United States
Department
of Agriculture

Animal and
Plant Health
Inspection
Service

**Veterinary
Services**

Part I: Reference of 1996 Dairy Management Practices

National Animal Health Monitoring System

NAHMS Dairy '96

May 1996

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 Dairy '96 study was a cooperative effort between State and Federal agricultural statisticians, animal health officials, university researchers, and extension personnel. We want to thank the National Agricultural Statistics Service (NASS) enumerators and 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 NASS enumerators were critical in providing quality data for Dairy '96 reports. All participants are to be commended for their efforts, particularly the producers whose voluntary efforts made the study possible.

A. Strating

Dr. Al Strating, Director
Centers for Epidemiology & Animal Health

Table of Contents

Introduction 1

Terms Used in This Report 2

Section I: Population Estimates 3

A. Dairy Herd Information and Management Practices 3

1. Record-keeping systems 3
2. Individual animal identification 3
3. Breed of dairy cows 4
4. Cow registration 4
5. Number of bulls used 6
6. Rolling herd average milk production 6
7. Days dry 8
8. Calving interval 8
9. Age at first calving 8
10. Contract rearing 9
11. Feed rations 10
12. Grains and roughages 11
13. Pasturing lactating cows 12
14. Bovine somatotropin (bST) 13
15. Systematic prostaglandin 14
16. Milk and Dairy Beef Quality Assurance Program (MDBQA) 15

B. Dairy Heifers 16

1. Colostrum management 16
2. Weaning age 17

C. Culled Cows 18

1. Cull type and destination 18
2. Reason for culling dairy cows for slaughter 21
3. Milk production break-even level 21

D. Health Management 22

1. Sources of health care information 22
2. Veterinarian usage 23
3. Vaccinations 25
4. Preventive practices 28

E. Births, Illnesses, and Deaths 29

1. Dairy calves born alive during 1995 29
2. Abortions 29
3. Dairy cow morbidity 30
4. Unweaned heifer calf mortality 30
5. Weaned heifer mortality 32
6. Dairy cow mortality 33

F. Housing 34

1. Housing facilities 34
2. Separate maternity housing 34
3. Milking facilities 34

G. Biosecurity 35

1. Physical contact 35
2. Biosecurity for new arrivals 37

Section II: Sample Profile 41

A. Cattle Inventory on January 1, 1996 41

1. Total cattle and calves 41
2. Total dairy cows 41
3. Total dairy heifers 41
4. Operations with beef replacements 41
5. Operations with 50 percent or more Holstein cows 41

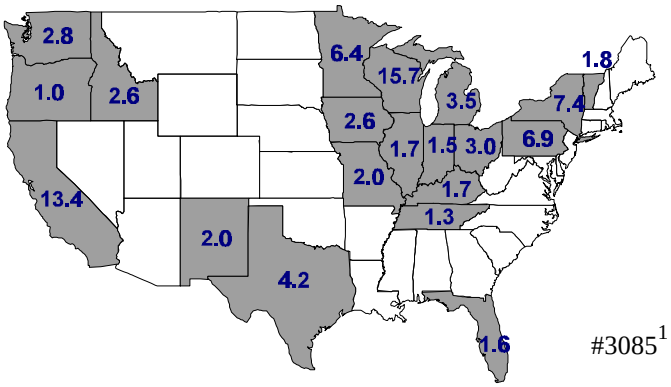
Introduction

The National Animal Health Monitoring System's (NAHMS) Dairy '96 study was designed to provide both participants and the industry with information on the nation's milk cows for education and research. This report is the first of several releases documenting Dairy '96 study results.

The first NAHMS national study of dairy health and management was the 1991-92 National Dairy Heifer Evaluation Project (NDHEP). NDHEP study results provided an overview of dairy herd management practices concentrating on the preweaned heifer.

Dairy '96 was the second NAHMS national study of the dairy industry. The 20 states participating in Dairy '96 (shown in the map at right) represented 83.1 percent of the U.S. milk cows on January 1, 1996.

Percent of U.S. Milk Cow Inventory, January 1, 1996, for States Participating in the NAHMS Dairy '96 Study



Total = 83.1 percent of the U.S. milk cow inventory.
States: California, Florida, Idaho, Illinois, Indiana, Iowa, Kentucky, Michigan, Minneosta, Missouri, New Mexico, New York, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Vermont, Washington, and Wisconsin.

NAHMS is sponsored by the USDA:APHIS:Veterinary Services (VS). The USDA's National Agricultural Statistics Service (NASS) collaborated with VS to select a statistically valid sample yielding 2,542 producers for Dairy '96. NASS enumerators collected data for *Part I: Reference of 1996 Dairy Management Practices* via a questionnaire administered on-farm from January 1 through 26, 1996.

Subsequent reports will report data collected by State and Federal Veterinary Medical Officers (VMO's) and Animal Health Technicians (AHT's) from February 20 through July 10, 1996. Anticipated release dates for additional Dairy '96 results are Fall 1996.

Discussions of Dairy '96 results within Part I are accessable on the Internet through gopher.aphis.usda.gov (menu choices: APHIS Information; Animal Health Information; Animal Health Monitoring, Risk Assessments, and Emerging Issues) and will be on the World Wide Web (through the APHIS Home Page) in mid-1996. Topics available on release of this report include culling practices and biosecurity measures.

For questions about this report or additional Dairy '96 and NAHMS results, please contact:

Centers for Epidemiology and Animal Health
USDA:APHIS:VS, attn. NAHMS
555 South Howes
Fort Collins, CO 80521
(970) 490-7800
Internet: NAHMS_INFO@aphis.usda.gov

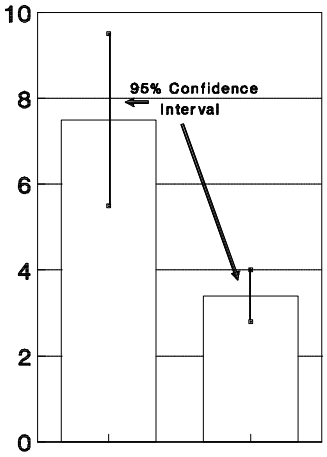
1 Identification numbers are assigned to each graph in this report for public reference.

Terms Used in This Report

Cow: female dairy bovine that has calved at least once.

Cow average: the average value for all cows; the reported value for each operation multiplied by the number of cows on that operation is summed over all operations and divided by the number of cows on all operations. This way, the result is adjusted for the number of cows on each operation. For instance, on page 8 the average age at first calving is multiplied by the number of cows for each operation. This product is then summed over all operations and divded by the sum of cows over all operations. The result is the average age at first calving for all cows.

Examples of 95% Confidence Intervals



(±1.0) (±0.3)
Standard Errors
#999a

Heifer: female dairy bovine not yet calved.

Holstein operations: Operations where Holstein cows accounted for 50 percent or more of the January 1, 1996, cow inventory.

Operation average: a single value for each operation is summed over all operations reporting divided by the number of operations reporting. For instance, operation average age at first calving (shown on page 8) is calculated by summing reported average age over all operations divided by the number of operations.

Population estimates: averages and proportions weighted to represent the population. Most of the estimates in this report 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 above, 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.) The second estimate of 3.4 shows a standard error of ±0.3 results with a range of 2.8 and 4.0.

Producer-identified cause: Causes of illnesses or deaths derived from observations of clinical signs reported by participating producers and not substantiated by a veterinarian or laboratory.

Physical contact: Possible nose-to-nose contact or sniffing/touching/licking each other through a fence.

Sample profile: information that describes characteristics of the operations from which Dairy ‘96 data were collected.

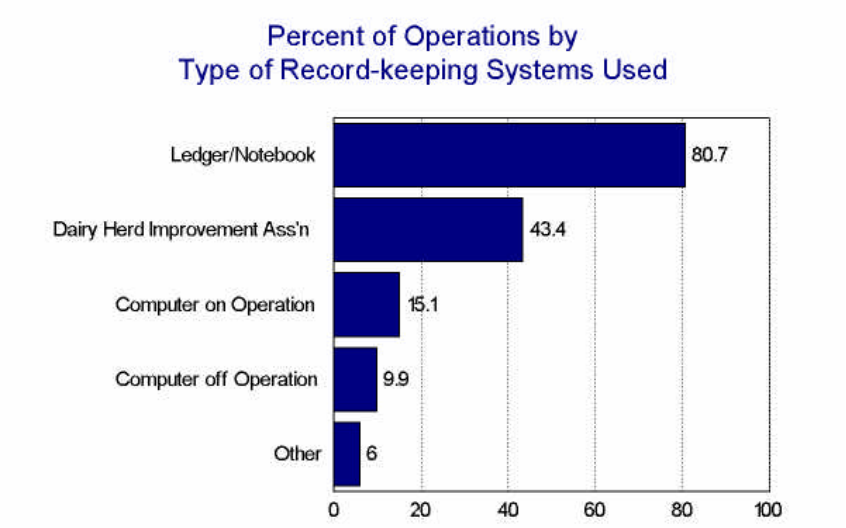
Section 1: Population Estimates

A. Dairy Herd Information & Management Practices

1. Record-keeping systems

a. Percent of operations (and percent of dairy cows on those operations) by type of individual animal record-keeping systems used for the dairy operation:

Record-keeping System	Percent Operations	Standard Error	Percent Dairy Cows	Standard Error
Hand written such as a ledger or notebook	80.7	(±1.0)	73.3	(±1.3)
Dairy Herd Improvement Association (DHIA)	43.4	(±1.2)	54.6	(±1.3)
Computer located on the operation	15.1	(±0.8)	36.9	(±1.1)
Computer located off the operation	9.9	(±0.8)	13.2	(±0.9)
Other system	6.0	(±0.7)	5.1	(±0.5)
Any	100.0	(±0.0)	100.0	(±0.0)



#3086

b. Percent of operations using a computerized recording-keeping system specifically for individual animal health information:

Percent Operations	Standard Error
8.9	(±0.6)

2. Individual Animal Identification

a. Percent of operations (and dairy cows) by type(s) of identification used:

Identification Type	Percent Operations	Standard Error	Percent Dairy Cows	Standard Error
Ear tags (all kinds)	81.2	(±1.1)	87.3	(±0.6)
Collars	22.3	(±1.0)	16.3	(±0.7)
Photograph or sketch	17.4	(±1.0)	10.3	(±0.6)
Branding (all methods)	4.9	(±0.5)	12.3	(±1.1)
Implanted electronic identification	0.3	(±0.1)	0.2	(±0.1)
Tattoo (other than tattoo for brucellosis)	6.5	(±0.6)	7.8	(±0.9)
Other	10.1	(±0.9)	6.4	(±0.6)
None	8.8	(±0.9)	2.5	(±0.3)

3. Breed of dairy cows

a. Percent of operations with at least one cow of the following breeds:

Breed	Percent Operations	Standard Error
Holstein	95.7	(±0.6)
Jersey	17.4	(±1.1)
Ayrshire	3.7	(±0.5)
Brown Swiss	5.8	(±0.6)
Guernsey	5.7	(±0.7)
Other	5.7	(±0.6)

b. Percent of cow inventory by breed:

Breed	Percent Cows	Standard Error
Holstein	93.7	(±0.5)
Jersey	4.0	(±0.4)
Ayrshire	0.4	(±0.1)
Brown Swiss	0.5	(±0.1)
Guernsey	0.8	(±0.1)
Other	0.6	(±0.1)
Total	100.0	

c. Percent of operations by main breed[1]:

Breed	Percent Operations	Standard Error
Holstein	93.0	(±0.8)
Jersey	4.1	(±0.6)
Ayrshire	0.3	(±0.1)
Brown Swiss	0.4	(±0.2)
Guernsey	1.7	(±0.4)
Other	0.5	(±0.2)
Total	100.0	

4. Cow registration

a. Percent of dairy cows registered with a breed association by herd size (number of dairy cows):

Number of Dairy Cows	Operation Average Percent of Dairy Cows	Standard Error	Percent of Dairy Cows	Standard Error
Less than 100	18.3	(±1.0)	20.5	(±1.0)
100-199	20.2	(±1.7)	20.1	(±1.7)
200 or more	11.5	(±1.1)	9.7	(±1.3)
All operations	18.1	(±0.8)	16.4	(±0.7)

1 Each operation is categorized by the breed with the largest number of cows in the January 1, 1996, inventory.

b. Percent of operations by percent of dairy cows registered:

Percent of Dairy Cows Registered	Percent Operations	Standard Error
0	65.5	(±1.2)
1-9	11.5	(±0.7)
10-50	6.4	(±0.6)
51-75	3.8	(±0.6)
76-99	5.2	(±0.5)
100	7.6	(±0.7)
Total	100.0	

i. Percent of operations by main breed within registration level (percent of dairy cows registered):

	Percent Operations Registration Level					
Breed	Less than 10.0%	Standard Error	10.0-75.9%	Standard Error	76.0% or more	Standard Error
Holstein	96.0	(±0.8)	89.3	(±2.6)	80.2	(±2.6)
Jersey	2.6	(±0.7)	4.7	(±1.4)	12.0	(±2.0)
Ayrshire	0.0	(±0.0)	0.4	(±0.4)	1.6	(±0.8)
Brown Swiss	0.4	(±0.3)	0.8	(±0.7)	0.6	(±0.4)
Guernsey	0.4	(±0.2)	4.7	(±2.2)	5.1	(±1.8)
Other	0.6	(±0.3)	0.1	(±0.1)	0.5	(±0.3)
Total	100.0		100.0		100.0	

c. Percent of all operations by herd size within registration level:

	Percent Operations Registration Level					
Number of Dairy Cows	Less than 10.0%	Standard Error	10.0-75.9%	Standard Error	76.0% or more	Standard Error
Less than 100	82.7	(±0.7)	79.3	(±2.0)	84.6	(±1.8)
100-199	11.1	(±0.6)	14.6	(±1.8)	12.6	(±1.7)
200 or more	6.2	(±0.3)	6.1	(±0.7)	2.8	(±0.5)
Total	100.0		100.0		100.0	

d. Percent of all operations by registration level within herd size:

	Percent Operations Registration Level						
Number of Dairy Cows	Less than 10.0%	Stand. Error	10.0-75.9%	Stand. Error	76.0% or More	Stand. Error	Total
Less than 100	72.4	(±1.3)	14.5	(±1.0)	13.1	(±0.9)	100.0
100-199	67.9	(±2.5)	18.6	(±2.2)	13.5	(±1.8)	100.0
200 or more	78.0	(±1.9)	15.8	(±1.7)	6.2	(±1.1)	100.0
All operations	72.2	(±1.1)	15.0	(±0.9)	12.8	(±0.8)	100.0

5. Number of bulls used

a. Percent of operations by number of bulls in the January 1, 1996, inventory used for breeding dairy cows or heifers:

Number Bulls	Percent Operations	Standard Error
0	45.4	(±1.3)
1	34.8	(±1.3)
2-4	16.9	(±0.8)
5 or more	2.9	(±0.2)
Total	100.0	

6. Rolling herd average milk production[1]

a. All herds

i. Operation average (and cow average) rolling herd milk production (pounds per cow) by herd size and Dairy Herd Improvement Association (DHIA) participation:

	Pounds per Cow			
Number of Dairy Cows	Operation Average	Standard Error	Cow Average	Standard Error
Less than 100	16,152	(±117)	16,809	(±92)
100-199	18,302	(±166)	18,350	(±159)
200 or more	19,215	(±151)	19,768	(±165)
All operations	16,587	(±100)	18,198	(±79)
DHIA or other computer records	18,470	(±111)	19,463	(±104)
No DHIA or other computer records	14,903	(±152)	16,083	(±120)

ii. Percent of operations by rolling herd average milk production:

Average Pounds	Percent Operations	Standard Error
Less than 14,000	21.4	(±1.2)
14,000 - 15,999	17.5	(±1.1)
16,000 - 19,999	42.3	(±1.3)
20,000 - 21,999	10.8	(±0.7)
22,000 or more	8.0	(±0.6)
Total	100.0	

iii. Percent of operations reporting rolling herd average milk production from the Dairy Herd Improvement Association (DHIA) or other computerized records:

Percent Operations	Standard Error
46.8	(±1.2)

1 Rolling herd average information was based on DHIA or other computer records where available and otherwise on producers' best estimtes.

