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Animal Health  
Monitoring  
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# Beef 2007-08

## Part I: Reference of Beef Cow-calf Management Practices in the United States, 2007–08



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## Introduction

The National Animal Health Monitoring System (NAHMS) is a nonregulatory program of the United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service. NAHMS is designed to help meet the Nation's animal-health information needs and has collected data on cattle health and management practices on cow-calf operations through two previous studies.

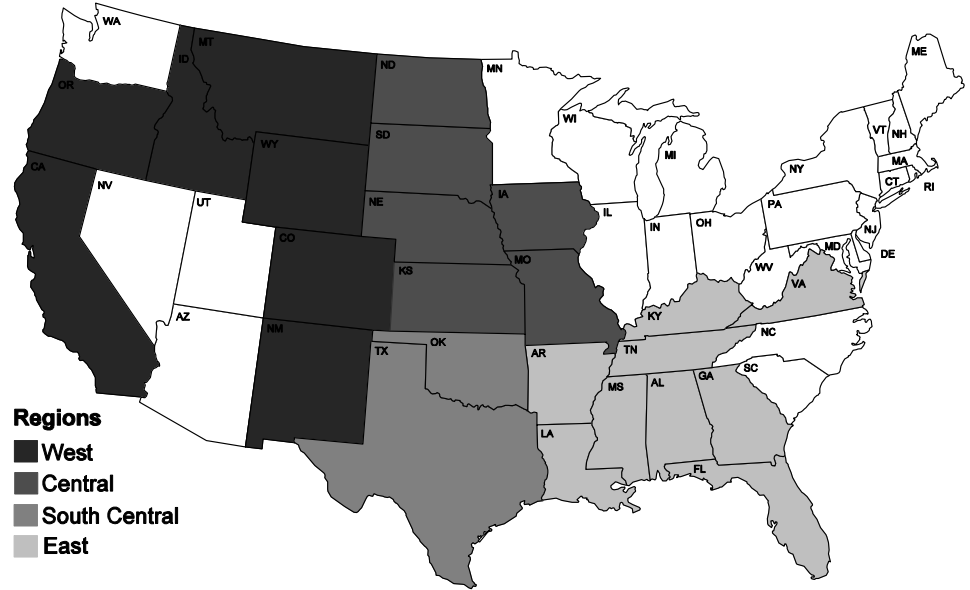
The NAHMS 1992-93 Cow-calf Health and Productivity Audit (CHAPA) provided the first national information on the health and management of cattle on cow-calf operations in the United States. While the study was in progress the media began to report on "Mystery Calf Disease" throughout the United States. These media reports stimulated requests from stakeholders for information on the occurrence of this "new" disease—later referred to as weak calf syndrome. The CHAPA study became one vehicle that provided estimates of the frequency of occurrence and geographic distribution of the disease.

Information from the NAHMS Beef '97 study helped the U.S. beef industry identify educational needs and prioritize research efforts on such timely topics as antibiotic usage and Johne's disease, as well as potential foodborne pathogens, including *Salmonella*. Data from the Beef '97 study were also critical in designing the enhanced surveillance plan for bovine spongiform encephalopathy (BSE).

The Beef 2007-08 study was conducted in 24 States (see map, next page) with the largest beef cow populations and provides participants, stakeholders, and the industry as a whole with valuable information representing 79.6 percent of U.S. cow-calf operations and 87.8 percent of U.S. beef cows. Part I: Reference of Beef Cow-calf Management Practices in the United States, 2007–08 is the first in a series of reports containing national information from the NAHMS Beef 2007-08 study. This report contains information collected from 2,872 cow-calf operations.

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### NAHMS Beef 2007-08 Participating States by Region





## Terms Used in This Report

**Animal average:** The average value for all animals; the single reported value for each operation multiplied by the number of animals on that operation is summed over all operations and divided by the number of animals on all operations. This way, the result is adjusted for the number of animals on each operation. For an example, see average age calves were dehorned on p 35.

**Beef cow:** Female bovine that has calved at least once.

**Beef heifer:** Female bovine that has not yet calved.

**Born alive:** Calves born alive and surviving at least 2 hours after birth.

**Calf crop percentage:** Number of cows and heifers calving divided by number of cows and heifers exposed. The number exposed was adjusted by subtracting the number of cows or heifers exposed or artificially inseminated and that died, were sold, or moved off the operation before calving, and adding the number of cows or heifers exposed or artificially inseminated that were brought onto the operation for calving in 2007.

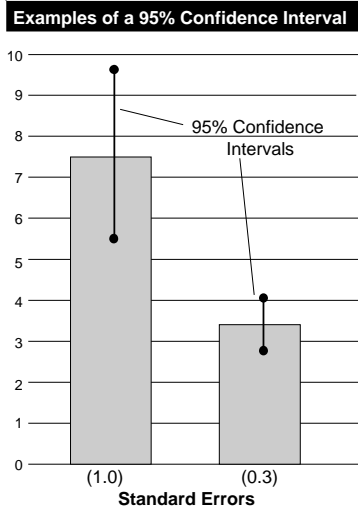
**Creep feed:** Supplementation of unweaned calves with a feed source not available to mother cows. Supplement may be high energy and/or high protein, free choice, or limit fed.

**Forward pricing:** A way for cattle sellers and buyers to contract for a price on their livestock ahead of an expected sale date. When used properly, forward pricing can reduce price risk. A forward pricing contract is a legal, binding commitment between a buyer and a seller. The contract guarantees a price for a specified amount and quality of product to be delivered at a certain time to a place specified in the contract.

**Herd size:** Herd size is based on October 1, 2007, cow inventory. If there were no cows on October 1, 2007, then July 1, 2007 cow inventory was used.

**Operation:** Premises with at least one beef cow on October 1, 2007, or July 1, 2007.

**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 age that calves were dehorned (shown on p 35) is calculated by summing reported average age over all operations divided by the number of operations.



**Population 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 (—).

**Regions:**

**West:** California, Colorado, Idaho, Montana, New Mexico, Oregon, Wyoming

**Central:** Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota

**South Central:** Oklahoma, Texas

**East:** Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee, Virginia

**Sample profile:** Information that describes characteristics of the operations from which Beef 2007-08 data were collected.

## Section I: Population Estimates

### A. Management Practices

#### 1. Marketing channels

Producers were asked to report whether they used specific production practices to target marketing channels for calves. Overall, the highest percentage of operations used specific management practices to target conventional markets followed by natural market channels. A higher percentage of operations with 200 or more beef cows utilized specific production practices to target a breed-influenced program compared with operations in the other size categories. Only 5.2 percent of operations with 1 to 49 beef cows used age-and-source verification markets, while 29.0 percent of operations with 200 or more beef cows did so. Similar percentages of operations with 50 to 99 and 100 to 199 cows used specific management practices to target age-and-source verification markets (11.7 and 14.9 percent, respectively).

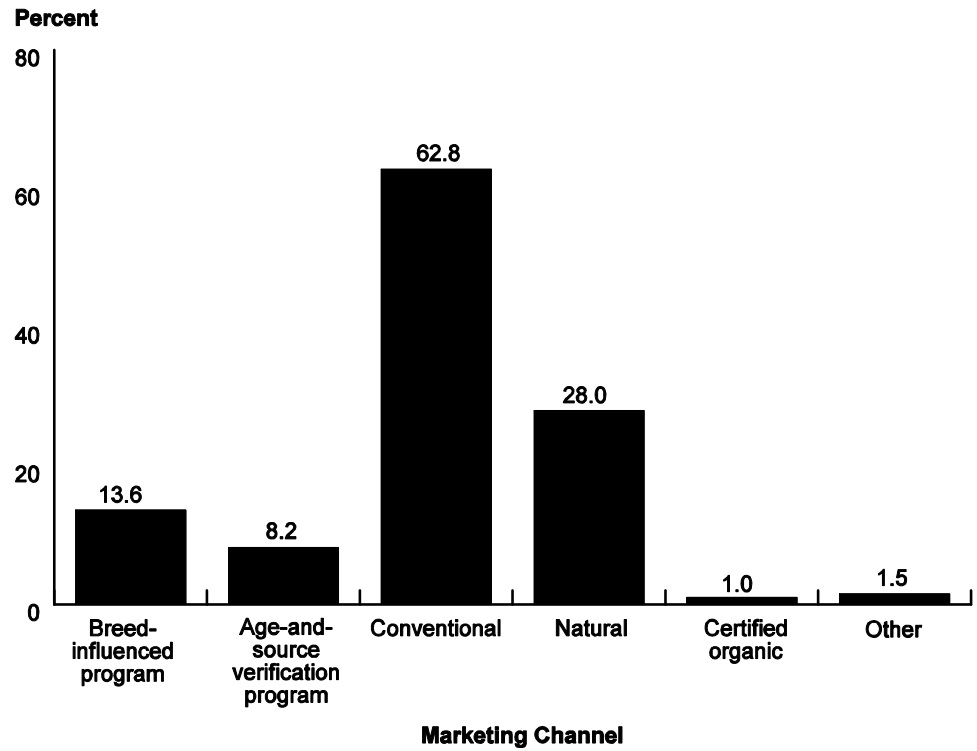
a. Percentage of operations that used specific production practices to target the following marketing channels for calves produced, by herd size:

Marketing Channel	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Breed-influenced program	11.7	(1.2)	15.9	(2.1)	16.1	(2.0)	28.6	(2.6)	13.6	(1.0)
Age-and-source verification program	5.2	(0.8)	11.7	(1.8)	14.9	(1.8)	29.0	(2.3)	8.2	(0.7)
Conventional	60.5	(1.8)	68.7	(2.6)	68.4	(2.7)	67.8	(2.4)	62.8	(1.4)
Natural	28.8	(1.7)	25.3	(2.6)	24.4	(2.4)	30.8	(2.5)	28.0	(1.3)
Certified organic*	1.2	(0.4)	0.2	(0.2)	0.3	(0.2)	1.3	(0.5)	1.0	(0.3)
Other	1.4	(0.4)	0.8	(0.5)	2.6	(0.9)	2.3	(0.7)	1.5	(0.3)

\*Operation certified by USDA.

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**Percentage of Operations that used Specific Production Practices to Target the Following Marketing Channels for Calves Produced**



A lower percentage of operations in the South Central and East regions (5.9 and 5.6 percent, respectively) used age-and-source verification programs than operations in the West and Central regions (16.3 and 11.5 percent, respectively). About 7 of 10 operations in the Central region (73.8 percent) used specific management practices to target conventional marketing channels. A higher percentage of operations in the West region used specific management practices to target natural markets than operations in the East region (36.9 and 23.7 percent, respectively).

b. Percentage of operations that used specific production practices to target the following marketing channels for calves produced, by region:

Marketing Channel	Percent Operations							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Breed-influenced program	23.0	(3.3)	16.1	(1.9)	11.5	(1.8)	11.0	(1.5)
Age-and-source verification program	16.3	(2.5)	11.5	(1.5)	5.9	(1.3)	5.6	(1.0)
Conventional	56.7	(3.9)	73.8	(2.2)	57.7	(2.9)	60.9	(2.3)
Natural	36.9	(3.9)	24.9	(2.3)	32.6	(2.7)	23.7	(2.0)
Certified organic*	2.8	(1.3)	0.7	(0.5)	1.3	(0.7)	0.4	(0.3)
Other	2.0	(1.1)	2.4	(0.7)	1.3	(0.7)	0.7	(0.4)

\*Operation certified by USDA.

## 2. Record-keeping systems

The majority of operations (83.3 percent) kept some form of records, and over 90 percent of operations with 100 or more cows kept records. Across herd sizes, over three-fourths of operations kept hand-written records. The percentage of operations that kept records on a computer located on the operation ranged from 13.3 percent of operations with 1 to 49 beef cows to 37.4 percent of operations with 200 or more. A higher percentage of operations with 200 or more beef cows kept records on a computer located off the operation than operations in any other size category.

a. Percentage of operations by record-keeping system used and by herd size:

Record-keeping System	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hand-written records (e.g., ledger, notebook, pocket diary)	76.2	(1.6)	80.8	(2.4)	89.1	(1.7)	88.5	(1.7)	78.6	(1.2)
Computer on operation	13.3	(1.3)	24.5	(2.6)	21.8	(2.3)	37.4	(2.5)	17.0	(1.0)
Computer off operation	2.0	(0.5)	4.2	(1.2)	3.7	(1.0)	10.8	(1.4)	2.9	(0.4)
Any of above	80.5	(1.5)	87.0	(2.0)	93.6	(1.2)	95.0	(1.2)	83.3	(1.1)

Hand-written records were used on a higher percentage of operations in the Central region (86.2 percent) compared with operations in the South Central and East regions (77.1 and 73.3 and percent, respectively). Operations in the West region reported a higher percentage use of on-farm computer records (28.7 percent) than operations in the South Central or East regions (14.7 and 13.5 percent, respectively).

b. Percentage of operations by record-keeping system used and by region:

Record-keeping System	Percent Operations							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hand-written records (e.g., ledger, notebook, pocket diary)	82.3	(3.5)	86.2	(1.9)	77.1	(2.5)	73.3	(2.1)
Computer on operation	28.7	(3.6)	20.3	(2.0)	14.7	(2.0)	13.5	(1.6)
Computer off operation	5.2	(1.7)	2.7	(0.7)	4.0	(1.0)	1.6	(0.5)
Any of above	88.2	(3.1)	90.6	(1.6)	82.2	(2.3)	77.6	(2.0)



Photo courtesy of Dr. Dave Dargatz

### 3. Information sources

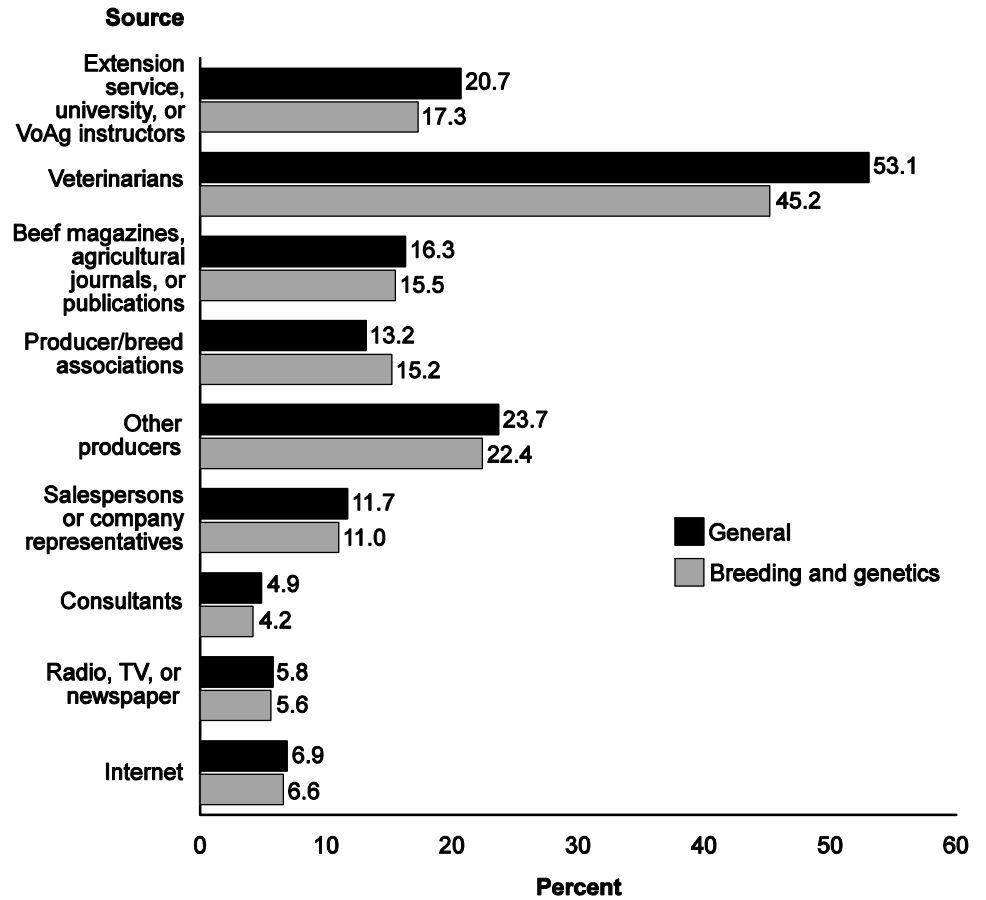
Producers were asked about the sources they used for general information and for breeding and genetics information. More operations considered veterinarians a very important source for both general information and breeding and genetics information (53.1 and 45.2 percent, respectively) than any other information source. Only 4.9 percent of operations considered consultants a very important source of general information, and only 6.9 percent considered Internet sources as very important sources of general information.

