

2016 Minnesota State FFA Milk Quality & Products CDE Exam

Do not write on exam. Bubble in the most correct answer on your scantron

Milk Production

1. What is a major reason for limiting the use of antibiotics with lactating dairy cows?
 - A. antibiotics are toxic to cows
 - B. antibiotics may be found in the milk for many hours after treatment
 - C. antibiotics are ineffective when they contact milk
 - D. antibiotics cost more than dairymen can afford

2. A cryoscope is an important tool that tests for _____ in milk.
 - A. antibiotics
 - B. butterfat
 - C. pesticides
 - D. added water

3. The ideal cleaning agent for removing milkstone from equipment surfaces is which of the following?
 - A. acidic detergent
 - B. phosphate
 - C. chelating agent
 - D. surfactant

4. The microbiological standard for Grade A milk is _____ bacteria or less per milliliter of
 - A. 750,000
 - B. 100,000
 - C. 75,000
 - D. 50,000

5. What is the principal protein in milk?
 - A. casein
 - B. whey protein
 - C. crude protein
 - D. lactoglobulin

6. Raw milk somatic cell count must be _____ or less to meet Grade A standards in the United States.
 - A. 750,000
 - B. 400,000
 - C. 250,000
 - D. 100,000

7. The activity/inactivity of which enzyme is the basis for confirming the effectiveness of milk pasteurization?
- A. phosphatase
 - B. lipase
 - C. peroxidase
 - D. catalase
8. Failure to sanitize milking equipment immediately before use may result in which of the following issues?
- A. foreign flavor
 - B. high bacteria count
 - C. high somatic cell count
 - D. high freezing point
9. Chemical sanitizers containing which of the following are most widely used for sanitizing milking equipment?
- A. bromine
 - B. saline
 - C. iodine
 - D. chlorine
10. The CMT test detects which of the following in raw milk?
- A. bacteria
 - B. red blood cells
 - C. somatic cells
 - D. antibiotics
11. What is the name of the off-flavor in milk that is generally caused by exposure to sunlight or fluorescent light?
- A. rancid
 - B. oxidized
 - C. acid
 - D. malty
12. Lactose is the principal _____ in milk.
- A. carbohydrate
 - B. fat
 - C. protein
 - D. mineral

13. _____ is the major mineral nutrient found in milk and is readily absorbed by the body.
- A. potassium
 - B. phosphorus
 - C. magnesium
 - D. calcium
14. By volume, milk consists of approximately _____ percent water.
- A. 92
 - B. 87
 - C. 50
 - D. 3.7
15. A primary cause of milkstone on equipment is which of the following?
- A. failure to use adequate detergent in dairies that have hard water
 - B. the use of acid cleaners in dairies having hard water
 - C. the use of soft water for cleaning and rinsing
 - D. all of the above
16. The high acid flavor in milk is caused by which of the following?
- A. growth of somatic cells
 - B. high storage temperature
 - C. exposure to sunlight
 - D. contamination with copper
17. The ability of lipase to attack milk fat and produce a rancid off flavor is enhanced by which of the following practices?
- A. feeding cows moldy hay
 - B. excessive agitation of warm raw milk
 - C. exposing milk to sunlight
 - D. poorly cleaned milking equipment
18. What are the two most important diseases of cattle transmissible to man through milk?
- A. Scarlet fever and Q fever
 - B. Tuberculosis and Anthrax
 - C. Brucellosis and Scarlet fever
 - D. Tuberculosis and Brucellosis
19. The temperature of cooled milk on the producing farm must be kept below which of the following degrees?
- A. 45°F
 - B. 40°F
 - C. 35°F
 - D. 32°F

