



Forage Quantity and Quality Impact Beef Nutrition

Management of beef cattle nutrition ideally should be based on the quantity and quality of forage, as well as animal considerations such as body condition score, physiological status and production goals, according to information from the Texas AgriLife Extension Service (formerly Texas Agricultural Extension Service).*

Estimating the quality of forage consumed by grazing animals often is difficult because the quality of forage changes seasonally, according to beef cattle specialists. Also, in rangeland environments, animals can choose from numerous plant species and select specific plant parts. This selectivity frequently changes the diet composition and makes it difficult to tell exactly what these animals are eating.

For some time, it has been recognized that a relationship exists between forage quality and the physical appearance of feces of grazing cattle.

Grazing cattle primarily eat grasses and forbs (herbaceous broadleaf plants) and prefer new plant growth. New plant growth consisting of mostly leaves contains high levels of easily digestible compounds.

This new plant growth has very little fiber in the form of cellulose or cellulose-lignin complexes. Therefore, cattle droppings that result from the consumption of immature, high quality forages tend to fall to the ground in relatively shapeless deposits. As grasses mature, the fibrous content increases and the appearance of the cattle droppings reflects a lower quality diet that is high in fiber.

To help interpret the relationship between forage quality and fecal appearance, please see adjacent photos.

Forage quality categories are divided on a crude protein basis because this approach provides the clearest relationship to visual changes in droppings. Some overlap of digestibility values exists between the middle two crude protein levels. Forage quality estimates were obtained using near infrared reflectance spectroscopy (NIRS) fecal analysis. While this guide serves as a general indicator of forage diet quality, more precise estimates can be obtained through NIRS fecal analysis.

Interpreting forage quality

Forage quality must be interpreted in relation to the status of the animals being managed. Be sure to consider these factors:

- Animal physiological status (dry, lactating, growing).
- Body condition score for determining performance goals. Body condition scores are good nutritional management indicators. These scores reflect past forage quality and quantity levels, but they also indicate future management needs.
- Production goals (maintenance versus gain).

Don't overlook forage quantity

While forage quality is important, so is forage availability or quantity. Beef cattle experts say there are several indicators that may provide clues to forage availability. These include:

- **Forage preferences.** Even though grass is their preferred food, some grasses are more palatable and cattle will search for these specific grasses. Having "a lot of grass" does not necessarily mean cattle will perform at the desired level if very little of the desired grass is available, according to experts.
- **Eating of browse.** Texas AgriLife Extension experts explain that cattle diets typically consist of more than 80 percent grass and other herbaceous plants. Cattle are not efficient at eating the leaves of wood plants, also known as browse. Normal diets usually contain less than 7 percent browse. If cattle are spending time eating browse, it is a good indicator that available forage is limited. Performance most likely will suffer once browse in the diet reaches 10 percent.
- **Grazing patterns.** Cattle have fairly definite grazing patterns. Typically, there are three major daily grazing periods—long periods at dawn and late afternoon and a short one near midnight. Cattle graze to fill a need for quantity. If you see your cattle grazing in the mid-day summer heat, this might be an indicator that they do not have enough grass to meet their needs.

Help with nutrition management

Purina Mills has designed supplemental feed products to help you manage your beef cattle nutrition programs. These products can improve animal performance while also enhancing forage utilization. They help you balance the nutritional needs of your cattle when forage quality and quantity decline as the spring and summer progress.

Three range supplements, for example, contain Purina's exclusive Intake Modifying Technology™. These are: Sup-R-Block®, Sup-R-Lix®, and Accuration® Cattle Limiter.

Purina Mills IM Technology supplements are offered free-choice, not hand-fed. IM Technology products are consumed by cattle multiple times a day. This optimizes the rumen's environment so you're offering cattle predictable, consistent nutrition all the time.

Other benefits of these products include:

- Cattle graze longer because they do not need to cease grazing as they would if they were hand-fed.
- An increase in grazing distribution. Cattle can be drawn into less heavily grazed areas through free-choice blocks and feeders.
- A decrease in labor and delivery costs.

