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Supplementation Frequency Decisions for Beef Cattle Producers

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How often and how much of a given feed should be fed to cattle are questions that many beef cattle producers ask. Producers looking to cut operational costs but maintain or improve cattle performance may consider supplementation frequency as something that could be modified in their operations. For many of these producers, labor is an important consideration in developing nutritional programs. Management practices that add to labor and time demands must be sufficiently justified by their impacts on animal productivity, health, or operational profitability. Likewise, nutritional practices that add operational expenses, such as additional fuel and repairs for tractors, trucks, and other feeding equipment, must be evaluated for cost-effectiveness.

Self-fed supplements, for instance lick tubs or salt-limiting supplements, are a tempting option for producers trying to cut down on time and expenses devoted to feed delivery to cattle. However, cattle performance goals and unit cost of production considerations may steer producers in a different direction. For example, seedstock producers developing bulls targeting moderate to high growth rates are likely to seek out a supplement that is best fed by hand. Similarly, when producers pencil out the cost of various supplements on a dry matter per unit of energy and protein basis, they will often discover the convenience of self-fed supplements comes at a price. Then they wrestle with decisions on what other supplements might be feasible for their management systems and reasonable for their budgets.

The ideal number of feedings per week depends on the type of supplement being offered. Some feeds do not lend themselves to infrequent supplementation. For example, ionophores or other antibiotics delivered through feed as well as non-protein nitrogen supplements, such as urea-containing products, cannot be fed only once or twice per week. The ionophores and other antibiotics will not work as intended if fed infrequently, and the non-protein nitrogen feeds need to be fed more frequently to ensure cattle safety when consuming these products.

There are also differences between energy and protein supplements for optimum feeding frequency. There is substantial evidence that reduced frequency of protein supplement feeding to cattle consuming low quality forages has little or no effect on animal performance, despite lowering forage intake. Though, results are different when considering energy supplements.

Reductions in average daily gains have been observed when the feeding frequency is lessened using high energy supplements containing high levels of rapidly fermentable sugars and starches. Starches from grains in energy supplements are less disruptive to digestion in cattle on forage-based diets when fed on a daily basis than when fed less

often. More grain must be fed per feeding when supplementation frequency is reduced. This can decrease rumen pH and/or cause an insufficiency of nitrogen in the rumen. The end result is that less frequent feeding of grain-based energy supplements can negatively affect fiber (forage) digestion in the rumen and hurt cattle performance.

Recently energy supplements based on low-starch co-products have been evaluated for the effects of varying feeding frequency on cattle performance. Results differ depending upon the supplement used. North Carolina researchers showed that growing steers fed medium quality hay could be supplemented with a blend of soybean hulls and corn gluten feed as little as twice a week without lowering average daily gains as compared with daily feeding. Florida researchers, on the other hand, reported that average daily gains of yearling steers supplemented with citrus pulp were higher when the supplement was fed daily as opposed to 3 times per week. They also observed less variation in daily forage intake with daily supplementation. Nebraska researchers saw that, when dried distillers grains plus solubles were fed in excess of 15% of the diet to growing cattle, more frequent supplementation improved average daily gains. Additional Florida data suggest that, for improved reproductive efficiency in mature cows, energy supplements consisting primarily of the combination of wheat middlings and soybean hulls are best fed daily instead of 3 times per week.

Advantages to more frequent supplementation of cattle include more frequent contact with these animals. This gives producers more opportunities to observe cattle for health or other problems and may facilitate more timely identification of cattle needing treatment. It also conditions cattle to human interaction and allows them to associate humans with providing feed. This can lead to improved cattle handling when cattle need to be moved or worked. If more feed is needed for one feeding than can be carried in one vehicle, then there may be little difference from a time, fuel, and labor standpoint to make multiple trips for one feeding versus spreading these trips out over several feeding periods.

There are also some advantages to infrequent supplementation of cattle beyond the obvious benefits of feed delivery cost reductions. In mud-prone feeding areas, feeding less often can reduce trampling damage to feeding areas and help with mud levels. Feeding larger quantities in fewer feeding sessions means that more feed is offered to cattle at any one feeding. Assuming that adequate trough space is available, this may allow more timid cattle to feed in a less competitive situation. This means that there may be less variation in supplement intake among cattle in a herd and subsequently more consistent performance within a feeding management group.

Cattle who expect feed delivered to them on a daily basis at a regular feeding time may alter their grazing behavior in anticipation of feeding, possibly affecting grazing efficiency. So, more infrequent supplementation may be beneficial in that respect as well. Louisiana research documented differences in stocker calf grazing behavior based on time of day supplement was offered and noted that supplementation strategies could be used to manipulate grazing patterns.

Ultimately, producers need to consider the specific feedstuffs and feeding levels used when deciding on appropriate supplementation frequency. In cases, such as the one noted previously where steers were fed a mixture of soybean hulls and corn gluten feed as little as twice a week without performance reductions, daily supplementation may not be the best option. In other instances, cattle performance may be sacrificed if animals are supplemented only a few times per week. For more information about stocker cattle production, contact an office of the Mississippi State University Extension Service.