20. In 2012 the number of dairy farm operations dropped below _____ farms.
- A. 125,000
 - B. 100,000
 - C. 75,000
 - D. 50,000
21. Poor quality forage will cause _____ to decrease significantly.
- A. somatic cells
 - B. bacteria counts
 - C. fat percentage
 - D. casein percentage
22. Which portion of the milking procedure is recommended because it flushes potential mastitis- causing bacteria from the teat canal, allows you to observe early signs of clinical mastitis and helps promote milk letdown?
- A. predipping
 - B. drying
 - C. postdipping
 - D. forestripping
23. Compared to a Holstein cow, on a per gallon of milk basis, the average Jersey cow produces
- A. more fat and total milk solids
 - B. more fat but less total solids
 - C. less fat and total milk solids
 - D. less fat but more total milk solids
24. A cow's stomach has four compartments. Which stomach compartment has the primary function of absorbing water and other substances from the digested contents?
- A. rumen
 - B. omasum
 - C. abomasum
 - D. reticulum
25. When feeding distillers grains in dairy feed rations, there are concerns regarding the supply of protein building blocks. What are the building blocks of protein?
- A. DNA
 - B. amino acids
 - C. nitrogen
 - D. carbohydrates
 - E. magnesium
26. The major result of storing milk cold is the
- A. stopping of all bacterial growth
 - B. slowing of bacterial growth
 - C. killing of all bacteria
 - D. killing of all microorganisms

27. A milk hauler found the milk temperature in the bulk tank at the farm to be at 65°F. Milking had been completed 3 hours previously. The hauler should
- A. expect the milk to be sour
 - B. expect the sample to yield a high count of bacteria
 - C. not pump the milk into his truck's tank
 - D. all of the above
28. Milk producers should avoid the use of metals that contain copper or that tend to rust because
- A. these conditions promote oxidation of the milk and bacterial contamination
 - B. these kinds of equipment are quite costly
 - C. the metals release radioactive particles
 - D. they stimulate the growth of bacteria
29. Milk is a major nutritional source of which mineral that combined with vitamin D and exercise builds strong bones and teeth?
- A. calcium
 - B. iron
 - C. phosphorous
 - D. potassium
 - E. nitrogen
30. A bulk milk hauler detected a sour odor in the raw milk in a farm bulk tank. Upon further examination he/she was likely to find
- A. butter particles floating on the milk
 - B. a high freezing point of the milk
 - C. that the milk had been exposed to sanitizer
 - D. a high titratable acidity

Milk Marketing

31. A major reason for establishing minimal farm milk prices through the Federal milk orders is
- A. to insure that all dairymen have a market for milk
 - B. to insure that all processors have adequate milk for manufacture of butter and feeds
 - C. to insure an adequate supply of pure and wholesome milk for the consumer
 - D. to provide federal control of the production of milk
32. A Federal Milk Marketing Order is not authorized unless two-thirds of the affected _____ milk to the proposed marketing area approves its implementation.
- A. dairy cooperatives supplying
 - B. producers supplying
 - C. cheese processors manufacturing
 - D. handlers processing
 - E. brokers selling

33. The actual milk check amount received by a dairy farmer is called the _____.
- A. milk-feed ratio price
 - B. cooperative bonus premium
 - C. Federal Order price
 - D. mailbox price
 - E. margin profit price
34. What piece of legislation made farmer cooperatives legal?
- A. Capper-Volstead Act
 - B. Sherman Act
 - C. Farm Bill
 - D. Barkley Act
35. Which country is the world leading importer of dairy products?
- A. United States
 - B. New Zealand
 - C. China
 - D. European Union (EU)
 - E. Australia
36. A milk producer would receive the maximal price for milk delivered within a milk marketing order if all of it was used to make
- A. dry whole milk
 - B. ice cream
 - C. mozzarella cheese
 - D. butter
 - E. pasteurized milk
37. The amount of milk produced in the U.S. by dairy farmers is directly influenced by
- A. prices they receive for milk
 - B. prices they pay for feed
 - C. their costs of production other than feed
 - D. all the above
38. To make one pound of butter requires approximately ___ pounds of whole milk
- A. 8
 - B. 12
 - C. 22
 - D. 44
39. Marketing cooperatives often offer incentives to dairy farmers for producing milk having which of the following special characteristics?
- A. low bacteria count
 - B. low somatic cell count
 - C. high protein content
 - D. all of the above

