Part III:
Beef Cow/Calf Health Management

Beef
CHAPA
Cow/Calf Health & Productivity Audit

NAHMS

January 1994

Acknowledgements

This report has been prepared from material received and analyzed by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS).

The Beef Cow/Calf Health and Productivity Audit was a cooperative effort between State and Federal animal health officials, university researchers, and extension personnel. We want to thank the State and Federal Veterinary Medical Officers (VMO's) who visited the farms and collected the data for their hard work and dedication to the National Animal Health Monitoring System (NAHMS).

The roles of the producer, Area Veterinarian in Charge (AVIC), NAHMS Coordinator, Veterinary Medical Officer (VMO), Animal Health Technician (AHT), and enumerators from the National Agricultural Statistics Service (NASS) were critical in providing quality data for this report. All participants are to be commended for their efforts, particularly the producers whose voluntary efforts made the study possible.

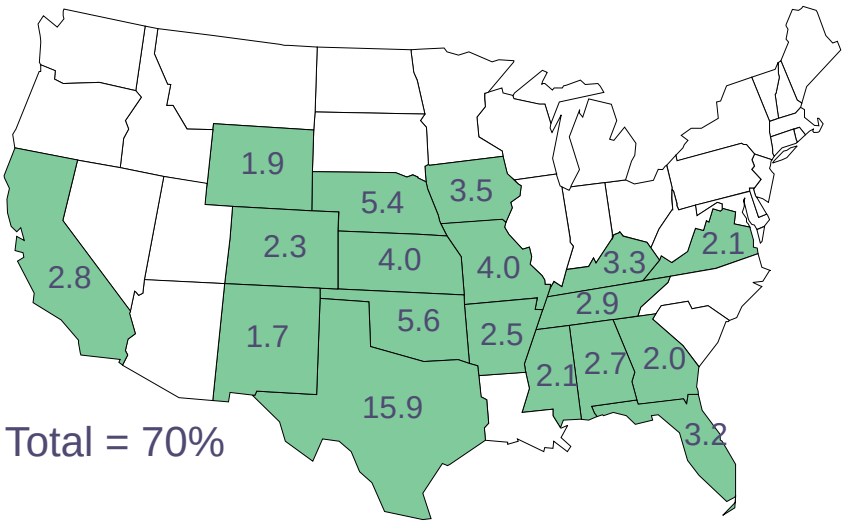
Introduction

As part of the National Animal Health Monitoring System (NAHMS), USDA:APHIS: Veterinary Services conducted a National study of beef production designed to provide both participants and the industry with information on cow/calf health, productivity, and management practices. The National Agricultural Statistics Service (NASS) collaborated with USDA:APHIS:VS to select a producer sample that was statistically designed to provide inferences about the nation's cow/calf population. Data were collected and results released as described below:

- Initially, NASS enumerators contacted producers in the 48 continental States by computer-assisted telephone interview and asked them a series of questions about management practices and the health of their animals. The 3,397 cow/calf producers participating represented all U.S. cow/calf operations. Results of NASS contacts for the Beef Cow/Calf Health and Productivity Audit were released in August 1993 as *Part I: Beef Cow/Calf Herd Management Practices in the United States.*

- Part II was released in November 1993. NASS enumerators collected data for *Part II: Nutritional & Reproductive Management Practices* from November 9 through December 4, 1992, by personal interview from a subset of producers responding to the first NASS contact. The 799 producers participating in this portion of the study were required to have five or more beef cows (or beef replacement heifers) and 50 percent or more of the 1992 calf crop born between January 1 and June 30, 1992. Data collection was limited to 18 of the largest cow/calf-producing States (shown below). The 18 States with producers participating represented 70 percent of the U.S. beef cow/calf operations. The target population represented:

States Participating in Data Collection for Parts II and III of the Beef CHAPA Study Results and Percent of U.S. Cow/Calf Operations Represented



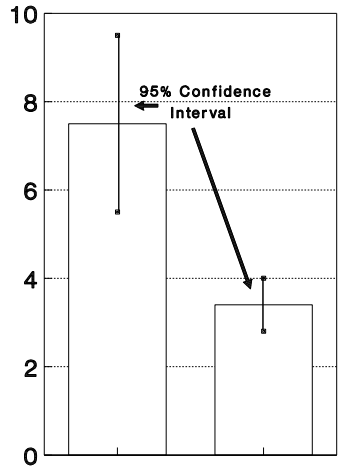
- 49 percent of beef cows in the U.S.
- 42 percent of beef operations in the U.S.
- 71 percent of beef cows on predominantly spring calving beef operations in the U.S. with 5 or more beef cows (or replacement heifers).
- 75 percent of predominantly spring calving beef operations in the U.S. with 5 or more beef cows (or replacement heifers).

- Data for this report, *Part III: Beef Herd Health Status,* were collected from 540 producers from the subset described above. Federal and State Veterinary Medical Officers (VMO's) conducted personal interviews with the producers between January 4 and February 28, 1993.

Descriptive tables in this report are divided into two parts:

- The **Sample Profile** contains descriptive results from only the subset of operations that completed the personal interview.
- **National Population Estimates Based on Data Collected** are population estimates, such as averages and proportions which have been weighted to represent the National cow/calf population. Most of the estimates are provided with a measure of variability called the standard error and denoted by (±). Chances are 95 out of 100 that the interval created by the estimate plus or minus two standard errors will contain the true population value. In the example at right, an estimate of 7.5 with a standard error of ±1.0 results in a range of 5.5 to 9.5 (two times the standard error above and below the estimate).

