

FFA MILK QUALITY AND PRODUCTS TEAM ACTIVITY

The following table shows results of monthly tests performed on dairy farm #7485 in the Plentiful Profit Public Health District. Your team is responsible for completing the following four tests:

1. **Standard Plate Count**—Count the red spots on the pictures of Petrifilm plates, which were performed using 0.01 and 0.001 milliliter of milk. Calculate the count per milliliter and place that count in the following table. Note that counts in it are the number $\times 10^3$.
2. **Somatic Cell Count**—A certified laboratory technician at the responsible health department performed a microscopic count of somatic cells using the methylene blue staining method and reported an average count of 2.2 per field. The microscopic factor is 500,000 therefore, each field represents 1/500,000 of a milliliter. Multiply that number by the reciprocal of the fraction of one milliliter that the area represents and record it in the following table.
3. **Snap antibiotic test**—Decide whether the test is positive or negative based on the color in the picture of the finished “Snap” test for beta lactam (penicillin and others of related molecular structure) antibiotics. Record your answer in the table.

Use the completed table to decide whether actions should be taken for violations of any or all of the milk sanitation regulations as described in the Pasteurized Milk Ordinance, Section 6. *The Examination of Milk and Milk Products*. These are counts of bacteria and somatic cells plus milk temperature recorded at the time of farm pickup. Tests for adulteration with antibiotics are made on all tanker loads of milk with follow-up testing at all farms represented in any particular offending tanker load of raw milk. Assume that the record shown in this problem represents the subject farm.

Tests for adulteration of raw farm bulk milk with water are commonly done at the laboratory of the receiving plant. Results of freezing point tests shown here are of that type.

Since it is in the interest of the milk processor that no bacterial growth has occurred in the milk sufficient to ferment lactose into lactic acid, tests of titratable acidity are run, especially on tanker loads of milk.

Assignment: Perform the tests, fill in the blanks and answer the questions pertaining to the data and results. Be sure to answer what action of the regulatory agency or the dairy plant receiving the milk is/are likely to take in case of tests that show a violation of public health and/or industry standards.

CHAPTER: _____

Test results for dairy farm UD Dairy Farm

Test	Month				
	1	2	3	4	5
Bacteria Count x 10 ³	120	20	450	35	_____
Somatic Cell Count x 10 ³	100	725	740	840	_____
Temperature (°C)	34	56	36	50	37
Antibiotic test (+/-)	pos	neg	neg	neg	_____
Freezing Point (°C)	-0.522	-0.500	-0.523	-0.493	-0.529
Titrateable Acidity (%)	0.28	0.16	0.17	0.55	.18
