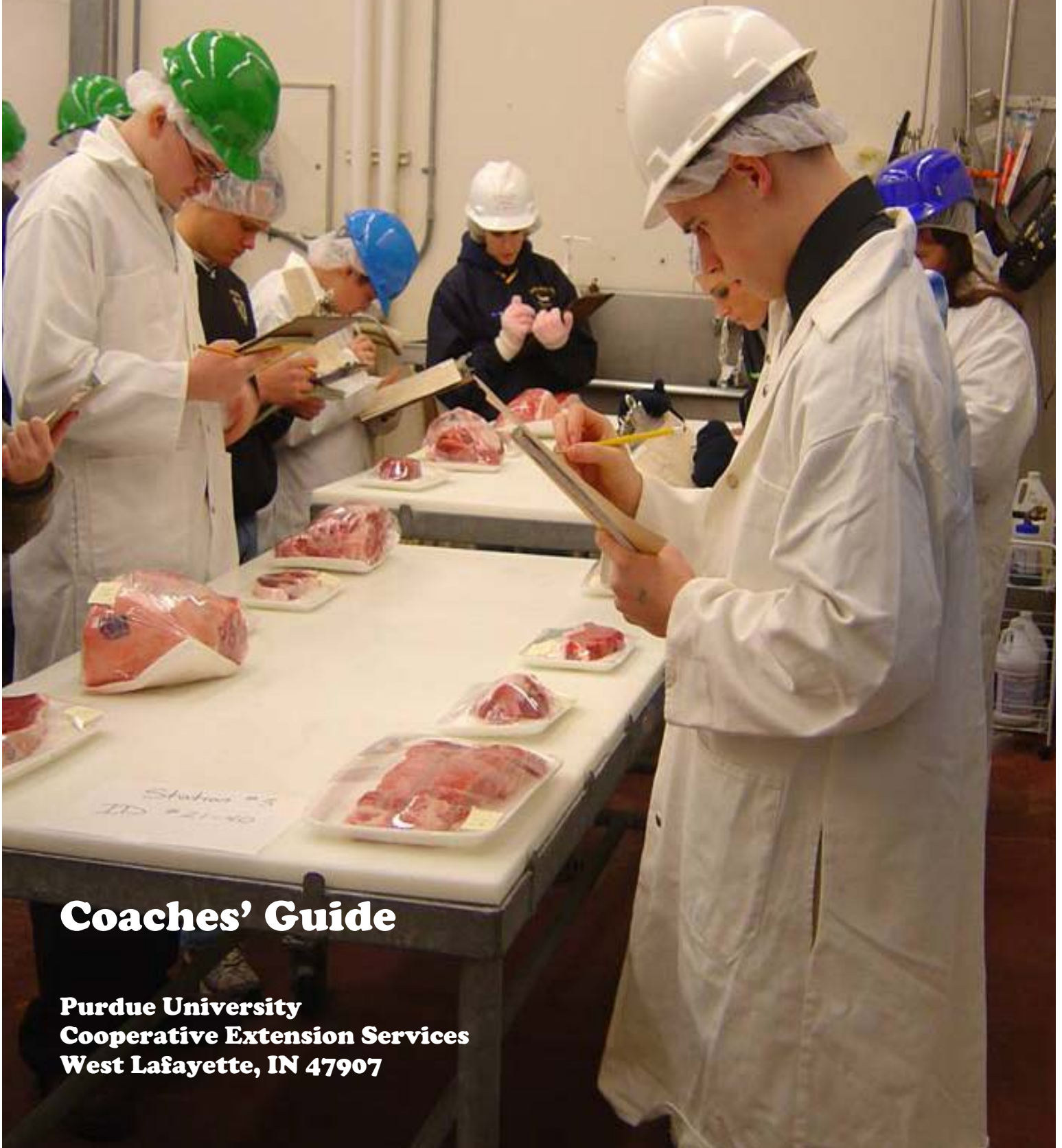


Indiana 4-H/FFA Meat Evaluation And Identification Contest

Rewrite 4/06
Updated 12/09



Coaches' Guide

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Indiana 4-H/FFA Meat Evaluation and Identification Handbook

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MEAT EVALUATION AND IDENTIFICATION CONTEST

GENERAL INSTRUCTION

I. Objectives

The Meat Contest is a learning experience designed to train youth in the following:

- A. Identification and selection of quality meat cuts.
- B. Selection of the proper cooking method.
- C. Carcass evaluation with emphasis on utilization of information in a herd improvement program.

II. Implementation and Program Schedule

State Contest - last Saturday in January

- A. Registrations due: **January 15**
- B. As long as space is available, each county and each school may register multiple teams.
- C. A team consists of 4 members with the lowest team member's score being dropped.
- D. A plaque will be awarded to the top 4-H and FFA teams.

III. General Conduct of Contest

- A. Contestants will move from class to class in separate groups during the contest. No two teammates will be in the same group.
- B. Group leaders will be provided for each group.
- C. Contestants will not be permitted to:
 - 1. Handle or touch cuts under any condition.
 - 2. Use any mechanical aid, such as a measuring device, light, etc.
 - 3. Talk to fellow contestants at any time during the contest.
 - 4. Monopolize any one exhibit for any unreasonable length of time.
 - 5. Separate themselves from the class on which their group is working.
- D. The retail identification (ID) cuts may be different for the 4-H contest than they are for the FFA contest, due to different ID sheets.
- E. Contestants must bring their own clipboards and pencils.

State 4-H Meat Contest Classes

The state 4-H meat contest will consist of three main parts:

- 1) Six placing classes
- 2) Identification of 40 retail meat cuts
- 3) Two sets of oral reasons

A. Six placing classes 300 points

- 1) Pork Carcasses (with reasons)
- 2) Hams (with reasons)
- 3) One to two placing classes from the following group:
Beef carcasses – Beef ribs - Beef Rounds – Beef short loins
Lamb Carcasses – Pork center loins – Pork center ribs
- 4) Two to three placing classes from the following group:
Bacon – Beef Porterhouse Steaks – Beef Ribeye Steaks – Beef T-bone
Steaks- Beef Top Loin Steaks – Lamb Blade Chops – Lamb Double Chops –
Lamb Loin Chops - Ham Center Slices – Pork Loin Chops – Pork Rib Chops – Pork
Sirloin Chops

B. Retail Identification of 40 Meat Cuts 400 points

Use updated National 4-H scorecard 4-H ID-1 and 4-H ID-2
Mark cookery method as D, M or DM

C. Two sets of oral reasons - 50 points/set 100 points

1. Reasons to be given on hams, pork carcasses or retail cuts (added 11/09)
2. Reasons may not exceed two minutes in length.
3. Contestants will be penalized for using notes in the reasons room
4. Contestants will be allowed to take term sheets into the contest area

D. Total Points for the 4-H Meat Contest 800 points

State FFA Meat Judging Classes

The state FFA meat contest will consist of six main parts:

- 1) Six placing classes
- 2) Two sets of questions from placing classes
- 3) Identification of 40 retail meat cuts
- 4) Quality and Yield Grading four beef carcasses
- 5) A written exam
- 6) Meat formulation

A. Six placing classes 300 points

- 1) **Beef carcasses** (with questions)
- 2) **Lamb carcasses** (with questions)
- 3) **One to two other placing classes from the following group:**
Beef ribs - Beef Rounds – Beef short loins
Pork Carcasses – Pork center ribs – Hams – Pork center loins
- 4) **Two to three placing classes from the following group:**
Bacon – Beef Porterhouse Steaks – Beef Ribeye Steaks – Beef T-bone Steaks –
Beef Top Loin Steaks – Lamb Blade Chops – Lamb Double Chops – Lamb Loin
Chops – Ham Center Slices – Pork Loin Chops – Pork Rib Chops – Pork Sirloin
Chops

B. Retail Identification of Forty Meat Cuts 240 points
Use updated National FFA scorecard FFA ID-1 and FFA ID-2

C. Beef Quality and Yield Grading 120 points

1. Contestants will quality and yield grade four beef carcasses.
2. Contestants may use yield grade formulation sheets to calculate final yield grades.
3. Contestants may use calculators.
4. See Meat Grading Scorecard (FFA ID-3) for scoring procedures.

D. Written Examination over Meat Science and the Meat Industry 60 points

1. An assortment of 20 meat science questions in multiple choice format, worth 3 points/question
2. This examination is designed to allow contestants to demonstrate their scientific knowledge related to: meat animals, meat products, and the meat industry.

The following are references for the meat science and industry examination.

Principles of Meat Science
4th Edition

Kendall Hunt Publishing Company
4050 Westmark Dr.
Dubuque, IA 52002
(319)589-1000

Identifying Meat
Cuts;
Meat Evaluation



National Cattlemen's Beef Association
444 North Michigan Ave.
Chicago, IL 60611
Customer Service 1-800-368-3138

- E. Questions over two placing classes 50 points
1. A total of ten questions worth 5 points each from the beef and lamb carcass classes
 2. Contestants may use their notes to answer the questions
- F. Meat Formulation 50 points
Examples included in the coaches' guide
- G. Total Points for the FFA Meat Judging CDE 820 points

RETAIL MEAT CUT EVALUATION

GENERAL INSTRUCTIONS

- 1 Cuts will be designated by number: 1-2-3-4.
- 2 Contestants will mark their placing on computer judging cards.
- 3 Each class is worth 50 points.

TIPS ON HOW TO EVALUATE RETAIL CUTS

I. BEEF CUTS

Consumer demand is for high-quality lean beef with a minimum of waste in the form of either fat or bone. Beef quality characteristics are of importance because of their relation to the taste of the cooked meat and to the appearance of the cuts in the retail counter. The retail meat cutter controls the amount of fat trim on the cuts for displays and thereby influences the acceptability of meat cuts by the consumers. Carcasses and wholesale cuts from which retail cuts are made vary widely in the amount of fat deposited on the outer surfaces, and in the seams between muscles.

Beef cut evaluation should be based on:

A. Quality Characteristics

1. Marbling

Marbling refers to the amount of fine particles of fat in the lean. The higher the degree of marbling indicates juiciness and has a positive influence on perception of tenderness. However, excessive marbling may be perceived as being undesirable by the average consumer.

2. Maturity

Since the age of an animal at slaughter is closely associated with the eating quality of beef, it is important to estimate the maturity of the carcass or cut. When examining retail cuts maturity estimates may be made by observing color, texture, and firmness of lean and fat.

Color

Lean with a bright cherry-red color is associated with young tender meat. The fat of youthful animals should be a chalky white color. As animals mature the color of the lean becomes darker and the fat begins to show a yellowish color. Thus, the presence of dark colored lean and/or yellowish fat indicates a more mature animal and reduced tenderness.

Pale color is also considered to be undesirable because it is usually associated with the loss of natural fluids from the meat.

Texture

The texture of the lean refers to the prominence of very small muscle bundles observed on close examination of the lean cut surface.

Meat from youthful animals is fine-textured. The bundles are not easily distinguished. The cut surface appears very smooth.

Meat from more mature animals is coarse-textured. The bundles are clearly visible and the cut surface appears rough.