Examples of 95% Confidence Intervals



(±1.0) (±0.3)
Standard Errors

Subsequent Beef CHAPA activities collected additional data from these same producers in the 18 States. Additional Beef CHAPA National results will be released as they are completed. If you have questions about this report contact NAHMS at:

Center for Animal Health Monitoring
USDA:APHIS:VS
555 South Howes, Suite 200
Fort Collins, Colorado 80521
(303) 490-7800

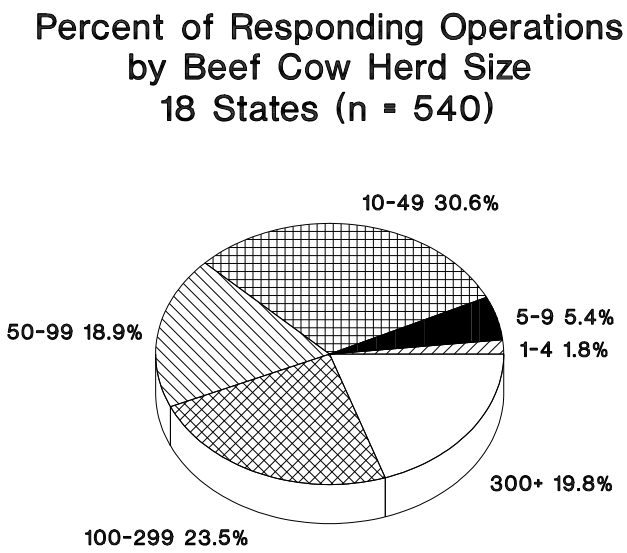
Part III: A. Participant Profile[1]

1. Descriptive statistics of responding operations
   a. Beef cow herd size (as of 1/1/93):

	Number of Operations
1-4	10
5-9	29
10-49	165
50-99	102
100-299	127
300+	107
Total	540

   b. Beef cows reported in sample operations:

Number of Cows
174,513



1 Actual study sample values; not population estimates.

Part III: B. Population Estimates Based on Data Collected

1. Bull management

a. Percent of operations (and percent of all cows on these operations) removing bulls from the female breeding herd for at least one estrus cycle (21 days) during 1992 to manipulate calving dates:

Percent of Operations	Standard Error	Percent of Beef Cow Inventory	Standard Error
46.8	(±3.7)	64.5	(±3.2)

b. Percent of operations removing bulls from female breeding herd by beef cow herd size:

Beef Cow Herd Size	Percent of Operations	Standard Error
1-19	41.5	(±7.6)
20-49	37.0	(±5.7)
50-99	60.9	(±7.3)
100-299	74.4	(±5.9)
300+	92.8	(±3.4)

c. Percent of operations which purchased, leased, or borrowed bulls in the last 12 months:

Percent of Operations	Standard Error
48.5	(±3.6)

i. For operations that purchased, leased, or borrowed bulls, percent of these operations (and cows and bulls on these operations) semen testing and/or scrotal measuring these bulls:

Procedure	Percent of Operations	Stand. Error	Percent of Cows	Stand. Error	Percent of Bulls	Stand. Error
Semen tested	47.0	(±5.0)	68.2	(±3.9)	66.5	(±4.5)
Scrotal measured	31.3	(±4.6)	55.4	(±4.6)	53.7	(±5.0)

ii. For operations that purchased, leased, or borrowed bulls, percent that added bulls older than 18 months or no longer considered virgin:

Percent of Operations	Standard Error
60.6	(±5.0)

iii. For operations that introduced bulls older than 18 months or no longer considered virgin, percent of operations testing all these bulls for *Trichomonas fetus*:

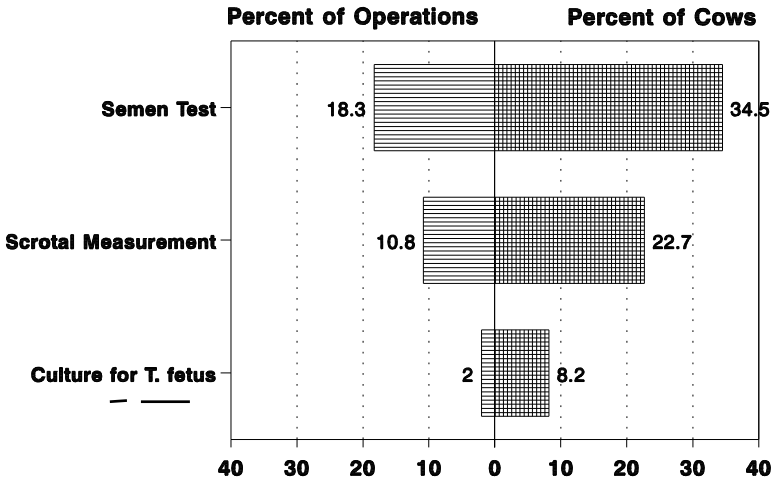
Percent of Operations	Standard Error
4.4	(±2.3)

1. Bull management (continued)

d. Prior to the last breeding season and excluding bulls purchased, leased, or borrowed, percent of operations (and all cows and bulls on these operations) performing the following procedures on bulls:

Procedure	Percent of Operations	Stand. Error	Percent of Cows	Stand. Error	Percent of Bulls	Stand. Error
Semen tested	18.3	(±2.7)	34.5	(±3.9)	37.3	(±4.4)
Scrotal measured	10.8	(±1.9)	22.7	(±3.3)	28.1	(±4.2)
Culture for Trichomonas fetus	2.0	(±1.1)	8.2	(±3.0)	7.9	(±3.0)

% Operations & Cows on These Operations Performing Selected Procedures on Bulls*



*Prior to last breeding season & excluding bulls purchased, leased, or borrowed.

i. Percent of operations testing for Trichomonas fetus (and cows and bulls on those operations) that had one or more positive cultures:

Percent of Operations	Stand. Error	Percent of Cows	Stand. Error	Percent of Bulls	Stand. Error
0.2	(±0.2)	0.7	(±0.7)	0.4	(±0.3)

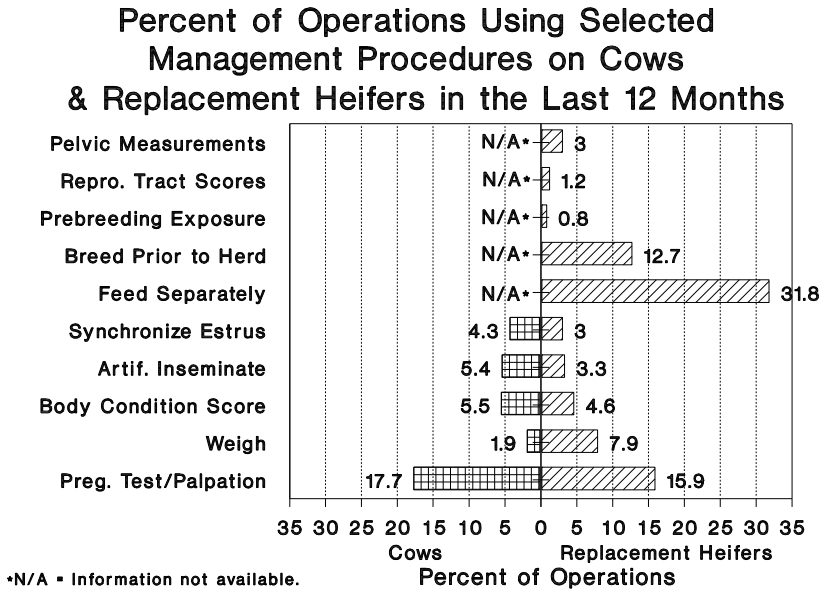
2. Replacement heifer and cow management

a. Percent of operations using the following reproductive management procedures on replacement heifers in the last 12 months:

