SUPPLEMENT STRATEGIES

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Using satellite-linked collars to track cow movement, Montana researchers showed that low-moisture blocks can attract cattle to graze unused forage on steep, rough range land.

A regular series on cost-effective supplementation strategies, sponsored by CRYSTALYX® Brand Supplements. Results By the Barrel.™

Study documents improved grazing distribution using low-moisture block supplements

***HAVRE, Montana** – New research here asks: If trace-mineral, low-moisture block supplements can attract cattle to better graze under-used pasture land, how does a loose mineral form compare to low-moisture blocks?*

The study details

- Location: 630-acre and 820-acre pastures on the Thackeray Ranch, in the Bear's Paw Mountains, south of Havre. Each pasture's terrain was classified as easy, moderate, difficult and extreme. Researchers based classification on nearness to water, elevation and slope.
- Grazing period: September through mid-November 2000 for pasture 1; Late November through December, pasture 2.
- Setup: Electric fence split each pasture for two experimental treatments, allocating terrain styles equally. Both flat and extreme areas were omitted from the study. A total of 217 Continental-cross cow/calf pairs, previously acclimated to low-moisture blocks, were randomly assigned to pastures and treatments. Cows in each group were randomly assigned to wear electronic Global Positioning Satellite (GPS) tracking collars that recorded their movement and grazing activity by satellite.
- Feed makeup. Experimenters offered cows either trace mineral-fortified 30 percent crude-protein low-moisture blocks or a commercially prepared dry mineral mix in open mineral feeders. White salt blocks were also placed about 40 yards from each supplement source.
- Investigators regularly measured data from the collars and observed cattle from horseback. They calculated the time cattle spent within 10, 100, 200, 400 and 600 yards of blocks, mineral and water. They then estimated the ability of each source to attract cattle into areas that were difficult to graze and hold them nearby.

Results: Improved grazing patterns

- During the entire trial, 74 percent of the cows visited the low-moisture blocks at least once. That compares to only 55 percent for the dry mineral mix.
- As expected, cattle were less likely to visit both supplement sources when they were placed on difficult terrain vs. moderate. However, the proportion of those that ignored dry mineral on difficult terrain was higher than for blocks: 62 percent vs. only 40 percent. Plus, previous experiments in this study's same location found that when low-moisture blocks were compared to no supplement at all, fully 97 percent of the cattle ignored the rougher areas in favor of flat terrain near water.
- Cows sought out and visited the areas with low-moisture blocks more often than those containing dry mineral. On average, cows visited low-moisture blocks every other day. They visited dry mineral feeders only every four days.
- Low-moisture blocks appeared to have the power to hold cows in under-utilized areas thus increasing forage utilization. Cows actually spent about 400 percent more time at the low-moisture blocks than the dry mineral feeders.
- In one of the study's biggest surprise findings, the low-moisture blocks were even more attractive than water during the fall and winter study. Cows spent more time within 200 to 600 yards of low-moisture blocks than within similar distances to water.

Quick Summary

- Montana research demonstrates that strategic placement of low-moisture blocks can draw cattle into under-used portions of range, effectively increasing available grazing land.
- In this study, low-moisture blocks were found to be more attractive than loose, dry mineral in distributing grazing.
- Blocks were even more effective than water in attracting cattle.

Implications

This study confirms previous studies showing that low-moisture blocks can attract cattle to rougher portions of pasture land and improve grazing efficiency. It shows that blocks are visited more often and more consistently than loose mineral, offering a more effective supplement and grazing management tool than dry mineral.

Source: Bailey, DW. Effectiveness of Low-Moisture Molasses Blocks and Conventional Formulations for Delivering Supplemental Minerals to Cattle on Rangelands. Northern Agricultural Research Center, Montana State University, 2001.

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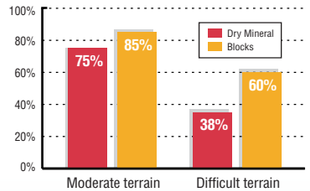
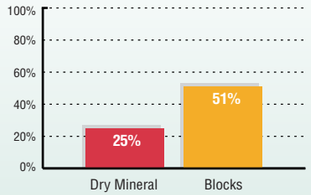
Percentage of cows that visited supplement source



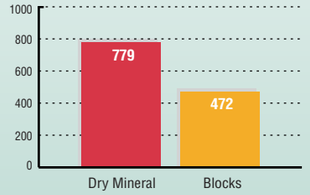
Blocks more attractive: A higher percentage of cows visited blocks than loose mineral, regardless of terrain.

Percentage of days that cows visited supplement source



Blocks kept them moving: Cows visited the block site for a larger percentage of their grazing days than they did loose mineral.

Average distance of herd from supplement source (yards)



Blocks drew them further: The average cow was less willing to stray from the block than from loose mineral.

RESULTS BY THE BARREL™

More and more cattlemen supplement their feeding programs with the brand they know: CRYSTALYX® Brand Supplements.

- Contain proteins, vitamins, minerals and trace minerals. No reliance on chemical hardeners and clay binders or salt to limit consumption.
- Complete family of formulations to fit virtually all feeding situations.
- Highly concentrated: Only 2 percent to 5 percent moisture.
- Dissolves slowly as licked. Self-limiting. Can't be over-consumed.
- No waste, windproof, waterproof, cannot be trampled, bit off or broken.
- Durable steel half-barrel can be moved from pasture to pasture.

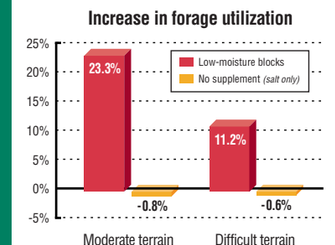
- Labor-savings, environmentally friendly packaging and weather-proof supplement delivery.

ECONOMIC IMPACT

Reduce the natural unevenness of grazing that results when cattle linger on flat and riparian ground and several benefits occur:

- Less forage goes to waste. In previous work by this study's author, strategic block placement increased total forage utilization on moderate and difficult terrain by 23 percent and 11 percent, respectively. Studies from the University of Missouri's Forage Research Center suggest that cattle on eastern pastures might also improve forage use by better enticing them away from water. There, season-long forage utilization dropped by half in distant reaches of large pastures.
- The more heavily grazed areas improve in quality. Researchers have noted the chicken-and-egg nature of distribution problems: Cattle graze more heavily near water because they seek areas where most of the old-growth forage was removed in the previous year. That new growth is most often found near water, because cattle graze heavily near water. Therefore, if cattle can be enticed beyond those boundaries to graze old growth, numerous studies have documented the improvement that can be expected in stand biodiversity, plant vigor, forage quality and quantity, and soil condition.
- Drawing cattle away from ecologically fragile riparian areas can increase stream bank stability and reduce erosion.
- Wider grazing patterns return manure-based nutrients to the soil more effectively, as well as help release carbon and nitrogen tied up in dead plant material.

Increase in forage utilization



Supplementation can improve forage use by over 20 percent in moderate terrain; 10 percent in difficult terrain, previous research shows.

Source: Baily, DW and Welling, GR, Modification of Cattle Grazing Distribution with Dehydrated Molasses Supplement. Journal of Range Management 52:575-582, November 1999.