

Knowledge has been developing at such a rate that it is difficult to keep track of the latest developments. These developments have to be brought down to the practical level for there to be value.

Producers have occasionally observed and commented on the weakness and unthriftiness of some calf crops after a particularly hard winter. Growing research into this area has yielded some insights into what the link is between maternal nutrition and the health and subsequent growth rate of the calf. We can now see that where the cow is either over fed or under fed there is a high incidence of poor health and growth of the calf such that its genetic potential to grow is not achieved. The following excerpt reinforces the point:

“Even in the earliest stages of embryonic life when nutrient requirements for conceptus growth are negligible, alterations in tissue composition can occur influencing future growth of a compromised organ system. Not only is neonatal health compromised but subsequent health may also be programmed because offspring from undernourished dams have exhibited poor growth and productivity and have developed significant diseases later in life.”<sup>1</sup>

Most livestock species will react to serious nutrient shortfall during pregnancy by delivering offspring that are below average in birth weight. If the restriction is severe enough it can lead to poor health and poor growth response in the calf. This condition is referred to as Intrauterine Growth Retardation (IUGR). General understanding of the factors that regulate fetal growth have increased and these elements are being incorporated into management and nutrition recommendations. It is important to recognize that either under or over feeding can cause genes responsible for normal growth to be altered in a way which can program the fetus at an early age to a reduced growth curve or poor organ development. Once gene expression is altered it has lifetime effects which cannot be completely undone by proper feeding of the calf emphasizing the importance of accurate delivery of nutrients throughout the gestation period. Interestingly, overfeeding also can cause fetal growth retardation particularly affecting the internal organs and respiratory systems.

Supplementary feeding aims to make up the deficiencies where pasture is short as in the later part of the grazing season or where good quality forage is in short supply. There are different approaches for supplementing. Rather than feeding to keep an animal alive develop a focus on supplying nutrients to optimize performance. Optimizing performance always produces the best result with no negative long term effects on animals or finances. When feeding crop residues, supplementing this type of forage to the animal’s requirements will improve utilization and improve intake. Crop residues are increasingly being used to reduce overall supplementary feed cost while meeting requirements for production.

1. Effects of maternal Nutrition on conceptus growth and offspring performance: Implications for beef cattle production. R.N. Funston, D.M. Larson, and K.A. Vonnahme. 2009 J. Ani.Sci. 2010 88:E205-E215 doi: 10.2527/jas. 2009-2351.

Begin by looking at strategies to improve feeding quality of all available feed resources. This may necessitate a capital expenditure to capture all the value that is available but will pay a dividend as new technology is utilized.

A common approach is PLAN-IMPLEMENT-REVIEW-PLAN. First search out nutrient needs of each class of livestock then identify what resources are available to meet the needs and in what quantities. Determine whether protein or energy is likely to be deficient then match to the best available energy (grain) or protein (pulses or oilseed meal) source. Look at cost benefit for each group and address most vulnerable groups first. Part of your plan should examine ways to improve forage and grain utilization. For forages, chopping improves intake and utilization particularly when grain can be added in a way that does not allow for sorting. Feeding these ingredients together stabilizes the rumen and enhances intake.

The Highline Bale Pro CFR processors with a chopper and grain tank option can do this in an industry leading way and allows more efficient utilization of forage while maximizing grain supplementation saving valuable forage from being wasted. Use bunk feeders to ensure the forage delivered is consumed and not left on the ground, stepped on, or used for bedding. Bunks also prevent the consumption of excessive amounts of dirt and small stones that can lead to digestive upset. The following examples can return value to your extra investment and effort.

High vomitoxin grain can be improved in quality by dehulling the grain. Most of the toxin produced by fusarium moulds are located on the outside of the kernel on the pericarp (bran or hull). By removing the hull some of the toxins go with it. This approach has been successfully used to remove thirty five percent of the vomitoxin and render the grain of higher energy due to the reduced fibre level. Dehulling equipment can be constructed on the farm using old concaves from a combine and running them with a tight clearance.

Plan to store forage bales on tires instead of on the ground. This simple step can reduce hay losses from 18% down to 8% where rainfall and melting snow cause saturation of the lower portion of the bale. Longer term storage hay can be tarped to reduce rain, solar and bacterial degradation.

Once the plan is set implementation needs to include your normal record keeping efforts to determine the success of your plan. Review the expected results compared to the actual results. Consult extension workers, veterinarians and other who have pertinent experience and can help advise and interpret the results if you are unsure. As the fall and winter progress any changes can be incorporated into a modified plan and the cycle continues. Successful management of your beef enterprise is done within the context of your Cost of Production statement. Keep current with results and look ahead for areas to save which do not reduce productivity. Being production minded will yield superior results to being cost focussed only.