Firmness

The lean and fat should appear firm. The fat should not be greasy or oily in appearance. As an animal matures, fat may become soft and oily. Lean firmness may also be affected.

3. Freshness

The cuts should be very fresh to assure consumer satisfaction.

Lean surfaces should not have any hint of brown or green color. Discoloration may be due to microbial growth or chemical degradation of meat pigment. In either case, product quality is adversely affected.

The cut surface of any bones present may also be used as an indicator of freshness. A freshly cut bone appears ivory white with some reddish color in the marrow. As time passes, the bone may turn slightly yellow; the marrow dries and becomes brown or black.

B. Expected Yield of Lean Meat

Yield refers to the proportion of lean to fat and bone. The higher the lean yield the better since this means more lean meat and less fat which has to be trimmed off by the consumer. Fat and bone trimmed away by the consumer is called plate waste.

C. Questions (Examples)

1. Which Beef Loin Porterhouse Steak had the highest lean to bone ratio?
2. Between 2 and 3 which Beef Rib Steak had more marbling?
3. Which Beef Chuck Blade Roast had the most seam fat?

II. PORK CUTS

Pork cut evaluation should be based on:

A. Quality Characteristics

1. Color

Pork lean should have a reddish-pink color. If it is pale or white it may also be soft and watery.

2. Firmness of lean and fat

The pork lean and fat should be firm. If it appears soft, it may also appear to be watery. This is not desirable.

3. Texture

The texture of pork lean should appear smooth. A coarse textured lean would appear rough and is not as desirable.

4. Marbling

Pork lean should have a slight degree of marbling with a white firm fat. If it lacks marbling, it will lack juiciness and tend to dry out during cooking. Lean possessing abundant marbling is also undesirable in pork.

5. Freshness

Cuts should appear fresh. A brown or green coloring of lean or a discoloration of the cut surfaces of bone may indicate a lack of freshness.

B. Expected Yield Of Lean Meat

**NOTE: More consideration is generally given to yield than to quality.*

1. Subcutaneous and Seam Fat

Subcutaneous fat refers to the fat on the outer edge of the cut. Most meat merchandisers trim this fat down to a thickness of 1/8 inch or less.

Seam fat refers to the fat deposited between muscles. This fat usually cannot be trimmed away.

2. Muscling

Muscling is very important in the pork carcass and cut. The ham and shoulder should exhibit fullness, thickness, and plumpness.

C. Questions (Examples)

1. Which Smoked Bacon did not have the "ends" trimmed off?
2. Which Pork Loin Chop had the largest loin eye muscle?
3. Which Pork Shoulder Blade Boston Roast had the highest lean to fat ratio?

III. LAMB CUTS

Lamb cut evaluation should be based on:

*NOTE: More consideration is generally given to yield than to quality.

A. Expected Yield of Meat

Yield refers to the proportion of lean to bone and fat. The higher the lean yield the better because this means more lean meat and less fat which has to be trimmed off by the consumer.

Excess fat in lamb cuts is extremely undesirable. The fatter the cut, the lower the yield and the less desirable it becomes.

B. Quality Characteristics

1. Marbling

The more marbling seen in the cut, the juicier it becomes when cooked. This increases the quality of the cut; however, modern consumers object to excessive levels of marbling fat.

2. Color

The color of the lamb cut should be bright reddish-pink. The fat should be chalky white.

3. Freshness

Freshness is a particular concern for lamb cuts. The cuts are often rather small and thus have a high ratio of surface to volume. Also, turnover in the retail case is relatively slow.

Brown or greenish color of lean or discoloration of cut surfaces of bone may indicate a lack of freshness.

C. Questions (Examples)

1. Between 3 and 4, which Lamb Loin Chop had more marbling?
2. Which Lamb Leg had the most external fat?
3. Which Lamb Shoulder Roast had a more youthful reddish-pink colored lean?

WHOLESALE MEAT CUT EVALUATION

GENERAL INSTRUCTIONS

1. Cuts will be designated by number: 1-2-3-4.
2. Contestants will mark their placing on computer judging cards.
3. Ranking of class is worth 50 points.

TIPS ON HOW TO EVALUATE WHOLESALE CUTS

I. BEEF RIBS

Beef ribs are a **QUALITY** class. Quality of cut is very important. However, if quality of all cuts is adequate (choice or better), then rank the class based on cutability. A high yield of high quality trimmed steaks and roasts are desirable.

Criteria to evaluate beef ribs are listed in order of importance.

A. Quality

1. Marbling in the Ribeye at the loin end and the blade face
2. Color of lean (cherry red)
3. Firmness of lean (both faces)
4. Fineness of texture (both faces)

B. Fat

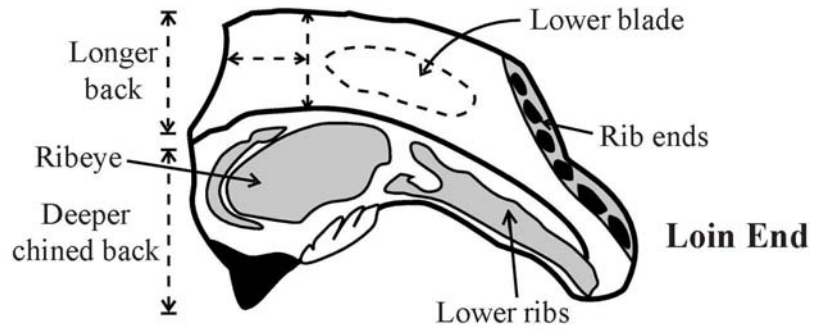
1. External fat over back, loin and blade ends, rib ends, lower ribs and lower blade.
2. Seam fat in the blade face

C. Muscle

1. Surface area of lean in blade face
2. Size of Ribeye in loin and blade end
3. Width of back

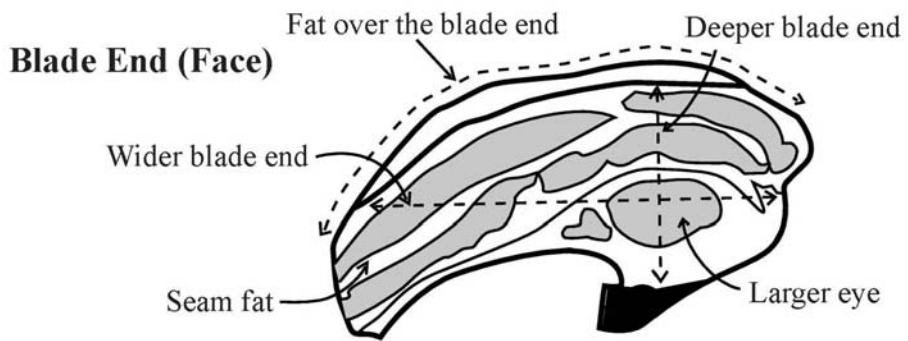
D. Questions (Examples)

1. Which rib possessed the highest degree of marbling?
2. Which rib had the largest Ribeye area?
3. Between ribs 1 and 2, which had less fat over the blade end?



Quality (Ribeye and Blade End)

- Marbling
- Color
- Texture
- Firmness



II. FRESH HAMS

Criteria to evaluate hams are listed in order of importance.

A. Cutability

1. Fat

Fat thickness under and along the side of the butt face
External fat over fore cushion and rump portion
Seam fat in the butt face
Collar fat

2. Muscle

Cushion or center section depth, bulge, width, length high number of center cut slices
Fore cushion fullness, meatier
Butt face (rump face) — depth, width, more surface area of lean
Heel — fullness, bulge

B. Quality

1. Color

Reddish-pink (in face) is desirable
Two-toned color is not desirable

2. Marbling

In exposed lean at butt face

3. Firmness

Texture of lean in butt face
Limited muscle separation (muscle “sag”)
PSE — pale, soft, and exudative lean is not desirable

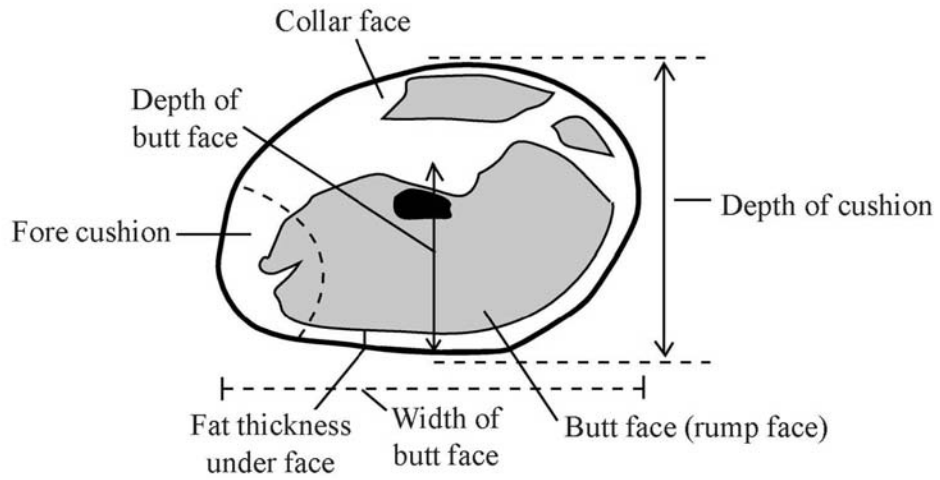
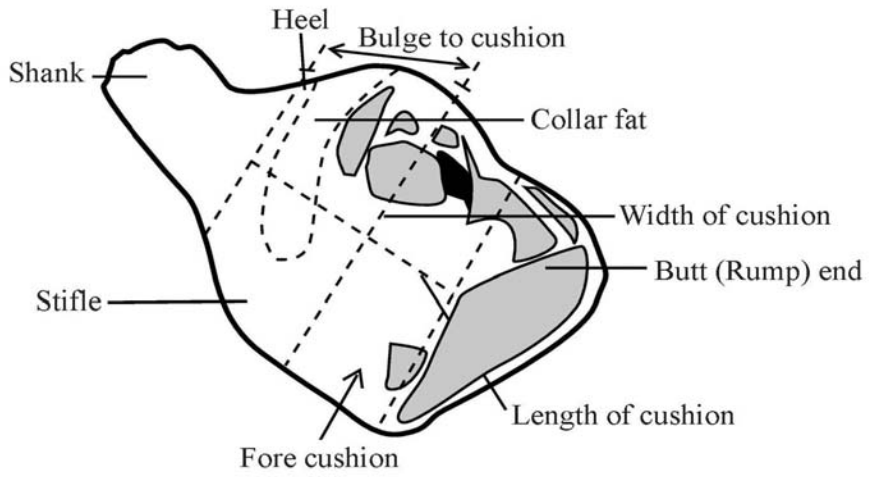
C. General

1. **Shorter shank** — higher lean to bone, desirable

D. Questions (Examples)

1. Which ham had the most fat over the ham collar?
2. Between hams 2 and 3, which possessed a more desirable, reddish-pink color at the ham face?
3. Which ham had the widest, deepest cushion?

FRESH HAMS



RETAIL MEAT CUT IDENTIFICATION

GENERAL INSTRUCTIONS

Contestants will use the Retail Meat Cut Identification Score sheets on pages 22-25.

