

Supplement with Snacks

New technology provides an option to salt for limiting intake of self-fed supplements for cattle on forage-based diets.

Feed suppliers have new names for it, such as controlled consumption or intake modification, but they are talking about the concept of self-limiting feed. It's not a new idea. For many years, some pretty smart folks have tried to figure how to save time and labor associated with feeding grain or supplements to cattle by using self-feeders. The problem with having feed available at all times is that cattle may, and often will, overeat. So a lot of those same folks looked for something that could be added to the feed to limit consumption.

Perhaps the most common ingredient used as a limiter has been salt. Mixing salt with feed to control intake does work. However, over time cattle may become tolerant, and increased amounts of salt may be required to achieve the desired effect. Furthermore, high levels of salt can be dangerous, particularly if the animals run out of drinking water. There also is some concern that, in the long run, feeding high levels of salt could contribute to increased concentrations of sodium in the soil.

Options available

Several commercial feed companies offer self-limiting products ranging from supplements for cows on low-quality forage to developer rations for bulls and replacement females, as well as backgrounding and growing rations for calves. There are self-limiting products formulated for finishing programs, too. But don't expect the feed tag to reveal a high salt content for controlling consumption. Today's self-limiting feeds are built from sophisticated formulations involving a myriad of ingredients. When asked about what specific substance serves to limit intake, feed companies hold their cards close to the vest.

Purina Mills has been researching

self-limiting feeds for more than 30 years, according to Lee Dickerson, director of Purina's range cattle business in the United States. Based in Saint Louis, Mo., Purina currently offers products featuring the company's trademark IM Technology (Intake Modifying Technology™).

Dickerson says there is no single ingredient that limits consumption. Purina has conducted more than 1,500 studies involving many ingredients in many different combina-

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—Lee Dickerson

tions to develop several self-limiting formulations. As many as 10 of the ingredients used can have an effect on consumption, but all of them provide necessary nutrients, such as minerals, protein or energy.

“It's not so much the individual ingredients but the specific combinations of ingredients that limit intake based on taste and metabolic response,” Dickerson adds. “The combinations of ingredients

change the eating behavior of cattle, making them ‘snack eaters.’”

Snackers

During recent years there has been increasing producer interest in self-limiting nutritional supplements for cattle whose primary diet consists of low-quality pasture or harvested forage. Cited as an advantage over more traditional supplement feeding methods, such as grain or range cubes, is the ability of the new supplements to maintain digestive stability in the ruminant animal. Instead of gobbling up several pounds of cubes or grain during a five- to 10-minute period each day or every other day, cattle have 24-hour access to self-limiting supplements. Cattle adapt to a snacking behavior, coming to the self-feeder for small amounts of supplement, several times throughout the day.

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Especially to the growing number of producers who have another job during the day, the convenience and labor savings of self-limited products are an advantage. Often, a self-feeder may need to be filled only once per week, and a service-oriented dealer may do that, allowing producers to use the time they have with the cattle for observation.

[PHOTOS BY SHAUNA ROSE HERMEL]



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Dickerson says the real key to this kind of feeding system is that multiple supplemental snacks promote stable rumen function by optimizing the environment for the rumen microflora that are necessary to di-

gest forage fiber. As rumen “bugs” become more efficient fiber digesters, cattle are better able to utilize available forage. Cattle spend more time grazing. In fact, Purina research has documented 15%-20% increases in animal grazing time and enhanced pasture utilization.

“And you don’t waste money by over-feeding supplement,” Dickerson adds, “because intake varies with forage quality. Cat-

tle receiving higher-quality forage will consume less supplement. When nutrition available from forage is low, consumption of the supplement increases to meet animal requirements.”

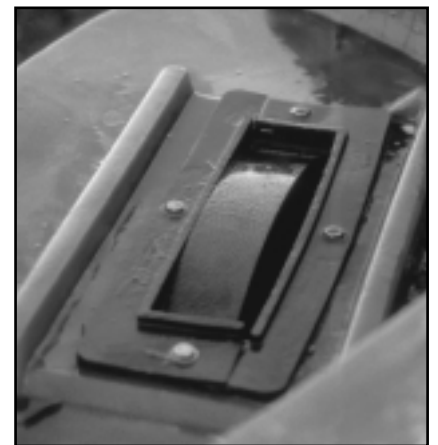
Supplement selection is based on the quality or nutrient value of a producer’s forage base, as well as the stage of production and body condition of the cattle. Purina products, for example, offer varying lev-

els of protein and energy content and are available in meal or pellet form (Accuration®/Cattle Limiter™), lick-blocks (Sup-R-Block®), and liquid (Sup-R-Lix®). Which product to use is based on the producer’s program objectives and product availability.

