
The following is a description for how to successfully compete in a meat animal carcass evaluation contest. The American Gelbvieh Junior Association has a carcass evaluation contest each year at their Junior Classic national show. Using the photos and carcass data from two of the animals used in the 2010 contest at the Lone Star Classic, we have developed this carcass evaluation educational tool. Turn to page 41 for photos and descriptions of the live animals. Then turn to page 48 for photos of the actual carcasses and ribeyes, and the harvest data from these two animals.

Thank you goes to Mark Goes and Justin Benz from Southeast Community College Beatrice, Beatrice, Neb., for writing this guide. Electronic copies of this guide are available by contacting the American Gelbvieh Association at 303-465-2333 or info@gelbvieh.org.

The purpose of a meat animal/carcass contest is to practice skills of predicting end point value of a live animal. End value of a meat animal is based on the two basic criteria of quantity and quality.

Quantity is reflected as the percent of the live animal that will end up as boneless, closely trimmed of fat, retail cuts from the round, loin, rib and chuck of the animal and is referred to as the Yield Grade. Yield Grades of beef carcasses range from 1-5 with 1 being the most desirable and 5 the least desirable.

Quality is reflected as an indicator of the tenderness, juiciness and flavor of the meat from the animal. The indicator of juiciness and flavor is the degree of intramuscular fat (IMF) or marbling of the animal’s meat. The primary indicator of tenderness is the maturity of the animal or an indicator of its age. Younger animals tend to have more tender meat than older animals. The combination of marbling and maturity of a beef carcass is used to assign a Quality Grade ranging from Prime (the best) to Choice, to Select, to Standard (less desirable).

There are other Quality Grades that are assigned to animals that are more mature and likely have undesirable meat for the mainstream retail cut market without added value through tenderizing, cooking, preserving etc.

When evaluating a beef animal for carcass characteristics with regard to Quality grade, we must consider the amount of IMF within the muscle. Unfortunately, IMF is the last fat to be deposited within the animal after they have developed kidney, pelvic, and heart fat found inside the body cavity, seam fat between the muscles, and back fat between the hide. The only type of fat that we can “see” on a live animal that can indicate how much marbling it may have is the back fat. An animal develops its back fat low on its body at the front first and continues the development of its cover from front to back, bottom to top until we consider it “finished.” So we focus on points of the animal that will show us the degree of marbling. When evaluating a beef animal for carcass characteristics with regard to Quality grade, we must consider the ratio of muscle, bone, and fat inside the animal. Yield Grade 1 animals tend to have more muscle, less fat, and perhaps finer bone while Yield Grade 5 animals tend to have less muscle, more fat, and could have more bone in relation to their muscle. So after we determine how heavy boned the animal is and predict how much back fat thickness it has at the 12th and 13th rib, we focus on points of the animal that will show us the degree of muscle it has such as the expression of muscle in the forearm and shoulder, the width, depth and length of its top, and the thickness, width and depth of muscle in its round. We seek animals that develop a high degree of muscle with less outside fat. Hence another paradox for our industry as we desire more muscle and less back fat, yet we need the back fat as an indicator of the animals degree of marbling.

After all this, one must understand that we are predicting what is under the hide. It requires experience to determine the differences of muscle, bone, fat, hide thickness, and fill on an animal. Everyone gets “fooled” some time when evaluating animals for carcass composition. But the diligent student of live evaluation can develop respectable skills with reliability and acceptable accuracy of his or her estimates.
**Live Evaluation of Steer #1**

As we evaluate steer #1 we see expression of muscle under a tight hide suspended on a lighter bone. Ripples of muscle are evident with little fat deposited in the low spots giving the animal somewhat the appearance of a body builder. The side view allows us to see the expression of muscle in the lower shoulder and forearm with the lower round and stifle muscles quite evident. The steer appears to have little waste in the lower portion of his body with a shallower middle and cleaner elbow pocket. From behind, the twist and cod area of the steer are relatively devoid of fat with little or no fat evident over the pins. The steer stands wide from hock to hock and has a great deal of muscle dimension to the round and top butt. The amount and expression of muscle indicate a larger than average ribeye and relatively thin back fat for a steer of this weight. We certainly would expect a very desirable Yield Grade based on the lighter bone, tighter hide, shallower middle, and absence of fat while still harvesting an abundance of red meat from the animal. Unfortunately for this steer, the absence of outside fat and the youthful appearance of the steer would indicate a poor chance of a desirable Quality Grade.

**Steer #2**

As we evaluate steer #2 we don’t see as much visible muscle as the steer has developed a great deal of outside fat. Low spots on the animal have been “filled in” with fat giving the animal a smoother and more even appearance. The side view allows us to see smoothness over the ribs with more waste to the lower middle of the body. Fat is evident from the brisket to the cod as well as layers of fat over the top and side of the steer. However, we can still detect expression of muscle in the shoulder with good side dimension and some muscle expression in the lower round and stifle. The rear view allows us to see excessive fat in the cod and over the pins yet the animal stands wide with adequate dimension from stifle to stifle and a deep muscle pattern to the round. The amount and expression of muscle indicate an average ribeye covered with an excessive amount of back fat for a steer of this weight. We would expect a very desirable Quality Grade based on the fat cover but the degree of fat in relation to the average muscle would indicate a poor chance of a desirable Yield Grade.
Carcass Evaluation of Steer #1

The carcass from steer number one is in line with the live animal prediction. The absence of cover over the entire carcass gives a bluish color to the carcass. The KPH fat is a small amount for a carcass of this weight (1.5% of the carcass). The large amount of muscling that is now evident without the hide indicates more retail cuts (54.41% of the carcass) and a very desirable Yield Grade (YG 1.0). The cross section of the loin muscle between the 12th and 13th ribs, or ribeye shows it to be larger than average for a carcass of this weight (17.1 sq inches) with less thickness of back fat (.2 inch). Unfortunately, there is not enough marbling (slight) to reach a premium Quality Grade (only Select +). One must note however that to have this much marbling on a carcass with this much leanness and muscle gives merit to the animal.

Carcass Evaluation of Steer #2

The carcass from steer number two has an excessive amount of KPH (4% of the carcass), a thicker, fatter flank or belly wall, and has back fat that covers most of the lean. The average amount of muscling that is evident without the hide indicates less retail cuts (48.75%). The ribeye is average for a carcass of this weight (14.7 sq inches) with an excessive amount of back fat (.7 inch) that must be trimmed before retail. This adds up to a relatively poor Yield Grade (YG 3.4). Fortunately for the steer, there is enough marbling (small) to barely reach the Choice Quality Grade (Choice -) but it is disappointing for a steer to have this much fat and still not reach the premium upper two-thirds level of Choice or even Prime Quality Grade.