40. Dividing the total dollars a dairy has in assets by the number of cows determines which economic indicator?
- A. equity
 - B. total investment per cow
 - C. debt per cow
 - D. debt to asset ratio
41. Which state that does not participate in the federal milk marketing order program is considering a proposal to create a Federal Order?
- A. California
 - B. New York
 - C. Pennsylvania
 - D. Minnesota
42. The Agricultural Act of 2014, farm bill, provides a risk management tool for nearly all dairy producers in the country. This tool that recognizes large swings in feed costs and milk prices is called
- A. Milk Income Loss Contract
 - B. Milk Income-Over-Feed Cost
 - C. Dairy Export Incentive Program
 - D. Price Support Program
43. Most dairy cows are milked two to three times per day. On average, a cow will produce _____ gallons of milk each day.
- A. 1 to 2
 - B. 6 to 7
 - C. 15 to 16
 - D. 20 to 21
44. The _____ concentration in the bulk milk tank helps the producers monitor the efficacy of their feeding programs.
- A. antibiotic
 - B. bacteria
 - C. milk urea nitrogen (MUN)
 - D. somatic cell
45. Mastitis has severe economic consequences. The high somatic cell count causes a decrease in cheese yield and the bacteria causes a (an) _____ in the lactose (milk sugar).
- A. denaturation
 - B. decrease
 - C. increase
 - D. gram-negative infection
46. Based on Federal Order pricing which component of milk is the most valuable?
- A. fat
 - B. other solids
 - C. protein
 - D. somatic cells

47. Prices paid by handlers are identical in all federal orders for milk utilized in the manufactured product categories, however milk used in Class I varies by location. The highest price paid for Class I milk is in the _____ region of the United States.
- A. Southeast
 - B. Midwest
 - C. Northwest
 - D. Northeast
48. In a Federal Milk Marketing Order the first buyers of milk are typically referred to as
- A. milk haulers
 - B. handlers
 - C. producer processors
 - D. cheese makers
49. Fluid milk use per person has reached its lowest level since tracking began in 1909. How many pounds of fluid milk are currently being used per person per year?
- A. 86
 - B. 201
 - C. 312
 - D. 515
50. From 2000 to 2013 average protein and solids-not-fat levels in raw milk have_____.
- A. increased
 - B. decrease
 - C. remained the same
 - D. been like a roller coaster up and then down
 - E. inconsistent
51. To make one pound of whole milk cheese requires approximately ___ pounds of whole milk
- A. 5
 - B. 10
 - C. 20
 - D. 40
52. Marketing cooperatives often offer incentives to dairy farmers for producing milk having which of the following special characteristics?
- A. low bacteria count
 - C. high protein content
 - B. low somatic cell count
 - D. all of the above
 - E. none of the above
53. The check off-funded _____ mission is to enhance demand for U.S. milk products and ingredients by securing access and assisting suppliers to meet global market needs.
- A. Federal Milk Marketing Orders' (FMMO)
 - B. U.S. Dairy Export Council's (USDEC)
 - C. U.S. Department of Agriculture Grading's (USDA)
 - D. Dairy Management, Inc.'s (DMI)

54. The number of Federal milk marketing orders in the United States is
- A. equal to the number of states
 - B. equal to the number of states within the continental limits
 - C. more than 30
 - D. ten
55. The _____ concentration in the bulk milk tank helps the producers monitor the efficacy of their feeding programs.
- A. antibiotic
 - B. bacteria
 - C. milk urea nitrogen (MUN)
 - D. somatic cell
56. Approximately _____ percent of the 2013 U.S. milk production was used to make cheese.
- A. 10
 - B. 25
 - C. 50
 - D. 75
57. The actual cost of producing dairy products that is used to in the Class III and IV pricing formula is called the _____.
- A. milk-feed ratio price
 - B. cooperative bonus premium
 - C. Federal Order price
 - D. make allowance
58. _____ is an effective exercise natural choice recovery drink due to its powerful nutrient package that supplies the nutrition the body needs after a workout. It has carbohydrates to help refuel the body; protein to help reduce muscle breakdown and stimulate growth; and fluid and electrolytes to aid in rehydration. Drinking it after resistance training has been shown to increase the body's ability to make new muscle and may help improve body composition.
- A. Chocolate milk
 - B. Greek yogurt
 - C. Gatorade
 - D. Whey protein concentrate
59. According to the USDA Dairy Products summary, Wisconsin has the most manufacturing plants with 210. Which state has no manufacturing plants?
- A. Arkansas
 - B. Tennessee
 - C. Wyoming
 - D. Utah
60. Among the cheese varieties produced in the U.S, which garners the largest market share? This cheese accounted for over 32 percent of the total U.S. cheese production in 2012
- A. Cheddar
 - B. Mozzarella
 - C. Italian style cheese
 - D. Blue cheese

