



COMPREHENSIVE CATTLE NUTRITION AND HEALTH PLANS MAKE EVERY BITE COUNT

By: Henry Hilscher, Ph.D

Finding a veterinarian and nutritionist to develop a cow and calf health protocol and nutrition program that fits your local challenges and needs can have a big impact on this success. A good nutrition plan in the form of a solid grazing plan or a complete TMR ration on cattle in confinement is essential for making sure you maximize return on investment when using vaccines, parasite control, and implants.

As we roll into spring and more and more calves continue to arrive it is important to think of those calves as they growing and what stage they are at from a nutritional and health status.

HEIFERS & COWS



SPRING CONTENT

- Comprehensive Cattle Nutrition P 1-3
- Pre Breeding Bull Condition Score P 4
- Commodity Outlook P 5
- Meet the Team P 5
- Cattle Market Outlook P 6

LIFE STAGE	PRE BREEDING	PREGNANCY CHECK	PRE CALVING
FOCUS	Health and well-being of heifers and cows prior to pregnancy	Pregnancy confirmation and final protection of cow and unborn calf	Preserving pregnant females' energy to keep unborn calf healthy and growing
PRODUCT OPTIONS	<ul style="list-style-type: none"> • Reproductive vaccines • Parasite Control 	<ul style="list-style-type: none"> • Reproductive vaccines • Parasite Control 	<ul style="list-style-type: none"> • Parasite Control • Bovine scours vaccines

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HEALTH FOCUS

- **Vaccinate against the worst:** Addressing IBR, BVD, and Vibrio/Lepto is the first step in setting up calves for success. Consider pre-breeding shots for the cows that cover viral and bacterial pathogens and top diseases that cause abortions (Table 1).
- **Control parasites:** Deworming and parasite control is important to avoid complications that impact performance.

NUTRITION FOCUS

- **Match nutrition to life stage:** Manage cows in groups that calve in 60-day intervals. This will help ensure cows are all on the same nutritional plane and help build strong immune system early in the calf's life. Heifers and 2- to 3-year-old cows should be managed separately if possible, to make sure they are on a higher plane of nutrition, as they are still growing.
- **Control scours:** The sandhills calving system can be used to decrease scours in newborn calves.
- **Right macronutrients:** Match your cow's nutrient requirements to her forage availability and quality will help your cows maintain BCS, breed back, and provide nutrients to your growing calves
- **Right minerals:** Maintain a quality nutrition program with year-round mineral and supplemental feed program when needed will keep those animals in the best shape for optimal immune function.



CALVES

LIFE STAGE	BRANDING/TURNOUT	PRE WEANING	WEANING
FOCUS	Overall health of calf from birth to 3 months of age	Health and well-being of calf from 3 to 7 months of age	Transition of nursing calf to stocker/feedlot environment
PRODUCT OPTIONS	<ul style="list-style-type: none"> • Respiratory vaccines • Implants • Clostridial vaccines 	<ul style="list-style-type: none"> • Respiratory vaccines • Parasite control • Clostridial vaccines 	<ul style="list-style-type: none"> • Respiratory vaccines • Implants

BRANDING/TURNOUT: In the first three months of a newborn's life passive immunity from mothers' milk helps provide resistance to potential disease/infections. The transfer of antibodies from the cow to the calf via colostrum is extremely important to newborn calves because their immune system is not mature enough to develop its antibodies. The calf should be immune to most of the pathogens present in the environment because the dam has already been exposed to them and developed protective antibodies (Cooke, 2010). After the first 60 days a cow's ability to meet the growing demands of the growing calf declines, this aligns well with a calf's ability to digest and consume feed and forage (Figure 2).



HEALTH FOCUS

- **Build active immunity:** Leverage calf vaccines to build active immunity as the calves innate immunity wanes. This is the time to consider a suckling calf implant and parasite control (Figure 3).
- **Control parasites:** Calves' may need deworming and parasite control to avoid wasted potential

NUTRITION FOCUS

- **Adjust nutrition for forage conditions:** Consider early weaning or creep feeding as forage quality goes down or forage availability dwindles to maintain adequate growth in calves and ensure breed back in cows.
- **Alleviate calf stress:** Dehorning, castrating, and branding at this time will help alleviate stress during the weaning period.

PREWEANING: Pre-weaning management is important to ensure that calves can continue to grow and stay healthy when exposed to the stressors associated with weaning.

HEALTH FOCUS

- **Nutrition buffers against stress:** The nutritional status of the calf determines how well the calf will mount an immune response to vaccination and challenges associated with the stress of weaning.
- **Control parasites:** Calves may need deworming and parasite control to avoid



NUTRITION FOCUS

- **Vaccine timing is critical:** The immune responses to vaccination are not immediate and it is recommended that ranchers vaccinate calves 2-3 weeks before weaning for the calf's immune system to be prepared for the stress of the weaning process. Superior Livestock Auction has a list of vaccine programs and approved vaccines that fit in a well-marketed system.

