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“Stocker Cents” article

Supplemental Feeding of Stocker Cattle

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Feeding a supplement in addition to allowing stockers to graze is a practice that can have some benefits. However, the decisions to supplement and what to supplement should not be made lightly and require some planning. Factors such as forage quality and availability, feed availability, desired animal performance, and marketing objectives all weigh into the decision of whether or not to supplement and exactly what to supplement. Supplemental feed should be readily available, economical, easy to feed, and nutritious for the animal. Ideally, these supplements will be limit fed, thereby allowing the animals to utilize forage pasture.

Crude Protein

Protein is the building block of muscle tissue, and as such is an important factor for a growing animal. Beef cattle protein needs will vary depending upon the age of the calf, where it fits on the growth curve, and rate of daily gain. Typically, as the rate of gain increases, so does the protein requirement. Therefore, those values can be anywhere from 8 to 18% crude protein depending upon level of feed intake. Actively growing forages can be relatively high in crude protein, depending upon management protocols. However, most of this protein will be very highly degradable in the rumen. Therefore, a potential deficiency in by-pass protein may occur.

Recent data from the University of Nebraska have shown that supplementing by-pass protein in the form of dried distiller's grains fed at 5 lbs per head in unfertilized bromegrass pastures resulted in a 34% increase in total gain per acre compared to fertilized bromegrass pastures and a 105% increase in total gain per acre compared to unfertilized pastures.

Energy

Along with crude protein, energy is the other nutrient most often thought about in supplement programs. While most forage grown in Mississippi, have high levels of energy, there are some instances and conditions that warrant feeding an energy supplement. Simply feeding an energy supplement may not be sufficient. To more effectively utilize the energy some protein will have to be fed as well. The type of energy becomes the main concern when designing pasture supplements. Cattle on pasture will typically have a rumen microbe population that is very effective in digesting fiber. The addition of a high starch supplement can decrease this population of microbes, thereby decreasing the ability of the animal to digest forage. Starch is rapidly degraded in the rumen and requires a different population of microbes to digest it compared to fiber/forages.

Normally, the cereal grains are the feedstuffs that are classified as energy feeds. However, there are many co-products that are readily available that can be thought of as high energy and do not have the negative effect on fiber digestion like cereal grains. Soybean hull pellets, a co-product of soybean processing, is an excellent feedstuff that is high in digestible fiber and adequate in protein. Previous studies have shown that supplementing soybean hulls resulted in similar gains compared to a corn-based supplement for cattle grazing winter wheat pastures. Corn gluten pellets are co-products of corn syrup manufacture and also are high in digestible fiber and protein. Dried distiller's grains have already been discussed as a high protein supplement. However, they also have a high level of digestible fiber and fat, which makes them an excellent energy supplement.

Minerals

The importance of a good high quality mineral fed at all times cannot be stressed enough. In most situations, a good overall beef mineral will be sufficient for pasture production of stockers. Yet, there are some instances when special attention might be paid to cattle needs. Apart from high-stressed calves, other situations which might require special attention would be in the case of rapid growth of pastures during the spring, which might require a mineral higher in magnesium to offset any incidences of tetany. Additionally, the use of co-products such as dried distiller's grains and corn gluten feed, might result in imbalances with calcium, phosphorus, and sulfur. These products will be high in phosphorus and sulfur. Care should be taken when using these feeds as supplements to ensure that these imbalances do not occur.

Other Considerations

Apart from the nutritional aspects of choosing to supplement and what to supplement, other factors need to be addressed.

Rate of gain. Supplementing stockers will increase the rate of gain. Care should be given to not allow cattle to become to "fleshy" as some buyers might see that in a negative light and apply discounts to the cattle. Remember, the goal of the operation is to put gain on in the most economical manner possible, not to simply put the most gain on the cattle. Depending upon commodity markets, it may be beneficial to achieve more moderate gains without supplementing.

Compensatory gain. This effect occurs when animals are moved from a restricted plane of nutrition to a higher plane of nutrition, the body "compensates" for that restricted time and high rates of gain are achieved. This should be examined if the operation is retaining ownership on the cattle, some producers feel that they should allow this to occur at the feedyard, where feed costs are higher and the improved efficiency can help. This should be done cautiously, as in some cases, the animal is restricted so much that they never really compensate fully at the feedyard, which might result in lighter carcass weight.

Stocking rate. The addition of a supplement to a pasture grazing program can increase stocking rate, thereby allowing more cattle to graze. University data have shown that

anywhere from 22 to 54% increases in stocking rates can be achieved with supplements fed at the rate of 4 to 5 lbs per head daily. This is an important consideration if the operation needs to increase numbers to make specific load requirements, or if higher cattle numbers are desired for economic reasons.

Forage management. Due to high costs of fertilization, efficiency of nitrogen use by the plant and subsequently the animal, and environmental concerns with nitrogen applications, supplementing cattle may be a more effective use of resources. Current research are showing that in some cases, using supplements can effectively substitute for fertilizer application by improving performance of cattle and increasing stocking rate. While few studies exist examining this effect/relationship, it does appear to have some validity and does require further investigation.

The decision to supplement or not and what to supplement requires much thought and input from the producer. Most of these decisions will be economically driven, and what may appear to be lucrative in one economy, may be disastrous in another. Understanding the overall objective of the operation and marketing potential can help determine if supplementation is warranted. Once the decision to supplement has been made, choosing ingredients that make up for any deficiencies will not affect fiber digestibility and are economical are paramount to success. For more information about stocker cattle production, contact an office of the Mississippi State University Extension Service.