0.9 percent x 350,000) either have no access to a livestock veterinarian or would have to travel 300 or more miles to reach one. Of the operations that reported no veterinarian was available for their livestock, 25 percent raised "other" livestock species, such as aquaculture, fur-bearing animals, or bees (data not shown).

a. Percentage of operations by distance to the nearest veterinarian that worked with the type of livestock or poultry present on the operation, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Distance (miles)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 30	85.2	(0.8)	76.6	(1.7)	83.2	(0.6)	71.0	(1.7)	82.0	(0.5)
30–99	12.5	(0.7)	18.8	(1.6)	14.3	(0.6)	24.2	(1.6)	15.2	(0.4)
100–299	0.6	(0.2)	0.6	(0.3)	0.1	(0.1)	2.4	(0.5)	0.5	(0.1)
300 or more	0.0	(0.0)	0.0	(—)	0.1	(0.0)	0.2	(0.1)	0.1	(0.0)
No veterinarian available for my type of animals	0.7	(0.2)	1.5	(0.6)	0.8	(0.1)	0.9	(0.3)	0.8	(0.1)
Don't know distance	1.0	(0.2)	2.5	(0.6)	1.5	(0.2)	1.3	(0.5)	1.4	(0.1)
Total	100.0		100.0		100.0		100.0		100.0	

The percentage of operations by distance to the nearest veterinarian did not differ substantially by farm sales.

b. Percentage of operations by distance to the nearest veterinarian that worked with the type of livestock or poultry present on the operation, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Distance (miles)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Less than 30	82.3	(0.5)	80.1	(1.4)	76.6	(2.5)
30–99	14.9	(0.5)	17.5	(1.4)	18.0	(2.3)
100–299	0.5	(0.1)	0.5	(0.2)	1.7	(0.9)
300 or more	0.1	(0.0)	0.0	(—)	0.6	(0.5)
No veterinarian available for my type of animals	0.8	(0.1)	0.8	(0.3)	1.5	(0.7)
Don't know distance	1.4	(0.2)	1.1	(0.3)	1.6	(0.7)
Total	100.0		100.0		100.0	

2. Use of veterinarians

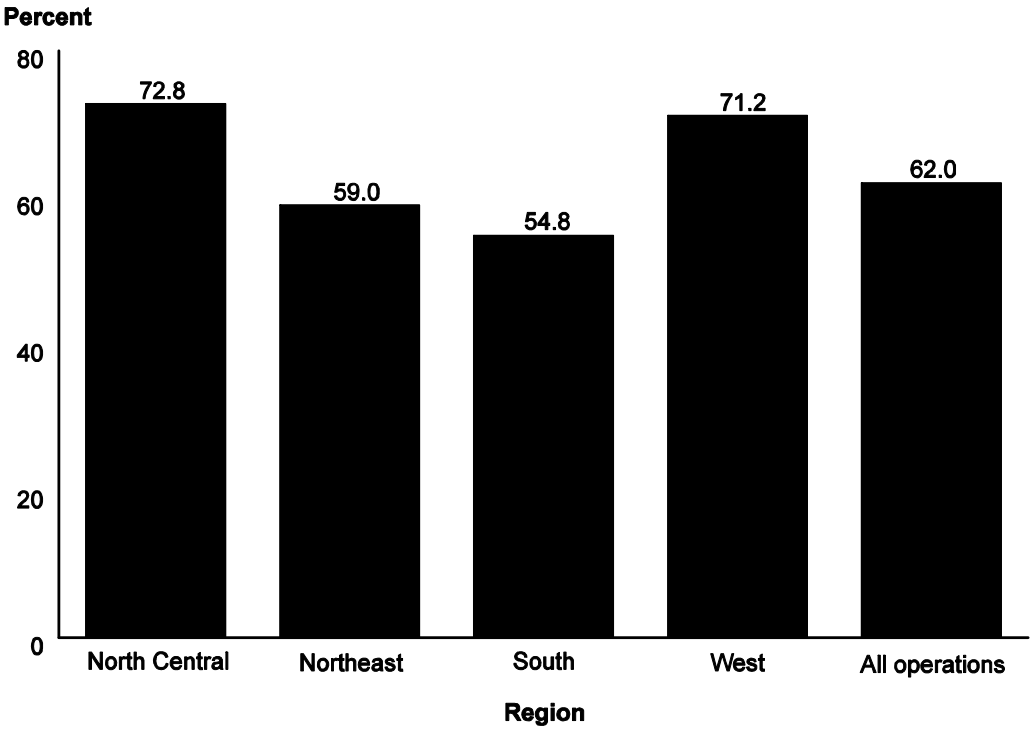
About 7 of 10 operations in the North Central and West regions (72.8 and 71.2 percent, respectively) used a veterinarian for their livestock or poultry during the previous 12 months, compared with fewer than 6 of 10 operations in the Northeast and South regions (59.0 and 54.8 percent, respectively). Generally, veterinarians in the West region were farther away from farms compared with veterinarians in the South region, but a higher percentage of operations used veterinarians in the West region than in the South region.

a. Percentage of operations that used a veterinarian* for their livestock or poultry during the previous 12 months, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
72.8	(1.0)	59.0	(1.9)	54.8	(0.8)	71.2	(1.7)	62.0	(0.6)

*E.g., for treatment, consultation, health certificates, etc.

Percentage of operations that used a veterinarian* for their livestock or poultry during the previous 12 months, by region



*E.g., for treatment, consultation, health certificates, etc.

A higher percentage of medium- and high-sales operations (87.0 and 86.5 percent, respectively) used a veterinarian for their livestock or poultry during the previous 12 months compared with low-sales operations (59.0 percent).

b. Percentage of operations that used a veterinarian* for their livestock or poultry during the previous 12 months, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
59.0	(0.6)	87.0	(1.2)	86.5	(2.0)

*E.g., for treatment, consultation, health certificates, etc.

3. Reasons for not using a veterinarian

Producers who did not use a veterinarian during the previous 12 months were asked why. Of the 38.0 percent of operations that did not use a veterinarian (Section III, table A.2.a), 65.8 percent did not use a veterinarian because they had no disease or other need for a veterinarian, and 44.2 percent did not use a veterinarian because the operation provided the animals' health care. Only one of eight operations (12.4 percent) that did not use a veterinarian reported that veterinarians were too expensive. About 1 of 10 operations in the Northeast region that did not use a veterinarian (10.4 percent) did not use one because no veterinarian was available or because the veterinarian was too far away (in operator's opinion). The most common "other" reason for not using a veterinarian was that the animals were raised under contract and the contractor provided any necessary veterinary care for the animals. This scenario is common for contract poultry and swine operations.

a. For operations that did not use a veterinarian during the previous 12 months, percentage of operations by reasons for not using a veterinarian, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Reason	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Too expensive	10.1	(1.3)	11.2	(2.1)	13.0	(0.9)	14.4	(2.7)	12.4	(0.7)
No veterinarian available in area or veterinarian too far away	2.6	(0.7)	10.4	(2.2)	3.2	(0.5)	3.3	(1.2)	3.6	(0.4)
Provide own health care for animals	43.6	(2.2)	46.4	(3.5)	43.9	(1.3)	46.4	(3.7)	44.2	(1.0)
No disease or other need for a veterinarian	67.9	(2.1)	61.0	(3.4)	65.5	(1.2)	67.5	(3.4)	65.8	(1.0)
Other	2.4	(0.7)	1.5	(0.7)	2.1	(0.3)	1.3	(0.7)	2.0	(0.3)

The percentages of operations by reasons for not using a veterinarian during the previous 12 months did not differ substantially by farm-sales (note the large standard errors).

b. For operations that did not use a veterinarian during the previous 12 months, percentage of operations by reasons for not using a veterinarian, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Reason	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Too expensive	12.5	(0.7)	9.1	(2.8)	8.4	(4.7)
No veterinarian available in area or veterinarian too far away	3.6	(0.4)	4.5	(2.7)	0.0	(—)
Provide own health care for animals	44.0	(1.0)	52.3	(5.0)	41.0	(8.1)
No disease or other need for a veterinarian	66.1	(1.0)	57.0	(5.1)	64.2	(7.7)
Other	1.9	(0.3)	5.6	(2.1)	5.4	(3.7)

B. Access to Business Resources

1. Proximity to urban areas

Rural urban continuum codes are assigned to each U.S. county based on Census data and are intended to reflect a county's level of urbanization and proximity to urban areas. Some business resources for small-scale livestock operations might be more readily available near urban areas. For example, opportunities for direct marketing to consumers through farmer's markets or Community Supported Agriculture might be more prevalent for operations in close proximity to moderately sized urban areas. See Terms Used in this Report, p 2 for more information on rural urban continuum codes.

Overall, one of four operations (23.4 percent) were located in counties with an urban population of 2,500 to 19,999 and were adjacent to a metropolitan area (rural-urban classification code 6). About 4 of 10 operations (39.2 percent) were located in metropolitan counties (rural-urban classification code 1, 2, or 3). The South region had the highest percentage of operations located in metropolitan counties with a population of 1 million or more (rural-urban classification code 1).

