FFA Meat Judging CDE
Contest

- Retail ID
- Beef Grading
- Pork & Beef Carcass Classes
- Pork & Beef Wholesale Cut Classes
- Retail Cut Classes
- Test
- Team Formulation Problem
Purpose

- To educate and expose you, the consumer, to factors that will enable you to **identify cuts of meat** at the retail store.
- Knowing cuts of meat and the area of the carcass in which the cuts came from will allow you to better prepare the meat for a more enjoyable meal.
• Species found at the retail market (beef, pork, lamb) are physiologically the same. *Bones and muscles are basically the same* with minor exceptions.

• Example: Thoracic Vertebrae
  • Porcine 14
  • Bovine 13
Fabrication Process...

SIDE

↓

QUARTERS

↓

PRIMALS (wholesale cuts)

↓

SUBPRIMALS

↓

RETAIL CUTS
Identification Tips

1. Primary factor for identification is **BONE**
2. Secondary factor is **MUSCLE**
   Muscle/Bone shape and size relationship

**Bone:**
1. Most reliable key for identification
2. Retail cut names are often derived from bones
3. Used as a guide to anatomical location
### Identification Tips

Each of the seven categories have an associated bone.

<table>
<thead>
<tr>
<th>Category</th>
<th>Illustration</th>
<th>Associated Bone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Arm Cuts</td>
<td></td>
<td>Arm Bone</td>
</tr>
<tr>
<td>Shoulder Blade Cuts</td>
<td></td>
<td>Blade Bone (near neck)</td>
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<td></td>
<td></td>
<td>Blade Bone (center cuts)</td>
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<tr>
<td></td>
<td></td>
<td>Blade Bone (near rib)</td>
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<tr>
<td>Rib Cuts</td>
<td></td>
<td>Back Bone and Rib Bone</td>
</tr>
<tr>
<td>Short Loin Cuts</td>
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<td>Back Bone (T-Shape) T-Bone</td>
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<tr>
<td>Hip (Sirloin) Cuts</td>
<td></td>
<td>Pin Bone (near Short Loin)</td>
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<td></td>
<td></td>
<td>Flat Bone (Center cuts)</td>
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<td></td>
<td></td>
<td>Wedge Bone† (near round)</td>
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<tr>
<td>Leg or Round Cuts</td>
<td></td>
<td>Leg or Round Bone</td>
</tr>
<tr>
<td>Breast, or Brisket Cuts</td>
<td></td>
<td>Breast and Rib Bones</td>
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</tbody>
</table>

†On one side of a sirloin steak, this bone may be wedge shaped while on the other side the same bone may be round.

Picture courtesy of the American Meat Science Association
Identification Tips

Muscle:

1. **Number of muscles in cut**
2. **Texture of Cut**
3. **Size:** Beef > Pork > Lamb

Distinguishing Between Species:

Muscle Color:

- **Beef** ---- Bright Cherry Red
- **Lamb** ----- Reddish Pink
Beef Round Steak
Beef Chuck 7-Bone
Beef Loin T-Bone Steak
Basic Terminology

• **Cutability**: Proportion of red meat : fat + bone
  - Carcass Weight
  - Fatness
  - Muscling
Basic Terminology

- Quality - Prediction of eating quality
  - Marbling
  - Lean Color
  - Lean Texture
  - Lean Firmness
USDA Quality and Yield Grades

- 90% of the cattle slaughtered in the US receive a USDA grade.
- Dual grading system (quality and yield)
- USDA grading of beef is optional
- Both quality grades and yield grades are assigned to carcasses by USDA Graders who are independent of the packing plants.
USDA Quality Grade

- What is meant by quality grade:
  - term used to describe the characteristics of the lean that indicate palatability
  - describes factors that consumers associate with tenderness, juiciness, flavor, and overall palatability
Quality Grade Factors

- **Maturity:**
  - Subjective observation of ossification of the vertebral columns, color of lean, and texture of lean

- **Marbling**
  - Subjective evaluation of the amount of intramuscular fat dispersed within the ribeye
Beef Quality Grades-Maturity

• Maturity of a carcass is determined by subjective evaluation of the ossification (turning to bone) of the vertebral column from the sacral vertebra to the thoracic vertebra.