PURPOSE OF MEAT IDENTIFICATION

There are enough cuts and kinds of meat available in the retail markets of the United States for a homemaker to prepare a different meat dish for the family every day for an entire year.

The need for a uniform system of meat identification has become necessary due to the mobility of the American population. Many people identify meat cuts by name only, making meat shopping more difficult when they move to another section of the country where different names may be used.

To eliminate confusion at the meat counter, a master list of "official" names of retail cuts of beef, veal (young beef), pork, and lamb has been developed. This new system provides that each cut be labeled by species, by primal (wholesale) cut, and by the recommended retail name - standardized across the country. This system is described in detail in the *Uniform Retail Meat Identity Standards*, available from the National Livestock and Meat Board.

SAMPLE OF OFFICIAL NAMES

<u>Species</u>	<u>Primal (wholesale) Cut</u>	<u>Retail Name</u>
Beef	Loin	T-Bone Steak
Beef Rib	Ribeye	Steak
Pork	Loin	Loin Chop
Pork	Shoulder	Blade Boston Roast
Lamb	Shoulder	Square Cut Roast
Lamb	Leg	Sirloin Chop

TIPS ON HOW TO IDENTIFY MEAT CUTS

I. SPECIES

Two factors are used to distinguish between meats from the various species.

A. Color

Generally color is as follows:

Beef — bright cherry red

Pork — reddish-pink

Lamb —reddish-purple

B. Size

Beef cuts are the largest.

Pork cuts are intermediate in size.

Lamb cuts are the smallest.

II. PRIMAL (WHOLESALE) CUT

The primal cut indicates the location on the carcass. The primal cuts are sometimes given different names depending on the species. Primal cuts for species are as follows.

<u>Beef</u>	<u>Pork</u>	<u>Lamb</u>
Chuck	Shoulder	Shoulder
Rib	Rib, Full Loin	Rib (Rack)
Loin	Loin	Loin
Round	Ham (Leg)	Leg
Shank	Hock	Shank
Brisket		Breast
Plate	Spareribs	Riblets
Flank	Belly (Side)	Flank
Variety Meats	Variety Meats	Variety Meats

III. RETAIL CUTS

Retail cuts frequently have the same names as the primal cut from which they come. Another clue to identification is learning to recognize the bones in the seven groups of retail cuts. By recognizing the bones, it becomes surprisingly easy to identify by name a large number of retail cuts (especially steaks, chops, and roasts) in an identification class.

A. Shoulder (Chuck) Arm Cuts

Shoulder arm cuts can be identified by the presence of the arm bone. The arm bone appears as a cross section of a nearly perfect circle. Also, the presence of cross sections of rib bones identifies the cut as a shoulder cut. Rib bones will look smaller than the arm bone and there will be several bones cut crossways with about an inch of muscle

Example: Beef Chuck Arm Steak
Pork Shoulder Arm Steak
Lamb Shoulder Arm Steak



B. Shoulder Blade Cuts

Usually all or part of the backbone and rib bone are removed by the packer or retailer. Thus, the most important identifying bone is the blade bone. This bone can take the appearance of two shapes:

1. It may resemble a reverse 7; or
2. It is a flat bone.

Most of the meat in the blade is tenderer than those in the arm cuts.

Examples: Beef Chuck Blade Steak
Pork Shoulder Blade Steak
Lamb Shoulder Blade Steak



C. **Rib Cuts** The main bones of rib cuts are the rib bone and the chine bone. The rib bone is a small curved bone, while the chine is usually wider. If these bones are removed, cuts from the rib are comparatively easy to recognize by the appearance of the Ribeye. The Ribeye is the tender muscle which lies along both sides of the back bone in the rib and loin.

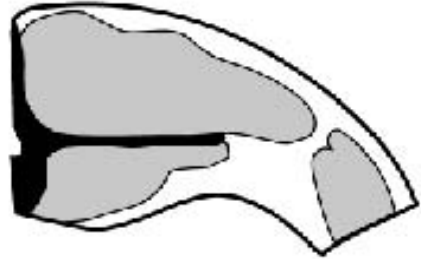
Examples: Beef Rib Steak
Pork Loin Rib Chop
Lamb Rib Chop



D. Loin (Short Loin) Cuts

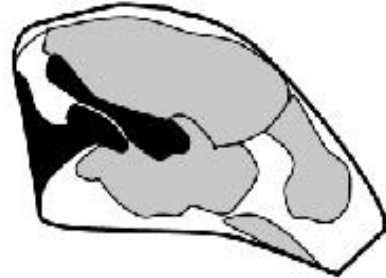
The loin cut is one of the easiest cuts to identify; it is a T-shaped bone. The tenderloin muscle is a smaller muscle than the loin eye.

Examples: Beef Loin Porterhouse or T-Bone Steak
Pork Loin Chop
Lamb Loin Chop



E. **Sirloin (Hip) Cuts** The sirloin cut can be identified by recognizing the hip bone. The hip bone comes in many shapes depending where the cut is made. The hip bone begins first as the pin bone which is toward the front of the sirloin section. Next comes the flat bone which is larger than the pin. This is followed by the next part which is the oval or round bone and the wedge bone which is shaped like a wedge.

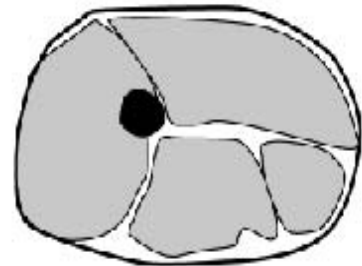
Examples: Beef Loin Sirloin Steak
Pork Loin Sirloin Chop
Lamb Leg Sirloin Chop



F. Leg, Round, and Ham Cuts

Only a cross section of the leg bone (femur) is found in the center cut steaks for the leg, round, and ham. The leg bone is a small round bone. Learn to recognize the shape of the muscles in this cut.

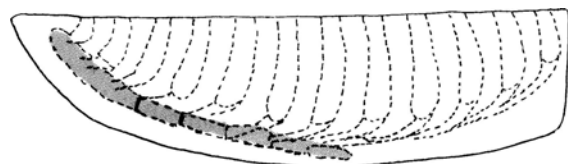
Examples: Beef Round Steak
Pork Ham Slice or Center Cut
Lamb Leg Steak or Center Cut



G. Breast Cuts (Brisket, Short Plate)

Bones in the breast contain the breast bone, ribs, and rib cartilages. The bones are small like the rib bones.

Examples: Beef Plate Short Ribs
Pork Spareribs
Lamb Breast or Riblets



IV. COOKING METHOD

Tenderness is the key factor used to determine the appropriate cooking method for a particular cut of meat. The factors used to predict tenderness are the cut of the meat and the quality of the meat.

Cuts of meats come from different locations of the carcass. By knowing the part of the carcass that the cut comes from, one can determine the relative tenderness. Since meat is composed mainly of muscles, the extent to which the live animal uses the muscles will affect the tenderness. More frequently used muscles exhibit larger muscle fibers and more connective tissue. A larger quantity of connective tissue decreases tenderness.

Less tender cuts of meat come from the *active muscles of locomotion*. Thus, cuts from the neck and leg are less tender. These cuts come from the chuck, round, foreshank, and brisket of a beef carcass. Less tender cuts also come from the leg, shoulder, and foreshank of beef, pork, and lamb carcasses.

The tenderest cuts are from the *support muscles* in those areas of the animal which receive less exercise. Cuts from the muscles in the back are the most tender. These cuts come from the rib, short loin, and sirloin of the beef carcass. Tender cuts also come from the rib and loin of a lamb carcass and the loin of a pork carcass. These cuts are more expensive, because there is very few.

Cooking methods can be classified as Dry Heat or Moist Heat methods.

Moist heat is used with less tender cuts of meats. The cut is surrounded by either steam or hot liquid. Slow cooking in moisture softens the connective tissue, thus making the meat tenderer.

Dry Heat is used with tender and high quality cuts of meat.

This classification scheme has some shortcomings. For instance, pan frying has some characteristics of both moist and dry methods. In order to avoid confusion, the following guidelines are used in this context.

A. Dry Heat Methods

Roasting is a cooking method in which meat is surrounded and cooked by heated air. This method is recommended for large tender cuts of beef, veal, pork, and lamb. Meat is not covered and no water is added.

Broiling is cooking by direct heat from a flame, electric unit, or glowing coals. Meat is primarily cooked one side at a time. This method is recommended for steaks and chops that are cut 1 to 1-1/2 inches thick. If steaks or chops are less than 1-inch thick, pan broil them.

Pan broiling is cooking in an uncovered pan over direct heat. Fat that cooks out of the meat is drained as it accumulates.

Pan frying (or stir frying) is similar to pan broiling, except that the meat is cooked in a small amount of fat.

B. Moist Heat Methods

Braising is cooking in a small amount of liquid in a covered container or foil wrap. The liquid may be water or a water-based liquid, or the meat juices alone. Larger, less tender cuts, such as chuck and round, are braised as with pot roasts. Steaks from the round and chuck along with other less tender steaks also can be braised.

Cooking in liquid (stewing) is usually with briskets, plates, necks, shanks, corned beef, stew, or soup meat cuts.

Indiana 4-H Retail Meat Cut Identification Card

4-H ID-1
2005

Contestant Name: _____

Contestant Number: _____

Species	Primal Cut	
B – Beef	A. Breast	J. Rib (Rack)
L – Lamb	B. Brisket	K. Round
P - Pork	C. Chuck	L. Shank
	D. Flank	M. Shoulder
	E. Ham/Leg	N. Side (Belly)
	F. Jowl	O. Spareribs
	G. Leg	P. Variety Meats
	H. Loin	Q. Various
	I. Plate	

Retail Names
Chops, Roasts/Pot Roasts, Steaks, Slices

1. American-Style	30. Rib, Large End
2. Arm	31. Rib, Small End
3. Arm, Boneless	32. Rib, Small End, Boneless
4. Arm, Picnic, Whole	33. Round
5. Bacon	34. Round, Boneless
6. Blade	35. 7-Bone
7. Blade, Boneless	36. Shoulder, Boneless
8. Blade Boston	37. Sirloin
9. Bottom Round	38. Sirloin, Flat Bone
10. Bottom Round Rump	39. Sirloin, Half
11. Butterfly	40. Skirt, Boneless
12. Center	41. Smoked Center
13. Chuck Eye, Boneless	42. Smoked Ham, Boneless
14. Cubed	43. Smoked Loin
15. Double	44. Smoked Rib
16. Eye Round	45. Smoked Rump Portion
17. Flank	46. Smoked Shank Portion
18. Frenched-Style/Frenched	47. Smoked Shoulder Picnic, Whole
19. Fresh, Center	48. Square Cut
20. Fresh, Rump Portion	49. T-Bone
21. Fresh, Shank Portion	50. Tenderloin
22. Fresh Side	51. Tip
23. Heel of Round	52. Tip, Cap Off
24. Loin	53. Top Blade, Boneless
25. Mock Tender	54. Top Loin
26. Neck	55. Top Loin, Boneless
27. Porterhouse	56. Top Round
28. Rib	57. Top Sirloin
29. Rib Eye	

