SUMMER 2002

FEED FOR THOUGHT

News For Cattlemen From Suga-Lik® A Product Of U.S. Sugar Corp.

Bahia Bank Account

Chet Fields, Ph.D. PAS

Some time ago, in “Feed For Thought,” we proposed that the rancher's main "bank account of nutrients" is forage. The balance in that account determines cow body condition score, reproductive efficiency, milk production and hence weight of calves produced. In order to optimize return on your investment, you should "reconcile your nutrients accounts" on a regular basis.

Weaning weight of your calves is mostly dependent upon your cows' genetic potential and total milk production. Total milk production is in turn mostly dependent upon milk production at the "peak" of the lactation period. Peak milk production occurs about 60 days after calving and research has proven that enhancing peak milk production will have the long-lasting effect of increasing total milk production and hence weaning weights. Therefore, ***nutrient deficiencies, especially those that occur leading up to and during the period of peak lactation, are especially costly.***

For the examples shown, I've estimated that a dry cow weighing 1,000 pounds, during last trimester of gestation, will consume about 18 lbs. of Bahia dry matter. Similarly, I've estimated that a 1,000 lb. cow producing 20 lbs. of milk at the peak of her lactation will consume about 23 lbs. of Bahia dry matter. This cow should average about 13 lbs. of milk over her entire lactation and be capable of weaning a 500 lb. steer calf. The nutrient values shown are averages for Bahia over the last three years (actual samples taken, n=264). Individual pastures vary substantially. The heavy horizontal lines labeled either "Dry" or "Peak" identify the nutrient requirement for protein and minerals or in the case of energy, the estimated intake of dry matter for dry and peak lactation cows. Nutrient requirements are those defined by the National Academy of Sciences, Committee on Animal Nutrition (NRC). The amount of nutrient required was divided by the estimated dry matter intake of Bahia to obtain the dietary concentration.

PROTEIN:

"**Chart 1**" shows that at no time during the year did "average" Bahia meet the protein requirement of the cow at peak lactation. In fact, Bahia met the protein requirement of the dry cow only during the period from March through July. If your Bahia is average, then your cows are deficient in protein relative to the needs of either a lactating cow or a dry cow from August until the following March. Start feeding the appropriate *Suga-Lik® Fully Fortified®* protein supplement in August to prevent this protein deficiency.

ENERGY:

There are lots of ways to express the energy level in feeds relative to a cow’s requirement. Regardless if you use TDN or the more sophisticated Net Energy system, it all boils down to "can she eat enough" for the level of production desired. "**Chart 2**" depicts the "energy balance account.” The heavy horizontal lines depict likely Bahia dry matter intake for dry cows and cows at peak lactation. For each month the "taller" of the two bars shows how much a cow needs to eat per day in a given month to maintain her body condition score while producing 20 lbs. of milk. It's obvious from this chart that if she'll only consume 23 lbs. of Bahia dry matter per day she's going to lose a lot of weight during peak lactation. The short

CHART 1

BAHIA CRUDE PROTEIN BY MONTH

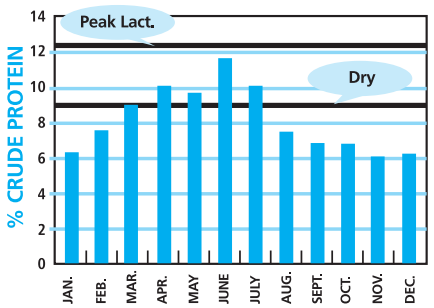
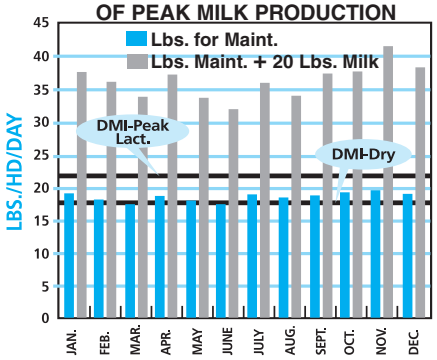


CHART 2

BAHIA REQ. TO PROVIDE ENERGY FOR MAINT. OR MAINT. PLUS 20 LBS. OF PEAK MILK PRODUCTION



bar on the graph illustrates how much dry matter she needs to eat daily to maintain body weight and fetus development. Bahia will do a pretty good job of maintaining the cow's weight and development of the fetus most of the year with perhaps a little surplus energy for milk production or to improve body condition score in October and November.