a. Percentage of operations by importance of the following information sources to operating the cow-calf operation, and by type of information:

Source	Percent Operations													
	General Information						Breeding and Genetics Information							
	Not Important		Somewhat Important		Very Important		Not Important		Somewhat Important		Very Important			
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Total	
Extension service, university, or VoAg instructors	35.8	(1.4)	43.5	(1.4)	20.7	(1.1)	100.0	44.7	(1.4)	38.0	(1.4)	17.3	(1.1)	100.0
Veterinarians	15.2	(1.1)	31.7	(1.3)	53.1	(1.4)	100.0	22.5	(1.2)	32.3	(1.3)	45.2	(1.4)	100.0
Beef magazines, agricultural journals, or publications	36.5	(1.4)	47.2	(1.4)	16.3	(1.0)	100.0	40.2	(1.4)	44.3	(1.4)	15.5	(1.0)	100.0
Producer/breed associations	55.7	(1.4)	31.1	(1.3)	13.2	(0.9)	100.0	55.5	(1.4)	29.3	(1.3)	15.2	(1.0)	100.0
Other producers	31.1	(1.4)	45.2	(1.4)	23.7	(1.2)	100.0	33.4	(1.4)	44.2	(1.4)	22.4	(1.2)	100.0
Salespersons or company representatives	56.8	(1.4)	31.5	(1.3)	11.7	(0.9)	100.0	59.0	(1.4)	30.0	(1.3)	11.0	(0.9)	100.0
Consultants	82.9	(1.1)	12.2	(0.9)	4.9	(0.6)	100.0	83.3	(1.0)	12.5	(0.9)	4.2	(0.6)	100.0
Radio, TV, or newspaper	67.9	(1.3)	26.3	(1.2)	5.8	(0.7)	100.0	70.3	(1.3)	24.1	(1.2)	5.6	(0.7)	100.0
Internet	73.3	(1.2)	19.8	(1.1)	6.9	(0.7)	100.0	74.3	(1.2)	19.1	(1.1)	6.6	(0.7)	100.0



**Percentage of Operations that Rated the Following General and Breeding and Genetics Information Sources Very Important for Operating the Cow-calf Operation**



Of all operations, the majority (54.3 percent) considered veterinarians very important sources for either general or breeding and genetics information. The lowest percentage of operations considered consultants (5.1 percent), radio, TV, or newspaper (6.3 percent), and Internet sources (7.5 percent) very important sources of either general or breeding and genetics information.

b. Percentage of operations in which the following sources were very important to operating the cow-calf operation for either general or breeding and genetics information, by herd size:

Source	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Extension service, university, or VoAg instructors	21.1	(1.5)	26.6	(2.6)	23.6	(2.5)	20.6	(2.1)	22.1	(1.2)
Veterinarians	52.0	(1.9)	57.4	(2.9)	63.7	(2.7)	63.4	(2.6)	54.3	(1.4)
Beef magazines, agricultural journals, or publications	15.6	(1.4)	23.5	(2.4)	21.3	(2.4)	21.6	(2.2)	17.6	(1.1)
Producer/breed associations	13.3	(1.2)	20.4	(2.3)	25.7	(2.6)	23.9	(2.4)	15.9	(1.0)
Other producers	25.3	(1.6)	23.0	(2.4)	25.2	(2.5)	25.8	(2.6)	25.0	(1.2)
Salespersons or company representatives	11.7	(1.2)	14.0	(2.0)	19.1	(2.2)	15.8	(1.8)	12.8	(0.9)
Consultants	4.8	(0.8)	6.0	(1.4)	4.2	(1.0)	6.8	(1.2)	5.1	(0.6)
Radio, TV, or newspaper	6.3	(0.9)	6.7	(1.3)	7.0	(1.4)	4.8	(1.0)	6.3	(0.7)
Internet	7.4	(1.0)	7.5	(1.6)	9.5	(1.7)	7.3	(1.2)	7.5	(0.8)

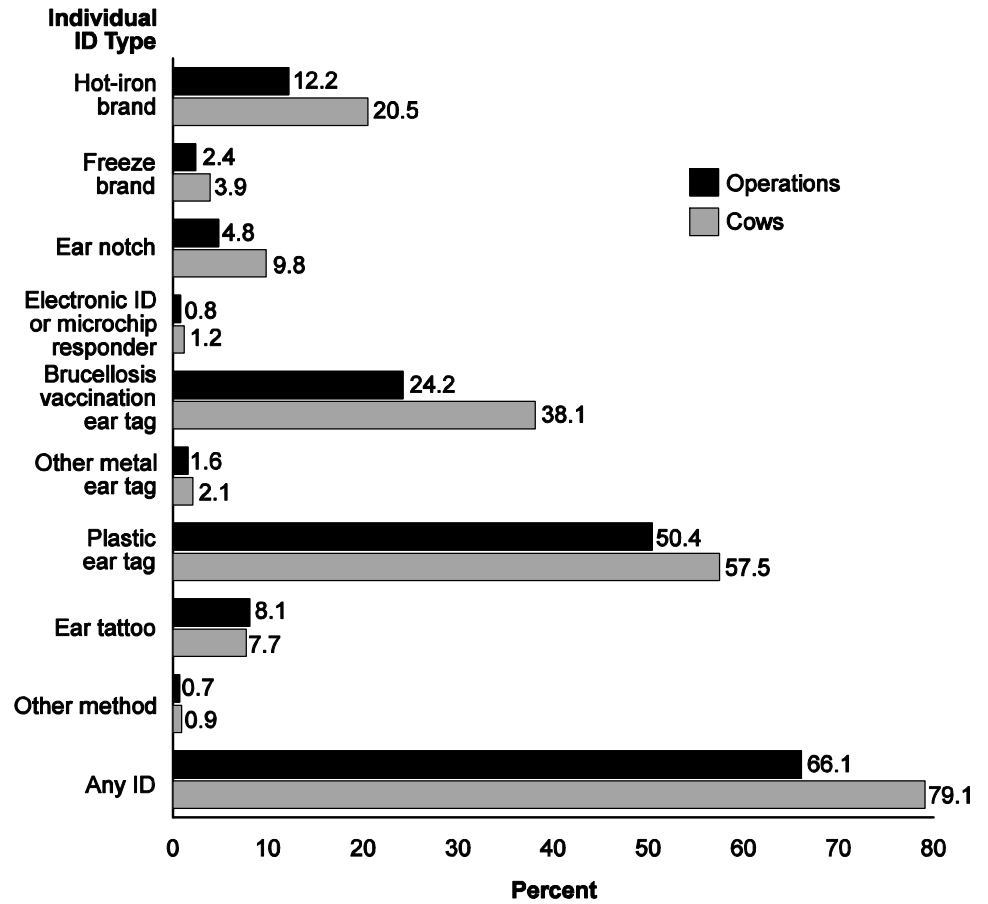
#### 4. Individual animal identification for cows

Nearly two-thirds of operations (66.1 percent) used some form of individual animal identification (ID) on at least some cows, and 79.1 percent of cows had some form of individual ID. Plastic ear tags were the most common single type of individual cow ID for operations and individual cows (50.4 and 57.5 percent, respectively). Electronic ID or microchips were used on only 0.8 percent of operations and 1.2 percent of individual cows.

a. Percentage of operations by type of *individual animal* ID used on at least some cows, and percentage of cows by type of individual animal ID used:

Individual ID Type	Percent Operations	Standard Error	Percent Cows	Standard Error
Hot-iron brand	12.2	(0.8)	20.5	(1.1)
Freeze brand	2.4	(0.4)	3.9	(0.6)
Ear notch	4.8	(0.5)	9.8	(0.9)
Electronic ID or microchip responder	0.8	(0.2)	1.2	(0.3)
Brucellosis vaccination ear tag (Bang's tag)	24.2	(1.1)	38.1	(1.2)
Other metal ear tag	1.6	(0.3)	2.1	(0.4)
Plastic ear tag	50.4	(1.4)	57.5	(1.3)
Ear tattoo (other than for brucellosis vaccination)	8.1	(0.7)	7.7	(0.6)
Other method	0.7	(0.2)	0.9	(0.2)
Any ID	66.1	(1.4)	79.1	(1.0)

**Percentage of Operations and Percentage of Cows by Type of Individual Animal ID Used**



The percentage of operations that used any form of individual animal ID ranged from 59.3 percent of operations with 1 to 49 cows to 89.1 percent of operations with 200 or more. Plastic ear tags were the most common type of individual animal ID across all herd sizes.

b. Percentage of operations by type of *individual animal* ID used on at least some cows, and by herd size:

Individual ID Type	Percent Operations							
	Herd Size (Number of Beef Cows)							
	1-49		50-99		100-199		200 or More	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	9.1	(1.1)	16.8	(2.1)	21.6	(2.4)	27.7	(2.2)
Freeze brand	1.1	(0.4)	4.5	(1.1)	6.8	(1.3)	8.3	(1.3)
Ear notch	2.9	(0.6)	7.8	(1.6)	10.2	(1.8)	14.1	(1.7)
Electronic ID or microchip responder	0.3	(0.2)	2.0	(0.9)	2.1	(0.8)	2.4	(0.8)
Brucellosis vaccination ear tag (Bang's tag)	18.4	(1.4)	31.0	(2.6)	41.4	(2.8)	56.7	(2.5)
Other metal ear tag	1.3	(0.4)	2.1	(0.8)	2.9	(1.0)	3.1	(0.8)
Plastic ear tag	44.3	(1.8)	65.4	(2.8)	67.5	(2.7)	64.2	(2.5)
Ear tattoo (other than for brucellosis vaccination)	7.1	(0.9)	11.1	(1.9)	8.3	(1.5)	12.4	(1.6)
Other method	0.5	(0.3)	0.8	(0.4)	1.5	(0.6)	1.5	(0.6)
Any ID	59.3	(1.8)	80.4	(2.3)	85.0	(2.0)	89.1	(1.6)

On operations with 200 or more beef cows, nearly 9 of 10 cows (88.8 percent) had individual ID of any type, compared with about 6 of 10 cows (60.5 percent) on operations with 1 to 49 beef cows. Plastic ear tag was the type of individual animal ID used on the highest percentage of cows across herd sizes.

c. Percentage of cows by type of *individual animal* ID used, and by herd size:

Percent Cows								
Herd Size (Number of Beef Cows)								
Individual ID Type	1-49		50-99		100-199		200 or More	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	9.5	(1.2)	15.0	(2.0)	20.9	(2.5)	30.2	(2.4)
Freeze brand	0.4	(0.2)	1.1	(0.3)	4.2	(1.0)	7.4	(1.4)
Ear notch	2.2	(0.6)	7.2	(1.4)	10.4	(2.0)	15.8	(1.9)
Electronic ID or microchip responder	0.2	(0.1)	0.7	(0.4)	1.3	(0.5)	2.2	(0.8)
Brucellosis vaccination ear tag (Bang's tag)	18.6	(1.6)	28.7	(2.4)	38.6	(2.6)	55.4	(2.5)
Other metal ear tag	0.9	(0.3)	1.6	(0.6)	1.7	(0.6)	3.3	(0.8)
Plastic ear tag	46.1	(2.1)	62.9	(2.7)	65.1	(2.8)	58.8	(2.5)
Ear tattoo (other than for brucellosis vaccination)	6.0	(1.0)	6.9	(1.3)	5.1	(1.1)	10.6	(1.4)
Other method	0.5	(0.3)	0.7	(0.4)	0.6	(0.3)	1.4	(0.5)
Any ID	60.5	(2.0)	78.9	(2.2)	84.7	(1.9)	88.8	(1.8)

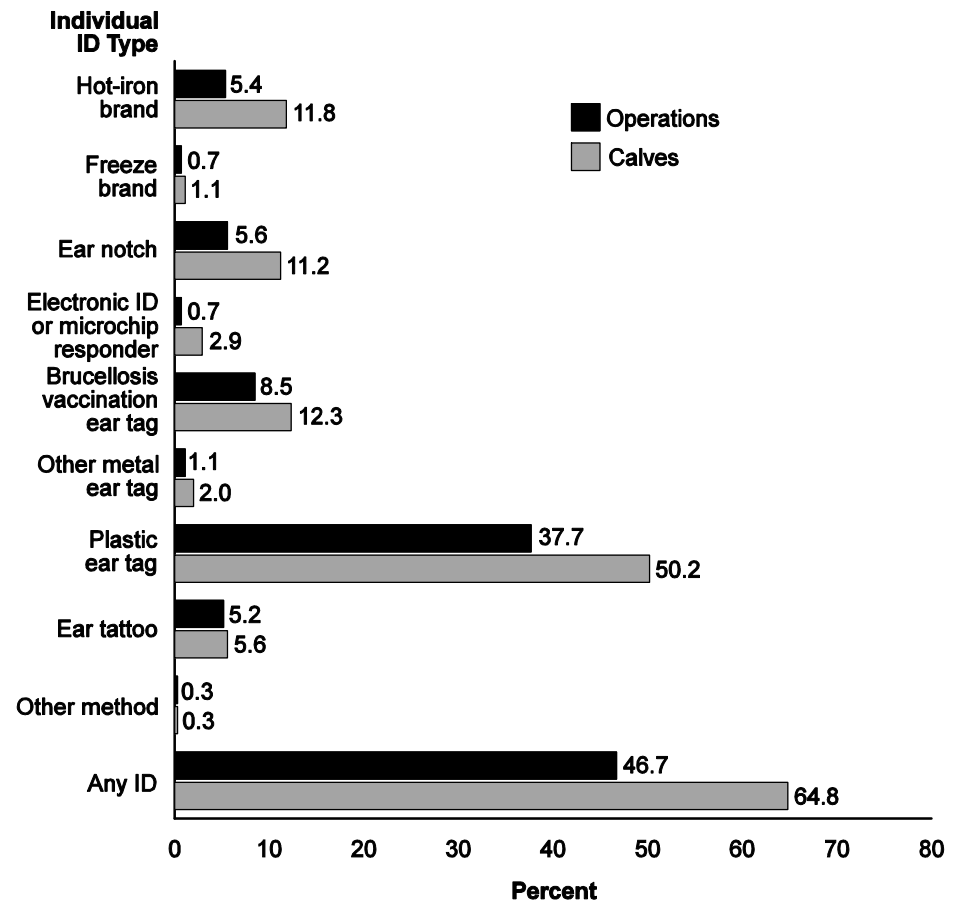
### 5. Individual animal identification for calves

Nearly half of operations (46.7 percent) used some form of individual animal ID on at least some calves, and 64.8 percent of calves had some form of individual ID. The most common type of individual calf ID was a plastic ear tag for operations (37.7 percent) and individual calves (50.2 percent). Electronic ID or microchip responder were used for calves on only 0.7 percent of operations and 2.9 percent of individual calves.

b. Percentage of operations by type of *individual animal* ID used on at least some calves, and percentage of calves by type of individual animal ID used:  
(Table was revised post-production—01/30/09)

<b>Individual ID Type</b>	<b>Percent Operations</b>	<b>Standard Error</b>	<b>Percent Calves</b>	<b>Standard Error</b>
Hot-iron brand	5.4	(0.6)	11.8	(1.1)
Freeze brand	0.7	(0.2)	1.1	(0.4)
Ear notch	5.6	(0.6)	11.2	(1.0)
Electronic ID or microchip responder	0.7	(0.2)	2.9	(0.7)
Brucellosis vaccination ear tag (Bang's tag)	8.5	(0.7)	12.3	(1.0)
Other metal ear tag	1.1	(0.3)	2.0	(0.5)
Plastic ear tag	37.7	(1.3)	50.2	(1.4)
Ear tattoo (other than for brucellosis vaccination)	5.2	(0.6)	5.6	(0.7)
Other method	0.3	(0.2)	0.3	(0.1)
Any ID	46.7	(1.4)	64.8	(1.3)

**Percentage of Operations and Percentage of Calves by Type of Individual Animal ID Used (Graph was Revised Post-Production—1/30/2009)**





About 4 of 10 operations with 1 to 49 cows (39.1 percent) used individual animal ID on at least some calves, compared with about 6 to 7 of 10 operations in the other herd-size categories. Use of a hot-iron brand as a type of individual animal ID ranged from 3.7 percent of operations with 1 to 49 beef cows to 15.7 percent of operations with 200 or more.

