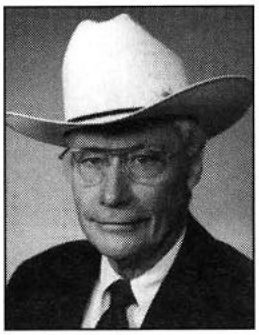
BEEF LOGIC

by Bob Long

How Cattle Grow — The Muscle

Beef – the world's most healthful, most prestigious and best tasting food. Beef contains the essential amino acids for proper protein nutrition. Beef is an excellent source of minerals and the B vitamins. Beef makes men stronger, women more beautiful and kids smarter.



Bob Long

Beef is muscle. The muscles are attached to the skeleton and to each other and make it possible for cattle to stand and move about as the muscles contract and relax.

All cattle have exactly the same number of muscles and these muscles are attached to the same places on the skeleton. This fact eliminates the often heard reference to "muscle pattern" differences since all cattle have the same muscle pattern. This same fact points out the inaccuracy of such statements as "muscled down closer to the hock."

Even though the muscle pattern is the same in all cattle, large differences in total muscularity or muscle:bone ratio occur. Two steers of identical frame size may have an entirely different amount of muscle. It is not uncommon in two steers of the same frame size to have one carrying twice as much muscle as the other.

While we have wide differences in muscularity, we need to be aware that just as the skeleton grows proportionately the muscles are also in the same proportion. There is an exception. A newborn calf will have a higher percentage of his total muscle in his legs than will an older animal. This is apparently nature's way of helping the calf survive since immediately after birth the calf must stand and nurse and follow his mother. However, at about the time he has doubled his birth weight (approximately 6 weeks of age) the muscle pattern is established for the rest of his life and is the same in all cattle.

Because muscles occur in the same proportion we must dispose of the old often used phrase, "more weight (or more meat) in the high priced cuts." This statement originated years ago when some cattleman decided that more muscle in the rib, loin and round and less in the rest of the carcass would be a great thing. It might be desirable but it is just not possible.

Research data from this country, Australia and Canada all agree that different breeds of cattle (British, European, Zebu), dairy breeds, wild cattle and even water buffalo have essentially the same relationship between the various muscles. This does not mean that we cannot increase or decrease muscle. It simply means that we cannot change one muscle or one group of muscles without changing all muscles by the same percentage.

Stated another way – each muscle in an animal's body represents a constant percentage of its total muscle mass and this percentage is the same for all cattle. The correlation is essentially perfect. This same principle is observed in the case of the various cuts of a carcass. Note there is no range of percentage represented by each wholesale cut but rather a specific percentage. This holds true in all carcasses, good or bad, old or young.

This situation should not be discouraging. Indeed, it is most fortunate. If we can measure or see the amount of muscle in one part of an animal's body we can depend on proportional development in all other parts. We can estimate the muscling of a steer by looking at the width, thickness and bulge of the forearm where there is no covering of fat. If the steer is well developed there we know he is well-muscled throughout his body.

We will expand on this method of visual appraisal after we cover in the next column how fat is deposited. Then we will use what we know concerning the anatomy and development of the skeleton, muscle and fat to determine the muscling and fatness of slaughter cattle and their quality and yield grade. Likewise, we will use these same principles to score breeding stock for composition in order to select genetic material that will improve the carcasses of their commercial offspring.

What is moderate cow size and how do you maintain it?

Serving on our panel this month and addressing this question are: Tom Drake of Drake Farms, Davis, Okla.; Bill Kurtz of Kurtz Angus, St. Croix Falls, Wis.; and Ken VanDyke of Hyline Angus, Manhattan, Mont.

Tom Drake:

A moderate cow size to me means a frame 4 or 5. It's also a cow with a body condition score of 5+ to 6+ and weighing 1,000 to 1,150 pounds.

It's simple for us to maintain moderate size because we use frame 5 to 7 bulls and adjust matings to suit our standards.

When I think of cow size, or when someone asks me, "how big will she get?" my question to them is, "how big do you want her to be?" By this, I'm talking body condition or body condition scoring. Also, I use the cow's condition at the time of calf weaning, not just before she's ready to calve.

We do have a number of cows from 6+ to 7+ frame. These are all good producers and we will not discriminate because of their size. As long as they do what is demanded of them, their overall size isn't that important. But they must produce in our south-central Oklahoma environment.

This, to me, is the most critical requirement breeders should look at. We all must produce cattle to fit our management and environment. Before you can maintain cow size, be sure you know what size best fits your environment, market and management. After that, the rest is easy.

Bill Kurtz:

A 1,200-pound cow is a much better producer and has less body weight to maintain through our long Wisconsin winters. Still, it's important to breed your cows for a size and type that fits your market. Don't be swayed by someone else's opinion, such as show ring or bull test station, if you can't market that animal or its offspring.

To maintain moderate cow size, we use smaller frame bulls and come back with larger ones on their offspring. I fear going too far down in size.