The remainder of the year, your cows are deficient in energy. Assuming your cows have a body condition score of 5.5 or more, it may make economic sense and isn't detrimental to productivity for a cow to lose some weight at the peak of lactation. Your challenge is to prevent her from losing substantial weight throughout lactation and entering breeding season with too poor a body condition score to breed and conceive successfully. *Suga-Lik® Fully Fortified®* high-energy supplements can substantially reduce this energy deficiency.

MINERALS:

The average values for calcium, magnesium, iron, manganese and molybdenum vary by month from barely adequate to excessive, relative to the requirement of either dry or peak lactation cows. Zinc, copper, cobalt and selenium are deficient to extremely marginal through the year. Sulfur varies from barely adequate for a lactating cow to excessive for either a dry or lactating cow, depending upon the month of the year. Sulfur levels in Bahia are very sensitive to fertilizer source. *Suga-Lik® Fully Fortified®* supplements complement the excesses and deficiencies of the above-mentioned minerals.

"**Chart 3**" illustrates phosphorus levels in Bahia relative to the cow's requirement. Bahia is deficient relative to the requirements for a dry cow eight months of the year and for a cow at peak lactation 11 months of the year. In formulating *Suga-Lik® Fully Fortified®* supplements, phosphoric acid is used as the only source of supplemental phosphorus. No other source of phosphorus has higher bioavailability or is as economical.

"**Chart 4**" illustrates potassium levels in Bahia relative to the cow's requirement. Potassium is required in greater quantities than ANY other mineral and is secreted in the milk more than ANY other mineral, including calcium! In contrast to some minerals, cows don't store potassium so it's very important that they obtain a dietary source daily. This is especially important during periods of heat stress. Potassium levels in Bahia are adequate for the dry cow most of the year and deficient for the cow at peak lactation from November through March. *Suga-Lik® Fully Fortified®* supplements contain 2.7% to 3.0% potassium. This level is adequate to prevent potassium deficiency in your cows, even during periods of peak lactation.

VITAMINS:

Because the vitamin content of forages is much more dependent upon environmental factors than the protein, energy and mineral content, forages are ***NOT*** considered to be a reliable source of vitamins. Year around supplementation to provide a daily allowance per cow of 50,000 units of vitamin A, 13,600 IU of vitamin D and 227 units of vitamin E is needed. *Suga-Lik® Fully Fortified®* supplements provide 100% of these requirements.

In summary, make sure your "nutrient bank account" isn't overdrawn. Contact your Suga-Lik® representative for an economical, strategic supplement plan that's "Fully Fortified" and targeted to your cow's reproductive cycle and her nutrient requirements.

CHART 3

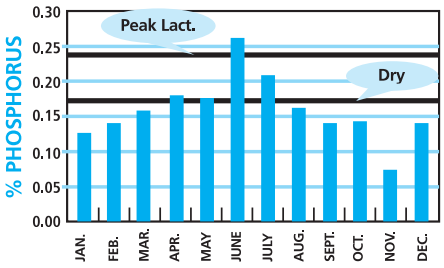
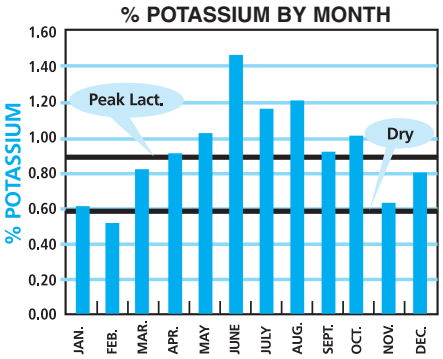


CHART 4



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