2016 Minnesota State FFA Milk Quality & Products CDE Exam Key

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|-------|-------|
| 1. B | 49. B |
| 2. D | 50. A |
| 3. A | 51. B |
| 4. B | 52. D |
| 5. A | 53. B |
| 6. A | 54. D |
| 7. A | 55. C |
| 8. B | 56. C |
| 9. D | 57. D |
| 10. C | 58. A |
| 11. B | 59. C |
| 12. A | 60. B |
| 13. D | |
| 14. B | |
| 15. A | |
| 16. B | |
| 17. B | |
| 18. D | |
| 19. A | |
| 20. A | |
| 21. C | |
| 22. D | |
| 23. A | |
| 24. B | |
| 25. B | |
| 26. B | |
| 27. D | |
| 28. A | |
| 29. A | |
| 30. D | |
| 31. C | |
| 32. B | |
| 33. D | |
| 34. A | |
| 35. C | |
| 36. D | |
| 37. D | |
| 38. C | |
| 39. D | |
| 40. B | |
| 41. A | |
| 42. B | |
| 43. B | |
| 44. C | |
| 45. B | |
| 46. C | |
| 47. A | |
| 48. B | |

Fewest dairies exit since tracking began

Among the top 10 states when ranked by farm numbers, only 2.6 percent of dairies exited the business. For the 40 remaining states, losses were somewhat steeper at 2.9 percent.

by Hoard's Dairyman staff

RECORD milk checks in 2014 and last year's equally monumental beef prices that propped up cull cow values worked in tandem with lower feed costs to buoy cash flows. Those were among the reasons that the smallest number of dairy farmers left the business since tracking of commercial dairy farms began in 1992.

Overall, only 1,225 farms exited the dairy industry, and that represented the lowest total since 2010's 1,800. On a percentage basis, those two years yielded the lowest percentage reduction at 2.7 and 3.3 percent, respectively, as shown in Table 1. Overall, there were 43,584 dairy farms in the U.S.

USDA posted a substantial correction when looking back at the 2014 dairy farm numbers, along with one minor correction. Last year the federal agency reported that Pennsylvania grew from 7,200 to 7,340 herds. That was incorrect.

In updated data shown to the right, the Keystone State was home to 6,810 farms in 2014, not the previously stated 7,340. Additionally, USDA revised New Mexico upward from 140 to 150 dairy farms. After both revisions, U.S. dairy farm numbers fell to 44,809 and represented 535 fewer operations in 2014.

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	43,584	-2.7

Table 1 details the 24-year history of dairy farms holding permits to sell milk. Since 1992, the drop in licensed, or so-called commercial, dairy farms has declined 87,925 from 131,509 to 43,584. That's a 67 percent drop during that time.

Table 2 provides a collective overview of the last 24 years of change. Nationally, average herd size has gone up 188 percent, from 74 to 212 cows. Regionally, the West (+301) and the Midwest (+178) have seen the largest percentage gains in herd size.

Western herds added 16 cows per herd last year, bringing its average to 1,055. That represented moderate growth in herd size after the Western states added 47, 33 and 49 cows each of the three prior years.

Meanwhile, the Midwest (+6) and the Southeast (+6) also outpaced the national growth rate in herd size. For the first time, Northeast herds moved into triple digits for herd numbers, growing to 104 cows per operation. However, that growth remained under the national average at (+4).