b. Percentage of operations by type of *individual animal* ID used on at least some calves, and by herd size:

Percent Operations								
Herd Size (Number of Beef Cows)								
Individual ID Type	1-49		50-99		100-199		200 or More	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	3.7	(0.7)	7.5	(1.5)	10.3	(1.9)	15.7	(1.7)
Freeze brand	0.6	(0.3)	0.7	(0.4)	1.0	(0.5)	1.9	(0.6)
Ear notch	3.1	(0.7)	9.8	(1.8)	10.9	(1.8)	18.7	(1.9)
Electronic ID or microchip responder	0.1	(0.1)	1.7	(0.8)	1.9	(0.7)	3.7	(0.9)
Brucellosis vaccination ear tag (Bang's tag)	6.1	(0.9)	12.6	(1.9)	15.3	(2.1)	19.3	(2.3)
Other metal ear tag	0.7	(0.3)	1.4	(0.7)	2.4	(0.9)	2.3	(0.7)
Plastic ear tag	31.8	(1.7)	51.2	(2.9)	57.0	(2.9)	49.8	(2.6)
Ear tattoo (other than for brucellosis vaccination)	4.8	(0.8)	6.3	(1.4)	5.4	(1.3)	7.8	(1.3)
Other method	0.3	(0.2)	0.4	(0.3)	0.3	(0.3)	0.5	(0.3)
Any ID	39.1	(1.8)	62.3	(2.8)	68.3	(2.7)	71.4	(2.4)

As with cows, a plastic ear tag was the most common type of individual animal ID for calves across all herd sizes.

d. Percentage of calves by type of *individual animal* ID used on at least some calves, and by herd size: (Table was revised post-production—1/30/2009)

Percent Calves								
Herd Size (Number of Beef Cows)								
Individual ID Type	1-49		50-99		100-199		200 or More	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	4.1	(0.9)	7.8	(1.7)	10.9	(2.4)	18.8	(2.2)
Freeze brand	0.3	(0.2)	0.4	(0.2)	0.4	(0.3)	2.3	(1.0)
Ear notch	3.5	(0.9)	9.1	(1.8)	10.3	(2.2)	17.2	(2.0)
Electronic ID or microchip responder	0.0	(0.0)	1.7	(0.7)	2.2	(0.9)	5.5	(1.6)
Brucellosis vaccination ear tag (Bang's tag)	5.6	(1.0)	10.7	(1.9)	13.3	(1.9)	16.5	(2.0)
Other metal ear tag	0.9	(0.4)	1.2	(0.8)	2.6	(1.0)	2.7	(1.0)
Plastic ear tag	36.2	(2.2)	52.7	(3.1)	59.1	(3.0)	53.1	(2.7)
Ear tattoo (other than for brucellosis vaccination)	4.6	(0.9)	3.4	(0.9)	4.2	(1.1)	7.9	(1.4)
Other method	0.4	(0.3)	0.4	(0.4)	0.2	(0.2)	0.2	(0.2)
Any ID	44.4	(2.3)	63.7	(2.9)	71.9	(2.7)	74.2	(2.3)

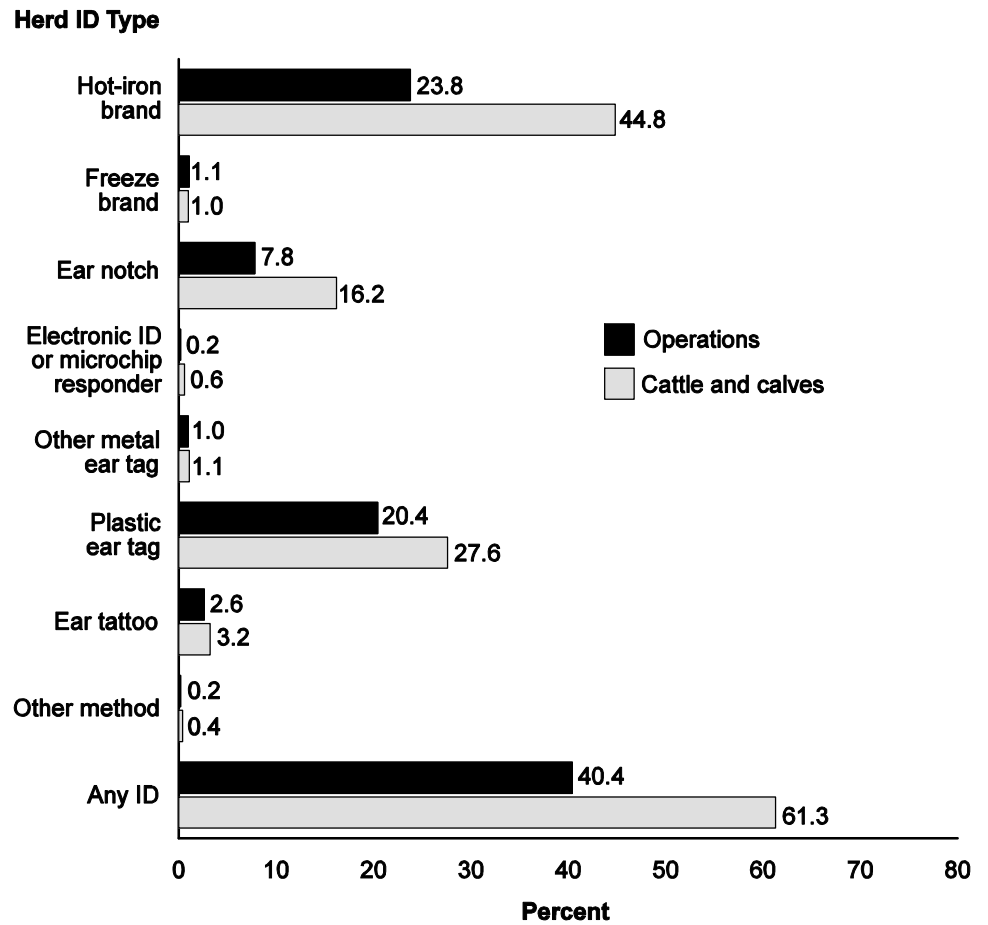
## 6. Herd identification

A herd ID is the same identification applied to all the cattle and calves in the herd. Branding all animals in the herd with the same brand registered to the operation is an example of herd ID. Only 40.4 percent of operations used some form of herd ID, and 61.3 percent of cattle and calves had some form of herd ID. Hot-iron branding and plastic ear tag were the most common types of herd ID for operations (23.8 and 20.4 percent of operations, respectively). Similarly, hot-iron branding was the most common type of herd ID for cattle and calves followed by plastic ear tag (44.8 and 27.6 percent of cattle and calves, respectively).

a. Percentage of operations and percentage of cattle and calves on October 1, 2007, by type of *herd* ID used (all animals have the same ID):

<b>Herd ID Type</b>	<b>Percent Operations</b>	<b>Standard Error</b>	<b>Percent Cattle and Calves</b>	<b>Standard Error</b>
Hot-iron brand	23.8	(1.1)	44.8	(1.5)
Freeze brand	1.1	(0.3)	1.0	(0.2)
Ear notch	7.8	(0.7)	16.2	(1.6)
Electronic ID or microchip responder	0.2	(0.1)	0.6	(0.2)
Metal ear tag other than Bang's tag	1.0	(0.3)	1.1	(0.3)
Plastic ear tag	20.4	(1.1)	27.6	(1.6)
Ear tattoo (other than for brucellosis vaccination)	2.6	(0.4)	3.2	(0.5)
Other method	0.2	(0.1)	0.4	(0.2)
Any ID	40.4	(1.3)	61.3	(1.5)

**Percentage of Operations and Percentage of Cattle and Calves on October 1, 2007, by Type of Herd ID Used (All Animals Have the Same ID)**



The percentage of operations that used any form of herd ID increased as herd size increased, as did the percentage that used a hot-iron brand for herd ID. The percentage of operations that used plastic ear tags for herd ID ranged from 16.4 percent of operations with 1 to 49 beef cows to 33.1 percent of operations with 200 or more.

b. Percentage of operations by type of *herd* ID used (all animals have the same ID), and by herd size:

Percent Operations								
Herd Size (Number of Beef Cows)								
	1-49		50-99		100-199		200 or More	
Herd ID Type	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	16.5	(1.3)	33.2	(2.7)	46.9	(2.8)	62.0	(2.4)
Freeze brand	0.7	(0.3)	1.8	(0.7)	1.4	(0.6)	3.6	(1.2)
Ear notch	4.9	(0.8)	11.4	(1.9)	17.7	(2.3)	20.9	(1.9)
Electronic ID or microchip responder	0.0	(--)	0.6	(0.4)	0.6	(0.4)	1.8	(1.0)
Metal ear tag other than Bang's tag	1.0	(0.4)	0.8	(0.5)	1.6	(0.7)	1.1	(0.4)
Plastic ear tag	16.4	(1.4)	28.7	(2.6)	31.8	(2.7)	33.1	(2.6)
Ear tattoo (other than for brucellosis vaccination)	1.9	(0.5)	4.7	(1.2)	2.7	(1.0)	6.2	(1.4)
Other method	0.1	(0.1)	0.0	(--)	1.3	(0.6)	0.6	(0.3)
Any ID	31.4	(1.7)	54.7	(2.8)	69.3	(2.6)	77.8	(2.1)

The percentage of cattle and calves that had any form of herd ID increased as operation size increased, ranging from 34.8 percent on operations with 1 to 49 beef cows to 77.8 percent on operations with 200 or more. The percentages of cattle and calves that had plastic ear tags were similar across herd sizes, but use of hot-iron branding for herd ID increased as herd size increased.

c. Percentage of cattle and calves on October 1, 2007, by type of *herd* ID used (all animals have the same ID), and by herd size:

<b>Percent Cattle and Calves</b>								
<b>Herd Size (Number of Beef Cows)</b>								
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>	
<b>Herd ID Type</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Hot-iron brand	21.1	(4.5)	35.7	(2.9)	48.0	(3.0)	64.1	(2.5)
Freeze brand	0.4	(0.2)	1.1	(0.5)	0.6	(0.3)	1.6	(0.5)
Ear notch	9.9	(4.9)	12.2	(2.2)	15.4	(2.2)	22.9	(2.2)
Electronic ID or microchip responder	0.0	(--)	0.6	(0.4)	0.3	(0.2)	1.1	(0.6)
Metal ear tag other than Bang's tag	0.9	(0.4)	0.4	(0.3)	1.6	(0.7)	1.3	(0.5)
Plastic ear tag	20.7	(4.5)	27.8	(2.7)	32.5	(3.0)	29.9	(2.5)
Ear tattoo (other than for brucellosis vaccination)	1.6	(0.5)	3.7	(1.1)	2.0	(0.7)	4.5	(1.0)
Other method	0.2	(0.2)	0.0	(--)	0.9	(0.5)	0.5	(0.3)
<b>Any ID</b>	<b>34.8</b>	<b>(4.1)</b>	<b>55.8</b>	<b>(3.0)</b>	<b>70.5</b>	<b>(2.8)</b>	<b>77.8</b>	<b>(2.2)</b>

Overall, a higher percentage of operations in the West region used any type of herd ID compared with the other regions. Hot-iron brand was used by 71.4 percent of operations in the West region compared with 22.8, 34.0 and 2.8 percent of operations in the Central, South Central, and East regions, respectively.

d. Percentage of operations by type of *herd* ID used (all animals have the same ID), and by region:

Herd ID Type	Percent Operations							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	71.4	(3.7)	22.8	(1.7)	34.0	(2.7)	2.8	(0.7)
Freeze brand	1.9	(1.1)	1.9	(0.6)	1.2	(0.6)	0.2	(0.1)
Ear notch	18.1	(2.9)	4.9	(0.9)	12.7	(1.8)	2.6	(0.6)
Electronic ID or microchip responder	0.2	(0.2)	0.3	(0.2)	0.0	(0.0)	0.4	(0.2)
Metal ear tag other than Bang's tag	1.4	(0.7)	0.8	(0.5)	1.6	(0.7)	0.5	(0.3)
Plastic ear tag	25.6	(3.3)	24.6	(2.1)	18.5	(2.2)	17.6	(1.7)
Ear tattoo (other than for brucellosis vaccination)	4.4	(1.4)	3.9	(1.0)	1.9	(0.7)	1.9	(0.6)
Other method	0.6	(0.3)	0.2	(0.1)	0.0	(0.0)	0.3	(0.3)
Any ID	74.3	(3.7)	42.5	(2.3)	49.5	(2.9)	21.7	(1.9)

The West region had the highest percentage of cattle and calves with any form of herd ID (84.8 percent) and the East region had the lowest percentage (33.1 percent). The percentage of cattle and calves with any form of herd ID was similar in the Central region and the South Central region (61.5 and 65.7 percent, respectively). Hot-iron branding as a method of herd ID was most common in the West region and least common in the East region (82.8 and 9.0 percent of cattle and calves, respectively).

e. Percentage of cattle and calves on October 1, 2007, by type of *herd* ID used (all animals have the same ID), and by region:

Herd ID Type	Percent Cattle and Calves							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Hot-iron brand	82.8	(4.7)	39.9	(2.2)	50.9	(2.8)	9.0	(1.6)
Freeze brand	0.4	(0.3)	1.8	(0.5)	0.8	(0.4)	0.6	(0.4)
Ear notch	33.1	(5.6)	7.5	(1.3)	23.6	(2.8)	5.8	(1.1)
Electronic ID or microchip responder	0.5	(0.4)	0.7	(0.6)	0.1	(0.1)	1.0	(0.4)
Metal ear tag other than Bang's tag	1.9	(0.9)	0.9	(0.4)	1.0	(0.4)	0.6	(0.3)
Plastic ear tag	32.2	(5.7)	32.0	(2.4)	20.5	(2.2)	23.6	(2.1)
Ear tattoo (other than for brucellosis vaccination)	2.8	(1.0)	4.5	(1.1)	1.8	(0.6)	2.8	(0.7)
Other method	0.6	(0.3)	0.2	(0.2)	0.5	(0.4)	0.4	(0.3)
Any ID	84.8	(4.7)	61.5	(2.3)	65.7	(2.6)	33.1	(2.3)



### 7. National Animal Identification System (NAIS) and U.S. Animal Identification Number (AIN)

NAIS is a voluntary program that facilitates the collection of information about all livestock operations, regardless of livestock species. This information is stored in a database for use during animal disease events. NAIS is designed to allow animal tracking during disease outbreaks so that sick or exposed animals can be quickly located to help contain the disease. Although the program was designed by USDA, each State is responsible for its implementation. A unique premises ID is assigned by each State's Department of Agriculture to all operations enrolled in NAIS.

The smallest herd size (fewer than 50 beef cows) had the lowest percentage of operations with a unique NAIS premises ID (11.7 percent) compared with operations with 50 or more beef cows. The percentages of operations with a unique NAIS premises ID were similar for all herd sizes with 50 or more cows.

a. Percentage of operations with a unique NAIS premises ID assigned by their State Department of Agriculture, by herd size:

Percent Operations									
Herd Size (Number of Beef Cows)									
1-49		50-99		100-199		200 or More		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
11.7	(1.2)	25.1	(2.6)	27.5	(2.6)	29.7	(2.3)	16.0	(1.0)

A higher percentage of operations in the Central region had a unique NAIS premises ID (20.2 percent) compared with operations in the South Central region (11.6 percent).

b. Percentage of operations with a unique NAIS premises ID assigned by their State Department of Agriculture, by region:

Percent Operations							
Region							
West		Central		South Central		East	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
14.7	(2.6)	20.2	(1.9)	11.6	(1.8)	17.1	(1.7)

Once an NAIS premises ID is obtained, an operation has the option of obtaining officially recognized individual animal ID, as outlined in AIN guidelines.