I have suggested the American Angus Association AHIR program add percent of dam's weight to birth and weaning weight EPDs. This would require breeders to report their cow weights with the calf weights. Knowing what percent of dam's weight the calf weans off, plus its dam's weight, would be another tool we could use for maintaining moderate size. As it stands, when you read EPDs, if a calf has a 90-pound birth weight and an 800-pound weaning weight, you have no idea whether its dam weighs 1,000 or 1,800 pounds.

Ken VanDyke:

Moderate cow size in our herd includes females in the 1,200- to 1,400-pound range. These same females would be about 150 pounds lighter in harsh Western range conditions.

We maintain this cow size because for 35 years our idea of what an Angus female should be has never changed. We want them to be long-necked, feminine, fertile and have a lot of rib and capacity. That is what enables them to convert grass to milk on our Montana ranch.

The American Angus Association's AHIR program also helps us maintain moderate size. Cows are culled on performance records. Those below 100 ratio are culled. Cows not calving on a regular calving interval are also culled. We've noticed when you're done culling, you're left with a set of productive females in the 1,200- to 1,400-pound range.

We also try not to use any single trait selections in our herd bulls. Bulls with moderate and balanced EPDs tend to sire females moderate in all areas. They excel for our commercial cow-calf customers, and that's what we're after.

WE WELCOME YOUR INPUT!

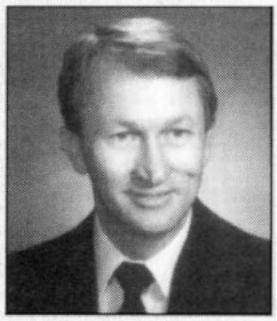
"What's Your Beef?" column serves as a forum for Angus breeders and industry experts to express their opinions on current issues and topics of breed improvement and performance programs.

If you have a topic or question you'd like to suggest, please contact the Angus Journal *editorial office at 1-(800) 821-5478 or fax (816) 233-6575.*

Janssen Named 1994 BIF Outstanding Seedstock Producer

Richard Janssen, owner and operator of Green Garden Angus Ranch, Ellsworth, Kan., was selected as the Beef Improvement Federation's (BIF) 1994 Outstanding Seedstock Producer at the BIF convention held June 1-2 at the University Park Holiday Inn in West Des Moines, Iowa.

Janssen and his wife, Shelly, own and operate a 4,000-acre integrated central Kansas farm that produces wheat, milo, oats, alfalfa and forage crops. His 200 head of registered Angus cows utilize the native range and crop residues. The goal for the past 26 years has been to provide the commercial cattleman with problem-free, profitable seedstock.



Richard Janssen

Since 1984, Janssen has been aggressively stacking pedigrees to improve the predictability in his systematic approach to seedstock selection. Systematic selection is simply putting parameters on breeding functions. The first function is calving ease with the breeding process built around birth weight and actual birth weights. The second function is mothering ability, with milk EPD that exceeds breed average. The third function is growth, with no limit as long as the first two functions are maintained. Richard separates the Angus cattle into one of three systematic groups.

System one cattle represent a source of genuine calving ease cattle with the genetic ability to maintain moderate mature cow size. System two cattle are designed around moderate birth weight with added growth. These cattle provide commercial cattlemen with the opportunity to add more growth to their cow herds without adding excessive birth weight. System three cattle are designed to compete with the major growth breeds and are promoted as a terminal cross.

In addition, Janssen is developing a group of Angus carcass cattle by stacking EPDs primarily for the marbling trait as identified by the carcass evaluation program of the American Angus Association.

This systematic selection process employed by Green Garden gives its customers opportunity to choose from a wider range of predictable products that can more accurately target needs of his commercial cattle producing clientele.

Green Garden Angus was nominated by the Kansas Livestock Association.

Robert C. deBaca Receives 1994 BIF Pioneer Award

The Beef Improvement Federation (BIF) honored a true pioneer in the genetic improvement of beef cattle when they presented a Pioneer Award to Robert deBaca at the BIF Convention.

Dr. deBaca has had a long and distinguished career as a professional animal scientist. In the late 1950s he joined the animal science extension faculty of Iowa State University. His pioneering efforts in scientific animal breeding systems culminated with the development of the Iowa Beef Improvement Association, an active organization which continues to serve the beef industry.

Dr. deBaca demonstrated his concern for people and his ever present willingness to share his scientific expertise in a number of international activities. He was largely responsible for the development of performance testing programs in both beef cattle and swine in Argentina. He also had significant input that benefited Native Americans through his work with the Navajo Indians of the Southwest.

After more than 15 years in academia, Bob decided to directly apply his expertise and entered the beef industry, beginning as a geneticist and manager of a major beef breeding program and ultimately developing his own consulting service and beef cattle management enterprise. He served three years as executive secretary of the Beef Improvement Federation and developed a quarterly newspaper published by the organization.

He also coordinated the breeding and marketing activities of 13 forward-thinking Angus breeders who pooled their efforts to breed, advertise and market cattle jointly under the name of Ideal Beef Systems. In addition to coordinating this, he published a newsletter, "Ideal Beef Memo," which provided semi-technical information on beef cattle production to a circulation of 26,000.

Currently deBaca is the principal in "Managing Partner," a purebred cattle records computer software program and business. AJ