

**National FFA 2008  
Dairy Foods  
CDE**

**Problem Solving**

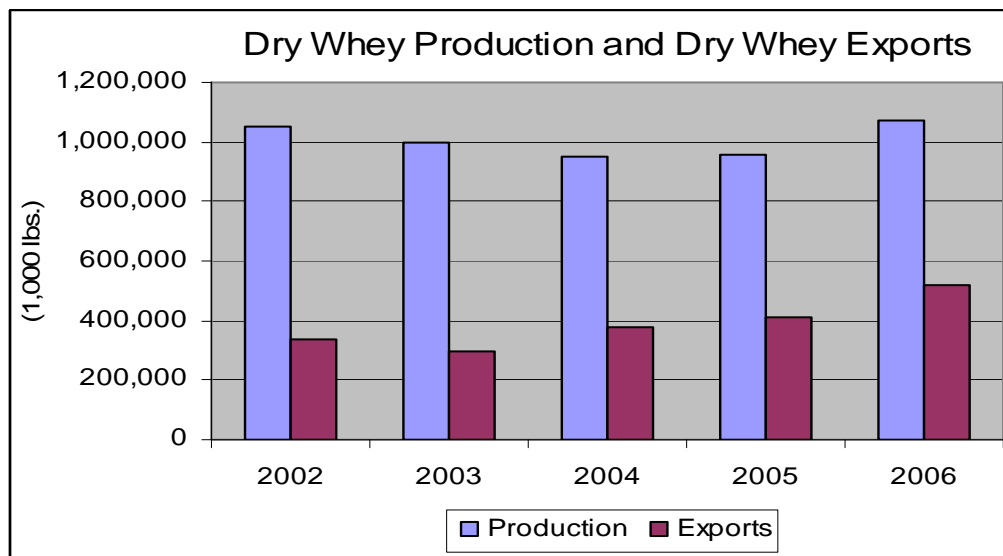
**Changes in the structure of U.S. dairy farms, 2000-2007**

<b>Herd size</b>	<b>(No. of operations)</b>			<b>(Percent of U.S. cows)</b>		<b>(Percent of U.S. milk)</b>	
	<b>2000</b>	<b>2007</b>	<b>change</b>	<b>2000</b>	<b>2007</b>	<b>2000</b>	<b>2007</b>
1-29	30,810	20,015	-35.0%	2.9%	1.7%	1.8%	1.2%
30-49	22,110	13,420	-39.3%	9.1%	5.7%	7.7%	4.5%
50-99	31,360	20,980	-33.1%	22.0%	15.4%	19.4%	13.1%
100-199	12,865	9,325	-27.5%	18.0%	13.4%	17.3%	12.2%
200-499	5,350	4,555	-14.9%	16.7%	15.0%	18.0%	14.9%
500-999	1700	1700	0	12.0%	12.6%	13.7%	12.3%
1,000-1,999	695	920	+32.4%	10.1%	12.5%	11.6%	16.1%
2000 +	280	595	+112.5%	9.2%	21.6%	10.5%	25.7%
<b>Total:</b>	<b>105,170</b>	<b>71,510</b>	<b>-32.0%</b>				

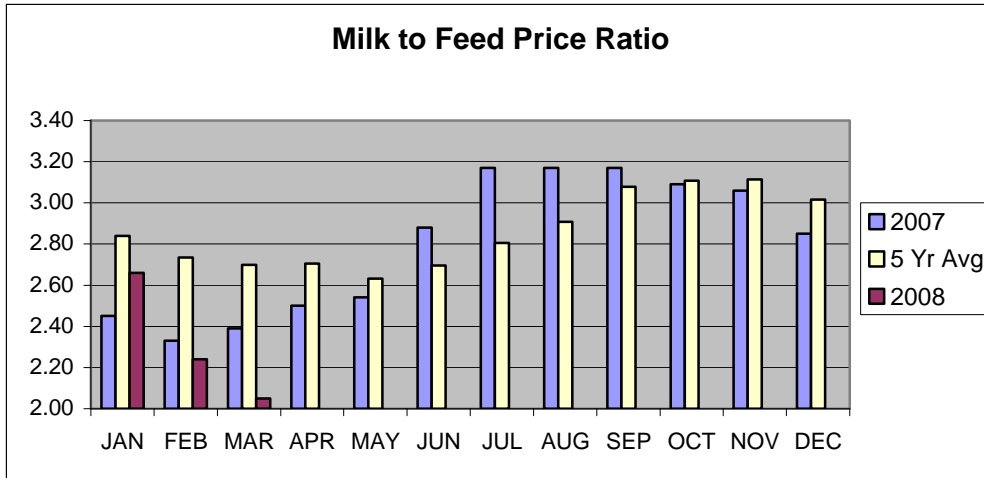
Source: USDA,NASS. Herd size refers to all dairy cows on an enterprise, including dry cows but excluding heifers.

