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REDUCING SUPPLEMENTATION COSTS FOR BEEF CATTLE IN TODAY'S INDUSTRY

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Cost effective supplementation has always been an important factor in determining the economic bottom line of cow/calf and stocker producers. In today's industry of increasing feed, fertilizer, and other input costs it is increasingly important that producers develop cost effective supplementation programs. Supplementation programs should be evaluated based on 1) the type of supplementation needed (i.e. protein supplementation, energy supplementation, both protein and energy supplementation, etc.), 2) the cost per unit of protein, energy, or some other nutrient, 3) feeding frequency, 4) delivery and storage cost and requirements, 5) digestive implications, 6) intake variation, and 7) safety, just to name a few. The goal of this paper will not be to provide a comprehensive discussion on supplementation programs, but rather to highlight a few ways to reduce the cost of supplementation programs in today's industry of rapidly increasing input costs. For more detailed reviews on supplementation several excellent Extension publications are available including:

Supplementation Strategies for Beef Cattle

<http://beef.tamu.edu/academics/beef/pub/nutrition/b6067-supplementationstrategies.pdf>

Beef Cow Nutrition Guide

<http://www.oznet.ksu.edu/library/lvstk2/c735.pdf>

One of the first steps in developing a supplementation program is to determine whether or not supplementation is needed. If cattle are grazing pasture or consuming hay that exceeds the level of nutrients needed for the desired level of performance then supplementation is not warranted from a performance standpoint. In this situation some producers choose to occasionally provide some supplement not to improve performance, but to facilitate cattle management and handling.

If it is determined that supplementation is required because available pasture or hay is lacking in nutritive value to support the desired level of performance, then the decision has to be made on which type of supplementation is most appropriate for the given situation. If a diet is low in protein, then a small amount of a high protein supplement such as cottonseed meal, soybean meal, or 40% crude protein cubes would be logical choices. If a diet is low in energy, then a

supplement with a higher concentration of energy and a lower concentration of protein such as corn, soybean hulls, corn gluten feed, or 20% crude protein cubes would be logical choices.

After determining which type of supplement is most appropriate for the given situation, then supplements should be priced based on their cost per unit of protein, energy or other needed nutrient. This is accomplished by multiplying the nutrient concentration of the feedstuff by the quantity of feed purchased. For example, there are 20 lbs of crude protein in a 50 lb sack of 40% crude protein cubes ($50 \text{ lbs} \times 40\% = 20 \text{ lbs}$ of crude protein). Once the pounds of protein per sack are determined then the price per pound of protein can be calculated by dividing the purchase price by the pounds of protein. If the 40% crude protein cubes cost \$9.50/sack then each pound of protein would cost \$0.475 ($\$9.50 \div 20 \text{ lbs of crude protein} = \0.475 per pound of protein); where as the price per pound of protein for 20% crude protein cubes that cost \$8.00 per sack would be \$0.80 per pound of protein. This same calculation can be done when pricing energy supplements or any other nutrient. Total digestible nutrients or TDN is an energy measurement commonly used when comparing feeds per unit of energy. The example below shows how to calculate the price per pound of TDN for corn with a price of \$200 per ton and a TDN concentration of 88%.

determine energy content per ton:

$$2000 \text{ lb} \times 88\% \text{ TDN} = 1760 \text{ lb of TDN per ton}$$

determine price per pound of TDN:

$$\$200 \text{ per ton} \div 1760 \text{ lb of TDN} = \$0.114 \text{ per lb of TDN}$$

Another factor to consider when choosing supplements is the frequency at which the supplement needs to be fed. Energy supplements typically need to be fed everyday. In contrast high protein supplements, such as cottonseed meal or 40% crude protein cubes can generally be fed everyday, every other day, or even twice a week. When protein supplementation is needed, feeding high protein supplements like the two mentioned above twice a week instead of daily can reduce labor and fuel costs, thus lowering the overall cost of the supplementation program.

Some producers choose to purchase "convenience" supplements which are available to the cattle at all times during the supplementation period and will last for several days or even several weeks. Examples of convenience feeds include blocks, tubs, liquid feeds, and mixed feeds with added limiters. When comparing these feeds to each other and traditional hand fed supplements it is important to calculate the cost per pound of utilizable protein or energy. Because of their potential convenience, blocks, tubs, liquid feeds, and mixed feeds with added

limiters are generally more expensive per pound of protein or energy than hand fed supplements. On some occasions when a producer has several operations separated by long distances, the potential fuel savings provided by having to offer these supplements less frequently than traditional hand fed supplements may provide some economic benefit.

Producers may also be able to reduce supplement costs by adjusting the time of year when supplements are purchased. As a general rule, feed prices are lowest during the summer and increase through the fall and winter. Purchasing or contracting feed during the summer or early fall will typically reduce supplement costs. It should be noted that long term storage of many feeds can be difficult during the summer. Additionally, because of the rapid increase in feed costs many companies have reduced the length of time of contracts. Purchasing feed in bulk can also reduce cost compared with purchasing sacked feed. Producers who are unable to purchase in bulk may be able to enjoy cost savings by contracting with their feed dealer during late summer or early fall. Some feed dealers allow producers to contract smaller quantities of sacked feed and then pick that feed up as it is needed throughout the winter.

As the cost of traditional feed ingredients increase many cattlemen are considering the purchase of non-traditional feed ingredients. While these feeds may offer some cost savings they typically come with additional problems. Storage and handling are potential problems with some of these ingredients. Additionally, some of these non-traditional products pose a high risk of creating acidosis or digestive upsets; others contain high levels of minerals or other compounds that can reduce performance, become toxic, and even cause death. If considering non-traditional feeds, check with a nutritionist to determine if and how these ingredients can be used in your operation.

Conclusion

In conclusion, to reduce/control supplement costs only supplement when nutrients are lacking in the diet for the desired level of performance. Make sure to match the nutrient requirements of your cattle to your given resources by establishing a calving season to coincide with periods of high levels of quality forage production as well as matching hay resources to cattle requirements. Additionally, always make sure to compare feeds based on their cost per pound of nutrient. While we are likely to be faced with relatively high feed costs in the foreseeable future, we can take steps to minimize the cost of our supplementation programs.