

Acknowledgments

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) during a nationwide study of management and animal health on feedlot operations.

The Feedlot '99 study was a cooperative effort between State and Federal agricultural statisticians, animal health officials, university researchers, extension personnel, and feedlot owners and operators. We want to thank the hundreds of industry members who helped determine the direction and objectives of this study by participating in focus groups.

Thanks to the National Agricultural Statistics Service (NASS) enumerators and State and Federal Veterinary Medical Officers (VMO's) and Animal Health Technician's (AHT's) who visited the operations 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, VMO, AHT, and NASS enumerator were critical in providing quality data for Feedlot '99 reports. Special recognition goes to Dr. Guy Loneragan from the Integrated Livestock Management program at Colorado State University for his contribution to the design and implementation of the Feedlot '99 study and analysis and interpretation of these data. Thanks also to the Centers for Epidemiology and Animal Health (CEAH) for their efforts in generating and distributing timely reports from Feedlot '99 data.

All participants are to be commended for their efforts, particularly the producers whose voluntary efforts made the Feedlot '99 study possible.

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Suggested bibliographic citation for this report:

USDA. 2000. Changes in the U.S. Feedlot Industry, 1994-1999. USDA:APHIS:VS, CEAH, National Animal Health Monitoring System. Fort Collins, CO. #N327.0800

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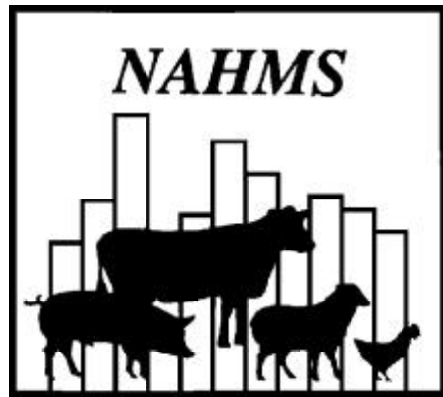
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Terms Used in This Report

Cattle placed/placement: Cattle placed in a feedlot, fed a high-energy ration and intended for the slaughter market.

Cattle on feed: Animals being fed a high-energy ration of grain, silage, hay, and/or protein supplement for the slaughter market, excluding cattle being “backgrounded only” for later sale as feeders or later placement in another feedlot and animals grown for breeding.

MGA[®]: melengesterol acetate, a heat suppressant for females.

N/A: Not applicable.

N/AV: Not available.

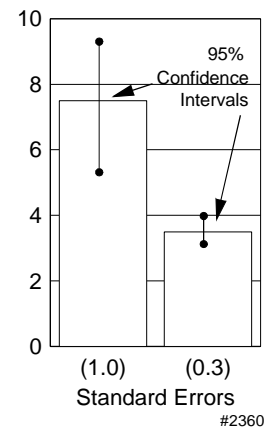
Operation: An area of land managed as a unit by an individual, partnership, or hired manager.

Percent cattle: The total number of cattle with a certain attribute divided by the total number of cattle on all operations (or on all operations within a certain category such as by operation capacity or region).

Percent operations: The number of operations with a certain attribute divided by the total number of operations. Percentages will sum to 100 where the attributes are mutually exclusive (i.e., percentage of operations located within each region). Percentages will *not* sum to 100 where the attributes are not mutually exclusive (i.e., the percentage of operations using treatment methods where operations may have used more than one method).

Population estimates: Averages and proportions weighted to represent the population. For this report, the reference population was all operations with 1,000 head or more capacity in the selected states. Estimates in this report are provided with a measure of precision called the *standard error*. A confidence interval can be created with bounds equal to the estimate plus or minus two standard errors. If the only error is sampling error, then confidence intervals created in this manner will contain the true population mean 95 out of 100 times. In the example at right, an estimate of 7.5 with a standard error of 1.0 results in a confidence interval 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 a confidence interval 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 two. Most estimates in this report are rounded to the nearest tenth. If rounded to 0, the standard error was reported as (0.0). If there were no reports of the event, no standard error was reported (--).

Examples of a 95% Confidence Interval



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

Operation capacity: Size groupings based on feedlot capacity. The capacity is the total number of head of cattle that could be accommodated in the feedlot at one time.

Section I: Demographics, 1995-2000

A. Changes in Cattle on Feed Industry

1. Cattle on Feed Inventory

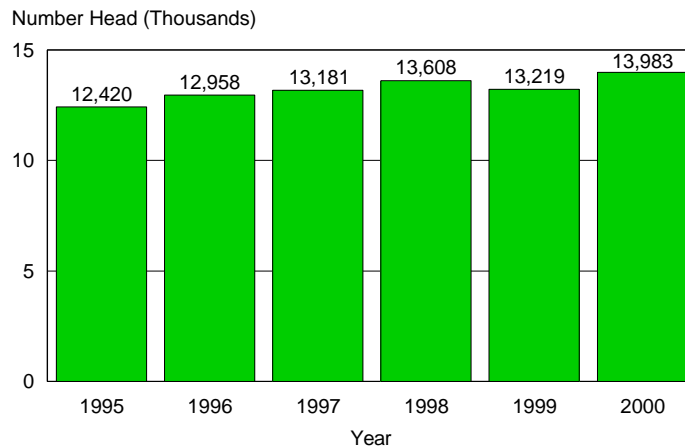
Throughout each year, the USDA’s National Agricultural Statistics Service (NASS) surveys a random sample of producers to provide national estimates of animal populations and food production. This section reports NASS’ demographics of the U.S. feedlot industry as estimated from their surveys. In January and July of each year, both feedlots of less than 1,000 head capacity and those of 1,000 head or more capacity are surveyed to provide the U.S. estimate of cattle on feed. Thereafter on a monthly basis, only the large feedlots are surveyed.

The following tables show changes over the previous 5 years in total inventory of cattle on feed, size of feedlots, characteristics of placements, disappearance, and number of feedlots. The period of January 1, 1995, through January 1, 2000, is characterized by a general increase in the total number of cattle on feed with a decline only from 1998 to 1999. January 1, 2000, shows a 12.6 percent increase over January 1, 1995.

| a. Number of cattle on feed in the U.S., January and July 1995 and 2000: | | | | | | |
|--|------------|-----------------------|-----------------|------------|-----------------------|-----------------|
| Year | January 1 | | | July 1 | | |
| | 1,000 Head | Percent Previous Year | Percent of 1995 | 1,000 Head | Percent Previous Year | Percent of 1995 |
| 1995 | 12,420 | 95.4 | 100.0 | 11,200 | 106.7 | 100.0 |
| 1996 | 12,958 | 104.3 | 104.3 | 9,800 | 87.5 | 87.5 |
| 1997 | 13,181 | 101.7 | 106.1 | 10,900 | 111.2 | 97.3 |
| 1998 | 13,608 | 103.2 | 109.6 | 11,000 | 100.9 | 98.2 |
| 1999 | 13,219 | 97.1 | 106.4 | 11,500 | 104.5 | 102.7 |
| 2000 | 13,983 | 105.8 | 112.6 | 12,300 | 107.0 | 109.8 |

Source: National Agriculture Statistics Service (NASS).

Number of Cattle on Feed in the U.S.,
January 1995 - 2000



Source: National Agricultural Statistics Service (NASS).

#4289

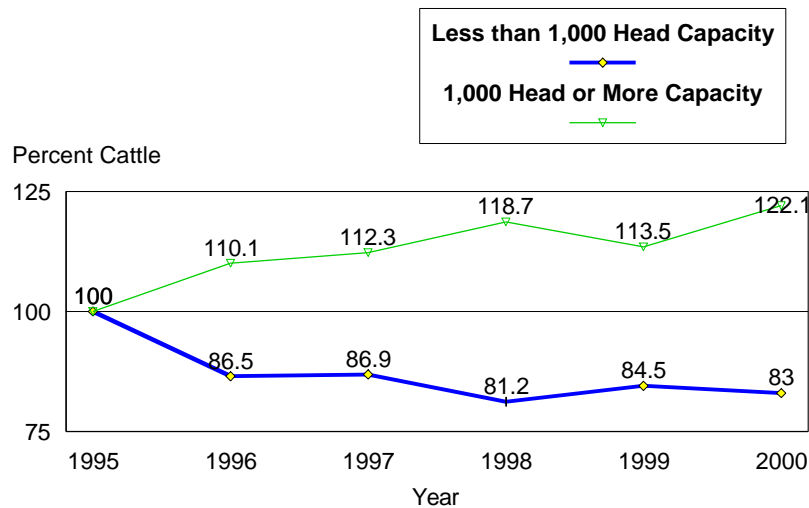
The increase in number on feed clearly occurs in feedlots with 1,000 head or more capacity.

b. Number of cattle on feed in the U.S. on small vs. large feedlots, January 1, 1995 - 2000:

| Year | Feedlots Less than 1,000 Head Capacity | | | Feedlots 1,000 Head or More Capacity | | |
|------|--|-----------------------|-----------------|--------------------------------------|-----------------------|-----------------|
| | 1,000 Head | Percent Previous Year | Percent of 1995 | 1,000 Head | Percent Previous Year | Percent of 1995 |
| 1995 | 3,020 | N/AV | 100.0 | 9,400 | N/AV | 100.0 |
| 1996 | 2,612 | 86.5 | 86.5 | 10,346 | 110.1 | 110.1 |
| 1997 | 2,623 | 100.4 | 86.9 | 10,558 | 102.0 | 112.3 |
| 1998 | 2,453 | 93.5 | 81.2 | 11,155 | 105.7 | 118.7 |
| 1999 | 2,552 | 104.0 | 84.5 | 10,667 | 95.6 | 113.5 |
| 2000 | 2,508 | 98.3 | 83.0 | 11,475 | 107.6 | 122.1 |

Source: National Agriculture Statistics Service (NASS).

Cattle on Feed in the U.S. on Feedlots as a Percent of 1995 by Operation Capacity, January 1, 1995 - 2000



Source: National Agricultural Statistics Service (NASS).

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Feedlots with 32,000 head or more capacity show a steady 2 percent increase per year in their contribution to the total number of cattle on feed and accounted for over one-third (35.9 percent) of all cattle on feed on January 1, 2000.

c. Number of cattle on feed in the U.S. by feedlot capacity, January 1, 1995 - 2000:

| Year | Less than 1,000 Head | | 1,000 - 7,999 Head | | 8,000 - 15,999 Head | | 16,000 - 31,999 Head | | 32,000 Head or More | |
|------|----------------------|------------------|--------------------|------------------|---------------------|------------------|----------------------|------------------|---------------------|------------------|
| | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total |
| 1995 | 3,020 | 24.3 | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV |
| 1996 | 2,612 | 20.2 | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV |
| 1997 | 2,623 | 19.9 | 2,365 | 18.0 | 1,543 | 11.7 | 2,707 | 20.5 | 3,943 | 29.9 |
| 1998 | 2,453 | 18.0 | 2,433 | 17.9 | 1,596 | 11.7 | 2,797 | 20.6 | 4,329 | 31.8 |
| 1999 | 2,552 | 19.3 | 2,212 | 16.7 | 1,424 | 10.8 | 2,546 | 19.3 | 4,485 | 33.9 |
| 2000 | 2,508 | 17.9 | 2,389 | 17.1 | 1,556 | 11.1 | 2,512 | 18.0 | 5,018 | 35.9 |

Source: National Agriculture Statistics Service (NASS).

The inventory mix of steers and heifers changed from 65 to 60 percent steers and 35 to 40 percent heifers from 1995 to 2000.

d. Number of steers, heifers, cows, and bulls on feed in 1,000 head or more capacity feedlots, January 1, 1995 - 2000:

| Year | Steers & Steer Calves | | Heifers & Heifer Calves | | Cows & Bulls | |
|------|-----------------------|------------------|-------------------------|------------------|--------------|------------------|
| | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total |
| 1995 | 6,105 | 64.9 | 3,260 | 34.7 | 35 | 0.4 |
| 1996 | 6,635 | 64.1 | 3,627 | 35.1 | 84 | 0.8 |
| 1997 | 6,398 | 60.6 | 4,069 | 38.5 | 91 | 0.9 |
| 1998 | 6,796 | 60.9 | 4,300 | 38.6 | 59 | 0.5 |
| 1999 | 6,461 | 60.6 | 4,153 | 38.9 | 53 | 0.5 |
| 2000 | 6,840 | 59.6 | 4,574 | 39.9 | 61 | 0.5 |

Source: National Agriculture Statistics Service (NASS).