The West and North Central regions had a higher percentage of operations in completely rural counties (rural-urban classification code 9; fewer than 2,500 urban population and not adjacent to a metropolitan area), compared with the South and Northeast regions. The percentage of operations located in completely rural counties (rural-urban classification code 9) ranged from 2.3 percent of operations in the Northeast region to 13.3 percent of operations in the North Central region. This finding might be related to the findings in Section I, table B.2.a., in which a higher percentage of operations in the Northeast region than in the North Central region marketed animals or animal products directly to individuals/consumers, or directly to restaurants/institutions. These marketing opportunities may not be as readily available to operations in highly rural counties. Further data exploration (not shown in table) confirmed that a higher percentage of operations in metro counties (code 1, 2, or 3) than in rural counties (code 8 or 9) used direct marketing (29.3 and 23.0 percent of operations, respectively) to consumers, health food/specialty stores, or restaurants/institutions.

a. Percentage of operations by the rural-urban classification* of operations' county, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Rural-urban classification (codes 1-9)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Metro counties										
1—Counties in metro areas of 1 million population or more	8.8	(0.6)	12.9	(1.4)	18.0	(0.6)	9.0	(1.1)	14.0	(0.4)
2—Counties in metro areas of 250,000–999,999 population	9.0	(0.6)	19.2	(1.6)	11.2	(0.5)	15.3	(1.4)	11.6	(0.4)
3—Counties in metro areas of 50,000–249,999 population	14.5	(0.8)	13.9	(1.4)	12.9	(0.6)	14.3	(1.3)	13.6	(0.4)
Subtotal	*32.3*	*(1.0)*	*46.0*	*(2.0)*	*42.1*	*(0.8)*	*38.6*	*(1.7)*	*39.2*	*(0.6)*
Nonmetro counties										
4—Urban population of 20,000–49,999, adjacent to a metro area	7.5	(0.5)	15.4	(1.4)	7.8	(0.4)	9.4	(1.1)	8.4	(0.3)
5—Urban population of 20,000–49,999, not adjacent to a metro area	4.3	(0.5)	2.5	(0.6)	2.5	(0.3)	6.1	(0.8)	3.4	(0.2)
6—Urban population of 2,500 to 19,999, adjacent to a metro area	22.4	(0.9)	21.1	(1.7)	26.2	(0.7)	13.9	(1.3)	23.4	(0.5)
7—Urban population of 2,500 to 19,999, not adjacent to a metro area	13.2	(0.7)	7.9	(1.1)	10.5	(0.5)	19.6	(1.3)	12.1	(0.4)
8—Completely rural or less than 2,500 urban population, adjacent to a metro area	7.0	(0.5)	4.8	(0.9)	5.4	(0.4)	4.2	(0.7)	5.7	(0.3)
9—Completely rural or less than 2,500 urban population, not adjacent to a metro area	13.3	(0.7)	2.3	(0.6)	5.5	(0.4)	8.2	(0.8)	7.8	(0.3)
Subtotal	*67.7*	*(1.0)*	*54.0*	*(2.0)*	*57.9*	*(0.8)*	*61.4*	*(1.7)*	*60.8*	*(0.6)*
Total	100.0		100.0		100.0		100.0		100.0	

*See Terms Used in this Report, p 2.

A higher percentage of low-sales operations (14.9 percent) were located in counties with metropolitan populations of 1 million or more (code 1) compared with medium- and high-sales operations (6.7 and 7.5 percent, respectively). Conversely, a higher percentage of medium- and high-sales operations (13.9 and 14.0 percent, respectively) were located in completely rural counties (code 9) compared with low-sales operations (7.1 percent).

b. Percentage of operations by rural-urban continuum code* of operation's county, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Rural-urban classification (codes 1-9)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Metro counties						
1—Counties in metro areas of 1 million population or more	14.9	(0.5)	6.7	(0.9)	7.5	(1.7)
2—Counties in metro areas of 250,000–999,999 population	11.5	(0.4)	11.3	(1.1)	15.0	(2.1)
3—Counties in metro areas of 50,000–249,999 population	13.6	(0.4)	13.0	(1.2)	12.9	(2.0)
Subtotal	*40.0*	*(0.6)*	*31.0*	*(1.6)*	*35.4*	*(2.8)*
Nonmetro counties						
4—Urban population of 20,000–49,999, adjacent to a metro area	8.5	(0.4)	6.9	(0.8)	9.7	(1.8)
5—Urban population of 20,000–49,999, not adjacent to a metro area	3.4	(0.2)	3.8	(0.6)	2.3	(0.9)
6—Urban population of 2,500 to 19,999, adjacent to a metro area	23.8	(0.5)	20.0	(1.3)	19.0	(2.4)
7—Urban population of 2,500 to 19,999, not adjacent to a metro area	11.7	(0.4)	15.9	(1.3)	14.9	(2.1)
8—Completely rural or less than 2,500 urban population, adjacent to a metro area	5.5	(0.3)	8.5	(1.0)	4.7	(1.2)
9—Completely rural or less than 2,500 urban population, not adjacent to a metro area	7.1	(0.3)	13.9	(1.2)	14.0	(2.0)
Subtotal	*60.0*	*(0.6)*	*69.0*	*(1.6)*	*64.6*	*(2.8)*
Total	100.0		100.0		100.0	

*See Terms Used in this Report, p 2.

2. Slaughter facilities used

Although small-scale livestock operations are highly varied in the types of livestock species/crops raised, the majority have at least some beef cattle (see Section I, table A.1.a.). Under the most common model for beef production in the United States, cow-calf operations sell weaned calves to stocker or feeder operations and, therefore, are several steps removed from the slaughter stage of the production cycle. In the production of other commodities, such as poultry, animals are usually shipped directly from grower operation to the processing facility. Certain livestock, such as horses, are currently not slaughtered in the United States.

Small-scale operations that want to directly market meat and poultry products require access to facilities for slaughtering and processing animals. Some regions of the United States do not have enough stationary slaughter facilities to meet the needs of local small-scale farmers (Goodsell et al., 2010). One alternative is a mobile slaughter unit, which is a self-contained slaughter facility that can travel from site to site. Mobile poultry slaughter units may represent the most rapidly growing type of mobile slaughter facility, since most USDA poultry plants are operated by private entities that do not accept birds from outside producers. However, red- meat mobile slaughtering units also exist. Producers who wish to learn more about mobile slaughter and/or direct marketing of meat and poultry products can find more information from a local extension office or written publications (Goodsell et al., 2010).

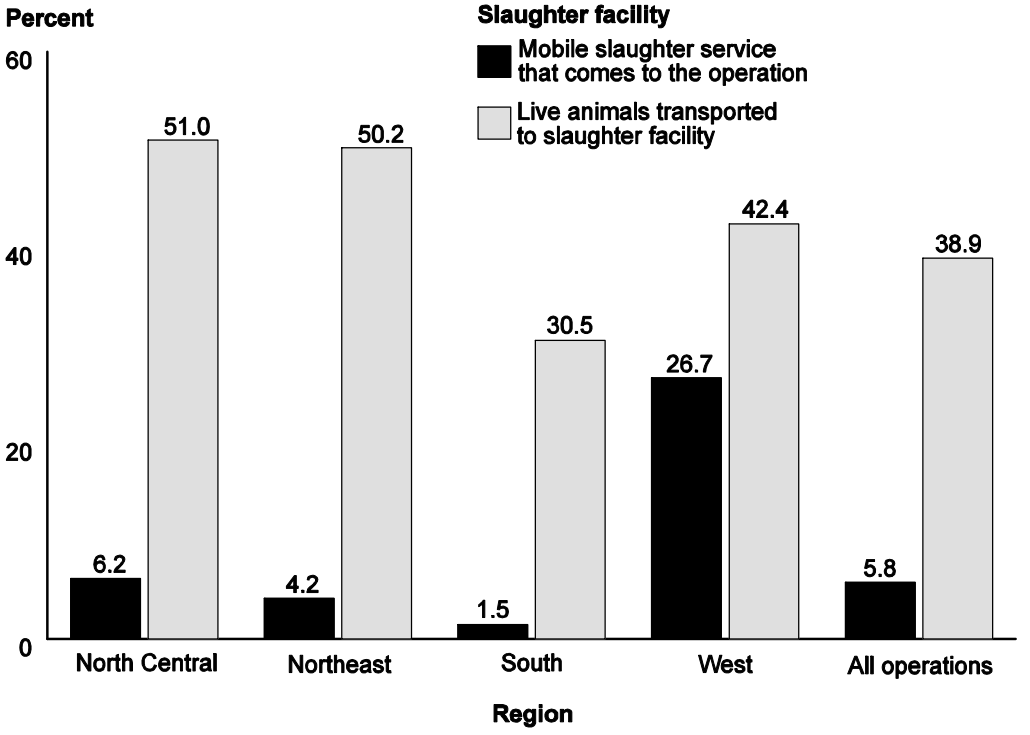
Overall, 5.8 percent of operations used a mobile slaughter service for livestock or poultry, and 38.9 percent had live animals transported to a slaughter facility. A higher percentage of operations in the West region used a mobile slaughter service (26.7 percent) compared with operations in the North Central, Northeast, and South regions (6.2, 4.2, and 1.5 percent of operations, respectively). Producers were not asked to specify what species of livestock was slaughtered using a mobile service. Examination of operations that used mobile slaughter services and raised only one species of livestock reveals that a variety of different species were slaughtered using mobile slaughter services (data not shown).

A lower percentage of operations in the South region had live animals transported to a slaughter facility compared with the other regions.

a. Percentage of operations by facilities used for slaughtering livestock or poultry for home use or sale, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Slaughter facility	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Mobile slaughter service that comes to the operation	6.2	(0.5)	4.2	(0.8)	1.5	(0.2)	26.7	(1.5)	5.8	(0.3)
Live animals transported to slaughter facility	51.0	(1.1)	50.2	(2.1)	30.5	(0.8)	42.4	(1.8)	38.9	(0.6)

Percentage of operations by facilities used for slaughtering livestock or poultry for home use or sale, and by region



About 4 of 10 low -sales operations (37.6 percent) transported live animals to a slaughter facility compared with about half of medium- and high-sales operations (49.9 and 50.4 percent, respectively). A slightly higher percentage of medium-sales operations than low-sales operations used a mobile slaughter service (8.7 and 5.5 percent, respectively).

b. Percentage of operations by facilities used for slaughtering livestock or poultry for home use or sale, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Slaughter facility	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Mobile slaughter service that comes to the operation	5.5	(0.3)	8.7	(1.0)	7.5	(1.5)
Live animals transported to slaughter facility	37.6	(0.6)	49.9	(1.7)	50.4	(3.0)

3. Distance to slaughter facility

Operators who transported live animals to a slaughter facility were asked about the farthest one-way distance to the facility(s) they used. The farthest one-way distance to the slaughter facility was less than 50 miles for about three of four operations (78.5 percent) that had live animals transported to a slaughter facility. A higher percentage of operations in the West region were 50 to 149 miles from the farthest slaughter facility they used, compared with the other regions.