Variety Meats	
58. Brains	62. Oxtail
59. Heart	63. Sweetbreads (beef thymus)
60. Kidney	64. Tongue
61. Liver	65. Tripe

Miscellaneous Other Cuts

66. Back Ribs	78. Ground Beef
67. Bacon, Slab	79. Ground Pork
68. Beef for Stew	80. Point Half, Boneless
69. Breast	81. Riblets
70. Brisket, Whole, Boneless	82. Sausage
71. Canadian Style Bacon	83. Sausage Links
72. Corned	84. Shank
73. Country Style Ribs	85. Short Ribs
74. Cross Cuts	86. Sirloin Cutlets
75. Cross Cuts, Boneless	87. Smoked Hock
76. Flat Half, Boneless	88. Smoked Jowl
77. Fresh Hock	89. Spareribs

Type of Cut
Ch – Chop(s)
Ro – Roast/Pot Roast
Sl – Slice(d)
St – Steak

Cookery Method
D – Dry Heat
M – Moist Heat
D/M – Dry or Moist Heat

Cut No.	Species (1 pt)	Primal Cut (3 pts)	Retail Name (4 pts)	Type (1pt)	Cookery Method (1pt)
Ex.	Lamb L	Leg G	Center 12	Slice S1	Dry D
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____
7.	_____	_____	_____	_____	_____
8.	_____	_____	_____	_____	_____
9.	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____
11.	_____	_____	_____	_____	_____
12.	_____	_____	_____	_____	_____
13.	_____	_____	_____	_____	_____
14.	_____	_____	_____	_____	_____
15.	_____	_____	_____	_____	_____
16.	_____	_____	_____	_____	_____
17.	_____	_____	_____	_____	_____
18.	_____	_____	_____	_____	_____
19.	_____	_____	_____	_____	_____
20.	_____	_____	_____	_____	_____

Number incorrect	_____	_____	_____	_____	_____
	X 1	X 3	X 4	X 1	X 1

Points Off	_____	_____	_____	_____	_____
------------	-------	-------	-------	-------	-------

200 - _____ = _____
Total Points Off Final Score

Indiana 4-H Retail Meat Cut Identification Card

4-H ID-2
2005

Contestant Name: _____

Contestant Number: _____

Species	Primal Cut	
B – Beef	A. Breast	J. Rib (Rack)
L – Lamb	B. Brisket	K. Round
P - Pork	C. Chuck	L. Shank
	D. Flank	M. Shoulder
	E. Ham/Leg	N. Side (Belly)
	F. Jowl	O. Spareribs
	G. Leg	P. Variety Meats
	H. Loin	Q. Various
	I. Plate	

Retail Names
Chops, Roasts/Pot Roasts, Steaks, Slices

1. American-Style	30. Rib, Large End
2. Arm	31. Rib, Small End
3. Arm, Boneless	32. Rib, Small End, Boneless
4. Arm, Picnic, Whole	33. Round
5. Bacon	34. Round, Boneless
6. Blade	35. 7-Bone
7. Blade, Boneless	36. Shoulder, Boneless
8. Blade Boston	37. Sirloin
9. Bottom Round	38. Sirloin, Flat Bone
10. Bottom Round Rump	39. Sirloin, Half
11. Butterfly	40. Skirt, Boneless
12. Center	41. Smoked Center
13. Chuck Eye, Boneless	42. Smoked Ham, Boneless
14. Cubed	43. Smoked Loin
15. Double	44. Smoked Rib
16. Eye Round	45. Smoked Rump Portion
17. Flank	46. Smoked Shank Portion
18. Frenched-Style/Frenched	47. Smoked Shoulder Picnic, Whole
19. Fresh, Center	48. Square Cut
20. Fresh, Rump Portion	49. T-Bone
21. Fresh, Shank Portion	50. Tenderloin
22. Fresh Side	51. Tip
23. Heel of Round	52. Tip, Cap Off
24. Loin	53. Top Blade, Boneless
25. Mock Tender	54. Top Loin
26. Neck	55. Top Loin, Boneless
27. Porterhouse	56. Top Round
28. Rib	57. Top Sirloin
29. Rib Eye	

Variety Meats

58. Brains	62. Oxtail
59. Heart	63. Sweetbreads (beef thymus)
60. Kidney	64. Tongue
61. Liver	65. Tripe

Miscellaneous Other Cuts

66. Back Ribs	78. Ground Beef
67. Bacon, Slab	79. Ground Pork
68. Beef for Stew	80. Point Half, Boneless
69. Breast	81. Riblets
70. Brisket, Whole, Boneless	82. Sausage
71. Canadian Style Bacon	83. Sausage Links
72. Corned	84. Shank
73. Country Style Ribs	85. Short Ribs
74. Cross Cuts	86. Sirloin Cutlets
75. Cross Cuts, Boneless	87. Smoked Hock
76. Flat Half, Boneless	88. Smoked Jowl
77. Fresh Hock	89. Spareribs

Type of Cut
Ch – Chop(s)
Ro – Roast/Pot Roast
Sl – Slice(d)
St – Steak

Cookery Method
D – Dry Heat
M – Moist Heat
D/M – Dry or Moist Heat

Cut No.	Species (1 pt)	Primal Cut (3 pts)	Retail Name (4 pts)	Type (1pt)	Cookery Method (1pt)
Ex.	Lamb	Leg	Center	Slice	Dry
	L	G	12	S1	D
21.	_____	_____	_____	_____	_____
22.	_____	_____	_____	_____	_____
23.	_____	_____	_____	_____	_____
24.	_____	_____	_____	_____	_____
25.	_____	_____	_____	_____	_____
26.	_____	_____	_____	_____	_____
27.	_____	_____	_____	_____	_____
28.	_____	_____	_____	_____	_____
29.	_____	_____	_____	_____	_____
30.	_____	_____	_____	_____	_____
31.	_____	_____	_____	_____	_____
32.	_____	_____	_____	_____	_____
33.	_____	_____	_____	_____	_____
34.	_____	_____	_____	_____	_____
35.	_____	_____	_____	_____	_____
36.	_____	_____	_____	_____	_____
37.	_____	_____	_____	_____	_____
38.	_____	_____	_____	_____	_____
39.	_____	_____	_____	_____	_____
40.	_____	_____	_____	_____	_____

Number incorrect _____

X 1 X 3 X 4 X 1 X 1

Points Off _____

200 - _____ = _____
Total Points Off Final Score

Indiana FFA Retail Meat Cut Identification Card

Contestant Number : _____

Cut No.	Species (1 pt)	Primal Cut (2pts)	Retail Name (3 pts)
Ex.	Beef B	Loin 7	Top Loin 72

PRIMAL NAME – 2 Points

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Breast 2. Brisket 3. Chuck 4. Flank 5. Ham/Leg 6. Jowl 7. Leg 8. Loin 9. Plate | <ul style="list-style-type: none"> 10. Rib 11. Round 12. Shank 13. Shoulder 14. Side "Belly" 15. Spareribs 16. Variety Meats 17. Various Meats |
|---|--|

RETAIL NAME - 3 Points
ROASTS/POT ROASTS

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. American Style 2. Arm Picnic 3. Arm Roast 4. Arm Pot Roast (Bnls) 5. Back Ribs 6. Blade 7. Blade Boston 8. Bottom Round (Bnls) 9. Bottom Round Rump (Bnls) 10. Breast 11. Brisket Whole (Bnls) 12. Center Loin 13. Center Rib 14. Chuck Eye Roast 15. Country Style Ribs 16. Cross Cuts 17. Cross Cuts (Bnls) 18. Eye 19. Eye Round 20. Flat Half (Bnls) 21. Frenched Style 22. Fresh Side 23. Heal of Round | <ul style="list-style-type: none"> 24. Large End 25. Loin 26. Mock Tender 27. Point Half (Bnls) 28. Rib 29. Riblets 30. Rump Portion 31. Seven (7) Bone 32. Shank Portion 33. Short Ribs 34. Shoulder (Bnls) 35. Sirloin 36. Sirloin Half 37. Small End 38. Spare Ribs 39. Square Cut (Whole) 40. Tenderloin (Whole) 41. Tip 42. Tip, Cap Off 43. Top Loin (Bnls) 44. Top Loin Double (Bnls) 45. Top Round |
|---|--|

STEAKS

- | | |
|--|--|
| <ul style="list-style-type: none"> 46. Arm 47. Arm (Bnls) 48. Blade 49. Bottom Round 50. Center Slice 51. Eye 52. Eye Round 53. Flank 54. Mock Tender 55. Neck Slice 56. Porterhouse 57. Round 58. Round (Bnls) 59. Seven (7) Bone 60. Sirloin (Bnls) | <ul style="list-style-type: none"> 61. Sirloin (Bnls) 62. Sirloin, Cutlets 63. Skirt (Bnls) 64. Small End 65. Small End (Bnls) 66. T - Bone 67. Tenderloin 68. Tip 69. Tip, Cap Off 70. Top Blade (Bnls) 71. Top Loin 72. Top Loin (Bnls) 73. Top Round 74. Top Sirloin (Bnls) |
|--|--|

CHOPS

- | | |
|--|---|
| <ul style="list-style-type: none"> 75. Arm 76. Blade 77. Blade (Bnls) 78. Butterfly (Bnls) 79. Double 80. Loin | <ul style="list-style-type: none"> 81. Rib 82. Rib (Frenched) 83. Sirloin 84. Top Loin 85. Top Loin (Bnls) |
|--|---|

VARIETY MEATS

- | | |
|--|---|
| <ul style="list-style-type: none"> 86. Heart 87. Kidney 88. Liver 89. Oxtail | <ul style="list-style-type: none"> 90. Sweetbread 91. Tongue 92. Tripe |
|--|---|

VARIOUS MEATS

- | | |
|---|---|
| <ul style="list-style-type: none"> 93. Beef for Stew 94. Cube Steak 95. Ground Beef 96. Ground Pork | <ul style="list-style-type: none"> 97. Hocks 98. Sausage 99. Sausage Links |
|---|---|

SMOKED/CURED PORK

- | | |
|--|---|
| <ul style="list-style-type: none"> 100. Back Ribs 101. Brisket, Corned 102. Canadian Bacon 103. Center Slice 104. Ham (Bnls) 105. Ham (Whole) 106. Hocks 107. Jowl | <ul style="list-style-type: none"> 108. Loin Chop 109. Picnic (Whole) 110. Rib Chop 111. Rump Portion 112. Shank Portion 113. Slab Bacon 114. Sliced Bacon 115. Spareribs |
|--|---|

1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
Number incorrect			
X 1 X 2 X 3			
Points Off			

120 - _____ = _____
Total Points Off Final Score

Indiana FFA Retail Meat Cut Identification Card

FFA ID-2

Name: _____

Contestant Number: _____

B—Beef P—Pork L—Lamb SPECIES—1 Point

PRIMAL NAME – 2 Points

- | | |
|---|--|
| 1. Breast
2. Brisket
3. Chuck
4. Flank
5. Ham/Leg
6. Jowl
7. Leg
8. Loin
9. Plate | 10. Rib
11. Round
12. Shank
13. Shoulder
14. Side "Belly"
15. Spareribs
16. Variety Meats
17. Various Meats |
|---|--|