2. Cattle Placed on Feed

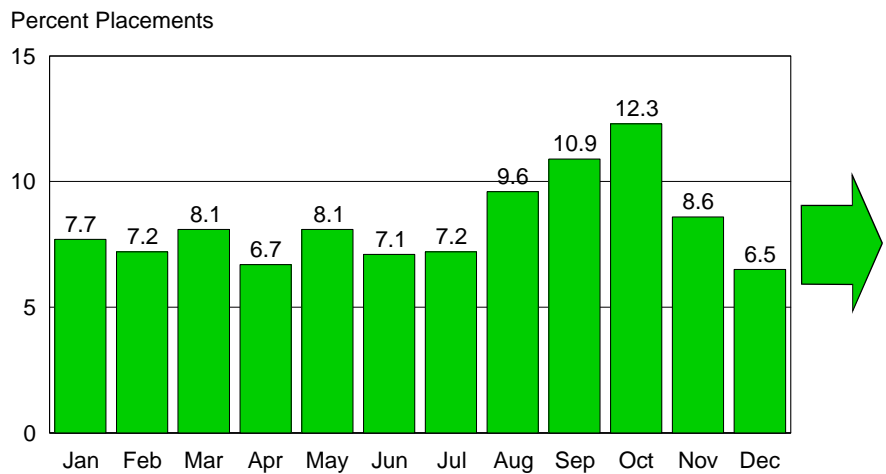
There are no clear trends in the number of cattle placed by weight group, although the proportion of cattle placed at 800 lbs. or more each January seems to have increased slightly to 17.1 percent of the total placed during January 2000. Proportions placed in the other size groups vary, suggesting changing conditions, such as availability, pasture conditions, may have more of an impact than a trend in placement weight.

a. Number of cattle placed on feed during January by weight group in 1,000 head or more capacity feedlots, January 1, 1995 - 2000:

| Year | Less than 600 lbs. | | 600 - 699 lbs. | | 700 - 799 lbs. | | 800 or more lbs. | |
|------|--------------------|------------------|----------------|------------------|----------------|------------------|------------------|------------------|
| | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total | 1,000 Head | Percent of Total |
| 1995 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 1996 | 260 | 16.8 | 550 | 35.5 | 499 | 32.2 | 240 | 15.5 |
| 1997 | 409 | 21.7 | 657 | 34.8 | 522 | 27.7 | 299 | 15.8 |
| 1998 | 317 | 18.4 | 560 | 32.4 | 550 | 31.9 | 299 | 17.3 |
| 1999 | 379 | 19.6 | 628 | 32.5 | 604 | 31.2 | 322 | 16.7 |
| 2000 | 494 | 22.2 | 696 | 31.3 | 654 | 29.4 | 382 | 17.1 |

Source: National Agriculture Statistics Service (NASS).

Percent of Cattle by Month in Feedlots with 1,000 Head or More Capacity, 1999



Source: National Agricultural Statistics Service (NASS).

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The number of cattle placed by month over the 4-year period, 1996-1999, consistently shows the largest number placed during October, the next largest in September, followed by August or November.

b. Number of cattle placed on feed by month in 1,000 head or more capacity feedlots, January 1996 - 1999:

| Month | 1996 | | 1997 | | 1998 | | 1999 | |
|-----------|------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|---------------------------|
| | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month |
| January | 1,549 | 89.6 | 1,887 | 111.3 | 1,726 | 111.2 | 1,933 | 127.8 |
| February | 1,713 | 110.6 | 1,797 | 95.2 | 1,496 | 86.7 | 1,808 | 93.5 |
| March | 1,948 | 113.7 | 1,966 | 109.4 | 1,709 | 114.2 | 2,031 | 112.3 |
| April | 1,364 | 70.0 | 1,548 | 78.7 | 1,584 | 92.7 | 1,688 | 83.1 |
| May | 1,557 | 114.1 | 1,864 | 120.4 | 2,033 | 128.3 | 2,049 | 121.4 |
| June | 1,305 | 83.8 | 1,444 | 77.5 | 1,564 | 76.9 | 1,794 | 87.6 |
| July | 1,746 | 133.8 | 1,995 | 138.2 | 1,937 | 123.8 | 1,812 | 101.0 |
| August | 2,265 | 129.7 | 2,429 | 121.8 | 2,063 | 106.5 | 2,428 | 134.0 |
| September | 2,653 | 117.1 | 2,711 | 111.6 | 2,660 | 128.9 | 2,759 | 113.6 |
| October | 3,007 | 113.3 | 2,916 | 107.6 | 2,830 | 106.4 | 3,114 | 112.9 |
| November | 2,348 | 78.1 | 2,207 | 75.7 | 2,065 | 73.0 | 2,170 | 69.7 |
| December | 1,695 | 72.2 | 1,552 | 70.3 | 1,512 | 73.2 | 1,646 | 75.9 |
| Total | 23,150 | | 24,316 | | 23,179 | | 23,183 | |

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

c. Percent of yearly placements by month and year in feedlots with 1,000 head or more capacity, 1996 - 1999:

| Month | Percent Placements | | | |
|-----------|--------------------|-------|-------|-------|
| | 1996 | 1997 | 1998 | 1999 |
| January | 6.7 | 7.7 | 7.4 | 7.7 |
| February | 7.4 | 7.4 | 6.5 | 7.2 |
| March | 8.4 | 8.1 | 7.4 | 8.1 |
| April | 5.9 | 6.4 | 6.8 | 6.7 |
| May | 6.7 | 7.7 | 8.8 | 8.1 |
| June | 5.6 | 5.9 | 6.7 | 7.1 |
| July | 7.5 | 8.2 | 8.4 | 7.2 |
| August | 9.8 | 10.0 | 8.9 | 9.6 |
| September | 11.5 | 11.1 | 11.5 | 10.9 |
| October | 13.0 | 12.0 | 12.2 | 12.3 |
| November | 10.2 | 9.1 | 8.9 | 8.6 |
| December | 7.3 | 6.4 | 6.5 | 6.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

3. "Other" (Non-harvest) Disappearances from the Feedlot

The table below provides monthly estimates of cattle departures from feedlots for reasons other than harvest. This disappearance includes not only death loss, but return of cattle to pasture and placement in another feedlot. This number varied from roughly 50,000 to 100,000 head each month.

a. Number of cattle placed on feed for the slaughter market that left the feedlot for non-harvest reasons, such as death loss, movement from feedlots to pasture, and shipments to other feedlots by month, January 1996 - 1999, in 1,000 head or more capacity feedlots:

| Month | 1996 | | 1997 | | 1998 | | 1999 | |
|-----------|------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|---------------------------|
| | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month | 1,000 Head | Percent of Previous Month |
| January | 65 | 95.6 | 92 | 107.0 | 99 | 116.5 | 70 | 82.4 |
| February | 72 | 110.8 | 61 | 66.3 | 69 | 69.7 | 65 | 92.9 |
| March | 76 | 105.6 | 86 | 141.0 | 94 | 136.2 | 71 | 109.2 |
| April | 107 | 140.8 | 98 | 114.0 | 92 | 97.9 | 104 | 146.5 |
| May | 84 | 78.5 | 117 | 119.4 | 93 | 101.1 | 99 | 95.2 |
| June | 70 | 83.3 | 60 | 51.3 | 72 | 77.4 | 63 | 63.6 |
| July | 62 | 88.6 | 57 | 95.0 | 50 | 69.4 | 52 | 82.5 |
| August | 50 | 80.6 | 45 | 78.9 | 52 | 104.0 | 55 | 105.8 |
| September | 70 | 140.0 | 53 | 117.8 | 61 | 117.3 | 62 | 112.7 |
| October | 78 | 111.4 | 91 | 171.7 | 52 | 85.2 | 80 | 129.0 |
| November | 93 | 119.2 | 85 | 93.4 | 78 | 150.0 | 83 | 103.7 |
| December | 86 | 92.5 | 85 | 100.0 | 85 | 109.0 | 90 | 108.4 |
| Total | 913 | -- | 930 | -- | 897 | -- | 894 | -- |

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

Cattle departures from feedlots for reasons other than harvest appears relatively constant over time.

b. Number of cattle placed on feed for the slaughter market that left the feedlot for non-harvest reasons, such as death loss, movement from feedlots to pasture, and shipments to other feedlots, as a percent of yearly placements in 1,000 head or more capacity feedlots:

| Year | Percent |
|------|---------|
| 1996 | 3.94 |
| 1997 | 3.82 |
| 1998 | 3.87 |
| 1999 | 3.86 |

Source: National Agriculture Statistics Service (NASS). (1995 data are available but not shown.)

4. Number of Feedlots

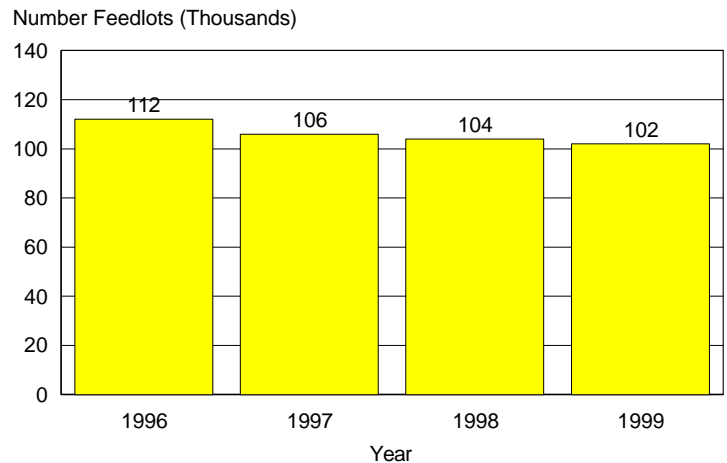
The total number of feedlots declined steadily over the 4 years from 1996 through 1999. Total feedlots in 1999 was 9 percent less than in 1996. The decline was predominantly in feedlots with a capacity of fewer than 1,000 head, while the number of feedlots for most large size groups increased.

a. Number of feedlots in the U.S. by operation capacity, January 1996 - 1999:

| Capacity (Number Head) | 1996 | | 1997 | | 1998 | | 1999 | |
|---------------------------|---------|--------------------------|---------|--------------------------|---------|--------------------------|---------|--------------------------|
| | Number | Percent of Previous Year | Number | Percent of Previous Year | Number | Percent of Previous Year | Number | Percent of Previous Year |
| Less than 1,000 | 110,000 | N/AV | 104,000 | 94.5 | 102,000 | 98.1 | 100,000 | 98.0 |
| 1,000-1,999 | 874 | N/AV | 842 | 96.3 | 834 | 99.0 | 831 | 99.6 |
| 2,000 - 3,999 | 515 | N/AV | 504 | 97.9 | 491 | 97.4 | 507 | 103.3 |
| 4,000-7,999 | 304 | N/AV | 308 | 101.3 | 313 | 101.6 | 336 | 107.3 |
| 8,000-15,999 | 187 | N/AV | 191 | 102.1 | 184 | 96.3 | 193 | 104.9 |
| 16,000-31,999 | 138 | N/AV | 137 | 99.3 | 143 | 104.4 | 141 | 98.6 |
| 32,000 or more | 91 | N/AV | 93 | 102.2 | 107 | 115.1 | 111 | 103.7 |
| Total | 112,109 | N/AV | 106,075 | 94.6 | 104,072 | 98.1 | 102,119 | 98.1 |

Source: National Agriculture Statistics Service (NASS). (1995 not available).

Number of Feedlots in the U.S.,
1996 - 1999



Source: National Agricultural Statistics Service (NASS).

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5. Feedlot Industry Changes by State

The following table describes U.S. feedlot industry changes by state between January 1, 1995, and January 1, 2000, based on NASS data.

States that historically have fed the majority of feedlot cattle have continued to increase their share of the U.S. feedlot industry. Colorado, Iowa, Kansas, Nebraska, and Texas accounted for 67 percent of the total U.S. cattle on feed on January 1, 1995. On January 1, 2000, the proportion of cattle on feed in these states had risen to 72 percent. Of the remaining states, most western states (namely Arizona, California, and Washington) were feeding more cattle, while mid-western states (Illinois, Indiana, Michigan, and Ohio) were feeding fewer.