The distances reported in the following table are for the 38.9 percent of operations that transported live animals to a slaughter facility (Section III, table B.2.a.) and may not reflect the distance to slaughter facilities from operations that did not transport live animals to slaughter facilities. Therefore, the table does not imply that 78.5 percent of all small-scale livestock operations are less than 50 miles from a stationary slaughter facility.

a. For operations that transported live animals to a slaughter facility, percentage of operations by farthest one-way distance to slaughter facility, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Distance (miles)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 50	85.7	(1.1)	82.2	(2.3)	75.8	(1.3)	63.6	(2.7)	78.5	(0.8)
50–149	12.6	(1.0)	14.7	(2.1)	23.6	(1.3)	33.1	(2.6)	19.9	(0.8)
150 or more	1.7	(0.3)	3.1	(1.2)	0.6	(0.2)	3.3	(1.0)	1.6	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	

Animals were transported 150 or more miles on a higher percentage of high-sales operations (6.3 percent) than low-sales operations (1.2 percent).

b. For operations that transported live animals to a slaughter facility, percentage of operations by farthest one-way distance to slaughter facility, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Distance (miles)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Less than 50	78.6	(0.9)	79.2	(2.0)	75.2	(3.7)
50–149	20.2	(0.9)	17.6	(1.9)	18.5	(3.2)
150 or more	1.2	(0.2)	3.2	(0.9)	6.3	(2.2)
Total	100.0		100.0		100.0	

4. Transporting products to markets

Producers who use certain marketing channels such as a farmer's market, direct to consumers over the Internet, or through a livestock auction transport their animals or products themselves. Conversely, in the case of on-farm sales of products or animals, the purchaser comes to the operation to make a purchase. There are other marketing channels in which producers are not responsible for product transportation; however, they may still be responsible for transportation costs. For example, for dairy operations that sell milk through a cooperative, the cooperative sends a truck to the operation on a regular schedule to pick up milk. Similarly, for vertically integrated poultry operations, transportation of birds or eggs is provided by the poultry company.

Overall, 80.9 percent of operations transported their animals or products to sell them. In the Northeast region, 61.0 percent of operations had animals or products transported to the place of sale compared with 77.6 percent in the North Central region, 77.0 percent in the West region, and 86.0 percent in the South region. Operations in the Northeast had a higher percentage of operations with dairy cattle or poultry compared with operations in the other regions (see Section I, table A.1.a.), which might explain why a lower percentage of operations in the Northeast region transported animals or products.

a. Percentage of operations that transported animals or products to place of sale*, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
77.6	(0.9)	61.0	(2.0)	86.0	(0.6)	77.0	(1.6)	80.9	(0.5)

*E.g., to auction, other farms, fair, farmer's market, etc.

A higher percentage of low-sales operations (82.1 percent) transported animals or products to the place of sale compared with medium- and high-sales operations (71.5 and 69.4 percent, respectively). Larger operations may sell products through distributors, and distributors often provide product transportation. In fact, previous tables show that the percentage of operations that sold products through distributors increased as farm sales increased (see Section I, table B.2.b).

b. Percentage of operations that transported animals or products to place of sale*, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
82.1	(0.5)	71.5	(1.5)	69.4	(2.8)

*E.g., to auction, other farms, fair, farmer's market, etc.

Operators who transported their animals or products to the place of sale were asked about the farthest one-way distance they traveled to sell animals or products. Overall, about 6 of 10 operations (63.2 percent) that transported animals or products to sell them traveled less than 50 miles to the farthest destination. For about 3 of 10 operations that transported animals or products to the place of sale (31.3 percent), the farthest one-way distance traveled was 50 to 149 miles.

A higher percentage of operations in the West region than operations in the other regions were 50 or more miles away from the farthest location for selling animals or products. About one of seven operations in the West region (14.6 percent) traveled 150 or more miles to the farthest location where they sold animals or products.

c. For operations that transported animals or products to the place of sale*, percentage of operations by farthest one-way distance traveled to sell animals or products, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Distance (miles)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 50	63.7	(1.2)	63.2	(2.6)	67.4	(0.9)	38.8	(2.1)	63.2	(0.7)
50–149	30.9	(1.2)	29.7	(2.5)	28.8	(0.8)	46.6	(2.1)	31.3	(0.6)
150 or more	5.4	(0.6)	7.1	(1.5)	3.8	(0.3)	14.6	(1.5)	5.5	(0.3)
Total	100.0		100.0		100.0		100.0		100.0	

*E.g., to auction, other farms, fair, farmer's market, etc.

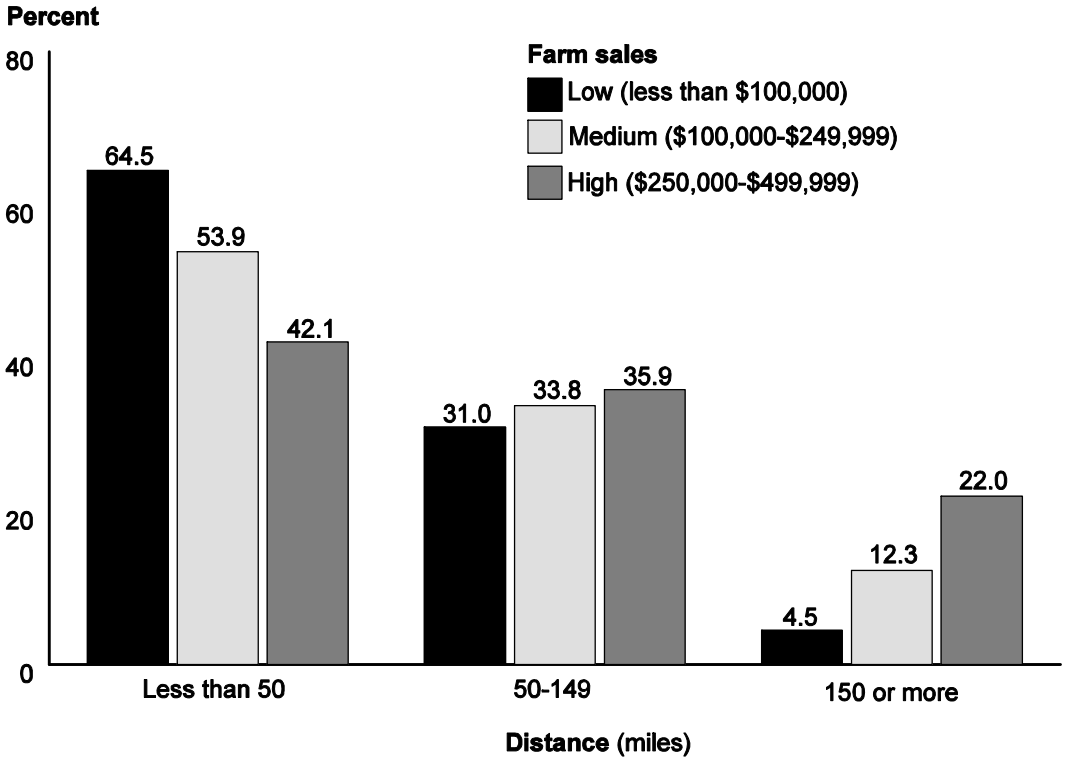
For operations that transported animals or products to the place of sale, a higher percentage of high-sales operations traveled 150 or more miles to sell animals or products than low- and medium-sales operations.

d. For operations that transported animals or products to the place of sale*, percentage of operations by farthest one-way distance traveled to sell animals or products, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Distance (miles)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Less than 50	64.5	(0.7)	53.9	(2.1)	42.1	(3.6)
50–149	31.0	(0.7)	33.8	(2.0)	35.9	(3.6)
150 or more	4.5	(0.3)	12.3	(1.5)	22.0	(3.0)
Total	100.0		100.0		100.0	

*E.g., to auction, other farms, fair, farmer's market, etc.

For operations that transported animals or products to the place of sale*, percentage of operations by farthest one-way distance traveled to sell animals or products, and by farm sales



*E.g., to auction, other farms, fair, farmer's market, etc.

5. Livestock feed sources

Overall, about 6 of 10 operations (63.4 percent) used home-grown feed for their livestock or poultry; 39.2 percent used feed transported to the operation by a feed supplier; and 71.0 percent had feed transported by the operator. Operators on a lower percentage of operations in the Northeast region transported feed to the operation themselves compared with the other regions. Operators on operations in the South region were more likely than operators on operations in the other regions to transport feed and less likely to use home-grown feed or have feed transported by a feed supplier.

a. Percentage operations by source of livestock or poultry feed, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Source	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Home-grown feed*	73.0	(1.0)	73.2	(1.9)	56.3	(0.8)	68.0	(1.7)	63.4	(0.6)
Feed transported/ shipped by supplier	45.5	(1.1)	48.3	(2.0)	33.6	(0.8)	44.7	(1.8)	39.2	(0.6)
Feed transported to operation by operator	64.4	(1.0)	51.8	(1.9)	78.0	(0.7)	66.0	(1.8)	71.0	(0.5)

*Some operations may have interpreted this to include grazing pasture.