Procedure	Percent of Operations	Standard Error
Pelvic measurements	3.0	(±0.9)
Reproductive tract scores	1.2	(±0.4)
Weigh	7.9	(±1.3)
Prebreeding exposure to gomer cow or gomer/teaser bull	0.8	(±0.4)
Synchronize estrus	3.0	(±0.7)
Artificially inseminate	3.3	(±0.7)
Breed replacement heifers at least 2 weeks prior to the rest of the herd	12.7	(±2.1)
Body condition score	4.6	(±1.3)
Pregnancy test by palpation	15.9	(±2.3)
Feed replacement heifers separately from the rest of the herd	31.8	(±3.2)

b. Percent of operations using the following management procedures on cows in the last 12 months:

Procedure	Percent of Operations	Standard Error
48-hour calf removal	2.8	(±0.9)
Flushing (feeding cows and heifers more or better quality feed prior to breeding)	13.8	(±2.5)
Synchronize estrus	4.3	(±1.5)
Artificially inseminate	5.4	(±1.2)
Body condition score	5.5	(±1.2)
Weigh	1.9	(±0.7)
Pregnancy test by palpation	17.7	(±2.1)



3. Calves weaned in 1992 - average weight and value at weaning

   a. Operation average weaning weight and value per head[1]:

	Weaning Weight		Value	
	Average Pounds	Standard Error	Average Dollars	Standard Error
Calves	483.2	(±5.8)	419.32	(±5.53)

   b. Average weaning weight and value per head:[2]

	Weaning Weight		Value	
	Average Pounds	Standard Error	Average Dollars	Standard Error
Calves	502.4	(±4.4)	451.15	(±5.15)

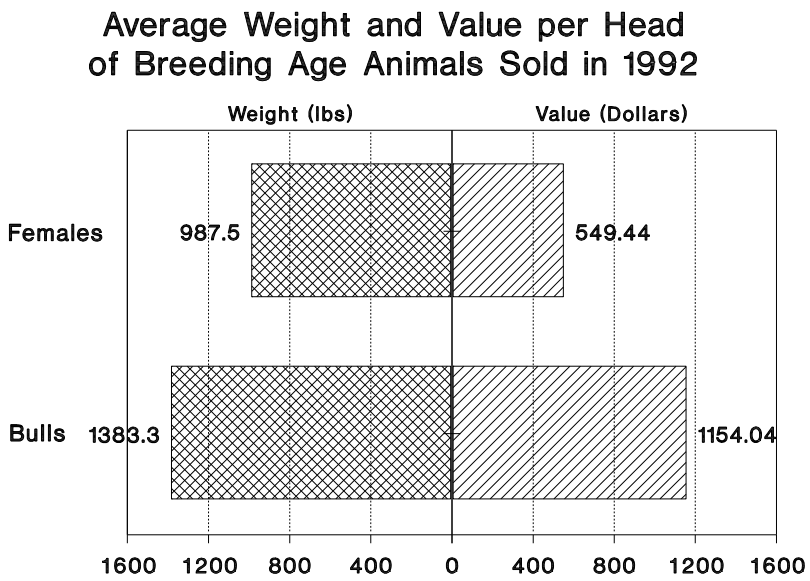
4. Breeding-age animals (culls and replacements) sold in 1992

   a. Operation average weight and value per head for[1]:

	Weight		Value	
	Average Pounds	Standard Error	Average Dollars	Standard Error
Breeding-age females sold	983.0	(±17.7)	491.39	(±11.19)
Breeding-age bulls sold	1,493.7	(±42.0)	967.92	(±28.76)

   b. Average weight and value per head for[2]:

	Weight		Value	
	Average Pounds	Standard Error	Average Dollars	Standard Error
Breeding-age females sold	987.5	(±11.5)	549.44	(±10.95)
Breeding-age bulls sold	1,383.3	(±39.9)	1,154.04	(±52.92)



1 Average weight and value was first calculated for each operation, then an average (of the operation averages) was calculated across all operations.

2 Reported number of head, total weight, and total value were summed over all operations, then per head weight and value derived.

4. Breeding-age animals sold in 1992 (continued)

c. For operations that culled one or more breeding-age females during 1992, operation average percent sold for each of the following reasons:

Reason	Average Percent	Standard Error
Pregnancy status (open or aborted)	18.5	(±2.5)
Other reproductive problems (other than open or aborted)	5.7	(±1.9)
Physical unsoundness (injury or lame)	4.2	(±1.4)
Digestive problem	1.7	(±1.1)
Respiratory problem	0.1	(±0.1)
Udder problem	5.2	(±2.2)
Producing poor calves	3.1	(±0.9)
Bad eye(s)	4.6	(±1.7)
Age/bad teeth	35.2	(±3.9)
Temperament	6.0	(±2.0)
Economics (drought, market, herd reduction)	8.0	(±2.1)
Other	7.7	(±1.6)
Total	100.0	