Note: Eleven states were in both the NAHMS 1994 Cattle on Feed Evaluation (COFE) and Feedlot '99 study.

| a. Changes in number cattle/calves on feed and number feedlots by state (NASS data), 1995 and 2000: | | | | | | | | | | |
|---|-----------------------|-------------|--|--------|--------------|--------|-----------------|---------|-----------------|-------|
| State | On-farm Participation | | # of Cattle/Calves on Feed (Thousand Head) | | | | Number Feedlots | | | |
| | | | 1,000+ Capacity Feedlots | | All Feedlots | | <1,000 Capacity | | 1,000+ Capacity | |
| | COFE '94 | Feedlot '99 | 1/1/95 | 1/1/00 | 1/1/95 | 1/1/00 | 1994 | 1999 | 1994 | 1999 |
| Alabama | | | | | 8 | 4 | | | | |
| Alaska | | | | | * | * | | | | |
| Arizona | Yes | Yes | 210 | 272 | 210 | 272 | | | 10 | 7 |
| Arkansas | | | | | 13 | 11 | | | | |
| California | Yes | Yes | 400 | 415 | 400 | 415 | | | 38 | 24 |
| Colorado | Yes | Yes | 966 | 1,180 | 990 | 1,200 | | | 172 | 162 |
| Connecticut | | | | | * | * | | | | |
| Delaware | | | | | * | * | | | | |
| Florida | | | | | * | * | | | | |
| Georgia | | | | | 15 | 3 | | | | |
| Hawaii | | | | | * | * | | | | |
| Idaho | Yes | Yes | 255 | 310 | 270 | 315 | | | 60 | 55 |
| Illinois | Yes | | | | 280 | 230 | 7,150 | 6,300 | | |
| Indiana | | | | | 200 | 120 | N/AV | 5,800 | | |
| Iowa | Yes | Yes | 365 | 375 | 910 | 1,100 | 14,725 | 12,000 | 275 | 325 |
| Kansas | Yes | Yes | 1,990 | 2,310 | 2,040 | 2,350 | | | 305 | 220 |
| Kentucky | | | | | 40 | 15 | | | | |
| Louisiana | | | | | 5 | * | | | | |
| Maine | | | | | * | * | | | | |
| Maryland | | | | | 20 | 17 | | | | |
| Massachusetts | | | | | * | * | | | | |
| Michigan | | | | | 210 | 200 | N/AV | 4,000 | | |
| Minnesota | Yes | | | | 300 | 285 | 7,950 | 7,400 | | |
| Mississippi | | | | | 4 | * | | | | |
| Missouri | | | | | 70 | 100 | N/AV | 3,900 | | |
| Montana | | | | | 100 | 70 | | | | |
| Nebraska | Yes | Yes | 1,730 | 2,300 | 1,940 | 2,440 | 5,050 | 4,335 | 650 | 685 |
| Nevada | | | | | 25 | 21 | | | | |
| New Hampshire | | | | | * | * | | | | |
| New Jersey | | | | | 4 | 3 | | | | |
| New Mexico | | Yes | N/AV | 116 | 155 | 116 | | | N/AV | 10 |
| New York | | | | | 25 | 30 | | | | |
| North Carolina | | | | | 15 | 5 | | | | |
| North Dakota | | | | | 100 | 70 | N/AV | 1,600 | | |
| Ohio | | | | | 225 | 190 | N/AV | 7,400 | | |
| Oklahoma | Yes | Yes | 375 | 430 | 380 | 435 | | | 20 | 27 |
| Oregon | | | | | 100 | 50 | | | | |
| Pennsylvania | | | | | 80 | 75 | N/AV | 5,100 | | |
| Rhode Island | | | | | * | * | | | | |
| South Carolina | | | | | 7 | 6 | | | | |
| South Dakota | Yes | Yes | 160 | 194 | 340 | 350 | 3,700 | 3,200 | 100 | 123 |
| Tennessee | | | | | 27 | 10 | | | | |
| Texas | Yes | Yes | 2,370 | 2,900 | 2,380 | 2,910 | | | 137 | 142 |
| Utah | | | | | 60 | 35 | | | | |
| Vermont | | | | | * | * | | | | |
| Virginia | | | | | 40 | 27 | | | | |
| Washington | Yes | Yes | 151 | 228 | 156 | 235 | | | 20 | 19 |
| West Virginia | | | | | 10 | 7 | | | | |
| Wisconsin | | | | | 150 | 160 | N/AV | 7,400 | | |
| Wyoming | | | | | 100 | 90 | | | | |
| * Other states | | | N/AV | 445 | 16 | 11 | N/AV | 31,565 | N/AV | 320 |
| U.S. | 13 | 12 | 9,400 | 11,475 | 12,420 | 13,983 | N/AV | 100,000 | N/AV | 2,119 |

6. Cattle Harvest

The total federally inspected slaughter from 1995 to 2000 shows a decreasing contribution from steers and a higher contribution from heifers. This same relationship was seen when comparing the January 1 steer and heifer inventories on feed (see table I.A.1.d).

| a. Cattle slaughtered under Federal Inspection, 1995 and 1999: | | | | | |
|--|--------------------------------|------------------|--------------------------------|------------------|-----------------|
| Classification | 1995 | | 1999 | | |
| | Number Head (Thousand Head) | Percent of Total | Number Head (Thousand Head) | Percent of Total | Percent of 1995 |
| Steers | 17,887.2 | 51.3 | 17,608.0 | 49.6 | 98.4 |
| Heifers | 10,174.6 | 29.2 | 11,648.4 | 32.8 | 114.5 |
| Dairy cows | 2,861.7 | 8.2 | 2,573.3 | 7.3 | 89.9 |
| Other cows | 3,281.1 | 9.4 | 3,029.7 | 8.5 | 92.3 |
| Bulls and stags | 674.4 | 1.9 | 626.9 | 1.8 | 93.0 |
| Total | 34,879.0 | 100.0 | 35,486.3 | 100.0 | 101.7 |

Source: National Agriculture Statistics Service (NASS).

June was the peak fed-cattle harvest month for both 1995 and 1999. Finished market weights for each month in 1999 were heavier compared to 1995, ranging from 17 lbs. higher in August and September up to 40 lbs. higher in March.

| b. Cattle slaughtered under Federal Inspection* by month, 1995 and 1999: | | | | | |
|--|-------------------------------|------------------------------------|-------------------------------|------------------------------------|--|
| Month | 1995 | | 1999 | | Change in Average Live Weight (1999-1995) (In Pounds) |
| | Number Head (in Thousands) | Live Weight/Head (in Pounds) | Number Head (in Thousands) | Live Weight/Head (in Pounds) | |
| January | 2,802.4 | 1,192 | 2,903.5 | 1,224 | +32 |
| February | 2,529.6 | 1,187 | 2,665.2 | 1,225 | +38 |
| March | 2,900.5 | 1,180 | 2,990.2 | 1,220 | +40 |
| April | 2,601.6 | 1,175 | 2,916.4 | 1,204 | +29 |
| May | 3,076.8 | 1,173 | 2,947.2 | 1,191 | +18 |
| June | 3,199.8 | 1,179 | 3,153.9 | 1,197 | +18 |
| July | 2,890.7 | 1,187 | 3,036.8 | 1,208 | +21 |
| August | 3,175.8 | 1,191 | 3,099.3 | 1,208 | +17 |
| September | 3,034.6 | 1,196 | 3,044.9 | 1,213 | +17 |
| October | 2,999.0 | 1,194 | 3,033.2 | 1,217 | +23 |
| November | 2,914.8 | 1,192 | 2,881.5 | 1,220 | +28 |
| December | 2,753.4 | 1,197 | 2,814.2 | 1,228 | +31 |
| Total | 34,879.0 | 1,187 | 35,486.3 | 1,212 | +25 |

* Federally inspected cattle slaughter accounted for 97.9 percent of the total commercial slaughter in 1995 and 98.2 percent in 1999. The components of total commercial slaughter in 1999 (36.2 million head) were federally inspected slaughter (35.5 million and head) and other slaughter (0.7 million head).

Source: National Agriculture Statistics Service (NASS).

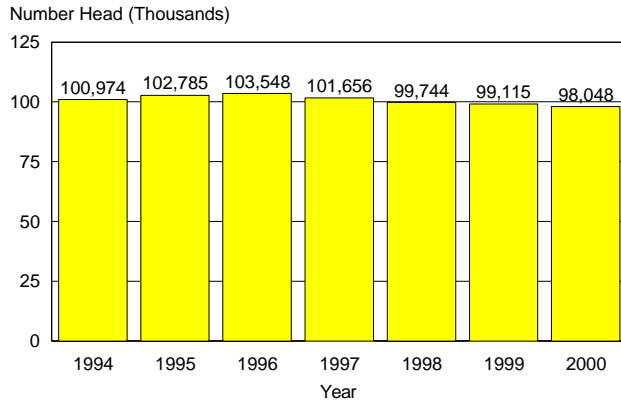
7. All Cattle and Calves (Beef and Dairy) Production, Disposition, and Income, 1994-2000

a. Change by year:

| Year | Number (Thousand Head) | | | | | | Gross Income (in Billion Dollars) |
|------|--------------------------------------|--------------------|------------|----------|---------|---------|--------------------------------------|
| | January 1 All Cattle Inventory | Total Calf Crop | Marketings | | Deaths | | |
| | | | Cattle | Calves | Cattle | Calves | |
| 1994 | 100,973.6 | 40,104.5 | 46,499.1 | 9,571.2 | 1,589.0 | 2,681.3 | \$36.6 |
| 1995 | 102,785.2 | 40,263.7 | 48,741.0 | 9,656.1 | 1,644.7 | 2,738.8 | \$34.3 |
| 1996 | 103,548.2 | 39,823.0 | 48,721.9 | 10,295.1 | 1,761.3 | 2,810.6 | \$31.3 |
| 1997 | 101,655.7 | 38,960.9 | 49,646.7 | 10,154.4 | 1,847.1 | 2,828.6 | \$36.3 |
| 1998 | 99,744.0 | 38,812.1 | 47,226.7 | 9,729.1 | 1,668.0 | 2,541.5 | \$33.7 |
| 1999 | 99,115.0 | 38,710.4 | 48,386.2 | 9,856.4 | 1,659.0 | 2,454.8 | \$36.8 |
| 2000 | 98,048.0 | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV |

Source: National Agriculture Statistics Service (NASS).

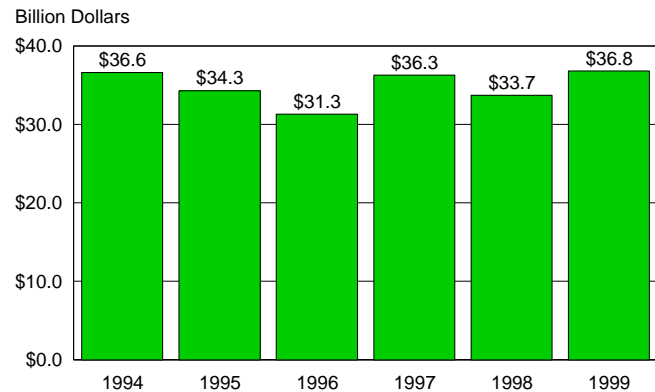
All Cattle Inventory in the U.S.,
January 1, 1994 - 2000



Source: National Agricultural Statistics Service (NASS).

#4291

Gross Income from Cattle in the U.S.,
1994 - 1999



Source: National Agricultural Statistics Service (NASS).

#4292

8. Miscellaneous Information

| a. Cattle whole carcass condemnations, 1993 - 1999 (thousand head): | | | |
|---|--------------------|------------------|-------------------|
| Year | Number Slaughtered | Number Condemned | Percent Condemned |
| 1993 | 32,441 | 159.9 | 0.49 |
| 1994 | 33,121 | 164.5 | 0.50 |
| 1995 | 34,640 | 174.1 | 0.50 |
| 1996 | 35,714 | 181.5 | 0.51 |
| 1997 | 35,576 | 176.2 | 0.50 |
| 1998 | 34,911 | 157.1 | 0.44 |
| 1999 | N/AV | N/AV | N/AV |

Source: Condemnations include ante-mortem and post-mortem inspection.
Under Federal Inspection fiscal year ending September 30, reported by the Food Safety Inspection Service (FSIS), USDA.
Iowa Ag Stats, 515-284-4340.

| b. Weighted average choice fed steer cattle prices by year, 1994 - 1999*: | |
|---|------------------------|
| Year | Price (in Dollars/cwt) |
| 1994 | \$69.29 |
| 1995 | \$66.57 |
| 1996 | \$65.00 |
| 1997 | \$66.09 |
| 1998 | \$61.73 |
| 1999 | \$65.65 |

* Cattle-Fax, P.O. Box 3947, Englewood, CO 80155.

9. NAHMS Sentinel Feedlot Monitoring

The Sentinel Feedlot Monitoring program was developed to identify changes in disease occurrence in cattle on U.S. feedlots. Since data collection was initiated in 1993, NAHMS has gathered data from an increasing number of feedlots (via consulting veterinarians). Participation in this program is voluntary and confidential. Data for the tables below were from 57 feedlots (six veterinarians) in 1994 and 94 feedlots (nine veterinarians) in 1999.

Feedlot data are submitted monthly through veterinary consultants to maintain confidentiality. Cause of death is attributed by feedlot personnel under the supervision of the consulting veterinarian. In return for sharing data on cattle health, the veterinarians receive monthly reports which summarize and compare data from their client feedlots with those from all feedlots submitted that month. Data from all participating feedlots* and those feedlots** that had supplied at least 10 months of data each year from January 1, 1994, through December 31, 1999, are presented below.

