

Cattle Business in Mississippi – June/July 2013
“Beef Production Strategies” article

Supplementation on Summer Pasture

Jane Parish – Extension Beef Cattle Specialist, Mississippi State University

It is common for cattle grazing summer pastures in Mississippi to be provided with a mineral and vitamin supplement but no grain-based supplement. In many cases stocking rates are such that summer forages provide adequate or even excessive dry matter availability for grazing cattle to consume. Yet supplementation with concentrate feeds during the summer is not out of the question as a reasonable practice on cattle operations. It all depends upon the situation.

Supplementation may be used to improve the overall diet quality of cattle grazing summer pasture. It is well documented that summer forages typically have less crude protein and total digestible nutrients concentrations than winter forages. Of course, forage species and management affect this, particularly management of forage maturity. Similarly, late summer pastures may need supplementation even more so than earlier summer pastures because of the decline in nutritive value over the course of the growing season.

Supplementation may be worthy of consideration in cases where forage availability is less than desired. This might occur during a drought, after poor forage stand establishment, or when there is a loss of grazing acreage, such as when a pasture lease expires and is not renewed. Decreasing stocking rates by adding grazing acreage or removing animals from the herd could be done to address limited forage availability. In cases where a producer does not want to sell any cattle at the current time and cannot or will not add pasture acreage, then shifting cattle onto a diet with a greater percentage of grain in place of forage could be used to tide them over until a time when available forage becomes more abundant. Supplementation in these cases may need to involve stored forage such as hay or baleage in addition to concentrates. If nothing is done when forage quantities are insufficiently matched to cattle nutrient demands, then cattle performance will clearly suffer.

Whether or not grain supplementation is warranted varies with operational goals, pasture type, time of year, supplement type, supplementation rate, pasture and supplement costs, and cattle prices. Producers should first define their purpose(s) for supplementation. Is the idea to improve profitability through better growth performance or enhanced reproductive performance? Is the primary goal to meet specific performance targets, such as those for contract grazing or board sale specifications? Is supplementation being considered as a means to get calves used to consuming feed? Is it an option because there is a desire for cattle to be trained to come to feed? The reason behind providing the supplement will drive decisions on what, when, and how much to supplement.

Producers must determine the economic value of supplying nutrients from grain to cattle. The value of added weight gain is one aspect of this. Additional body condition and its effects on cow market price and reproductive performance should also be valued. Also important, but difficult to put a dollar value on, is the benefit of supplementation on maternal nutrition, fetal performance, and subsequent lifetime effects on the performance of the gestating calf. In estimating cattle performance grazing summer pasture and the boost expected from supplementation, cattle health, cattle genetics, ionophore use, growth-promoting implant use, climatic conditions, stocking rate, forage maturity, forage species, forage cultivar, soil type, and soil fertility all interact to affect the end result.

It is useful to first understand how the base forage within a pasture will potentially affect grazing cattle performance. In most cases, the nutritive value of common bermudagrass mixed with dallisgrass and crabgrass will exceed that of hybrid bermudagrass. Likewise, bermudagrass will often have greater nutritive value than bahiagrass. Furthermore, cattle weight gains on summer annual pastures (e.g., pearl millet, sorghum-sudangrass, crabgrass) will typically exceed those on summer perennial (“permanent”) pastures (e.g., bermudagrass, bahiagrass). Forage and grazing management play a big role in determining possible animal weight gains on pasture. Well-managed bahiagrass can certainly surpass poorly-managed bermudagrass for nutritive value, and cattle can gain more on bermudagrass than pearl millet if forage and grazing management are more favorable for weight gains on the bermudagrass.

For a reference point, on pasture alone, it is reasonable to expect growing calf weight gains of slightly less than 2 pounds per day on summer annual grass pastures. This can range from 1.5 to 2.5 pounds per day though. Bermudagrass pastures typically support average daily gains in growing calves of just less than 1.5 pounds per day, with a usual range of 0.7 to 1.8 pounds per day. Bahiagrass pastures often produce average daily gains in growing calves of not quite 1 pound per day, and may range from just less than 0.5 to up to 1.2 pounds per day.

Average daily gains on summer pasture alone may be less than production targets, showing that there can be a legitimate role for supplementation during the warm-season months. There may also be instances where animals are thin and need additional nutrients to regain body condition and weight. Bulls used as herd sires for spring breeding may be removed from breeding pastures in June after having lost weight throughout the breeding season. These animals are candidates for grain supplementation during summer, especially when they might be expected to service a fall-breeding herd as well. Another scenario that bears consideration for supplementing cattle diets is when stockpiled summer forages are grazed in late fall. The nutritive value of these pastures is often very poor, and growing or lactating cattle would most likely require additional nutrients from a supplement to support their nutrient demands. Additionally, for implants to be effective at improving calf growth, average daily gains generally need to be at least 1.3 pounds per day to see the true benefit of the implants. Thus, supplementation on summer pasture may be needed to reach this rate of gain.

When deciding to supplement summer pasture with concentrate feed to increase animal and/or land productivity, the duration, timing, quantity, and dietary setting of supplementation are important. In some instances, 6 weeks of concentrate

supplementation may be insufficient to achieve noticeable cattle weight gain differences. Time of year and environmental conditions affect this. Supplementation during early summer may not produce as much of a boost in average daily gains as supplementation during late summer when the gap between forage nutritive value and animal nutrient needs is wider. Supplement quantities offered to cattle are critical to production and economic efficiency. Diminishing marginal returns are a concern. What this means is that, as supplement feeding rate is increased, the average daily gain increases by less and less until eventually greater additional supplement feeding rates produce decreased average daily gains. This is partially explained by decreases in fiber utilization with increasing rates of concentrate supplementation on forage-based diets. Similarly, moderate rates of supplementation may be economically ideal. Relatively low cattle prices relative to input costs may make high rates of supplementation a poor choice and vice-versa for low rates of supplementation.

Think beyond traditional grain-based supplementation of summer pastures. Supplementation does not always have to come from a bucket or a sack. It can be from other forages. High-quality legumes (e.g., clovers, alfalfa), forbs (e.g., chicory), or summer annuals may complement permanent summer pastures by increasing the overall nutritive value of the diet available to grazing cattle. Creep grazing and limit grazing can be used to help deliver the better quality forages to specific groups of cattle with greater nutrient needs as a percent of their total intake.

As with all nutritional management decisions, it is important to monitor the results of a feeding program and make adjustments as needed. Track cattle health and performance along with pasture conditions. Also essential, monitor input and output prices to put nutrition program decisions in an economic context. For more information about beef cattle production, contact an office of the Mississippi State University Extension Service or visit msucares.com/livestock/beef.