RETAIL NAME – 3 Points

ROASTS/POT ROASTS

- | | |
|---|--|
| 1. American Style
2. Arm Picnic
3. Arm Roast
4. Arm Pot Roast (Bnls)
5. Back Ribs
6. Blade
7. Blade Boston
8. Bottom Round (Bnls)
9. Bottom Round Rump (Bnls)
10. Breast
11. Brisket Whole (Bnls)
12. Center Loin
13. Center Rib
14. Chuck Eye Roast
15. Country Style Ribs
16. Cross Cuts
17. Cross Cuts (Bnls)
18. Eye
19. Eye Round
20. Flat Half (Bnls)
21. Frenched Style
22. Fresh Side
23. Heal of Round | 24. Large End
25. Loin
26. Mock Tender
27. Point Half (Bnls)
28. Rib
29. Riblets
30. Rump Portion
31. Seven (7) Bone
32. Shank Portion
33. Short Ribs
34. Shoulder (Bnls)
35. Sirloin
36. Sirloin Half
37. Small End
38. Spare Ribs
39. Square Cut (Whole)
40. Tenderloin (Whole)
41. Tip
42. Tip, Cap Off
43. Top Loin (Bnls)
44. Top Loin Double (Bnls)
45. Top Round |
|---|--|

STEAKS

- | | |
|--|--|
| 46. Arm
47. Arm (Bnls)
48. Blade
49. Bottom Round
50. Center Slice
51. Eye
52. Eye Round
53. Flank
54. Mock Tender
55. Neck Slice
56. Porterhouse
57. Round
58. Round (Bnls)
59. Seven (7) Bone
60. Sirloin (Bnls) | 61. Sirloin (Bnls)
62. Sirloin, Cutlets
63. Skirt (Bnls)
64. Small End
65. Small End (Bnls)
66. T - Bone
67. Tenderloin
68. Tip
69. Tip, Cap Off
70. Top Blade (Bnls)
71. Top Loin
72. Top Loin (Bnls)
73. Top Round
74. Top Sirloin (Bnls) |
|--|--|

CHOPS

- | | |
|--|---|
| 75. Arm
76. Blade
77. Blade (Bnls)
78. Butterfly (Bnls)
79. Double
80. Loin | 81. Rib
82. Rib (Frenched)
83. Sirloin
84. Top Loin
85. Top Loin (Bnls) |
|--|---|

VARIETY MEATS

- | | |
|--|---|
| 86. Heart
87. Kidney
88. Liver
89. Oxtail | 90. Sweetbread
91. Tongue
92. Tripe |
|--|---|

VARIOUS MEATS

- | | |
|---|---|
| 93. Beef for Stew
94. Cube Steak
95. Ground Beef
96. Ground Pork | 97. Hocks
98. Sausage
99. Sausage Links |
|---|---|

SMOKED/CURED PORK

- | | |
|--|---|
| 100. Back Ribs
101. Brisket, Corned
102. Canadian Bacon
103. Center Slice
104. Ham (Bnls)
105. Ham (Whole)
106. Hocks
107. Jowl | 108. Loin Chop
109. Picnic (Whole)
110. Rib Chop
111. Rump Portion
112. Shank Portion
113. Slab Bacon
114. Sliced Bacon
115. Spareribs |
|--|---|

Cut No.	Species (1 pt)	Primal Cut (2pts)	Retail Name (3 pts)
Ex.	Beef B	Loin 7	Top Loin 72
21.	_____	_____	_____
22.	_____	_____	_____
23.	_____	_____	_____
24.	_____	_____	_____
25.	_____	_____	_____
26.	_____	_____	_____
27.	_____	_____	_____
28.	_____	_____	_____
29.	_____	_____	_____
30.	_____	_____	_____
31.	_____	_____	_____
32.	_____	_____	_____
33.	_____	_____	_____
34.	_____	_____	_____
35.	_____	_____	_____
36.	_____	_____	_____
37.	_____	_____	_____
38.	_____	_____	_____
39.	_____	_____	_____
40.	_____	_____	_____

Number incorrect	_____	_____	_____
	X 1	X 2	X 3
Points Off	_____	_____	_____

120 - _____ = _____
Total Points Off Final Score

BEEF CARCASS EVALUATION

(FFA ONLY)

TIPS ON HOW TO EVALUATE BEEF CARCASSES

The quality and quantity of edible meat that can be obtained from a dressed beef carcass are the two major factors which determine value in the contemporary market. The relative economic contribution of quality and quantity can be established from market quotations of quality grade coupled with a knowledge of expected retail cut yield for the various Yield Grade classification



Beef Carcass evaluation should be based on the following.

A. Quality Grade

1. Maturity
2. Marbling
3. Meat Color
4. Quality Grade

B. Yield Grade

1. Fat Depth
2. Ribeye Area
3. Percent of Kidney, Pelvic, Heart Fat
4. Hot Carcass Weight (Provided at the contest)








C. Quality Evaluation

Quality evaluation is an attempt to predict taste characteristics; therefore, factors which may be related to tenderness, juiciness, flavor, and appearance are given major consideration.

Maturity and marbling are the two main factors utilized in the establishment of the USDA Quality Grade for Beef.

1. Maturity

Maturity is an estimation of the physiological age of the animal that produced the beef carcass. Maturity is one of the best indicators of meat palatability because it is closely related to meat tenderness. Five maturity groups are identified below as A, B, C, D, and E in order of increasing maturity. The maturity of the carcass is determined by evaluating the size, shape, and ossification of the bones and cartilages, especially the split chine bones, as well as the color and texture of the lean flesh. In the split chine bones, ossification of cartilage tips occurs at an earlier stage of maturity in the posterior portion of the vertebrae column (sacral vertebrae) and at progressively later stages of maturity in the lumbar and thoracic vertebrae. In the youngest carcasses considered as "beef", the cartilage at the ends of the chine bones show no ossification, cartilage is evident on all of the vertebrae of the spinal column, and the sacral vertebrae show distinct separation. In addition, the split vertebrae are soft, porous, and very red in color. In such carcasses, the rib bones have only a slight tendency toward flatness. In progressively more mature carcasses, the cartilage tips change to bone in the sacral (tail) area first, then in the lumbar, and finally in the thoracic vertebrae. In beef which is very advanced in maturity, all the split vertebrae are devoid of red color, very hard and flinty, and cartilage on the ends of the vertebrae is entirely ossified. With advancing maturity, the rib bones become progressively wider and flatter until, in very mature beef, the ribs become very wide and flat.

Approximate Chronological Age	Maturity Group	Maturity Descriptions				
		Vertebral Ossification			Ribs	Rib-Eye Muscle
		Sacral	Lumbar	Thoracic		
9-10 months	A-(A ⁹) 	<i>Distinct separation</i>	<i>Cartilage evident on all vertebrae</i>	<i>Cartilages evident on all vertebrae; soft, porous, and very red chine bones</i>	Slight tendency toward flatness	Light grayish in color; very fine in texture
30 months	A+/B-(A ¹⁰⁰ /B ⁹) 	Completely fused	Nearly completely ossified	<i>Cartilages have some evidence of ossification; slightly red and slightly soft chine bones</i>	Slightly wide; slightly flat	Light red in color; fine in texture
42-48 months	B+(B ¹⁰⁰) 	Completely fused	Completely ossified	<i>Cartilages partially ossified; chine bones tinged with red</i>	Slightly wide; slightly flat	Tends to be fine in texture
42-48 months	C-(C ⁹) 	Completely fused	Completely ossified	<i>Cartilages moderately (20%-30%) ossified; chine bones tinged with red</i>	Slightly wide; slightly flat	Tends to be fine in texture
60-70 months	C+/D-(C ¹⁰⁰ /D ⁹) 	Completely fused	Completely ossified	<i>Cartilages show considerable ossification but outlines are plainly visible; moderately hard, rather white chine bones</i>	Moderately wide and flat	Moderately dark in color; slightly coarse in texture
Older	D+/E-(D ¹⁰⁰ /E ⁹) 	Completely fused	Completely fused	<i>Cartilages barely visible; hard, white chine bones</i>	Wide and flat	Dark red and coarse textured
Oldest	E+(E ¹⁰⁰) 	Completely fused	Completely fused	Completely ossified	Very wide and flat	Very dark red and coarse textured

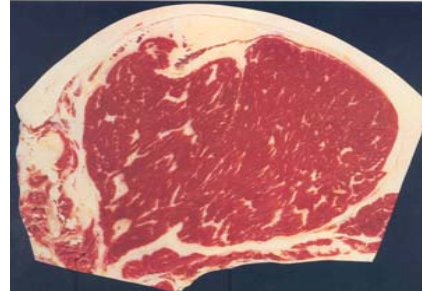
The Meat We Eat
Romans, Jones, Costello, Carlson, Ziegler
12th edition

DEGREE OF MARBLING

Abundant	10
Moderately Abundant	9
Slightly Abundant	8
Moderate	7
Modest	6
Small	5
Slight	4
Traces	3



9



8



7



6



5



4

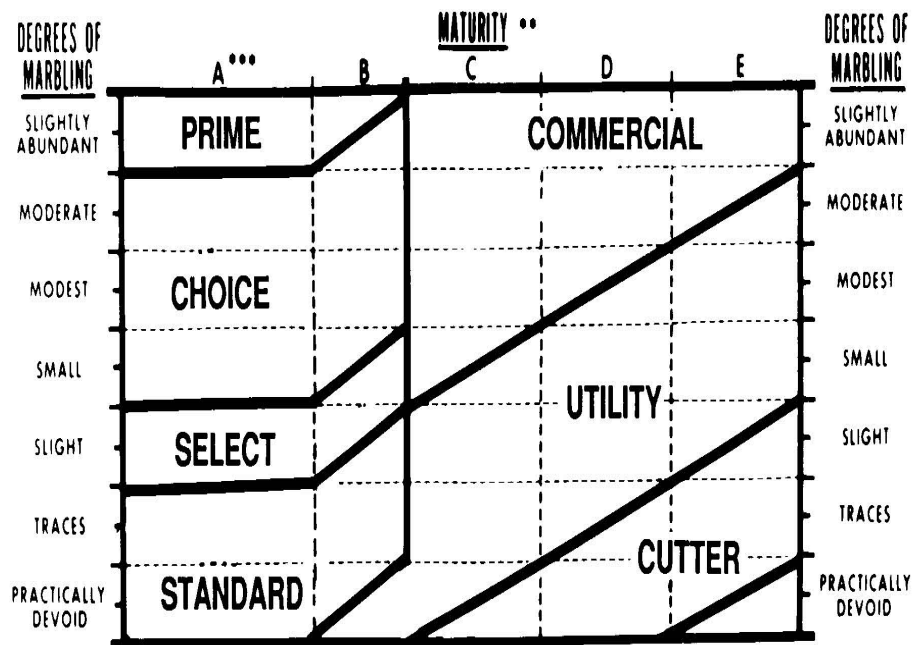
2. Marbling

Marbling is the visible intramuscular fat that is observed as flecks of fat in the cross-sectional surface of the Ribeye. Marbling tends to improve the juiciness and flavor of meat and it also may have a positive effect on meat tenderness.