Results differed little between all participating feedlots and those that had contributed at least 10 months of data each year since 1994. The increase in death loss as a percent of cattle may have resulted from:

- 1) a change in type of animal placed over time,
- 2) changes in health management of cattle in the feedlots,
- 3) reduced numbers of cattle sold prior to slaughter weight for health reasons so that they were more likely to have died from their disease at the feedlot, or
- 4) changes in nutritional management of the cattle at the feedlot.

| a. Number of cattle and calves that died as a percent of the number placed during the calendar year by year: | | |
|--|------------------------|----------------------------------|
| Year | Percent of Cattle | |
| | All Sentinel Feedlots* | Sentinel Subgroup: 24 Feedlots** |
| 1994 | 1.0 | 1.0 |
| 1995 | 1.2 | 1.2 |
| 1996 | 1.1 | 1.1 |
| 1997 | 1.4 | 1.3 |
| 1998 | 1.3 | 1.3 |
| 1999 | 1.4 | 1.4 |
| *All feedlots participating in the Sentinel Feedlot Monitoring program from January 1, 1994, through December 31, 1999. | | |
| **Those sentinel feedlots that had submitted at least 10 months of data each year from January 1, 1994, through December 31, 1999. | | |

The proportion of cattle deaths attributed to respiratory causes appears to have increased, whereas the proportion of deaths attributed to digestive causes decreased.

| b. Percent of total death loss by attributed cause of loss and summarization category: | | | | |
|--|--------------------|-----------|-------|-------|
| Year | Percent Death Loss | | | |
| | Respiratory | Digestive | Other | Total |
| All Sentinel Feedlots** | | | | |
| 1994 | 52.1 | 27.2 | 20.7 | 100.0 |
| 1995 | 55.4 | 24.8 | 19.8 | 100.0 |
| 1996 | 55.4 | 24.0 | 20.6 | 100.0 |
| 1997 | 59.6 | 21.4 | 19.0 | 100.0 |
| 1998 | 57.0 | 23.2 | 19.8 | 100.0 |
| 1999 | 61.5 | 19.5 | 19.0 | 100.0 |
| Sentinel Subgroup: 24 Feedlots** | | | | |
| 1994 | 52.2 | 28.8 | 19.0 | 100.0 |
| 1995 | 54.4 | 28.0 | 17.6 | 100.0 |
| 1996 | 53.5 | 28.3 | 18.2 | 100.0 |
| 1997 | 58.2 | 24.7 | 17.1 | 100.0 |
| 1998 | 56.8 | 26.0 | 17.2 | 100.0 |
| 1999 | 61.2 | 21.9 | 16.9 | 100.0 |
| *All feedlots participating in the Sentinel Feedlot Monitoring program from January 1, 1994, through December 31, 1999. | | | | |
| **Those sentinel feedlots that had submitted at least 10 months of data each year from January 1, 1994, through December 31, 1999. | | | | |

Section II: NAHMS Population Estimates

The time frame for questions regarding placements and procedures performed on cattle is for the years ending June 30 in 1994 (COFE) and 1999 (Feedlot '99 study).

A. Placement Profile

1. Type of Cattle, Gender, and Disposition

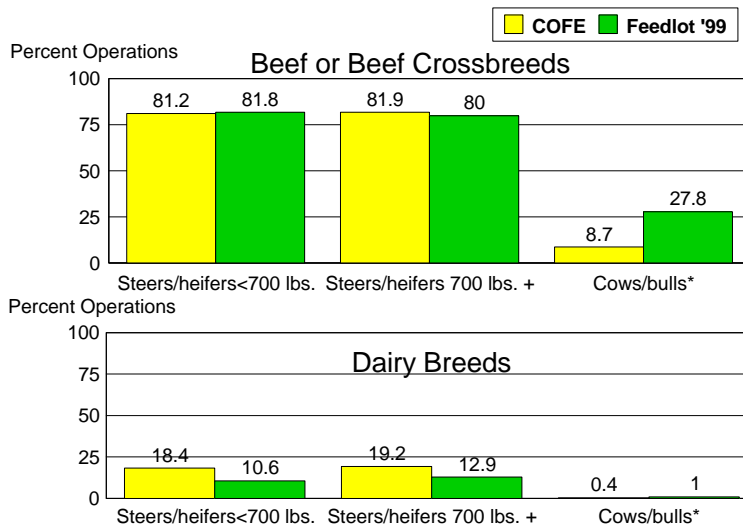
The percentage of feedlots that placed beef steers and heifers changed little from 1994 to 1999. Although feedlots that placed dairy steers and heifers were in the minority, data suggest a decreased percentage of feedlots placed these classes of dairy cattle in 1999.

a. Percent of operations that placed the following types of cattle for the U.S. slaughter market by operation capacity, 1994 - 1999:

| Type of Cattle | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|---------------------------------------|---------------------------------------|--------------|--------------------|--------------|----------------|--------------|---|--------------|--------------------|--------------|----------------|--------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| Steers and heifers less than 700 lbs. | | | | | | | | | | | | |
| Beef or beef crossbreeds | 76.3 | (2.1) | 94.9 | (1.1) | 81.2 | (1.5) | 76.9 | (2.4) | 94.3 | (1.1) | 81.8 | (1.8) |
| Dairy breeds | 8.1 | (1.2) | 47.3 | (2.3) | 18.4 | (1.1) | 5.4 | (0.9) | 24.2 | (1.9) | 10.6 | (0.9) |
| Steers and heifers 700 lbs. or more | | | | | | | | | | | | |
| Beef or beef crossbreeds | 77.5 | (2.0) | 94.1 | (1.1) | 81.9 | (1.5) | 74.3 | (2.5) | 95.2 | (0.8) | 80.0 | (1.8) |
| Dairy breeds | 12.6 | (1.5) | 37.7 | (2.4) | 19.2 | (1.3) | 7.9 | (1.4) | 26.0 | (2.1) | 12.9 | (1.2) |
| Cows and bulls | | | | | | | | | | | | |
| <i>Question variation:</i> | <i>Did you place any cows? bulls?</i> | | | | | | <i>Did you place any cows? Did you place any bulls?</i> | | | | | |
| Beef or beef crossbreeds | 7.3 | (1.2) | 12.4 | (1.7) | 8.7 | (1.0) | 23.1 | (2.2) | 40.3 | (2.3) | 27.8 | (1.7) |
| Dairy breeds | 0.1 | (0.0) | 1.0 | (0.4) | 0.4 | (0.1) | 0.6 | (0.4) | 1.9 | (0.6) | 1.0 | (0.3) |

* During the period July 1 of the previous year through June 30th of the current year.

Percent of Operations that Placed the Following Types of Cattle for the U.S. Slaughter Market, 1994 and 1999



* Questions relating to the cows/bulls category varied slightly between the two studies.

#4264

For all operations, the percentages of dairy breed placements weighing less than 700 lbs declined from 1994 to 1999 (5.1 percent compared to 1.5, respectively). There was a smaller decrease in dairy breed placements weighing 700 lbs. or more (1.9 percent compared to 1.2 percent, respectively). With regard to beef breeds and beef crossbreeds, small feedlots tended to increase the percentage of placements weighing less than 700 lbs. Conversely, large feedlots increased the number of placements weighing 700 lbs. or more.

b. Percent of cattle placed for the U.S. slaughter market by type of cattle and by operation capacity:

| Type of Cattle | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|--|--------------------------------------|-------------|--------------------|-------------|----------------|-------------|---|-------------|--------------------|-------------|----------------|-------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error |
| Steers and heifers less than 700 lbs. | | | | | | | | | | | | |
| Beef or beef crossbreeds | 39.1 | (2.0) | 44.3 | (1.6) | 43.4 | (1.4) | 42.7 | (1.9) | 42.1 | (1.2) | 42.2 | (1.1) |
| Dairy breeds | 1.6 | (0.4) | 5.9 | (0.7) | 5.1 | (0.6) | 0.9 | (0.3) | 1.5 | (0.3) | 1.5 | (0.2) |
| Steers and heifers 700 lbs. or more | | | | | | | | | | | | |
| Beef or beef crossbreeds | 56.9 | (2.1) | 47.5 | (1.5) | 49.1 | (1.3) | 53.1 | (1.9) | 53.8 | (1.2) | 53.7 | (1.0) |
| Dairy breeds | 1.1 | (0.2) | 2.0 | (0.2) | 1.9 | (0.2) | 1.4 | (0.5) | 1.2 | (0.3) | 1.2 | (0.2) |
| Cows and bulls | | | | | | | | | | | | |
| <i>Question variation:</i> | <i>Percent cows or bulls placed?</i> | | | | | | <i>Percent cows placed? Percent bulls placed?</i> | | | | | |
| Beef or beef crossbreeds | 1.3 | (0.3) | 0.3 | (0.1) | 0.5 | (0.1) | 1.9 | (0.3) | 1.4 | (0.2) | 1.4 | (0.1) |
| Dairy breeds | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

The profile of animals that were placed on feed for the U.S. beef harvest market clearly changed. In both large and small feedlots, the percentage of steers placed decreased while the percentage of heifers increased. These changes are greatest for those feedlots with 8,000-head or greater capacity and were consistent across beef and dairy types. In the 1994 COFE, 65.4 percent of beef placements were steers, whereas 57.1 percent were steers in the Feedlot '99 study. The proportional increase in heifers may be due in part to decrease in U.S. cattle inventory, i.e., ranchers retained fewer heifers for breeding purposes.

c. Percent of beef cattle (and percent of dairy cattle) placed for the U.S. slaughter market by gender of cattle and by operation capacity:

| Gender of Cattle | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|----------------------------|--------------------------------------|-------------|--------------------|-------------|----------------|-------------|---|-------------|--------------------|-------------|----------------|-------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error | Percent | Stan. Error |
| Beef | | | | | | | | | | | | |
| Steers | 64.8 | (1.6) | 65.5 | (1.0) | 65.4 | (0.9) | 61.9 | (1.6) | 56.2 | (1.1) | 57.1 | (1.0) |
| Heifers | 33.9 | (1.6) | 34.2 | (1.0) | 34.1 | (0.9) | 36.2 | (1.6) | 42.4 | (1.1) | 41.4 | (1.0) |
| <i>Question variation:</i> | <i>Percent cows or bulls placed?</i> | | | | | | <i>Percent cows placed? Percent bulls placed?</i> | | | | | |
| Cows and bulls | 1.3 | (0.4) | 0.3 | (0.1) | 0.5 | (0.1) | 1.9 | (0.3) | 1.4 | (0.2) | 1.5 | (0.1) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |
| Dairy | | | | | | | | | | | | |
| Steers | 94.2 | (1.5) | 97.4 | (1.0) | 97.2 | (0.9) | 80.3 | 6.5 | 90.0 | (2.5) | 88.7 | (2.5) |
| Heifers | 5.8 | (1.5) | 2.6 | (1.0) | 2.8 | (0.9) | 19.6 | 6.5 | 9.7 | (2.5) | 11.0 | (2.5) |
| <i>Question variation:</i> | <i>Percent cows or bulls placed?</i> | | | | | | <i>Percent cows placed? Percent bulls placed?</i> | | | | | |
| Cows and bulls | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.1 | (0.0) | 0.3 | (0.1) | 0.3 | (0.1) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

The percentages of cattle by final disposition were similar in the two study years. The percentages of placements that were returned to grazing forage and shipped to another feedlot decreased in 1999 compared to 1994. Theft apparently remains no problem for U.S. feedlots.

| d. Percent of cattle by disposition category ¹ and by operation capacity: | | | | | | | | | | | | |
|--|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| Category | 1994 COFE | | | | | | Feedlot '99 | | | | | |
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| Marketed for harvest | 94.4 | (0.5) | 96.1 | (0.6) | 95.8 | (0.5) | 94.8 | (0.5) | 97.1 | (0.2) | 96.7 | (0.2) |
| Died | 1.1 | (0.1) | 1.2 | (0.0) | 1.1 | (0.0) | 0.9 | (0.0) | 1.3 | (0.1) | 1.3 | (0.1) |
| Sent to market prior to slaughter weight | 0.3 | (0.1) | 0.4 | (0.1) | 0.4 | (0.1) | 0.4 | (0.2) | 0.3 | (0.0) | 0.3 | (0.0) |
| Returned to grazing forage | 2.8 | (0.4) | 1.3 | (0.3) | 1.6 | (0.2) | 1.8 | (0.3) | 0.9 | (0.1) | 1.1 | (0.1) |
| Shipped to another feedlot | 1.4 | (0.3) | 1.0 | (0.4) | 1.1 | (0.3) | 2.0 | (0.4) | 0.4 | (0.1) | 0.6 | (0.1) |
| Stolen | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) |
| Lost for other reasons | 0.0 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) | 0.1 | (0.0) | 0.0 | (0.0) | 0.0 | (0.0) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

¹ Cattle marketed or left the operation from July 1 of the previous year through June of the current year. Other cattle placed in the feedlot for the purposes other than being finished for the U.S. slaughter market such as animals being developed as breeding replacements are not included as disposition.