• Particular attention is paid to the cartilagineous tips, or buttons, found on the dorsal aspect of each vertebral spinous process.
Spinous process of the Thoracic vertebra

“Buttons”
Beef Quality Grades - Lean Maturity

Young
A^00

Intermediate
B^00

Mature
C^00
D^00
E^00
Various Maturity of Beef Cattle
USDA Quality-Marbling

- Marbling, or intramuscular fat flecks within the exposed ribeye area
- Usually the major factor determining quality grade

Flecks of fat within the encircled area
Overall USDA Quality Grade

- Modest Marbling
- A-Maturity
- Average Choice
USDA Yield Grade

• What is meant by USDA Yield Grade:
  – Yield grades were developed to estimate the “Percent Boneless Closely Trimmed Rib, Loin, Chuck, and Round.”

• This equation uses the hot carcass weight, ribeye area, back fat thickness, and percentage of Kidney, Pelvic, and Heart Fat (KPH).
USDA Yield Grades

- Predicting Carcass Cutability
  - Hot Carcass Weight (lbs)
  - Adjusted Fat Thickness (in.)
  - Ribeye Area (sq. in.)
  - % Kidney Pelvic and Heart Fat
USDA Yield Grades
Percent Kidney, Pelvic, and Heart Fat (KPH)

Pelvic Fat

Kidney Fat

Heart Fat
12\textsuperscript{th} Rib Back Fat Thickness

\( \frac{3}{4} \) the length of the ribeye
12th Rib Ribeye Area

Each Square is a tenth of an inch

8 in²
Beef Judging

- Beef Carcasses
- Middle Meats (Ribs, Short Loins, Full Loins)
- Rounds
Beef Carcasses - emphasis

- Generally, ranked on value
  - Quality grade drives initial value
  - Value either stays consistent or not due to differences in cutability
Beef Carcasses - emphasis

- Judges should recognize optimum levels of quality and cutability and understand how to balance traits
- Normally prefer Choice YG 3.5 or better carcasses over Select YG 1’s or 2’s
- However, Select carcasses will place over Choice is the choice carcass is YG 3.6 or higher
Beef Carcass-common decisions

- **Common class:**
  1 = Select YG 1 or 2
  1 = Choice YG 4
  2 = Choice YG 1’s or 2’s

- Select carcass places over YG 4 in the bottom pair due to superior cutability.

- Top pair Choice carcasses are sorted based on subtle differences in cutability and or quality.
Beef Carcass-common decisions

- Strict cutability class containing all Choice or all Select
- Quality class usually contains pairs similar in cutability but different in quality
- Additional scenarios
  - Trimness differences with similar muscling
  - Muscling differences with similar trimness
  - Fat, muscular carcass versus trim, thinly muscled carcass
Terminology

- Muscling
  - Ribeye
  - Round
  - Sirloin
  - Rib
  - Chuck

- Trimness
  - Ribeye
  - Round
  - Sirloin
  - Short loin
  - Loin edge
  - Rib
  - Chuck

- Quality
  - Marbling, color
  - Texture, firmness
  - KPH
  - Cod/udder
Beef Rounds - emphasis

- Placed on trimness first then muscling (Cutability)
- Quality does not play a major role in ranking
  - Quality may be used in questions
Beef Rounds-common situations

- Similar in trimness and placed on muscling
- Similar in muscling, placed on trimness
- A combination of trimness and muscling
Terminology

- **Muscling**
  - Rump face
  - Knuckle face
  - Cushion
  - Center section
  - Heel
  - Shank

- **Trimness**
  - Round face
  - Cushion
  - Center section
  - Heel
  - Cod
  - Flank edge
  - Pelvic fat

- **Quality**
  - Marbling, color,
    Texture, firmness
Beef Ribs, Short Loins and Loins emphasis

