

Milk Quality and Products
2018 Problem Solving

Read each questions carefully and select the best answer. Mark the corresponding answer on the scantron bubble answer sheet in the section marked Problem Solving.

1. You are a supervisor working in a cheese manufacturing facility and are approached by a quality assurance specialist asking if a semi tanker load of milk should be accepted or rejected. The hauler works for a reputable company that has never presented any prior issues. All pre-tests are within acceptable limits except temperature and the initial reading indicated the milk being 1.2 degrees Celsius higher than acceptable limits. After re-testing using a different thermometer the temperature is found to be 1.0 degrees Celsius higher than acceptable limits. This load of milk should be
 - a. Accepted
 - b. Rejected**

2. As a dairy farmer you recently hired a new employee to work in the milking parlor. This person works alone as your time can be directed to other farm duties and after their first two months of work you notice an increase in the number of lactating cows requiring treatment for mastitis. The root cause of this issue is likely
 - a. Milk was not being cooled fast enough after milking
 - b. Not following post-milk teat dip procedures**
 - c. Milk filters have not been changed regularly
 - d. The bulk tank did not get rinsed properly

3. You are a production supervisor in a milk packaging plant. A quality assurance specialist notifies you about multiple samples of packaged product that have both an off-flavor and smell. Using the lot/batch number to trace this product back to when it originally entered the plant records indicate no issues when the milk was offloaded from the truck or any other quality control points. This leads you to suspect
 - a. The packaging line was not properly cleaned between lots/batches.**
 - b. The pasteurization machine is not working correctly.
 - c. Not enough Vitamin D was added to this lot/batch.
 - d. A line worker is pulling a prank on me.

4. Calculate the blend price for a market order that has placed:
65% of the milk supply as fluid at \$16.50 per hundred weight;
18% of the milk supply in ice cream at \$15.28 per hundred weight; and
17% of the milk supply in milk powder at \$14.25 per hundred weight.
The blend price would be:
 - a. \$16.50
 - b. \$14.25
 - c. \$15.90**
 - d. \$46.03
 - e. \$15.34

Use this photo to answer questions 5-7.

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no artificial colors or flavors

Nutrition Facts

Serving Size 1 Cup (240mL)
Servings Per Container 8

Amount Per Serving	
	% Daily Value*
Calories 110 Calories from Fat 40	
Total Fat 4.5g	7%
Saturated Fat 0.5g	3%
Trans Fat 0g	
Polyunsaturated Fat 2.5g	
Monounsaturated Fat 1g	
Cholesterol 0mg	0%
Sodium 95mg	4%
Potassium 380mg	11%
Total Carbohydrate 9g	3%
Dietary Fiber 2g	7%
Sugars 6g	
Protein 8g	16%
Vitamin A 10%	• Vitamin C 0%
Calcium 45%	• Iron 6%
Vitamin D 30%	• Riboflavin 30%
Folate 15%	• Vitamin B12 50%
Phosphorus 25%	• Magnesium 15%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500mg	3,500mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Protein	50g	65g

INGREDIENTS: SOYMILK (FILTERED WATER, SOYBEANS), CANE SUGAR, **CONTAINS 2% OR LESS OF:** VITAMIN AND MINERAL BLEND (TRICALCIUM PHOSPHATE, CALCIUM CARBONATE, VITAMIN A PALMITATE, VITAMIN D2, RIBOFLAVIN [B2], VITAMIN B12), SEA SALT, NATURAL FLAVOR, GELLAN GUM.

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SHAKE WELL. PERISHABLE. KEEP REFRIGERATED. SILK WILL STAY FRESH 7-10 DAYS IN REFRIGERATOR AFTER OPENING. DO NOT FREEZE.

NOT TO BE USED AS INFANT FORMULA

*SILK ORIGINAL SOYMILK: 45% DV CALCIUM; LOWFAT DAIRY MILK: 30% DV CALCIUM. USDA NATIONAL NUTRIENT DATABASE FOR STANDARD REFERENCE, RELEASE 28. DATA CONSISTENT WITH TYPICAL LOWFAT DAIRY MILK.

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5. This product is a good source for
- A. Protein
 - B. Calcium
 - C. Sugar
 - D. Both A and B**
 - E. Both B and C
6. This is a real dairy product.
- a. True
 - b. False**
7. The size of this container is
- a. 8 ounces
 - b. 32 ounces
 - c. 64 ounces**
 - d. 128 ounces

Use this picture to answer questions 8-11.