2. Cattle Source and Ownership of Placements

The percentages of animals placed by feedlots from various sources were similar for the two studies. Somewhat more of the cattle placed in each year were provided for custom feeding than were purchased at auction, although approximately one-third of the animals were purchased via auction. Small feedlots placed a larger percentage of cattle from auctions than large feedlots.

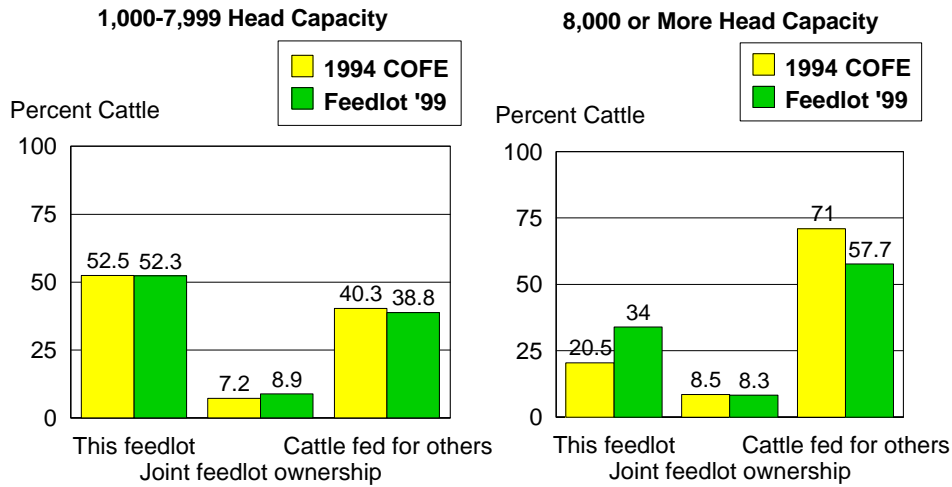
| a. Percent of cattle placed for the U.S. slaughter market by <i>source of cattle</i> and by operation capacity: | | | | | | | | | | | | |
|---|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| Source | 1994 COFE | | | | | | Feedlot '99 | | | | | |
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| Born on this operation or another operation operated by this feedlot | 2.3 | (0.4) | 0.6 | (0.1) | 0.8 | (0.1) | 3.1 | (0.6) | 0.4 | (0.1) | 0.9 | (0.2) |
| Purchased via auction | 45.1 | (2.2) | 26.5 | (1.3) | 29.7 | (1.2) | 46.9 | (2.1) | 31.0 | (1.3) | 33.6 | (1.2) |
| Purchased via direct sale (cash or video, private treaty) | 23.5 | (1.6) | 23.6 | (1.8) | 23.6 | (1.5) | 24.5 | (1.9) | 23.6 | (1.6) | 23.8 | (1.4) |
| Provided for custom feeding | 24.0 | (2.3) | 47.4 | (2.0) | 43.4 | (1.7) | 24.7 | (2.1) | 44.1 | (1.8) | 40.9 | (1.6) |
| Other source | 5.1 | (1.1) | 1.9 | (0.9) | 2.5 | (0.8) | 0.8 | (0.2) | 0.9 | (0.3) | 0.8 | (0.3) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

The percentage of cattle placed on feed that were owned by large feedlots increased (20.5 percent compared to 34.0 percent of cattle placed). Overall, 26.1 percent of placements were owned by feedlots in 1994 compared to 36.9 percent in 1999. Percentages of cattle owned by others decreased in large feedlots in 1999 compared to 1994.

b. Percent of cattle placed on feed for the U.S. slaughter market by *type of owner* at time of placement and by operation capacity:

| Owner | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|---|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| This feedlot | 52.5 | (2.7) | 20.5 | (1.6) | 26.1 | (1.4) | 52.3 | (2.5) | 34.0 | (2.2) | 36.9 | (1.8) |
| Joint feedlot ownership with others | 7.2 | (0.9) | 8.5 | (0.6) | 8.2 | (0.5) | 8.9 | (1.4) | 8.3 | (0.8) | 8.4 | (0.7) |
| Others (cattle being custom fed for others) | 40.3 | (2.6) | 71.0 | (1.7) | 65.7 | (1.5) | 38.8 | (2.5) | 57.7 | (2.2) | 54.7 | (1.8) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

Percent of Cattle Placed on Feed for the U.S. Slaughter Market by Type of Owner at the Time of Placement and by Operation Capacity, 1994 and 1999



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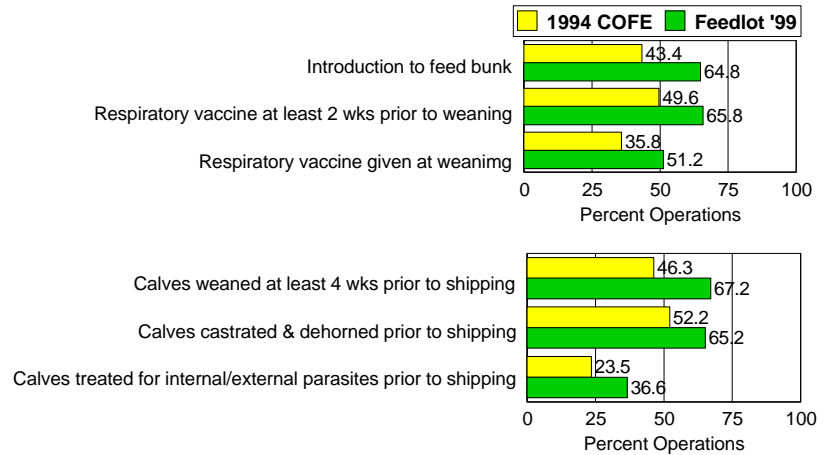
B. Arrival Management and Group Processing

1. Effectiveness of Pre-arrival Processing

Procedures performed on cattle prior to feedlot arrival have been called preconditioning. Preconditioning has been shown to be effective in decreasing health problems in feedlot cattle, particularly in those animals weighing less than 700 lbs at placement.

A higher percentage of operations reported that each of the pre-arrival procedures listed below were *extremely* or *very* effective in reducing sickness and death loss in cattle placed at less than 700 lbs in 1999 compared to 1994. It appears that most of this increase may be from feedlots that responded *does not apply/don't know* in 1994 which may indicate that producers have become more knowledgeable about the effectiveness of pre-arrival processing.

Percent of Operations* that Perceived Pre-arrival Management Practices on Cattle <700 lbs. to Be **Extremely** or **Very** Effective in Reducing Sickness and Death Loss, 1994 and 1999



*For operations that placed cattle less than 700 lbs.

#4275

| a. For operations that placed cattle less than 700 lbs., percent of operations by perceived effectiveness of pre-arrival management practices on cattle less than 700 lbs. placed in reducing sickness and death loss: | | | | | | | | | | | |
|--|---------------------|--------------|----------------|--------------|----------------------|--------------|------------------------|--------------|----------------------------|--------------|-------|
| Study | Extremely Effective | Stand. Error | Very Effective | Stand. Error | Moderately Effective | Stand. Error | Not/Slightly Effective | Stand. Error | Does Not Apply/ Don't Know | Stand. Error | Total |
| Introduction of feed bunk | | | | | | | | | | | |
| 1994 COFE | 12.4 | (1.3) | 31.0 | (1.7) | 16.1 | (1.3) | 1.8 | (0.5) | 38.7 | (1.9) | 100.0 |
| Feedlot '99 | 22.6 | (1.7) | 42.2 | (2.2) | 17.4 | (1.8) | 3.4 | (0.9) | 14.4 | (1.9) | 100.0 |
| Respiratory vaccine at least 2 weeks prior to weaning | | | | | | | | | | | |
| 1994 COFE | 23.0 | (1.6) | 26.6 | (1.6) | 8.9 | (0.9) | 1.4 | (0.4) | 40.1 | (1.8) | 100.0 |
| Feedlot '99 | 27.0 | (2.0) | 38.8 | (2.2) | 11.8 | (1.6) | 0.7 | (0.3) | 21.7 | (2.0) | 100.0 |
| Respiratory vaccine given at weaning | | | | | | | | | | | |
| 1994 COFE | 12.5 | (1.2) | 23.3 | (1.6) | 16.6 | (1.4) | 3.7 | (0.7) | 43.9 | (1.8) | 100.0 |
| Feedlot '99 | 18.7 | (1.6) | 32.5 | (2.1) | 21.7 | (1.9) | 1.6 | (0.4) | 25.5 | (2.0) | 100.0 |
| Calves weaned at least 4 weeks prior to shipping | | | | | | | | | | | |
| 1994 COFE | 25.1 | (1.6) | 21.2 | (1.5) | 9.4 | (1.2) | 2.2 | (0.5) | 42.1 | (1.8) | 100.0 |
| Feedlot '99 | 32.4 | (2.0) | 34.8 | (2.1) | 9.9 | (1.5) | 1.0 | (0.3) | 21.9 | (2.0) | 100.0 |
| Calves castrated and dehorned prior to shipping | | | | | | | | | | | |
| 1994 COFE | 25.7 | (1.6) | 26.5 | (1.6) | 8.1 | (1.0) | 2.7 | (0.7) | 37.0 | (1.8) | 100.0 |
| Feedlot '99 | 31.7 | (2.1) | 33.5 | (2.1) | 9.1 | (1.2) | 1.2 | (0.4) | 24.5 | (2.2) | 100.0 |
| Calves treated for internal or external parasites prior to shipping | | | | | | | | | | | |
| 1994 COFE | 6.4 | (0.9) | 17.1 | (1.4) | 22.6 | (1.5) | 8.8 | (1.1) | 45.1 | (1.9) | 100.0 |
| Feedlot '99 | 8.0 | (1.0) | 28.6 | (2.1) | 27.9 | (1.9) | 5.4 | (0.9) | 30.1 | (2.2) | 100.0 |

2. Initial Processing Timing

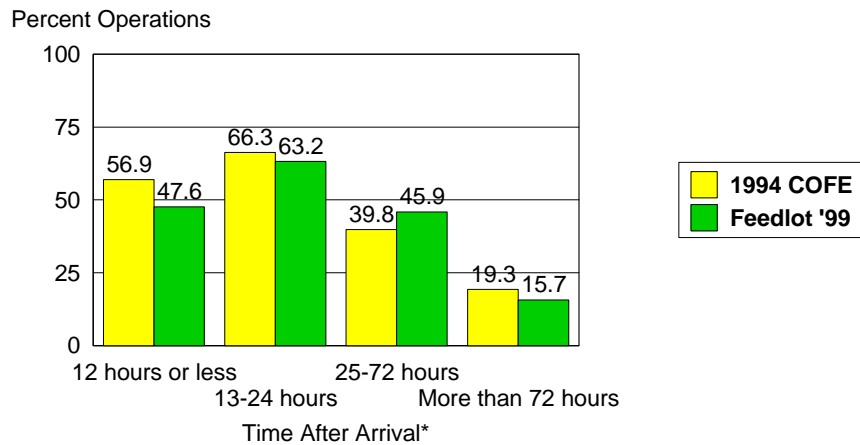
Processing cattle soon after arrival may be advantageous in reducing morbidity and mortality.

Virtually all feedlots processed some cattle as a group in each study year. Most feedlots processed some cattle in the first 24 hours after arrival. In each study year, the percentage of feedlots processing in the first 24 hours was greater for larger feedlots. Time categories in the table below are not mutually exclusive.

a. Percent of *operations* initially processing some cattle as a group during the following time periods after arrival by operation capacity:

| Time After Arrival | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|--------------------|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| 12 hours or less | 48.7 | (2.4) | 80.1 | (2.0) | 56.9 | (1.8) | 39.4 | (2.7) | 68.8 | (2.2) | 47.6 | (2.1) |
| 13-24 hours | 59.6 | (2.4) | 85.5 | (1.6) | 66.3 | (1.8) | 55.8 | (2.8) | 82.7 | (1.7) | 63.2 | (2.1) |
| 25-72 hours | 38.8 | (2.3) | 42.6 | (2.3) | 39.8 | (1.8) | 45.4 | (2.8) | 47.2 | (2.3) | 45.9 | (2.1) |
| More than 72 hours | 21.0 | (2.0) | 14.5 | (1.7) | 19.3 | (1.5) | 17.2 | (2.1) | 11.9 | (1.6) | 15.7 | (1.6) |
| Any processing | 98.2 | (0.6) | 99.4 | (0.4) | 98.5 | (0.5) | 96.6 | (1.1) | 100.0 | -- | 97.5 | (0.8) |

Percent of Operations Initially Processing Some Cattle as a Group During the Following Time Periods* After Arrival, 1994 and 1999



* Time periods are not mutually exclusive.