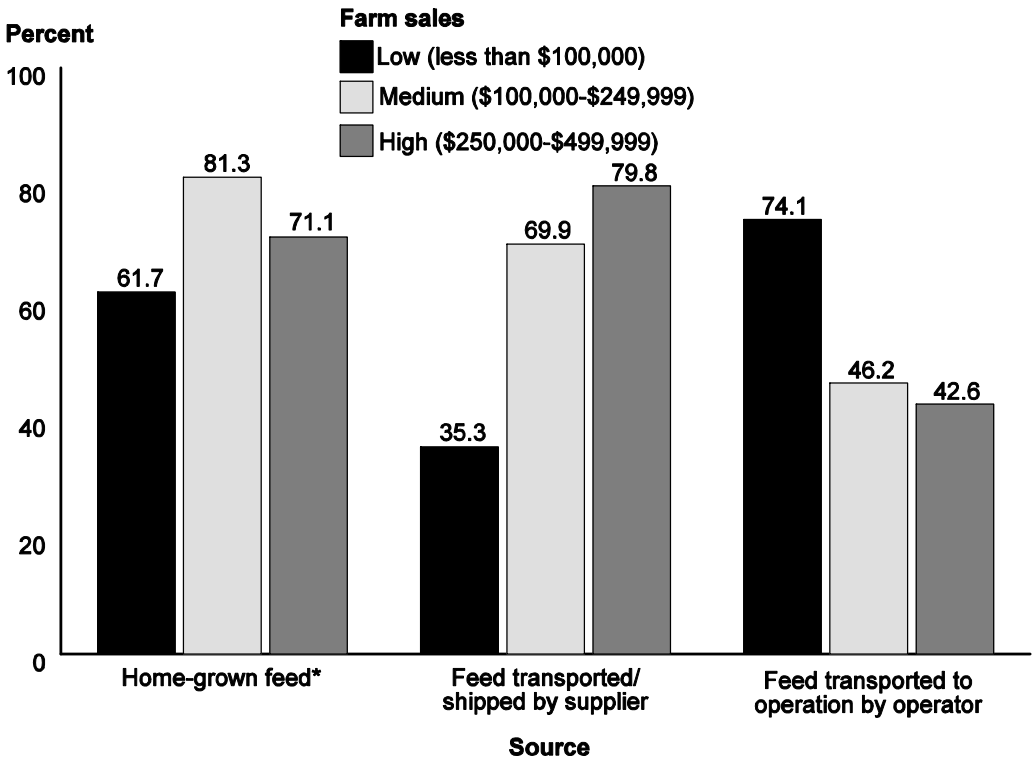
Operators on about three of four low-sales operations (74.1 percent) transported livestock or poultry feed to the operation themselves, while operators on less than half of medium- and high-sales operations did so (46.2 and 42.6 percent, respectively). About 8 of 10 high-sales operations (79.8 percent) had a feed supplier transport feed to the operation compared with about 7 of 10 medium-sales operations (69.9 percent) and 3 of 10 low-sales operations (35.3 percent).

b. Percentage of operations by source of livestock or poultry feed, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Source	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Home-grown feed*	61.7	(0.6)	81.3	(1.3)	71.1	(2.8)
Feed transported/ shipped by supplier	35.3	(0.6)	69.9	(1.6)	79.8	(2.5)
Feed transported to operation by operator	74.1	(0.6)	46.2	(1.7)	42.6	(3.0)

*Some operations may have interpreted this to include grazing pasture.

Percentage of operations by source of livestock or poultry feed, and by farm sales



*Some operations may have interpreted this to include grazing pasture.

6. Distances feed is transported

The farthest one-way distance feed was transported by a feed supplier was less than 50 miles for 71.4 percent of operations that received feed this way. For operations in which a supplier transported feed in the West region, feed was shipped 150 or more miles for about 24.7 percent of operations compared with less than 7 percent of operations in the North Central, Northeast, and South regions (5.2, 6.5, and 6.9 percent, respectively).

On about 9 of 10 operations in which the operator transported feed to the operation (88.8 percent), the operator traveled less than 50 miles to the farthest feed location. On operations in the West region in which the operator transported feed, operators traveled 50 to 149 miles on a higher percentage of operations compared with operations in the other regions.

a. For operations in which feed was transported to the operation, percentage of operations by farthest one-way distance feed was transported, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Distance (miles)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Feed transported/shipped by supplier										
Less than 50	80.1	(1.2)	67.5	(2.7)	73.0	(1.3)	44.8	(2.8)	71.4	(0.8)
50–149	14.7	(1.1)	26.0	(2.6)	20.1	(1.2)	30.5	(2.6)	20.1	(0.8)
150 or more	5.2	(0.6)	6.5	(1.3)	6.9	(0.7)	24.7	(2.4)	8.5	(0.5)
Total	100.0		100.0		100.0		100.0		100.0	
Feed transported to operation by operator										
Less than 50	94.4	(0.6)	91.3	(1.7)	89.6	(0.6)	68.9	(2.1)	88.8	(0.5)
50–149	4.9	(0.6)	8.1	(1.6)	9.3	(0.6)	25.8	(2.0)	9.8	(0.4)
150 or more	0.7	(0.2)	0.6	(0.6)	1.1	(0.2)	5.3	(1.0)	1.4	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	

A higher percentage of medium- and high-sales operations received feed from distant sources than low sales operations. For operations that had their feed transported by the supplier, feed was shipped 150 or more miles for a higher percentage of medium- and high-sales operations (15.0 and 21.1 percent, respectively) than low-sales operations (6.5 percent). Similarly, for operations in which the operator transported feed, feed was transported 150 or more miles on a higher percentage of medium- and high- sales operations (4.6 and 6.3 percent, respectively) than on low-sales operations (1.2 percent).

b. For operations in which feed was transported to the operation, percentage of operations by farthest one-way distance feed was transported, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Distance (miles)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Feed transported/shipped by supplier						
Less than 50	74.5	(0.9)	61.2	(2.1)	51.6	(3.4)
50–149	19.0	(0.9)	23.8	(1.8)	27.3	(2.9)
150 or more	6.5	(0.5)	15.0	(1.5)	21.1	(2.8)
Total	100.0		100.0		100.0	
Feed transported to operation by operator						
Less than 50	89.4	(0.5)	84.8	(1.9)	67.8	(4.3)
50–149	9.4	(0.5)	10.6	(1.6)	25.9	(4.1)
150 or more	1.2	(0.2)	4.6	(1.1)	6.3	(2.2)
Total	100.0		100.0		100.0	

7. Off-farm employment

Producers were asked if anyone in the household, including themselves, earned income from an off-farm job. Overall, 61.7 percent of operations had at least one person in the household who earned income from an off-farm job. Small-scale farm households relied upon a variety of different industries for off-farm income—about 10 percent of all operations had a household member employed in agriculture/forestry/fishing/hunting/mining (9.2 percent), construction (9.7 percent), education services (10.8 percent), finance/insurance/real estate/other professional services (9.1 percent), or healthcare services (9.0 percent).

a. Percentage of operations in which anyone in the household earned income from an off-farm job in the following industries, by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Industry*	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Agriculture, forestry, fishing, hunting or mining	11.4	(0.7)	6.4	(1.0)	7.7	(0.5)	13.0	(1.3)	9.2	(0.4)
Construction	10.4	(0.7)	11.1	(0.3)	9.0	(0.5)	10.2	(1.2)	9.7	(0.4)
Manufacturing	9.0	(0.6)	4.5	(0.9)	6.6	(0.4)	4.8	(0.8)	6.9	(0.3)
Education services	9.8	(0.7)	11.4	(1.4)	11.0	(0.5)	11.6	(1.2)	10.8	(0.4)
Healthcare services	11.8	(0.7)	8.3	(1.2)	7.6	(0.5)	8.8	(1.1)	9.0	(0.4)
Other government services	7.2	(0.6)	5.9	(1.0)	7.3	(0.5)	10.1	(1.1)	7.5	(0.3)
Wholesale trade, warehousing, utilities, or transportation	7.0	(0.6)	5.3	(1.0)	5.9	(0.4)	5.9	(0.9)	6.2	(0.3)
Finance, insurance, real estate, and other professional services	8.7	(0.6)	7.4	(1.1)	9.0	(0.5)	11.6	(1.2)	9.1	(0.4)
Recreation or tourism, including eating and lodging	1.1	(0.2)	1.6	(0.6)	0.8	(0.1)	2.1	(0.6)	1.1	(0.1)
Retail trade or personal services	8.2	(0.6)	6.7	(1.0)	7.3	(0.5)	8.5	(1.1)	7.6	(0.3)
Other	0.3	(0.1)	0.1	(0.1)	0.2	(0.1)	0.1	(0.1)	0.2	(0.1)
Any off-farm job	66.9	(1.0)	55.5	(2.1)	59.0	(0.8)	65.9	(1.7)	61.7	(0.6)

*See Terms Used in This Report (p 2) for a listing of occupations that were classified into each industry category.

A higher percentage of low-sales operations (62.9 percent) had at least one person in the household who earned income from an off-farm job compared with medium- and high-sales operations (53.2 and 47.9 percent, respectively).

b. Percentage of operations in which anyone in the household earned income from an off-farm job in the following industries, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Industry*	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Agriculture, forestry, fishing, hunting or mining	9.4	(0.4)	9.1	(1.0)	4.8	(1.3)
Construction	10.2	(0.4)	5.4	(0.8)	5.7	(1.4)
Manufacturing	7.4	(0.3)	3.7	(0.6)	1.7	(0.7)
Education services	10.6	(0.4)	11.5	(1.1)	13.0	(2.0)
Healthcare services	9.1	(0.4)	8.0	(0.9)	7.2	(1.5)
Other government services	7.7	(0.4)	6.0	(0.8)	4.5	(1.2)
Wholesale trade, warehousing, utilities, or transportation	6.6	(0.3)	3.5	(0.6)	0.6	(0.4)
Finance, insurance, real estate, and other professional services	9.1	(0.4)	8.8	(1.0)	9.0	(1.7)
Recreation or tourism, including eating and lodging	1.1	(0.1)	1.2	(0.4)	0.5	(0.3)
Retail trade or personal services	7.9	(0.4)	5.4	(0.8)	6.3	(1.5)
Other	0.2	(0.1)	0.2	(0.1)	0.6	(0.4)
Any off-farm job	62.9	(0.6)	53.2	(1.7)	47.9	(3.0)

*See Terms Used in This Report (p 2) for a listing of occupations that were classified into each industry category.