Visit with your Purina Mills representative, who can help you determine which IM Technology product best fits your production system and goals.

**"Forage Quality Photo Guide," Texas AgriLife Extension Service Publication No. L-5359.*

Aureomycin® Protects Against Anaplasmosis

Anaplasmosis is now recognized as an economically important cattle disease in at least 40 states. Sometimes called yellow bag or yellow fever, the disease is caused by the parasite *Anaplasma marginale*, which infects red blood cells. It is spread primarily by ticks and other blood-sucking insects, including horn flies, horse flies and mosquitoes.

Most new cases of anaplasmosis are seen in late spring and early summer. However, disease transmission has been recorded in cattle under desert mountain range conditions every month of the year.

Cattle experts urge you to suspect anaplasmosis when animals are anemic, regardless of the season. Other symptoms include weakness, fever, depression, constipation, decreased milk production, jaundice, abortion and sometimes death.

If left uncontrolled, anaplasmosis can cause abortions (which may reduce the calf crop by 4 percent) and lower productivity, which can increase cull rates by 30 percent, says Denny Hausmann, DVM, technical service veterinarian for Alpharma, Inc. Animal Health.

Studies show that anaplasmosis can cause mortality rates of 30 to 50 percent if symptomatic cattle are left untreated, Dr. Hausmann says. Anaplasmosis also reduces productivity and fertility in 1- to 3-year-old cattle, he adds.

Once animals recover from infection, they usually remain carriers of the disease for life, showing no symptoms but quietly infecting other animals.

Using a free-choice antimicrobial approved for anaplasmosis, such as Aureomycin®, will help protect your cattle against early-stage anaplasmosis and prevent the disease from occurring during high-risk periods, according to Dr. Hausmann.

Aureomycin is approved for administration in the feed to control anaplasmosis in beef cattle. Cattle can receive Aureomycin right up to slaughter as no withdrawal period is required.

Feed manufacturers, such as Purina Mills, offer a variety of feeds, and free choice minerals and blocks containing this broad-spectrum antimicrobial. Contact your local Purina dealer for more information.

Aureomycin® is a registered trademark of Alpharma Inc. For more information, visit www.AlpharmaCattle.com.

Mandatory COOL on the way How Can You Prepare?

After more than a decade of debate, discussion, delays and postponements, mandatory country-of-origin labeling (COOL) is expected to be implemented next Sept. 30. What do you need to do to get ready?

While the mandatory COOL law was originally passed as part of the 2002 Farm Bill, USDA has not yet developed the rule for implementation of the law, says Karen Batra, Director of Public Affairs for the National Cattlemen's Beef Association (NCBA), Washington, DC.

"The rule is going to outline exactly how this program is going to work, but we haven't seen that yet," says Batra. "So we're in a situation where we just need to wait, watch and be ready because what producers need to do specifically will be outlined in that rule."

The most important thing you can do right now is be aware that mandatory COOL is expected to be implemented in September, Batra emphasizes.

NCBA has always favored a voluntary approach to country-of-origin labeling and has been opposed to government mandated COOL, explains Batra. "Unfortunately, we are now in a situation where it is a mandatory law so that's something that we're going to deal with in September."

NCBA adopted policy in February 2007 that directs the organization to work with Congress and USDA to ensure that a COOL program provides maximum benefit and minimal market disruption to the United States beef industry.

During development of the 2007 Farm Bill, the House Agriculture Committee worked with NCBA and other groups to make COOL more workable for producers. Language to that end has been included in both the U.S. House of Representatives version and the Senate version of the Farm Bill passed last December, according to Batra.

Part of that language stipulates that only papers and records producers currently use as a normal part of conducting their business can be used for verification of the origin of their cattle, she says.

"In other words what this language does is make it so producers don't need to take on any additional recordkeeping burden. They don't need to put any new systems in place or any new computer tracking or anything like that. In theory, the paperwork that they have, such as sales certificates and health certificates, should suffice to prove origin of their cattle."