WEANING: Given the challenges to a weaned calf, a nutrition program and vaccine program developed and implemented before weaning, pays for itself. Removing as much stress as possible is beneficial to calf health and performance. Cattle intakes will be low during the weaning period and making sure every bite counts is crucial to helping a stressed animal maintain health and continue growing.



HEALTH FOCUS

- **Build active immunity:** Weaning rations may include coccidiostats, ionophores, vitamins and minerals, and antibiotics. The first 14 to 21 days should be geared around driving intake and maintaining rumen health. Leverage calf vaccines to build active immunity as the calves' innate immunity wanes. This is the time to consider a suckling calf implant and parasite control (Figure 3).
- **Control parasites:** Calves may need deworming and parasite control to avoid complications that impact performance.

NUTRITION FOCUS

- **Weaning ration:** Provide calves with access to plenty of clean water and access to high quality, highly palatable weaning ration with good quality forage. Adequate bunk space is very important to allow animals plenty of access to feed. Working with a nutritionist to develop a weaning ration and program can allow you to tailor your ration to work with your ingredients that aid in the weaning process.

MANAGEMENT PRACTICES: A strong relationship with your veterinarian and nutritionist can allow you to make the most of your situation. Every situation is unique and presents its challenges, but with a strong plan and a willingness to adapt, every problem is solvable.

- **Communicate early:** Being proactive and having your nutritionist and veterinarian communicate can help your program from the start. If everyone agrees from the start, communication will be easier when there is a problem.
- **Fenceline weaning:** Fenceline weaning can help alleviate stress while improving weight gain over traditional weaning plans. Pierce et al. (2003) reported that fenceline weaned calves have decreased signs of stress, spent less time bawling and walking and more time eating and lying down than calves assigned to traditional weaning.
- **Vaccine handling:** BQA certified employees can help ensure proper handling of vaccines and cattle.
- **Record keeping:** Scales at your facilities can help you in the long term collecting weights and measuring performance. Keeping records of morbidity and mortalities will help your team (your employees, vet, and nutritionist) understand what's working.



Diseases Causing Abortions in Cattle

Diseases	Organism	How spread	State of gestation at abortion	Samples needed for diagnosis	Vaccination	Remarks
Brucellosis	Bacterial (Brucella abortus)	Aborted fetuses, fetal membranes	6-9 months	Blood sample from aborting cow; fetus; placenta	Live vaccine in heifers at 4-12 months.	Cull infected animals. Do not vaccinate bulls.
Leptospirosis	Bacterial (At least 5 serotypes)	Urine of infected animals, aborted fetuses	Any stage, usually 6-9 months	Sample 10 percent of herd	Every 6 months at 2-4 weeks before breeding.	Laboratory should determine the type of leptospira causing infection.
Red nose (IBR)	Viral	Contagious from cow to cow	6-9 months	Fetus; placenta; blood samples	Killed or modified live vaccine. See veterinarian.	Abortion may or may not be associated with illness in cows.
Virus diarrhea (BVD)	Viral	Contagious from cow to cow	Variable, usually early in gestation	Two blood samples, 3 weeks apart	Killed or modified live vaccine. See veterinarian.	Calves born with disease (loss of hair, brain damage)
Vibriosis	Bacterial (Campylobacter fetus venerealis)	Venereal disease spread by infected bulls	Early abortion, repeat breeding	Vaginal mucus from infected cow; cervical mucus; fetus; preputial washings from the bull	Two injections of vaccine the first year, 30-60 days before breeding. Bulls and cows should be vaccinated.	Also causes few abortions
Vibriosis	(Campylobacter fetus intestinalis)	Ingested	+6 months	Fetus	None	Sporadic abortions
Trichomoniasis	Protozoal (Trichomonas fetus)	Venereal disease spread by infected bulls	2-4 months	Preputial washings from infected bulls; uterus from cull cows	1st dose: 60 days prebreeding. 2nd dose: 30 days prebreeding. Single booster annually.	Treatment consists of sexual rest of cows for 90 days; artificial inseminations; cull infected bulls and open cows.