8. Distance to off-farm employment

On operations in which at least one person in the household earned income from an off-farm job, operators were asked about the farthest one-way distance traveled to off-farm work. Household members from about half of operations (56.0 percent) traveled less than 25 miles to work. The farthest distance to off-farm employment was 25 to 49 miles for about one-fourth of operations (24.2 percent), and was 100 miles or more for 7.9 percent of operations. In the West region, a higher percentage of operations (11.5 percent) reported a travel distance of 100 or more miles than operations in the North Central and Northeast regions (5.9 and 5.6 percent, respectively).

a. For operations in which anyone in the household earned income from an off-farm job, percentage of operations by farthest one-way distance traveled to work, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Distance (miles)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Less than 25	57.5	(1.4)	66.8	(2.8)	53.6	(1.1)	56.9	(2.4)	56.0	(0.8)
25–49	25.9	(1.2)	16.9	(2.1)	25.1	(1.0)	19.3	(1.9)	24.2	(0.7)
50–99	10.7	(0.9)	10.7	(1.9)	12.7	(0.8)	12.3	(1.6)	11.9	(0.5)
100 or more	5.9	(0.6)	5.6	(1.3)	8.6	(0.6)	11.5	(1.6)	7.9	(0.4)
Total	100.0		100.0		100.0		100.0		100.0	

The farthest one-way distance to off-farm employment was generally similar for low-, medium-, and high-sales operations.

b. For operations in which anyone in the household earned income from an off-farm job, percentage of operations by farthest one-way distance traveled to work, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Distance (miles)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Less than 25	55.3	(0.9)	62.8	(2.4)	64.8	(4.2)
25–49	24.5	(0.7)	22.1	(2.1)	15.6	(3.3)
50–99	12.2	(0.6)	7.8	(1.3)	12.5	(2.8)
100 or more	8.0	(0.5)	7.3	(1.4)	7.1	(2.2)
Total	100.0		100.0		100.0	

C. Paperwork for Government Regulations

On average, operations devoted 1.7 hours per month completing paperwork related to local, State, or Federal health and environmental regulations. Operations in the Northeast and West regions devoted slightly more time on paperwork (2.3 and 2.6 hours per month, respectively) than operations in the South region (1.5 hours per month), on average.

a. Average number of hours per month operations devoted to completing paperwork related to local, State, or Federal health and environmental regulations, by region

Average Number Hours									
Region									
North Central		Northeast		South		West		All operations	
Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error	Avg.	Std. error
1.8	(0.2)	2.3	(0.2)	1.5	(0.1)	2.6	(0.2)	1.7	(0.1)

On average, medium- and high-sales operations devoted more time to completing paperwork related to local, State, or Federal health and environmental regulations (2.7 and 2.6 hours per month, respectively) than low-sales operations (1.6 hours per month).

b. Average number of hours per month operations devoted to completing paperwork related to local, State, or Federal health and environmental regulations, by farm sales

Average Number Hours					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Average	Std. error	Average	Std. error	Average	Std. error
1.6	(0.1)	2.7	(0.4)	2.6	(0.3)

Overall, one of two operations (55.0 percent) did not devote any time completing paperwork related to local, State, or Federal health and environmental regulations (zero hours per month), and about 4 of 10 operations (38.7 percent) spent just 0.1 to 5 hours per month.

c. Percentage of operations by number of hours per month devoted to completing paperwork related to local, State, or Federal health and environmental regulations, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Hours (per month)	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
0	53.8	(1.1)	46.7	(2.1)	58.3	(0.8)	46.8	(1.9)	55.0	(0.6)
0.1–5	40.4	(1.1)	44.3	(2.1)	36.3	(0.8)	42.6	(1.8)	38.7	(0.6)
6–9	1.3	(0.2)	1.9	(0.5)	1.3	(0.2)	2.7	(0.6)	1.5	(0.1)
10–14	2.7	(0.3)	3.4	(0.8)	2.8	(0.3)	4.4	(0.8)	3.0	(0.2)
15 or more	1.8	(0.3)	3.7	(0.8)	1.3	(0.2)	3.5	(0.6)	1.8	(0.2)
Total	100.0		100.0		100.0		100.0		100.0	

About one of two medium- and high-sales operations (47.2 and 55.4 percent, respectively) and 4 of 10 low-sales operations (37.5 percent) devoted 0.1 to 5 hours per month completing paperwork related to local, State, or Federal health and environmental regulations.

d. Percentage of operations by number of hours per month devoted to completing paperwork related to local, State, or Federal health and environmental regulations, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000-$499,999)	
Hours (per month)	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
0	56.6	(0.6)	43.5	(1.7)	34.6	(2.9)
0.1–5	37.5	(0.6)	47.2	(1.7)	55.4	(3.1)
6–9	1.4	(0.2)	2.3	(0.5)	2.2	(1.0)
10–14	2.8	(0.2)	4.0	(0.7)	4.6	(1.3)
15 or more	1.7	(0.2)	3.0	(0.6)	3.2	(1.0)
Total	100.0		100.0		100.0	

Section IV: Opportunities to Assist Small-scale Livestock Operations

A. Livestock Disease Outbreaks

A major animal or crop disease outbreak could impact many U.S. farms, including small-scale operations. The following information is intended to provide insight into how small-scale operators can best be served in the event of a major animal disease outbreak.

1. Resources contacted in the event of a disease outbreak

If a foreign-animal-disease outbreak were to occur in the United States, early detection would be critical to mitigating the effects of the outbreak. Ensuring that those most likely to be contacted are aware of the appropriate procedures for reporting a potential outbreak will help speed diagnosis and response. Most operations (85.1 percent) would be very likely to directly contact a private veterinarian if they had an animal suspected of having a foreign animal disease. This finding is consistent with findings from previous NAHMS studies on individual commodities.

a. Percentage of operations by likelihood of directly contacting the following resources if livestock or poultry on the operation were suspected of having a foreign animal disease*

	Percent Operations						
	Likelihood						
	Not		Somewhat		Very		
Resource	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
Extension agent/university	42.6	(0.6)	20.3	(0.5)	37.1	(0.6)	100.0
State Veterinarian's office	51.6	(0.6)	19.9	(0.5)	28.5	(0.5)	100.0
USDA	59.1	(0.6)	20.2	(0.5)	20.7	(0.5)	100.0
Private veterinarian	7.9	(0.3)	7.0	(0.3)	85.1	(0.4)	100.0
Other	95.3	(0.3)	1.4	(0.1)	3.3	(0.2)	100.0

*A disease not known to be present in the United States, such as foot-and-mouth disease or exotic Newcastle disease, etc.

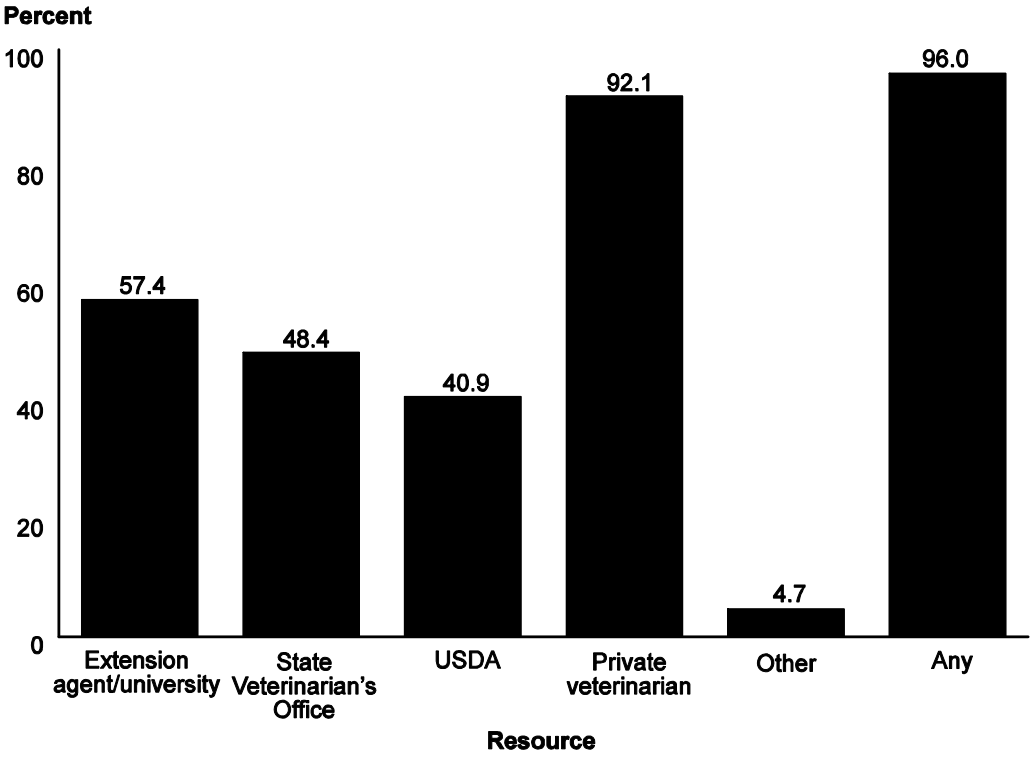
Overall, 96.0 percent of operations were somewhat or very likely to contact at least one of the resources listed in the table below if they had an animal suspected of having a foreign animal disease; 92.1 percent of operations would be somewhat or very likely to directly contact a private veterinarian. Only 40.9 percent of operations would be somewhat or very likely to directly contact the USDA. In the West region, over half of operations (55.4 percent) were somewhat or very likely to directly contact the State Veterinarian's office, and in the South region, over 6 of 10 operations (61.2 percent) were somewhat or very likely to directly contact an extension agent or university. "Other" resources that would be contacted included other producers, neighbors, contracting company (for contract operations), and diagnostic laboratories.

b. Percentage of operations that would be somewhat or very likely to contact the following resources directly if livestock or poultry on the operation were suspected of having a foreign animal disease,* by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Resource	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Extension agent/ university	51.0	(1.1)	56.4	(2.1)	61.2	(0.8)	55.9	(1.8)	57.4	(0.6)
State Veterinarian's office	47.4	(1.1)	47.8	(2.1)	47.5	(0.9)	55.4	(1.8)	48.4	(0.6)
USDA	37.4	(1.1)	42.1	(2.1)	42.7	(0.8)	40.3	(1.8)	40.9	(0.6)
Private veterinarian	93.7	(0.5)	90.7	(1.2)	91.1	(0.5)	93.7	(0.9)	92.1	(0.3)
Other	4.1	(0.4)	5.5	(1.0)	5.0	(0.4)	5.0	(0.8)	4.7	(0.3)
Any	95.9	(0.5)	95.4	(0.9)	96.1	(0.3)	96.8	(0.6)	96.0	(0.2)

*A disease not known to be present in the United States, such as foot-and-mouth disease or exotic Newcastle disease, etc.