For the eleventh time in the past thirteen years, the Southeast had the largest share of farms calling it quits this past year (Table 3). The 4 percent total yielded 115 fewer dairy farms. Since 1992, the Southeast has lost more operations than any other area as farms fell from 12,057 to 2,785 . . . a drop of 9,272 farms or 77 percent. Cow numbers followed suit; there are 707,000 fewer cows, a 56 percent drop.

Next was the Midwest, which lost 3.4 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.

For the first time in seven 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.

For the first time in over a century, Wisconsin fell below 10,000 dairy farms. Meanwhile, Arizona added 10 operations. All other states remained steady or realized a reduction in dairy farm numbers.

The farms counted in this survey are those that have a permit to sell milk. The number differs from other estimates that can include any farm with a milk cow. ▼

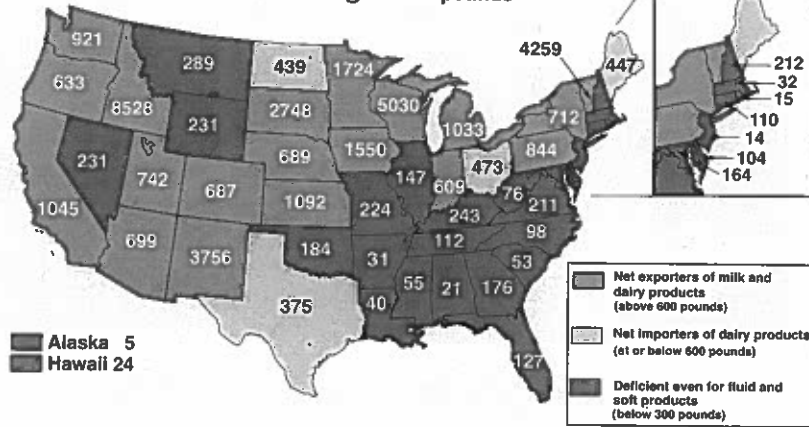
	1992			2015			Percent change		
	Herds	Cows/ (1,000s) herd	Cows/ herd	Herds	Cows/ (1,000s) herd	Cows/ herd	Herds	Cows	herd
Midwest	80,135	4,100	51	23,250	3,311	142	-71	-19	178
Northeast	29,758	1,824	61	13,720	1,426	104	-54	-22	70
Southeast	12,057	1,253	104	2,785	546	196	-77	-56	89
West	9,559	2,515	263	3,829	4,040	1055	-60	61	301
U.S.	131,509	9,692	74	43,584	2,257	212	-67	-4	188

State/Region	2014	2015	Change	Percent change
Midwest				
Illinois	690	680	-10	-1.4
Indiana	1,265	1,210	-55	-4.3
Iowa	1,370	1,360	-10	-0.7
Kansas	315	300	-15	-4.8
Michigan	1,950	1,880	-70	-3.6
Minnesota	3,605	3,470	-135	-3.7
Missouri	1,230	1,190	-40	-3.3
Nebraska	190	185	-5	-2.6
North Dakota	100	90	-10	-10.0
Ohio	2,810	2,730	-80	-2.8
South Dakota	255	255	0	0.0
Wisconsin	10,290	9,900	-390	-3.8
Region total	24,070	23,250	-820	-3.4
Northeast				
Connecticut	130	120	-10	-7.7
Delaware	40	35	-5	-12.5
Maine	280	250	-30	-10.7
Maryland	450	440	-10	-2.2
Massachusetts	150	150	0	0.0
New Hampshire	120	120	0	0.0
New Jersey	70	65	-5	-7.1
New York	4,950	4,830	-120	-2.4
Pennsylvania	6,810	6,770	-40	-0.6
Rhode Island	15	15	0	0.0
Vermont	880	850	-30	-3.4
West Virginia	75	75	0	0.0
Region total	13,970	13,720	-250	-1.8
Southeast				
Alabama	40	35	-5	-12.5
Arkansas	75	70	-5	-6.7
Florida	130	130	0	0.0
Georgia	230	220	-10	-4.3
Kentucky	720	690	-30	-4.2
Louisiana	120	110	-10	-8.3
Mississippi	85	75	-10	-11.8
North Carolina	250	230	-20	-8.0
Oklahoma	170	170	0	0.0
South Carolina	80	75	-5	-6.3
Tennessee	370	350	-20	-5.4
Virginia	630	630	0	0.0
Region total	2,900	2,785	-115	-4.0
West				
Alaska	2	2	0	0.0
Arizona	100	110	10	10.0
California	1,485	1,465	-20	-1.3
Colorado	120	120	0	0.0
Hawaii	2	2	0	0.0
Idaho	530	520	-10	-1.9
Montana	70	70	0	0.0
Nevada	20	20	0	0.0
New Mexico	150	150	0	0.0
Oregon	250	240	-10	-4.0
Texas	440	430	-10	-2.3
Utah	210	210	0	0.0
Washington	480	480	0	0.0
Wyoming	10	10	0	0.0
Region total	3,869	3,829	-40	-1.0
U.S. Total	44,809	43,584	-1,225	-2.7