Among operations that had a unique NAIS premises ID, a higher percentage with 200 or more cows had implemented an individual ID system utilizing AIN guidelines than those with fewer than 100 cows.

c. For operations with a unique NAIS premises ID, percentage of operations that had implemented an individual animal ID system utilizing AIN guidelines, by herd size:

Percent Operations									
Herd Size (Number of Beef Cows)									
1-49		50-99		100-199		200 or More		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
6.8	(3.0)	5.5	(2.7)	18.8	(4.7)	22.6	(3.7)	9.6	(1.8)

The percentages of operations that implemented an individual ID system utilizing AIN guidelines were similar across all regions.

d. For operations with a unique NAIS premises ID, percentage of operations that had implemented an individual animal ID system utilizing AIN guidelines, by region:

Percent Operations							
Region							
West		Central		South Central		East	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
8.3	(3.4)	9.6	(2.4)	15.2	(6.3)	6.6	(2.1)

#### 8. Contributions to income and labor input

The majority of operations (71.9 percent) reported that the cow-calf operation was a supplemental source of income. The percentage of operations in which the cow-calf operation was the primary source of income increased as herd size increased. Overall, 13.8 percent of operations operated for reasons other than primary or supplemental income, such as pleasure.

a. Percentage of operations by reason for operating the cow-calf operation and by herd size:

Percent Operations										
Herd Size (Number of Beef Cows)										
Reason	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Primary source of income	5.3	(0.8)	24.1	(2.5)	42.8	(2.8)	65.0	(2.6)	14.3	(0.7)
Supplemental source of income	78.0	(1.5)	68.3	(2.7)	50.9	(2.9)	31.7	(2.6)	71.9	(1.2)
Other	16.7	(1.4)	7.6	(1.5)	6.3	(1.8)	3.3	(0.9)	13.8	(1.0)

The cow-calf operation was a primary source of income on a higher percentage of operations in the West and Central regions (24.6 and 21.0 percent, respectively) than for operations in the South Central and East regions (11.3 and 9.3 percent, respectively). Only about 1 of 10 operations in the Central region (9.0 percent) operated cow-calf operations for reasons other than primary or supplemental incomes.

b. Percentage of operations by reason for operating the cow-calf operation and by region:

Reason	Percent Operations							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Primary source of income	24.6	(2.1)	21.0	(1.6)	11.3	(1.4)	9.3	(1.1)
Supplemental source of income	55.4	(3.8)	70.0	(2.2)	73.8	(2.5)	76.0	(2.0)
Other	20.0	(3.6)	9.0	(1.7)	14.9	(2.2)	14.7	(1.7)

Operators were asked to consider all the hours worked on and off farm and then estimate the percentage of work time devoted to the cow-calf operation.

The operation average percentage of the operator's work time devoted to the cow-calf operation increased as herd size increased, ranging from 28.9 percent of operations with fewer than 50 beef cows to 68.2 percent of operations with 200 or more.

c. Operation average percentage of operator's work time devoted to the cow-calf operation, by herd size:

<b>Operation Average Percent</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
28.9	(1.0)	47.3	(1.8)	55.5	(1.9)	68.2	(1.8)	35.9	(0.8)

Operations in the West region devoted a higher percentage of work time to the cow-calf operation than did operations in the other regions.

d. Operation average percentage of operator's work time devoted to the cow-calf operation, by region:

<b>Operation Average Percent</b>							
<b>Region</b>							
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>	
<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>
46.1	(2.8)	37.6	(1.5)	32.2	(1.6)	35.3	(1.4)

A higher percentage of operations with 1 to 49 beef cows had operators that devoted less than 25.0 percent of their time to the cow-calf operation compared with operations with 50 or more beef cows.

e. Percentage of operations by percentage of operator's work time devoted to the cow-calf operation, and by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Percent Time</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Less than 25.0	57.8	(1.8)	27.4	(2.6)	19.0	(2.5)	11.5	(2.2)	47.6	(1.4)
25.0 to 49.9	19.4	(1.5)	26.9	(2.6)	22.7	(2.4)	15.4	(1.9)	20.6	(1.1)
50.0 to 74.9	10.8	(1.1)	19.9	(2.4)	21.7	(2.3)	18.8	(2.0)	13.5	(0.9)
75.0 to 99.9	3.7	(0.7)	7.2	(1.3)	14.1	(2.0)	19.3	(2.0)	5.9	(0.6)
100.0	8.3	(1.0)	18.6	(2.3)	22.5	(2.3)	35.0	(2.4)	12.4	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

### 9. Dehorning

Nearly twice the percentage of calves born alive in the South Central region had or were expected to have horns, compared with the other regions.

a. Percentage of calves born alive during 2007 that had or were expected to have horns, by region:

<b>Percent Calves</b>									
<b>Region</b>									
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>		<b>All Operations</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
11.1	(1.3)	7.1	(0.7)	22.8	(1.5)	9.8	(1.1)	12.4	(0.6)

The East region had the highest percentage of operations in which no calves had or were expected to have horns. The percentage of operations in which all calves had or were expected to have horns was higher in the South Central region than in the East region.

b. Percentage of operations by percentage of calves born alive in 2007 that had or were expected to have horns, and by region:

Percent Calves	Percent Operations									
	Region									
	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	55.2	(3.9)	68.3	(2.3)	50.3	(2.9)	74.9	(2.0)	63.8	(1.3)
0.1 to 24.9	25.9	(3.4)	20.2	(1.9)	18.3	(2.1)	15.7	(1.7)	18.6	(1.0)
25.0 to 49.9	3.2	(1.0)	4.1	(1.0)	7.9	(1.5)	2.5	(0.6)	4.6	(0.6)
50.0 to 74.9	5.1	(1.8)	3.2	(0.9)	10.0	(1.7)	2.8	(0.8)	5.3	(0.7)
75.0 to 99.9	2.6	(1.3)	0.2	(0.1)	4.2	(1.1)	1.3	(0.5)	2.1	(0.4)
100.0	8.0	(2.4)	4.0	(1.1)	9.3	(1.8)	2.8	(0.8)	5.6	(0.7)
Total	100.0		100.0		100.0		100.0		100.0	

Operations in the West and Central regions dehorned a higher percentage of calves in 2007 (73.8 and 67.3 percent, respectively) than operations in the East and South Central regions (39.5 and 35.8 percent, respectively).

c. Of calves born alive in 2007 that had or were expected to have horns, percentage that were or would be dehorned on the operation, by region:

Percent Calves	Percent Calves									
	Region									
	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
	73.8	(5.7)	67.3	(4.3)	35.8	(3.5)	39.5	(6.0)	48.8	(2.4)

About 6 of 10 operations in the South Central and East regions (62.9 and 60.8 percent, respectively) did not dehorn any horned calves during 2007, compared with about 3 of 10 operations in the West and Central regions (31.0 and 26.3 percent, respectively). Conversely, a higher percentage of operations in the West and Central regions dehorned all calves born with horns, compared with operations in the South Central and East regions. Regardless of region, most operations either dehorned all or none of their calves.

d. Percentage of operations by percentage of horned calves born alive during 2007 that were or would be dehorned on the operation, and by region:

Percent Calves Dehorned	Percent Operations									
	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	31.0	(5.9)	26.3	(4.1)	62.9	(3.8)	60.8	(4.3)	50.7	(2.3)
0.1 to 24.9	5.2	(2.3)	8.9	(2.1)	11.0	(2.3)	6.2	(2.1)	8.7	(1.2)
25.0 to 49.9	0.4	(0.3)	1.3	(0.8)	2.2	(1.2)	0.2	(0.2)	1.3	(0.5)
50.0 to 74.9	4.1	(2.6)	3.0	(1.3)	3.3	(1.5)	2.9	(1.4)	3.2	(0.8)
75.0 to 99.9	1.7	(0.9)	1.6	(1.0)	1.7	(1.0)	1.2	(0.8)	1.6	(0.5)
100.0	57.6	(6.0)	58.9	(4.3)	18.9	(2.9)	28.7	(4.0)	34.5	(2.1)
Total	100.0		100.0		100.0		100.0		100.0	



The average age that calves were dehorned was similar across all herd sizes. However, the operation average age of dehorning was lower on operations with 100 or more beef cows compared with operations that had fewer than 100 beef cows.

e. For operations with horned calves, average age and operation average age (in days) that calves were dehorned:

Measure*	Average (Days)									
	Herd Size (Number of Beef Cows)									
	1-49	50-99	100-199	200 or More	All Operations					
	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error				
Average age	143.9	(16.9)	138.7	(12.6)	110.3	(10.3)	108.6	(5.3)	118.6	(4.5)
Operation average age	157.6	(11.2)	159.1	(10.7)	121.1	(7.4)	119.4	(5.3)	146.8	(6.0)

\*See Terms Used in This Report, p 3, for definitions of animal average and operation average.

Of operations that dehorned calves, 43.0 percent reported an average age at dehorning of 92 days or less, while 41.6 percent of operations reported an average age at dehorning of 154 days or more.

f. For operations that dehorned calves, percentage of operations by average age (days) calves were dehorned:

Average Age (Days)	Percent Operations	Standard Error
1 to 31	6.2	(1.2)
32 to 61	17.2	(2.2)
62 to 92	19.6	(2.4)
93 to 122	7.8	(1.5)
123 to 153	7.6	(1.5)
154 to 183	15.8	(2.3)
184 to 214	7.8	(1.7)
215 or more	18.0	(2.5)
Total	100.0	

About 5 of 10 operations in the West region (51.7 percent) used an electric dehorner/debudder, hot iron as the primary method for dehorning calves. The majority of operations in the East region (59.2 percent) used saws, barnes, or keystone (guillotine) as the primary method of dehorning calves. Relatively few operations across regions used caustic paste to dehorn calves.

g. Percentage of operations by primary method used to dehorn calves, and by region:

Primary Method	Percent Operations									
	Region									
	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Caustic paste	8.2	(3.0)	8.1	(2.6)	3.2	(2.5)	3.4	(2.3)	5.7	(1.3)
Electric dehorner/debudder, hot iron	51.7	(6.4)	29.5	(4.1)	13.5	(3.9)	12.0	(3.8)	24.5	(2.4)
Spoons or gouges	25.7	(5.4)	28.9	(4.3)	37.8	(5.8)	25.4	(5.4)	30.6	(2.7)
Saws, barnes, or keystone (guillotine)	14.4	(4.9)	33.5	(4.6)	45.5	(6.1)	59.2	(6.4)	39.2	(3.0)
Total	100.0		100.0		100.0		100.0		100.0	

Both washing with water and chemically disinfecting dehorning equipment were implemented by similar percentages of operations across regions.

h. For operations using spoons or gouges, or saws, barnes, or keystone (guillotine), percentage of operations that routinely cleaned dehorning equipment, by method and by region:

Method	Percent Operations									
	Region									
	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Washed with water after each animal	21.4	(8.6)	29.3	(5.8)	40.0	(6.6)	46.0	(7.6)	36.6	(3.7)
Chemically disinfected after each animal	47.8	(10.3)	45.0	(6.2)	59.6	(6.5)	37.2	(7.5)	49.1	(3.7)

**10. Castration**

The percentage of operations that castrated any bull calves prior to sale increased as herd size increased.

a. Percentage of operations that castrated any bull calves born in 2007 before sale, by herd size:

<b>Percent Operations</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
50.3	(1.8)	75.0	(2.5)	85.1	(2.3)	95.3	(1.2)	59.2	(1.4)

A higher percentage of operations in the West and Central regions (92.3 and 84.2 percent, respectively) castrated any bull calves born in 2007 before selling them than did operations in the South Central and East regions (43.9 and 46.0 percent, respectively).

b. Percentage of operations that castrated any bull calves born in 2007 before sale, by region:

<b>Percent Operations</b>							
<b>Region</b>							
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
92.3	(2.4)	84.2	(2.1)	43.9	(2.8)	46.0	(2.3)

The overall percentage of bull calves castrated differed in each region. A higher percentage of calves in the West region (95.6 percent) were castrated than in any other region. The percentage castrated in the Central region (88.5 percent) was higher than the percentage castrated in the South Central or East regions (65.9 and 58.1 percent, respectively).

The operation average percentage of bull calves castrated was higher in the West and Central regions (85.2 and 81.2 percent, respectively) than in the South Central and East regions (39.7 and 42.8 percent, respectively).

c. Of bull calves born in 2007, percentage and operation average percentage of bull calves that were or would be castrated before sale, by region:

<b>Percent Bull Calves</b>										
<b>Region</b>										
<b>South Central</b>										
<b>West</b>		<b>Central</b>		<b>East</b>		<b>All Operations</b>				
<b>Measure</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Percent bull calves	95.6	(0.8)	88.5	(1.3)	65.9	(2.4)	58.1	(2.1)	77.1	(0.9)
Operation average percent	85.2	(2.8)	81.2	(2.1)	39.7	(2.7)	42.8	(2.2)	55.4	(1.3)

Most operations either castrated none of their bull calves before sale (40.8 percent) or all of their bull calves before sale (49.5 percent).

d. Percentage of operations by percentage of bull calves that were or would be castrated before sale:

<b>Percent Castrated</b>	<b>Percent Operations</b>	<b>Standard Error</b>
0	40.8	(1.4)
0.1 to 24.9	1.7	(0.3)
25.0 to 49.9	0.9	(0.2)
50.0 to 74.9	2.7	(0.4)
75.0 to 99.9	4.4	(0.5)
100.0	49.5	(1.3)
<b>Total</b>	<b>100.0</b>	

The average age that bull calves were castrated was similar across all herd sizes.

e. Average age (days) of bull calves when castrated, by herd size:

<b>Average Age (Days)</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>
78.0	(3.7)	87.4	(5.1)	76.7	(3.5)	72.6	(2.5)	76.8	(1.7)

Most operations (74.5 percent) castrated bull calves at an average age of less than 93 days, but almost one of five operations (18.4 percent) did not castrate calves until they were over 122 days old.

f. For operations that castrated bull calves born in 2007 before sale, percentage of operations by average age (days) when bull calves were castrated:

<b>Average Age (Days)</b>	<b>Percent Operations</b>	<b>Standard Error</b>
1 to 31	33.2	(1.7)
32 to 61	20.0	(1.3)
62 to 92	21.3	(1.4)
93 to 122	7.1	(0.8)
123 or more	18.4	(1.3)
Total	100.0	

For operations that castrated bull calves, the percentage of operations that used a blade ranged from 44.5 percent of operations with 1 to 49 beef cows to 63.5 percent of operations with 200 or more. A higher percentage of operations with 1 to 49 cows castrated bull calves with a rubber band or tubing at 3 months old or less than did operations with 100 or more cows.

g. Percentage of operations by primary method of castration and by herd size:

Percent Operations										
Herd Size (Number of Beef Cows)										
Method	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Remove testicles with a blade	44.5	(2.5)	51.0	(3.3)	60.9	(3.0)	63.5	(2.7)	49.2	(1.7)
Clamp/burdizzo	2.7	(0.8)	6.1	(1.5)	3.6	(1.1)	2.7	(0.7)	3.5	(0.6)
Rubber band or tubing at 3 months of age or less	44.5	(2.5)	36.0	(3.2)	25.7	(2.6)	29.7	(2.7)	39.5	(1.7)
Rubber band or tubing at more than 3 months of age	8.3	(1.4)	6.9	(1.6)	9.8	(1.9)	4.0	(1.0)	7.8	(0.9)
Other	0.0	(--)	0.0	(--)	0.0	(--)	0.1	(0.1)	0.0	(0.0)
Total	100.0		100.0		100.0		100.0		100.0	



Photo courtesy of Judy Rodriguez

**11. Source of female replacements**

Of the heifers and cows that calved in 2007, 83.0 percent of heifers and 75.6 percent of cows were raised on the operation where they calved.

For heifers and cows that calved in 2007, percentage of heifers and cows by source:

<b>Source</b>	<b>Percent Heifers</b>	<b>Standard Error</b>	<b>Percent Cows</b>	<b>Standard Error</b>
Raised on the operation	83.0	(2.0)	75.6	(1.1)
Purchased	17.0	(2.0)	24.4	(1.1)
Total	100.0		100.0	

## B. Nutrition Management

### 1. Source of nutrition information

The highest percentage of operations reported that either a feed salesperson or veterinarian was the most important source of animal nutrition information (31.7 and 27.3 percent of operations, respectively). Across herd sizes, similar percentages of operations used primarily feed salespersons or veterinarians for nutrition information. Other producers and extension agents or specialists were the next most important sources of nutritional information. Private nutritionists were not commonly considered as the most important source, but a higher percentage of operations with 200 or more cows used a private nutritionist than did the smaller sized operations.