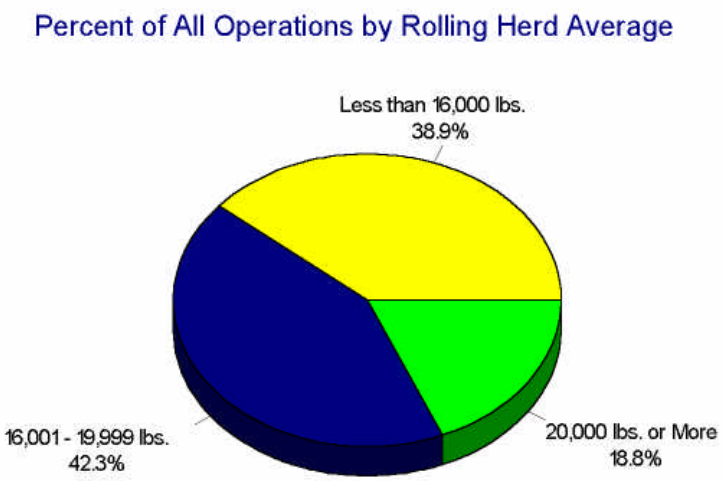
b. Holstein herds[1]

i. Operation average (and cow average) rolling herd milk production for Holstein operations by herd size and Dairy Herd Improvement Association (DHIA) participation:

Number of Dairy Cows[2]	Operation Average	Standard Error	Cow Average	Standard Error
Less than 100	16,505	(±116)	17,093	(±92)
100-199	18,497	(±155)	18,528	(±152)
200 or more	19,375	(±151)	19,938	(±159)
All Holstein operations	16,925	(±99)	18,442	(±78)
DHIA or other computer records	18,694	(±111)	19,633	(±102)
No DHIA or other computer records	15,282	(±148)	16,352	(±116)

ii. Percent of Holstein operations by rolling herd average milk production:

Average Pounds	Percent Holstein Operations	Standard Error
Less than 14,000	17.9	(±1.2)
14,000 - 15,999	17.5	(±1.2)
16,000 - 19,999	44.5	(±1.3)
20,000 - 21,999	11.6	(±0.7)
22,000 or more	8.5	(±0.6)
Total	100.0	



#3087

1 Operations where Holstein cows accounted for 50 percent or more of the January 1, 1996, cow inventory.

2 Number of dairy cow size groups are based on total dairy cows in the herd - all cows, not just Holstein cows.

7. Days dry

a. Operation average (and cow average) reported average days dry during 1995:

Operation Average	Standard Error	Cow Average	Standard Error
60.5	(±0.3)	61.7	(±0.4)

b. Percent of operations by reported average number of days dry:

Days Dry	Percent Operations	Standard Error
Less than 60	28.4	(±1.2)
60-69	53.2	(±1.3)
70 or more	18.4	(±1.1)
Total	100.0	

8. Calving interval

a. Operation average (and cow average) reported average calving interval (in months) for dairy cows during 1995:

Operation Average	Standard Error	Cow Average	Standard Error
12.9	(±0.0)	13.0	(±0.0)

b. Percent of operations by reported average calving interval (in months) for dairy cows:

Months	Percent Operations	Standard Error
Less than 13	65.4	(±1.2)
13-15	33.0	(±1.2)
More than 15	1.6	(±0.3)
Total	100.0	

9. Age at first calving

a. Operation average (and cow average) reported average age (months) at first calving:

Operation Average	Standard Error	Cow Average	Standard Error
25.8	(±0.1)	25.5	(±0.1)

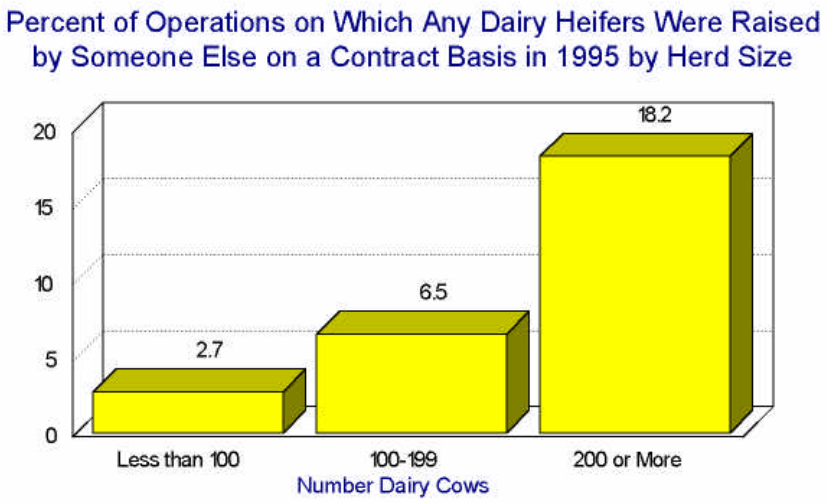
b. Percent of operations (and percent of cows on these operations) by reported average age (in months) of cows at first calving:

Age (Months)	Percent Operations	Standard Error	Percent Cows	Standard Error
Less than 24.0	9.3	(±0.9)	7.9	(±0.6)
24.0-24.9	30.8	(±1.3)	34.3	(±1.3)
25.0-25.9	12.6	(±0.8)	16.5	(±1.2)
26.0-26.9	17.3	(±1.0)	17.1	(±0.9)
27.0-27.9	7.7	(±0.7)	7.4	(±0.6)
28.0 - 28.9	6.8	(±0.6)	5.7	(±0.5)
29.0 - 29.9	1.3	(±0.3)	1.3	(±0.2)
30 or more	14.2	(±1.0)	9.8	(±0.7)
Total	100.0		100.0	

10. Contract rearing

a. Percent of operations on which any dairy heifers were raised by someone else on a contract basis in 1995 by herd size:

Number of Dairy Cows	Percent Operations	Standard Error
Less than 100	2.7	(±0.4)
100-199	6.5	(±1.4)
200 or more	18.2	(±1.9)
All operations	4.1	(±0.4)

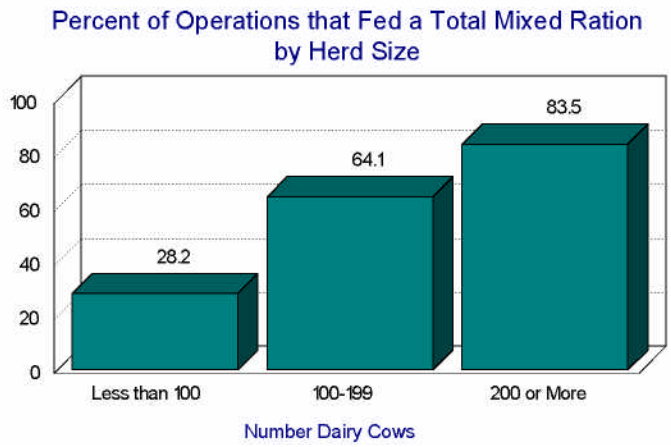


#3088

11. Feed rations

a. Percent of operations that fed a total mixed ration by herd size:

Number of Dairy Cows	Percent Operations	Standard Error
Less than 100	28.2	(±1.3)
100-199	64.1	(±2.6)
200 or more	83.5	(±1.7)
All operations	35.6	(±1.1)



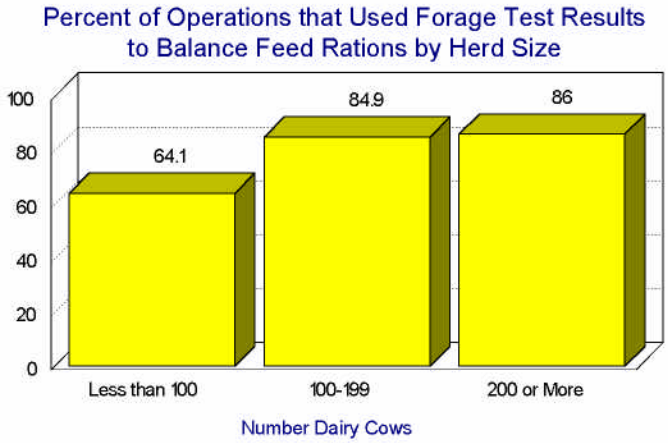
#3089

i. Percent of operations that fed a total mixed ration by rolling herd average:

Average Pounds	Percent Operations	Standard Error
Less than 16,000	28.9	(±2.0)
16,000 - 19,999	33.2	(±1.7)
20,000 or more	55.4	(±2.5)
All operations	35.6	(±1.1)

b. Percent of operations that used forage test results to balance feed rations by herd size:

Number of Dairy Cows	Percent Operations	Standard Error
Less than 100	64.1	(±1.4)
100-199	84.9	(±1.7)
200 or more	86.0	(±1.5)
All operations	67.8	(±1.2)



#3090

12. Grains and roughages

a. Percent of operations that fed feed grains and roughages raised on the operation to dairy animals during 1995 by region:

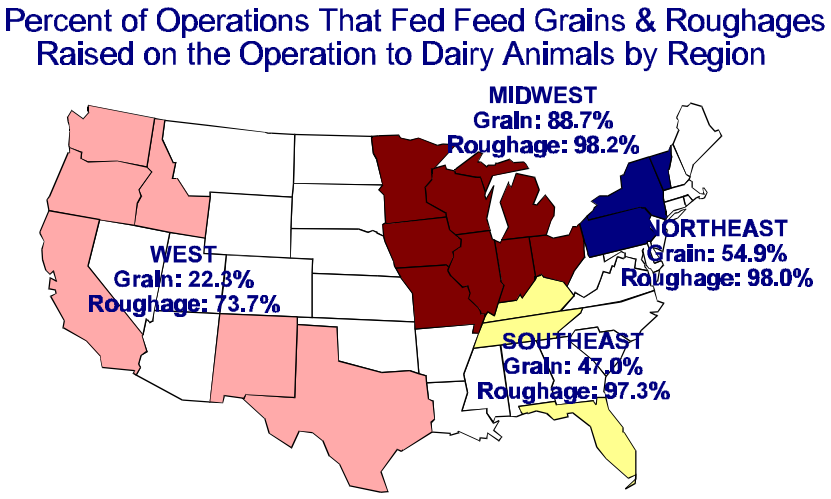
	Percent Operations			
Region	Feed Grains	Standard Error	Roughages	Standard Error
West	22.3	(±3.8)	73.7	(±4.2)
Midwest	88.7	(±1.3)	98.2	(±0.7)
Northeast	54.9	(±1.9)	98.0	(±0.7)
Southeast	47.0	(±5.3)	97.3	(±0.8)
All operations	72.7	(±1.0)	96.0	(±0.6)

i. Of operations that fed *feed grains*, operation average percent of feeds fed that were raised on the operation by region:

	Operation Average Percent	
Region	Feed Grains	Standard Error
West	75.1	(±5.6)
Midwest	86.5	(±1.0)
Northeast	68.7	(±1.6)
Southeast	61.2	(±4.4)
All operations	82.1	(±0.8)

ii. Of operations that fed *roughages*, operation average percent of feeds fed that were raised on the operation by region:

	Operation Average Percent	
Region	Roughages	Standard Error
West	69.7	(±2.4)
Midwest	94.2	(±0.6)
Northeast	96.3	(±0.5)
Southeast	93.2	(±2.2)
All operations	93.0	(±0.4)



#3091

13. Pasturing lactating cows

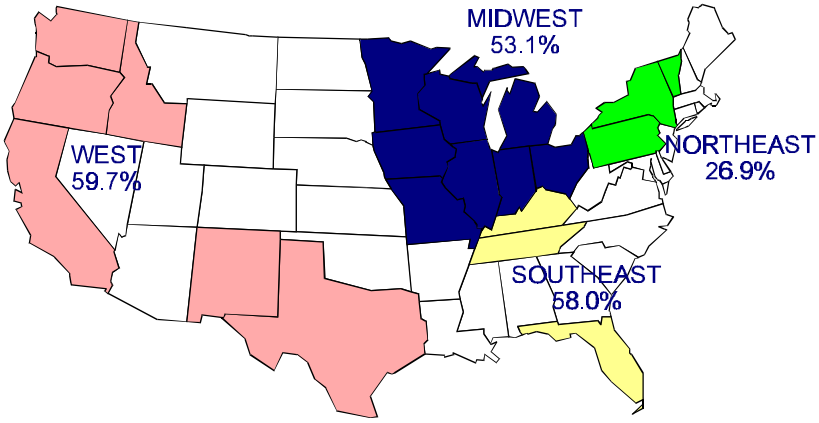
a. Percent of operations that pastured lactating dairy cows for 3 or more months during 1995 by region:

Region	Percent Operations	Standard Error
West	43.4	(±4.4)
Midwest	54.0	(±1.6)
Northeast	70.1	(±1.9)
Southeast	74.5	(±4.7)
All operations	58.0	(±1.2)

b. For operations that pastured lactating dairy cows for 3 or more months during 1995, percent of operations where pasture provided at least 90 percent of roughages for the cows while on pasture by region:

Region	Percent Operations	Standard Error
West	59.7	(±6.7)
Midwest	53.1	(±2.5)
Northeast	26.9	(±2.6)
Southeast	58.0	(±5.7)
All operations	46.1	(±1.7)

Percent of Operations* that Provided Pastured Cows with at Least 90 Percent of Roughage from Pasture by Region



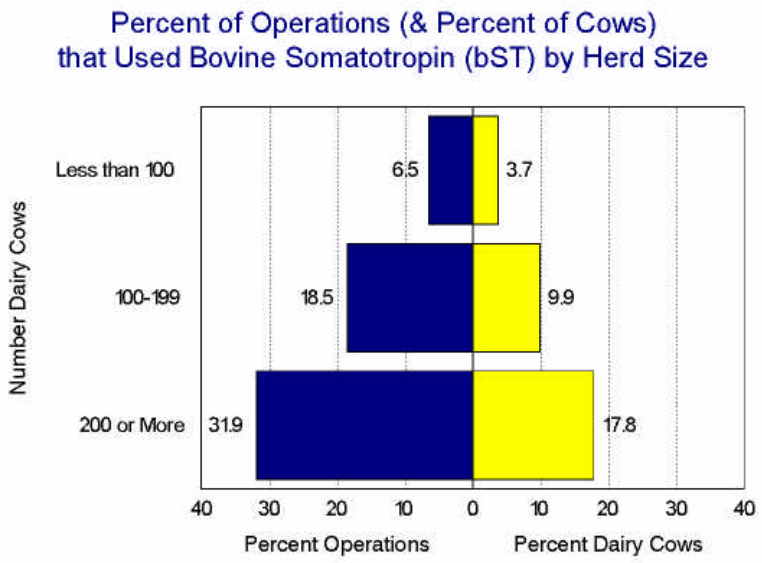
* Operations that pastured lactating cows.