Equal influences grew U.S. milk production

ON A percentage basis, growth in cow numbers and improved productivity of those cows contributed equally to the 1.3 percent gain in U.S. milk production last year. Cow numbers grew from 9.257 to 9.317 million head over that span. At the same time, milk production per cow went from 2014's 22,258 pounds to 22,393 in 2015. On a percentage basis, cow numbers and milk per cow both rose 0.6 percent. The map at the right depicts milk produced based on each state's population. Green states are net exporters while yellow and red areas need to purchase additional dairy products.

Milk produced per person averaged 650 pounds



Year	Billions of pounds	Percent change
2006	181.8	2.8
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

2015 milk production			
State	Milk output in million pounds	% change from 2014	Rank
Alabama	101	-7.3	45
Alaska	4	0.0	50
Arizona	4,773	1.5	13
Arkansas	91	-5.2	47
California	40,898	-3.4	1
Colorado	3,750	4.4	15
Connecticut	396	3.4	34
Delaware	99	2.1	46
Florida	2,582	3.0	18
Georgia	1,797	6.3	23
Hawaii	35	17.1	48
Idaho	14,114	1.7	3
Illinois	1,892	2.3	22
Indiana	4,030	3.5	14
Iowa	4,841	4.2	12
Kansas	3,179	2.1	16
Kentucky	1,074	7.2	27
Louisiana	188	-7.8	40
Maine	594	-0.8	33
Maryland	983	-0.4	29
Massachusetts	217	-6.9	39
Michigan	10,253	6.7	7
Minnesota	9,466	3.7	8
Mississippi	165	-12.2	41
Missouri	1,365	-1.3	25
Montana	299	-0.7	36
Nebraska	1,307	9.4	26
Nevada	669	-3.0	32
New Hampshire	282	0.0	37
New Jersey	127	0.0	44
New Mexico	7,831	-3.4	9
New York	14,100	2.7	4
North Carolina	986	2.6	28
North Dakota	332	2.5	35
Ohio	5,493	1.3	11
Oklahoma	720	-0.8	31
Oregon	2,551	0.0	19
Pennsylvania	10,805	1.3	5
Rhode Island	16	-7.0	49
South Carolina	261	-0.8	38
South Dakota	2,359	11.8	20
Tennessee	742	-0.4	30
Texas	10,295	-0.1	6
Utah	2,222	1.7	21
Vermont	2,666	0.0	17
Virginia	1,771	-0.4	24
Washington	6,606	0.5	10
West Virginia	141	0.7	42
Wisconsin	29,030	4.4	2
Wyoming	135	4.6	43
U.S.	208,633	1.3	

