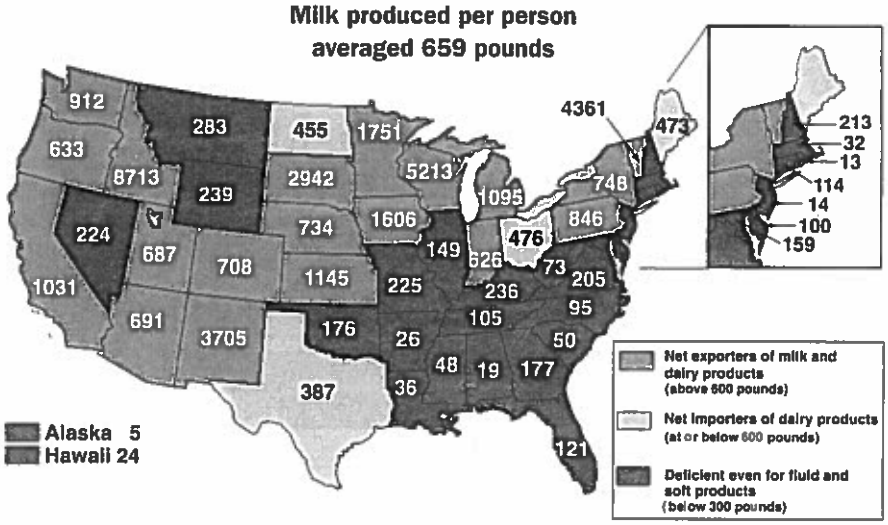
Dairy cow numbers reached a 20-year high

EVEN though the national dairy herd climbed to its highest levels dating back to 1996's 9.35 million cows, enhanced cow productivity, as measured by milk per cow, accounted for nearly all the growth in last year's milk production. The average dairy cow produced 22,774 pounds of milk and that total climbed 1.7 percent over the past 12 months. Meanwhile, the additional 14,000 dairy cows pushed the collective herd to 9.328 million and only represented a 0.2 percent growth rate.

Milk per cow ranged from Colorado's industry-leading 25,980 pounds down to Alaska's 11,667.

Year	Billions of pounds	Percent change
2007	185.6	2.1
2008	190.0	2.3
2009	189.2	-0.3
2010	192.9	1.8
2011	196.3	1.8
2012	200.6	2.1
2013	201.2	0.3
2014	206.1	2.4
2015	208.6	1.3
2016	212.4	1.8

Milk produced per person averaged 659 pounds



2016 milk production

State	Milk output in million pounds	% change from 2015	Rank
Alabama	92	-8.9	45
Alaska	4	0.0	50
Arizona	4,788	1.1	13
Arkansas	79	-13.2	47
California	40,469	-1.0	1
Colorado	3,923	4.4	15
Connecticut	408	3.0	34
Delaware	96	-3.0	46
Florida	2,503	-3.1	18
Georgia	1,830	1.8	23
Hawaii	35	-0.3	48
Idaho	14,665	3.9	3
Illinois	1,903	0.5	22
Indiana	4,151	3.1	14
Iowa	5,034	4.1	12
Kansas	3,329	4.8	16
Kentucky	1,048	-2.7	27
Louisiana	169	-10.1	40
Maine	630	6.1	33
Maryland	956	-2.7	29
Massachusetts	215	-0.9	39
Michigan	10,876	6.0	7
Minnesota	9,666	2.2	8
Mississippi	144	-12.7	41
Missouri	1,373	0.6	25
Montana	295	-1.3	36
Nebraska	1,399	7.0	26
Nevada	660	-1.3	32
New Hampshire	284	0.7	37
New Jersey	122	-3.9	44
New Mexico	7,711	-1.5	9
New York	14,765	4.8	4
North Carolina	965	-2.0	28
North Dakota	345	3.9	35
Ohio	5,532	0.7	11
Oklahoma	692	-4.8	31
Oregon	2,593	1.6	19
Pennsylvania	10,820	0.2	5
Rhode Island	14	-11.9	49
South Carolina	250	-4.2	38
South Dakota	2,546	7.9	20
Tennessee	696	-6.2	30
Texas	10,773	4.6	6
Utah	2,095	-5.6	21
Vermont	2,724	2.2	17
Virginia	1,723	-2.7	24
Washington	6,650	0.7	10
West Virginia	134	-5.0	42
Wisconsin	30,123	3.8	2
Wyoming	140	3.2	43
U.S.	**212,436**	**1.8**	