#3092

14. Bovine somatotropin (bST)

a. Percent of operations (and percent of cows) that used bovine somatotropin (bST) in cows during the current lactation (at the time of the Dairy '96 interview) by herd size:

Number of Dairy Cows	Percent Operations	Standard Error	Percent Cows	Standard Error
Less than 100	6.5	(±0.6)	3.7	(±0.4)
100-199	18.5	(±2.0)	9.9	(±1.3)
200 or more	31.9	(±2.3)	17.8	(±1.7)
All operations	9.4	(±0.6)	10.1	(±0.7)



#3094

b. Percent of operations (and percent of cows) that used bovine somatotropin (bST) in cows during the current lactation (at the time of the Dairy '96 interview) by region:

Region	Percent Operations	Standard Error	Percent Cows	Standard Error
West	15.2	(±2.6)	10.9	(±1.6)
Midwest	7.6	(±0.7)	8.3	(±1.0)
Northeast	12.0	(±1.2)	11.8	(±1.1)
Southeast	8.3	(±1.8)	13.6	(±2.2)
All operations	9.4	(±0.6)	10.1	(±0.7)

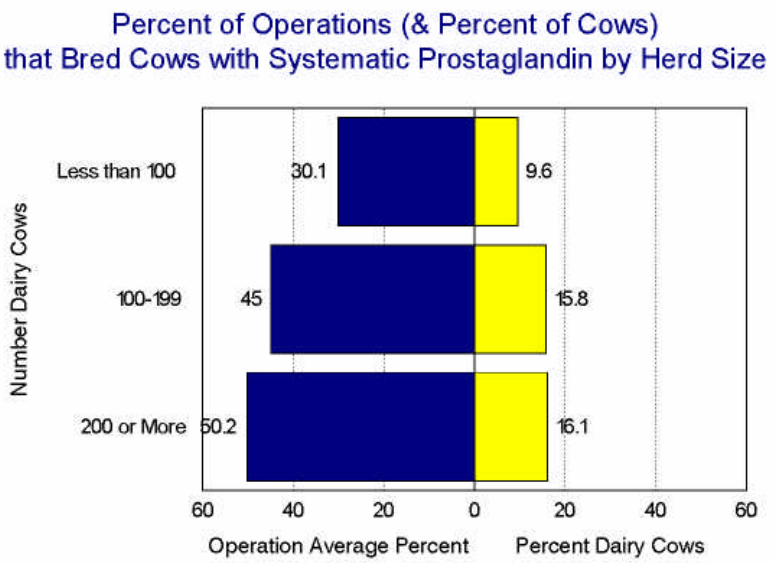
c. For operations giving bovine somatotropin (bST), operation average percent of dairy cows that received bST during the current lactation:

Operation Average Percent	Standard Error
49.2	(±2.4)

15. Systematic prostaglandin

a. Percent of operations (and percent of cows) that bred cows with Systematic Prostaglandin (estrus synchronization) during the current lactation (at the time of the Dairy '96 interview) by herd size:

Number of Dairy Cows	Percent Operations	Standard Error	Percent Cows	Standard Error
Less than 100	30.1	(±1.2)	9.6	(±0.5)
100-199	45.0	(±2.7)	15.8	(±1.6)
200 or more	50.2	(±2.4)	16.1	(±1.4)
All operations	33.0	(±1.1)	13.1	(±0.7)



#3094

b. Percent of operations (and percent of cows) that bred cows with Systematic Prostaglandin (estrus synchornization) during the current lactation (at the time of the Dairy '96 interview) by region:

Region	Percent Operations	Standard Error	Percent Cows	Standard Error
West	29.5	(±2.2)	11.8	(±1.5)
Midwest	32.0	(±1.5)	13.2	(±0.9)
Northeast	41.2	(±2.1)	15.2	(±1.1)
Southeast	11.4	(±1.8)	12.6	(±1.6)
All operations	33.0	(±1.1)	13.1	(±0.7)

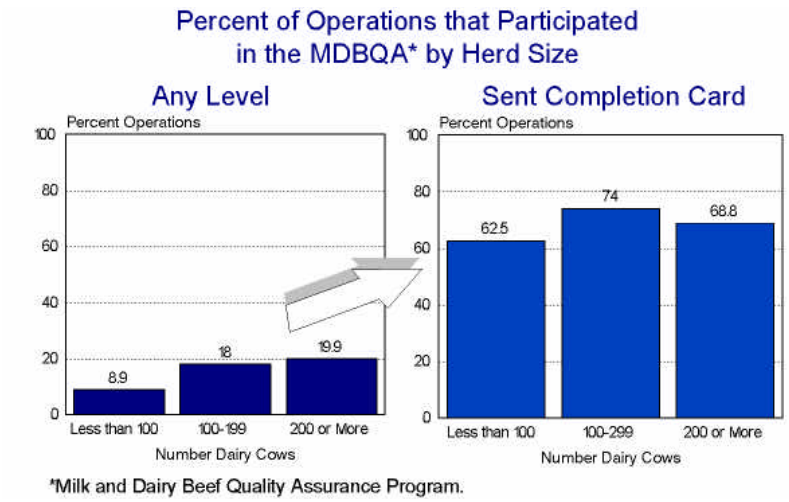
c. For operations that bred cows with Systematic Prostaglandin, operation average percent of dairy cows synchronized with Systematic Prostaglandin during the current lactation:

Operation Average Percent	Standard Error
28.4	(±0.9)

16. Milk and Dairy Beef Quality Assurance Program (MDBQA)

a. Percent of operations that participated in the MDBQA by herd size:

Number of Dairy Cows	Percent Operations	Standard Error
Less than 100	8.9	(±0.7)
100-199	18.0	(±1.9)
200 or more	19.9	(±1.9)
All operations	10.6	(±0.7)



#3095

b. Percent of operations that had participated in the MDBQA by region:

Region	Percent Operations	Standard Error
West	9.0	(±1.2)
Midwest	12.1	(±0.9)
Northeast	8.2	(±1.2)
Southeast	6.4	(±1.7)
All operations	10.6	(±0.7)

c. For operations that participated in the MDBQA, percent of operations by level of involvement and herd size:

	Veterinarian Involved		Sent Completion Card	
Number of Dairy Cows	Percent Operations	Standard Error	Percent Operations	Standard Error
Less than 100	86.1	(±2.7)	62.5	(±4.5)
100-199	88.5	(±3.3)	74.0	(±5.3)
200 or more	89.2	(±2.8)	68.8	(±4.8)
All operations	86.9	(±2.0)	65.4	(±3.4)

d. For operations that had participated in the MDBQA, percent of operations by level of involvement and region:

	Veterinarian Involved		Sent Completion Card	
Region	Percent Operations	Standard Error	Percent Operations	Standard Error
West	80.1	(±4.9)	61.6	(±6.5)
Midwest	91.9	(±2.2)	69.8	(±4.1)
Northeast	71.8	(±6.4)	50.9	(±8.1)
Southeast	80.3	(±9.9)	56.8	(±13.9)
All operations	86.9	(±2.0)	65.4	(±3.4)

B. Dairy Heifers

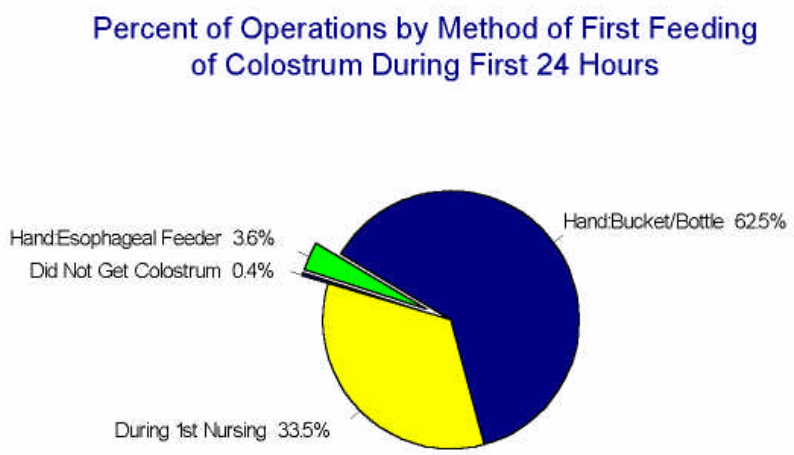
1. Colostrum management

a. Percent of operations (and percent heifer calves born on these operations) by time following birth when newborn calves were normally separated from the mother:

Age (Hours)	Percent Operations	Standard Error	Percent Calves	Standard Error
Immediately (no nursing)	47.9	(±1.3)	45.0	(±1.4)
After nursing, but less than 12 hours	20.8	(±1.0)	27.4	(±1.4)
12-24 hours	17.4	(±1.1)	18.7	(±1.2)
More than 24 hours	13.9	(±1.0)	8.9	(±0.6)
Total	100.0		100.0	

b. Percent of operations (and percent of heifer calves born on these operations) by method normally used for first feeding of colostrum to newborn dairy heifers:

Method of Delivery	Percent Operations	Standard Error	Percent Calves	Standard Error
During first nursing	33.5	(±1.2)	29.4	(±1.1)
Hand feeding from bucket or bottle	62.5	(±1.2)	62.2	(±1.3)
Hand feeding using esophageal feeder	3.6	(±0.4)	8.3	(±1.0)
Did not get colostrum	0.4	(±0.2)	0.1	(±0.1)
Total	100.0		100.0	



#3096

c. For operations that hand fed colostrum, percent of operations (and percent of heifer calves born on these operations) by amount of colostrum normally fed by hand during the first 24 hours:

Source	Percent Operations Hand Feeding	Standard Error	Percent Calves	Standard Error
Two quarts or less	21.4	(±1.3)	21.1	(±1.5)
More than two, but less than four quarts	46.6	(±1.6)	43.0	(±1.8)
Four quarts or more	32.0	(±1.5)	35.9	(±1.6)
Total	100.0		100.0	

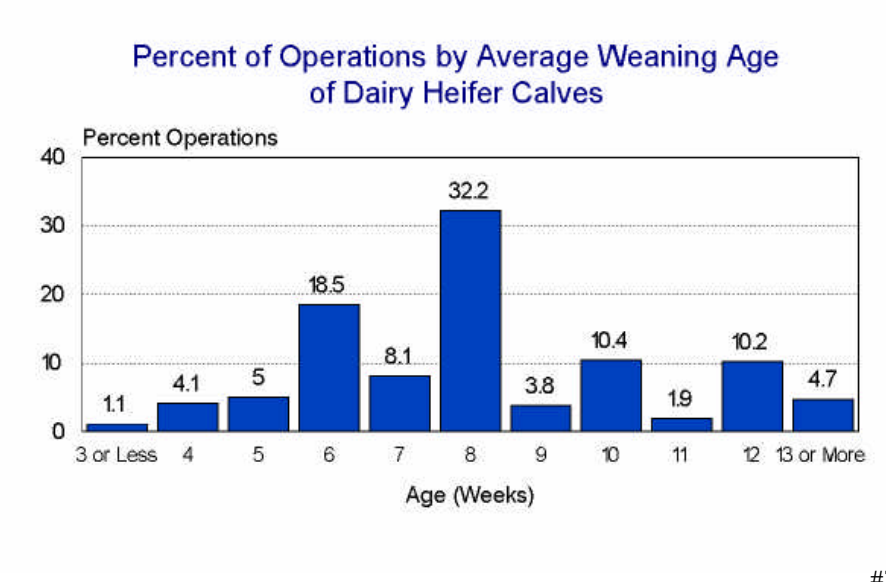
2. Weaning age

a. Average age at weaning (in weeks) of dairy heifer calves by herd size:

Number of Dairy Cows	Operation Average	Standard Error	Calf Average	Standard Error
Less than 100	8.4	(±0.1)	8.2	(±0.1)
100-199	8.0	(±0.1)	8.1	(±0.1)
200 or more	9.2	(±0.1)	9.5	(±0.2)
All operations	8.4	(±0.1)	8.7	(±0.1)

b. Percent of operations by average weaning age of dairy heifer calves:

Age	Percent Operations	Standard Error
3 weeks or less	1.1	(±0.3)
4 weeks	4.1	(±0.6)
5 weeks	5.0	(±0.6)
6 weeks	18.5	(±1.0)
7 weeks	8.1	(±0.7)
8 weeks	32.2	(±1.2)
9 weeks	3.8	(±0.5)
10 weeks	10.4	(±0.9)
11 weeks	1.9	(±0.5)
12 weeks	10.2	(±0.8)
13 weeks or more	4.7	(±0.5)
Total	100.0	



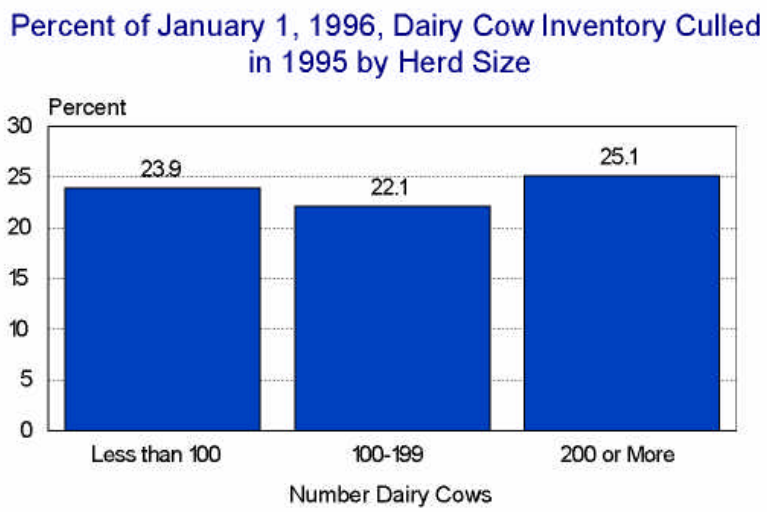
#3097

C. Culled Cows

1. Cull type and destination

a. Number of dairy cows that were culled from the herd in 1995 as a percent of January 1, 1996, dairy cow inventory by herd size and registration level:

Number of Dairy Cows	Percent Cows: Less Than 10% Registered	Standard Error	10% or More Registered	Standard Error	All Operations	Standard Error
Less than 100	22.9	(±0.6)	26.1	(±1.8)	23.9	(±0.7)
100-199	21.2	(±0.5)	24.0	(±1.1)	22.1	(±0.5)
200 or more	25.0	(±0.6)	25.8	(±1.2)	25.1	(±0.6)
All operations	23.5	(±0.4)	25.6	(±1.0)	24.0	(±0.4)



#3098

b. For operations that culled dairy cows during 1995, percent of culled dairy cows (and operation average percent) by destination:

Destination	Percent Culled Dairy Cows	Standard Error	Operation Average Percent Culls	Standard Error
Sent to another operation	4.5	(±1.0)	2.7	(±0.3)
Sold for slaughter:				
Sent to a market, auction, or stockyards	74.0	(±1.4)	77.8	(±0.9)
Sold directly to a packer or slaughter plant	21.0	(±1.2)	18.2	(±0.9)
Sent elsewhere	0.5	(±0.1)	1.3	(±0.3)
Total	100.0		100.0	

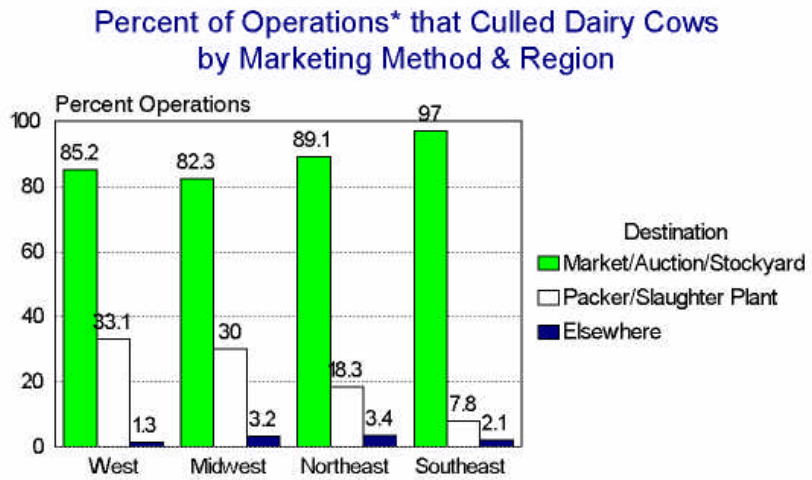
c. Percent operations culling dairy cows for slaughter

i. For operations that culled dairy cows for slaughter, percent of operations using the following marketing methods by herd size:

	Percent Operations					
Percent of Dairy Cows	Sent to a Market Auction, or Stockyards	Standard Error	Sold Directly to a Packer or Slaughter Plant	Standard Error	Sent Elsewhere	Standard Error
Less than 100	85.0	(±1.1)	23.9	(±1.3)	3.2	(±0.5)
100-199	83.5	(±2.2)	34.9	(±2.6)	2.7	(±1.1)
200 or more	85.3	(±2.0)	43.6	(±2.5)	1.2	(±0.4)
All operations	84.9	(±0.9)	26.4	(±1.1)	3.0	(±0.5)

ii. For operations that culled dairy cows for slaughter, percent of operations using the following marketing methods by region:

	Percent Operations					
Marketing Method	Sent to a Market Auction, or Stockyards	Standard Error	Sold Directly to a Packer or Slaughter Plant	Standard Error	Sent Elsewhere	Standard Error
West	85.2	(±2.9)	33.1	(±3.1)	1.3	(±0.4)
Midwest	82.3	(±1.3)	30.0	(±1.6)	3.2	(±0.6)
Northeast	89.1	(±1.3)	18.3	(±1.7)	3.4	(±0.9)
Southeast	97.0	(±1.5)	7.8	(±1.7)	2.1	(±1.5)
All operations	84.9	(±0.9)	26.4	(±1.1)	3.0	(±0.5)



*For operations that culled dairy cows for slaughter.

#3099

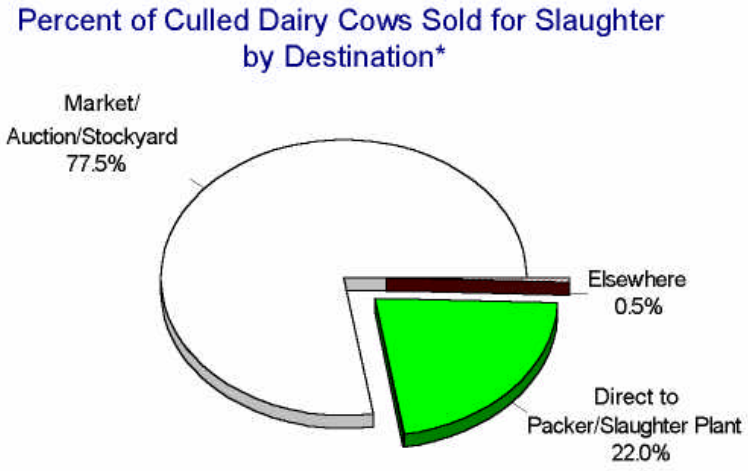
d. Percent dairy cows culled for slaughter

i. For operations that culled dairy cows for slaughter, percent of dairy cows culled for slaughter by marketing method:

Percent of Dairy Cows	Percent Dairy Cows: Sent to a Market Auction, or Stockyards	Standard Error	Sold Directly to a Packer or Slaughter Plant	Standard Error	Sent Elsewhere	Standard Error
Less than 100	79.3	(±1.4)	19.7	(±1.4)	1.0	(±0.2)
100-199	74.9	(±2.3)	24.5	(±2.3)	0.6	(±0.3)
200 or more	76.5	(±2.3)	23.4	(±2.3)	0.1	(±0.0)
All operations	77.5	(±1.2)	22.0	(±1.2)	0.5	(±0.1)

ii. For operations that culled dairy cows for slaughter, percent of dairy cows culled for slaugher by marketing method and region:

Marketing Method	Percent Dairy Cows: Sent to a Market Auction, or Stockyards	Standard Error	Sold Directly to a Packer or Slaughter Plant	Standard Error	Sent Elsewhere	Standard Error
West	78.9	(±2.5)	20.9	(±2.5)	0.2	(±0.1)
Midwest	73.2	(±1.5)	26.2	(±1.5)	0.6	(±0.2)
Northeast	84.7	(±1.5)	14.1	(±1.4)	1.2	(±0.4)
Southeast	78.3	(±8.3)	21.5	(±8.3)	0.2	(±0.1)
All operations	77.5	(±1.2)	22.0	(±1.2)	0.5	(±0.1)



*For operations that culled dairy cows during 1995.

#3100

2. Reason for culling dairy cows for slaughter

a. For operations that culled dairy cows for slaughter, percent of dairy cows culled for slaughter by reason for culling:

Reason	Percent Dairy Cows Culled for Slaughter	Standard Error
Udder or mastitis problem	26.5	(±0.5)
Lameness or injury	15.0	(±0.6)
Disease	4.3	(±0.6)
Aggressiveness or belligerence (kickers)	1.0	(±0.1)
Poor production not related to above problems	22.4	(±0.8)
Reproductive problems	26.7	(±0.8)
Other	4.1	(±0.4)
Total	100.0	

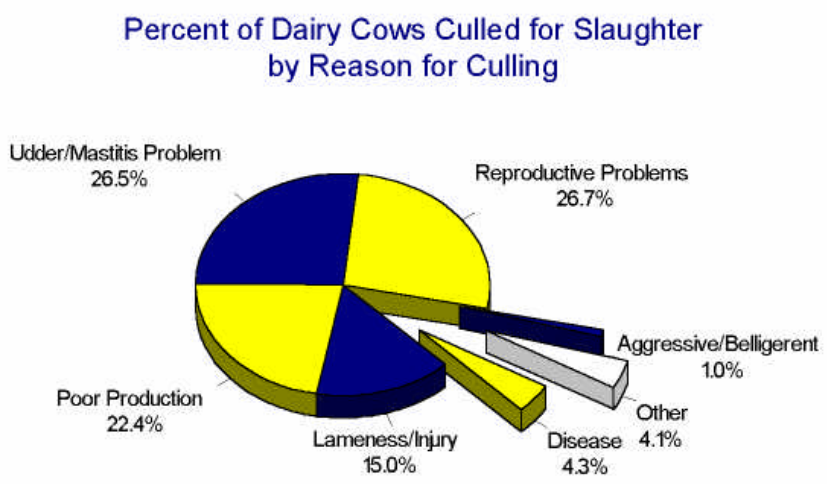
3. Milk production break-even level used to determine when to cull cows

a. Percent of operations that used a milk production break-even level (lbs./cow/day) to determine when to cull cows:

Percent Operations	Standard Error
28.4	(±1.1)

b. For operations that used a milk production break-even level, operation average milk production break-even level used to determine when to cull non-pregnant dairy cows by herd size:

Number of Dairy Cows	Operation Average Pounds per Cow per Day	Standard Error
Less than 100	32.5	(±0.6)
100-199	35.5	(±0.6)
200 or more	36.5	(±0.5)
All operations	33.4	(±0.4)



#3101

D. Health Management

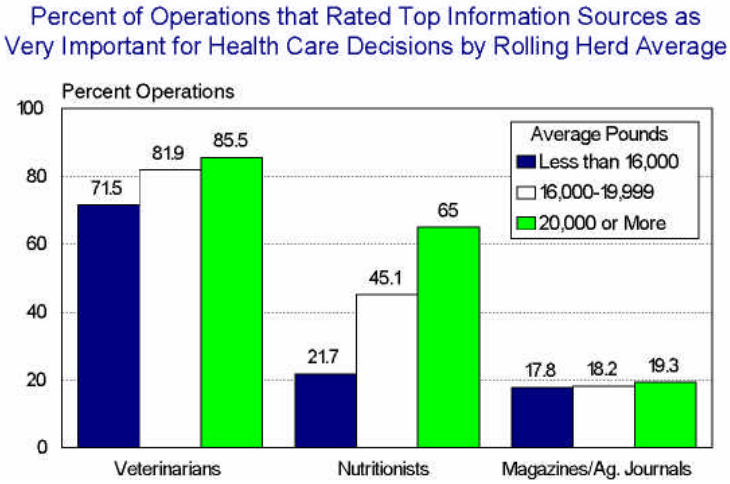
1. Source of health care information

a. Percent of operations by level of importance of source of information for making health care decisions for dairy herd:

Source	Not Important	Standard Error	Somewhat Important	Standard Error	Very Important	Standard Error	Total
	Percent Operations						
Veterinarians	2.3	(±0.4)	19.3	(±1.1)	78.4	(±1.1)	100.0
Nutritionists	27.1	(±1.3)	33.7	(±1.3)	39.2	(±1.2)	100.0
Extension Service/universities/ Vo-Ag instructors	54.9	(±1.3)	39.4	(±1.2)	5.7	(±0.7)	100.0
Producer associations	63.6	(±1.2)	28.6	(±1.1)	7.8	(±0.7)	100.0
Other producers	42.7	(±1.3)	46.1	(±1.3)	11.2	(±0.9)	100.0
Medical supply salespersons	64.8	(±1.2)	28.2	(±1.1)	7.0	(±0.7)	100.0
Consultants	75.7	(±1.1)	16.1	(±0.9)	8.2	(±0.7)	100.0
Dairy magazines or agricultural journals	20.5	(±1.1)	61.2	(±1.3)	18.3	(±1.1)	100.0
Radio, television, or newspapers	65.9	(±1.2)	29.3	(±1.2)	4.8	(±0.6)	100.0
Other	84.0	(±0.9)	3.5	(±0.5)	12.5	(±0.8)	100.0

b. Percent of operations where the following sources of information for making health care decisions were very important by rolling herd average:

Source	Less Than 16,000	Standard Error	16,000-19,999	Standard Error	20,000 or More	Standard Error
	Percent Operations					
	Rolling Herd Average Pounds					
Veterinarians	71.5	(±2.3)	81.9	(±1.4)	85.5	(±1.8)
Nutritionists	21.7	(±1.9)	45.1	(±1.9)	65.0	(±2.4)
Extension Service/universities/ Vo-Ag instructors	6.3	(±1.2)	4.8	(±0.9)	7.1	(±1.3)
Producer associations	7.3	(±1.1)	8.0	(±1.0)	7.4	(±1.2)
Other producers	12.9	(±1.9)	9.9	(±1.3)	10.3	(±1.5)
Medical supply salespersons	8.8	(±1.3)	5.9	(±0.8)	5.3	(±1.1)
Consultants	5.7	(±1.2)	7.7	(±1.0)	14.0	(±1.8)
Dairy magazines or agricultural journals	17.8	(±2.0)	18.2	(±1.6)	19.3	(±2.0)
Radio, television, or newspapers	6.1	(±1.2)	3.8	(±0.7)	4.2	(±1.1)
Other	12.6	(±1.5)	12.5	(±1.2)	11.8	(±1.5)



#3102

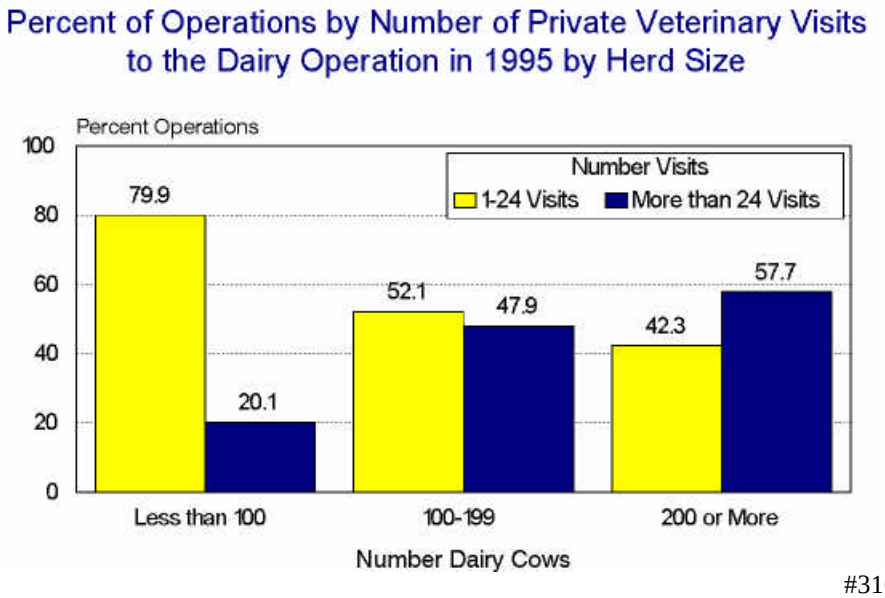
2. Veterinarian usage

a. Percent of operations that had a veterinarian diagnose or treat dairy animals during 1995 by type of veterinarian usage and herd size:

	Percent Operations							
	Number of Dairy Cows							
Status	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Private veterinarian on farm	96.7	(±0.7)	97.3	(±0.7)	95.8	(±0.8)	96.7	(±0.6)
Private veterinarian at clinic	10.2	(±0.9)	19.9	(±1.9)	22.4	(±1.8)	12.0	(±0.8)
Veterinarian on payroll	0.5	(±0.2)	1.8	(±0.5)	4.7	(±0.9)	0.9	(±0.1)
Any veterinarian usage	97.7	(±0.7)	99.5	(±0.3)	99.5	(±0.2)	98.1	(±0.5)

b. For those operations using a private veterinarian on the dairy operation, percent of operations by number of visits made by a private veterinarian (not on the payroll) to the dairy operation during 1995 by herd size:

	Percent Operations							
	Number of Dairy Cows							
Number Visits	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
1-6 visits	27.1	(±1.4)	13.7	(±1.7)	9.9	(±1.3)	24.5	(±1.2)
7-12 visits	22.1	(±1.3)	14.2	(±1.6)	11.9	(±1.5)	20.6	(±1.1)
13-24 visits	30.7	(±1.4)	24.2	(±2.2)	20.5	(±1.9)	29.4	(±1.2)
More than 24 visits	20.1	(±1.1)	47.9	(±2.7)	57.7	(±2.3)	25.5	(±1.0)
Total	100.0		100.0		100.0		100.0	



#3103

c. For operations taking animals to a private veterinarian's clinic, percent of operations by number of times dairy animals were taken to a private veterinarian (not on the payroll) for diagnosis or treatment during 1995:

Number Visits	Percent Operations	Standard Error
1-3 visits	60.2	(±3.4)
4-6 visits	20.6	(±2.8)
More than 6 visits	19.2	(±2.6)
Total	100.0	

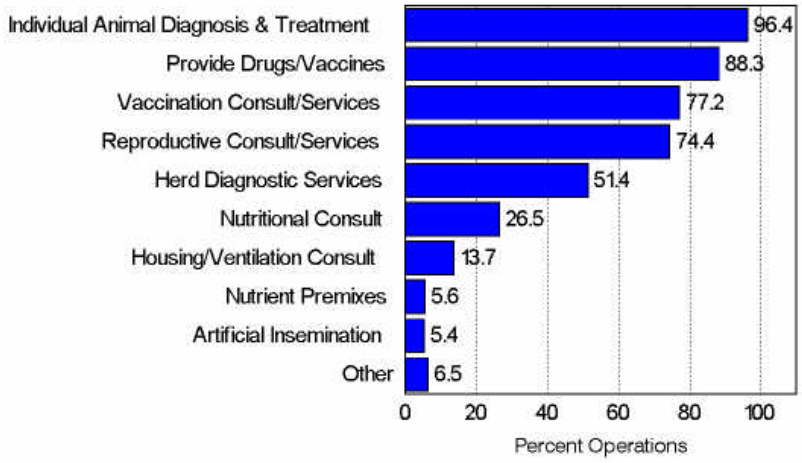
d. For operations that had a veterinarian on the payroll during 1995, average number of days the veterinarian was on the operation:

Average Days	Standard Error
47.8	(±10.8)

e. For operations that used a veterinarian for services to the operation during 1995, percent of operations that used a veterinarian for the following purposes:

Purpose	Percent Operations	Standard Error
Individual animal diagnosis and treatment	96.4	(±0.5)
Herd diagnostic services	51.4	(±1.3)
Reproductive consultation/services	74.4	(±1.3)
Nutritional consultation	26.5	(±1.1)
Vaccination consultation/services	77.2	(±1.2)
Housing/ventilation consultation	13.7	(±0.8)
Providing drugs/vaccines	88.3	(±1.0)
Providing nutrient premixes	5.6	(±0.5)
Artificial insemination	5.4	(±0.7)
Other	6.5	(±0.6)

Percent of Operations* by Purpose of Veterinary Services Used



*Operations that used a veterinarian for services to the operation.

#3104

3. Vaccinations

a. Dairy heifers

i. Percent of operations normally vaccinating dairy heifers for the following diseases by herd size:

	Percent Operations							
	Number of Dairy Cows							
Disease	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Bovine Viral Diarrhea (BVD)	66.7	(±1.5)	84.1	(±1.8)	82.7	(±1.7)	69.7	(±1.3)
Infectious Bovine Rhinotracheitis (IBR)	62.5	(±1.5)	82.0	(±1.9)	83.5	(±1.6)	66.1	(±1.3)
Parainfluenza Type 3 (PI3)	57.0	(±1.6)	74.5	(±2.2)	73.9	(±2.1)	60.1	(±1.3)
Bovine Respiratory Syncytial Virus (BRSV)	55.5	(±1.6)	72.5	(±2.3)	74.6	(±2.0)	58.7	(±1.3)
Hemophilus somnus	34.5	(±1.5)	50.9	(±2.7)	47.9	(±2.4)	37.3	(±1.3)
Leptospirosis	64.4	(±1.5)	77.7	(±2.1)	81.9	(±1.7)	67.0	(±1.3)
Salmonella	17.2	(±1.1)	22.9	(±2.3)	35.0	(±2.4)	18.9	(±1.0)
E. coli mastitis	15.9	(±1.1)	25.6	(±2.4)	35.0	(±2.4)	18.1	(±0.9)
Clostridia	29.1	(±1.3)	43.3	(±2.5)	54.6	(±2.4)	32.3	(±1.1)
Brucellosis	61.1	(±1.5)	73.1	(±2.1)	82.1	(±1.7)	63.8	(±1.3)
Mycobacterium paratuberculosis (Johne's disease)	4.7	(±0.6)	7.9	(±1.6)	10.0	(±1.5)	5.4	(±0.6)
Other	6.9	(±0.7)	8.8	(±1.6)	8.9	(±1.6)	7.3	(±0.6)
None	15.2	(±1.2)	6.4	(±1.1)	5.1	(±0.9)	13.6	(±1.0)

ii. Percent of operations normally vaccinating dairy heifers for the following diseases by region:

	Percent Operations							
Region	West	Standard Error	Midwest	Standard Error	Northeast	Standard Error	Southeast	Standard Error
Bovine Viral Diarrhea (BVD)	68.0	(±3.8)	70.3	(±1.7)	69.0	(±2.2)	68.3	(±5.5)
Infectious Bovine Rhinotracheitis (IBR)	64.5	(±3.9)	66.1	(±1.8)	66.9	(±2.2)	64.7	(±5.5)
Parainfluenza Type 3 (PI3)	57.0	(±3.9)	59.6	(±1.8)	62.7	(±2.3)	58.2	(±5.6)
Bovine Respiratory Syncytial Virus (BRSV)	54.4	(±3.8)	58.0	(±1.8)	63.0	(±2.3)	54.5	(±5.7)
Hemophilus somnus	40.5	(±3.8)	35.7	(±1.7)	42.0	(±2.3)	29.0	(±5.0)
Leptospirosis	64.5	(±3.7)	68.3	(±1.7)	64.2	(±2.2)	69.8	(±5.5)
Salmonella	28.4	(±3.4)	16.9	(±1.3)	20.1	(±1.9)	21.6	(±3.8)
E. coli mastitis	27.3	(±3.5)	16.1	(±1.2)	18.6	(±1.8)	25.2	(±5.0)
Clostridia	59.1	(±3.3)	30.7	(±1.5)	16.5	(±1.7)	80.0	(±3.9)
Brucellosis	87.4	(±3.6)	67.1	(±1.7)	45.1	(±2.3)	71.3	(±5.0)
Mycobacterium paratuberculosis (Johne's disease)	6.8	(±1.0)	6.2	(±0.8)	2.8	(±0.8)	6.3	(±2.1)
Other	6.0	(±1.0)	5.4	(±0.8)	13.5	(±1.5)	3.1	(±1.3)
None	9.9	(±3.6)	13.8	(±1.4)	15.7	(±1.7)	7.4	(±3.4)

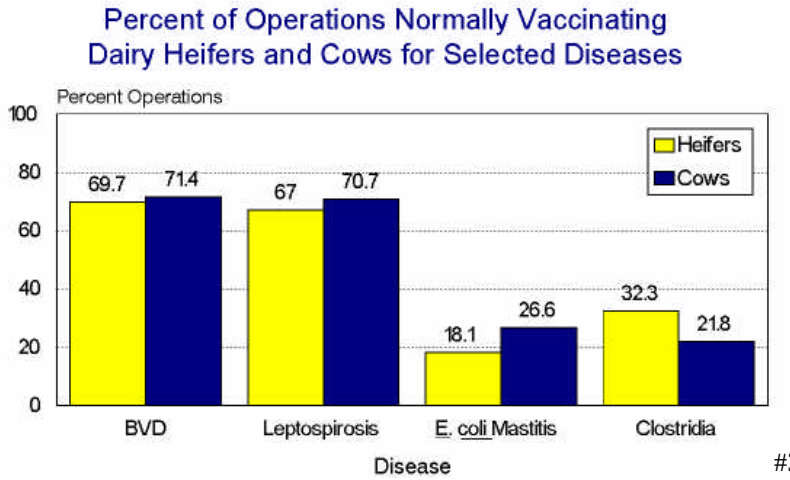
b. Dairy cows

i. Percent of operations normally vaccinating dairy cows for the following diseases by herd size:

	Percent Operations							
	Number of Dairy Cows							
Disease	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Bovine Viral Diarrhea (BVD)	68.7	(±1.5)	83.4	(±1.9)	84.5	(±1.7)	71.4	(±1.3)
Infectious Bovine Rhinotracheitis (IBR)	66.0	(±1.5)	82.2	(±2.0)	84.5	(±1.7)	69.0	(±1.3)
Parainfluenza Type 3 (PI3)	59.9	(±1.5)	74.8	(±2.3)	73.6	(±2.2)	62.5	(±1.3)
Bovine Respiratory Syncytial Virus (BRSV)	58.4	(±1.5)	71.4	(±2.3)	72.7	(±2.1)	60.8	(±1.3)
Hemophilus somnus	35.7	(±1.5)	51.6	(±2.7)	48.6	(±2.4)	38.4	(±1.3)
Leptospirosis	68.3	(±1.5)	80.5	(±2.1)	85.7	(±1.7)	70.7	(±1.3)
Salmonella	16.9	(±1.1)	22.7	(±2.3)	37.1	(±2.4)	18.8	(±1.0)
E. coli mastitis	23.1	(±1.3)	37.7	(±2.6)	53.7	(±2.4)	26.6	(±1.1)
Clostridia	18.9	(±1.2)	31.7	(±2.3)	43.1	(±2.4)	21.8	(±1.0)
Other	6.3	(±0.7)	7.0	(±1.4)	8.0	(±1.3)	6.5	(±0.6)
None	21.2	(±1.3)	9.0	(±1.6)	6.2	(±1.1)	18.9	(±1.1)

ii. Percent of operations normally vaccinating dairy cows for the following diseases by region:

	Percent Operations							
Region	West	Standard Error	Midwest	Standard Error	Northeast	Standard Error	Southeast	Standard Error
Bovine Viral Diarrhea (BVD)	71.0	(±3.4)	70.2	(±1.8)	76.2	(±2.1)	63.2	(±5.7)
Infectious Bovine Rhinotracheitis (IBR)	64.1	(±4.0)	68.1	(±1.8)	74.6	(±2.0)	61.4	(±5.6)
Parainfluenza Type 3 (PI3)	58.6	(±3.8)	60.6	(±1.8)	69.6	(±2.2)	57.3	(±5.7)
Bovine Respiratory Syncytial Virus (BRSV)	52.5	(±3.8)	58.8	(±1.8)	70.4	(±2.2)	54.2	(±5.7)
Hemophilus somnus	40.4	(±3.7)	35.8	(±1.7)	47.0	(±2.3)	24.8	(±3.8)
Leptospirosis	74.1	(±2.6)	69.9	(±1.8)	72.6	(±2.1)	65.5	(±5.4)
Salmonella	28.7	(±3.4)	15.9	(±1.2)	22.0	(±2.0)	21.8	(±3.8)
E. coli mastitis	45.4	(±3.7)	24.3	(±1.4)	24.8	(±1.9)	32.1	(±5.2)
Clostridia	43.3	(±3.7)	20.1	(±1.3)	12.6	(±1.5)	51.0	(±5.3)
Other	5.2	(±0.9)	4.2	(±0.8)	13.5	(±1.5)	3.7	(±1.5)
None	15.4	(±2.1)	20.9	(±1.6)	15.0	(±1.8)	19.6	(±4.8)



#3105

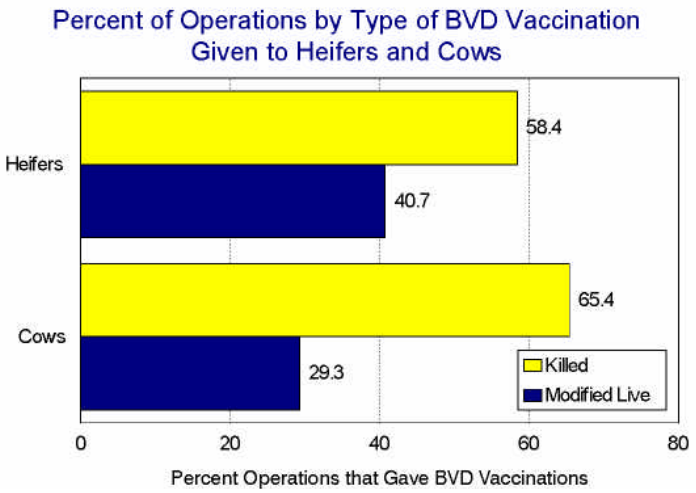
c. BVD vaccinations

i. For operations that gave BVD vaccinations to dairy *heifers*, percent of operations by type of BVD vaccination given:

	Percent Operations					
BVD Vaccine	Given	Standard Error	Didn't Know	Standard Error	Not Given	Standard Error
Killed	58.4	(±1.5)	9.8	(±0.9)	31.8	(±1.4)
Modified live	40.7	(±1.5)	10.3	(±0.9)	49.0	(±1.5)

ii. For operations that gave BVD vaccinations to dairy *cows*, percent of operations by type of BVD vaccination given:

	Percent Operations					
BVD Vaccine	Given	Standard Error	Didn't Know	Standard Error	Not Given	Standard Error
Killed	65.4	(±1.4)	10.3	(±0.9)	24.3	(±1.2)
Modified live	29.3	(±1.3)	10.7	(±0.9)	60.0	(±1.4)



#3107

iii. For operations that gave either dairy heifers or cows an initial BVD vaccination with killed BVD vaccine, percent that gave a second injection (not an annual booster):

Percent Operations	Standard Error
51.8	(±1.8)

iv. For operations that gave BVD vaccinations to dairy *cows*, percent of operations that gave annual BVD booster injections:

Percent Operations					
Given	Standard Error	Didn't Know	Standard Error	Not Given	Standard Error
77.4	(±1.3)	3.5	(±0.5)	19.1	(±1.2)

v. For all operations, percent that:

Vaccine/Delivery	Percent Operations	Standard Error
Used modified live vaccine (MLV) in heifers only	9.9	(±0.8)
Used MLV in cows only	2.4	(±0.4)
Used MLV in heifers or cows	30.7	(±1.1)
Used killed vaccine with second injections and annual boosters in cows or heifers	22.3	(±1.0)
Did any of the above	46.6	(±1.3)

4. Preventive practices

a. Percent operations (and percent of dairy heifers on those operations) by preventive practices normally used for dairy *replacement heifers*:

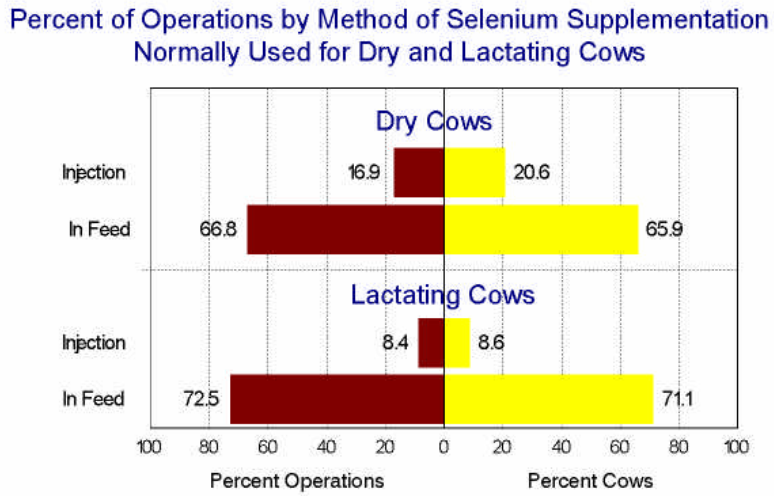
Practice	Percent Operations	Standard Error	Percent Heifers	Standard Error
Deworming	67.3	(±1.3)	64.5	(±1.5)
Coccidiostats in feed	46.5	(±1.2)	60.1	(±1.5)
Vitamins A-D-E injection	16.3	(±1.0)	22.9	(±1.4)
Vitamins A-D-E in feed	76.9	(±1.1)	79.2	(±1.5)
Selenium injection	12.7	(±0.8)	17.2	(±1.0)
Selenium in feed	70.8	(±1.2)	71.5	(±1.6)
Ionophores in feed (e.g., Rumensin-, Bovatec-)	42.2	(±1.2)	53.9	(±1.6)
Probiotics	13.1	(±0.9)	17.5	(±1.3)
Other	4.8	(±0.6)	5.4	(±0.7)
No preventives given	6.4	(±0.7)	4.0	(±1.2)

b. Percent operations (and percent of dairy cows on those operations) by preventive practices normally used in dairy *cows*:

Practice	Percent Operations	Standard Error	Percent Cows	Standard Error
Deworming	53.4	(±1.3)	47.0	(±1.1)
Vitamins A-D-E injection	15.5	(±0.9)	22.0	(±1.1)
Vitamins A-D-E in feed	81.4	(±1.1)	78.8	(±1.2)
Probiotics	16.7	(±0.9)	23.2	(±1.3)
Other	4.4	(±0.5)	4.7	(±0.6)
No preventives given	8.5	(±0.8)	9.1	(±0.9)

c. Percent operations (and percent of cows on those operations) by method of selenium supplementation normally used for dry cows and lactating cows:

	Dry Cows				Lactating Cows			
Method	Percent Operations	Standard Error	Percent Cows	Standard Error	Percent Operations	Standard Error	Percent Cows	Standard Error
Selenium injection	16.9	(±0.9)	20.6	(±1.0)	8.4	(±0.6)	8.6	(±0.6)
Selenium in feed	66.8	(±1.3)	65.9	(±1.4)	72.5	(±1.2)	71.1	(±1.4)
No selenium given	28.7	(±1.3)	28.3	(±1.3)	25.7	(±1.2)	26.6	(±1.3)



#3107

E. Births, Illnesses, and Deaths

1. Number of dairy calves born alive during 1995 as a percent of January 1, 1996, dairy cow inventory:

Percent	Standard Error
93.4	(±0.5)

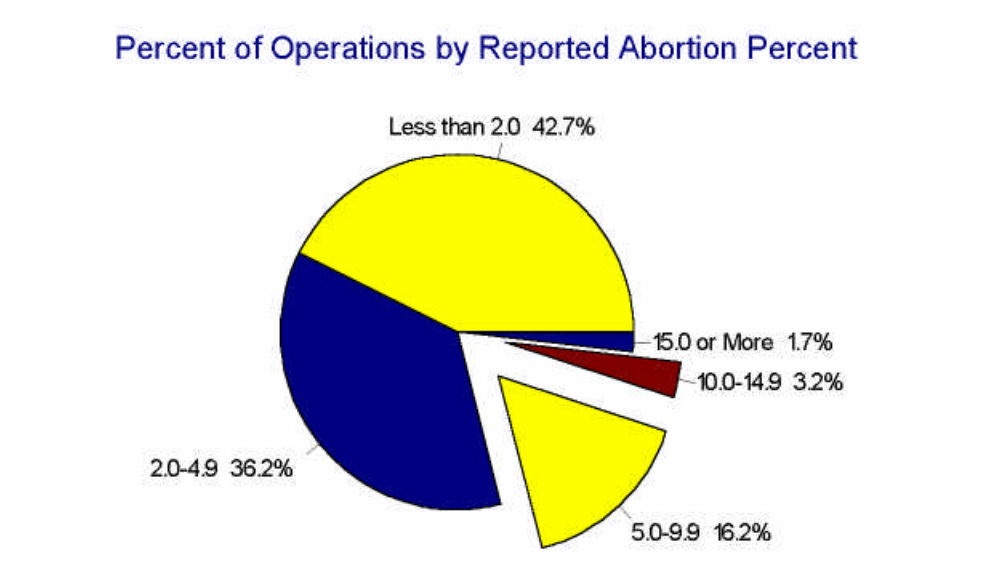
2. Abortions

a. Number of abortions as a percent of January 1, 1996, dairy cow inventory by herd size:

Number of Dairy Cows	Operation Average	Standard Error	Cow Average	Standard Error
Less than 100	3.0	(±0.1)	3.2	(±0.1)
100-199	3.3	(±0.2)	3.3	(±0.1)
200 or more	3.6	(±0.1)	3.9	(±0.2)
All operations	3.1	(±0.1)	3.5	(±0.1)

b. Percent of operations by reported abortion percent:

Abortion Percent	Percent Operations	Standard Error
Less than 2.0	42.7	(±1.3)
2.0-4.9	36.2	(±1.2)
5.0-9.9	16.2	(±0.9)
10.0-14.9	3.2	(±0.5)
15 or more	1.7	(±0.4)
Total	100.0	



#3108

3. Dairy cow morbidity

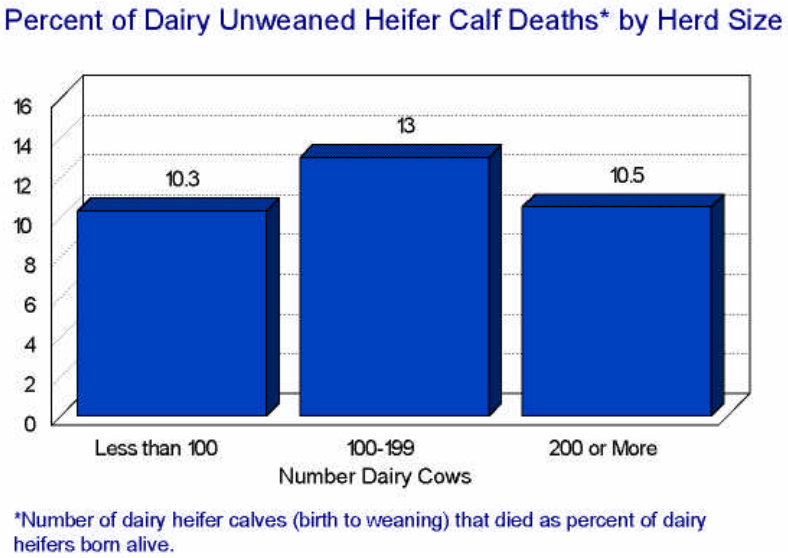
a. Percent of dairy cows from which producers identified the following conditions during 1995 as a percent of January 1, 1996, cow inventory by herd size:

	Percent of Dairy Cows							
	Number of Dairy Cows							
Producer-identified Health Problem	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Clinical mastitis	15.3	(±0.5)	12.9	(±0.6)	11.2	(±0.5)	13.4	(±0.3)
Lameness	9.5	(±0.4)	12.7	(±0.8)	10.8	(±0.6)	10.5	(±0.3)
Respiratory problems	2.5	(±0.2)	2.6	(±0.3)	2.5	(±0.2)	2.5	(±0.1)
Reproductive problems (not pregnant 150 days after calving)	11.7	(±0.3)	11.6	(±0.5)	11.3	(±0.5)	11.6	(±0.3)
Diarrhea (more than 48 hours)	4.8	(±0.5)	2.8	(±0.4)	2.0	(±0.3)	3.4	(±0.2)
Milk fever	7.3	(±0.2)	5.8	(±0.3)	4.3	(±0.3)	5.9	(±0.1)
Displaced abomasum	3.0	(±0.1)	3.4	(±0.2)	2.3	(±0.1)	2.8	(±0.1)
Retained placenta (more than 24 hours)	8.4	(±0.2)	8.4	(±0.3)	7.0	(±0.4)	7.8	(±0.2)
Other health-related problems	2.0	(±0.3)	2.6	(±0.5)	2.2	(±0.4)	2.2	(±0.2)

4. Unweaned heifer calf mortality

a. Number of dairy heifer calves (from birth to weaning) that died during 1995 as a percent of dairy heifers born alive by herd size:

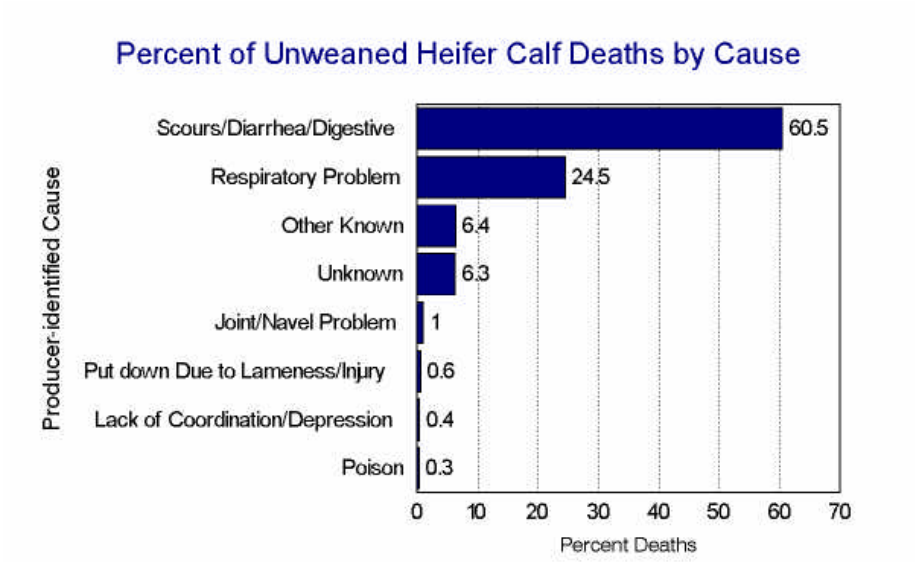
Number of Dairy Cows	Percent Calves	Standard Error
Less than 100	10.3	(±0.3)
100-199	13.0	(±0.7)
200 or more	10.5	(±0.8)
All operations	10.8	(±0.4)



#3109

b. Percent of total unweaned heifer calf deaths by cause:

Producer-attributed Cause of Death	Percent Deaths	Standard Error
Scours, diarrhea, or other digestive problems	60.5	(±1.2)
Respiratory problems	24.5	(±1.0)
Joint or navel problems	1.0	(±0.1)
Put down due to lameness or injury	0.6	(±0.1)
Lack of coordination or severe depression	0.4	(±0.1)
Poison	0.3	(±0.1)
Other known reasons	6.4	(±1.1)
Unknown reasons	6.3	(±0.9)
Total	100.0	



#3110

c. Number of unweaned heifer calf deaths by cause as a percent of heifer calves born alive:

Producer-attributed Cause of Death	Percent Heifer Calves Born Alive	Standard Error
Scours, diarrhea, or other digestive problems	6.5	(±0.2)
Respiratory problems	2.7	(±0.1)
Joint or navel problems	0.1	(±0.0)
Put down due to lameness or injury	0.1	(±0.0)
Lack of coordination or severe depression	0.0	(±0.0)
Poison	0.0	(±0.0)
Other known reasons	0.7	(±0.1)
Unknown reasons	0.7	(±0.1)
Total	10.8	(±0.4)

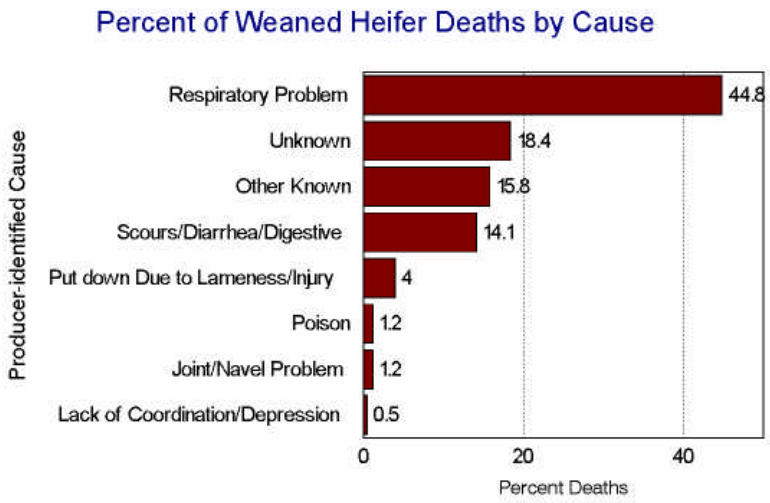
5. Weaned heifer mortality

a. Number of heifers from weaning age to first calving that died during 1995 as a percent of January 1, 1996, heifer inventory (weaning age to calving) by herd size:

Number of Dairy Cows	Percent Heifers	Standard Error
Less than 100	2.2	(±0.1)
100-199	2.4	(±0.2)
200 or more	2.7	(±0.3)
All operations	2.4	(±0.1)

b. Percent of total weaned heifer deaths by cause:

Producer-attributed Cause of Death	Percent Deaths	Standard Error
Scours, diarrhea, or other digestive problem	14.1	(±1.6)
Respiratory problem	44.8	(±2.1)
Poison	1.2	(±0.3)
Put down due to lameness or injury	4.0	(±0.5)
Lack of coordination or severe depression	0.5	(±0.1)
Joint or navel problem	1.2	(±0.5)
Other known	15.8	(±2.4)
Unknown	18.4	(±1.4)
Total	100.0	



#3111

c. Number of weaned dairy heifer deaths by cause as a percent of January 1, 1996, heifer inventory (weaning age to calving):

Producer-attributed Cause of Death	Percent Weaned Heifers	Standard Error
Scours, diarrhea, or other digestive problem	0.3	(±0.0)
Respiratory problem	1.1	(±0.1)
Poison	0.0	(±0.0)
Put down due to lameness or injury	0.1	(±0.0)
Lack of coordination or severe depression	0.0	(±0.0)
Joint or navel problem	0.0	(±0.0)
Other known	0.4	(±0.1)
Unknown	0.5	(±0.0)
Total	2.4	(±0.1)

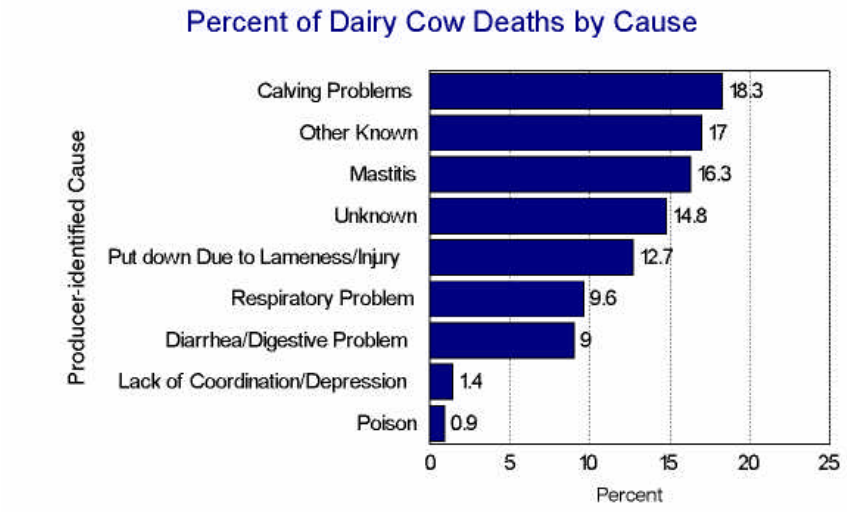
6. Dairy cow mortality

a. Number of dairy cows that died during 1995 as a percent of January 1, 1996, dairy cow inventory by herd size:

Number of Dairy Cows	Percent Cows	Standard Error
Less than 100	3.6	(±0.1)
100-199	3.8	(±0.1)
200 or more	4.0	(±0.2)
All operations	3.8	(±0.1)

b. Percent of total dairy cow deaths by cause:

Producer-attributed Cause of Death	Percent Deaths	Standard Error
Diarrhea or other digestive problem	9.0	(±1.0)
Respiratory problem	9.6	(±0.7)
Poison	0.9	(±0.2)
Put down due to lameness or injury	12.7	(±0.7)
Lack of coordination or severe depression	1.4	(±0.2)
Mastitis	16.3	(±0.8)
Calving problems	18.3	(±0.7)
Other known reasons	17.0	(±0.9)
Unknown reasons	14.8	(±0.8)
Total	100.0	



#3112

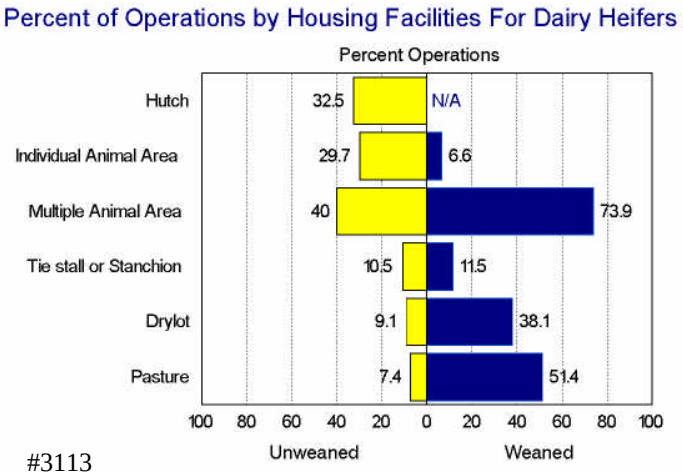
c. Number of dairy cow deaths by cause as a percent of January 1, 1996, dairy cow inventory:

Producer-attributed Cause of Death	Percent Cows	Standard Error
Diarrhea or other digestive problem	0.3	(±0.0)
Respiratory problem	0.4	(±0.0)
Poison	0.0	(±0.0)
Put down due to lameness or injury	0.5	(±0.0)
Lack of coordination or severe depression	0.1	(±0.0)
Mastitis	0.6	(±0.0)
Calving problems	0.7	(±0.0)
Other known reasons	0.6	(±0.0)
Unknown reasons	0.6	(±0.0)
Total	3.8	(±0.1)

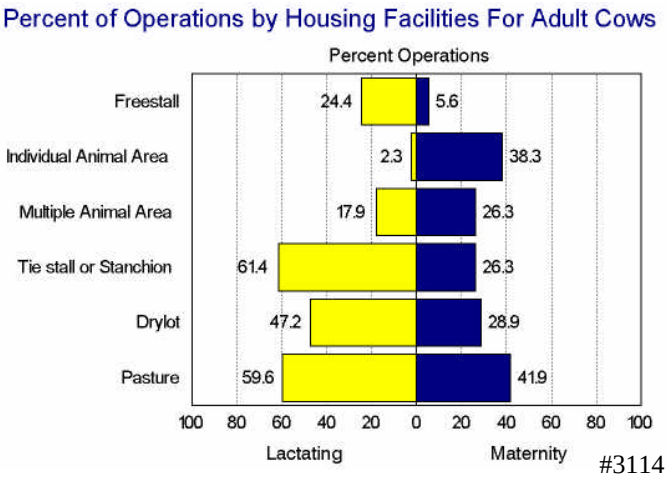
F. Housing

1. Percent of operations by housing facilities used during 1995:

Housing Type	Unweaned Dairy Heifers	Stand. Error	Weaned Dairy Heifers	Stand. Error	Lactating Dairy Cows	Stand. Error	Maternity	Stand Error
	Percent Operations							
Freestall	2.5	(± 0.4)	9.7	(± 0.7)	24.4	(± 0.9)	5.6	(± 0.5)
Individual animal area	29.7	(± 1.2)	6.6	(± 0.7)	2.3	(± 0.4)	38.3	(± 1.2)
Multiple animal area	40.0	(± 1.3)	73.9	(± 1.2)	17.9	(± 1.1)	26.3	(± 1.1)
Tie stall or stanchion	10.5	(± 0.7)	11.5	(± 0.8)	61.4	(± 1.0)	26.3	(± 1.1)
Drylot	9.1	(± 0.8)	38.1	(± 1.2)	47.2	(± 1.3)	28.9	(± 1.1)
Pasture	7.4	(± 0.9)	51.4	(± 1.3)	59.6	(± 1.2)	41.9	(± 1.3)
Hutch	32.5	(± 1.1)	N/A	—	N/A	—	N/A	—



#3113



#3114

2. Separate maternity housing

   a. Percent of operations in which maternity housing was separate from housing used for lactating dairy cows by herd size:

Number of Dairy Cows	Percent Operations	Standard Error
Less than 100	39.1	(±1.3)
100-199	68.9	(±2.6)
200 or more	87.1	(±1.7)
All operations	45.4	(±1.2)

3. Percent of operations (and percent of cows on those operations) that used the following types of milking facilities in 1995:

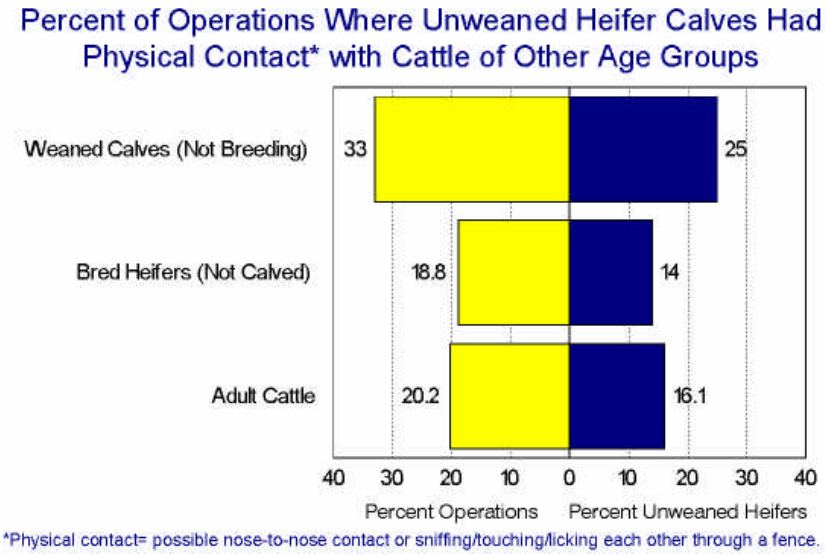
Facility Type	Percent Operations	Standard Error	Percent Cows	Standard Error
Parlor	28.8	(±0.9)	54.9	(±1.0)
Tie stall or stanchion	69.5	(±0.9)	43.9	(±1.0)
Other	2.9	(±0.5)	4.3	(±0.7)

G. Biosecurity

1. Physical contact

a. Percent of operations (and percent unweaned heifers on these operations) where after separation from the dam, heifer calves not yet weaned had physical contact[1] with:

Age Groups	Percent Operations	Standard Error	Percent Unweaned Heifers	Standard Error
Weaned calves not yet of breeding age	33.0	(±1.3)	25.0	(±1.1)
Bred heifers not yet calved	18.8	(±1.1)	14.0	(±0.9)
Adult cattle	20.2	(±1.1)	16.1	(±1.0)



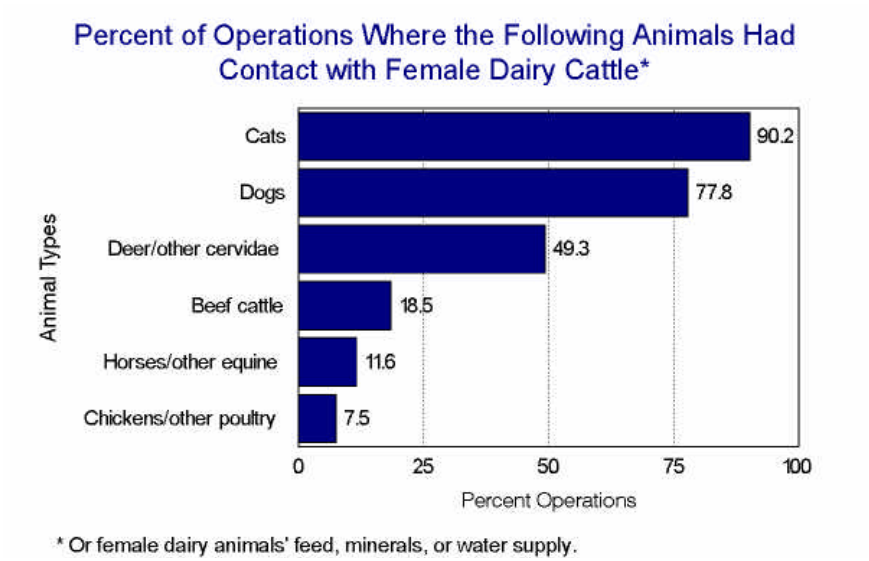
#3115

1 Physical contact = possible nose-to-nose contact or sniffing/touching/licking each other, including through a fence.

b. Physical contact[1] with other animals

i. Percent of operations where the following animals had physical contact with female dairy cattle and/or contact with their feed, minerals, or water supply:

Animal Types	Percent Operations	Standard Error
Chickens or other poultry	7.5	(±0.8)
Horses or other equine	11.6	(±0.9)
Pigs	3.9	(±0.6)
Sheep	2.3	(±0.5)
Goats	3.0	(±0.5)
Beef cattle	18.5	(±1.1)
Exotic species (e.g., llamas, alpacas)	0.8	(±0.2)
Deer or other cervidae	49.3	(±1.1)
Dogs	77.8	(±1.1)
Cats	90.2	(±0.8)



#3116

ii. Percent of operations where the following animals had physical contact with female dairy cattle and/or contact with their feed, minerals, or water supply by region:

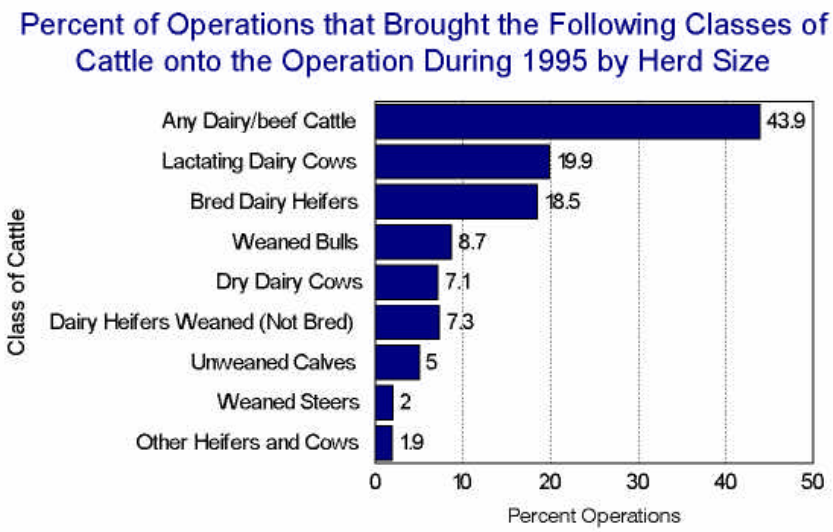
	Percent Operations							
Animal Types	West	Standard Error	Midwest	Standard Error	Northeast	Standard Error	Southeast	Standard Error
Chickens or other poultry	4.9	(±0.9)	7.4	(±1.1)	8.7	(±1.2)	8.3	(±3.9)
Horses or other equine	8.3	(±1.5)	13.1	(±1.3)	9.8	(±1.5)	7.7	(±2.1)
Pigs	3.4	(±2.4)	4.9	(±0.9)	2.3	(±0.8)	0.2	(±0.1)
Sheep	2.7	(±1.4)	2.8	(±0.8)	1.3	(±0.5)	0.2	(±0.1)
Goats	1.9	(±0.5)	2.3	(±0.6)	4.3	(±1.2)	6.6	(±3.8)
Beef cattle	23.1	(±4.7)	20.1	(±1.5)	11.7	(±1.4)	23.2	(±5.1)
Exotic species (e.g., llamas, alpacas)	0.2	(±0.1)	1.1	(±0.4)	0.3	(±0.3)	0.5	(±0.4)
Deer or other cervidae	18.8	(±3.4)	54.4	(±1.4)	49.4	(±2.3)	39.7	(±3.9)
Dogs	80.7	(±2.3)	81.3	(±1.4)	70.8	(±2.1)	63.2	(±5.5)
Cats	79.9	(±3.2)	93.3	(±1.0)	88.7	(±1.5)	76.3	(±3.9)