#6468

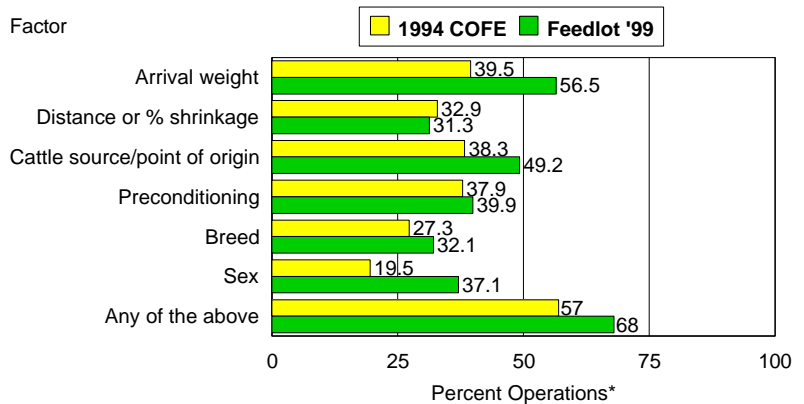
The majority of cattle placed in each study year (87.3 percent in 1994 and 80.8 percent in 1999) were processed within 24 hours after arrival. In both 1994 and 1999, a small percentage of placements were not processed following arrival (0.4 and 0.3, respectively).

b. Percent of *cattle* initially processed as a group during the following time periods after arrival by operation capacity:

| Time After Arrival | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|--------------------|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| 12 hours or less | 37.5 | (2.6) | 43.4 | (2.4) | 42.4 | (2.0) | 29.4 | (2.3) | 40.0 | (2.4) | 38.3 | (2.0) |
| 13-24 hours | 36.8 | (2.2) | 46.6 | (2.2) | 44.9 | (1.9) | 35.1 | (2.2) | 44.0 | (2.1) | 42.5 | (1.8) |
| 25-72 hours | 17.7 | (1.6) | 8.8 | (0.8) | 10.3 | (0.7) | 25.5 | (2.0) | 14.8 | (1.3) | 16.6 | (1.1) |
| More than 72 hours | 6.4 | (0.8) | 1.0 | (0.2) | 2.0 | (0.2) | 8.3 | (1.3) | 1.2 | (0.3) | 2.3 | (0.3) |
| Not processed | 1.6 | (0.4) | 0.2 | (0.0) | 0.4 | (0.1) | 1.7 | (1.0) | 0.0 | (0.0) | 0.3 | (0.2) |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | | 100.0 | |

More feedlots appear to be adjusting processing procedures based on animal and transportation factors than previously. The largest changes in the percentage of operations that adjusted their procedures were for animal arrival weight and sex of the animal. Alteration of processing procedures was more common for larger feedlots across all animal and transportation categories.

Percent of Operations* that Changed Any Processing Procedures for New Arrivals Based on Each of the Following Factors, 1994 and 1999



* For operations that processed new arrivals. Categories are not mutually exclusive. #4269

c. For operations that processed new arrivals, percent of operations that changed any processing procedures for new arrivals based on each of the following factors and by operation capacity:

| Factor | 1994 COFE | | | | | | Feedlot '99 | | | | | |
|---|--------------------|--------------|--------------------|--------------|----------------|--------------|--------------------|--------------|--------------------|--------------|----------------|--------------|
| | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | | 1,000 - 7,999 Head | | 8,000 Head or More | | All Operations | |
| | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error | Percent | Stand. Error |
| Arrival weight | 32.8 | (2.3) | 58.6 | (2.4) | 39.5 | (1.8) | 53.7 | (2.8) | 63.5 | (2.2) | 56.5 | (2.1) |
| Distance transported or percent shrinkage | 27.7 | (2.2) | 47.8 | (2.4) | 32.9 | (1.7) | 28.3 | (2.5) | 39.1 | (2.2) | 31.3 | (1.9) |
| Source of cattle | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV | 44.3 | (2.8) | 61.6 | (2.3) | 49.2 | (2.1) |
| Point of origin | 30.7 | (2.2) | 59.8 | (2.3) | 38.3 | (1.8) | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV |
| Marketing channel | 23.2 | (2.0) | 47.8 | (2.4) | 29.6 | (1.7) | N/AV | N/AV | N/AV | N/AV | N/AV | N/AV |
| Preconditioning | 31.7 | (2.2) | 55.7 | (2.4) | 37.9 | (1.8) | 36.6 | (2.7) | 48.3 | (2.3) | 39.9 | (2.0) |
| Sex | 13.2 | (1.6) | 37.3 | (2.4) | 19.5 | (1.3) | 31.9 | (2.6) | 50.3 | (2.3) | 37.1 | (2.0) |
| Breed | 6.2 | (1.1) | 21.1 | (2.0) | 10.1 | (1.0) | 10.5 | (1.5) | 21.6 | (2.0) | 13.7 | (1.3) |
| Any of the above | 51.4 | (2.4) | 72.9 | (2.2) | 57.0 | (1.9) | 66.1 | (2.7) | 72.7 | (2.1) | 68.0 | (2.0) |

The percentages of operations providing additional pen, waterer, and bunk space for newly arrived cattle were similar in the two study years.

d. Percent of operations that provided new arrivals with additional pen space, water space, and bunk space (compared to cattle on feed for more than 30 days) by frequency:

| Study | Always | Standard Error | Most of the Time | Standard Error | Sometimes | Standard Error | Never | Standard Error | Total |
|--------------------------|--------|----------------|------------------|----------------|-----------|----------------|-------|----------------|-------|
| Additional Pen Space | | | | | | | | | |
| 1994 COFE | 14.4 | (1.3) | 17.0 | (1.4) | 29.9 | (1.7) | 38.7 | (1.8) | 100.0 |
| Feedlot '99 | 19.9 | (1.7) | 20.7 | (1.7) | 26.4 | (1.8) | 33.0 | (2.1) | 100.0 |
| Additional Waterer Space | | | | | | | | | |
| 1994 COFE | 14.6 | (1.3) | 14.5 | (1.3) | 30.1 | (1.7) | 40.8 | (1.9) | 100.0 |
| Feedlot '99 | 19.0 | (1.7) | 18.7 | (1.6) | 23.4 | (1.8) | 38.9 | (2.1) | 100.0 |
| Additional Bunk Space | | | | | | | | | |
| 1994 COFE | 18.6 | (1.5) | 19.3 | (1.4) | 28.2 | (1.7) | 33.9 | (1.8) | 100.0 |
| Feedlot '99 | 24.5 | (1.9) | 22.9 | (1.8) | 21.5 | (1.6) | 31.1 | (2.0) | 100.0 |

Cattle are reprocessed within 30 days of arrival for many reasons including administration of initial or further vaccinations against respiratory disease, metaphylaxis (mass-treatment) with an antimicrobial to decrease morbidity and mortality, and delayed implantation to help control the buller steer syndrome.

Similar percentages of feedlots reprocessed and similar percentages of cattle were reprocessed within 30 days of arrival in 1994 and 1999. Approximately two-thirds of feedlots reprocessed at least some cattle, while one-quarter of total placements were reprocessed for various reasons.

e. For operations that initially processed cattle/calves as a group within 30 days of arrival, percent of operations processing cattle (and percent of cattle being processed) a second time within 30 days after arrival:

| Measure | 1994 COFE | | Feedlot '99 | |
|------------|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| Operations | 65.1 | (1.8) | 63.8 | (2.0) |
| Cattle | 24.4 | (1.4) | 24.6 | (1.3) |

In 1999, approximately three-quarters (78.9 percent) of all feedlots used the same pens for receiving and shipping cattle, a higher percentage than for 1994 (66.1 percent).

f. Percent of operations that used the same holding pens for receiving and shipping cattle:

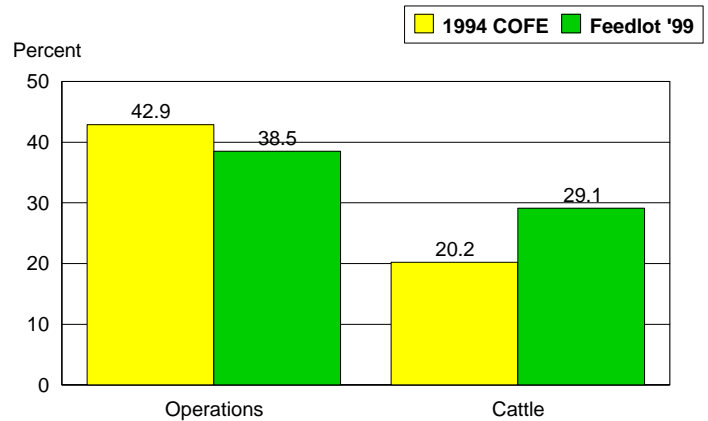
| 1994 COFE | | Feedlot '99 | |
|-----------|----------------|-------------|----------------|
| Percent | Standard Error | Percent | Standard Error |
| 66.1 | (1.8) | 78.9 | (1.7) |

3. Branding and Identification

Branding is a visually obvious and permanent form of identification, although it can result in substantial hide damage and subsequent economic loss. In 1994, a surprisingly large percentage of feedlots hide branded cattle after arrival (42.9 percent of feedlots), and one in five cattle (20.2 percent) were hide branded. In 1999, 38.5 percent of feedlots hide branded and 29.1 percent of all cattle were hide branded.

Data gathered in the Feedlot '99 study indicated that there was not one main reason that feedlots hide branded cattle (presented in *Part I: Baseline Reference of Feedlots Management Practices, 1999*). Therefore, efforts to decrease economic losses due to hide branding must account for the variety of reasons that motivate branding.

Percent of Operations that Hide Branded (Freeze or Hot) Cattle and Percent of Cattle Branded After Arrival, 1994 and 1999



#4270

| a. Percent of operations (and percent of cattle) that hide branded (freeze or hot) cattle after arrival: | | | | |
|--|-----------|----------------|-------------|----------------|
| Measure | 1994 COFE | | Feedlot '99 | |
| | Percent | Standard Error | Percent | Standard Error |
| i. Operations | 42.9 | (1.7) | 38.5 | (1.8) |
| ii. Cattle | 20.2 | (1.6) | 29.1 | (2.2) |

The percentage of feedlots branding any cattle at one or more of the following locations decreased over time. There is some evidence that the greatest decrease in branding site use was for the head, neck, or shoulder.

| b. Percent of all operations (and percent of cattle) that hide branded (freeze or hot) at one or more of the following sites: | | | | |
|---|-----------|----------------|-------------|----------------|
| Site | 1994 COFE | | Feedlot '99 | |
| | Percent | Standard Error | Percent | Standard Error |
| Operations | | | | |
| Head, neck, or shoulder | 9.5 | (1.1) | 6.3 | (0.7) |
| Side or rib | 10.1 | (1.1) | 8.0 | (1.0) |
| Lower rear leg, upper rear leg, or hip | 36.6 | (1.7) | 34.5 | (1.8) |
| Cattle Branded | | | | |
| Head, neck, or shoulder | 2.2 | (0.3) | 2.3 | (0.4) |
| Side or rib | 1.6 | (0.2) | 1.6 | (0.3) |
| Lower rear leg, upper rear leg, or hip | 16.4 | (1.5) | 25.5 | (2.1) |

C. Nutritional Management

1. Implants

Implants are a cost-effective method of increasing cattle performance, feed efficiency, and lean muscle mass. Much research has been focused on developing appropriate implant strategies to enhance their economic benefit. The greatest benefits of implants are realized when cattle are exposed to active implants throughout the feeding period.