Percentage of operations by most important source of animal nutrition information, and by herd size:

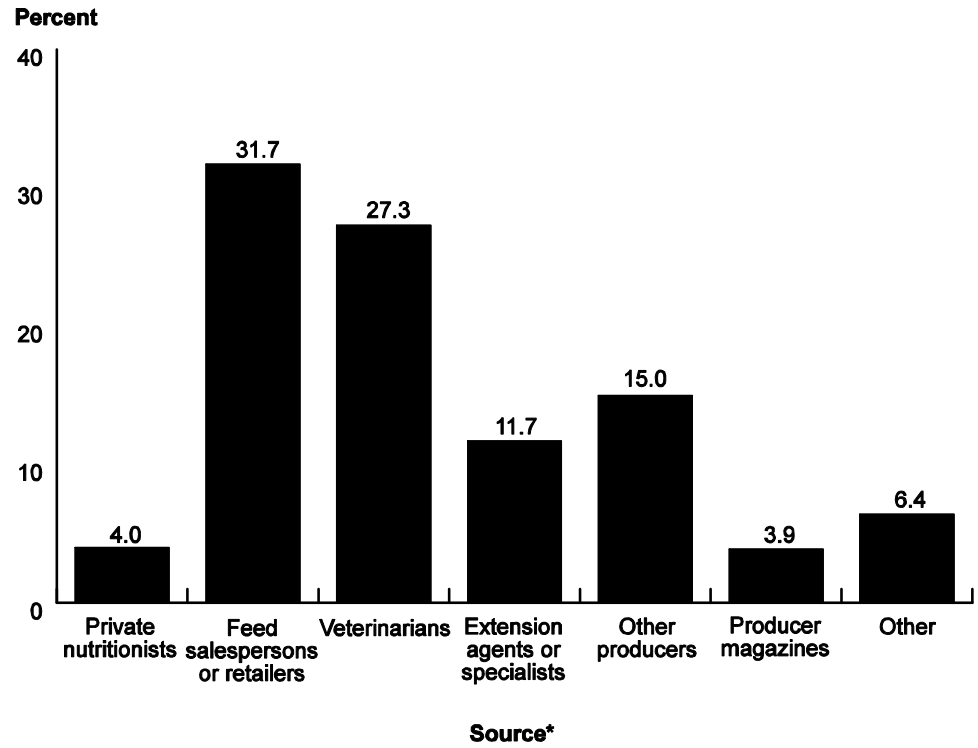
Source*	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Private nutritionists	2.7	(0.6)	3.7	(0.9)	8.0	(1.6)	15.5	(1.8)	4.0	(0.5)
Feed salespersons or retailers	31.4	(1.7)	33.8	(2.8)	33.4	(2.7)	27.6	(2.2)	31.7	(1.3)
Veterinarians	27.3	(1.7)	28.0	(2.6)	26.3	(2.6)	27.2	(2.6)	27.3	(1.3)
Extension agents or specialists	11.3	(1.2)	14.5	(2.1)	11.9	(1.9)	9.1	(1.4)	11.7	(0.9)
Other producers	16.6	(1.4)	10.7	(1.9)	11.8	(1.8)	10.6	(1.6)	15.0	(1.0)
Producer magazines	3.4	(0.7)	5.1	(1.2)	5.6	(1.7)	4.4	(0.9)	3.9	(0.5)
Other	7.3	(1.0)	4.2	(1.1)	3.0	(0.9)	5.6	(1.3)	6.4	(0.7)
Total	100.0		100.0		100.0		100.0		100.0	

\*Other than producer's personal knowledge or education.



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**Percentage of Operations by the Most Important Source of Animal Nutrition Information**



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\*Other than producer's personal knowledge or education

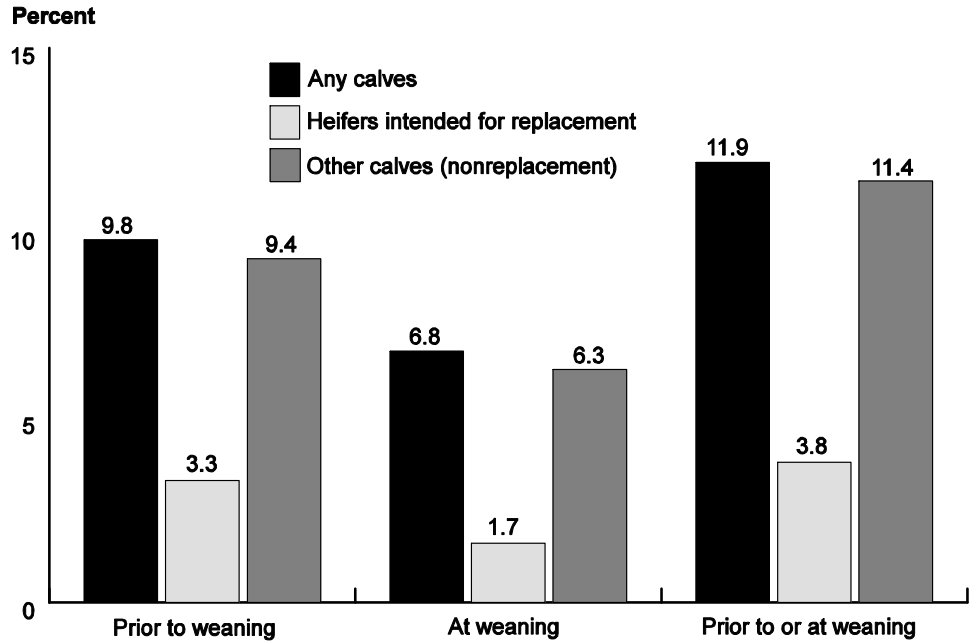
## 2. Implanting practices

Overall, a relatively low percentage of operations (11.9 percent) implanted any calves with a growth promotant prior to or at weaning during the previous 12 months. Also, when any implant prior to or at weaning was considered, a lower percentage of operations with 1 to 49 cows implanted either heifers intended for replacement or other calves than did operations with 50 or more cows. Almost 1 of 3 operations with 200 or more cows (31.1 percent) implanted at least some calves, but only 7.0 percent of operations with 1 to 49 cows implanted at least some calves. A higher percentage of operations with 200 or more cows implanted other calves than did operations with 50 to 99 cows (30.8 and 19.7 percent, respectively). A lower percentage of operations with 1 to 49 cows implanted replacement heifers and other calves prior to weaning than did operations with 50 or more cows. Similarly, a lower percentage of operations with 1 to 49 cows implanted either heifers intended for replacement or other calves at weaning than did operations with larger herd sizes.

a. Percentage of operations that implanted any calves with a growth promotant prior to or at weaning during the previous 12 months, by implant practice and by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Implant Practice</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
<b>Prior to Weaning</b>										
Any calves	5.5	(0.8)	16.4	(2.1)	24.8	(2.4)	26.9	(2.3)	9.8	(0.7)
Heifers intended for replacement	1.9	(0.5)	5.5	(1.3)	8.5	(1.7)	9.0	(1.5)	3.3	(0.4)
Other calves (nonreplacement)	5.2	(0.8)	15.7	(2.1)	22.9	(2.4)	26.8	(2.3)	9.4	(0.7)
<b>At Weaning</b>										
Any calves	4.2	(0.7)	12.1	(1.9)	12.1	(1.9)	18.3	(2.0)	6.8	(0.6)
Heifers intended for replacement	1.0	(0.4)	2.9	(1.0)	3.2	(1.3)	3.8	(1.0)	1.7	(0.3)
Other calves (nonreplacement)	3.8	(0.7)	11.6	(1.9)	11.6	(1.9)	17.4	(2.0)	6.3	(0.6)
<b>Prior to or at Weaning</b>										
Any calves	7.0	(0.9)	19.9	(2.3)	27.3	(2.5)	31.1	(2.4)	11.9	(0.8)
Heifers intended for replacement	2.1	(0.5)	6.7	(1.4)	9.7	(1.8)	9.8	(1.5)	3.8	(0.4)
Other calves (nonreplacement)	6.7	(0.9)	19.7	(2.3)	25.2	(2.4)	30.8	(2.4)	11.4	(0.8)

**Percentage of Operations that Implanted Any Calves with a Growth Promotant Prior to or at Weaning During the Previous 12 Months**



About 9 of 10 operations (90.2 percent) did not implant replacement heifers or other calves with a growth promotant prior to weaning. A higher percentage of operations with 1 to 49 cows did not implant calves prior to weaning (94.5 percent) compared with all other herd sizes. A lower percentage of herds with 200 or more cows did not implant calves prior to weaning (73.1 percent) than did operations with fewer than 100 cows.

b. Percentage of operations by growth-promotant implanting practice during the previous 12 months for *preweaned* replacement heifers and for *preweaned* calves not intended for replacement, and by herd size:

<b>Percent Operations*</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Implant Practice</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Implant other calves, but not heifers for replacement	3.6	(0.7)	10.9	(1.8)	16.1	(2.0)	17.9	(2.0)	6.5	(0.6)
Implant other calves and heifers for replacement	1.6	(0.4)	4.8	(1.2)	6.8	(1.5)	8.9	(1.5)	2.9	(0.4)
Implant heifers for replacement but not other calves	0.3	(0.2)	0.7	(0.6)	1.7	(0.7)	0.1	(0.1)	0.4	(0.2)
Implant neither	94.5	(0.8)	83.6	(2.1)	75.4	(2.4)	73.1	(2.3)	90.2	(0.7)
<b>Total</b>	<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>	

\*Compared to table B.2.a, small differences in estimates due to rounding.

More than 9 of 10 operations (93.2 percent) did not implant any replacement heifers or other calves with a growth promotant at weaning during the previous 12 months. A higher percentage of operations with 1 to 49 beef cows implanted no calves at weaning (95.8 percent) compared with all other herd sizes.

c. Percentage of operations by growth-promotant implanting practice **at weaning** during the previous 12 months for replacement heifers and for calves not intended for replacement, and by herd size:

<b>Percent Operations*</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Implant Practice</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Implant other calves, but not heifers for replacement	3.2	(0.6)	9.1	(1.7)	8.9	(1.5)	14.5	(1.8)	5.1	(0.5)
Implant other calves and heifers for replacement	0.6	(0.3)	2.5	(0.9)	2.7	(1.3)	2.9	(0.9)	1.2	(0.3)
Implant heifers for replacement but not other calves	0.4	(0.2)	0.5	(0.3)	0.5	(0.4)	0.9	(0.5)	0.5	(0.2)
Implant neither	95.8	(0.7)	87.9	(1.9)	87.9	(1.9)	81.7	(2.0)	93.2	(0.6)
<b>Total</b>	<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>	

\*Compared to table B.2.a, small differences in estimates due to rounding.

Overall, more than 9 of 10 operations (96.2 percent) did not implant replacement heifers either prior to or at weaning during the previous 12 months. A higher percentage of operations with 1 to 49 cows (97.9 percent) did not implant replacement heifers either prior to or at weaning compared to all other herd sizes.

Almost 9 of 10 operations (88.6 percent) did not implant other (nonreplacement) calves either prior to or at weaning. A higher percentage of operations with 1 to 49 cows did not implant other (nonreplacement) calves either prior to or at weaning compared to all other herd sizes.

d. Percentage of operations by timing of implanting growth promotant during the previous 12 months, and by herd size:

<b>Percent Operations*</b>										
<b>Herd Size (Number of Beef Cows)</b>										
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Timing</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
<b>Heifers Intended for Replacement</b>										
Only prior to weaning	1.1	(0.3)	3.8	(1.1)	6.5	(1.3)	6.0	(1.2)	2.2	(0.3)
Only at weaning	0.3	(0.2)	1.2	(0.6)	1.2	(0.7)	0.9	(0.4)	0.5	(0.2)
Prior to and at weaning	0.7	(0.3)	1.7	(0.8)	2.0	(1.2)	2.9	(0.9)	1.1	(0.3)
Neither prior to nor at weaning	97.9	(0.5)	93.3	(1.4)	90.3	(1.8)	90.2	(1.5)	96.2	(0.4)
Total	100.0		100.0		100.0		100.0		100.0	
<b>Other Calves</b>										
Only prior to weaning	2.9	(0.6)	8.1	(1.5)	13.6	(1.9)	13.5	(1.7)	5.1	(0.5)
Only at weaning	1.4	(0.4)	4.0	(1.2)	2.4	(0.8)	4.0	(0.9)	2.0	(0.3)
Prior to and at weaning	2.4	(0.5)	7.6	(1.5)	9.2	(1.7)	13.3	(1.9)	4.3	(0.5)
Neither prior to nor at weaning	93.3	(0.9)	80.3	(2.3)	74.8	(2.4)	69.2	(2.4)	88.6	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

\*Compared to table B.2.a, small differences in estimates due to rounding.

For the 9.8 percent of operations that implanted any calves prior to weaning (table 2a, p 44), approximately two of three operations (66.3 percent) did not implant replacement heifers prior to weaning. Approximately one of three operations (32.8 percent) implanted replacement heifers one time prior to weaning.

e. For operations that implanted any calves with a growth promotant during the previous 12 months, percentage of operations by number of times unweaned **replacement heifers** were implanted **prior to weaning**, and by herd size:

Percent Operations										
Herd Size (Number of Beef Cows)										
Number Implants	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0	66.5	(7.0)	66.6	(6.7)	65.5	(5.6)	66.6	(4.7)	66.3	(3.6)
1	33.5	(7.0)	30.1	(6.4)	34.5	(5.6)	33.1	(4.7)	32.8	(3.5)
2 or more	0.0	(0.0)	3.3	(3.2)	0.0	(0.0)	0.3	(0.3)	0.9	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

For the 9.8 percent of operations that implanted any calves prior to weaning, more than 8 of 10 (84.5 percent) implanted nonreplacement calves 1 time prior to weaning. Approximately 1 of 10 operations (10.5 percent) implanted nonreplacement calves 2 times prior to weaning. The percentages of operations that implanted calves were similar across all herd sizes.

f. For operations that implanted any calves with a growth promotant during the previous 12 months, percentage of operations by number of times unweaned **calves not intended for replacement** were implanted **prior to weaning**, and by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Number Implants</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
0	5.1	(3.0)	4.3	(3.3)	7.0	(2.9)	0.5	(0.3)	4.6	(1.6)
1	86.9	(4.8)	82.8	(5.1)	79.9	(4.8)	87.1	(3.1)	84.5	(2.6)
2	8.0	(3.9)	12.0	(4.0)	13.1	(4.1)	11.5	(3.0)	10.5	(2.1)
3 or more	0.0	(--)	0.9	(0.9)	0.0	(--)	0.9	(0.8)	0.4	(0.3)
<b>Total</b>	<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>		<b>100.0</b>	



### 3. Creep feeding

Overall, calves had access to creep feed on more than one in four operations (27.4 percent). The West region reported the lowest percentage of operations (13.3 percent) that provided calves access to creep feed compared with the other regions.

a. Percentage of operations in which unweaned calves had access to creep feed, by region:

Percent Operations									
Region									
West		Central		South Central		East		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
13.3	(3.0)	35.7	(2.5)	22.9	(2.4)	29.2	(2.1)	27.4	(1.2)

For operations in which calves had access to creep feed, approximately one in three operations (31.2 percent) allowed access for 61 days or less, and almost one-half (45.1 percent) allowed access for 93 or more days.

b. For operations in which unweaned calves had access to creep feed in 2007, percentage of operations by average number of days calves had access:

Number of Days	Percent Operations	Standard Error
1 to 31	10.8	(1.6)
32 to 61	20.4	(2.1)
62 to 92	23.7	(2.3)
93 to 122	14.2	(2.0)
123 or more	30.9	(2.5)
Total	100.0	

## C. Productivity and Marketing

### 1. Weaning weight

For operations with 1 to 49 cows, the average weaning weight of bull and steer calves (512 lb) was lower compared with operations with 50 to 99 (561 lb), 100 to 199 (561 lb), and 200 or more beef cows (554 lb). Operations with 1 to 49 cows also had the lowest average weaning weight for other heifers (473 lb).

a. Average weaning weight (lb), by calf group and by herd size:

Average Weight (lb)										
Herd Size (Number of Beef Cows)										
Calf Group	1-49		50-99		100-199		200 or More		All Operations	
	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error
Replacement heifers	492	(7)	540	(8)	548	(5)	543	(4)	532	(3)
Other heifers	496	(5)	522	(5)	526	(5)	518	(4)	515	(2)
Bulls and steers	532	(5)	565	(5)	572	(5)	564	(4)	559	(2)
All	499	(5)	536	(5)	542	(5)	539	(4)	530	(2)

Replacement heifer average weaning weights were similar across all regions. However, average weaning weights of other (nonreplacement) heifers were lower in the East region than in the West region (474 and 510 lb, respectively) or the Central region (502 lb). Average weaning weights for bull and steer calves were lower in the East region (523 lb) than in all other regions.

b. Average weaning weight (lb), by calf group and by region:

Average Weight (lb)										
Region										
Calf Group	West		Central		South Central		East			
	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error
Replacement heifers	540	(6)	537	(4)	534	(8)	532	(3)		
Other heifers	531	(6)	515	(4)	519	(5)	496	(4)		
Bulls and steers	572	(6)	565	(4)	560	(5)	531	(5)		
All	545	(6)	533	(4)	535	(5)	503	(5)		

**2. Weaning age**

The average age of calves at weaning was similar across all herd sizes.

a. Average age (days) of calves at weaning, by herd size:

<b>Average Age (Days)</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>
201.2	(1.9)	207.8	(2.3)	207.7	(2.7)	209.0	(1.8)	206.7	(1.1)

b. Average age (days) of calves at weaning, by region:

<b>Average Age (Days)</b>							
<b>Region</b>							
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>	
<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>	<b>Avg.</b>	<b>Std. Error</b>
211.0	(2.1)	208.3	(1.8)	206.5	(2.7)	199.9	(2.0)

The average weaning age on the majority of operations (75.5 percent) was less than 230 days.

c. Percentage of operations by average weaning age (days):

<b>Average Age (Days)</b>	<b>Percent Operations</b>	<b>Standard Error</b>
Less than 170	12.9	(1.1)
171 to 199	32.2	(1.4)
200 to 229	30.4	(1.4)
230 to 259	14.7	(1.0)
260 to 289	5.7	(0.7)
290 or more	4.1	(0.6)
<b>Total</b>	<b>100.0</b>	

### 3. Factors determining when to wean calves

The majority of operations (53.8 percent) used calf age and/or weight to determine when to wean calves. Tradition was the next most common reason used to determine when to wean calves (11.9 percent of operations).