2016 cow numbers

State	Milk cows 1,000s	% change from 2015	Rank
Alabama	7.0	-12.5	43-T
Alaska	0.3	0.0	50
Arizona	196.0	1.0	13
Arkansas	6.0	-14.3	45-T
California	1,762.0	-0.8	1
Colorado	151.0	3.4	15
Connecticut	19.0	0.0	34
Delaware	5.0	0.0	47
Florida	123.0	-1.6	19
Georgia	84.0	1.2	25
Hawaii	2.4	9.1	48
Idaho	595.0	1.7	4
Illinois	94.0	0.0	21
Indiana	184.0	1.1	14
Iowa	213.0	0.9	12
Kansas	146.0	2.1	16
Kentucky	58.0	-4.9	27
Louisiana	12.0	-14.3	39-T
Maine	30.0	0.0	32-T
Maryland	48.0	-2.0	28
Massachusetts	12.0	0.0	39-T
Michigan	419.0	2.7	8
Minnesota	461.0	0.2	7
Mississippi	10.0	-9.1	41
Missouri	88.0	0.0	24
Montana	14.0	0.0	37-T
Nebraska	60.0	5.3	26
Nevada	30.0	3.4	32-T
New Hampshire	14.0	0.0	37-T
New Jersey	7.0	0.0	43-T
New Mexico	315.0	-2.5	9
New York	620.0	0.3	3
North Carolina	46.0	-2.1	29
North Dakota	16.0	0.0	35
Ohio	265.0	-0.7	11
Oklahoma	37.0	-5.1	31
Oregon	125.0	0.0	18
Pennsylvania	529.0	-0.2	5
Rhode Island	0.8	-11.1	49
South Carolina	15.0	0.0	36
South Dakota	115.0	8.5	20
Tennessee	42.0	-6.7	30
Texas	475.0	2.6	6
Utah	92.0	-4.2	22
Vermont	130.0	-1.5	17
Virginia	90.0	-1.1	23
Washington	276.0	-0.4	10
West Virginia	9.0	0.0	42
Wisconsin	1,279.0	0.0	2
Wyoming	6.0	0.0	45-T
U.S.	**9,328.0**	**0.2**	

2016 milk per cow

State	Milk per cow (pounds)	% change from 2015	Rank
Alabama	13,143	4.1	49
Alaska	11,667	0.0	50
Arizona	24,429	0.1	5
Arkansas	13,167	1.3	48
California	22,968	-0.3	12
Colorado	25,980	1.0	1
Connecticut	21,474	3.0	21
Delaware	19,100	-3.0	35
Florida	20,350	-1.5	30
Georgia	21,786	0.6	19
Hawaii	14,542	-8.6	45
Idaho	24,647	2.2	3
Illinois	20,245	0.5	32
Indiana	22,560	2.0	16
Iowa	23,634	3.1	8
Kansas	22,801	2.7	13
Kentucky	18,069	2.3	37
Louisiana	14,083	4.9	47
Maine	21,000	6.1	23
Maryland	19,917	-0.7	33
Massachusetts	17,917	-0.9	38
Michigan	25,957	3.2	2
Minnesota	20,967	1.9	25
Mississippi	14,400	-4.0	46
Missouri	15,602	0.6	43
Montana	21,071	-1.3	22
Nebraska	23,317	1.7	10
Nevada	22,000	-4.6	18
New Hampshire	20,286	0.7	31
New Jersey	17,429	-3.9	40
New Mexico	24,479	1.0	4
New York	23,815	4.4	7
North Carolina	20,978	0.1	24
North Dakota	21,563	3.9	20
Ohio	20,875	1.5	27
Oklahoma	18,703	0.3	36
Oregon	20,744	1.6	28
Pennsylvania	20,454	0.4	29
Rhode Island	17,500	-0.9	39
South Carolina	16,667	-4.2	41
South Dakota	22,139	-0.5	17
Tennessee	16,571	0.5	42
Texas	22,680	1.9	15
Utah	22,772	-1.5	14
Vermont	20,954	3.7	26
Virginia	19,144	-1.6	34
Washington	24,094	1.0	6
West Virginia	14,889	-5.0	44
Wisconsin	23,552	3.8	9
Wyoming	23,300	3.2	11
U.S.	**22,774**	**1.7**	

