



## Year End Evaluation... We Are To Be Caretakers Of God's Creation

*Genesis 1:26-28 "Then God said, 'Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground.'"*

Vigortone wants you to be able to raise calves for as long as you want to. To do that you must keep your cows reproducing and have enough income over feed costs to pay the bills. Many of the important decisions ranchers make involve the management of the nutritive intake of their cows. A better understanding of specific nutritional factors can help the producer improve reproductive performance in his herd. Brood cows are your production plant; we need something to sell.

Your economic results depend upon both the weights of the calves sold and upon the calving percentage of the cow over her lifetime. There is no replacement for good genetics, sound management, and proper nutrition.

Some of you are buying bulls with high milking ability EPDs. If feed resources are limited, cow weight and milk production need to be carefully scrutinized, as both not only impact nutrient requirements but also feed intake. Cows bred for a high level of milk production have higher nutrient requirements even when not lactating. Requirements are high during the last trimester of pregnancy and during the time the cow is nursing her calf. After the calf is weaned, the requirements drop considerably. Are we matching the cow's needs with the forage available?

If a cow's nutrient intake is substandard, less than what she needs to perform at 100 percent, the reproductive system will be the first to be shut down.

### Minerals And Vitamins

Minerals such as calcium and phosphorus are vital to bone growth and development and maintenance of body tissues. Phosphorus is required in metabolism of energy in the body. Potassium and chlorine are needed to maintain appropriate levels of water in the cells and tissues, as well as aid in the transmission of nerve impulses. Iron is required in the manufacture of hemoglobin for the transportation of oxygen in the blood. Copper is required in the cells in the energy-generating structures known as mitochondria. Zinc is essential in the making of sperm. Zinc and copper are essential in normal immune function. Vitamin A functions in the growth of both skeletal and soft tissues of the body: in vision, reproduction, and disease resistance. Several benefits of providing adequate vitamin E to cows include improved mammary gland health, reduced prevalence of reproductive disorders, and enhanced immune function.

### Protein

Most operations look to protein first in their supplement program. Cattle actually have requirements for two different types of protein. The first is rumen degradable protein, which is used by rumen microorganisms as they digest fiber, produce volatile fatty acids, and make microbial protein. The second type of protein is escape protein, which is not degraded in the rumen by the rumen microorganisms but is digested in the small intestine of the animal. Cattle do not have a specific requirement for escape protein. In some cases, supplemental escape protein may be necessary, because microbial protein is not adequate to meet the requirements for metabolizable protein. Rumen degradable

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protein, microbial protein, and escape protein from feeds are used to meet the metabolizable protein requirements of the animals.

Some range cow protein supplements contain urea or nonprotein nitrogen (NPN). There's not enough energy in the total diet for your cow to take the NPN and convert it into protein. If you are supplementing grain or grain byproducts, you can use a little urea to make protein in the rumen.

Protein supplements will not work properly if forage quantity is limited. Don't expect cows to gain body condition while grazing dormant forages, even when properly supplemented. In most years, cows will maintain condition under these management conditions. Therefore, it is important that cows be in good condition (BCS 5 or greater) when these programs are started. Thin cows will not do well under winter grazing conditions because they lack the insulating fat cover of cows in better condition. Weaning earlier is one way to allow cows to maintain condition and go into the winter in better shape.

During periods when lush grass abounds, little or no supplemental protein is necessary, a grain-based energy supplement that would provide the starch necessary to help the cow utilize the higher levels of protein more extensively is better than a protein supplement at this time.

A good supplementation program will provide supplemental nutrients needed to make the most of your forages at a cost-effective price. A sound supplementation program must change each year to meet the nutritional requirements of the ever-changing genetic base, forage quality, and forage pounds available. This year we need to look at the price of by-products and see what works for you.

Talk with your Vigortone area sales manager about a year-round mineral, vitamin, protein, and energy program for your operation. We can customize our program to what is available in your area. Remember that your supplementation program will have long-term results or repercussions.

*"I've never worried too much about the economics of cattle eating too much salt or mineral. It's always been a good indicator to me if cattle are eating salt and mineral that probably everything is going to be working correctly. It's a real good, low-cost protection against metabolic and reproductive problems."* — Eric Brast, assistant director of the TCU Ranch Management Program, Fort Worth.

*"From an economic standpoint, the greater number of cows that can be grazed on a given forage base and meet their nutrient needs from the grazed resource base, the greater the profit potential of the enterprise."* — Rick Rasby, University of Nebraska-Lincoln.

**TABLE 1. Examples Of Inadequate Or Excessive Dietary Nutrient Intake On Reproduction In Beef Cattle (Bearden and Fuquay, 1992)**

<b>Nutrient Consumption</b>	<b>Reproductive Consequence</b>
Excessive energy intake	Low conception, abortion, dystocia, retained placenta, reduced libido
Inadequate energy intake	Delayed puberty, suppressed estrus and ovulation, suppressed libido and spermatozoa production
Excessive protein intake	Low conception rate
Inadequate protein intake	Suppressed estrus, low conception, fetal resorption, premature parturition, weak offspring
Vitamin A deficiency	Impaired spermatogenesis, anestrus, low conception, abortion, weak offspring, retained placenta
Phosphorus deficiency	Anestrus, irregular estrus
Selenium deficiency	Retained placenta
Copper deficiency	Depressed reproduction, impaired immune system, impaired ovarian function
Zinc deficiency	Reduced spermatogenesis