POUR-ON INSECTICIDE FOR BEEF & DAIRY CATTLE & SHEEP

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labelling.

READY TO USE — No dilution necessary.

Apply To	Target Species	Dosage
Lactating and Non-Lactating Dairy Cattle, Beef Cattle, and Calves	Lice, Horn flies, Face flies, Aids in control of Horse flies, Stable flies, Mosquitoes, Black flies, and Ticks.	Apply 3 mL per 100 lbs body weight of animal up to a maximum of 30 mL for any one animal. Pour along back and down face.
Sheep	Sheep keds, Lice	Pour along back. Apply 1.5 mL per 50 lbs of body weight of animal up to a maximum of 18 mL for any one animal.

For cattle and sheep, repeat treatment as needed, but not more than once every 2 weeks.

SPECIAL NOTE: BOSS® Pour-On Insecticide is not effective against cattle grubs. BOSS Pour-On Insecticide should be used in an integrated pest management system which may involve repeat treatments and the use of other pest control practices.

PRECAUTIONARY STATEMENTS, HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION — Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

FIRST AID

If On Skin Or Clothing • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice. **If In Eyes** • Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice. **If Swallowed** • Call poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.

HOT LINE NUMBER

Have the product container or label with you when calling the poison control center or doctor or going for treatment. You may also contact the Rocky Mountain Poison Center at 1-303-595-4869 for emergency medical treatment information.

Note to Physician: Contains petroleum distillates—vomiting may cause aspiration pneumonia.

ENVIRONMENTAL HAZARDS
This product is extremely toxic to fish and other aquatic invertebrates. Do not add directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on label.

STORAGE AND DISPOSAL
Do not contaminate water, food, or feed by storage or disposal.
Storage: Keep container sealed when not in use. Do not store near food or feed.
Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or incinerator, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
†Season-long lice control from Jan-April.

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 Schering-Plough Animal Health

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U.S. Patent No. 5,750,514 23416425 Rev. 7/02



8. This product may be used to control flies on lactating dairy cows.
 - a. True
 - b. False
9. If a lactating cow weighs approximately 1,200 pounds, she should be treated with how much of this product?
 - a. 3 mL
 - b. 30 mL
 - c. 36 mL
 - d. 18 mL

10. The withdrawal period for this product is
- 1 week
 - 2 weeks
 - 30 days
 - This product does not have a withdrawal period.**
11. This product should be applied
- Using a sprayer and cover the entire body.
 - On cloth hanging above the feeder forcing the animal to rub their face on it.
 - Mixed in the animal's drinking water.
 - Poured directly from the container over the animal's back and down its face.**

Use this picture to answer question 12.



12. Which Indiana farmer benefits most from this product?
- Dairy farmer
 - Corn farmer
 - Soybean farmer**
 - All of the above

Use this picture to answer questions 13-14.