Producer experiences

Texas cattleman Lee Miller mixes Accuration with cracked corn to supplement his fall-calving cows. Not far from the Gulf Coast, near La Grange, Texas, Miller’s 100 or so registered Angus cows graze rolling hills of Bermuda grass. With close to 38 inches (in.) of annual precipitation, Miller usually has an ample quantity of pasture, but the quality doesn’t always meet the nutritional requirements of his cows.

“Prior to calving, when the cows are dry but the grass is not so good, we’ll supplement with a mix containing mostly limiter (about 80% Accuration) and a little corn. After calving, we’ll adjust the amount of limiter in the mix to increase intake,” Miller explains. “I’ve learned that you can optimize forage utilization, either pasture or hay, as well as the consumption of supplement by varying the amount of limiter in the mix.



Cattle adapt to self-limited supplements by developing a snacking behavior, coming to the self-feeder for small amounts of supplement, several times throughout the day.

“We can put as much condition on our cows as we want, and with this self-fed system, I don’t have to handle all those sacks of cake (range cubes) like I used to,” he adds.

On the northern Plains, Lyle Weiss mixes controlled intake products in rations for growing the bulls and replacement heifers produced at Pine Creek Angus, near Faith, S.D. To save hay for the cow herd, Weiss developed his sale bulls on pasture supplemented with a mixture of limiter product and corn, feeding no hay until late in the 140-day development period. The program targeted daily gains of 3 pounds (lb.), but the bulls gained up to 5 lb. per day. The cost of feed alone was 21¢ per pound of gain.

“The first year we used (controlled-intake product) with soyhulls to grow heifers, those heifers gained almost too much — a little over 2 pounds per day,” Weiss offers. “But we’ve learned how to adjust what we’re feeding to get the outcome we want.”

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— *Ivan Rush*

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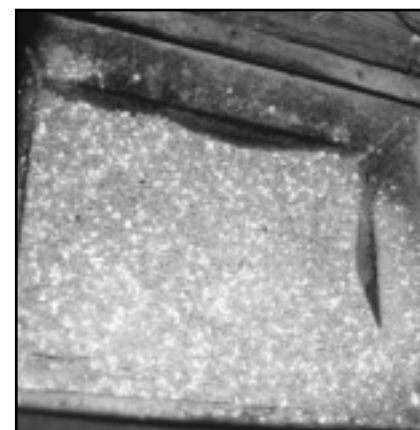
In Missouri, the bred heifers that Elizabeth Coon and husband Larry developed with a controlled-consumption program achieved better condition, more easily, than with any previous method. On Coon Angus Ranch, near Bethel, the heifers were fed low-quality, year-old hay and supplemented with a self-fed mix of 80% Accura-

tion and 20% corn. Late in the third trimester of gestation, the heifers consumed 5.75 lb. of mixed supplement daily, at a cost of 80¢ per head per day.

“All things considered, I think that’s competitive. It was dealer-mixed and delivered, so we didn’t have to handle any bags or buckets at all. All we had to do was go out and check on the cattle,” Coon says.

Extension beef specialist Ivan Rush of the University of Nebraska Panhandle Research and Extension Center says the concept of self-fed beef nutrition programs makes sense when it can reduce labor requirements. And while little independent research has been done regarding controlled-intake products, producer feedback indicates a relatively high rate of satisfaction when they are managed properly.

“When supplementing cattle on forage with self-limiting products, the cost



Producers can optimize forage utilization and supplement consumption by varying the amount of limiter in the mix.

may be higher than for the more traditional products, like range cubes. Many users say the big advantage of self-limiting supplements is the convenience. Whether that is worth the extra cost depends on what a producer thinks his or her time and labor are worth,” Rush offers.

Rush and Dickerson agree that producers should get estimates from their local feed suppliers and pencil out a cost-benefit ratio for their locale and management situation.

Rush grows concerned when the terminology “stretch pastures” is associated with any supplemental feeding program, fearing producers will interpret that to mean it actually gives them more forage and extends the grazing season.

Producers should realize that trying to make grazed forages last longer is not the same thing as trying to make cattle better able to utilize more of the forage available to them. Producers can increase the intake of poor-quality forage and increase its digestibility or utilization with protein supplementation programs, says Rush, including traditional protein products. Doing so will allow the cattle to get more nutrition from the forage that is available, but it won’t increase the forage supply (see “Supplementing Winter Grazing,” February 2003 *Angus Journal*, page 85).