Percentage of operations by most important factor for determining when to wean calves:

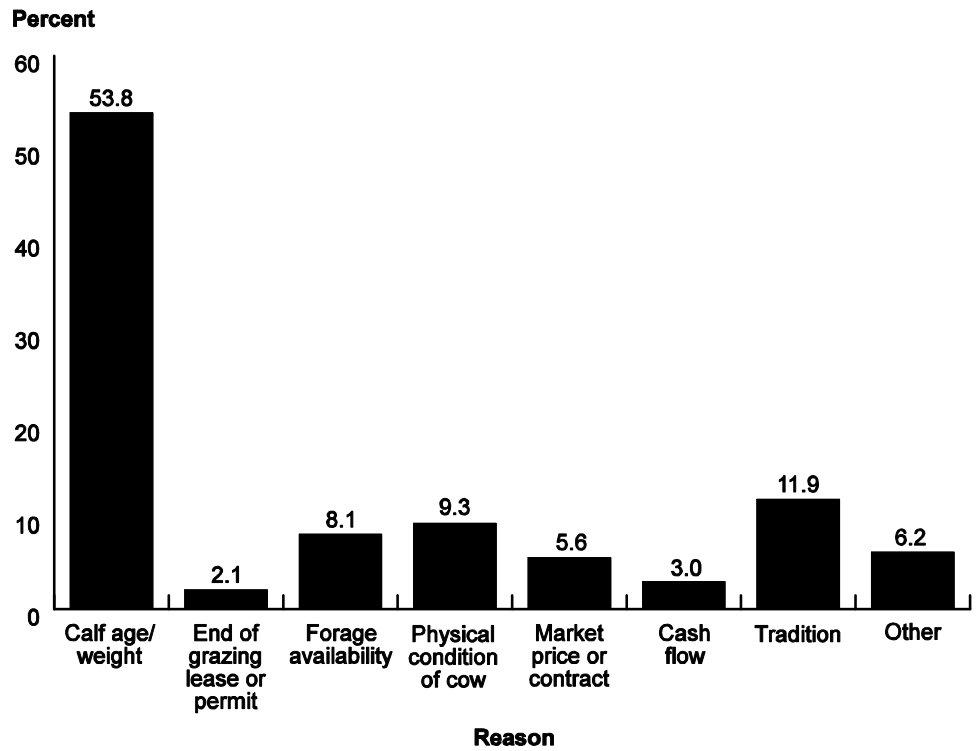
Reason	Percent Operations	Standard Error
Calf age/weight	53.8	(1.4)
End of grazing lease or permit	2.1	(0.3)
Forage availability	8.1	(0.7)
Physical condition of cow	9.3	(0.9)
Market price or contract	5.6	(0.6)
Cash flow	3.0	(0.5)
Tradition	11.9	(0.8)
Other	6.2	(0.7)
Total	100.0	



Photo courtesy of Dr. Dave Dargatz

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**Percentage of Operations by Most Important Factor for Determining When to Wean Calves**



#### 4. Type of calves weaned

The percentages of calves weaned or expected to be weaned in each class were similar across all herd sizes. All herd sizes weaned or expected to wean a higher percentage of heifers than bulls and steers.

Percentage of all calves weaned or expected to be weaned in 2007, by calf group and by herd size:

<b>Percent Calves</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Calf Group</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Replacement heifers	15.2	(0.9)	13.5	(0.9)	13.5	(0.9)	16.3	(0.7)	15.0	(0.4)
Other heifers	38.2	(0.9)	38.1	(1.0)	40.5	(1.1)	35.2	(0.7)	37.4	(0.4)
Bulls and steers	46.6	(0.8)	48.4	(0.7)	46.0	(1.0)	48.5	(0.4)	47.6	(0.3)
Total	100.0		100.0		100.0		100.0		100.0	

#### 5. Information provided to buyers

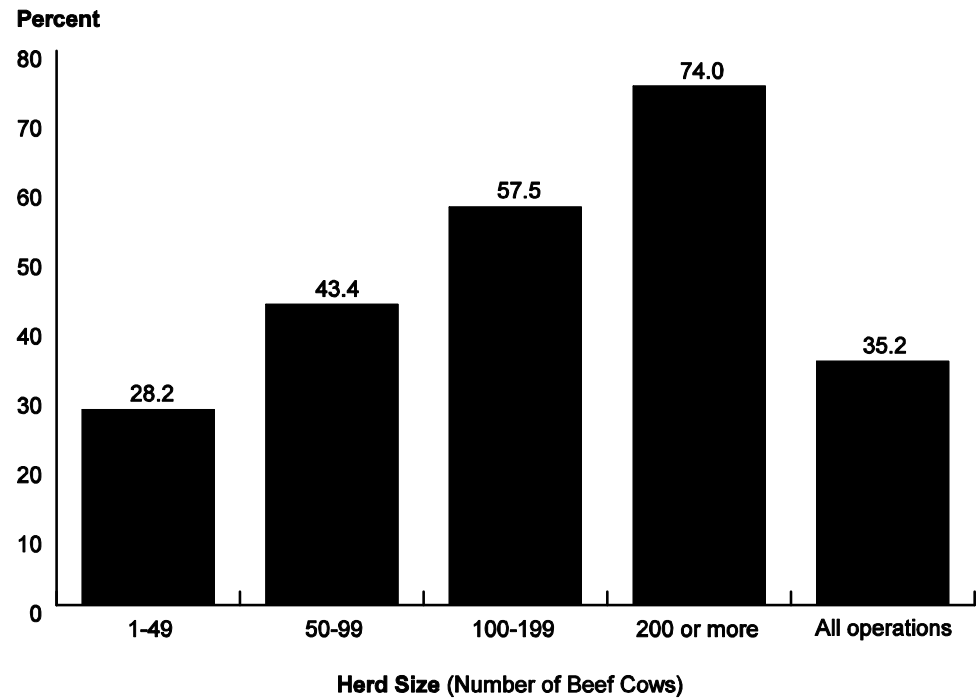
The percentage of operations that usually provided information regarding their calf health program to buyers increased as herd size increased. Large operations may be more likely to provide information if they engage in direct marketing to other industry segments.

a. Percentage of operations that usually provided buyers with information about their calf health programs, by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
	28.2	(1.6)	43.4	(2.7)	57.5	(2.8)	74.0	(2.5)	35.2	(1.2)

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**Percentage of Operations that Usually Provided Buyers with Information About Their Calf Health Programs, by Herd Size**





Of operations that usually reported information to buyers regarding their calf health programs, the percentage that usually provided written documentation ranged from 32.6 percent of operations with 1 to 49 beef cows to 53.1 percent of operations with 200 or more.

b. For operations that usually provided buyers with information about their calf health program, percentage of operations by method used to convey information and by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Method</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Written documentation	32.6	(3.2)	47.6	(4.0)	51.9	(3.6)	53.1	(2.8)	40.2	(2.1)
Told buyer orally	65.1	(3.2)	51.5	(4.0)	47.6	(3.6)	45.4	(2.8)	58.1	(2.1)
Other	2.3	(1.0)	0.9	(0.6)	0.5	(0.3)	1.5	(0.7)	1.7	(0.6)
Total	100.0		100.0		100.0		100.0		100.0	

The percentage of operations in which the same people or companies tended to buy weaned calves from the operation each year increased as herd size increased, ranging from 27.2 percent of operations with 1 to 49 cows to 60.3 percent of operations with 200 or more.

c. Percentage of operations in which the same people or companies tended to buy weaned calves from the operation each year, by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
	27.2	(1.6)	37.1	(2.8)	39.8	(2.8)	60.3	(2.6)	31.5	(1.3)

**6. Forward pricing**

The percentage of operations that marketed calves using forward pricing increased as herd size increased, ranging from 2.3 percent of operations with 1 to 49 beef cows to 15.4 percent of operations with 200 or more. Similarly, the percentage of the 2007 calf crop forward priced ranged from 2.2 percent of the calf crop on operations with 1 to 49 beef cows to 18.7 percent of the calf crop on operations with 200 or more.

a. Percentage of operations (and percentage of 2007 calf crop) using forward pricing of calves, by herd size:

Measure	Percent									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	
	Pct.	Error	Pct.	Error	Pct.	Error	Pct.	Error	Pct.	Error
Operations	2.3	(0.5)	3.1	(0.8)	6.9	(1.3)	15.4	(1.7)	3.5	(0.4)
Calf crop	2.2	(0.6)	3.1	(0.9)	7.6	(1.5)	18.7	(2.1)	9.7	(0.9)

On operations using forward pricing, more than two-thirds of the calf crop was forward priced.

b. For operations that forward priced calves, percentage of calf crop forward priced:

Percent Calf Crop	Standard Error
68.4	(2.6)

For operations that forward priced calves, 63.1 percent forward priced three-fourths or more of the 2007 calf crop.

c. For operations using forward pricing, percentage of operations by percentage of calf crop forward priced:

<b>Percent Calf Crop Forward Priced</b>	<b>Percent Operations</b>	<b>Standard Error</b>
0.1 to 24.9	10.6	(4.3)
25.0 to 49.9	10.3	(3.7)
50.0 to 74.9	16.0	(3.8)
75.0 to 99.9	30.4	(5.4)
100.0	32.7	(6.2)
<b>Total</b>	<b>100.0</b>	

For operations using forward pricing, about two-thirds forward priced some calves using the cash market, while about one-fourth of operations used futures contracts. These percentages were similar for calves.

d. For operations using forward pricing, percentage of operations (and percentage of forward-priced calves), by type of forward pricing used:

<b>Type of Forward Pricing</b>			<b>Percent Forward-priced Calves</b>	
	<b>Percent Operations</b>	<b>Standard Error</b>	<b>Standard Error</b>	
Forward cash	64.9	(5.4)	61.9	(5.7)
Futures contract	25.1	(4.7)	25.4	(4.9)
Options	4.8	(1.6)	4.8	(1.7)
Other	7.5	(3.2)	7.9	(3.4)
<b>Total</b>			<b>100.0</b>	

## D. Beef Quality Assurance Program

### 1. Familiarity

Overall, more than one-half of operations (51.3 percent) had heard of the Beef Quality Assurance (BQA) program. A higher percentage of operations with 200 or more beef cows had heard of the BQA program compared with operations with fewer than 200 beef cows. A lower percentage of operations with 1 to 49 beef cows had heard of the BQA program compared with the other herd sizes.

a. Percentage of operations that had heard of the BQA program, by herd size:

Percent Operations									
Herd Size (Number of Beef Cows)									
1-49		50-99		100-199		200 or More		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
44.3	(1.8)	65.5	(2.7)	69.2	(2.7)	79.0	(2.0)	51.3	(1.4)

The Central region reported the highest percentage of operations that had heard of the BQA program (66.9 percent), while the South Central region reported the lowest percentage of operations that had heard of the BQA program (37.0 percent). The percentage of operations that had heard of the BQA program was similar in the West and East regions (53.9 and 52.2 percent, respectively).

b. Percentage of operations that had heard of the BQA program, by region:

Percent Operations							
Region							
West		Central		South Central		East	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
53.9	(3.9)	66.9	(2.5)	37.0	(2.8)	52.2	(2.3)

Of the 51.3 percent of operations that had heard of the BQA program, approximately one in five (22.2 percent) had attended a BQA meeting or training session. A lower percentage of operations with 1 to 49 cows had attended a BQA meeting or training session compared with operations with 100 or more beef cows.

c. For operations that had heard of the BQA program, percentage of operations that had attended a State or local BQA meeting or training session, by herd size:

<b>Percent Operations</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
17.8	(2.0)	26.4	(3.2)	29.8	(3.1)	35.6	(2.9)	22.2	(1.5)

Of the 51.3 percent of operations that had heard of the BQA program, a higher percentage in the East region (34.8 percent) had attended a meeting or training session compared with operations in the Central or South Central regions (13.2 and 14.7 percent, respectively).

d. For operations that had heard of the BQA program, percentage of operations that had attended a State or local BQA meeting or training session, by region:

<b>Percent Operations</b>							
<b>Region</b>							
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
23.2	(3.8)	13.2	(1.8)	14.7	(3.1)	34.8	(2.9)

## 2. Management practices

More than one in three operations had used each BQA management practice before attending training. The majority of operations that attended BQA training were either using BQA practices or switched to them after training.

For operations that attended BQA training\*, percentage of operations that, as a result of BQA training, changed any of the following management practices to follow BQA recommendations:

Management Practice	Percent Operations						Total
	Changed to BQA Practice After Training		Change Used BQA Practice Before Training		Did Not Change to BQA Practice		
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	
Storage and handling of vaccines	21.8	(2.8)	42.0	(3.6)	36.2	(3.7)	100.0
Use and care of needles and syringes	26.5	(3.0)	40.2	(3.6)	33.3	(3.7)	100.0
Injection site selection (SQ and IM)	44.3	(3.7)	33.6	(3.4)	22.1	(3.3)	100.0
Antibiotic selection and use	21.6	(3.1)	40.9	(3.6)	37.5	(3.7)	100.0
Record keeping	23.8	(3.1)	33.7	(3.4)	42.5	(3.7)	100.0
Cattle handling and transportation	16.9	(2.6)	43.4	(3.6)	39.7	(3.7)	100.0

\*Attended a State or local BQA meeting or training session.

### 3. Certification

Overall, nearly 6 of 10 operations (57.2 percent) that had attended BQA training were BQA certified. A higher percentage of operations with 50 to 99 beef cows (72.9 percent) were certified than were operations with 1 to 49 beef cows (45.7 percent). For all other herd sizes, the percentages of operations that were BQA certified were similar.

a. For operations that attended BQA training\*, percentage of operations that were BQA certified, by herd size:

Percent Operations									
Herd Size (Number of Beef Cows)									
1-49		50-99		100-199		200 or More		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
45.7	(6.2)	72.9	(5.8)	66.3	(5.9)	62.6	(4.6)	57.2	(3.7)

\*Attended a State or local BQA meeting or training session.

