

The Value of a Beef Carcass

Unlike years ago, a carcass is not just sold by the pound. There are a lot of differences that exist between carcasses that have value to a consumer, and market channels have ways of assigning value based on those differences. This station requires contestants to demonstrate their abilities to determine the values of those carcasses.

Carcass value is based on at least two different criteria - yield and quality grades. Yield grades depict the amount of boneless, closely trimmed retail products that can be produced from carcasses. Quality grades depict the amount of eating satisfaction that consumers should expect from the products of carcasses.

To determine yield grade, one must measure the fat depth and ribeye area (at the 12th and 13th rib split of a carcass), the percent of kidney, pelvic, and heart fat (the amount of fat inside the body cavity of a carcass), and the weight of the carcass. Quality is determined by the amount of marbling that exists in the ribeye, as well as the maturity of the carcass.

Contestants are given opportunities to show that they know how to implement values and calculate yield and quality grades for carcasses, as well as values of carcasses per one hundred weight (CWT) and total carcass values. Students should know the degrees of marbling (values provided) necessary to achieve final quality grades, assuming that all marbling calls are derived from "A" maturity carcasses. Students must also be able to measure fat thicknesses, measure ribeye areas (sq. in.), and consider hot carcass weights (values provided) and KPH% (values provided) to calculate final yield grades.

Contestants will be scored on the accuracy of their calculations of final yield and quality grades, as well as carcass prices. The formula for determining the yield grades for the carcasses is noted below. Students will not need to memorize this formula, as it will be given to them on contest day. Using the values calculated on the three "carcasses", contestants will be asked calculate the value per one hundred weight (CWT) and the total value of each of these three "carcasses" using a value-based pricing grid (provided) where adjustments are made to a base carcass price per CWT.

For example, let's say that a carcass is estimated to have a yield grade of 2.2 and a quality grade of Low Prime. A value-based grid indicates that a yield grade 3, Low Choice carcass is worth \$140 per cwt (meaning per one hundred pounds). The grid also shows that a yield grade 2 Low Prime carcass is worth \$15.00 more than this. Thus, this carcass is worth \$155.00 per cwt. If the carcass weighs 800 pounds, then the carcass is worth a total value of \$1,240.

What's a Yield Grade?

USDA yield grades are a reflection of the cutability of the carcass that will be produced from a beef animal. USDA yield grades are reported usually as 1,2,3,4, or 5, and these yield grades facilitate scoring and communication in the marketing of cattle and/or carcasses. USDA yield grades are calculated by using the following formula:

$$YG = 2.50 + (2.50 \times \text{Adjusted Fat Thickness, in.}) + (0.20 \times \text{Kidney, Pelvic and Heart Fat \%}) + (0.0038 \times \text{Hot Carcass Weight, lbs.}) - (0.32 \times \text{Ribeye Area, sq. in.})$$
Minimum Percent Retail Yield for USDA Yield Grades of Beef Cattle

- >52.3% = YG 1
- 52.3-50.0% = YG2
- 50.0-47.7% = YG3
- 47.7-45.4 = YG4
- <45.4% = YG 5