Percentage of operations that would be somewhat or very likely to contact the following resources directly if livestock or poultry on the operation were suspected of having a foreign animal disease*



*A disease not known to be present in the United States, such as foot-and-mouth disease or exotic Newcastle disease, etc.

Regardless of farm sales, about 9 of 10 operations would be somewhat or very likely to directly contact a private veterinarian if they had an animal suspected of having a foreign animal disease. A higher percentage of high-sales operations would be somewhat or very likely to contact a State Veterinarian compared with low-sales operations (59.7 and 47.7 percent, respectively). Conversely, a higher percentage of low-sales operations would be somewhat or very likely to contact an extension agent compared with medium-sales operations (58.1 and 51.0 percent, respectively).

c. Percentage of operations that would be somewhat or very likely to directly contact the following resources if livestock or poultry on the operation were suspected of having a foreign animal disease,* by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Resource	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Extension agent/ university	58.1	(0.6)	51.0	(1.7)	53.6	(3.0)
State Veterinarian's office	47.7	(0.7)	51.8	(1.7)	59.7	(3.0)
USDA	41.2	(0.6)	36.5	(1.7)	43.9	(3.0)
Private veterinarian	91.9	(0.4)	93.8	(0.8)	93.5	(1.4)
Other	4.7	(0.3)	5.7	(0.8)	3.9	(1.2)
Any	95.9	(0.3)	97.2	(0.5)	97.1	(1.0)

*A disease not known to be present in the United States, such as foot-and-mouth disease or exotic Newcastle disease, etc.

2. Awareness of Federal indemnity

Operators were provided with the following definition for Federal livestock indemnity: "Both USDA and State Veterinarians are responsible for controlling a specific set of regulated diseases, such as tuberculosis, brucellosis, pseudorabies, exotic Newcastle disease, etc. If it is determined that a herd or flock is infected and must be removed and euthanized to prevent disease spread of these regulated diseases, Federal law provides compensation (indemnity) to the producer based upon 'fair-market value' of the animals lost." After operators were given the definition, they were asked if they had previously heard of Federal indemnity. Less than half of all operations (47.2 percent) had heard of Federal indemnity. A slightly higher percentage of operations in the West and North Central regions had heard of Federal indemnity compared with operations in the Northeast and South regions.

a. Percentage of operations that had heard of Federal indemnity, by region

Percent Operations									
Region									
North Central		Northeast		South		West		All operations	
Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
50.6	(1.1)	43.8	(2.1)	44.2	(0.8)	54.8	(1.8)	47.2	(0.6)

A higher percentage of medium- and high-sales operations (57.5 and 60.5 percent, respectively) than low sales operations (45.9 percent) had heard of Federal indemnity.

b. Percentage of operations that had heard of Federal indemnity, by farm sales

Percent Operations					
Farm Sales					
Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Percent	Std. error	Percent	Std. error	Percent	Std. error
45.9	(0.7)	57.5	(1.7)	60.5	(3.0)

3. Operators' opinions about Federal indemnity

Operators were asked for their opinions on how the Federal government should pay indemnity to farmers for animals removed or euthanized to control a regulated disease. The majority (70.0 percent) believed that the government should use the market price of healthy animals of similar age, weight, and purpose on a similar farm for determining fair market value. Opinions on the method for determining fair market value were similar across regions.

a. Percentage of operations by operators' opinion about how the government should determine fair market value for animals removed or euthanized to control a regulated disease, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Method for determining fair market value	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Market price of healthy, young breeding replacement stock	21.7	(0.9)	23.1	(1.8)	22.5	(0.7)	25.5	(1.6)	22.6	(0.5)
Market price of healthy animals of similar age, weight, and purpose on a similar farm	72.3	(1.0)	70.0	(1.9)	69.3	(0.8)	67.9	(1.8)	70.0	(0.6)
Current market price of cull animals	6.0	(0.5)	6.9	(1.0)	8.2	(0.5)	6.6	(1.0)	7.4	(0.3)
Total	100.0		100.0		100.0		100.0		100.0	

Regardless of farm sales, about 2 of 10 operations believed that the government should use the market price of healthy young breeding replacement stock for determining fair market value of animals for indemnity payments.

A higher percentage of high-sales operations than low-sales operations believed that the price for healthy animals of similar age, weight, and purpose should be used for determining market value.

b. Percentage of operations by operators' opinion about how the government should determine fair market value for animals removed or euthanized to control a regulated disease, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Method for determining fair market value	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Market price of healthy, young breeding replacement stock	22.7	(0.6)	23.4	(1.5)	18.2	(2.3)
Market price of healthy animals of similar age, weight, and purpose on a similar farm	69.7	(0.6)	71.2	(1.6)	78.1	(2.5)
Current market price Of cull animals	7.6	(0.4)	5.4	(0.8)	3.7	(1.2)
Total	100.0		100.0		100.0	

Operators on the majority of operations (58.5 percent) believed that the government should take into account a livestock owner's biosecurity practices when determining indemnity payments, while the remaining 41.5 percent of operations believed that the government should pay full compensation regardless of a livestock owner's biosecurity practices. Opinions on whether or not biosecurity should affect indemnity payments did not differ substantially by region.

c. Percentage of operations by operators' opinion about whether the government should consider an operation's biosecurity when determining Federal indemnity, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Method for determining indemnity	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Government should take into account operation's infectious disease management practices* when determining indemnity	58.3	(1.1)	59.5	(2.1)	57.7	(0.9)	61.8	(1.9)	58.5	(0.6)
Government should pay full compensation regardless of operation's infectious disease management practices*	41.7	(1.1)	40.5	(2.1)	42.3	(0.9)	38.2	(1.9)	41.5	(0.6)
Total	100.0		100.0		100.0		100.0		100.0	

*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

Opinions on whether or not biosecurity should affect indemnity payments did not differ substantially by farm sales.

d. Percentage of operations by operators' opinion about whether the government should consider an operation's biosecurity when determining Federal indemnity, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Method for determining indemnity	**Pct.**	**Std. error**	**Pct.**	**Std. error**	**Pct.**	**Std. error**
Government should take into account an operation's infectious disease management practices* when determining compensation	58.5	(0.7)	60.4	(1.7)	53.1	(3.1)
Government should pay full compensation regardless of operation's infectious disease management practices*	41.5	(0.7)	39.6	(1.7)	46.9	(3.1)
Total	100.0		100.0		100.0	

*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

B. Information and Training Needs

Operators of small-scale operations are a diverse group with varying levels of experience in farming. Many operators have spent a lifetime in farming or ranching, while others are relatively new to the business. Based on research by the Economic Research Service in 2007, about 22 percent of all U.S. farms were operated by producers who had been in farming for 10 years or less (ERS, 2009). Federal agencies and universities provide relevant training and informational resources to assist small-scale operations. This section identifies topics in which small-scale livestock operators want more training and the preferred methods for delivering that training.

Training topics deemed very useful by the highest percentage of operations were animal health/diseases and how to transfer the farm to the next generation (41.0 and 40.9 percent of operations, respectively). Almost 7 of 10 operations (69.2 percent) did not think training on hiring and managing labor would be useful, which makes sense considering the 2007 Census of Agriculture reported that only 27 percent of all U.S. farms with annual gross sales between $5,000 and $249,999 hired outside labor (NASS, 2009).

