

ND FFA Association
2012 Meats Evaluation & Technology CDE
Meat Formulation Problem Solving

USDA Food Standards and Labeling Policy for Ground Beef:

May not contain added fat. Maximum total fat 30 percent. Cheek meat is permitted up to 25 percent and must be declared in the ingredients statement. For more than 25 percent, show as "Ground Beef and Cheek Meat," all the same size. Beef of skeletal origin or from the diaphragm or esophagus (weasand) may be used in the preparation of chopped beef, ground beef, or hamburger. Heart meat and tongue meat as organ meats are not acceptable ingredients in chopped beef, ground beef, or hamburger. No product 96 hours after slaughter may be used.

You have received an order with the following specifications:

Desired fat content of finished product = 15%

Batch size = 2,000 lbs.

Manufacture date = Thursday, June 7th, 2012

Least cost determined should be performed on acceptable ingredients to select the lowest cost product that meets all ground beef guidelines.

Product	<u>Available Ingredients</u>			
	Slaughter Date	Temp. "°F"	% Fat Content	\$ Price/lb.
Mock Tender	June 3, 2012	33°	5	\$2.59
Beef Shoulder Clod	June 2, 2012	34°	15	\$2.39
Primal Brisket	June 3, 2012	37°	8	\$2.69
80% Trimmings	June 4, 2012	33°	20	\$2.39
Chuck Roll	June 3, 2012	33°	16	\$2.69
Lamb Trimmings	June 4, 2012	34°	19	\$8.00
Beef Tongue	June 1, 2012	33°	5	\$3.43

Carefully read each item and possible answers. Mark the correct answer on the Meats CDE form. Completely fill the chosen oval to indicate your answer.

1. Which of the following was the correct formulation for this problem?
A. 80% Trimmings & Mock Tender B. Mock Tender & Chuck Roll
C. 80% Trimmings & Chuck Roll D. 80% Trimmings & Primal Brisket

2. Which ingredient was excluded on the basis of freshness?
A. 80% Trimmings B. Shoulder Clod
C. Cheek Meat D. Lamb Trimmings

3. About how much 80% Trimmings was in the correct final batch?
A. 0 lbs. B. 275 lbs.
C. 667 lbs. D. 1333 lbs.

4. What was the price per pound of the correct final batch?
A. \$2.68 B. \$3.95
C. \$2.46 D. \$3.45

5. How much lean was in the correct final batch?
A. 0 lbs. B. 85 lbs.
C. 375 lbs. D. 1,700 lbs.

6. What was the total cost of the correct final batch?
A. \$506.00 B. \$2,309.50
C. \$3,448.75 D. \$4,913.40

7. How much Chuck Roll was in the correct final batch?
A. 0 lbs. B. 275 lbs.
C. 1,700 lbs. D. 1,820 lbs.

8. What percentage of the correct final batch was Mock Tender?
A. 0.0% B. 33.0%
C. 45.0% D. 67.0%

9. How much fat was in the correct final batch?
A. 0 lbs. B. 275 lbs.
C. 300 lbs. D. 1700 lbs.

10. How much money was saved on the 2500 lb batch by using the correct formulation, as compared to the alternative?
A. \$560.00 B. \$440.00
C. \$330.00 D. \$220.00

2012 ND FFA Processed Meat Formulation KEY

1. A
2. B
3. D
4. C
5. D
6. D
7. A
8. B
9. C
10. A

2012 North Dakota State Meat CDE Written Test

Do not write on this test, mark your answers on the Grade Master answer card. Make dark marks. Erase completely to change.

1. What is the primary nutrient humans obtain by consuming meat?
 - A. Vitamins
 - B. Minerals
 - C. Protein
 - D. Carbohydrates

2. How does the lean-to-fat ration in ground beef affect the price??
 - A. The price will not change with less lean and more fat.
 - B. The price will be lower with less lean and more fat.
 - C. The price will be higher with less lean and more fat.
 - D. None of the above.