2015 cow numbers			
State	Milk cows 1,000s	% change from 2014	Rank
Alabama	8.0	0.0	43
Alaska	0.3	0.0	50
Arizona	195.0	1.0	13
Arkansas	7.0	0.0	44-T
California	1,778.0	-0.1	1
Colorado	146.0	1.4	15
Connecticut	19.0	0.0	34
Delaware	5.0	4.2	47
Florida	125.0	1.6	18-T
Georgia	83.0	2.5	25
Hawaii	2.2	0.0	48
Idaho	585.0	1.7	4
Illinois	94.0	0.0	22
Indiana	182.0	2.2	14
Iowa	211.0	1.9	12
Kansas	143.0	1.4	16
Kentucky	61.0	-3.2	26
Louisiana	14.0	-6.7	37-T
Maine	30.0	0.0	32
Maryland	49.0	-2.0	28
Massachusetts	12.0	-7.7	40
Michigan	408.0	4.6	8
Minnesota	460.0	0.0	7
Mississippi	11.0	-15.4	41
Missouri	88.0	-1.1	24
Montana	14.0	0.0	37-T
Nebraska	57.0	5.6	27
Nevada	29.0	0.0	33
New Hampshire	14.0	0.0	37-T
New Jersey	7.0	0.0	44-T
New Mexico	323.0	0.0	9
New York	618.0	0.5	3
North Carolina	47.0	2.2	29
North Dakota	16.0	0.0	35
Ohio	267.0	0.0	11
Oklahoma	39.0	-2.5	31
Oregon	125.0	0.8	18-T
Pennsylvania	530.0	0.0	5
Rhode Island	0.9	0.0	49
South Carolina	15.0	-6.3	36
South Dakota	106.0	9.3	20
Tennessee	45.0	-2.2	30
Texas	463.0	0.0	6
Utah	96.0	1.1	21
Vermont	132.0	0.0	17
Virginia	91.0	-2.2	23
Washington	277.0	1.5	10
West Virginia	9.0	0.0	42
Wisconsin	1,279.0	0.6	2
Wyoming	6.0	0.0	46
U.S.	9,317	0.6	

2015 milk per cow			
State	Milk per cow (pounds)	% change from 2014	Rank
Alabama	12,625	-7.3	49
Alaska	11,667	0.0	50
Arizona	24,477	0.4	3
Arkansas	13,000	-5.2	48
California	23,002	-3.3	9
Colorado	25,685	2.9	1
Connecticut	20,842	3.4	22
Delaware	19,700	-2.0	34
Florida	20,656	1.3	24
Georgia	21,651	3.7	19
Hawaii	15,909	17.1	43
Idaho	24,126	0.0	5
Illinois	20,128	2.3	31
Indiana	22,143	1.3	18
Iowa	22,943	2.2	10
Kansas	22,231	0.7	17
Kentucky	17,607	10.7	40
Louisiana	13,429	-1.3	47
Maine	19,800	-0.8	33
Maryland	20,061	1.6	32
Massachusetts	18,083	0.9	38
Michigan	25,130	2.0	2
Minnesota	20,578	3.7	25
Mississippi	15,000	3.7	46
Missouri	15,511	-0.2	45
Montana	21,357	-0.7	20
Nebraska	22,930	3.6	11
Nevada	23,069	-3.0	8
New Hampshire	20,143	0.0	30
New Jersey	18,143	0.0	37
New Mexico	24,245	-3.4	4
New York	22,816	2.2	12
North Carolina	20,979	0.4	21
North Dakota	20,750	2.5	23
Ohio	20,573	1.3	26
Oklahoma	18,462	1.7	36
Oregon	20,408	-0.8	27
Pennsylvania	20,387	1.3	28
Rhode Island	17,667	-7.0	39
South Carolina	17,400	5.9	41
South Dakota	22,255	2.3	15
Tennessee	16,489	1.8	42
Texas	22,235	-0.1	16
Utah	23,146	0.7	7
Vermont	20,197	0.0	29
Virginia	19,462	1.7	35
Washington	23,848	-1.0	6
West Virginia	15,667	0.7	44
Wisconsin	22,697	3.8	13
Wyoming	22,567	4.6	14
U.S.	22,393	0.6	

2016 State FFA Milk Quality CDE Problem Solving

100 Points (5 points per Question)

Use the March 10, 2016 Hoard's Dairyman articles to answer the following questions.