- Generally, placed on value
- However, no lower palatability endmeats (Rounds or Chucks)
- Quality is very important and is emphasized heavily
Beef Middle Meats—common situations

- A common class
  1 = Select YG 1 or 2
  1 = Choice YG 4
  2 = Choice YG 1 or 2’s

- Most instances the Select places over the Choice YG 4 in the bottom pair and the top pair is sorted on subtle differences in cutability or quality
Beef Middle Meats—common situations

- Strict cutability class containing all Choice or all Select
- Quality class usually contains pairs similar in cutability but different in quality
- Additional scenarios
  - Trimness differences with similar muscling
  - Muscling differences with similar trimness
  - Fat, muscular carcass versus trim, thinly muscled carcass
Pork Judging

- Pork carcasses (un-ribbed and ribbed)
- Fresh Hams
- Fresh Center Loins
Pork Carcass Emphasis

- Unribbed Carcasses- Placed on cutability
- Greater emphasis on trimness than muscling
- Begin by ranking carcasses on overall trimness
- Examine each pair for differences in muscling.
  - A full degree of superior muscling compensates for 0.25 fat. Inferior muscling is synonymous with adding 0.25
- “Thin” muscle not eligible for US#1
Pork Carcass- Ribbed

- Utilize fat depth and loin eye size in ribbed carcasses to assess percent muscle.
- Low quality (Pale, Soft, Exudative) pork carcasses should be severely penalized.
Common Situations for Pork Carcasses

- **Strictly a cutability class**
  - Trim, muscular ham
  - Trim, light muscle ham
  - Fat, muscular ham
  - Fat, light muscle ham
  - Any combination of the above
Pork Carcass Terminology

- **Trimness**
  - First rib, last rib, last lumbar vertebrae, loin edge, elbow pocket, collar, belly pocket, navel edge, sternum

- **Muscling**
  - Ham, sirloin, loin, shoulder
Fresh Hams

- Cutability is the main factor
- Trimness is generally the most influential factor
- Assess quality relative to acceptability for further processing
Common Situations for Hams

- **Strictly a cutability class**
  - Trim, muscular ham
  - Trim, light muscle ham
  - Fat, muscular ham
  - Fat, light muscle ham
  - Any combination of the above
Common Situations for Hams

- Similar in trimness, placed on muscling
- Similar in muscling, placed on trimness
- Quality problems
  - Pale, soft and exudative
  - Dark, firm and dry
Fresh Ham Terminology

- **Trimness**
  - Beneath the butt face, over the rump region, forecushion, collar (center section), cushion, seam

- **Muscling**
  - Butt face, cushion, center-section, forecushion

- **Quality**
  - Lean color, marbling, firmness, muscle separation, exudate
Fresh Center Loins

- **Emphasis**
  - Stronger quality emphasis than hams
  - If all acceptable in quality, then cutability still primary importance
  - Quality problems more severely discriminated against
  - Prototype PSE has no processing value
Fresh Center Loin Situations

- Quality problems
  - PSE
  - DFD
- Strictly a cutability class
  - Trim, muscular loin
  - Trim, light muscled loin
  - Fat, muscular loin
  - Fat, light muscled loin
  - Any combination of the above
Fresh Center Loin Situations

- Similar in trimness, placed on muscling
- Similar in muscling, placed on trimness
- Similar in trimness and muscling, placed on quality
Center Loin Terminology

- **Trimness**
  - Blade end, Lower rib, seam fat, back, sirloin end, tail region, seam fat

- **Muscling**
  - Blade end, loin eye, back, sirloin end, tenderloin

- **Quality**
  - Lean color, marbling, firmness, texture, exudation
Retail Cut Judging

- Must know what the cut is and what it is used for (Scenario?)
- Any cut from the loin, rib or rack
  - Quality more important
  - Outliers for cutability
- Any other cut
  - Primarily cutability
Retail Cut Judging

- Retail Purchase Intent
  - COLOR!!!
  - Packaging Attractiveness