Dairy farm exits outpaced 10-year trend

Among the top 10 states ranked by farm numbers, only 3.7 percent exited the business. For the 40 remaining states, losses were much steeper at 4.9 percent.

by Hoard's Dairyman staff

TIGHT margins that ranged from $5.76 to $9.17 per hundredweight after feed costs were among the reasons that 1,725 dairy farmers exited the industry last year. Those business closings were only the fourth time in the past decade that 4 percent or more of dairy farmers left the industry.

It goes without saying that dairy cows and farms continue to consolidate into clusters. When evaluating the top 10 dairy states as measured by total dairy farms, that group only lost 3.7 percent of its farms last year. Each state in that group also had 1,000 or more dairy farms. For the remaining 40 states, losses totaled a more brisk 4.9 percent.

In reviewing the prior year's report, USDA shaved 50 herds off of its 2015 estimate, reducing the total from 43,584 to 43,534. In the updated data shown to the right, California had 25 fewer herds; Utah, fell by 20; New York dropped 10; and South Carolina declined 5. Meanwhile, Maine had 10 more herds.

Table 1 details the 25-year history of dairy farms holding permits to sell milk. Since 1992, the drop in licensed, or so-called commercial, dairy farms has declined 89,700 from 131,509 to 41,809. That's a 68 percent drop during that time.

Table 2 provides a collective overview of the last 25 years of change. Nationally, average herd size has grown 203 percent, from 74 to 223 cows. Regionally, the West (+314) and the Midwest (+194) have seen the largest percentage gains in herd size. During that time, herd sizes in the Northeast and Southwest grew at half that pace.

Western herds added 34 cows per herd last year, bringing its average to 1,089. That represented stronger growth in herd size compared to the prior year's 16 cows. Even so, the higher 34-cow total remained off the pace of 2012 to 2014 when herd sizes grew 49, 33, and 47 cows, respectively.

Meanwhile, the Southeast (+10) added one more cow to its average herd while the Midwest matched the national average. After moving into triple-digit herd numbers for the first time last year, Northeast herds inched up herd numbers by three to reach 107 cows per herd as shown in Table 2.

For the twelfth time in the past 14 years, the Southeast had the largest share of farms calling it quits this past year (Table 3). The 7.4 percent total yielded 205 fewer dairy farms. That percentage reduction was the largest since to the 8.8 percent reduction in 2007. Since 1992, the Southeast has lost more operations than any other area as farms fell from 12,057 to 2,575 . . . a drop of 9,482 farms or 79 percent. Cow numbers followed suit; there are 723,000 fewer cows, a 58 percent drop.

Next was the Midwest, which lost 4.6 percent of its dairy operations. Outside of the Southeast, the Midwest has been the only other region to post the largest reduction in dairy farms. The Midwest lost the most dairies in 2011 and 2014. Overall, its 4.6 percent reduction in farm numbers was the most since 2014. Within the region, Wisconsin lost 380 dairy farms, making that the largest loss in the region. However, on a percentage basis, the Badger State bucked recent trends by being under the regional and national average at 3.8 percent.

For back-to-back years, the West retained the most dairy farms among all regions. Previous to this, the Northeast had retained the most operations for six straight years.

Table 1. Licensed U.S. dairy farms

Year	Number	% change
1992	131,509	
1993	124,945	-5.0
1994	117,732	-5.8
1995	111,825	-5.0
1996	106,181	-5.3
1997	99,413	-6.4
1998	91,508	-8.0
1999	87,527	-4.4
2000	82,937	-5.2
2001	76,875	-7.3
2002	74,012	-3.7
2003	70,375	-4.9
2004	66,830	-5.0
2005	64,540	-3.4
2006	62,070	-3.8
2007	59,130	-4.7
2008	57,127	-3.4
2009	54,932	-3.8
2010	53,132	-3.3
2011	51,291	-3.5
2012	49,281	-3.9
2013	46,975	-4.7
2014	44,809	-4.6
2015	43,534	-2.8
2016	41,809	-4.0