Operators on about 3 percent of operations reported "other" types of useful training, such as weed control and herbicides, soil topics, chemicals and pesticides, sustainability and conservation, animal nutrition, natural and organic farming, safety issues, how to be more profitable, animal genetics and breeding, and computer training.

a. Percentage of operations by level of usefulness of more training in the following topics

	Percent Operations						
	Level of Usefulness						
	Not		Somewhat		Very		
Topic	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Total
Infectious disease management practices*	26.1	(0.5)	44.7	(0.6)	29.2	(0.6)	100.0
Marketing of products	34.6	(0.6)	38.4	(0.6)	27.0	(0.5)	100.0
Managing the business	38.1	(0.6)	37.2	(0.6)	24.7	(0.5)	100.0
Hiring and managing labor	69.2	(0.6)	22.2	(0.5)	8.6	(0.3)	100.0
Tax-related issues	30.8	(0.6)	39.1	(0.6)	30.1	(0.6)	100.0
Animal health/diseases	19.0	(0.5)	40.0	(0.6)	41.0	(0.6)	100.0
Government programs and regulations	32.8	(0.6)	42.5	(0.6)	24.7	(0.5)	100.0
Rules governing interstate or international movement of animals or products	48.7	(0.6)	34.3	(0.6)	17.0	(0.5)	100.0
How to transfer the farm to the next generation	28.3	(0.6)	30.8	(0.6)	40.9	(0.6)	100.0
Other	97.3	(0.2)	0.5	(0.1)	2.2	(0.2)	100.0

*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

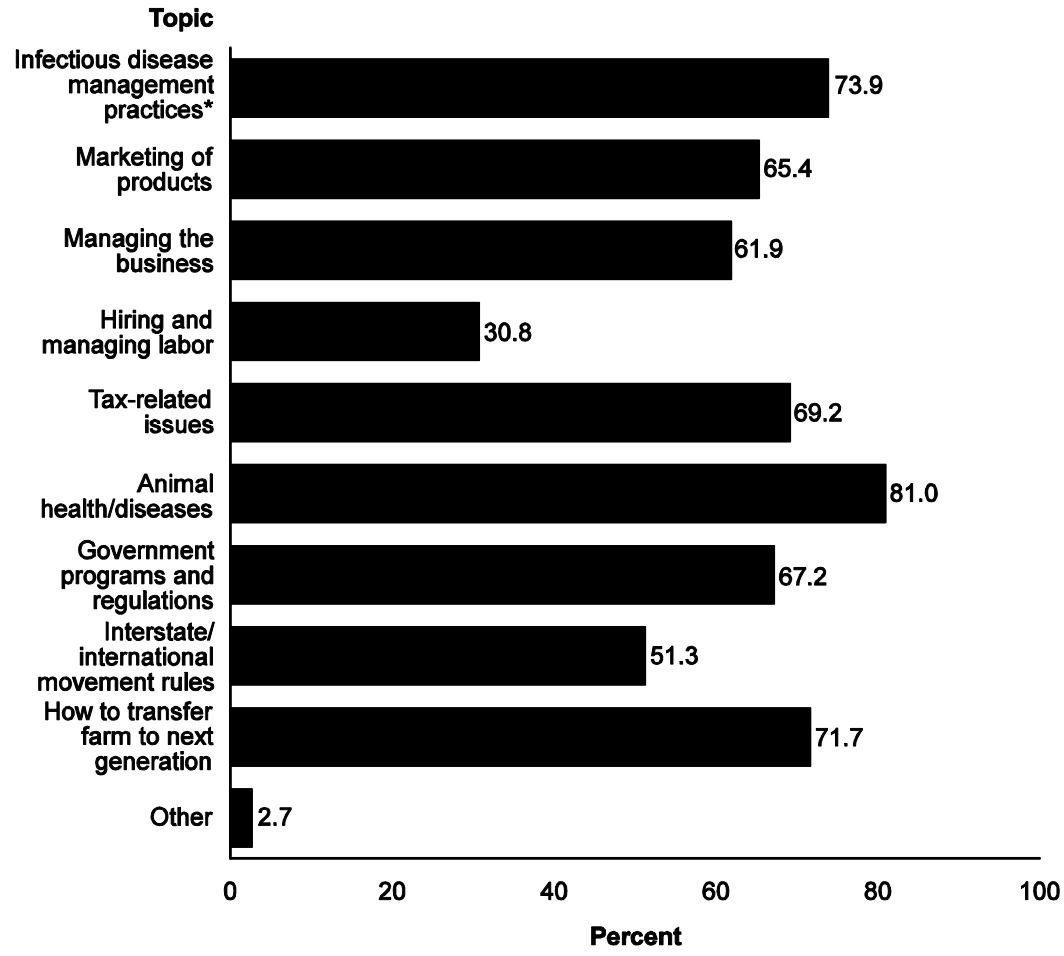
Training needs were generally similar across regions. Over two-thirds of operations across regions indicated that additional training in animal health/diseases, infectious disease management practices (biosecurity), how to transfer the farm to the next generation, tax-related issues, or government programs and regulations would be somewhat or very useful to the farm business. About half of all operations (51.3 percent) indicated that additional training about rules governing interstate or international movement of animals and products would be somewhat or very useful.

b. Percentage of operations in which additional training in the following topics would be somewhat or very useful, by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Topic	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Infectious disease management practices*	72.6	(1.0)	72.2	(1.9)	74.3	(0.8)	76.3	(1.6)	73.9	(0.5)
Marketing of products	67.3	(1.0)	63.1	(2.0)	63.9	(0.8)	69.2	(1.7)	65.4	(0.6)
Managing the business	64.9	(1.1)	61.6	(2.1)	59.7	(0.8)	65.5	(1.8)	61.9	(0.6)
Hiring and managing labor	29.4	(1.0)	28.9	(1.8)	30.8	(0.8)	35.6	(1.7)	30.8	(0.6)
Tax-related issues	69.0	(1.0)	67.9	(2.0)	69.0	(0.8)	71.5	(1.7)	69.2	(0.6)
Animal health/diseases	81.4	(0.9)	81.3	(1.7)	80.3	(0.7)	82.9	(1.4)	81.0	(0.5)
Government programs and regulations	65.1	(1.0)	65.3	(2.0)	68.5	(0.8)	67.7	(1.7)	67.2	(0.6)
Rules governing interstate or international movement of animals or products	51.5	(1.1)	50.5	(2.1)	50.0	(0.9)	57.9	(1.8)	51.3	(0.6)
How to transfer the farm to the next generation	74.0	(1.0)	69.9	(1.9)	71.0	(0.8)	70.6	(1.7)	71.7	(0.6)
Other	2.2	(0.3)	4.3	(0.9)	2.6	(0.3)	3.5	(0.6)	2.7	(0.2)

*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

Percentage of operations in which additional training in the following topics would be somewhat or very useful



*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

The percentage of operations in which additional training in hiring and managing labor would be somewhat or very useful increased as farm sales increased, ranging from 29.3 percent of low-sales operations to 52.5 percent of high-sales operations. Additional training on managing the business was rated somewhat or very useful by a higher percentage of medium- and high-sales operations (73.4 and 73.8 percent, respectively) than low-sales operations (60.5 percent).

c. Percentage of operations in which additional training in the following topics would be somewhat or very useful, by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Topic	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Infectious disease management practices	73.5	(0.6)	76.2	(1.5)	78.2	(2.5)
Marketing of products	64.7	(0.6)	71.6	(1.6)	72.4	(2.8)
Managing the business	60.5	(0.6)	73.4	(1.5)	73.8	(2.7)
Hiring and managing labor	29.3	(0.6)	39.8	(1.7)	52.5	(3.0)
Tax-related issues	68.5	(0.6)	74.5	(1.5)	77.0	(2.5)
Animal health/diseases	80.6	(0.5)	85.2	(1.2)	82.1	(2.3)
Government programs and regulations	67.1	(0.6)	68.7	(1.6)	66.2	(2.9)
Rules governing interstate or international movement of animals or products	50.7	(0.7)	57.3	(1.7)	56.4	(3.0)
How to transfer the farm to the next generation	71.2	(0.6)	76.9	(1.5)	73.2	(2.6)
Other	2.7	(0.2)	2.6	(0.5)	2.0	(0.8)

*Management practices that reduce the chance that infectious disease will be carried onto the farm by animals or people.

Receiving training or additional information through a local extension office or via a written publication were the delivery channels preferred by the highest percentage of operations overall (56.0 and 49.4 percent, respectively). A higher percentage of operations in the Northeast and South regions (60.8 and 58.6 percent, respectively) preferred to receive training or additional information through a local extension office, compared with operations in the West and North Central regions (48.7 and 52.8 percent, respectively). Compared with the Northeast and South regions, producers in the West and North Central regions may have to travel farther to reach a local extension office due to the rural nature of portions of these regions. The Internet was a preferred source of training or additional information for a higher percentage of operations in the West region than operations in the Northeast and South regions.

d. Percentage of operations by preferred channels for receiving training or additional information, and by region

	Percent Operations									
	Region									
	North Central		Northeast		South		West		All operations	
Channel	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Through local extension office	52.8	(1.1)	60.8	(2.1)	58.6	(0.9)	48.7	(1.9)	56.0	(0.6)
Presentation by expert	23.7	(0.9)	27.3	(1.9)	23.8	(0.7)	31.6	(1.7)	24.9	(0.5)
Written publication	49.3	(1.1)	50.4	(2.2)	48.5	(0.9)	53.7	(1.9)	49.4	(0.6)
Internet	31.2	(1.1)	26.1	(1.9)	28.4	(0.8)	35.8	(1.8)	29.9	(0.6)
Livestock association/ club	20.1	(0.9)	17.9	(1.7)	22.0	(0.7)	28.0	(1.7)	21.8	(0.5)

A higher percentage of medium- and high-sales operations (31.7 and 37.5 percent, respectively) preferred to receive training or additional information through a presentation by an expert compared with low-sales operations (23.9 percent). Preferences for the other training delivery channels did not differ substantially by farm sales.

e. Percentage of operations by preferred channels for receiving training or additional information, and by farm sales

	Percent Operations					
	Farm Sales					
	Low (Less than $100,000)		Medium ($100,000–$249,999)		High ($250,000–$499,999)	
Channel	Pct.	Std. error	Pct.	Std. error	Pct.	Std. error
Through local extension office	56.4	(0.7)	52.7	(1.8)	52.4	(3.1)
Presentation by expert	23.9	(0.6)	31.7	(1.7)	37.5	(3.1)
Written publication	49.3	(0.7)	51.4	(1.8)	47.5	(3.1)
Internet	29.8	(0.6)	29.6	(1.6)	31.4	(2.9)
Livestock association/club	22.1	(0.6)	18.7	(1.4)	22.0	(2.6)

Methodology

A. Study Purpose

This report is the fourth in a series of reports resulting from the Small-scale Operations Initiative implemented by the National Animal Health Monitoring System (NAHMS) at the request of the administrator of the U.S. Department of Agriculture-Animal and Plant Health Inspection Service. The primary objective of the Small-scale Operations Initiative is to provide statistically valid information on the characteristics of small-scale operations and obtain a better understanding of the challenges and barriers they face.