- 2015 had the smallest number of dairies leaving the dairy industry since tracking began in 1992. The principle reason for this was:
 - More automation.
 - Low feed costs.
 - High feed costs.
 - Low cull cow price.
 - High milk price
- What was the number of dairy farms that held permits to sell milk in the U. S. in 2015?
 - 43,584
 - 46,975
 - 46,960
 - 49,281
 - 51,291
- What was the percentage change of licensed U. S. dairy farms in 2015?
 - 0.2
 - 2.7
 - 3.1
 - 4.9
 - 5.1
- From 1992 to 2015 how many licensed U. S. dairy farms have left the milking business?
 - 45,344
 - 46,975
 - 74,012
 - 87,925
 - 86,165
- Which U. S. region lost the largest percentage of dairy farms in 2015?
 - All regions lost the same amount.
 - Midwest
 - Northeast
 - Southwest
 - West
- The U. S. average herd size in 2015 was:
 - 196 cows
 - 204 cows
 - 209 cows
 - 212 cows
 - 227 cows
- Which U. S. region had an average of 142 cows per herd in 2015?
 - All regions averaged the same.
 - Midwest
 - Northeast
 - Southwest
 - West
- Which state actually had an increase in the number of dairy farms in 2015?
 - California
 - Wisconsin
 - Minnesota
 - Arizona
 - Idaho
- Minnesota lost how many dairy farms in 2015?
 - 135
 - 170
 - 315
 - 345
 - 390
- The only state to lose more dairy farms than Minnesota in 2015 was:
 - Pennsylvania
 - Wisconsin
 - California
 - New York
 - Ohio

11. Nationally, milk production rose _____ percent in 2015.
- A. 0.4
 - B. 1.3
 - C. 2.4
 - D. 2.8
 - E. 3.5
12. The U. S. had a rolling herd average of _____ pounds in 2015.
- A. 19,841
 - B. 21,869
 - C. 22,258
 - D. 22,393
 - E. 23,785
13. California's 2015 milk production output was _____ million pounds more than any other state.
- A. 11,868
 - B. 14,542
 - C. 15,905
 - D. 16,375
 - E. 17,425
14. The U. S. total milk output in 2015 was about:
- A. 208.6 thousand pounds
 - B. 208.6 million pounds
 - C. 208.6 billion pounds
 - D. 208.6 trillion pounds
 - E. Cannot be determined
15. Minnesota had how many milk cows in 2015?
- A. 460
 - B. 4,600
 - C. 46,000
 - D. 460,000
 - E. 4,600,000
16. Which state had the lowest number of milk cows in 2015?
- A. Rhode Island
 - B. Wyoming
 - C. New Jersey
 - D. Hawaii
 - E. Alaska
17. Which state had the largest % change in milk per cow from 2014 to 2015?
- A. Hawaii
 - B. Arkansas
 - C. Georgia
 - D. Mississippi
 - E. Missouri
18. Which state had the lowest 2015 milk production per cow?
- A. Alaska
 - B. Arkansas
 - C. Georgia
 - D. Mississippi
 - E. Missouri
19. Which state produced the most milk based on it's state's population in 2015?
- A. Vermont
 - B. New Mexico
 - C. California
 - D. Wisconsin
 - E. Idaho
20. Which state was a net importer of dairy products in 2015?
- A. Utah
 - B. Kansas
 - C. North Dakota
 - D. Nebraska
 - E. South Dakota

2016 State FFA Milk Quality CDE Problem Solving Key

100 Points (5 points per Question)

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

2016 Key

Characteristics	Sample Numbers				
	1 Brick	2 Parmesan	3 Monterey Jack	4 Edam	5 Cheddar
A. Maximum Moisture more than 40%	X		X	X	
B. Minimum fat in the solids less than 35%		X			
C. Gas holes are expected= No	X	X	X	X	X
D. Receives "pasta filata treatment"= Yes					
E. Ripened by Bacteria= Yes	X	X	X	X	X
F. Brine/surface salted= Yes		X		X	
G. Originated in United States= Yes	X		X		