5. Death loss and health concerns

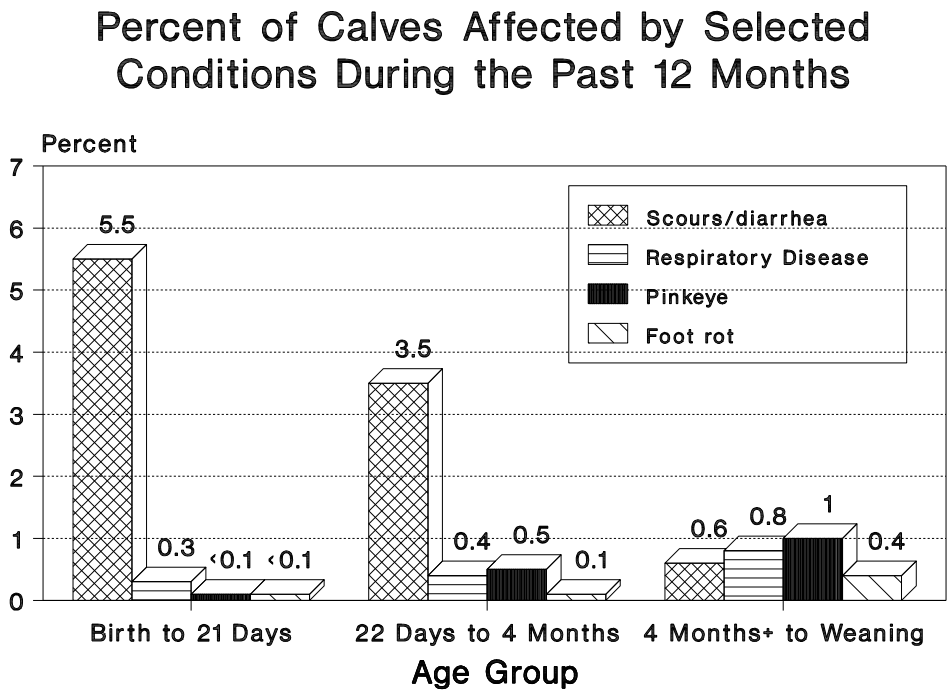
a. Operation average percent of calves affected during the 12 months prior to the study by the following conditions:

	Birth to 21 Days		22 Days to 4 Months		Over 4 Months Until Weaning	
Condition	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
Scours/diarrhea	5.6	(±1.6)	3.0	(±0.8)	0.3	(±0.1)
Respiratory disease	0.2	(±0.1)	0.2	(±0.1)	0.4	(±0.1)
Pinkeye	<0.1	(±0.0)	1.1	(±0.6)	1.6	(±0.5)
Foot rot	<0.1	(±0.0)	0.3	(±0.2)	0.2	(±0.1)

5. Death loss and health concerns (continued)

b. Percent of calves affected during the past 12 months by the following conditions:

	Birth to 21 Days		22 Days to 4 Months		Over 4 Months Until Weaning	
Condition	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
Scours/diarrhea	5.5	(±1.3)	3.5	(±0.6)	0.6	(±0.3)
Respiratory disease	0.3	(±0.1)	0.4	(±0.1)	0.8	(±0.2)
Pinkeye	<0.1	(±0.0)	0.5	(±0.1)	1.0	(±0.2)
Foot rot	<0.1	(±0.0)	0.1	(±0.0)	0.4	(±0.2)



5. Death loss and health concerns (continued)

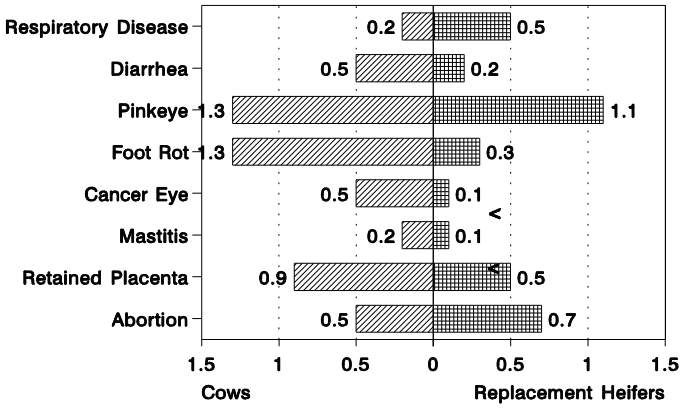
c. Operation average percent of cows and replacement heifers affected during the past 12 months by the following conditions:

Condition	Cows Percent	Cows Stand. Error	Replacement Heifers Percent	Replacement Heifers Stand. Error
Respiratory disease	0.2	(±0.1)	0.4	(±0.1)
Diarrhea	1.0	(±0.6)	0.6	(±0.5)
Pinkeye	2.7	(±0.9)	1.2	(±0.5)
Foot rot	1.6	(±0.6)	0.3	(±0.2)
Cancer eye	0.6	(±0.2)	<0.1	(±0.0)
Mastitis	0.4	(±0.2)	<0.1	(±0.0)
Retained placenta or uterine infection	0.8	(±0.2)	0.1	(±0.0)
Abortion	0.5	(±0.2)	0.3	(±0.1)

d. Percent of cows and replacement heifers affected during the past 12 months by the following conditions:

Condition	Cows Percent	Cows Stand. Error	Replacement Heifers Percent	Replacement Heifers Stand. Error
Respiratory disease	0.2	(±0.1)	0.5	(±0.2)
Diarrhea	0.5	(±0.2)	0.2	(±0.1)
Pinkeye	1.3	(±0.2)	1.1	(±0.4)
Foot rot	1.3	(±0.4)	0.3	(±0.1)
Cancer eye	0.5	(±0.1)	<0.1	(±0.0)
Mastitis	0.2	(±0.1)	<0.1	(±0.0)
Retained placenta or uterine infection	0.9	(±0.1)	0.5	(±0.2)
Abortion	0.5	(±0.1)	0.7	(±0.2)

Percent of Cows and Replacement Heifers Affected by Selected Conditions During the Past 12 Months, 1992

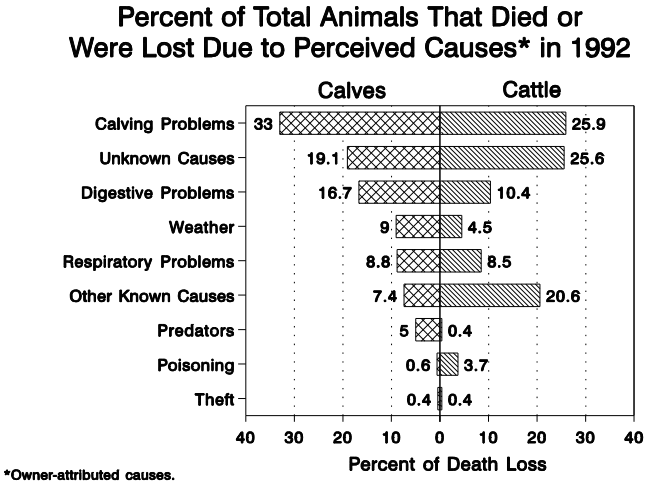


	Percent of Calf Crop	Standard Error
e. Calf death loss during 1992 (calves weighing less than 500 pounds died or lost) as a percent of calf crop:	4.4	(±0.3)
	Percent of Cattle Inventory	**Standard Error**
f. Cattle deaths during 1992 (cattle weighing 500 pounds or more died/lost) as a percent of total inventory:	1.0	(±0.1)