There was little change in the number of times cattle less than 700 lbs at placement were implanted from 1994 to 1999.

a. For steers and heifers less than 700 lbs. when placed, percent implanted by number of times implanted:

| Number of Times | 1994 COFE | | Question Variation | Feedlot '99 | |
|-----------------|-----------|----------------|--------------------|-------------|----------------|
| | Percent | Standard Error | | Percent | Standard Error |
| 0 | 1.3 | (0.2) | | 1.9 | (0.4) |
| 1 | 21.1 | (1.6) | | 18.1 | (1.5) |
| 2 or more | 77.6 | (1.6) | 2 | 74.0 | (1.7) |
| | | | 3 or more | 6.0 | (0.9) |
| Total | 100.0 | | | 100.0 | |

For cattle 700 lbs or more at placement, the percentage that were not implanted increased in 1999 (2.8 percent) compared to 1994 (1.1 percent). The percentage that were implanted two or more times decreased over the period (from 35.0 percent to 30.4 percent).

b. For steers and heifers 700 lbs. or more when placed, percent of calves implanted by number of times implanted:

| Number of Times | 1994 COFE | | Question Variation | Feedlot '99 | |
|-----------------|-----------|----------------|--------------------|-------------|----------------|
| | Percent | Standard Error | | Percent | Standard Error |
| 0 | 1.1 | (0.2) | | 2.8 | (0.7) |
| 1 | 63.9 | (2.1) | | 66.8 | (2.2) |
| 2 or more | 35.0 | (2.2) | 2 | 30.0 | (2.1) |
| | | | 3 or more | 0.4 | (0.2) |
| Total | 100.0 | | | 100.0 | |

2. Feed Additives

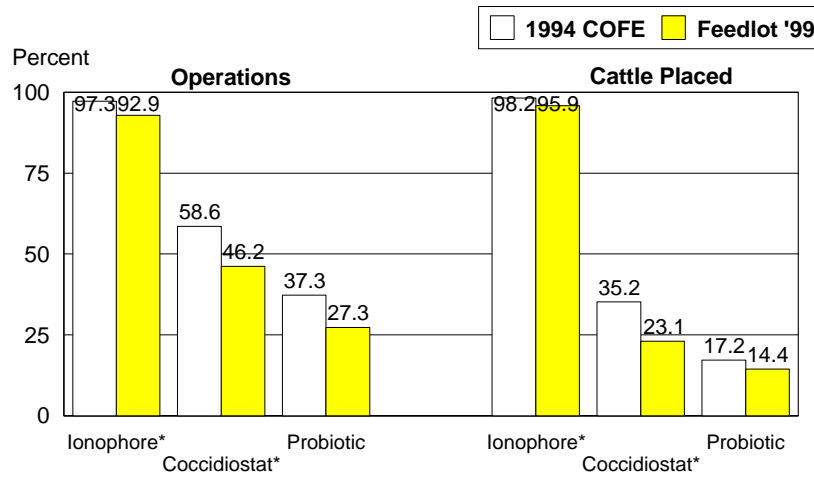
Ionophores are rumen microbial modifiers that improve feed efficiency (decrease feed-to-gain ratio) through enhancement of rumen microbial metabolism and also provide some control of coccidiosis. Coccidiostats are anticoccidial drugs that may be used to treat or prevent coccidiosis. The primary coccidial parasites of feedlot cattle are *Eimeria bovis* and *E. zurnii*. Probiotics are combinations of rumen microbes that usually include *Lactobacillus* spp. and are thought to enhance the development of a healthy rumen microbial environment.

From 1994 to 1999, there was a small shift downward in the percentages of feedlots using, and placements that were fed, ionophores, coccidiostats, and probiotics. Greater than 90 percent of feedlots used an ionophore in 1999, and greater than 95 percent of cattle received an ionophore.

| a. Percent of operations that fed (and percent of cattle placed that were fed) the following additives: | | | | |
|---|-----------|----------------|-------------|----------------|
| Additive | 1994 COFE | | Feedlot '99 | |
| | Percent | Standard Error | Percent | Standard Error |
| i. Operations | | | | |
| Ionophore* | 97.3 | (0.6) | 92.9 | (1.3) |
| Coccidiostat* | 58.6 | (1.8) | 46.2 | (2.1) |
| Probiotic | 37.3 | (1.8) | 27.3 | (1.8) |
| ii. Cattle placed | | | | |
| Ionophore* | 98.2 | (0.5) | 95.9 | (0.8) |
| Coccidiostat* | 35.2 | (2.4) | 23.1 | (2.7) |
| Probiotic | 17.2 | (1.6) | 14.4 | (1.7) |

* Ionophore such as Rumensin®, Bovatec®, or Cattlyst®.
 Coccidiostat other than an ionophore such as Corid® or Deccox®.

Percent of Operations that Fed
(and Percent of Cattle Placed that Were Fed)
the Following Additives, 1994 and 1999



* Ionophore such as Rumensin®, Bovatec®, or Cattlyst®.
 Coccidiostat other than an ionophore such as Corid® or Deccox®. #4271

3. Other

Heifers in which estrus is not controlled may have erratic feed intake and health problems. Melengesterol acetate (MGA[®]) is a progestin used as a feed additive to suppress ovarian activity in intact heifers. Additionally, decreasing the stress associated with estrus increases average daily gains and gain-to-feed ratio.

Almost identical percentages of feedlots in 1994 and 1999 fed MGA[®] to at least some heifers. These operations represent approximately two-thirds of operations that placed female cattle on feed.

a. For operations that placed female cattle on feed, percent of operations feeding MGA[®]:

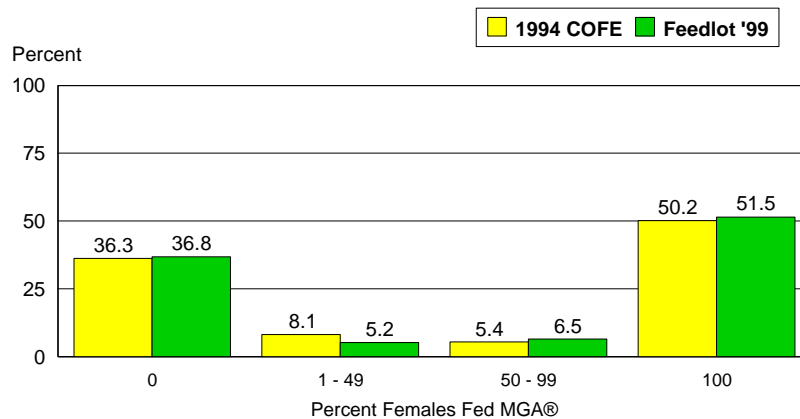
| 1994 COFE | | Feedlot '99 | |
|-----------|----------------|-------------|----------------|
| Percent | Standard Error | Percent | Standard Error |
| 63.7 | (1.9) | 63.2 | (2.1) |

A majority of the operations that fed any female cattle MGA[®] fed it to all female cattle.

b. For operations that placed female cattle on feed, percent of operations by percent of females fed MGA[®]:

| Percent Females Fed MGA [®] | 1994 COFE | | Feedlot '99 | |
|--------------------------------------|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| 0 | 36.3 | (2.0) | 36.8 | (2.1) |
| 1 - 49 | 8.1 | (1.1) | 5.2 | (0.8) |
| 50 - 99 | 5.4 | (0.9) | 6.5 | (1.0) |
| 100 | 50.2 | (2.0) | 51.5 | (2.2) |
| Total | 100.0 | | 100.0 | |

Percent of Operations* by Percent of Females Fed Melengesterol Acetate (MGA[®]), 1994 and 1999



* For operations that placed female cattle on feed.

#4272

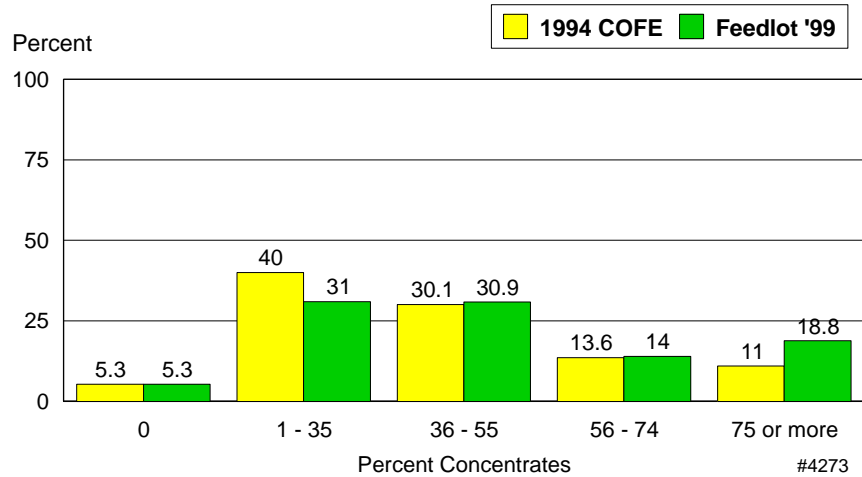
Cattle require a period of adaptation to high-energy concentrate (non-structural carbohydrate) rations to minimize the occurrence of lactic acidosis. Cattle that are maladapted to rations containing high concentrations of readily fermentable carbohydrates will likely suffer from rumen lactic acidosis and related diseases. Such diseases include, but are not limited to, dehydration, scours, liver abscessation, and laminitis (founder).

The percentage of feedlots that fed new arrivals a ration containing 1-35 percent energy concentrate (such as corn, wheat, or barley) decreased from 1994 to 1999. Over the same period, the percentage of feedlots that fed a ration containing 75 percent or more energy concentrate to new arrivals increased.

c. Percent of operations that fed the following average levels of concentrates (dry matter basis) to cattle in rations on arrival:

| Percent Concentrate | 1994 COFE | | Feedlot '99 | |
|---------------------|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| 0 | 5.3 | (0.9) | 5.3 | (1.1) |
| 1 - 35 | 40.0 | (1.9) | 31.0 | (2.1) |
| 36 - 55 | 30.1 | (1.7) | 30.9 | (1.9) |
| 56 - 74 | 13.6 | (1.3) | 14.0 | (1.5) |
| 75 or more | 11.0 | (1.2) | 18.8 | (1.7) |
| Total | 100.0 | | 100.0 | |

Percent of Operations that Fed the Following Average Levels of Concentrates (Dry Matter Basis) to Cattle in Rations on Arrival, 1994 and 1999



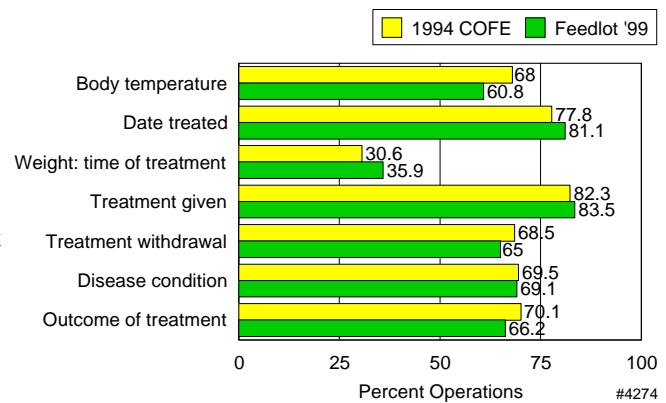
D. Health Management

1. Health Records Maintained

Disease conditions may be confused when basing a diagnosis solely on clinical signs. Different diseases may result in similar manifestations such as drooped ears, lowered head appearance, and unresponsiveness. Recording various animal and treatment information can provide data to monitor disease occurrence and treatment success and can be used for training purposes. Some examples of simple, yet valuable information include body temperature to help differentiate an infectious condition from a non-infectious condition, treatment date or expected withdrawal period (to avoid violative residues), disease diagnosis, and response to therapy. Further, day-to-day variations in an animal’s weight may be a sensitive indicator of either treatment success or the need to implement a secondary treatment regimen.

The percentage of feedlots recording the following information changed little from 1994 to 1999. There was a slight decrease in the percentage of feedlots that recorded body temperature *always* or *most of the time* (68.0 percent in 1994 compared to 60.8 percent in 1999). The percentage of feedlots that measured and recorded weight at time of treatment *always* or *most of the time* appears to have increased (30.3 percent compared to 35.9 percent).