Batra says that between now and the September implementation of COOL, producers should ensure that the normal paperwork and records they use for their business are in order.

"You don't need to put in place any new recordkeeping, but just make sure that the sales certificates and the health certificates are organized in a way that you can put your hands on them when you need them."

More detailed information on country-of-origin labeling may be found at: <http://www.beefusa.org/goveCOOL.aspx>

Management of Newly Purchased Yearling Bulls

A performance-tested yearling bull can improve herd performance through increased weaning weights, improved carcass quality and more replacement females, according to Cornell University Beef Cattle Extension Specialist Mike Baker.

Baker divides management of the yearling bull into the following three periods:

1. Pre-breeding or conditioning

The goal of this 2-month period is to ensure the yearling bull is physically fit and of adequate size to breed cows. Nutrition plays a key role in meeting this goal. Most yearling bulls are developed on a ration that promotes a high rate of gain, usually in excess of 3 pounds per day. At the start of breeding season a yearling bull should be gaining 2 to 2.5 pounds per day. The new bull's ration must change to support the desired growth rate.

Adjust yearling bulls to a new ration slowly by decreasing the grain portion of the ration by 10 percent every other day until the desired level is met. A rapid drop in nutrition can impair the bull's libido and fertility. Ideally, this period of adjustment will last at least 60 days before the breeding season begins. A yearling bull should eat about 2.2 percent of its body weight in dry matter each day.

In addition to adequate nutrition, yearling bulls should be allowed plenty of space. Place water, minerals and/or feed at different locations to encourage exercise.

A properly conditioned bull will be at a body condition score of 6.0 when turned out with the cows. Bulls should weigh at least 1,100 pounds at turn-out.

2. Breeding season.

The goal of this 2- to 3-month period is to maintain adequate growth rate and breeding condition while breeding the optimum number of cows.

Throughout the breeding season the yearling bull should continue to gain 2 to 2.5 pounds per day. Hand feeding the bull 10 to 22 pounds grain (14% CP) each day will support this growth rate.

Proper bull-to-female ratio is influenced by pasture size, terrain, and forage availability. Bull factors, such as libido, fertility, sperm reserve, social behavior and physical condition also are important. The accepted rule of thumb is that a bull can breed one cow per month of age.

During the first breeding season with a yearling bull, observe the herd at least daily to determine if the bull is following, mounting and servicing cows in heat. Note cows being bred and see if they are coming back into heat 21 days later.

3. Post-breeding

The goal of this 7- to 8-month period is to replace the weight lost during breeding and to add weight so they will reach 65 percent to 75 percent of their mature weight by their second birthday.

In addition to ensuring proper nutrition, yearling bulls should be treated for internal and external parasites. A vaccination protocol should be implemented in consultation with your herd veterinarian. If possible, yearling bulls should be managed separately from the cow herd. Do not put them with older bulls that will dominate.

Producer Profile

W4 Ranch: Good Nutrition is Key to Producing High Quality Cattle

A primary goal of W4 Ranch, Morgan, Texas, is to produce great high quality Hereford cattle. "Our basic goal is to be the top Hereford breeder in the State of Texas," says W4 general manager Jay Wright.

"We go at it from a little different angle than a lot of registered breeders," Wright acknowledges. "A lot of registered breeders breed for the show ring and breed for just specifically registered cattle. We're more of a working cattle ranch that has registered cattle. Our main goal is to raise Hereford bulls to sell pretty much commercially."

Wright estimates that W4 sells 90 to 95 percent of all its range bulls to commercial breeders to be used for the purpose of breeding for meat production. "We'll sell a handful of registered breeders along the way but for the most part our bread and butter is selling range bulls. We'll sell 100 to 160 a year without any problem whatsoever."

Reputation for quality

Over the years, the ranch, which is owned by James, Joe and Joey Walker, has grown into one of the largest registered Hereford breeders in Texas and has developed a reputation as a producer of high quality purebred Hereford cattle and certified females.