5. Death loss and health concerns (continued)

g. Percent of total animals that died or were lost due to the following:

Perceived Cause[1]	% of Total Calf Death Loss	Stand. Error	% of Total Cattle Death Loss	Stand. Error
Digestive problems (e.g., bloat, scours, parasites)	16.7	(±2.6)	10.4	(±2.7)
Respiratory problems (e.g., pneumonia, shipping fever)	8.8	(±1.4)	8.5	(±2.2)
Weather (e.g., lightning, drowning, chilling)	9.0	(±1.6)	4.5	(±0.9)
Calving problems	33.0	(±2.9)	25.9	(±4.3)
Poisoning (e.g., nitrates, fescue, noxious weeds, feed)	0.6	(±0.3)	3.7	(±1.9)
Predators	5.0	(±1.1)	0.4	(±0.2)
Theft	0.4	(±0.2)	0.4	(±0.2)
Other known causes (e.g., lameness)	7.4	(±1.8)	20.6	(±3.4)
Unknown causes	19.1	(±1.9)	25.6	(±3.6)
Total	100.0		100.0	



h. Calf death loss by cause as a percent of calf crop:

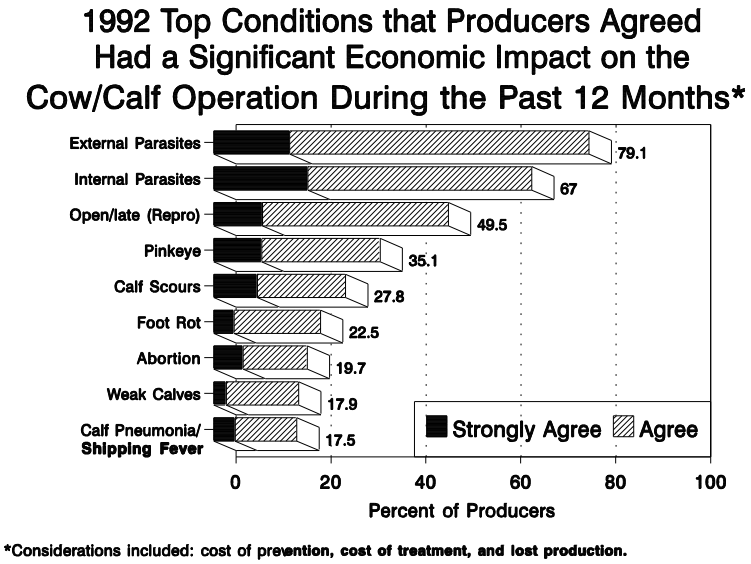
Perceived Cause[1]	Percent of Calf Crop	Standard Error
Digestive problems (e.g., bloat, scours, parasites)	0.7	(±0.1)
Respiratory problems (e.g., pneumonia, shipping fever)	0.4	(±0.1)
Weather (e.g., lightning, drowning, chilling)	0.4	(±0.1)
Calving problems	1.5	(±0.2)
Poisoning (e.g., nitrates, fescue, noxious weeds, feed)	<0.1	(±0.0)
Predators	0.2	(±0.1)
Theft	<0.1	(±0.0)
Other known causes (e.g., lameness)	0.3	(±0.1)
Unknown causes	0.8	(±0.1)

1 Owner-attributed cause of death.

6. Producer opinions on beef health

a. Opinions on health conditions that had a significant economic impact on the cow/calf operation in the last 12 months. Considerations included the cost of prevention, cost of treatment, and lost production:

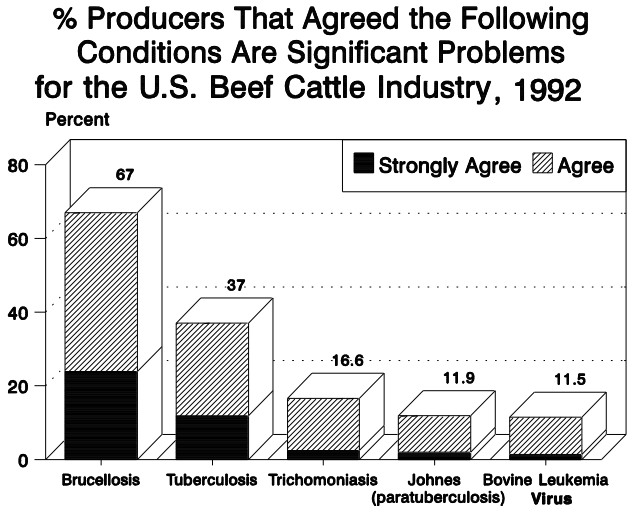
	Percent of Operations										
Conditions	Strongly Agree	Stand. Error	Agree	Stand. Error	Disagree	Stand. Error	Strongly Disagree	Stand. Error	No Opinion	Stand. Error	Total
Parasites											
Internal	19.8	(±2.9)	47.2	(±3.8)	22.7	(±3.3)	5.8	(±1.9)	4.5	(±1.4)	100.0
External	16.0	(±2.3)	63.1	(±3.4)	13.7	(±2.3)	3.5	(±1.4)	3.7	(±1.4)	100.0
Digestive											
Calf scours	9.2	(±1.9)	18.6	(±3.1)	44.7	(±3.8)	19.6	(±3.3)	7.9	(±2.3)	100.0
Bloat	1.5	(±0.8)	5.2	(±1.2)	52.1	(±3.8)	28.3	(±3.5)	12.9	(±2.7)	100.0
Ulcers (abomasal/ stomach)	0.5	(±0.2)	2.4	(±1.0)	45.6	(±3.9)	32.7	(±3.7)	18.8	(±3.0)	100.0
Coccidiosis	2.6	(±0.9)	10.2	(±2.3)	46.0	(±3.8)	23.0	(±3.2)	18.1	(±3.1)	100.0
Reproductive											
Open/late	10.3	(±2.1)	39.2	(±3.9)	31.7	(±3.6)	10.5	(±2.4)	8.3	(±2.4)	100.0
Abortion	6.2	(±1.6)	13.5	(±2.5)	48.4	(±3.9)	20.8	(±3.1)	11.1	(±2.7)	100.0
Weak calves	2.6	(±1.0)	15.3	(±2.8)	55.5	(±4.0)	18.9	(±3.1)	7.7	(±2.1)	100.0
Retained placenta/ uterine infect.	2.7	(±1.0)	14.1	(±2.3)	55.6	(±4.0)	17.3	(±3.0)	10.3	(±2.4)	100.0
Respiratory											
Calf pneumonia/ shipping fever	4.5	(±1.3)	13.0	(±2.4)	53.8	(±4.0)	19.3	(±3.1)	9.4	(±2.4)	100.0
Cow asthma	1.7	(±1.3)	3.5	(±1.1)	49.8	(±3.9)	23.8	(±3.3)	21.2	(±3.3)	100.0
Plant-related											
Fescue	2.6	(±0.9)	7.4	(±1.6)	50.3	(±3.9)	23.8	(±3.3)	15.9	(±2.8)	100.0
Nitrate	1.5	(±0.6)	2.5	(±0.6)	55.3	(±4.0)	24.5	(±3.4)	16.2	(±2.9)	100.0
Larkspur	0.7	(±0.5)	0.7	(±0.2)	44.9	(±3.8)	26.4	(±3.3)	27.3	(±3.3)	100.0
Other plant-related problems	1.6	(±0.6)	5.3	(±1.7)	46.3	(±3.8)	25.9	(±3.2)	20.9	(±3.0)	100.0
Other											
Pinkeye	10.1	(±2.2)	25.0	(±3.2)	41.4	(±3.7)	17.1	(±3.0)	6.4	(±1.9)	100.0
Foot rot	4.3	(±1.6)	18.2	(±2.6)	51.0	(±4.0)	18.7	(±3.2)	7.8	(±2.1)	100.0
White muscle disease (selenium/vitamin E deficiency)	0.8	(±0.3)	3.2	(±1.0)	42.6	(±3.8)	21.5	(±3.3)	31.9	(±3.6)	100.0
Copper deficiency	0.8	(±0.3)	2.8	(±1.1)	39.0	(±3.7)	19.3	(±2.9)	38.1	(±3.7)	100.0
Anaplasmosis	2.3	(±1.1)	2.9	(±1.1)	38.5	(±3.7)	22.5	(±2.9)	33.8	(±3.5)	100.0
Grass tetany	3.9	(±1.5)	10.0	(±1.7)	50.9	(±4.0)	20.9	(±3.3)	14.3	(±2.7)	100.0



