

# RUTGERS COOPERATIVE EXTENSION

NEW JERSEY AGRICULTURAL EXPERIMENT STATION

## Beef Carcass Terminology and Explanations

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When developing a beef marketing strategy, it is important to understand the terms that are most often used in describing the product's quality and sales features. Terminology is an integral component of beef marketing that can be an effective tool in marketing and analyzing the product. Universal evaluation terms give the beef industry a constant that allows consistent comparison and pricing relationships. Producers have a methodology that can assist in evaluating the percentage of lean meat to fat ratios, total expected weight yield, meat quality grades or levels, marbling, and carcass age.

In marketing beef as component cuts of meat, the carcass evaluation terms are all determined by specific carcass measurements, before the carcass is broken down into specific cuts. Each item gives the producer insight into many performance-related management practices that were or were not followed in the production of any particular beef animal.

1. **Hanging weight:** the weight of the beef carcass after the animal has been slaughtered. This weight is a measurement of the actual carcass. The hide, head, feet, and offal have been removed, leaving only the skeletal frame and muscle cover. The weight will be listed as either "hot weight," which is the weight taken when the carcass is still warm, or as "chilled weight," the weight after the carcass has been chilled to 36° Fahrenheit. The chilled weight is generally at least 2 percent less than the hot weight, due to the shrinkage of the carcass. Higher conditioned animals will have more shrinkage due to total fat deposits.

2. **Dressing percentage:** the dressing percentage figure is computed by taking an animal's carcass weight and dividing by its live weight. The figure represents the live animal's subjective carcass desirability. Although it is no longer used, by large packers,

one should note that the higher the degree of fat content, both as external covering and dispersed through the carcass, the higher the dressing percentage. Dressing percentage alone should not be the sole factor in determining carcass quality.

3. **Yield grade:** the yield grade figure is a composite numerical value placed upon a carcass, based on the specific carcass measurements made by the grader. The yield grade scores indicate the carcass quality and its potential meat yield, compared to industry standards.

Actual measurements are based on the fat covering at the division of the 12th and 13th ribs; on the side of the rib-eye at the base of the 12th/13th rib division; on the carcass weight, and on the fat percentage around the kidney, pelvic, and heart. The composite numerical value is computed by placing all the computations in a formula to calculate the final yield grade.

Yield grades are valued from 1 to 5, with 1 exhibiting the larger percentage of yield (meat versus fat and bone content) and 5 representing a wastier, smaller percentage of meat yield. Carcasses having a 4 or 5 yield grade generally have excess fat covering and deposits throughout the carcass, a condition that ultimately produces excessive fat trimmings and carcass weight loss. Carcasses ranging from 1 to 3 yield grades are the most accepted and the most desirable.

Most commercial purveyors use the yield/grade figure as the basis of their purchases and sales, based on the figures found in the trade or industry "yellow sheet." The "yellow sheet" is an industrywide publication that establishes and compares prices on yield-grade and quality-grade data.

4. **Quality grade:** the quality grade is a descriptive grade given to a carcass upon initial visual observation

by the grader. It is a score based upon the amount of marbling within the meat and the age of the animal as determined by the amount of ossification of the bone structure. Mature cows and bulls could never grade Choice or better regardless of the amount of marbling in the meat. Quality grades are listed by letter grades based upon the following standards:

|              |               |
|--------------|---------------|
| Prime = Prm  | Choice = Ch   |
| Select = Sel | Standard = St |

Within the various quality grades there are further breakdowns or sublevels indicated by either a plus or a minus. Plus (+) represents a higher level of quality, while the minus (-) represents a low level of quality within the various letter grades. Recently there has been some effort to qualify the Choice and the Select grades even further with an A or B classification, which would allow higher yield grade carcasses (1's or 2's) to move into the higher or lower letter grades.

Most producers generally want their cattle to fall within the Choice Plus (Ch +) to Select (Sel) or Select Plus (Sel +) ranges and have a 1 to 3 yield grade.

5. Rib eye: the rib eye measurement is an actual measurement done by the grader on the exposed rib muscle located at the break-point of the carcass between the 12th and 13th ribs. The measurement is taken on the exposed rib section located on the fore-quarter.

The measurement is taken by using a grid design consisting of quarter-inch squares and placing the grid over the rib eye and counting the actual number of squares. The grid is designed with preset square inches, so that a grader need to count only the outside or extra quarter-inch squares to determine the overall square inches of rib eye for that carcass. Generally, the rib eye should measure 1 square inch for every 100 pounds live weight of the animal, i.e., a 1,300-pound live animal should have at least a 13-square inch rib eye. Carcasses measuring below the weight/square inch standard usually have a poorer yield grade (moving toward 5), while carcasses demonstrating a larger rib eye generally have a better yield grade figure (moving toward 1).

6. Back fat: the back fat measurement is an actual figure calibrated in decimals as tenths of inches. The back fat measurement is taken at the same time the rib

eye is calculated and is measured with a ruler approximately at the outer midpoint of the carcass rib eye. The measurement is used in calibrating the final yield grade. The thicker the fat covering the greater the measurement, and subsequently the poorer the yield grade (moving toward 5). The acceptable back fat measurement ranges from 0.1 to 0.4 inches on a choice-yield grade 2 to 3 carcass.

Carcasses with the back fat trimmed to 0.3 inches are called partially trimmed and carcasses trimmed to 0.1 or less are called wholly trimmed. The trimming is done after the yield grade and carcass data are calculated, to maintain an accurate carcass evaluation.

7. Marbling: a grade for marbling is calibrated by the grader based upon industry standards by using actual rib eye photographs for comparison. Graders use the photographs to compare the carcass for marbling (fat) content in the rib eye, the muscle texture and color, and the overall visual quality of the carcass in relation to the bone to muscle cover. Grades for marbling are given as word grades that are abbreviated for ease of use.

|                             |                                |
|-----------------------------|--------------------------------|
| Abundant <b>AB</b>          | Moderately Abundant <b>MA</b>  |
| Slightly Abundant <b>SA</b> | Moderate <b>MO</b>             |
| Modest <b>M</b>             | Small <b>SM</b>                |
| Slight <b>SL</b>            | Traces <b>T</b>                |
| Devoid <b>DV</b>            | Practically Devoid <b>PRDV</b> |

On the graders sheet, one may also find numerical grades next to the marbling letter grade; these indicate the percentage of marbling exhibited by the carcass compared to the industry standard, i.e., -10, +15, etc. These letter and numerical grades are all used to tabulate the final yield grade by the grader.

Developing an understanding of the grading terminology and how the grades are calibrated will help many growers produce a better product and increase sales and income.

## References

1. Henning, William R., "Marketing Meat Animals Directly to Consumers," Penn State Special Circular 335.
2. Mickel, Robert C., "4-H Beef Carcass Evaluation Program for New Jersey," Carcass Evaluation Project, 1989 to 1993.