

PERFORMANCE REPORT

BEEF LOGIC

by Bob Long

Evaluating Cattle for Muscle

To produce beef is to produce muscle. No set of criteria for the evaluation of cattle for use as feeders, for immediate slaughter, or for breeding purposes can fail to include muscle.

The evaluation of cattle for muscle is based on exactly the same principle as that used for fatness. Look at a point on the skeleton where there is only muscle and since the shape of each bone in the skeleton is essentially identical in all cattle it is possible to measure the muscle at that point.



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For example, the shape of the forearm bone (between the knee and the elbow) is that of a cylinder or piece of pipe and is smooth, straight and practically uniform in circumference. Therefore, since there is never any fat deposited on the forearm it's obvious any change in width, thickness or bulge in the forearm region must be due to muscle. Also, muscles occur in the same proportion. If an

individual animal is heavily muscled over the forearm this animal is heavily muscled throughout the entire body.

The same procedure serves when examining the gaskin region (between the hock and the stifle). Here is another smooth round bone and since no fat is ever found in this region any change in shape is muscle. The forearm of a thinly muscled bull is thinner, straighter and flatter. Less bulge is seen in the muscles over the shoulder, in the stifle region and over the gaskin.

Also keep in mind that in live animals it is possible to see the muscles move as cattle walk. Distinction between fat and muscle can be made by remembering that fat hangs and drapes and shakes while muscle moves and bulges.

Another location where practically no fat is deposited is over the outside lower round. So, as you view cattle from the rear, a horizontal plane that would pass through the stifle joint should be the thickest place in the body. If this is not so, the cattle lack muscling or have heavy deposits of fat over the rump — or a combination of both.

Examination of the skeleton also reveals the foreleg is attached to the rest of the skeleton only by muscle. The amount of muscle development determines the distance between the foreleg bones and the rib cage, and consequently how far the front legs are held apart.

Likewise, the muscular development between the hind legs determines how far apart cattle stand as viewed from the rear. Therefore, heavily muscled cattle stand wide as viewed from either front or rear and thinly muscled cattle stand base narrow.

Fortunately, heavily muscled cattle are almost always trimmer and leaner than thinly muscled cattle. It is well to remember that heavily muscled cattle are leaner than they appear and light muscled cattle are fatter than they appear.

A word of caution — In the search for leaner carcasses with more muscle other factors which contribute to the efficiency of beef production must not be ignored. An ideal carcass with cutability and quality is not enough. It must have been produced

by a strain of cattle with reproductive efficiency, milking ability and longevity. Further, the carcass must have come from an animal that made rapid and efficient gains.

Breeding stock selection programs must consider every factor that affects the lower right hand corner of the profit and loss statement or true breed improvement will not result.

How can test station evaluation procedures for young bulls be enhanced to improve production efficiency?



Serving on our panel this month are Lisa Kriese, Extension animal scientist, and coordinator of bull test stations at Auburn University and Sally Northcutt Extension beef specialist at Oklahoma State University and Coordinator of the Oklahoma Beef Inc. bull test.

Kriese: Full feed central test stations are currently designed to maximize weight gains over a 112-day period. In many cases, the bull which gains the most weight is deemed the winner without regard to any type of efficiency measure.

A production efficiency measure would be an excellent tool for potential buyers to match efficiency with feed resources.

An adjusted feed efficiency value, which takes into consideration maintenance requirements, needs to be reported. Adjusted feed efficiency can be calculated on either individual or pens of bulls. This adjusted feed efficiency value is a good tool for producers and buyers trying to match efficiency and feed resources.

Still, for this efficiency measure to be used properly, educational materials or programs must be available.

Northcutt: Seedstock producers and commercial bull buyers continue to have increasing interest in the efficiency of gains in beef bulls. Determination of desirable genetics for efficient gain is an issue that needs to be addressed.

Central bull test stations should make every effort to measure individual feed efficiency on young bulls. Breeders could obtain valuable information for separating genetic differences in efficiency, that would otherwise be cost prohibitive in an on-farm setting. Results from the test station would serve as a supplement to a progressive on-farm performance program.

Future avenues to pursue may include live animal evaluation of body composition. Although the exact procedures may not be in place as of yet, the bull test station could be a future location to use live animal evaluation technology for optimizing the amount of muscle, fat and bone mass at a given weight.

WE WELCOME YOUR INPUT!

"What's Your Beef?" column serves as a forum for Angus breeders and industry experts to express their opinions on current issues and topics of breed improvement and performance programs.

If you'd like to respond to the question addressed above, or would like to address another topic, please contact the Angus Journal editorial office at 1-800-821-5478 or fax (816) 233-6575.

Performance Report

Getting Purebred Weights Right

Collecting and reporting weaning data properly is important in getting good performance information on purebred cattle. To get meaningful adjusted weights, ratios and expected progeny differences (EPDs), some care needs to be taken in regards to when weights are taken and how they are reported to your breed association.

Weaning weights should be taken as close to 205 days of age as possible. As a general rule, adjusted weights and ratios are calculated only if an animal is at least 160 days old and not more than 250 days old. This is a 90-day range. Weighing calves 205 days after the midpoint of the calving season should catch most calves within the range. If you stray from this too much, you will find that a fairly high percentage will be too young or too old for an adjusted weight to be calculated.

For example: You calve from Jan. 1 to March 31, which is about 90 days. The middle of your season is Feb. 15. If you weigh calves 205 days later on Sept. 8, all of your calves will fit in the 160- to 250-day age range.

A contemporary group is a group of cattle of the same sex raised under the

same management conditions. In general, calves from the same farm that are weaned on (or about) the same day are considered as a contemporary group unless there is something to indicate otherwise. Ratios and EPDs are based on how an animal compares to other animals in his contemporary group.

Getting contemporary groups right is probably the biggest problem we have in calculating good EPDs. Comparisons are based on how much higher or lower an animal's weight is compared to other animals that received the same treatment. These differences within contemporary groups are averaged across all herds to calculate EPDs. This is a gross simplification of the process, but the basic idea is that you directly compare only those animals that have received the same treatment. You then use all of these direct comparisons to come up with EPDs.

Your breed association and the folks who calculate your EPDs only see the data you send them. Following are a few tips to make your EPDs more accurate:

1. If an animal or group of animals receives special treatment (creep fed, show heifers, etc.) in-



dicate that they are a different group when you send in weights.

2. Cattle in different pastures should usually be reported as different groups. Otherwise, pasture differences get confused with genetic differences.
3. Weigh all of the calves in a group that are in the proper age range on the same day. If you weigh one or two calves at a time over several weeks, you will split up your contemporary group.
4. If you have a long calving season (more than 90 days), consider weighing an older group and a younger group to keep 205-day weights in the acceptable range.

—Ronnie Silcox, Beef Extension Specialist
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