6. Producer opinions on beef health (continued)

b. Opinions on the following conditions that are significant problems for the beef cattle industry of the U.S.:

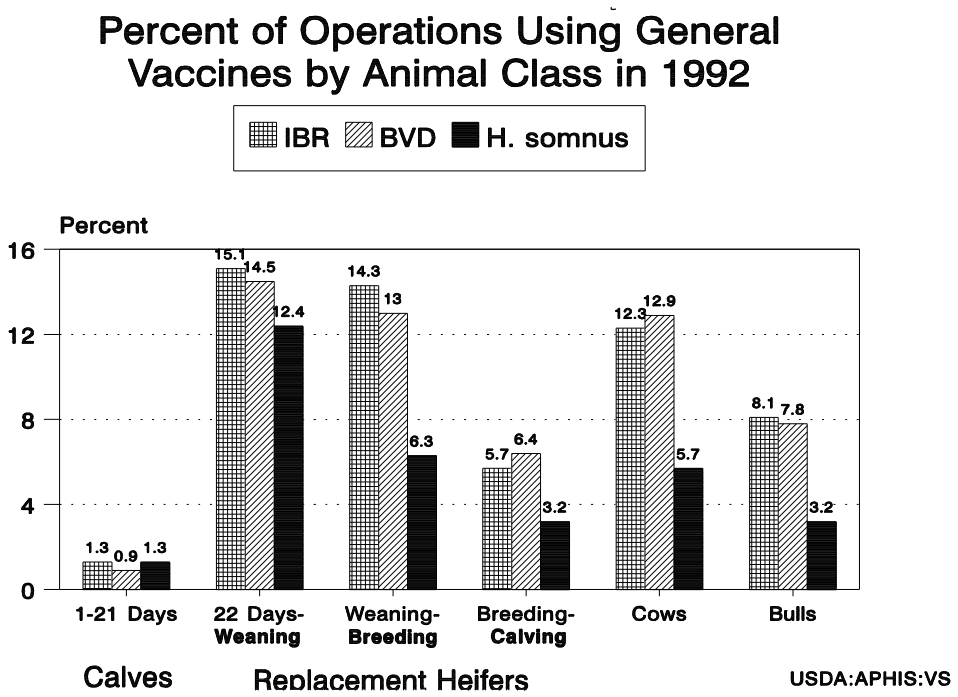
	Percent of Operations										
Conditions	Strongly Agree	Stand. Error	Agree	Stand. Error	Disagree	Stand. Error	Strongly Disagree	Stand. Error	No Opinion	Stand. Error	Total
Tuberculosis	11.9	(±2.4)	25.1	(±3.1)	21.4	(±2.9)	5.1	(±1.6)	36.5	(±3.6)	100.0
Brucellosis	23.9	(±3.2)	43.1	(±3.7)	15.5	(±2.7)	2.5	(±1.1)	15.0	(±2.8)	100.0
Trichomoniasis	2.5	(±0.6)	14.1	(±2.6)	12.8	(±2.2)	2.9	(±1.1)	67.7	(±3.3)	100.0
Johnes disease (para-tuberculosis)	2.0	(±1.0)	9.9	(±2.3)	13.1	(±2.2)	3.9	(±1.5)	71.1	(±3.2)	100.0
Bovine leukemia virus infection	1.4	(±0.6)	10.1	(±2.2)	14.4	(±2.4)	3.3	(±1.0)	70.8	(±3.0)	100.0



7. Vaccine useage

a. Percent of operations using the following vaccines in the last 12 months:

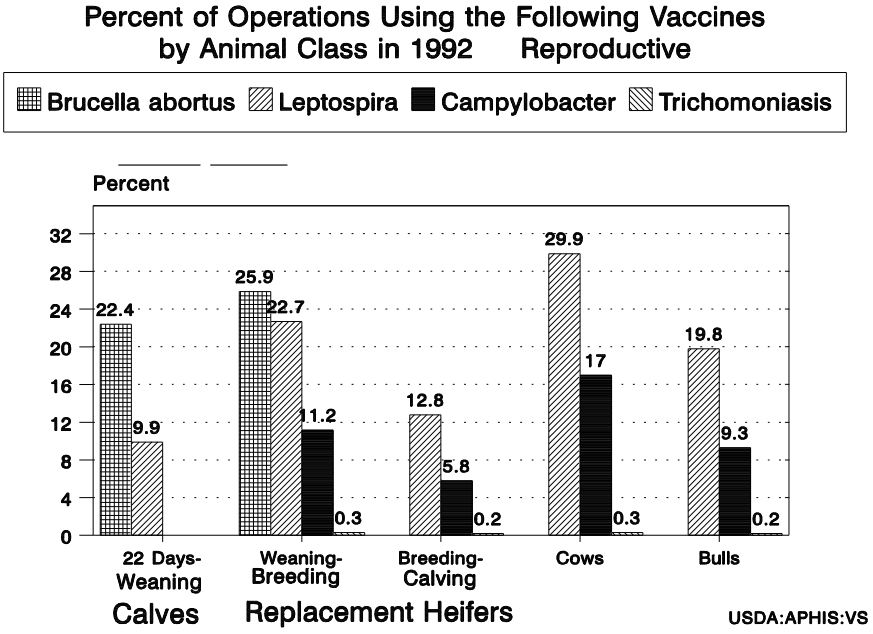
	Percent of Operations					
	Calves		Replacement Heifers			
Vaccine	1 to 21 Days	22 Days to Weaning	Weaning Through Breeding	After Breed. Through Calving	Cows	Bulls
General:						
IBR (rednose, infectious bovine rhinotracheitis)	1.3	15.1	14.3	5.7	12.3	8.1
Standard Error	(±0.9)	(±1.9)	(±2.2)	(±1.4)	(±2.2)	(±1.7)
BVD (bovine viral diarrhea)	0.9	14.5	13.0	6.4	12.9	7.8
Standard Error	(±0.8)	(±1.8)	(±2.1)	(±1.6)	(±2.3)	(±1.8)
Hemophilus somnus	1.3	12.4	6.3	3.2	5.7	3.2
Standard Error	(±0.8)	(±1.7)	(±1.3)	(±1.3)	(±1.6)	(±1.3)



Respiratory:						
PI3 (parainfluenza virus)	1.2	14.0	11.3	4.5	8.8	7.0
Standard Error	(±0.9)	(±1.8)	(±1.8)	(±1.4)	(±1.8)	(±1.7)
BRSV (bovine respiratory syncitial virus)	<0.1	10.7	9.4	3.2	6.1	4.5
Standard Error	(±0.0)	(±1.5)	(±1.7)	(±1.1)	(±1.6)	(±1.4)
Pasteurella	0.1	4.4	2.5	1.4	1.9	1.6
Standard Error	(±0.1)	(±1.2)	(±0.6)	(±0.9)	(±1.0)	(±0.9)

7. Vaccine useage (continued)

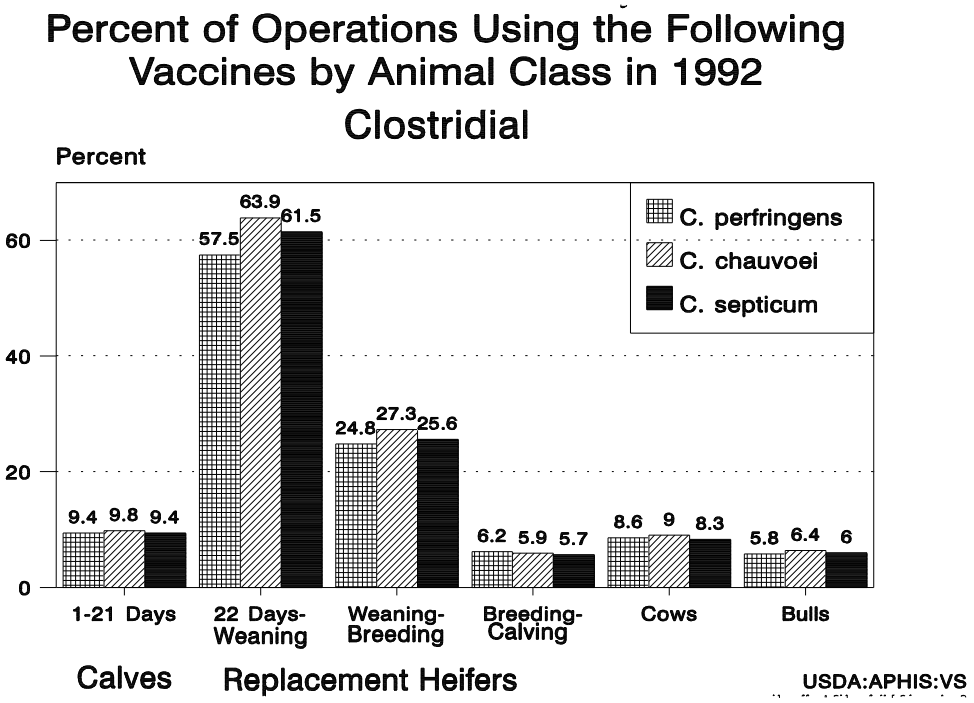
	Percent of Operations					
	Calves		Replacement Heifers			
Vaccine	1 to 21 Days	22 Days to Weaning	Weaning Through Breeding	After Breed. Through Calving	Cows	Bulls
Reproductive:						
Brucella abortus	NA[1]	22.4	25.9	NA[1]	NA[1]	NA[1]
Standard Error	NA[1]	(±2.3)	(±2.9)	NA[1]	NA[1]	NA[1]
Leptospira	NA[1]	9.9	22.7	12.8	29.9	19.8
Standard Error	NA[1]	(±2.3)	(±3.1)	(±2.2)	(±3.3)	(±3.0)
Campylobacter (vibrio)	NA[1]	NA[1]	11.2	5.8	17.0	9.3
Standard Error	NA[1]	NA[1]	(±2.0)	(±1.1)	(±2.3)	(±1.8)
Trichomoniasis	NA[1]	NA[1]	0.3	0.2	0.3	0.2
Standard Error	NA[1]	NA[1]	(±0.2)	(±0.1)	(±0.1)	(±0.1)