B. Sampling and Estimation

1. Operation selection

NASS performed the sample selection from its list frame. Within each State a stratified random sample of livestock operations was selected. Livestock operations are operations in which livestock or an animal commodity comprises the highest percentage of total sales from the operation. The size strata were based on the total value of sales of agricultural products for each operation. A total of 16,000 operations were selected.

2. Population inferences

Inferences cover the population of small-scale livestock operations with annual sales from $10,000 to $499,999 in all 50 States. (See Appendix II for data on small-scale livestock operations in individual States.) 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 to allow for inference back to the original population from which the sample was selected.

C. Data Collection

An introductory letter and information sheet were mailed to selected operations beginning April 1, 2011, followed 1 week later by the questionnaire and a cover letter. One week later respondents were contacted via an automatic dialing machine with a prerecorded message reminding respondents to complete and mail the questionnaire and thanking them if they already had. Nonrespondents to the mailing were contacted by telephone from April 14 to May 18, 2011, and surveys were completed via a telephone interview. Telephone interviews were conducted via computer-assisted telephone interview software by a NASS Data Collection Center.

D. Data Analysis

Initial data entry and validation for the Small-scale U.S. Livestock Operations report were performed at a NASS office. Data were entered into a SAS data set. NAHMS national staff performed additional data validation. Weighted point estimates and standard errors were generated using SUDAAN software, which accounts for the sampling design and weighting.

E. Sample Evaluation

The purpose of this section is to provide various performance measurements. Historically, the term "response rate" was used as a catchall term, but there are many ways to define and calculate response rates. Therefore, the following table presents an evaluation based on a number of measurements, which are defined with an *x* in categories that contribute to the measurement.

Nearly 20 percent of selected operations (19.1 percent) were inaccessible, even after eight or more telephone attempts.

Of the 8,186 completed surveys, 8,123 were used in analysis. The 63 operations excluded from analysis had missing data for farm sales in 2010.

			Measurement		
Response category	**Number operations**	**Percent operations**	**Contacts**	**Usable[1]**	**Complete[2]**
Survey complete—mail	4,350	27.2	x	x	x
Survey complete—telephone	3,836	24.0	x	x	x
No livestock inventory in last 12 months, or out of business	1,329	8.3	x	x	
Refusal	1,580	9.9	x		
Office hold (NASS elected not to contact)	1,849	11.5			
Inaccessible	3,056	19.1			
Total	16,000	100.0	11,095	9,515	8,186
Percent of total operations			69.3	59.5	51.2
Percent of total operations weighted[3]			69.7	60.2	51.0

[1]Useable operation—respondent provided answers to inventory questions for the operation (either zero or positive number on hand).
[2]Survey complete operation—respondent provided answers to all or nearly all questions.
[3]Weighted response—the rate was calculated using the initial selection weights.

Appendix I. Sample Profile

Number of responding operations, by farm sales		
Sales (dollars)	**Number**	**Percent of total**
Less than $100,000	6,924	85.2
$100,000–$249,999	901	11.1
$250,000–$499,999	298	3.7
Total	8,123	100.0

Number of responding operations, by region		
Region	**Number**	**Percent of total**
North Central	2,506	30.8
Northeast	661	8.1
South	4,050	49.9
West	906	11.2
Total	8,123	100.0

Number of responding operations, by rural-urban code		
Rural-urban classification (codes 1-9)	**Number**	**Percent of total**
Metro counties		
1—Counties in metro areas of 1 million population or more	1,032	12.7
2—Counties in metro areas of 250,000–999,999 population	946	11.6
3—Counties in metro areas of 50,000–249,999 population	1,062	13.1
Subtotal	*3,040*	*37.4*
Nonmetro counties		
4—Urban population of 20,000–49,999, adjacent to a metro area	687	8.5
5—Urban population of 20,000–49,999, not adjacent to a metro area	285	3.5
6—Urban population of 2,500–19,999, adjacent to a metro area	1,898	23.4
7— Urban population of 2,500–19,999, not adjacent to a metro area	1,042	12.8
8—Completely rural or less than 2,500 urban population, adjacent to a metro area	480	5.9
9— Completely rural or less than 2,500 urban population, not adjacent to a metro area	691	8.5
Subtotal	*5,083*	*62.6*
Total	8,123	100.0

Number of responding operations, by demographics of primary operator and by farm sales

	Farm sales							
	Low (Less than $100,000)		Medium ($100,00–$249,999)		High ($250,000–$499,999)		All operations	
Demographics	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**	**No.**	**Pct.**
Total	6,924	100.0	901	100.0	298	100.0	8,123	100.0
Age (years)								
Less than 25	19	0.3	8	0.9	0	0.0	27	0.3
25–44	716	10.3	185	20.5	79	26.5	980	12.0
45–64	3,481	50.3	500	55.5	151	50.7	4,132	50.9
65 or more	2,555	36.9	196	21.8	57	19.1	2,808	34.6
Not reported	153	2.2	12	1.3	11	3.7	176	2.2
Gender								
Male	6,162	89.0	857	95.1	282	94.6	7,301	89.9
Female	624	9.0	35	3.9	6	2.0	665	8.2
Not reported	138	2.0	9	1.0	10	3.4	157	1.9
Highest level of formal education								
Less than high school diploma	559	8.1	109	12.1	28	9.4	696	8.6
High school diploma or equivalency (GED)	2,713	39.2	328	36.4	107	35.9	3,148	38.8
Some college (include Associate degree)	1,738	25.1	231	25.6	77	25.8	2,046	25.2
College graduate and beyond	1,741	25.1	218	24.2	76	25.5	2,035	25.0
Not reported	173	2.5	15	1.7	10	3.4	198	2.4
Race								
White	6,462	93.3	872	96.8	286	96.0	7,620	93.8
Black or African American	*		*		*		102	1.3
American Indian or Alaska Native	*		*		*		100	1.2
Asian	*		*		*		8	0.1
Native Hawaiian or Pacific Islander	*		*		*		8	0.1
Multiracial	*		*		*		50	0.6
Not reported	206	3.0	19	2.2	10	3.3	235	2.9
Of Spanish, Hispanic, or Latino origin								
Yes	269	3.9	32	3.6	13	4.4	314	3.9
No	6,416	92.7	851	94.4	277	92.9	7,544	92.9
Not reported	239	3.4	18	2.0	8	2.7	265	3.2

*Data included in “All Operations” to prevent indentification of individual operations.

Appendix II: Small-scale U.S. Livestock Operations

Number of operations with a livestock species as the predominant contributor to gross farm sales, and with total gross annual sales between $10,000 and $499,999, 2007*

Region	State	Number operations	Percent operations	Region	State	Number operations	Percent operations
South	Alabama	8,748	2.5	West	Alaska	79	0.0
	Arkansas	10,379	3.0		Arizona	1,313	0.4
	Florida	5,037	1.4		California	6,211	1.8
	Georgia	6,082	1.7		Colorado	5,801	1.7
	Kentucky	17,214	4.9		Hawaii	311	0.1
	Louisiana	4,536	1.3		Idaho	4,055	1.2
	Mississippi	5,659	1.6		Montana	7,492	2.1
	North Carolina	5,892	1.7		Nevada	670	0.2
	Oklahoma	22,545	6.5		New Mexico	2,997	0.8
	South Carolina	2,194	0.6		Oregon	4,507	1.3
	Tennessee	14,566	4.2		Utah	3,367	1.0
	Texas	42,291	12.1		Washington	3,273	0.9
	Virginia	9,887	2.8		Wyoming	3,417	1.0
	Total	155,030	44.3		Total	43,493	12.5
North Central	Illinois	4,404	1.2	Northeast	Connecticut	443	0.1
	Indiana	5,293	1.5		Delaware	236	0.1
	Iowa	11,759	3.4		Maine	698	0.2
	Kansas	11,465	3.3		Maryland	1,507	0.4
	Michigan	4,972	1.4		Massachusetts	678	0.2
	Minnesota	11,420	3.3		New Hampshire	323	0.1
	Missouri	25,641	7.3		New Jersey	550	0.2
	Nebraska	8,713	2.5		New York	6,860	2.0
	North Dakota	5,271	1.5		Pennsylvania	11,705	3.3
	Ohio	7,587	2.2		Rhode Island	86	0.0
	South Dakota	8,110	2.3		Vermont	1,245	0.3
	Wisconsin	18,547	5.3		West Virginia	3,756	1.1
	Total	123,182	35.2		Total	28,087	8.0
Grand total		349,792					

*Source: NASS 2007 Census of Agriculture. See Terms Used in This Report for definition of small-scale livestock operation.

Number of U.S. operations with a livestock species as the predominant contributor to gross farm sales, 2007*

Sales (dollars)	**Number operations in United States**
$10,000–$99,999	263,045
$100,000–$249,999	54,187
$250,000–$499,999	32,560
Total	349,792

*Source: NASS 2007 Census of Agriculture. See Terms Used in This Report for definition of small-scale livestock operation.

Appendix III: U.S. Counties by Rural-urban Continuum Code, 2003

Rural-urban classification (codes 1-9)	**Number counties**	**Percent of total**
1—Counties in metro areas of 1 million population or more	413	13.2
2—Counties in metro areas of 250,000–999,999 population	325	10.4
3—Counties in metro areas of 50,000–249,999 population	351	11.2
4—Urban population of 20,000–49,999, adjacent to a metro area	218	6.9
5—Urban population of 20,000–49,999, not adjacent to a metro area	105	3.3
6—Urban population of 2,500–19,999, adjacent to a metro area	609	19.4
7—Urban population of 2,500–19,999, **not** adjacent to a metro area	450	14.3
8—Completely rural or less than 2,500 urban population, adjacent to a metro area	235	7.5
9—Completely rural or less than 2,500 urban population, not adjacent to a metro area	435	13.8
Total	3,141	100.0

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