Table 1. Texas Agri-Life Extension. Common cattle reproductive diseases. <https://agrillifeextension.tamu.edu/library/ranching/reproductive-diseases-in-cattle/#:~:text=The%20most%20common%20reproductive%20diseases,complexes%3B%20vibriosis%3B%20and%20trichomoniasis>

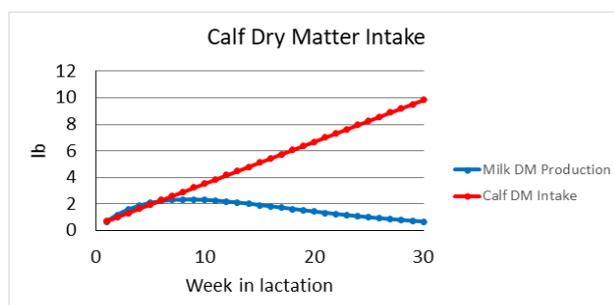


Figure 2 Cow Dry Matter Milk Production vs Calf DM Intake
Cooke, R. F., Overview of the Cattle Immune System. 2010. Oregon State University – Beef Cattle Library. BEEF043 , Price, E. O., J. E. Harris, R. E. Borgwardt, M. L. Sween, J. M. Connor. 2003. Fenceline contact of beef calves with their dams at weaning reduces the negative effects of separation on behavior and growth rate. J. Anim. Sci. 81:116-121, Troxel, T., S. Gadberry, D. Philipp, and J. Powell. 2014. Backgrounding. University of Arkansas MP379. 1-25. http://www.superiorlivestock.com/files/vac_programs.pdf, <http://www.superiorlivestock.com/images/forms/qualifiedvaccines.pdf>



Pre-Breeding Bull Body Condition – Keep the Battery Fully Charged

By: Justin Axman, M.S.
Nutritionist, Livestock Nutrition Center

It is that time of the year when warmer weather allows for the opportunity to begin planning or actively transporting cattle to pasture, working on farming/ranching plans for the foreseeable future, attend spring sporting events, endure the occasional extreme storm event, and last but not least evaluate your bull battery before breeding. Adequate time should be allotted for this latter exercise to allow for any deficiencies to be corrected in an appropriate amount of time, or in severe cases, purchase and replace unfit breeding stock. In terms of profitability for your cattle enterprise, proper management and nutrition of bulls are paramount to promote optimal reproductive efficiency and further advance the genetics of your herd.

It can become rather routine to neglect bulls during certain periods of the year after they have performed their necessary role and are idle until the next cycle. To combat any detriments neglect may cause, bulls should be visually appraised for body condition score (BCS; scale 1-9) with an optimal body condition target of 5.5-6.5 achieved at a minimum of six weeks (spermatogenesis completed in 60 days) before breeding season. Visually, this should appear as an animal with full rib cover, plump hindquarters, noticeable sponginess over the fore ribs, and fat deposits appearing in the brisket. It is not uncommon for bulls to lose weight (100-200 lbs.) and body condition throughout a breeding season, which creates the risk for subsequent bull performance to suffer and longevity in the herd to diminish if not corrected. When exposed to females, bulls in poor condition are less active and present the potential to cover fewer cows than intended. As



described in Table 1, bulls in greater body condition have larger scrotal circumference than their counterparts in poorer condition and possess greater potential to achieve reproductive success. In short, this metric is a component of breeding soundness exams and is used to estimate the reproductive capacity of breeding stock.

Table 1. Effect of body condition on scrotal circumference

BCS	NUMBER OF BULLS	SCROTAL CIRCUMFERENCE (CM)
4	5	36.9
5	242	37.7
6	80	38.6

(Adapted from Rusk et al., 2002)

On the contrary, over-conditioned bulls also possess their concerns in that excess fat in the scrotal region can have detrimental effects on semen quality. As described in Table 2, decreases in semen quality can be witnessed when BCS approaches 4 or below on the low end, and 7 or greater on the high end. Additionally, over-conditioned bulls are at high risk of under-performing once on an altered plane of nutrition and are expected to breed an acceptable number of females. A scenario like this will often leave you dissatisfied with your investment, in addition to a greater proportion of open cows.

Table 2. Effect of body condition on semen quality in physically normal beef bulls

BCS	% OF BULLS WITH SATISFACTORY SEMEN QUALITY	NUMBER OF BULLS
3	70.0	20
4	80.0	30
5	85.5	891
6	84.1	69
7	49.4	77

(Adapted from Barth et al., 2002)

It is imperative to avoid entering critical times of the year with cattle in poor, or excessive, body condition to create the most opportunity for your business model to be effective and profitable. Livestock Nutrition Center is outfitted to assist in the visual appraisal process and ensure your nutrition program is on target before breeding season. Be sure to contact your nearest LNC location to work with our Feed Consultative Sales Representatives and Nutritionists on devising a successful plan.

