The USDA beef grading system sets standards of quality and cutability (yield of edible meat) used in buying and selling of beef. As a voluntary program administered by the United States Department of Agriculture (USDA), the cost of the quality and yield grading program is borne by meat packers. Grading provides consumers an assurance that the product purchased conforms to an expected standard of palatability.

Two grading systems are used: Quality Grading and Yield Grading. This learning module explores the history, procedures, and technologies involved in USDA beef grading. A grading simulation accompanies the learning module to allow the viewer to participate in a virtual grading activity.

The menu button at the top left of all screens serves as a digital Table of Contents. The viewer can move within the module by clicking on any specific chapter - History, Pregrading, Quality Grading, Yield Grading, and Stamping - at any time.

**HISTORY**
By clicking on the history timeline the viewer can learn about the significant milestones in the development of USDA Quality and Yield Grading.

- **1926**: The USDA Secretary of Agriculture instituted the official U.S. Standards for Market Classes and Grades of Carcass Beef.

**PREGRADING**
Shortly after slaughter, several steps are taken to enhance the eating quality of the beef and to prepare the carcass for grading. The module takes the viewer through these steps: weighing the carcass, applying electrical stimulation, cooling the carcass, and preparing the ribeye for evaluation by the USDA grader.

- **Hot Carcass Weight**
- **Electrical Stimulation**
- **Cooling**
- **Exposing the Rib**

**QUALITY GRADING**
Quality grading predicts the overall eating experience of the meat when cooked. It’s based on three factors of palatability: tenderness, juiciness, and flavor. The higher the quality grade, the more likely the cut of meat will be tender and juicy and have the buttery, beef-fat flavor that consumers prefer.

There are eight USDA quality grades: Prime, Choice, Select, Standard, Commercial, Utility, Cutter, and Canner.

The module takes the viewer through a determination of the factors that affect quality grade including sex class, maturity, collagen cross linkage, maturity groups, lean muscle color and texture, and marbling.

**Sex Class**
- **Steer**
- **Bullock**
- **Cow**
- **Heifer**

**Maturity**
- **Color and texture**
- **Ossification**

**Collagen Cross Linkage**
- **more cross linkage - tougher**
- **less cross linkage - more tender**

The USDA Quality Grade is determined by factoring the maturity of the carcass with the amount of marbling within the ribeye.

**YIELD GRADING**

The purpose of yield grading is to predict the combined yield of boneless, closely trimmed retail cuts (BCTRC) expected to be derived from the four major primals: round, loin, rib, and chuck. With each yield grade a percentage of BCTRC is associated. A lower yield grade number means the carcass has a higher BCTRC percentage. The module takes the viewer through the four factors that affect the yield grade.

**STAMPING**

Once a carcass has been evaluated, the USDA grader stamps the carcass with the quality grade and yield grade.

**GRADING SIMULATION**

The Grading Simulation allows the viewer to apply his/her knowledge to an interactive grading exercise.

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**USDA Yield Grades**

<table>
<thead>
<tr>
<th>Grade</th>
<th>BCTRC Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;52.3</td>
</tr>
<tr>
<td>2</td>
<td>52.3 - 50.0</td>
</tr>
<tr>
<td>3</td>
<td>50.0 - 47.7</td>
</tr>
<tr>
<td>4</td>
<td>47.7 - 45.4</td>
</tr>
<tr>
<td>5</td>
<td>&lt; 45.4</td>
</tr>
</tbody>
</table>

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