1 Physical contact = possible nose-to-nose contact or sniffing/touching/licking each other, including through a fence.

2. Biosecurity for new arrivals

a. Percent of operations that brought the following classes of cattle onto the operation during 1995 by herd size:

	Percent Operations							
Class of Cattle	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Unweaned calves	4.9	(±0.8)	5.8	(±1.4)	4.9	(±1.3)	5.0	(±0.7)
Dairy heifers weaned but not bred	6.3	(±0.8)	11.9	(±2.0)	12.5	(±1.5)	7.3	(±0.7)
Bred dairy heifers	15.4	(±1.1)	25.6	(±2.3)	48.4	(±2.4)	18.5	(±0.9)
Lactating dairy cows	19.0	(±1.2)	22.6	(±2.3)	26.0	(±2.2)	19.9	(±1.0)
Dry dairy cows	6.6	(±0.9)	8.9	(±1.5)	10.1	(±1.5)	7.1	(±0.8)
Other heifers and cows (including beef)	1.9	(±0.4)	1.8	(±0.8)	2.1	(±0.6)	1.9	(±0.4)
Bulls (weaned)	7.2	(±0.8)	12.9	(±2.0)	22.9	(±2.1)	8.7	(±0.7)
Steers (weaned)	1.9	(±0.4)	2.5	(±1.1)	2.5	(±1.0)	2.0	(±0.3)
Any beef or dairy cattle	41.2	(±1.5)	51.9	(±2.6)	65.5	(±2.3)	43.9	(±1.3)



#3117

b. Percent of operations that brought the following classes of cattle onto the operation during 1995 by region:

	Percent Operations							
Class of Cattle	West	Standard Error	Midwest	Standard Error	Northeast	Standard Error	Southeast	Standard Error
Unweaned calves	2.0	(±0.5)	6.0	(±1.0)	4.3	(±1.1)	1.4	(±0.9)
Dairy heifers weaned but not bred	8.0	(±1.2)	7.2	(±1.0)	7.9	(±1.3)	4.8	(±1.7)
Bred dairy heifers	25.3	(±2.4)	17.0	(±1.3)	20.3	(±1.7)	16.4	(±2.7)
Lactating dairy cows	20.3	(±3.0)	18.4	(±1.4)	25.1	(±2.0)	12.4	(±2.5)
Dry dairy cows	7.6	(±3.0)	7.2	(±1.1)	7.3	(±1.2)	3.7	(±1.4)
Other heifers and cows (including beef)	1.7	(±0.5)	1.9	(±0.5)	0.9	(±0.4)	6.5	(±2.2)
Bulls (weaned)	16.9	(±2.6)	9.3	(±1.0)	4.0	(±0.8)	11.0	(±3.5)
Steers (weaned)	1.7	(±0.6)	2.7	(±0.5)	0.5	(±0.3)	0.5	(±0.4)
Any beef or dairy cattle	51.0	(±3.7)	43.7	(±1.8)	43.1	(±2.3)	37.8	(±4.5)

c. For operations that brought dairy cows (lactating or dry) onto the operation during 1995, number of *dairy cows* brought onto the operation as a percent of the January 1, 1996, dairy cow inventory by herd size:

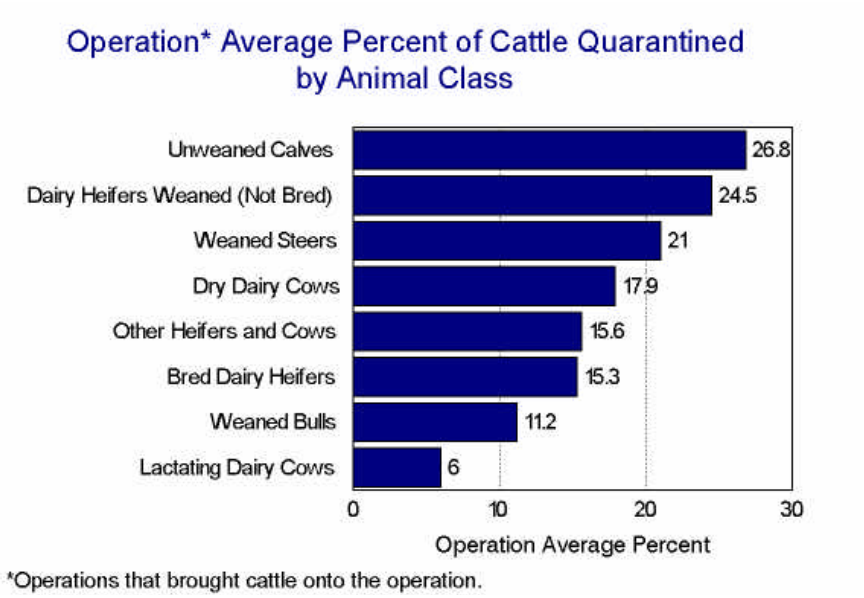
Number of Dairy Cows	Percent Cows	Standard Error	Operation Average	Standard Error
Less than 100	16.3	(±1.2)	18.8	(±1.9)
100-199	15.3	(±1.8)	15.5	(±1.8)
200 or more	10.8	(±1.0)	11.7	(±1.1)
All operations	14.2	(±0.8)	17.9	(±1.5)

d. For operations that brought bred heifers onto the operation during 1995, number of *bred heifers* brought onto the operation as a percent of the January 1, 1996, dairy cow inventory by herd size:

Number of Dairy Cows	Percent Bred Heifers	Standard Error	Operation Average	Standard Error
Less than 100	16.4	(±2.5)	17.0	(±2.6)
100-199	13.8	(±1.9)	13.3	(±1.6)
200 or more	19.3	(±1.7)	19.8	(±1.9)
All operations	17.8	(±1.2)	16.8	(±1.8)

e. For operations that brought the following classes of cattle onto the operation during 1995, operation average percent of animals quarantined, and, if quarantined, operation average number of days quarantined:

	Percent Cattle Quarantined		Days Quarantined	
Class of Animal	Operation Average	Standard Error	Operation Average	Standard Error
Unweaned calves	26.8	(±5.2)	40.8	(±5.7)
Dairy heifers weaned but not bred	24.5	(±4.7)	21.5	(±4.2)
Bred dairy heifers	15.3	(±1.9)	16.8	(±2.3)
Lactating dairy cows	6.0	(±1.7)	11.7	(±2.3)
Dry dairy cows	17.9	(±4.8)	8.9	(±2.1)
Other heifers and cows (including beef)	15.6	(±6.0)	24.3	(±9.1)
Bulls (weaned)	11.2	(±2.4)	21.0	(±3.1)
Steers (weaned)	21.0	(±6.6)	41.5	(±22.0)



#3118

f. For operations that brought beef or dairy cattle onto the operation during 1995, percent of operations using the following methods of disease control before bringing animals on farm

i. Vaccination normally required by operations by herd size:

	Percent Operations							
	Number of Dairy Cows							
Vaccination Type	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Brucellosis	48.9	(±2.5)	61.8	(±3.8)	73.8	(±2.7)	52.9	(±2.0)
Bovine viral diarrhea (BVD)	43.1	(±2.4)	59.3	(±3.8)	59.3	(±2.9)	46.8	(±2.0)
Infectious bovine rhinotracheitis (IBR)	39.2	(±2.3)	57.1	(±3.9)	58.9	(±2.9)	43.4	(±1.9)
Leptospirosis	41.9	(±2.4)	58.2	(±3.9)	55.8	(±3.0)	45.4	(±2.0)
Other	8.2	(±1.1)	12.0	(±2.9)	15.2	(±2.4)	9.4	(±1.0)
None	42.0	(±2.5)	28.3	(±3.5)	15.4	(±1.9)	37.7	(±2.0)

ii. Tests normally required by operations by herd size:

	Percent Operations							
	Number of Dairy Cows							
Test Type	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Brucellosis	28.5	(± 2.1)	39.7	(±3.8)	40.1	(±2.8)	31.0	(±1.7)
Mycobacterium paratuberculosis (Johne's disease)	8.5	(±1.3)	14.6	(±3.2)	4.7	(±1.1)	9.1	(±1.1)
Bovine viral diarrhea (BVD)	15.1	(±1.6)	21.5	(±3.4)	13.7	(±1.9)	15.9	(±1.3)
Bovine tuberculosis	22.3	(±1.9)	29.0	(±3.6)	24.8	(±2.3)	23.4	(±1.6)
Other	2.3	(±0.5)	4.1	(±2.0)	2.9	(±1.0)	2.6	(±0.5)
None	68.7	(±2.1)	58.4	(±3.8)	57.5	(±2.9)	66.3	(±1.8)

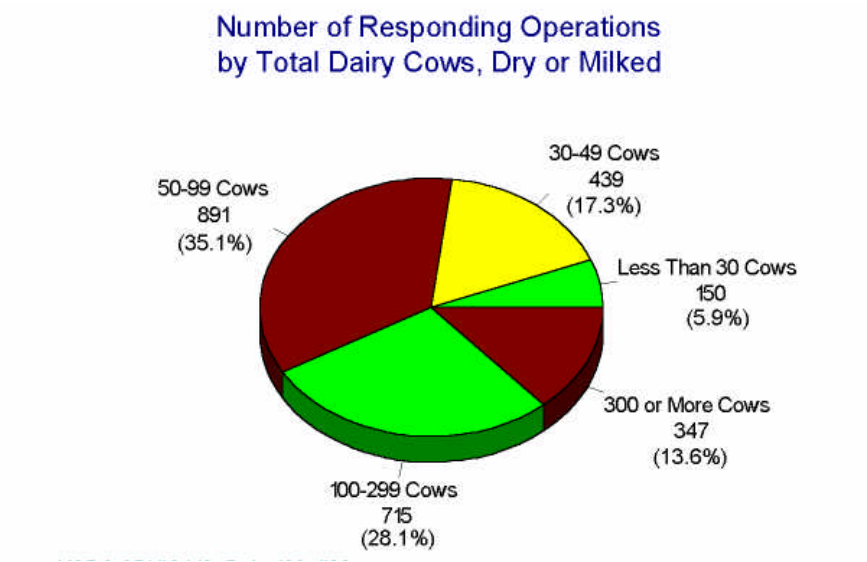
g. For operations bringing on dairy cows during 1995, percent that normally required tests or proof of health by herd size:

	Percent Operations							
	Number of Dairy Cows							
Proof Type	Less Than 100	Standard Error	100-199	Standard Error	200 or More	Standard Error	All Operations	Standard Error
Individual cow somatic cell count	24.7	(± 2.7)	32.1	(±5.2)	25.8	(±4.6)	25.7	(±2.3)
Herd bulk tank somatic cell count	13.4	(± 2.0)	21.1	(±3.8)	27.4	(±4.6)	15.3	(±1.7)
Individual cow milk culture	9.1	(± 1.7)	7.8	(±2.2)	9.8	(±2.5)	9.0	(±1.4)
Herd bulk tank cow milk culture	3.9	(± 0.9)	8.7	(±2.5)	23.4	(±4.4)	5.8	(±0.9)

Section II: Sample Profile

A. Cattle Inventory on January 1, 1996

	Number of Responding Operations
1. Total cattle and calves on hand:	
Less than 50	126
50-99	559
100-399	1,374
400 or more	483
Total	2,542
2. Total dairy cows, dry or milked:	
Less than 30	150
30-49	439
50-99	891
100-299	715
300 or more	347
Total	2,542



#3119

3. Total number of dairy heifers:	
Less than 10	153
10-29	480
30-49	547
50-99	686
100 or more	676
Total	2,542
4. Total operations with beef cows or beef replacements on hand:	361
5. Total operations with 50 percent or more Holstein cows:	2,387

Dairy Information from NAHMS

Two-page discussions and graphic presentations:

- *Upcoming*, Dairy ‘96 study results. Topics include: bovine leukosis virus (BLV), digital dermatitis (foot warts), Escherichia coli 0157, M. paratuberculosis, manure management, Neospora, and Salmonella.
- *May 1996*, Dairy ‘96 study results. Topics include: culling practices and biosecurity measures.
- *October 1995*, The Making of a National Study: Dairy ‘96. Presents results of Dairy ‘96 needs assessment activities and study objectives.
- *January 1994*, Bulk Tank Milk Somatic Cell Counts & Your Milk Quality Assurance Program. Assesses associations between somatic cell count and completion of the Milk and Dairy Beef Quality Assurance Program (MDBQAP).
- *September 1993 - February 1994*, National Dairy Heifer Evaluation Project results. Topics include: colostrum management, calf feeds and weaning practices, biosecurity measures, vaccination practices, nutritional supplements and feed additives, trasnfer of maternal immunity to calves, Cryptosporidium, Escherichia coli 0157:H7, Salmonella, blood selenium levels, etc.

Tabular summaries of monitoring and surveillance activity results with graphic presentations:

- *Upcoming*, Trends in Dairy Health and Management Practices: 1991-1995. (Dairy ‘96 and National Dairy Heifer Evaluation Project results)
- *Upcoming*, Part II: Dairy ‘96 study results.
- *May 1996*, Part I: Reference of 1996 Dairy Management Practices. (Dairy ‘96 study results, 40 pages.)
- *February 1994*, Dairy Heifer Morbidity, Mortality, & Health Management Focusing on Preweaned Heifers. (National Dairy Heifer Evaluation Project results, 22 pages.)
- *July 1993*, Dairy Herd Management Practices Focusing on Preweaned Heifers. (National Dairy Heifer Evaluation Project results, 36 pages.)

Results of NAHMS studies are also available on the **swine**, **beef cow/calf**, **beef feedlot** and **sheep** industries.

Centers for Epidemiology and Animal Health
USDA:APHIS:VS, attention NAHMS
555 South Howes
Fort Collins, CO 80521

N200.696