1 NA: Not applicable.

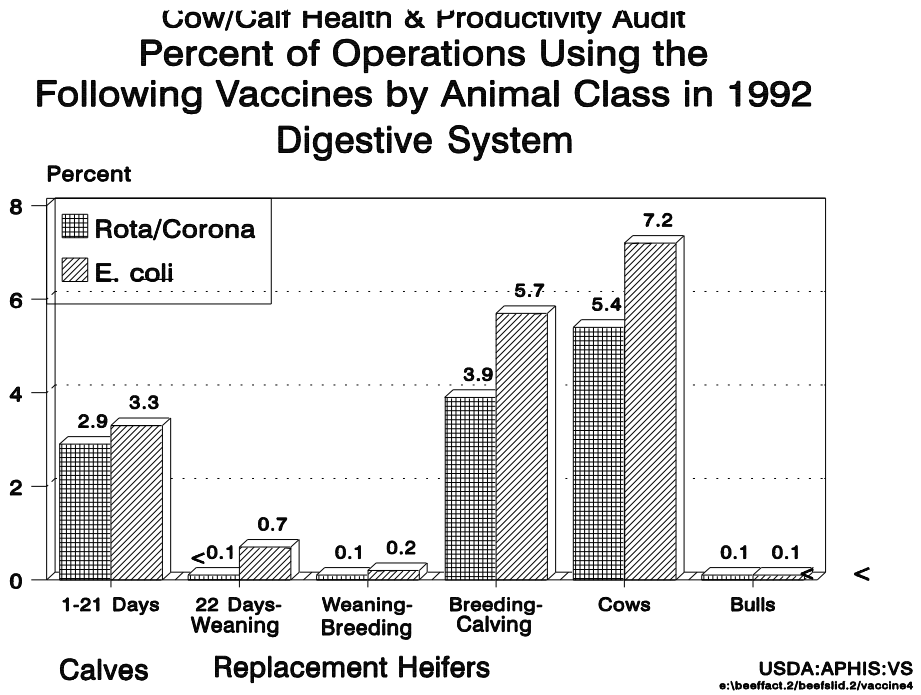
7. Vaccine useage (continued)

	Percent of Operations					
	Calves		Replacement Heifers			
Vaccine	1 to 21 Days	22 Days to Weaning	Weaning Through Breeding	After Breed. Through Calving	Cows	Bulls
Clostridial:						
C. perfringens C and D (enterotoxemia, overeating)	9.4	57.5	24.8	6.2	8.6	5.8
Standard Error	(±2.3)	(±3.5)	(±3.1)	(±1.6)	(±2.0)	(±1.9)
C. chauvoei (blackleg)	9.8	63.9	27.3	5.9	9.0	6.4
Standard Error	(±2.3)	(±3.4)	(±3.1)	(±1.5)	(±2.1)	(±2.0)
C. septicum (malignant edema)	9.4	61.5	25.6	5.7	8.3	6.0
Standard Error	(±2.3)	(±3.4)	(±3.2)	(±1.5)	(±2.1)	(±1.9)
C. sordeli	8.1	55.2	22.8	5.4	8.3	6.0
Standard Error	(±2.2)	(±3.4)	(±2.9)	(±1.5)	(±2.1)	(±1.9)
C. hemolyticum (redwater)	4.7	36.8	18.0	4.7	5.3	3.7
Standard Error	(±1.6)	(±3.3)	(±2.6)	(±1.5)	(±1.6)	(±1.5)
C. novyi (black disease)	8.9	55.5	22.3	5.7	8.3	6.0
Standard Error	(±2.3)	(±3.5)	(±2.9)	(±1.5)	(±2.1)	(±1.9)
C. tetani (tetanus)	5.4	27.9	16.0	4.1	3.4	2.1
Standard Error	(±1.9)	(±3.2)	(±2.8)	(±1.5)	(±1.2)	(±1.1)



7. Vaccine useage (continued)

	Percent of Operations					
	Calves		Replacement Heifers			
Vaccine	1 to 21 Days	22 Days to Weaning	Weaning Through Breeding	After Breed. Through Calving	Cows	Bulls
Digestive:						
Rota/corona	2.9	<0.1	0.1	3.9	5.4	<0.1
Standard Error	(±1.6)	(±0.0)	(±0.1)	(±1.2)	(±1.3)	(±0.0)
E. coli	3.3	0.7	0.2	5.7	7.2	<0.1
Standard Error	(±1.6)	(±0.4)	(±0.1)	(±1.5)	(±1.6)	(±0.0)
Salmonella	0.1	<0.1	<0.1	0.3	0.4	<0.1
Standard Error	(±0.1)	(±0.0)	(±0.0)	(±0.1)	(±0.2)	(±0.0)



Other:						
Anaplasmosis	NA[1]	0.1	1.3	0.2	1.4	1.5
Standard Error	NA[1]	(±0.1)	(±1.0)	(±0.1)	(±1.0)	(±1.0)
Moraxella bovis (pinkeye)	NA[1]	11.0	5.8	3.2	5.3	3.7
Standard Error	NA[1]	(±2.1)	(±1.6)	(±1.2)	(±1.5)	(±1.2)
Wart virus	<0.1	0.3	0.7	<0.1	<0.1	<0.1
Standard Error	(±0.0)	(±0.2)	(±0.4)	(±0.0)	(±0.0)	(±0.0)

1 NA: Not applicable.

Send us your comments!

The National Animal Health Monitoring System would like to receive input from readers on the information presented in this report. Contact:

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CHAPA Results

Results of the Beef Cow/Calf Health and Productivity Audit (CHAPA) are available in the following formats:

- Part 1: Beef Cow/Calf Herd Management Practices in the United States (7/93)
- Branding Practices in Beef Cow/Calf Herds (Interpretive summary, 7/93)
- Injection Sites in U.S. Beef Cow/Calf Herds (Interpretive summary, 7/93)
- Part II: Beef Cow/Calf Reproductive and Nutritional Management Practices (1/94)
- Part III: Beef Cow/Calf Health and and Health Management (1/94)
- Part IV: Beef Breeding Management (3/94)
- Animal Identification (Interpretive summary, 3/94)
- Results of Cryptosporidia and Giardia Evaluation in Beef Calves (Interpretive summary, 3/94)
- Information Sources for Beef Cow/Calf Producers (Interpretive summary, 3/94)

Additional interpretive summaries will be produced and distributed as they become available.