- As of 2007 dairy farms with a herd size of \_\_\_\_\_ or more cows produced more than 50% of the milk in the U.S.  
 A. 50  
 B. 200  
 C. 500  
 D. 1,000
- In 2007, operations with less than 100 cows accounted for what percent of all the cows?  
 A. 15.4%  
 B. 22.8%  
 C. 36.2%  
 D. 38.4%
- In 2007, what percent of all operations had herds with less than 100 cows?  
 A. 61%  
 B. 76%  
 C. 89%  
 D. 95%
- Based on the table above, herds with less than 200 cows produced \_\_\_\_\_ the National average milk production per cow.  
 A. less than  
 B. equal to  
 C. more than  
 D. 20% more than

5. Based on the table above, herds with more than 1,000 cows produced \_\_\_\_\_ the National average milk production per cow.
- less than
  - equal to
  - more than
  - 30% less than
6. Herds of 1,000 or more cows represented 2.2% of the operations but accounted for \_\_\_\_\_ percent of the U.S. milk production.
- 16.1
  - 25.7
  - 28.4
  - 41.8



7. Based on the graph above, since 2002 dry whey exports as a percent of production have \_\_\_\_\_.
- more than doubled
  - decreased
  - remained unchanged
  - increased
8. In 2004, dry whey production decreased and dry whey exports \_\_\_\_\_ when compared to 2003.
- remained unchanged
  - increased
  - decreased
  - doubled



Milk prices have been strong for several months, but the sharp increase in feed prices has mitigated benefits to producers. The National Agricultural Statistics Service (NASS) reports a milk-to-feed price ratio, which represents how much feed can be purchased with the value of one pound of milk.

9. In which month during 2007 could one pound of milk purchase the most feed?
  - A. Feb
  - B. Mar
  - C. May
  - D. Aug
  
10. Based on the five year average milk-to-feed ratio, during which month was a pound of milk worth the most?
  - A. Oct
  - B. Dec
  - C. Apr
  - D. May

Top 10 Dairy States in 2007						
	Total Milk Production		Total Cows		Production Per Cow	
No. 1	California	40.68 billion lbs.	California	1,813,000	Arizona	23,260 lbs.
No. 2	Wisconsin	24.08 billion lbs.	Wisconsin	1,247,000	Washington	23,239 lbs.
No. 3	New York	12.10 billion lbs.	New York	627,000	Colorado	22,915 lbs.
No. 4	Idaho	11.55 billion lbs.	Pennsylvania	550,000	Michigan	22,681 lbs.
No. 5	Pennsylvania	10.68 billion lbs.	Idaho	513,000	Idaho	22,513 lbs.
No. 6	Minnesota	8.66 billion lbs.	Minnesota	460,000	California	22,440 lbs.
No. 7	Michigan	7.60 billion lbs.	Texas	349,000	New Mexico	21,363 lbs.
No. 8	Texas	7.38 billion lbs.	New Mexico	342,000	Texas	21,143 lbs.
No. 9	New Mexico	7.31 billion lbs.	Michigan	335,000	New Hampshire	20,714 lbs.
No. 10	Washington	5.53 billion lbs.	Ohio	276,000	Utah	20,376 lbs.

11. Total U.S. milk production in 2007 was a record 185.6 billion pounds, an increase of 3.8 billion pounds or 2.1 percent. In the table above are the top ten states for milk production in 2007. What percent of the total U.S. milk production do these ten states represent?
- 69%
  - 73%
  - 80%
  - 86%
12. The number of milk cows in the U.S. in 2007 was 9.158 million, an increase of 46,000 head or 0.5 percent. Based on the table above, what percent of the total number of cows do the ten States represent?
- 56%
  - 67%
  - 71%
  - 76%
13. Despite the record increase in milk prices that could have been a huge incentive for producers to boost production per cow, that's not what happened in 2007. Nationally, average output rose a modest 316 pounds per cow to a record 20,267 pounds. The average production per cow for the top ten states was \_\_\_\_\_ pounds more than the national average production per cow.
- 1,797
  - 2,173
  - 2,993
  - 4,733

## A Look At How You Can Calculate Producer Pay Price

<b>Assume a dairy producer with :</b>	200,000 pounds of milk marketings	<b>Oct '07 Prices:</b>
	3.67% Butterfat test	\$1.4092 / lb
	3.10% Protein test	\$4.1695 / lb
	5.70% Other Solids test	\$0.2286 / lb
	Producer Price Differential (PPD)	\$2.12 / cwt
	330,000 Somatic Cell Count	\$0.00096 / 1,000 cells / cwt

Component	Average Tests	Hundred-Weights	Component Pounds Marketed	October '07 Component Prices	Total Value
Butterfat	3.67	x 2,000	= 7,340	x \$1.4092	= \$10,343.53
Protein	3.10	x 2,000	= 6,200	x \$4.1695	= \$25,850.90
Other Solids	5.70	x 2,000	= 11,400	x \$0.2286	= \$ 2,606.04
PPD		2,000		x \$2.12	= \$ 4,240.00
Somatic Cell Count (Calculate Adjuster)	330,000				
(350-330=20)	20	x \$0.00096	= \$0.02	x 2,000	= \$40.00

**Total Federal Order Value of Milk Marketed: October 2007 \$43,080.47**  
**Effective Price Per Hundredweight \$21.54**

14. Based on the information in the table above, what would be the effective price per hundred weight if the producers protein test was 3.60% instead of 3.10% and the producer price Differential (PPD) was a negative \$0.50 not \$2.12 per hundred weight and the protein price increased to \$4.3695 from \$4.1695 with all the other prices and tests remaining the same?
  - \$20.13
  - \$21.54
  - \$21.72
  - \$24.34
  
15. Based on the information in the table above, what would be the effective price per hundredweight if the producer price differential (PPD) was \$0.50 instead of \$2.12 and all the other prices and tests remained the same?
  - \$24.32
  - \$22.77
  - \$21.54
  - \$19.92