References

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COMMODITY OUTLOOK

By: Matt DeFlon

Procurement Manager, Livestock Nutrition Center

We have certainly seen our fair share of volatility over this past feed season. What has been driving this volatility? DEMAND, especially corn and soybeans. We have seen very large exports of corn and soybeans this crop year driven mostly by China. For instance, as we entered the 2020-21 crop year, anticipated corn exports were 2.2 billion bushels. We are now on pace with shipments and sales to export 2.9 billion bushels. This now has our carryout down to 1.2 to 1.3 billion bushels. Demand from China on soybeans has been just as astounding this year as they are importing record quantities this year. Soybean carryout is estimated to be in the 110 to 120 million bushels area. In addition, our domestic demand is higher due to higher inventories of beef, dairy, hogs, and poultry.

So how does all of the above affect the prices of our basic ingredients such as Corn Gluten Feed, DDG, Soyhulls, Wheat Midds, and others? It is key to remember these are by-products, i.e. ethanol plants don't run to produce DDG, they run to produce ethanol. So the demand for ethanol will drive the supply of DDG. Flour mills don't run to produce midds, they run to produce flour. COVID has reduced the demand for ethanol, corn sweeteners, and flour for bread which has decreased the supply of the by-products we consume for feed.

In conjunction with the by-products discussed above, the fiber/roughage market remains elevated as well. We are not quite to price levels we saw in the 2011/12 drought, but inching that way. A dry spring/early summer of 2020 in hay-producing areas resulted in a decrease in overall production. This has led to a minimal roughage carryout from the old crop into the new. Add in rumors of additional acres being taken from alfalfa production into planting row crops and supply will certainly tighten. Although roughage values are high, they remain competitive vs other ingredients in rations today.

As we move forward, the weather will come front and center to our volatility. We have to get through planting season promptly. Then we will have to watch our temperatures and moisture levels, especially in the June, July, and August time frames. The markets will watch each weather report for changes that can flip the direction of market trends on a dime. Weekly crop ratings will be monitored closely for any type of crop problems.

With tight carry-outs on both corn and soybeans, the pressure for bountiful crops is paramount and volatility will remain a keyword this spring and summer.



MEET THE TEAM

LNC takes great pride in sourcing our employees. Each issue we will introduce you to one of our own.



Henry Hilscher, Ph.D. Nutritionist

Cameron, TX // Gonzales, TX // Foreman, AR

Henry Hilscher joined LNC as a Nutritionist in July 2018. A native of Shiner, Texas, Henry received his bachelor's degree in Animal Science from Texas A&M University. He continued his education at the University of Nebraska, where he earned M.S. and doctorate degrees in Ruminant Nutrition.

While in Nebraska, he also served as the university's Research Feedlot Manager from 2014 to 2018. He provides technical support and training for the LNC sales team as well as expertise in beef cattle nutrition for customers in central, eastern, and southern Texas, western Louisiana and southwest Arkansas. Henry and his wife, Claire, reside in Cameron with their two sons, Barrett and Hollis.

JOIN OUR TEAM

Do you know someone that would be interested in joining our team?

At Livestock Nutrition Center we are always looking for qualified hard-working individuals. All of our positions offer a competitive salary, full benefits and uniforms.

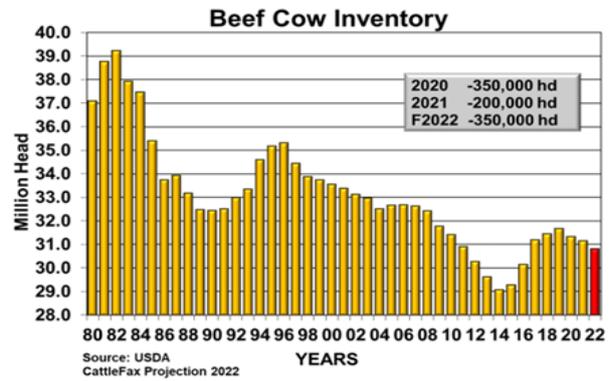
<https://www.lnc-online.com/careers/>

CATTLE MARKET OUTLOOK

- Cow herd is continuing to liquidate in areas of drought. Combined with smaller calf crops from 2019 and 2020, we expect tighter fed supplies and higher prices by late 2021.
- Higher prices for fed cattle and feeder cattle later in the year will keep the fall calf run higher priced than it would be in normal years.
- All classes of cattle are getting to above year-ago prices, we expect this will continue this year.

OUTLOOK

- Stockers: On summer grass, producers can expect solid profitability
- Cow/Calf: Producers will see improved profitability vs. a year ago



CattleFax THE DECIDING FACTOR

2021 Forecast

	Annual Avg.	Range
Fed Cattle:	\$119/cwt. (\$108)	-\$128)
800- Feeder Steer:	\$145/cwt. (\$135)	-\$160)
550-Steer Calf:	\$170/cwt. (\$160)	-\$180)
Utility Cow:	\$64/cwt. (\$52)	-\$74)
Bred Cows:	\$1600/ hd	(\$1200-\$1900)

CattleFax THE DECIDING FACTOR



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