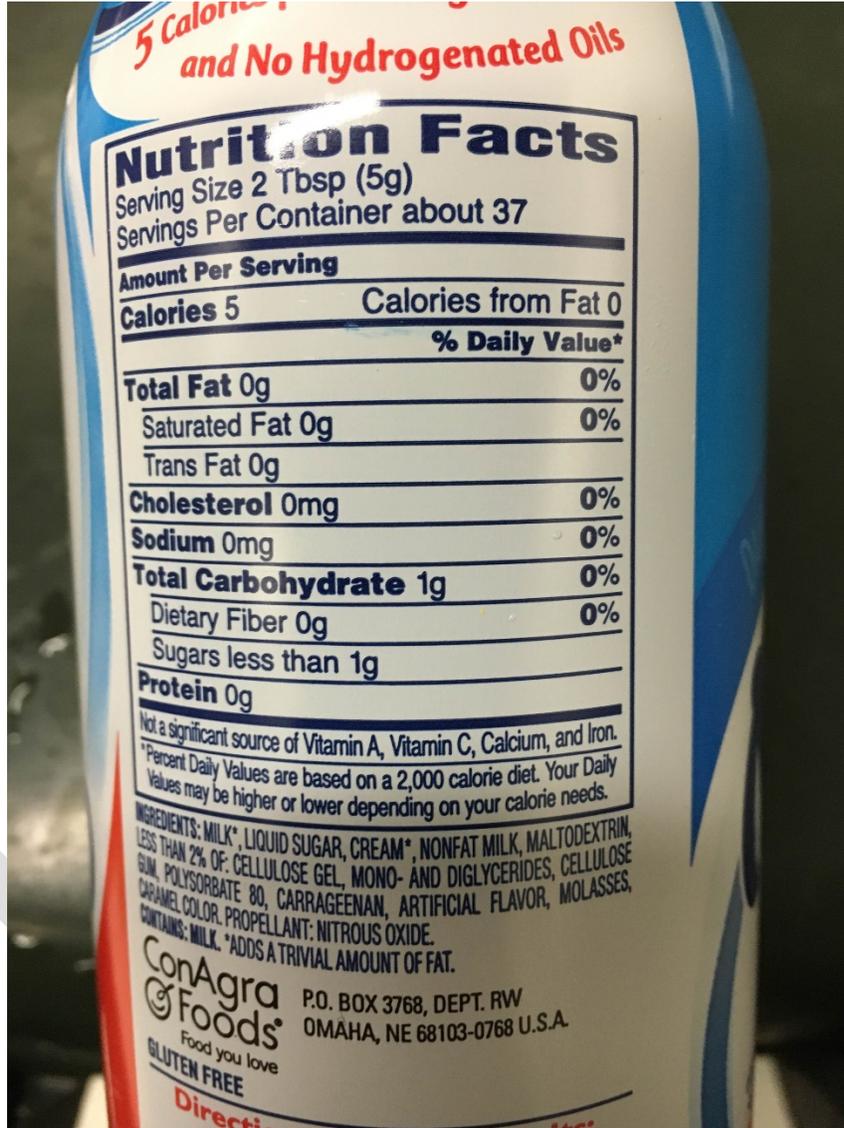
13. For an individual on a 2,000 calorie per day diet, this product provides about how much of their daily saturated fat intake?

- A. $\frac{1}{3}$
- B. $\frac{2}{3}$
- C. $\frac{1}{4}$
- D. $\frac{1}{2}$

14. This product is most likely

- a. Sour cream
- b. Non-fat yogurt
- c. **Plain yogurt**
- d. Vanilla yogurt

Use this picture to answer questions 15-17.



15. This product is nutritionally considered a fat free product.
- A. True
 - B. False
16. This is a non-dairy product.
- a. True
 - b. False
17. If only one serving of this product is consumed by an adult on a 2,000 calorie per day diet with no restrictions, it is safe to say this product has minimal nutritional value.
- a. True
 - b. False

Use this picture to answer questions 18.



18. This milk was packaged in a USDA inspected facility assigned number
- a. 1019
 - b. 11:44
 - c. 15 A
 - d. **18-1019**

Use this picture to answer questions 19-20.

Nutrition Facts		INGREDIENTS: MILKFAT AND NONFAT MILK, SWEET CREAM BUTTERMILK, FUDGE SWIRL (CORN SYRUP, SUGAR, WATER, HIGH FRUCTOSE CORN SYRUP, COCOA PROCESSED WITH ALKALI, WHEY, PECTIN), HIGH FRUCTOSE CORN SYRUP, SUGAR, MARSHMALLOWS (CORN SYRUP, SUGAR, MODIFIED CORN STARCH, GELATIN), CORN SYRUP, COCOA PROCESSED WITH ALKALI, WHEY, ARTIFICIAL FLAVOR, MONO AND DIGLYCERIDES, GUAR GUM, CALCIUM SULFATE, CAROB BEAN GUM, CARRAGEENAN.
Serving Size 1/2 cup (65g) Servings Per Container 12		
Amount Per Serving		
Calories 140	Calories from Fat 50	
% Daily Value*		
Total Fat 5g		8%
Saturated Fat 3.5g		18%
Trans Fat 0g		
Cholesterol 20mg		7%
Sodium 50mg		2%
Total Carbohydrate 21g		7%
Dietary Fiber 0g		0%
Sugars 16g		
Protein 2g		
Vitamin A 4%	• Vitamin C 0%	
Calcium 6%	• Iron 0%	

CONTAINS MILK

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19. This product was manufactured by Target.
- a. True
 - b. **False**
20. The largest ingredient by weight in this product is
- a. **Milkfat and nonfat milk**
 - b. Sweet cream buttermilk
 - c. Carob bean gum
 - d. Carrageenan