3. Meat Color

Color of lean affects the appearance of meat cuts which, in turn, affects consumer acceptability. Dark color in meat is usually associated with the more advanced stages of maturity in meat animals. Dark cutting beef, however, may occur in very young cattle. When dark cutting beef does occur, the USDA Grade may be reduced as much as one full grade depending upon the severity of the dark color.

RELATIONSHIP BETWEEN MARBLING, MATURITY, AND CARCASS QUALITY GRADE



* Assumes that firmness of lean is comparably developed with the degree of marbling and that the carcass is not a "dark cutter."

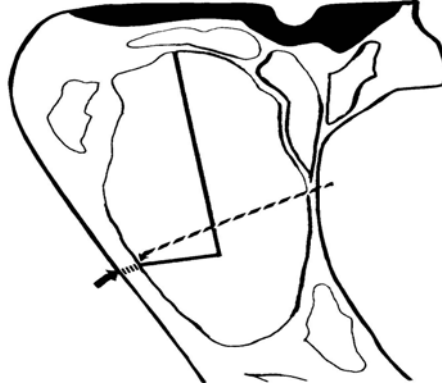
** Maturity increases from left to right (A through E).

*** The A maturity portion of the figure is the only portion applicable to bullock carcasses

B. Yield Grade

1. Fat Depth

Fat thickness is measured over the Ribeye at the twelfth rib location at a point $\frac{3}{4}$ of the length of the *longissimus* (loin) muscle from the chine bone end and perpendicular to the outside surface of the fat. This measurement should be adjusted up or down to reflect unusual amounts of fat on other parts of the carcass or to compensate for excessive trimming of fat which may have occurred over the Ribeye. Fat depth is measured to the nearest 0.1 inch.



2. Ribeye Area

The cross-sectional area of the *longissimus* muscle is measured in square inches. The evaluator should be careful not to include the small muscles which surround the *longissimus* in the measurement of the Ribeye area. Contestants will have to estimate Rib Eye size. Practice Makes Perfect

3. Percent Kidney, Pelvic, Heart Fat (KPH)

The amount of fat in the kidney knob (kidney and surrounding fat), the lumbar and pelvic fat in the loin and round, and the heart fat in the chuck and brisket area which are normally removed in making closely trimmed retail cuts, is evaluated subjectively and expressed as a percent of the carcass weight. A carcass with an average amount of fat in these locations would equal about 3 to 3.5% of the hot carcass weight. Carcasses that are extremely clean with regard to internal fat may have as low as 1% KPH fat while carcasses with extreme waste may have as much as 4.5 to 5.5% KPH fat.

Indiana FFA Meat Grading Scorecard

Name	Contestant #	Score
------	--------------	-------

Place an X in the appropriate place. You should have a total of 8 X's.

Beef Quality Grades					Beef Yield Grades				
	1	2	3	4		1	2	3	4
High Prime					0.00-0.33				
Average Prime					0.34-0.66				
Low Prime					0.67-0.99				
High Choice					1.00-1.33				
Average Choice					1.34-1.66				
Low Choice					1.67-1.99				
High Select					2.00-2.33				
Low Select					2.34-2.67				
High Standard					2.68-2.99				
Average Standard					3.00-3.33				
Low Standard					3.34-3.66				
					3.67-3.99				
High Commercial					4.00-4.33				
Avg Commercial					4.34-4.66				
Low Commercial					4.67-4.99				
High Utility					5.00-5.33				
Average Utility					5.34-5.66				
Low Utility					5.67-6.00				
For Official Scoring Only									

Contestants are allowed to bring worksheets, formulas and calculators to help figure Beef Yield Grades. Marbling cards are prohibited.

Scoring—A total of 120 points are allotted for this activity (60 points for quality grade and 60 points for yield grade). Both grades will receive 15 points for the correct answer. Ten points will be earned for a 1/3 grade above or below the official grade. Five points will be earned for 2/3 grade above or below the official grade.

Carcass Yield Grading									
	PYG				Rib Eye Area		% KPH		
Carcass No.	Est.	Adj.	Carcass Weight	Required REA	Est.	Adj.	Est.	Adj.	FYG
1									
2									
3									
4									
5									
6									
Place Yield Grade (YG 1-5) and corresponding letter (H-High, A-Avg., L-Low) under the column marked final Yield Grade (FYG).									
Yield Grade 1 High 1.00-1.33 Avg. 1.34-1.66 Low 1.67-1.99		Yield Grade 2 High 2.00-2.33 Avg. 2.34-2.66 Low 2.67-2.99		Yield Grade 3 High 3.00-3.33 Avg. 3.34-3.66 Low 3.67-3.99		Yield Grade 4 High 4.00-4.33 Avg. 4.34-4.66 Low 4.67-4.99		Yield Grade 5 High 5.00-5.33 Avg. 5.34-5.66 Low 5.67-5.99	

Carcass Quality Grading							
	Maturity						
Carcass No.	Bone	Lean	Marbling	Quality Grade	Prime High Prime Avg. Prime Low Choice High Choice Avg. Choice Low	Select High Select Low Std. High Std. Low	Comm. High Comm. Ave. Comm. Low Utility High Utility Avg. Utility Low
1							
2							
3							
4							
5							
6							
Place the grade in the space for "Quality Grade." 15 points are allowed for the correct grading of each carcass. A deduction of 5 points will be made for a 1/3 grade above or below the official grade; 10 points will be deducted for 2/3 grade above or below the official grade.							
Canner and cutter grades will not be used in the event. Since maturity is a factor between Standard and Commercial grades, carcasses which are close to the borderlines of maturity between these grades are not included in the event. There is not a Commercial grade for the carcasses from young animals; therefore, the spaces given to "Commercial" is not considered when scoring the carcasses from young animals.							

PORK CARCASS EVALUATION

TIPS ON HOW TO EVALUATE PORK CARCASSES

The value of a pork carcass in the contemporary market is derived mainly from the potential yield of trimmed fresh cuts, cured lean cuts, and sliced bacon. While lean trimmings have value as sausage ingredients and the fat trimmings have value when converted to lard, these generally contribute very little to the overall dollar value derived from the pork carcass. Pork carcasses must possess an acceptable level of quality (palatability indicating traits). This is a placing class only.



Pork carcass evaluation is based on the following.

A. Qualitative

1. Color
2. Marbling

B. Quantitative

1. Fat Depth

A. Qualitative Evaluation

1. Color-Structure

Muscle-color structure is also evaluated by observing the cross sectional cut surface of the loin eye between the tenth and eleventh ribs. Color should be uniformly reddish pink, moderately firm and dry. If the carcass color is extremely pale, soft and watery it may be disqualified.

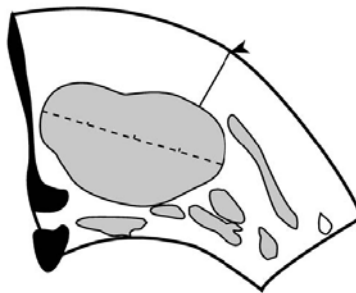
2. Marbling

Marbling is the small flecks of fat within the lean. This evaluation is made by observing the cross-sectional cut surface of the loin eye between the tenth and eleventh ribs.

B. Quantitative Evaluation

1. Fat Depth

Fat Depth is also evaluated at the loin eye area.



Using a back fat probe or other instrument graduated in 0.1 inch increments, measure the fat depth including the skin at the 3/4 point over the Ribeye. Divide the longest axis of the loin-eye muscle into quarters. Measure the fat depth at the 3/4 point from the medial edge of the muscle to a point at the outer edge of and perpendicular to the skin. Record fat depth to the nearest 0.1 inch.

LAMB CARCASS EVALUATION

TIPS ON HOW TO EVALUATE LAMB CARCASSES

The Lamb Carcass class will be placed strictly on visual evaluation of carcass merit. Cutability and quality are the two major factors that determine the value of a lamb carcass. Quality refers to those traits which are related to good eating by the consumer, while cutability refers to factors which determine how much of the carcass can be made into desirable retail cuts



Lamb carcass evaluation should be based on the following.

A. Cutability

Fat Thickness at the 12th rib
External fat over the remainder of the carcass
Ribeye Area
Leg Conformation

B. Quality

Maturity
Primary and Secondary Flank Fat Streaking
Color of Lean (Flank, Ribeye)
Color of Fat
Marbling
Firmness of Lean and Fat
Texture of Lean

A. Cutability

Cutability is very important to retailers who buy lamb carcasses and cut them into retail cuts for the consumer. The consumer usually prefers cuts that possess no more than approximately 1/10 inch of fat covering the outer surfaces, so the retailer must trim off any excess fat. A lamb carcass that is heavy muscled and is not carrying a lot of excess fat deposits is said to have a high cutability.

To choose the lamb carcasses with the highest cutability, you must observe the thickness of the outside fat cover, the amount of flank and crotch fat, the size of the Ribeye, and the conformation of the leg.

1. Fat Thickness

In the ribbed carcass the fat thickness can best be observed directly over the top of the two Ribeye muscles at the center of the longissimus muscle. This usually gives a good indication of the total fatness of the carcass. However, you must carefully observe the fat cover over the entire carcass to be sure that there are not excessive fat deposits elsewhere.

Under finished lamb carcasses with little or no fat covering at all (.05 inches or less) are undesirable and should be discriminated against. Carcasses with .1 to .2 inches of fat over the Ribeye would be preferred to carcasses with more or less fat covering.

2. Ribeye Area

The cross-sectional area of the Ribeye muscles is one good indicator of total muscling in the carcass. In addition to being a good indicator of total muscling a large Ribeye muscle in a lamb carcass is also desirable from the standpoint of consumer appeal. Carcasses are not ribbed in an industrial setting. The ribbing of contest carcasses will be left to the discretion of the meat

contest coordinators.

3. Leg Conformation

A major portion of the total value of the lamb carcass is in the leg cut. Therefore, an evaluation of the thickness and meatiness in the leg-sirloin area is very important. When evaluating leg conformation be especially careful to note the amount of fat covering that might be contributing to the thickness in the leg. You should attempt to determine the muscle thickness present if the fat were removed.

B. Quality

Consumer acceptability depends on the tenderness, juiciness, and flavor of cooked retail cuts. There are several traits or factors which can be observed in the lamb carcass that give a good indication of the eating quality of cooked lamb cuts.

1. Maturity

Meat tends to become less tender as an animal matures. Therefore it is important to determine if a lamb carcass is young or mature giving preference to the younger carcasses.