Table 2. How our industry changed from 1992 to 2016

	1992			2016			Percent change		
	Herds	Cows (1,000s)	Cows/ herd	Herds	Cows (1,000s)	Cows/ herd	Herds	Cows	Cows/ herd
Midwest	80,135	4,100	51	22,175	3,340	151	-72	-19	194
Northeast	29,758	1,824	61	13,350	1,424	107	-55	-22	74
Southeast	12,057	1,253	104	2,575	530	206	-79	-58	98
West	9,559	2,515	263	3,709	4,040	1089	-61	61	314
U.S.	131,509	9,692	74	41,809	9,328	223	-68	-4	203

Table 3. Dairy farm numbers by state and region

State/Region	2015	2016	Change	Percent change
Midwest				
Illinois	680	640	-40	-5.9
Indiana	1,210	1,145	-65	-5.4
Iowa	1,360	1,265	-95	-7.0
Kansas	300	290	-10	-3.3
Michigan	1,880	1,810	-70	-3.7
Minnesota	3,470	3,350	-120	-3.5
Missouri	1,190	1,100	-90	-7.6
Nebraska	185	175	-10	-5.4
North Dakota	90	85	-5	-5.6
Ohio	2,730	2,560	-170	-6.2
South Dakota	255	235	-20	-7.8
Wisconsin	9,900	9,520	-380	-3.8
Region total	***23,250***	***22,175***	***-1,075***	***-4.6***
Northeast				
Connecticut	120	120	0	0.0
Delaware	35	35	0	0.0
Maine	260	250	-10	-3.8
Maryland	440	420	-20	-4.5
Massachusetts	150	140	-10	-6.7
New Hampshire	120	120	0	0.0
New Jersey	65	60	-5	-7.7
New York	4,820	4,650	-170	-3.5
Pennsylvania	6,770	6,650	-120	-1.8
Rhode Island	15	10	-5	-33.3
Vermont	850	820	-30	-3.5
West Virginia	75	75	0	0.0
Region total	***13,720***	***13,350***	***-370***	***-2.7***
Southeast				
Alabama	35	35	0	0.0
Arkansas	70	60	-10	-14.3
Florida	130	120	-10	-7.7
Georgia	220	210	-10	-4.5
Kentucky	690	630	-60	-8.7
Louisiana	110	100	-10	-9.1
Mississippi	75	75	0	0.0
North Carolina	230	210	-20	-8.7
Oklahoma	170	160	-10	-5.9
South Carolina	70	60	-10	-14.3
Tennessee	350	300	-50	-14.3
Virginia	630	615	-15	-2.4
Region total	***2,780***	***2,575***	***-205***	***-7.4***
West				
Alaska	2	2	0	0.0
Arizona	110	110	0	0.0
California	1,440	1,420	-20	-1.4
Colorado	120	120	0	0.0
Hawaii	2	2	0	0.0
Idaho	520	520	0	0.0
Montana	70	65	-5	-7.1
Nevada	20	20	0	0.0
New Mexico	150	150	0	0.0
Oregon	240	230	-10	-4.2
Texas	430	400	-30	-7.0
Utah	190	180	-10	-5.3
Washington	480	480	0	0.0
Wyoming	10	10	0	0.0
Region total	***3,784***	***3,709***	***-75***	***-2.0***
U.S. Total	**43,534**	**41,809**	**-1,725**	**-4.0**

2017 State FFA Milk Quality CDE Problem Solving
100 Points (5 points per Question)

Use the March 10, 2017 Hoard's Dairyman articles to answer the following questions.