The percentages of operations that had attended BQA training and were BQA certified were similar across regions.

b. For operations that attended BQA training\*, percentage of operations that were BQA certified, by region:

Percent Operations							
Region							
West		Central		South Central		East	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
56.4	(9.3)	50.0	(6.9)	35.4	(10.6)	65.7	(5.0)

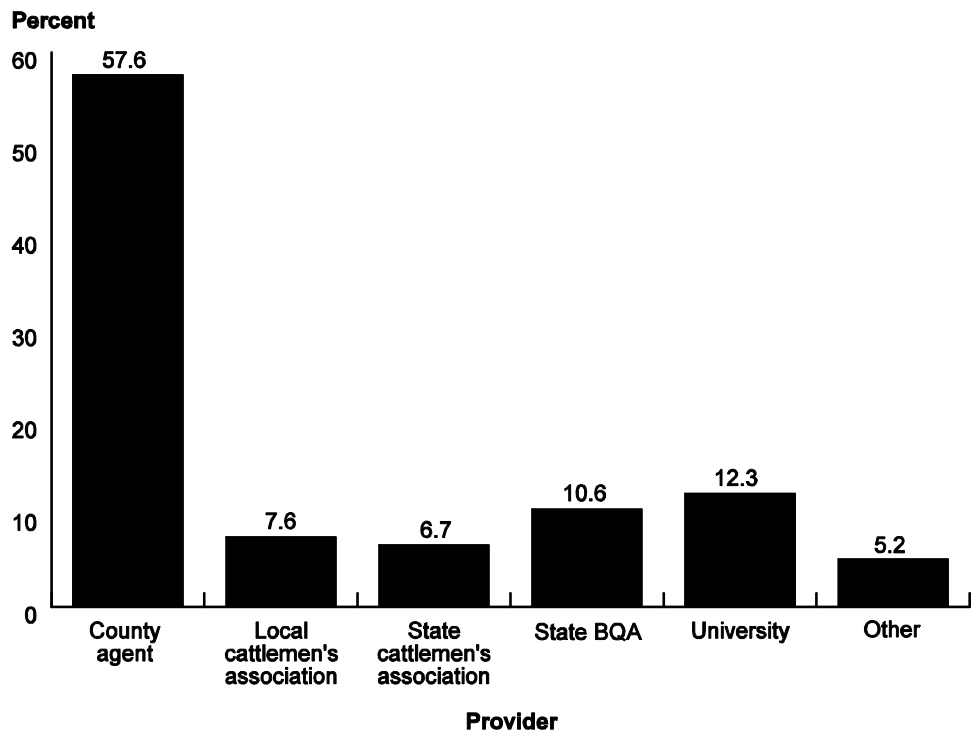
\*Attended a State or local BQA meeting or training session.

A county agent was the primary provider of BQA certification on nearly 6 of 10 operations (57.6 percent) that were BQA certified.

c. For operations that were BQA certified, percentage of operations by primary provider of BQA certification:

Provider	Percent Operations	Standard Error
County agent	57.6	(4.5)
Local cattlemen's association	7.6	(2.3)
State cattlemen's association	6.7	(2.1)
State BQA	10.6	(2.5)
University	12.3	(3.3)
Other	5.2	(1.5)
Total	100.0	

**For Operations that were BQA Certified, Percentage of Operations by Primary Provider of BQA Certification**





More than 5 of 10 operations (51.2 percent) had not heard of the National Beef Quality Audit, and less than 1 of 5 (17.0 percent) reported they knew the basics of the audit or were fairly knowledgeable about it.

d. Percentage of operations by familiarity with the results of the National Beef Quality Audit:

<b>Familiarity</b>	<b>Percent Operations</b>	<b>Standard Error</b>
Have not heard of it before	51.2	(1.4)
Recognize the name, not much else	31.8	(1.3)
Know some basics	12.4	(0.9)
Fairly knowledgeable	4.6	(0.5)
Total	100.0	

**4. Standardized performance analysis**

Less than 1 of 25 operations (3.5 percent) utilized Standardized Performance Analysis (SPA) to determine the profitability of producing beef calves. The percentages of operations that used SPA were similar for all herd sizes.

a. Percentage of operations that used the SPA, sponsored by the National Cattlemen’s Beef Association and the USDA Extension Service, to determine the profitability of producing beef calves, by herd size:

<b>Percent Operations</b>									
<b>Herd Size (Number of Beef Cows)</b>									
<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
3.0	(0.6)	3.9	(1.2)	5.8	(1.3)	6.0	(1.0)	3.5	(0.5)

Across all regions, a similar percentage of operations used SPA to determine the profitability of producing beef calves.

b. Percentage of operations that used the SPA, sponsored by the National Cattlemen’s Beef Association and the USDA Extension Service, to determine the profitability of producing beef calves, by region:

<b>Percent Operations</b>							
<b>Region</b>							
<b>West</b>		<b>Central</b>		<b>South Central</b>		<b>East</b>	
<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>	<b>Percent</b>	<b>Std. Error</b>
4.2	(1.7)	2.0	(0.5)	2.7	(1.0)	5.2	(1.0)

**E. General Management**

**1. Water sources**

A pond was the most common water source for all herd sizes. The percentage of operations that used a pond as a water source ranged from 75.0 percent of operations with 1 to 49 beef cows to 88.5 percent of operations with 200 or more. Across herd sizes, about 3 of 10 operations used a municipal water source. Over half of operations (55.8 percent) used a stream for a water source.

a. Percentage of operations by type of water source and by herd size:

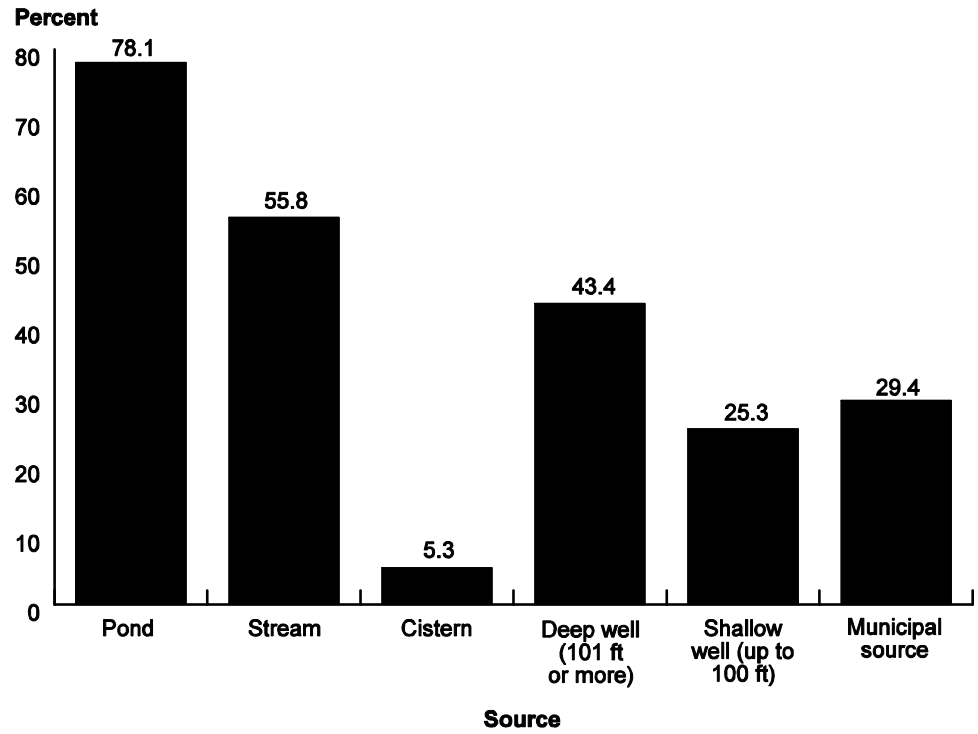
Source	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Pond	75.0	(1.6)	85.4	(2.0)	85.6	(1.9)	88.5	(1.7)	78.1	(1.2)
Stream	52.5	(1.8)	61.2	(2.9)	63.4	(2.8)	75.0	(2.3)	55.8	(1.4)
Cistern	4.5	(0.8)	5.9	(1.2)	6.9	(1.3)	11.9	(1.5)	5.3	(0.6)
Deep well (101 ft or more)	40.1	(1.8)	46.9	(2.9)	52.7	(2.9)	63.6	(2.6)	43.4	(1.4)
Shallow well (up to 100 ft)	21.0	(1.5)	29.3	(2.6)	40.4	(2.7)	50.3	(2.6)	25.3	(1.2)
Municipal source	28.9	(1.6)	30.0	(2.7)	32.3	(2.7)	29.1	(2.5)	29.4	(1.3)



Photo courtesy of Judy Rodriguez

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**Percentage of Operations by Type of Water Source**



The type of water sources used varied by region. A higher percentage of operations in the South Central and East regions (83.9 and 80.6 percent, respectively) used ponds, compared with operations in the West region (63.2 percent). Conversely, a higher percentage of operations in the West region used streams for water (71.2 percent) than did operations in the South Central and East regions (46.7 and 56.8 percent, respectively). A higher percentage of operations in the West region used deep wells for water than did operations in the East region (53.6 and 32.7 percent, respectively), and a higher percentage of operations in the West region used a shallow well than did all other regions. In the East region, only 14.6 percent of operations used a shallow well. A lower percentage of operations in the West region used a municipal water source than did all other regions.

b. Percentage of operations by type of water source and by region:

Percent Operations								
Region								
	West		Central		South Central		East	
Source	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Pond	63.2	(4.0)	73.2	(2.2)	83.9	(2.3)	80.6	(1.8)
Stream	71.2	(3.8)	60.1	(2.6)	46.7	(2.9)	56.8	(2.3)
Cistern	11.9	(2.4)	5.3	(1.2)	5.9	(1.3)	3.1	(0.8)
Deep well (101 ft or more)	53.6	(4.0)	52.8	(2.6)	44.7	(2.9)	32.7	(2.1)
Shallow well (up to 100 ft)	44.7	(3.9)	31.7	(2.2)	26.2	(2.5)	14.6	(1.6)
Municipal source	14.0	(2.9)	29.0	(2.2)	27.1	(2.5)	35.7	(2.2)

Overall, nearly 9 of 10 operations that used a stream or pond for water (87.9 percent) reported that cattle drank directly from the source. This percentage was similar across regions.

c. For operations that used a pond or stream for a water source, percentage of operations in which cattle ever drink directly from the source, by region:

Percent Operations									
Region									
West		Central		South Central		East		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
82.7	(3.3)	85.3	(2.1)	93.3	(1.6)	86.5	(1.7)	87.9	(1.0)

A higher percentage of operations with 1 to 49 beef cows (20.7 percent) cleaned water troughs or containers every 1 to 19 days, compared with operations with 100 to 199, or 200 or more beef cows (9.9 and 9.5 percent of operations, respectively). A higher percentage of operations with 200 or more beef cows cleaned water troughs or containers every 200 or more days compared with operations with 1 to 49 beef cows (36.9 and 22.5 percent, respectively).

d. For operations that used a trough or other separate container, percentage of operations by number of days between cleanings and by herd size:

Percent Operations										
Herd Size (Number of Beef Cows)										
Number of Days Between Cleaning	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
1 to 19	20.7	(2.2)	14.7	(2.8)	9.9	(2.2)	9.5	(2.4)	18.1	(1.6)
20 to 49	17.3	(2.0)	21.8	(3.5)	24.5	(3.5)	15.0	(2.4)	18.5	(1.6)
50 to 99	16.2	(2.0)	15.9	(3.2)	10.6	(2.1)	13.1	(2.4)	15.5	(1.5)
100 to 199	23.3	(2.4)	17.2	(2.9)	22.3	(3.3)	25.5	(3.4)	22.3	(1.7)
200 or more	22.5	(2.3)	30.4	(3.7)	32.7	(3.4)	36.9	(3.4)	25.6	(1.7)
Total	100.0		100.0		100.0		100.0		100.0	

The East region had the highest percentage of operations in which water troughs were cleaned every 1 to 19 days and the lowest percentage of operations in which water troughs were cleaned every 200 or more days.

e. For operations that used a trough or other separate container, percentage of operations by number of days between cleanings and by region:

Number of Days Between Cleaning	Percent Operations							
	Region							
	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
1 to 19	9.0	(3.0)	16.1	(2.7)	12.7	(2.6)	31.1	(3.7)
20 to 49	14.1	(3.8)	21.3	(2.8)	14.3	(2.8)	22.8	(3.2)
50 to 99	21.7	(4.4)	16.9	(2.6)	11.3	(2.6)	16.3	(2.8)
100 to 199	28.2	(4.7)	20.1	(2.8)	26.4	(3.6)	17.0	(3.1)
200 or more	27.0	(3.8)	25.6	(2.8)	35.3	(3.9)	12.8	(2.3)
Total	100.0		100.0		100.0		100.0	

## 2. Grazing

More than 9 of 10 operations (93.7 percent) used their own land for grazing, and of these only 7.8 percent commingled their cattle with cattle from other operations. Although a low percentage of operations grazed their cattle on public land or grazing association land, a relatively high percentage of these operations commingled their cattle (21.7 and 60.7 percent, respectively).

a. Percentage of operations by type of grazing used during the previous 12 months, and percentage of these operations that commingled their cattle with cattle from other operations:

Grazing Type	Percent Operations	Standard Error	Percent Operations That Commingled Cattle	
			Percent Operations	Standard Error
Public land (State or Federal)	4.2	(0.3)	21.7	(3.4)
Grazing association land	0.5	(0.1)	60.7	(13.3)
Leased, private land	30.1	(1.2)	13.0	(1.6)
Own land	93.7	(0.7)	7.8	(0.8)

Across all herd sizes, more than 9 of 10 operations used their own land for grazing. The percentage of operations that grazed cows on public land increased as herd size increased. The percentage of operations that grazed cows on leased, private land ranged from 68.9 percent of operations with 200 or more beef cows to 21.5 percent of operations with 1 to 49 beef cows.

b. Percentage of operations by type of grazing used during the previous 12 months, and by herd size:

<b>Percent Operations</b>								
<b>Herd Size (Number of Beef Cows)</b>								
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>	
<b>Grazing Type</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Public land (State or Federal)	1.5	(0.4)	5.2	(1.0)	11.1	(1.6)	29.3	(2.1)
Grazing association land	0.3	(0.2)	0.3	(0.2)	1.9	(0.8)	3.2	(0.8)
Leased, private land	21.5	(1.5)	46.2	(2.9)	51.4	(2.9)	68.9	(2.4)
Own land	93.1	(0.9)	94.6	(1.2)	96.9	(0.8)	95.2	(1.8)

More than 9 of 10 operations across all regions used their own land for grazing. Operations in the West region reported the highest percentage of grazing on public land (27.1 percent). The percentage of operations that utilized leased private lands for grazing was similar in the West and Central regions (51.3 and 42.9 percent, respectively), which was higher than in the South Central and East regions (25.7 and 19.2 percent, respectively).



c. Percentage of operations by type of grazing used during the previous 12 months, and by region:

Percent Operations								
Region								
Grazing Type	West		Central		South Central		East	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Public land (State or Federal)	27.1	(2.7)	5.6	(0.9)	0.2	(0.1)	0.7	(0.4)
Grazing association land	3.3	(1.0)	0.5	(0.2)	0.0	(--)	0.3	(0.3)
Leased, private land	51.3	(3.9)	42.9	(2.4)	25.7	(2.4)	19.2	(1.7)
Own land	94.9	(1.9)	93.1	(1.5)	94.1	(1.4)	93.5	(1.1)

A higher percentage of operations in the East and South Central regions did not move cattle to a noncontiguous area for grazing (89.5 and 89.5 percent, respectively), compared with operations in the West and Central regions (63.5 and 67.3 percent, respectively). A higher percentage of operations in the West region moved cattle more than 10 miles to grazing areas compared with all other regions. A higher percentage of operations in the Central region moved cattle more than 10 miles to grazing areas compared with operations in the South Central and East regions (4.7 and 2.3 percent, respectively).

d. Percentage of operations by average number of miles (one way) cattle were moved to grazing areas not contiguous with the operation, and by region:

Percent Operations										
Region										
Average Number of Miles	West		Central		South Central		East		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
0 (not moved)	63.5	(3.7)	67.3	(2.2)	89.5	(1.7)	89.5	(1.4)	81.6	(1.0)
0.1 to 0.9	0.9	(0.7)	1.8	(0.8)	0.9	(0.6)	1.0	(0.5)	1.1	(0.3)
1.0 to 3.9	3.8	(1.4)	7.2	(1.3)	2.0	(0.7)	3.3	(0.8)	3.9	(0.5)
4.0 to 9.9	7.8	(2.1)	10.1	(1.4)	2.9	(0.9)	3.9	(0.9)	5.5	(0.6)
10.0 or more	24.0	(3.1)	13.6	(1.5)	4.7	(1.2)	2.3	(0.7)	7.9	(0.7)
Total	100.0		100.0		100.0		100.0		100.0	

The average number of miles cattle were moved to graze was higher for operations in the West region than in any other region.

e. For operations that moved cattle for grazing, operation average number of miles (one way) cattle were moved, by region:

Operation Average Number of Miles									
Region									
West		Central		South Central		East		All Operations	
Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error	Avg.	Std. Error
35.4	(5.7)	14.3	(2.2)	19.1	(4.3)	7.6	(1.5)	17.7	(1.7)

### 3. Fly and rodent control

About 8 of 10 operations (82.0 percent) used fly control during the previous 12 months. Topical products were the most commonly used control method (57.6 percent of operations) followed by environmental fly control (30.5 percent of operations). Treated ear tags were used by only 2 of 10 operations (19.7 percent).

a. Percentage of operations by fly control methods used during the previous 12 months:

Method	Percent Operations	Standard Error
Environmental fly control (sprays, foggers, strips, zippers)	30.5	(1.3)
Topical products (dust bags, dips, sprays, backrubs)	57.6	(1.4)
Treated ear tags	19.7	(1.1)
Biological control (e.g., predator wasps)	1.5	(0.3)
Oral products (e.g., feed troughs)	14.5	(1.0)
Other	0.5	(0.2)
Any	82.0	(1.1)

Nearly two of three operations (65.0 percent) routinely used some kind of rodent control during the previous 12 months. Nearly 5 of 10 operations (48.0 percent) used cats for rodent control, and more than 3 of 10 (31.5 percent) used chemicals or bait.

b. Percentage of operations by rodent control methods used routinely during the previous 12 months:

Method	Percent Operations	Standard Error
Chemicals/bait	31.5	(1.3)
Traps	13.7	(0.9)
Cats	48.0	(1.4)
Other	3.0	(0.5)
Any	65.0	(1.4)

#### 4. Manure disposal

More than 4 of 10 operations (41.6 percent) did not dispose of manure. This relatively high percentage probably represents operations in which at least some cattle grazed on remote sites, and cattle density and manure deposition on these sites were too low to justify spreading or disposing of the manure.