Lamb carcasses are classified into three general categories: spring lamb, yearling, and mutton. In dressing lamb carcasses, the foot and pastern are removed at the ankle. There is a round or "spool joint" on the lower end of the cannon bone. A "break joint" is located immediately above at the zone of bone growth. Until an ovine animal is 12-14 months old, it is usually possible to remove the foot at the "break joint." This is the major distinction between lamb and yearling mutton carcasses. Other distinguishable maturity factors include bone color (young animals have red shank and rib bones), bone shape (young animals have red narrow, round ribs), and lean color (young animals have light colored lean). Since young carcasses have a milder flavor and are generally more tender, they are preferred.

2. Color of the Lean

The color of the lean meat has a major influence on the consumer at the time they purchase lamb cuts. The normal or desired color is usually described as bright reddish-pink in lamb.

Color of the lean in unribbed carcasses is examined in the flank as well as in the thoracic cavity. The desirable flank color is a bright pink. When possible, direct evaluation of the Ribeye muscle color is preferred. It is to be expected that rib eye color will be darker than the flank color. With an increase in age there is a darkening of the color making it less acceptable to the consumer.

3. Color of the Fat

Color of the fat should be chalky white. Other factors being equal, a carcass with yellow fat should be placed below one with white fat.

4. Marbling

The small flecks of fat intermingled with the red muscle fibers of the lean meat is called marbling. These flecks of fat melt when cooked and act like a basting sauce to make the meat juicier. Small amounts of marbling fat indicate that the cooked meat will be juicy.

Marbling fat can only be observed if the carcass has been ribbed to expose the Ribeye. Flank streaking and feathering can be observed in the unribbed carcass. Flank streaking (fat in the muscle of the flank) and feathering (streaks of fat in the muscle between the ribs) are useful indicators of marbling in the muscle but it is preferable to evaluate marbling directly in the Ribeye.

As long as marbling fat is not excessive, a carcass with more marbling flecks would be preferred over one with little or no marbling.

5. Firmness of Lean and Fat

Firmness is desirable and may be evaluated by appraisal of the legs, back and flank. However, excessive firmness is normally associated with excessive fat and is indirectly related to low cutability. Soft, oily fat is undesirable.

6. Texture of Lean

Texture of muscle tissue refers to the distinctiveness of muscle bundles. A fine texture is preferred because of its presumed association with tenderness.



Lamb Carcasses

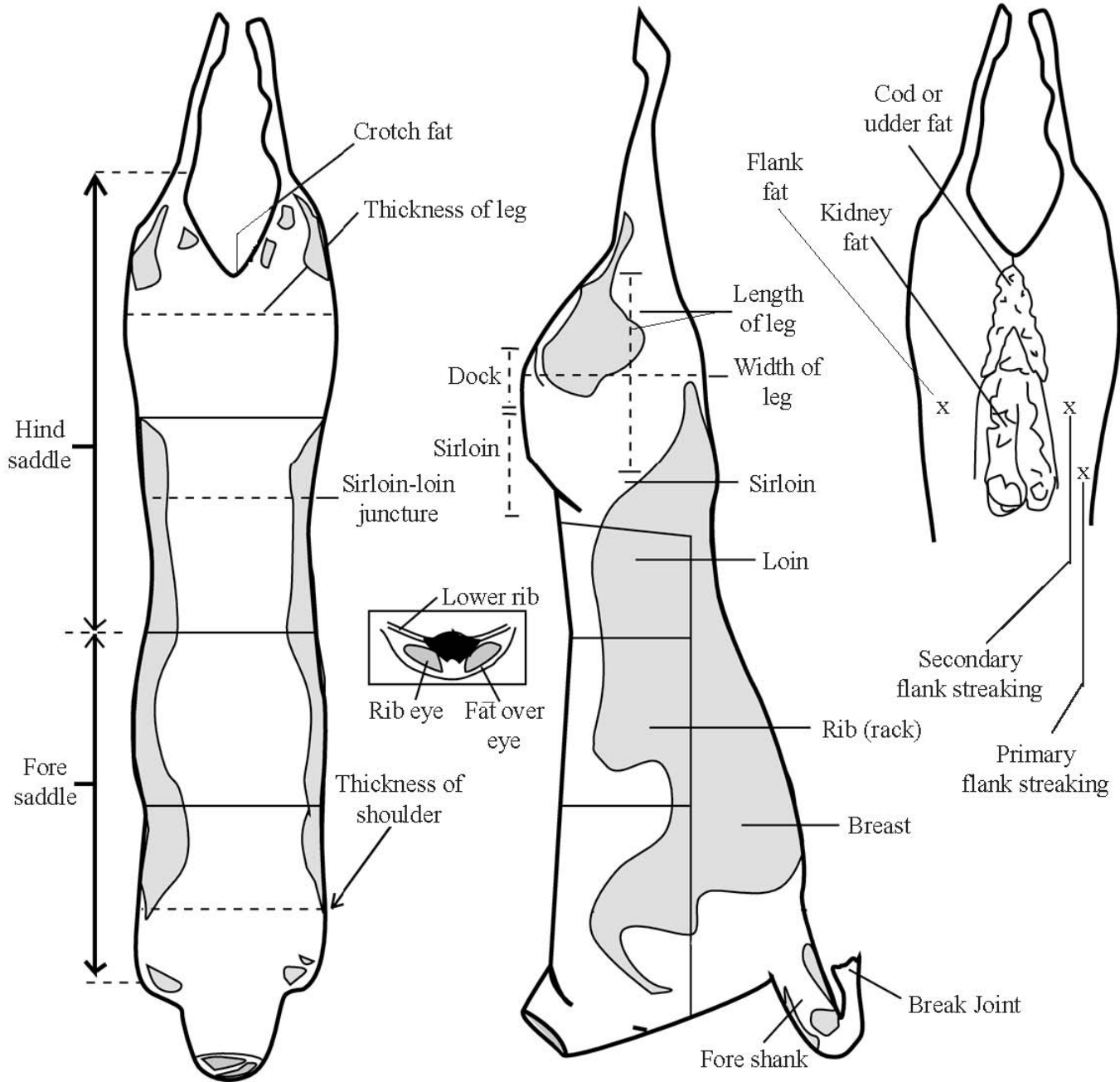
Ranking Lamb Carcasses

Most of the emphasis should be placed upon the cutability traits discussed above. In general, any lamb carcass that would be eligible for the Choice or Prime grades would be considered to have acceptable quality. Remember that under finished lambs may have very high cutability but are unacceptable to many buyers of lamb carcasses.

Lamb Questions Class

Ten (10) questions (5 points each) will be asked regarding considerations used for final ranking of the class. The type of questions asked may single out a specific carcass for the answer (Which lamb carcass had the largest Ribeye area?), or distinguish between two (pair comparison) carcasses (Between 3 and 4 which

carcass had more primary and secondary flank streaking?), or questions of a “yes” or “no” variety (All carcasses were from females.).



QUESTIONS CLASSES

Accurate observation of the characteristics of meat cuts and carcasses is an important skill. Questions classes are designed to encourage contestants to develop their power of observation. Placing of the class helps the contestant learn to make decisions and develop judgment skills. Both observation and judgment are critical in successful decision making.

There will be five (5) questions asked over each of two of the placing classes for a total of ten questions. Questions will be worth 5 points per question for a total of 50 points for the contest.

All questions will pertain directly to factors which the student should have observed when placing the class. For example: Which cut had the most marbling? Which chop was two-toned in color? Which carcass exhibited the greatest thickness through the leg? Which ham would have the highest yield of center cut slices? How many of the wholesale ribs graded USDA Choice?

ORAL REASONS (4-H ONLY)

Two Sets of Oral Reasons - 50 Points/Set

1. Reasons may not exceed two minutes in length
Contestant will be penalized for using notes in the reasons room



Example of Ham Reasons:

I placed the hams 1-2-3-4. In my top pair, I placed 1 over 2 as it exhibited a meatier ham that is wider, deeper, and fuller about its center-section. Furthermore, it was a trimmer, higher cutability ham exposing less fat beneath the face.

I admit 2 was shorter shanked; however, I still preferred 1 as it best combined trimness and muscularity to the highest degree.

In my middle pair I placed 2 over 3 as it displayed a higher quality ham that was more uniform in its color. It too was a more muscular ham that is plumper and more bulging about the cushion.

I realized 3 was trimmer; never-the-less I placed 3 third as it failed to possess the quality and meatiness of my top pair.

Now moving to my bottom pair, I placed 3 over 4 as it was a trimmer, higher cutability ham exposing less fat beneath the face. Moreover it was larger, wider, and deeper about its butt face.

I admit 4 had less seam fat in the face; never-the-less I placed 4 fourth as it was the wastiest ham requiring the most fat trim.

Example of Pork Carcass Reasons:

I placed the pork carcasses 4-2-3-1. In my top pair, I placed 4 over 2 as it possessed a meatier carcass that is fuller and deeper in its sirloin region. Moreover, it was leaner opposite the 1st rib.

I realize 2 had less fat in the collar region; however I still preferred 4 as it would yield a higher ratio of lean to fat.

In the middle pair, I placed 2 over 3 as 2 was a leaner carcass opposite the last rib. It too was a thicker, meatier carcass that was more defined in the ham region.

I admit 3 was fuller in the sirloin region; never the less I placed 3 third as it was a fatter, lighter muscled carcass.

In moving to my bottom pair, I placed 3 over 1 as 3 displayed a heavier muscled ham region. Moreover, it was leaner with less back fat throughout.

Yes, 1 had less collar fat; never the less I placed 1 fourth as it would yield the lowest percentage of closely trimmed retail cuts.

RESOURCES AND EQUIPMENT

The following are suggested teaching aids and materials for a Meat Evaluation Program in a school or county.

Most materials can be obtained from eight sources:

National Livestock and Meat Board
444 North Michigan Avenue
Chicago, Illinois 60611
(312) 467-5520

National 4-H Council
Supply Service
7100 Connecticut Avenue
Chevy Chase, MD. 20815
(301) 961-2934

NASCO
901 Janesville Avenue
Fort Atkinson, Wisconsin 53538
(414) 563-2446

National Pork Producers Council
P.O. Box 10383
Des Moines, IA 50306
(515) 223-2600

Art Services Inc.
3015 Earl Place N.E.
Washington D.C. 20018

Principles of Meat Science 4th Edition
4060 Westmark Drive
Dubuque, IA 52022

<http://bovine.unl.edu>

<http://porcine.unl.edu>

Materials Source

Meat Evaluation Handbook National Live Stock & Meat Board Meat Evaluation Handbook (slides)
National Live Stock & Meat Board Uniform Retail Meat Identity Standards National Live Stock & Meat Board Meat Identification Slide Set National Live Stock & Meat Board Wall Charts (Beef, Lamb, Pork)
National Live Stock & Meat Board Notebook Charts (Beef, Lamb, Pork) National Live Stock & Meat Board Back fat Probe NASCO *Beef and Pork Loin Grid NASCO Official USDA Beef Ribeye Grid Art Services Inc. Procedures to Evaluate Market Hog, 2nd Edition National Pork Producers Council Identifying Meat Cuts National Live Stock & Meat Board

*NASCO is now stocking grids. They are not shown in their catalog, but can be ordered.