When James Walker purchased the original ranch in 1961, it consisted of 1,000 acres. Many years were spent building the ranch's infrastructure, improving its water system with the development of irrigation, improving grasses, clearing land and building good fences. Since 1961, W4 has grown into 12,000 acres.

Wright, who has been W4's general manager for about eight years, believes in concentrating on birth weight, yearling weight and milk production as he seeks to always improve the genetic quality of W4 Ranch's Hereford cattle.

The ranch's primary focus of the ranch will always be on Herefords, he says. At the same time, the ranch needs to utilize other markets for diversity and complete success, Wright believes. That's one reason he established a Certified F1 program in which he breeds the older Hereford cows to Brahman bulls.

Black baldy program

Heifers and females that fall below standards he sets for his seed stock cattle can be mated to Angus bulls and used in the ranch's black baldy program, Wright explains. "We can be a place for people to come and get whatever they want."

Wright acknowledges that it is challenging to get a ranch, such as W4, where you want it to be and keep it there in today's ever-changing beef industry. "It's a never ending thing to try to change genetics and keep up with the needs of the beef industry," he says.

Costs, especially fuel and feed are making it even more challenging to raise cattle today, says Wright.

"The overhead is pretty high, so you need to do things that are more cost effective." One thing that is helping to reduce costs is the Purina nutrition programs that have been developed especially for the ranch, Wright says. "They help us keep feed costs more economical."

One of the major limiting factors for the ranch is labor, says Jeff Chaffin, W4 Ranch manager. "In our program, with 1,100 registered cows and only five employees on a day-to-day basis, labor can be one of our greatest challenges."

Nutrition has major role

That's where the Purina Accuration® Feed nutrition programs play a major role, he says. These labor saving programs help make available extra time for the employees to devote to continued genetic advances in the herd, says Chaffin.

W4 Ranch's first experiences with Purina came through using the Accuration® Feed Cattle Limiter program for developing heifers on grass. "That program has just been phenomenal for us," remarks Chaffin.

"The growth and maturity on those females far surpasses anything we've ever done in the past. Not to mention they are running on self-feeders so all you have to do is go look at them because they just pretty much take care of themselves." They use Wind & Rain® Availa®-4 Mineral tubs as well.

The W4 Ranch recently began a nutrition program for developing bulls using Accuration® Feed Cattle Limiter through the test period and then transition to a total mixed ration/silage mix with Sup-R-Lix® Feedlot 40 concentrate until the bulls are marketed.

The local Purina dealer, Clifton Feed Service, works very closely with the ranch to ensure that all feeders are kept full and consistent. Scott Conrad manages this from the dealer side and is an integral part of ensuring a successful communication process and service plan.

Purina Nutritional Consultant Dr. Chance Farmer formulates the TMR for the bulls and works with Purina Beef Specialist Dalton Nix to ensure the ranch's goals are being met. This includes frequent meetings with Chaffin and Wright to take samples, inspect cattle and make any necessary updates.

The ranch's nutrition program also includes use of Impact® Starter Complete for creep feeding to start all calves. The Diamond V XPC™ Yeast Culture product, in combination with high quality nutrients and intake modifiers, has helped develop a physical appearance that is critical to their marketing program, the ranch's managers believe. The use of Aureo S 700® (Aureomycin® brand chlortetracycline and sulfamethazine combination) helps to transition calves through this critical stage.

"The resulting nutrition program with Impact Starter and the Diamond V yeast culture has been exceptionally good for us," says Chaffin.

W4 Ranch's brood cows are supplemented with Sup-R-Lix® 2HL through the winter and run on both native pasture and coastal Bermuda grass hay. This allows for equitable supplement intake for all cows and reduced labor and fuel costs.

Contact your Purina dealer for further information on developing a specific nutrition program for your beef business or for more information on any of the cattle nutrition products and programs mentioned in this article.

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