1. In 2016, the top 10 states ranked by dairy farm numbers, only _____percent exited the business.
   A. 3.7
   B. 4.0
   C. 4.6
   D. 4.9
   E. 7.4

2. What was the number of dairy farms that held permits to sell milk in the U. S. in 2016?
   A. 40,584
   B. 41,809
   C. 42,960
   D. 43,281
   E. 44,291

3. What was the percentage change of licensed U. S. dairy farms in 2016?
   A. – 1.2
   B. – 2.7
   C. – 3.1
   D. – 4.0
   E. – 5.1

4. From 1992 to 2016 how many licensed U. S. dairy farms have left the milking business?
   A. 41,809
   B. 46,975
   C. 74,012
   D. 87,925
   E. 89,700

5. Which U. S. region lost the largest percentage of dairy farms in 2016?
   A. All regions lost the same amount.
   B. Midwest
   C. Northeast
   D. Southeast
   E. West

6. The U. S. average herd size in 2016 was:
   A. 196 cows
   B. 206 cows
   C. 209 cows
   D. 212 cows
   E. 223 cows

7. Which U. S. region had an average of 151 cows per herd in 2016?
   A. All regions averaged the same.
   B. Midwest
   C. Northeast
   D. Southwest
   E. West

8. Which region had the lowest decrease (% change) in the number of dairy farms in 2016?
   A. Midwest
   B. Northeast
   C. Southeaast
   D. Southwest
   E. West

9. Minnesota lost how many dairy farms in 2016?
   A. 105
   B. 120
   C. 137
   D. 142
   E. 150

10. The state that lost the most dairy farms in 2016 was:
    A. Pennsylvania
    B. Wisconsin
    C. California
    D. New York
    E. Ohio

11. Nationally, milk production rose _____ percent in 2016.
    A. 0.4
    B. 1.3
    C. 1.8
    D. 2.8
    E. 3.5

12. The U. S. had a rolling herd average of _____ pounds in 2016.
    A. 19,841
    B. 21,869
    C. 22,258
    D. 22,774
    E. 23,785

13. California's 2016 milk production output was _____ million pounds more than any other state.
    A. 10,346
    B. 11,542
    C. 13,905
    D. 14,375
    E. 15,425

14. The U. S. total milk output in 2016 was about:
    A. 212.4 thousand pounds
    B. 212.4 million pounds
    C. 212.4 billion pounds
    D. 212.4 trillion pounds
    E. Cannot be determined

15. Minnesota had how many milk cows in 2016?
    A. 461
    B. 4,610
    C. 46,100
    D. 461,000
    E. 4,610,000

16. Which state had the lowest number of milk cows in 2016?
    A. Rhode Island
    B. Wyoming
    C. New Jersey
    D. Hawaii
    E. Alaska

17. Which state had the highest production in milk per cow in 2016?
    A. Michigan
    B. Colorado
    C. Georgia
    D. Mississippi
    E. Missouri

18. The U.S. produced enough milk to supply each U. S. person _____ pounds?
    A. 626
    B. 643
    C. 659
    D. 734
    E. 912

19. Which state produced the most milk based on its state's population in 2016?
    A. Vermont
    B. New Mexico
    C. California
    D. Wisconsin
    E. Idaho

20. Which state was a net importer of dairy products in 2016 (300 to 600 pounds)?
    A. Utah
    B. Kansas
    C. Texas
    D. Nebraska
    E. South Dakota

2017 State FFA Milk Quality CDE Problem Solving Key

100 Points (5 points per Question)

1. A
2. B
3. D
4. E
5. D
6. E
7. B
8. E
9. B
10. B
11. C
12. D
13. A
14. C
15. D
16. E
17. B
18. C
19. E
20. C

2017 State Milk Quality- Cheese

Characteristics	Sample Numbers				
	1	2	3	4	5
A. Maximum Moisture more than 42%					
B. Minimum fat in the solids more than 50%					
C. Gas holes are expected= yes					
D. Receives "pasta filata treatment"= No					
E. Ripened by Bacteria= Yes					
F. Brine/surface salted= Yes					
G. Originated in Italy= Yes					

2017 State Milk Quality- Cheese Key

Characteristics	Sample Numbers				
	1 Cheddar	2 Swiss	3 Mozzarella	4 Provolone	5 American Processed
A. Maximum Moisture more than 42%			X	X	
B. Minimum fat in the solids more than 50%	X				X
C. Gas holes are expected= yes		X			
D. Receives "pasta filata treatment"= No	X	X			X
E. Ripened by Bacteria= Yes	X	X	X	X	X
F. Brine/surface salted= Yes		X	X	X	
G. Originated in Italy= Yes			X	X	