

# FEED FOR THOUGHT



Production Information For Cattlemen From Suga-Lik®, A Product Of U.S. Sugar Corp.

## Assessing Nutritional Needs

by Jason Rowntree, Ph.D., PAS

With beef production costs rising, enhancing nutritional efficiency is paramount in ensuring your cow-calf operation is operating comfortably in the black. Often I chat with producers who desire to merely obtain the least expensive cow supplement. Instead, shouldn't we ask, "Which supplement will ensure a cow's nutritional requirements are met based on the available forage and hay?" Sawdust is certainly cheap and a cow may be hungry enough to eat it, but the desired results will not be obtained. Therefore, as producers, it is essential that we assess our nutritional programs with efficiency in mind. Do we obtain the desired effect with the least amount of cost?

The challenge in assessing nutritional needs with efficiency as a priority is toeing the line between production and economics. Three steps towards negotiating this are to 1) evaluate where your cows are in the production cycle; 2) understand the relationship between forage production, milk production and mature frame size and finally; 3) ensure the proper nutrients are supplied to the cow within the given production cycle.

### ***Evaluating Where Your Cows Are In The Production Cycle***

To rein in costs and be more efficient, evaluate cows for where they are in the production cycle. John Hall, Virginia Tech, broke these phases into early postpartum, lactating and pregnant, mid-gestation, and the pre-calving phase. The early postpartum phase is the 90 day period beginning at calving in which cows are lactating, resume heat cycles and must also rebreed. Energy and protein requirements are at their highest. If proper nutrition is not supplied, then this phase could indeed lengthen and thus a cow's calving interval will become greater than 365 days. The lactating and pregnant phase (120 days) represents the stage in which the cows are newly pregnant, milk production

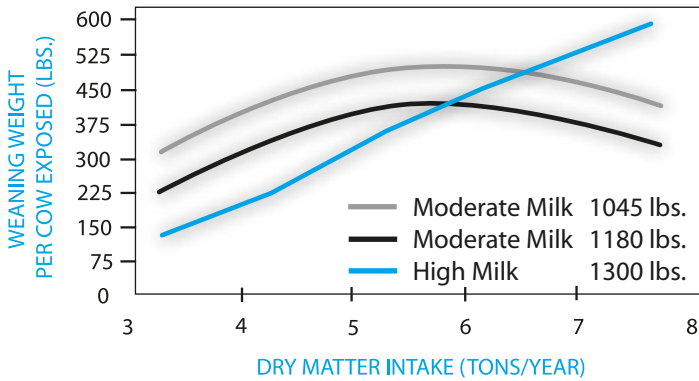
is high but begins to taper off and both protein and energy requirements remain high. Generally, these two periods are the most daunting for first calf heifers and young cows as they also are still growing thus increasing the overall nutritional requirement. Mid-gestation is the third phase and represents the cow's lowest nutrient requirements within the production cycle. This cycle is typically 100 days. Therefore, this is the opportunity to put weight on cattle. Finally, the pre-calving phase is the remaining 50 days before calving. This time is quite important as this is the last opportunity to ensure cows are of acceptable body condition scores (5 and 6) and the phase in which the fetus gains the most weight.

Once the stage of the production cycle has been identified, appropriate nutrition can be supplied in order to meet requirements with the postpartum and gestation phases being of utmost importance. In recent times, because of drought, some calving seasons have expanded from 90 to 180 days. Thus there could be cows in the same pasture that are in any of the production cycle phases. Ultimately, this presents an unmanageable situation in that it is not efficient to supply nutrition to cows that need it and cows that don't. This point in itself describes the utter necessity of a defined calving season.

### ***The Relationship Between Forage Production, Milk Production and Mature Size***

Matching cow genetics to the proper environment is a key in regard to your nutrition program and improving nutritional efficiency. From a forage production perspective, a normal Gulf Coast beef cow consumes 3.5 to 4.5 tons of forage annually. In an outstanding review of beef cow efficiency from New Mexico State University (Mathis and Sawyer, 2000), the authors utilize an adoption of a report from the U.S. Meat Animal Research Center, Clay Center, Nebraska. In Figure 1, the authors graph production efficiency expressed as the weaning weight per exposed cow across varying levels of dry matter intake for the differing genetic types of cows.

**Figure 1. Mathis and Sawyer, 2000**  
(adopted from Jenkins and Ferrell, 1994)



In this example, on a 3.5 to 4.5 ton annual dry matter intake, a moderate milking 1045 pound cow is roughly twice as efficient relative to a high milking, 1300 pound beef cow. Simply put, our Gulf Coast pastures can not maintain a high milking, large body weight cow. Only when 7 tons of dry matter is fed will the heavier milking, higher body weight cows be efficient. When cows of this size and milking capacity are placed in our environment, they are more apt to be open. What if, for example, a producer has opted to keep back Charolais sired heifers, a breed of cattle known for its terminal traits? Although moderate milkers, they will certainly be large in mature size for our Gulf Coast systems. Based on the work shown here, he almost certainly will have to purchase more supplements to maintain a female of this size. From an efficiency perspective, although the lighter weight, moderate milking cow may not wean the heaviest calf, she definitely should be the most apt to be efficient in terms of converting forage to weaned calf.

**Ensure The Proper Nutrients Are Supplied To The Cow Within the Given Production Cycle.**

The most common errors made relative to nutrition programs is over or underfeeding certain nutrients during the production

cycle. The two primary supplements producers should be concerned with are supplying enough protein to meet microbial protein requirements or feeding a high energy supplement to ensure the cow is consuming enough total calories to meet her energy requirements. Thirdly, and typically to a lesser degree, is the potential for mineral and vitamin deficiencies. In order to properly ascertain when and what to supplement, forage testing is paramount. In a winter calving system, most often, protein supplements should be offered when forage quality drops below 8% during the pre-calving production cycle. During this phase of production high energy supplements are typically not necessary and generally a few pounds of a 32% protein supplement will be adequate in ensuring microbial protein requirements are met. On the other hand, those who choose to merely offer a few pounds of protein in a meal or tub with sub par protein hay during the post calving period are almost ensuring energy requirements will not be met during a time when caloric intake is needed to ensure rebreeding. In this case, an energy-containing supplement would be an outstanding choice. Always price out protein supplements on pounds of protein offered per dollars spent. When supplying energy, price supplements based on how much energy or total digestible nutrients (TDN) you are obtaining for the price spent.

**DO YOUR HOMEWORK!**

Since 2003, fertilizer and diesel costs have over doubled. As well, many agricultural economists have projected calf prices to drop \$0.20 to \$0.30 per pound by the year 2010. Without question, the greatest costs you as a cow-calf producer will incur are those associated with supplying nutrition to your cattle. In order to properly assess the nutritional status of your cowherd, proper genetics and management are keys.

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