4-H Meat Cut Identification List

Beef

Primal	Retail Name	Cookery
Chuck	Beef Chuck Arm Pot Roast	Moist
	Beef Chuck Arm Pot Roast Boneless	Moist
	Beef Chuck Cross Rib Pot Roast	Moist
	Beef Chuck Cross Rib Pot Roast Boneless	Moist
	Beef Chuck Arm Steak	Moist
	Beef Chuck Arm Steak Boneless	Moist
	Beef Chuck 7-Bone Pot Roast	Moist
	Beef Chuck 7-Bone Steak	Moist
	Beef Chuck Blade Roast	Dry / Moist
	Beef Chuck Blade Steak	Dry / Moist
Shank	Beef Shank Cross Cuts	Moist
	Beef Shank Cross Cuts Boneless	Moist
Brisket	Beef Brisket Whole Boneless	Moist
Plate	Beef Plate Short Ribs	Moist
Flank	Beef Flank Steak	Dry / Moist
Rib	Beef Rib Roast Large End	Dry
	Beef Rib Steak Large End	Dry
	Beef Rib Roast Small End	Dry
	Beef Rib Steak Small End	Dry
	Beef Rib Steak Small End Boneless	Dry
	Beef Rib Eye Steak	Dry
	Beef Rib Eye Roast	Dry
Loin	Beef Loin Top Loin Steak	Dry
	Beef Loin Top Loin Steak Boneless	Dry
	Beef Loin T Bone Steak	Dry
	Beef Loin Porterhouse Steak	Dry
	Beef Loin Sirloin Steak, Wedge Bone	Dry
	Beef Loin Sirloin Steak, Round Bone	Dry
	Beef Loin Sirloin Steak, Flat Bone	Dry
	Beef Loin Sirloin Steak, Pin Bone	Dry
	Beef Loin Shell Sirloin Steak	Dry
	Beef Loin Sirloin Steak Boneless	Dry
	Beef Loin Top Sirloin Steak Boneless	Dry

	Beef Loin Tenderloin Roast	Dry
	Beef Loin Tenderloin Steak	Dry
Round	Beef Round Steak	Dry / Moist
	Beef Round Steak Boneless	Dry / Moist
	Beef Round Rump Roast Boneless	Dry / Moist
	Beef Round Heel of Round	Moist
	Beef Round Top Round Steak	Dry
	Beef Round Top Round Roast	Dry
	Beef Cubed Steak	Dry / Moist
	Beef Round Bottom Round Roast	Dry / Moist
	Beef Round Bottom Round Steak	Dry / Moist
	Beef Round Eye Round Roast	Dry / Moist
	Beef Round Eye Round Steak	Dry / Moist
	Beef Round Tip Roast	Dry / Moist
	Beef Round Tip Steak	Dry
	Beef Round Tip Steak Cap Off	Dry
	Beef Round Tip Roast Cap Off	Dry / Moist
Various	Beef for Stew	Moist
	Ground Beef	Dry / Moist

Pork

Primal	Retail Name	Cookery
Shoulder	Pork Shoulder Arm Picnic	Dry
	Pork Shoulder Arm Roast	Dry
	Pork Shoulder Arm Steak	Dry / Moist
	Smoked Pork Shoulder Picnic Whole	Dry / Moist
	Smoked Pork Hock	Moist
	Pork Shoulder Blade Boston Roast	Dry
	Pork Shoulder Blade Steak	Dry / Moist
	Pork Hock	Moist
	Loin	Pork Loin Blade Roast
Pork Loin Blade Chops		Dry / Moist
Pork Loin Country Style Ribs		Dry / Moist
Pork Loin Back Ribs		Dry / Moist
Pork Loin Center Rib Roast		Dry
Pork Loin Rib Chops		Dry / Moist
Pork Loin Center Loin Roast		Dry
Pork Loin Top Loin Chops		Dry / Moist
Pork Loin Top Loin Chops Boneless		Dry / Moist
Pork Loin Butterfly Chops		Dry / Moist
Pork Loin Chops		Dry / Moist
Pork Loin Sirloin Roast		Dry
Pork Loin Sirloin Chops		Dry / Moist
Pork Loin Sirloin Cutlets		Dry / Moist
Pork Loin Tenderloin Whole		Dry / Moist

	Smoked Pork Loin Canadian Style Bacon	Dry
	Smoked Pork Loin Chop	Dry
	Smoked Pork Loin Rib Chop	Dry
Side	Fresh Side Pork	Moist
	Fresh Side Pork Sliced	Dry / Moist
	Slab Bacon	Dry
	Sliced Bacon	Dry
Spareribs	Pork Spareribs	Dry / Moist
Ham	Pork Fresh Ham Whole	Dry
	Pork Fresh Ham Rump Portion	Dry
	Pork Fresh Ham Center Roast	Dry
	Pork Fresh Ham Center Slice	Dry / Moist
	Pork Fresh Ham Shank Portion	Dry / Moist
	Smoked Ham Whole	Dry
	Smoked Ham Whole Boneless	Dry
	Smoked Ham Shank Portion	Dry
	Smoked Ham Rump Portion	Dry
	Smoked Ham Center Roast	Dry
	Smoked Ham Center Slice	Dry
	Smoked Ham Center Slice Boneless	Dry
Jowl	Smoked Pork Jowl	Moist
Various	Pork Cubed Steak	Dry / Moist
	Sausage	Dry / Moist

Lamb

Primal	Retail Name	Cookery
Shoulder	Lamb Shoulder Square Cut Whole	Dry
	Lamb Shoulder Roast Boneless	Dry
	Lamb Shoulder Blade Chops	Dry / Moist
	Lamb Shoulder Arm Chops	Dry / Moist
	Lamb Shoulder Neck Slices	Moist
Breast	Lamb Breast	Dry / Moist
	Lamb Breast Riblets	Moist
Shank	Lamb Shank	Moist
Rib	Lamb Rib Roast	Dry
	Lamb Rib Chops	Dry
Loin	Lamb Loin Roast	Dry
	Lamb Loin Chops	Dry
	Lamb Loin Double Chops	Dry
Leg	Lamb Leg Sirloin Chops	Dry
	Lamb Leg Sirloin Half	Dry
	Lamb Leg Center Slice	Dry
	Lamb Leg French Style Roast	Dry
	Lamb Leg American Style Roast	Dry

Variety Meats

Primal Variety	Retail name	Cookery
	Brains	Dry / Moist
	Heart	Dry / Moist
	Kidney	Dry / Moist
	Liver	Dry / Moist
	Sweetbreads (Thymus)	Dry / Moist
	Tongue	Dry / Moist

FFA Meat Cut Identification List

Beef

Primal	Retail Name
Brisket	Beef Brisket Whole Boneless
	Beef Brisket Corned
	Beef Brisket Flat Half Boneless
	Beef Brisket Point Half Boneless
Chuck	Beef Chuck Arm Roast
	Beef Chuck Arm Pot Roast Boneless
	Beef Chuck Arm Steak
	Beef Chuck Arm Steak Boneless
	Beef Chuck Blade Roast
	Beef Chuck Blade Steak
	Beef Chuck Eye Roast Boneless
	Beef Chuck Mock Tender Roast
	Beef Chuck Mock Tender Steak
	Beef Chuck 7-Bone Roast
	Beef Chuck 7-Bone Steak
	Beef Chuck Top Blade Steak Boneless
	Flank
Loin	Beef Loin Porterhouse Steak
	Beef Loin Sirloin Steak
	Beef Loin Sirloin Steak Boneless
	Beef Loin T Bone Steak
	Beef Loin Tenderloin Roast Whole
	Beef Loin Tenderloin Steak
	Beef Loin Top Loin Steak
	Beef Loin Top Loin Steak Boneless
	Beef Loin Top Sirloin Steak Boneless
Plate	Beef Plate Short Ribs
	Beef Plate Skirt Steak Boneless
Rib	Beef Rib Eye Roast
	Beef Rib Eye Steak
	Beef Rib Large End Roast
	Beef Rib Small End Roast
	Beef Rib Small End Steak
	Beef Rib Small End Steak Boneless

Round	Beef Round Bottom Round Roast Boneless Beef Round Rump Roast Boneless Beef Round Bottom Round Steak Beef Round Eye Round Roast Beef Round Eye Round Steak Beef Round Heel of Round Beef Round Steak Beef Round Steak Boneless Beef Round Tip Roast Beef Round Tip Roast Cap Off Beef Round Tip Steak Beef Round Tip Steak Cap Off Beef Round Top Round Steak Beef Round Top Round Roast
Shank	Beef Shank Cross Cuts Beef Shank Cross Cuts Boneless
Various	Beef for Stew Cube Steak Ground Beef
Primal Ham / Leg	<p style="text-align: center;"><u>Pork</u></p> <p style="text-align: center;">Retail Name</p> Pork Fresh Ham Center Slice Pork Fresh Ham Rump Portion Pork Fresh Ham Shank Portion Smoked Ham Center Slice Smoked Ham Whole Boneless Smoked Ham Whole Smoked Ham Rump Portion Smoked Ham Shank Portion
Loin	Pork Loin Back Ribs Pork Loin Blade Chop Pork Loin Blade Chop Boneless Pork Loin Blade Roast Pork Loin Butterfly Chops Pork Loin Center Loin Roast Pork Loin Center Rib Roast Pork Loin Country Style Ribs Pork Loin Loin Chops Pork Loin Rib Chops Pork Loin Sirloin Chops Pork Loin Sirloin Cutlets Pork Loin Sirloin Roast Pork Loin Tenderloin Roast Whole Pork Loin Top Loin Chops Pork Loin Top Loin Chops Boneless

	Pork Top Loin Roast Boneless Pork Top Loin Double Roast Boneless Smoked Pork Loin Back Ribs Smoked Pork Loin Canadian Style Bacon Smoked Pork Loin Chop Smoked Pork Loin Rib Chop
Shoulder	Pork Shoulder Arm Picnic Pork Shoulder Arm Roast Pork Shoulder Arm Steak Pork Shoulder Blade Boston Roast Pork Shoulder Blade Steak Smoked Pork Shoulder Picnic Whole
Side "Belly"	Pork Side Fresh Side Pork Side Slab Bacon Pork Side Sliced Bacon
Spareribs	Pork Spareribs Spareribs Smoked Pork Spareribs Spareribs
Various	Cube Steak Ground Pork Pork Hocks Sausage Sausage Links Smoked Pork Hocks

Lamb

Primal	Retail Name
Breast	Lamb Breast Lamb Breast Riblets
Leg	Lamb Leg American Style Roast Lamb Leg Center Slice Lamb Leg French Style Roast Lamb Leg Sirloin Chops Lamb Leg Sirloin Half Lamb Shank Portion
Loin	Lamb Loin Double Chops Lamb Loin Chops Lamb Loin Roast
Rib	Lamb Rib Chop Lamb Rib Chop Frenched Lamb Rib Roast
Shoulder	Lamb Shoulder Arm Chops Lamb Shoulder Blade Chops Lamb Shoulder Neck Slices Lamb Shoulder Roast Boneless

Variety Meats

Variety

Heart

Kidney

Liver

Tongue

Oxtail
Sweetbread
Tripe

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