Percentage of operations (and percentage of beef cows on these operations) by method used to dispose of manure:

Disposal Method	Percent Operations	Standard Error	Percent Beef Cows	Standard Error
Drag or harrow pastures	36.7	(1.3)	41.2	(1.3)
Haul and spread onto land used for grazing or forage production for the operation	20.0	(1.0)	29.5	(1.1)
Haul and spread onto other land	13.8	(0.8)	21.0	(1.0)
Other	5.4	(0.7)	4.2	(0.6)
No disposal	41.6	(1.3)	34.1	(1.2)

### 5. Equipment cleaning and sharing

Overall, the majority of operations (85.0 percent) never used the same equipment for manure handling and feed handling. About 1 of 4 operations with 100 to 199 and 200 or more beef cows occasionally used the same equipment for manure and feed handling, (22.5 and 25.3 percent of operations, respectively).

a. Percentage of operations by frequency that equipment used for manure handling was also used to handle feed on the operation, and by herd size:

Percent Operations										
Herd Size (Number of Beef Cows)										
Frequency	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Regularly (at least weekly)	2.6	(0.6)	3.2	(1.0)	6.0	(1.3)	6.9	(2.1)	3.2	(0.4)
Occasionally (less than weekly)	8.6	(0.9)	16.9	(2.0)	22.5	(2.2)	25.3	(2.1)	11.8	(0.8)
Never	88.8	(1.1)	79.9	(2.2)	71.5	(2.4)	67.8	(2.6)	85.0	(0.8)
Total	100.0		100.0		100.0		100.0		100.0	

Across all herd sizes, slightly more than 1 of 10 operations had shared heavy equipment with other livestock operations during the previous 12 months. The percentages of operations that shared heavy equipment were similar across herd sizes.

b. Percentage of operations that shared any heavy equipment (e.g., tractors, feeding equipment, manure spreaders, trailers) with other livestock operations during the previous 12 months, by herd size:

Percent Operations									
Herd Size (Number of Beef Cows)									
1-49		50-99		100-199		200 or More		All Operations	
Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
10.9	(1.1)	14.0	(2.0)	13.6	(1.8)	11.6	(1.6)	11.6	(0.9)

For operations that shared heavy equipment, approximately two of three did so only one to four times per year. The number of times per year that equipment was shared was similar across herd sizes.

c. For operations that shared any heavy equipment with other livestock operations during the previous 12 months, percentage of operations by number of times equipment was shared, and by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
<b>Number of Times</b>	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
1 to 4	66.8	(5.4)	61.9	(7.6)	66.2	(6.9)	66.0	(6.9)	65.8	(3.9)
5 to 9	16.8	(4.4)	16.5	(5.7)	17.0	(5.6)	20.1	(5.9)	16.9	(3.2)
10 or more	16.4	(4.2)	21.6	(6.4)	16.8	(5.5)	13.9	(4.7)	17.3	(3.1)
Total	100.0		100.0		100.0		100.0		100.0	

For operations that shared heavy equipment, approximately one of three (35.6 percent) cleaned shared equipment prior to use. The percentages of operations that cleaned shared equipment prior to use were similar across herd sizes.

d. For operations that shared equipment, percentage of operations that cleaned equipment prior to use, by herd size:

<b>Percent Operations</b>										
<b>Herd Size (Number of Beef Cows)</b>										
	<b>1-49</b>		<b>50-99</b>		<b>100-199</b>		<b>200 or More</b>		<b>All Operations</b>	
	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
	36.1	(5.5)	35.0	(7.9)	32.4	(6.7)	36.2	(7.0)	35.6	(4.0)

For operations that cleaned shared heavy equipment prior to use, 80.0 percent used only water or steam for cleaning. Only 5.0 percent of operations washed and chemically disinfected shared heavy equipment prior to use.

e. For operations that cleaned heavy equipment prior to use, percentage of operations by primary cleaning procedure:

<b>Primary Cleaning Procedure</b>	<b>Percent Operations</b>	<b>Standard Error</b>
Wash equipment with water or steam only	80.0	(5.6)
Chemically disinfect only	2.3	(2.3)
Wash equipment and chemically disinfect	5.0	(2.6)
Other	12.7	(4.9)
<b>Total</b>	<b>100.0</b>	

**6. Natural resource management**

A higher percentage of operations with 200 or more cows kept records of natural resource conditions than did smaller operations. Otherwise, the percentages of operations that used specified natural resource management practices were relatively low and similar across herd sizes.

a. Percentage of operations by specified natural resource management practices, and by herd size:

Management Practice	Percent Operations									
	Herd Size (Number of Beef Cows)									
	1-49		50-99		100-199		200 or More		All Operations	
	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error	Pct.	Std. Error
Restrict access of cattle to flowing-water sources	18.9	(1.5)	19.3	(2.4)	24.3	(2.8)	24.0	(2.3)	19.7	(1.2)
Restrict access of cattle to timber	13.9	(1.4)	14.0	(2.1)	18.2	(2.8)	11.1	(1.7)	14.1	(1.1)
Keep written, computer or pictorial records of natural resource conditions	4.4	(0.8)	9.4	(1.7)	4.4	(1.1)	17.9	(1.9)	5.9	(0.6)

A lower percentage of operations in the South Central region (8.1 percent) restricted access of cattle to flowing water compared with all other regions. A higher percentage of operations in the West region (17.7 percent) kept records of natural resource conditions than did operations in all other regions.

b. Percentage of operations by specified natural resource management practices, and by region:

	Percent Operations							
	Region							
	West		Central		South Central		East	
<b>Natural Resource</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>	<b>Pct.</b>	<b>Std. Error</b>
Restrict access of cattle to flowing-water sources	25.3	(3.4)	25.3	(2.6)	8.1	(1.8)	23.3	(2.0)
Restrict access of cattle to timber	15.3	(3.3)	17.2	(2.3)	9.4	(2.0)	15.4	(1.7)
Keep written, computer, or pictorial records of natural resource conditions	17.7	(2.9)	7.1	(1.3)	4.5	(1.1)	3.1	(0.7)



## Section II: Methodology

### A. Needs Assessment

NAHMS develops study objectives by exploring existing literature and contacting stakeholders about their informational needs and priorities during a needs assessment phase. Stakeholders for NAHMS studies include industry members, allied industry representatives, other government agencies, animal health officials, and many others. The objective of the needs assessment for the NAHMS Beef 2007-08 study was to collect information about the most important health and productivity issues for cow-calf production. A driving force for the needs assessment was the desire of NAHMS to receive as much input as possible from a variety of producers, as well as from industry experts and representatives, veterinarians, extension specialists, universities, and beef organizations. Information was collected via interviews with key industry figures and through a needs assessment survey.

The needs assessment survey was designed to ascertain the most critical information gaps regarding animal health, and health and production management from producers, veterinarians, extension personnel, university researchers, and allied industry groups. The survey, created in SurveyMonkey, was available online from September 9, 2006, through February 15, 2007, and was promoted via electronic newsletters, magazines, and Web sites. Organizations/magazines promoting the study included “Beef Magazine”, “Drovers”, “Feedstuffs”, “Bovine Veterinarian”, and “The National Cattleman”. E-mail messages identifying the online site and asking for input were also sent to State extension personnel as well as State and Federal animal health officials. A total of 94 people completed the questionnaire. Universities/extensions accounted for 41.5 percent of respondents and veterinarians/consultants accounted for 31.9 percent.

Draft objectives for the Beef 2007-08 study, using input from interviews, literature searches, and the online survey, were drafted and circulated to stakeholder groups. Following this review, six final study objectives were identified:

- Describe trends in beef cow–calf health and management practices,
- Evaluate management factors related to beef quality assurance,
- Describe record-keeping practices on cow-calf operations,
- Determine producer awareness of bovine viral diarrhea (BVD) and management practices used for BVD control,
- Describe current biosecurity practices and producer motivation for implementing or not implementing biosecurity practices, and
- Determine the prevalence and antimicrobial resistance patterns of potential food safety pathogens.

## **B. Sampling and Estimation**

### **1. State selection**

The preliminary selection of States to be included in the study was done in October 2006, using the National Agricultural Statistics Service (NASS) "Cattle Report". A goal for NAHMS national studies is to include States that account for at least 70 percent of the animals and producer population in the United States. The initial review of States identified 24 major States representing 87.8 percent of the beef cow inventory and 79.6 percent of the operations with beef cows (cow-calf herds). The States were: Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Virginia, and Wyoming.

A memo identifying the States was provided in November 2006 to the USDA-APHIS-VS CEAH Director and, in turn, the VS Regional Directors. Each Regional Director sought input from the respective States about being included or excluded from the study.

### **2. Operation selection**

The list sampling frame was provided by NASS. Within each State a stratified random sample was selected. The size indicator was the number of beef cows for each operation. NASS selected a sample of beef producers in each State for making their January 1 cattle estimates. The list sample from the January 2007 survey was used as the screening sample. Those producers in the 24 States reporting 1 or more beef cows on January 1, 2007, were included in the sample for contact in October 2007.

### **3. Population inferences**

#### **a. Phase I: General Beef Management Report**

Inferences cover the population of beef producers with at least 1 beef cow in the 24 participating States. As of January 1, 2008, these States accounted for 87.8 percent (28.6 million head) of beef cows and 79.6 percent (603,000) of operations with beef cows in the United States. (See Appendix II for respective data on 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 inferences back to the original population from which the sample was selected.

**C. Data Collection****1. Data collectors and data collection period****a. Phase I: General Beef Management Report**

From October 22 through November 30, 2007, NASS enumerators administered the General Beef Management Report. The interview took slightly over 1 hour.

**D. Data Analysis****1. Phase I: Validation—General Beef Management Report**

Initial data entry and validation for the General Beef Management Report were performed in individual NASS State offices. Data were entered into a SAS data set. NAHMS national staff performed additional data validation on the entire data set after data from all States were combined.

## E. Sample Evaluation

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

A total of 4,001 operations were selected for the survey. Of these operations, 3,648 (91.2 percent) were contacted. There were 2,872 operations that provided usable inventory information (71.8 percent of the total selected and 78.7 percent of those contacted). Of those, there were 2,159 operations (54.0 percent) that provided “complete” information for the questionnaire. Of operations that provided complete information and were eligible to participate in the veterinary medical officer phase of the study (2,159 operations), 1,033 (47.8 percent) consented to be contacted for consideration/discussion about further participation.

Response Category	Number Operations	Percent Operations	Measurement Parameter		
			Contacts	Usable <sup>1</sup>	Complete <sup>2</sup>
Survey complete and Veterinary Services (VS) consent	1,033	25.8	x	x	x
Survey complete, refused VS consent	1,126	28.1	x	x	x
No beef cows on October 1 and July 1, 2007	469	11.7	x	x	
Out of business	244	6.1	x	x	
Out of scope	7	0.2			
Refusal of GBMR	776	19.4	x		
Office hold (NASS elected not to contact)	46	1.2			
Inaccessible	300	7.5			
<b>Total</b>	<b>4,001</b>	<b>100.0</b>	<b>3,648</b>	<b>2,872</b>	<b>2,159</b>
Percent of total operations			91.2	71.8	54.0
Percent of total operations weighted <sup>3</sup>			92.9	77.8	52.1

<sup>1</sup>Usable operation—respondent provided answers to inventory questions for the operation (either zero or positive number on hand).

<sup>2</sup>Survey complete operation—respondent provided answers to all or nearly all questions for at least one operation.

<sup>3</sup>Weighted response—the rate was calculated using the initial selection weights.

## Appendix I: Sample Profile

### Responding Operations

#### 1. Total beef cow inventory, by herd size

<b>Herd Size (Total Beef Cow Inventory)</b>	<b>Number of Responding Operations*</b>
1 to 49	819
50 to 99	386
100 to 199	381
200 or more	573
<b>Total</b>	<b>2,159</b>

\* Respondent provided answers to all or nearly all questions for at least one operation.

#### 2. Number of responding operations, by region

<b>Region</b>	<b>Number of Responding Operations*</b>
West	370
Central	612
South Central	483
East	694
<b>Total</b>	<b>2,159</b>

\* Respondent provided answers to all or nearly all questions for at least one operation.

## Appendix II: U.S. Beef Cow Population and Operations

### Number of cows on January 1, 2008\*

Region	State	Beef Cow Inventory Jan. 1, 2008 (Thousand Head)	Beef Cow Operations 2007
West	California	655	11,200
	Colorado	730	9,900
	Idaho	460	7,100
	Montana	1,523	11,000
	New Mexico	460	5,900
	Oregon	605	11,500
	Wyoming	733	4,800
	Total	5,166	61,400
Central	Iowa	1,015	25,000
	Kansas	1,511	26,000
	Missouri	2,080	54,000
	Nebraska	1,883	20,000
	North Dakota	922	10,500
	South Dakota	1,644	14,500
	Total	9,055	150,000
South Central	Oklahoma	2,053	48,000
	Texas	5,240	130,000
	Total	7,293	178,000
East	Alabama	677	23,000
	Arkansas	943	26,000
	Florida	936	15,500
	Georgia	553	17,500
	Kentucky	1,159	38,000
	Louisiana	513	12,100
	Mississippi	519	18,500
	Tennessee	1,079	42,000
	Virginia	692	21,000
Total	7,071	213,600	
Total (24 States)		28,585	603,000
Percentage of U.S.		87.8	79.6
Total U.S. (50 States)		32,553	757,900

\*Source: NASS Cattle report, February 1, 2008, and NASS Farms, Land in Farms, and Livestock Operations 2007 Summary report, February 2008. An operation is any place having one or more head of beef cows, excluding cows used to nurse calves, on hand at any time during the year.

## Appendix III: Study Objectives and Related Outputs

1. Describe trends in beef cow-calf health and management practices
  - **Part I: Reference of Beef Cow-calf Management Practices, October 2008**
  - Part II: Reference of Beef Cow-calf Management Practices, January 2009
  - Part III: Changes in the U.S. Beef Cattle Industry, 1993-2008, expected March 2009
  - Part V: Reference of Beef Cow-calf Management Practices, expected spring 2009
  - Info sheets, expected spring 2009
2. Evaluate management factors related to beef quality assurance
  - **Part I: Reference of Beef Cow-calf Management Practices, October 2008**
  - Info sheets, expected fall 2008
3. Describe record-keeping practices on cow-calf operations
  - **Part I: Reference of Beef Cow-calf Management Practices, October 2008**
  - Part III: Changes in the U.S. Beef Cattle Industry, 1993-2008, expected March 2009
4. Determine producer awareness of bovine viral diarrhea (BVD) and management practices used for BVD control
  - Part IV: Reference of Beef Cow-calf Health and Health Management, expected spring 2009
  - BVD Control on U.S. Beef Cow-calf Operations, Interpretive Report, expected spring 2009
  - Info sheets, expected spring 2009
5. Describe current biosecurity practices on cow-calf operations
  - Part IV: Reference of Beef Cow-calf Health and Health Management, expected spring 2009
6. Determine the prevalence and antimicrobial resistance patterns of potential food-safety pathogens
  - Info sheets, expected spring 2009