Percent of Operations that Recorded the Following for Sick Animals *Always* or *Most of the Time*, 1994 and 1999



| a. Percent of operations by frequency of recording the following for sick animals: | | | | | | | | |
|--|--------|----------------|------------------|----------------|-----------|----------------|-------|----------------|
| Study | Always | Standard Error | Most of the Time | Standard Error | Sometimes | Standard Error | Never | Standard Error |
| Body temperature | | | | | | | | |
| 1994 COFE | 54.7 | (1.8) | 13.3 | (1.3) | 13.0 | (1.3) | 19.0 | (1.5) |
| Feedlot '99 | 42.3 | (2.0) | 18.5 | (1.7) | 16.3 | (1.6) | 22.9 | (1.9) |
| Date treated | | | | | | | | |
| 1994 COFE | 71.8 | (1.6) | 6.0 | (0.9) | 7.2 | (1.0) | 15.0 | (1.4) |
| Feedlot '99 | 71.8 | (2.0) | 9.3 | (1.4) | 6.0 | (1.1) | 12.9 | (1.7) |
| Weight at time of treatment | | | | | | | | |
| 1994 COFE | 23.3 | (1.4) | 7.3 | (0.9) | 13.2 | (1.2) | 56.2 | (1.7) |
| Feedlot '99 | 25.5 | (1.7) | 10.4 | (1.4) | 14.0 | (1.4) | 50.1 | (2.1) |
| Treatment given | | | | | | | | |
| 1994 COFE | 77.7 | (1.6) | 4.6 | (0.8) | 4.9 | (0.9) | 12.8 | (1.3) |
| Feedlot '99 | 73.5 | (2.0) | 10.0 | (1.5) | 4.1 | (0.9) | 12.4 | (1.6) |
| Treatment withdrawal period | | | | | | | | |
| 1994 COFE | 63.3 | (1.8) | 5.2 | (0.9) | 6.3 | (0.9) | 25.2 | (1.7) |
| Feedlot '99 | 57.6 | (2.1) | 7.4 | (1.3) | 9.3 | (1.3) | 25.7 | (2.0) |
| Disease condition (shipping fever, lameness, pneumonia, etc.) | | | | | | | | |
| 1994 COFE | 61.7 | (1.8) | 7.8 | (1.0) | 8.5 | (1.1) | 22.0 | (1.6) |
| Feedlot '99 | 57.6 | (2.1) | 11.5 | (1.5) | 12.5 | (1.5) | 18.4 | (1.8) |
| Outcome of treatment (return to pen, died, or culled) | | | | | | | | |
| 1994 COFE | 62.3 | (1.8) | 7.8 | (1.0) | 8.1 | (1.1) | 21.8 | (1.6) |
| Feedlot '99 | 57.0 | (2.1) | 9.2 | (1.4) | 10.1 | (1.4) | 23.7 | (2.0) |

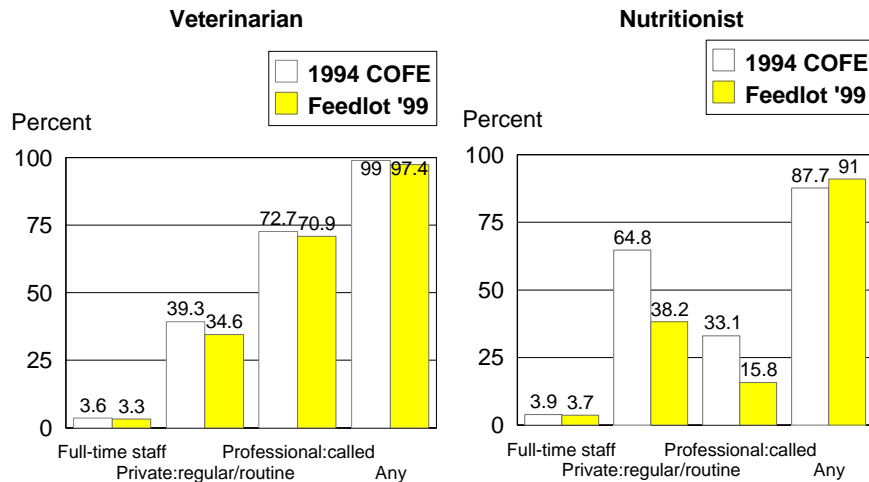
2. Use of Veterinarian and Nutritionist Services

Almost all feedlots (97.4 percent) used the services of a veterinarian in 1999, while many (91.0 percent) feedlots used the services of a nutritionist. Approximately one-third of feedlots had a veterinarian and/or nutritionist that made regular visits in 1999.

a. Percent of operations that used the services of the following types of consultants during the respective year ending June 30:

| Service | 1994 COFE | | Feedlot '99 | |
|---|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| Veterinarian | | | | |
| Full-time veterinarian on staff | 3.6 | (0.6) | 3.3 | (0.5) |
| Private veterinarian who made regular or routine visits | 39.3 | (1.6) | 34.6 | (1.6) |
| Professional veterinarian called as needed | 72.7 | (1.4) | 70.9 | (1.6) |
| Any veterinarian | 99.0 | (0.3) | 97.4 | (0.7) |
| Nutritionist | | | | |
| Full-time nutritionist on staff | 3.9 | (0.6) | 3.7 | (0.7) |
| Private nutritionist who made regular or routine visits | 64.8 | (1.7) | 38.2 | (1.8) |
| Professional nutritionist called as needed | 33.1 | (1.8) | 15.8 | (1.4) |
| Feed company nutritionist | N/AV | N/AV | 56.0 | (2.1) |
| Other nutritionist | N/AV | N/AV | 2.1 | (0.7) |
| Any nutritionist | 87.7 | (1.3) | 91.0 | (1.5) |

Percent of Operations that Used the Services of Veterinarians and Nutritionists, 1994 and 1999



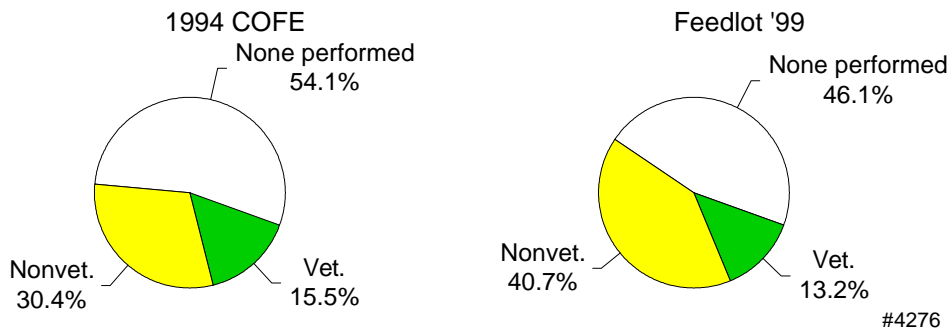
#4275

The best way to categorize cause of death in a feedlot animal is via a postmortem examination (autopsy/necropsy). Postmortems can be effectively performed by veterinarians or trained feedlot personnel. Failure to do postmortems will likely result in some misclassification of animal deaths and may lead to the inability to identify trends in cattle health such as treatment failure, misdiagnosis of live animals, or seasonal peaks in the incidence of diseases such as acute interstitial pneumonia.

There was a substantial increase in the percentage of dead cattle that had a postmortem examination from 1994 (45.9 percent) to 1999 (53.9 percent). This increase was primarily from postmortems by non-veterinarians.

| b. Percent of dead cattle where a postmortem examination was done during the year by: | | | | |
|---|-----------|----------------|-------------|----------------|
| Examiner | 1994 COFE | | Feedlot '99 | |
| | Percent | Standard Error | Percent | Standard Error |
| A veterinarian | 15.5 | (1.5) | 13.2 | (0.7) |
| A nonveterinarian | 30.4 | (2.4) | 40.7 | (2.1) |
| No postmortem performed | 54.1 | (2.5) | 46.1 | (2.3) |
| Total | 100.0 | | 100.0 | |

Percent of Dead Cattle Where a Postmortem Examination Was Done by Examiner, 1994 and 1999



3. Carcass Disposal Methods

The percentages of feedlots that used various dead animal disposal methods (and the percentages of dead animals disposed of) changed little from 1994 to 1999. Operations may have used more than one method of dead animal disposal.

| a. Percent of operations (and percent of dead animals) by dead animal disposal method: | | | | |
|--|-----------|----------------|-------------|----------------|
| Disposal Method | 1994 COFE | | Feedlot '99 | |
| | Percent | Standard Error | Percent | Standard Error |
| Operations | | | | |
| Buried on farm | 11.8 | (1.0) | 10.7 | (1.3) |
| Landfill | 1.2 | (0.4) | 1.6 | (0.4) |
| Renderer | 94.3 | (0.7) | 94.4 | (0.8) |
| Other | 1.0 | (0.4) | 0.4 | (0.2) |
| Dead Animals | | | | |
| Buried on farm | 3.5 | (0.8) | 5.3 | (1.5) |
| Landfill | 0.7 | (0.5) | 0.5 | (0.2) |
| Renderer | 95.8 | (0.9) | 94.1 | (1.6) |
| Other | 0.0 | (0.0) | 0.1 | (0.1) |
| Total | 100.0 | | 100.0 | |

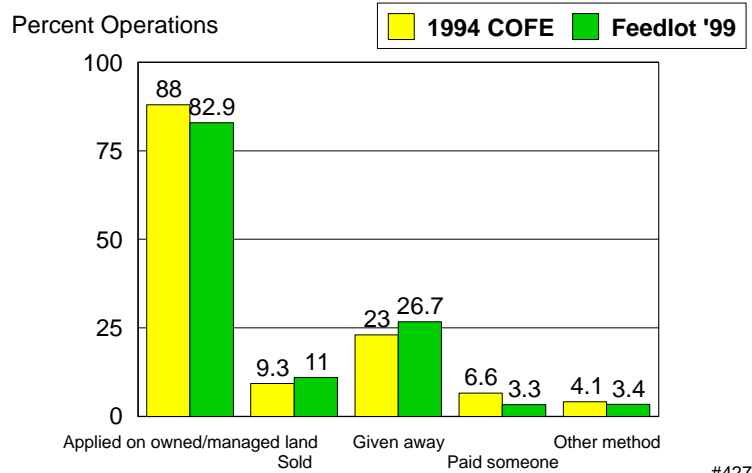
E. Environmental Programs

1. Waste Management

Manure disposal may pose problems for some feedlots, whereas others are able to capitalize on manure as a valuable, high quality fertilizer.

Feedlot operators used multiple means to dispose of manure from their operations. The majority of feedlots applied manure to land owned or managed by the feedlot, although this proportion of feedlots decreased slightly from 1994 to 1999. Interestingly, there was a slight increase in the percentage of feedlots that sold manure and a decrease in those that paid someone to take it.

Percent of Operations that Used the Following Manure Disposal Methods, 1994 and 1999



#4277

a. Percent of operations that used the following manure disposal methods:

| Method | 1994 COFE | | Feedlot '99 | |
|---|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| Applied on land owned or managed by the feedlot | 88.0 | (1.0) | 82.9 | (1.1) |
| Sold | 9.3 | (1.0) | 11.0 | (0.9) |
| Given away | 23.0 | (1.3) | 26.7 | (1.4) |
| Paid someone to take it | 6.6 | (0.7) | 3.3 | (0.4) |
| Removed by another method | 4.1 | (0.6) | 3.4 | (0.6) |

The percentage of feedlots that applied manure to land owned or managed by the feedlot that tested the nutrient content of soil increased in 1999 compared to 1994. Approximately three-quarters (76.1 percent) of the feedlots in this category tested the soil where the manure was being applied. It is unclear why a greater proportion tested soil if it were not to determine the application rate. Testing may have been part of a management plan to monitor phosphorous concentration in the soil.

b. For operations that applied manure on land owned by the feedlot, percent of operations that tested the nutrient content of the soil receiving the manure (and percent testing to determine the manure application rate) by operation capacity:

| Test Type | 1994 COFE | | Feedlot '99 | |
|---|-----------|----------------|-------------|----------------|
| | Percent | Standard Error | Percent | Standard Error |
| Tested | 69.1 | (1.9) | 76.1 | (2.0) |
| Tested to determine manure application rate | 62.4 | (2.4) | 53.5 | (2.5) |

Appendix I: Sample Profile

A. Responding Operations - 1,000 Head or More Capacity Feedlots

a. Number of operations by number placed during the year July 1 through June 30:

| | 1994 COFE | | Feedlot '99 |
|-----------------|-----------|----------|-------------|
| | Phase I | Phase II | |
| Number Placed | Number | Number | Number |
| 1 - 2,499 | 161 | 135 | 134 |
| 2,500 - 9,999 | 143 | 131 | 160 |
| 10,000 - 39,999 | 118 | 116 | 133 |
| 40,000 or more | 76 | 71 | 93 |
| Total | 498 | 453 | 520 |

NAHMS FEEDLOT '99 STUDY:

Completed and Expected Outputs and Related Study Objectives

1. Describe changes in management practices and animal health in feedlots from 1994 to 1999.
 - *Changes in the U.S. Feedlot Industry, 1994-1999*, August 2000
2. Describe the management in feedlots that impacts product quality.
 - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
 - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
 - Part III: Health Management and Biosecurity in U.S. Feedlots, 1999, expected December 2000
 - Quality assurance (interpretive report), expected 2001
 - Water quality (info sheet), expected fall 2000
 - Feed quality (info sheet), expected fall 2000
 - Implants (info sheet), May 2000
 - Vaccination practices (info sheet), expected fall 2000
 - Injections (info sheet), expected fall 2000
3. Identify factors associated with shedding by feedlot cattle of specified pathogens, such as *E. coli* 0157, *Salmonellae* spp., and *Campylobacter* spp.
 - *E. coli* 0157:H7 (info sheet), expected 2001
 - *Salmonella* (info sheet), expected 2001
 - *Campylobacter* (info sheet), expected 2001
4. Describe antimicrobial usage in feedlots.
 - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
 - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
 - Part III: Health Management and Biosecurity in U.S. Feedlots, 1999, expected December 2000
 - Antimicrobial usage in feedlots, expected fall 2001
5. Identify priority areas for pre-arrival processing of cattle and calves.
 - Part I: Baseline Reference of Feedlot Management Practices, 1999, May 2000
 - Part II: Baseline Reference of Feedlot Health and Health Management Practices, 1999, expected October 2000
 - Implants (info sheet), May 2000
 - Pre-arrival processing (info sheet), expected fall 2000

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