3. What are the USDA Quality Grades for **young** beef?
 - A. Prime, Choice, Select, Standard
 - B. Prime, Choice, Select, Standard, Commercial, Utility, Cutter/Canner
 - C. Kobe, Certified Angus, Certified Hereford, Sterling Silver
 - D. A, B, C, D

4. Fresh meat is a good source of which of the following vitamins?
 - A. A
 - B. B12
 - C. C
 - D. D3

5. When buying boneless, uncooked meat, how much meat should be allowed for a 3 oz. cooked?
 - A. 1/4 to 1/3 lb per serving lb
 - B. 1/3 to 1/2 pound per serving
 - C. 1/2 to 3/4 pound per serving
 - D. 3/4 to 1 pound per serving

6. What is the advantage to marinating meat?
 - A. Improve flavor and tenderness
 - B. Reduce nitrosamine formation (nitrosamines are possibly linked to cancer)
 - C. Neither A nor B
 - D. Both A and B

7. Aging is holding meat, especially beef, in an unfrozen state for a period of time to improve tenderness. If the meat is held in vacuum packaging, what sort of aging is occurring?
 - A. Dry aging.
 - B. Wet aging
 - C. Tenderness aging
 - D. Bacterial aging

8. Which of the following statements is true?
 - A. All beef must be graded before it can be sold.
 - B. Graded beef is more nutritious than ungraded beef.
 - C. Meat inspection is a voluntary action that processor use to increase value of beef.
 - D. Beef grades are used as a predictor of beef palatability.

9. What ingredient added to processed meats enhances flavor, improves protein binding, and helps with preservation?
 - A. Salt
 - B. Erythorbates
 - C. Sodium Nitrite
 - D. Spices

10. What is the maximum amount of fat and water allowed in hot dogs?
 - A. 50%
 - B. 40%
 - C. 30%
 - D. 20%

11. What will happen to vacuum packaged beef cuts when the surface is re-exposed to air?
 - A. The cuts will always spoil within 24 hr
 - B. The cuts will always continue to have an unusual off-odor
 - C. The cuts will remain just as it was before the package was opened
 - D. The cut will change from dark red/purple to its normal bright red color

12. At which of the following temperatures will pork be frozen?
 - A. 33° F
 - B. 40° F
 - C. 148° F
 - D. None the above

13. Meat simmered over low heat, with a small amount of liquid for long periods of time is referred to as what?
- A. Fried
 - B. Grilled
 - C. Braised
 - D. Broiled
14. Frozen meats should be stored at what maximum temperature (F)?
- A. 36
 - B. 28
 - C. 0
 - D. -20
15. What carcass quality defect is caused by long term stress that results in a high meat pH, and often requires the meat to be sold at a discount?
- A. Dark cutting
 - B. Bruises
 - C. Heavy carcass weights
 - D. Blood splashed lean
16. What is percentage of carcass weight compared to live weight called in pigs?
- A. Offal
 - B. Dressing percentage
 - C. Hot carcass weight
 - D. Pale, soft, and exudative pork (PSE)
17. Meat from cattle is called beef, meat from pigs is called pork, what is meat from sheep called?
- A. Ovine
 - B. Lamb and Mutton
 - C. Chevon
 - D. Turkey
18. Which term is associated with the objectionable flavor of meat that has been cooked, chilled, and then reheated?
- A. Tangy
 - B. Storage Burn
 - C. Warmed-over flavor
 - D. Livery

19. What is the term to describe when raw meat, poultry or fish or their juices touch cooked?
- A. Cross contamination
 - B. Rehydration
 - C. Added flavorings
 - D. Dirty meat
20. Which of the following is one of the factors used to calculate USDA Quality Grade in beef carcasses?
- A. Marbling in the ribeye
 - B. Live Weight
 - C. Carcass thickness
 - D. Breed of cattle

Key 2012 MEATS WRITTEN TEST

1. c
2. b
3. a
4. b
5. a
6. d
7. b
8. d
9. a
10. b
11. d
12. d
13. c
14. c
15. a
16. b
17. b
18. c
19. a
20. a