Using Low Moisture Blocks to Improve Livestock Distribution and Forage Utilization

Do you often eat at the same restaurants even if your town is loaded with places to eat? People frequent the same restaurants for a variety of reasons from the quality and type of food, to cost, to distance from home, to simply being unfamiliar with the alternatives. Like people, livestock also prefer to forage in the same locations. Forage quality or abundance, lack of information about other locations, and laziness all contribute to rangelands being both under and over grazed. Strategic placement of supplements improves livestock distribution resulting in more even use of rangelands. Placement of supplements, time of year, proper training, type of supplement and herding all influence their effectiveness.

Why supplement? Supplements provide nutrients to livestock when rangeland forage lacks needed nutrients. In fall and winter, the amount of mature forage on rangelands may be adequate but its nutrient content is often too low to meet animal needs. For example, the protein content of mature grass is normally 4-6%, yet the protein requirement for a mature, dry, pregnant cow is 6-7%. Thus, supplements enable livestock to eat standing dead forage and still meet nutritional needs.

Low moisture blocks (LMB) are molasses-based supplements that provide energy and protein and/or minerals. LMB contain 2 to 4% moisture and are self-fed. Nutrient compositions of LMB vary. All contain fat and trace minerals. Some provide protein with crude protein levels ranging from 20 to 40%. Others provide additional macro-minerals such as phosphorus.

Strategic placement of LMB can change where livestock graze and loaf. For example, on one Montana ranch, riders typically gathered 20% of the cattle from the eastern half of the ranch each fall but when LMB were located in the eastern half, the number of cattle gathered from that half increased to 55%. Cattle often spend as much as 5 hours/day within 100 yards of LMB. They also eat more forage, as much as 40%, at distances as far as third of a mile from LMB sites. Forage utilization can be improved as much as 25% on moderate and 10% on steep slopes when cattle are supplied with LMB near these areas.

How and when to supplement. LMB are available in 125 to 250 lb barrels and can be moved to rugged rangeland with a four-wheel drive truck or an ATV and small trailer. If the 250 lb LMB barrels are tipped on edge, they can be easily rolled on and off trailers or truck beds using ramps. As a rule of thumb, when the primary source of feed is standing dead grass, a 250 lb barrel lasts 25 cows about two weeks. According to studies conducted in Montana, fall and winter intake of LMB was about 0.7 lbs/head/day. Most of the cattle within the herd consumed LMB. Using GPS tracking collars researchers found that 48 out of 50 collared cows visited LMB.

Placing LMB near each other increases social interactions among animals increasing the likelihood that the supplement site will be used as a loafing area. The recommended density according to one study is eight barrels in an area 200 by 200 yd. Salt should be placed in the

same area because LMB do not contain salt. It's also recommended to place new supplement barrels at least 300 yards from old sites to improve livestock distribution and forage utilization. If supplements are repeatedly placed in the same area, nearby forage use becomes excessive.

LMB are most effective at luring livestock to less utilized areas in fall and winter. They may also improve distribution in the summer depending on growing conditions. Protein and energy supplements are less effective in spring and early summer when forage is actively growing.

Training the herd. Even though LMB are extremely nutritious, animals must become familiar with them before they can be used as attractants. Offering animals a supplement in drylot or small pens is the most effective method for getting animals to sample new supplements. Supplements are high in digestible nutrients making learning from nutrient feedback rapid. On large pastures, placing supplements near water will result in most animals becoming familiar with them within two to four weeks, though this method is not as effective as introducing supplements in a small area when animals are fed hay.

Showing animals where a supplement is located is a good practice especially if it is moved a long distance from its former location. Cows can be herded, "called" or "honked" to a new supplement location. Not all cows need to be shown the new location. Generally, the entire herd will find the location if 30 to 50% of the herd is shown the supplement site once.

In some cases, animals may find supplement locations without help. During studies in Montana, cattle found LMB locations in 600 + acre pastures within 2 days 50% of the time. Placing LMB on ridgelines may enable cows to see other cows consuming the supplement. In areas with trees, animals should be shown where the supplement is located. During one study, conducted on a 700-acre pasture with gentle terrain and interspersed with pinion and juniper trees, cows did not find a LMB for 6 weeks even though it was located next to a cow trail.

If new supplement barrels are placed only a short distance, 200 to 400 yards, from their previous locations, animals will readily find them. According to numerous studies conducted over seven years, cows consistently found new barrels of supplement within one or two days when they were placed 200 to 400 yards from the last supplementation site. Using this method, animals need only be herded to the first supplement location. The idea is to place supplements along areas such as ridges that typically receive little grazing.

Not all supplements are created equal.

Any supplement that provides needed nutrients and must be consumed slowly like LMB or pressed molasses blocks will likely be more effective at improving livestock distribution and forage utilization than supplements that are eaten quickly like range cake or cubes. Cake or cubes are largely ineffective at changing foraging locations because cattle return to favored locations as soon as the supplements are eaten. In addition, producers are not likely to travel to remote locations several times a week to feed cake or cubes. Finally, LMB is cheaper to feed than cake because it requires less labor and fuel costs to feed.

Supplements and herding. Using low-stress livestock handling techniques to move livestock away from sensitive areas such as streams and wet meadows is effective whether or not LMB are available on upland sites. In one study, forage remaining on or near streambanks was 2 to 4 inches taller in pastures where cattle were regularly herded whether or not LMB was placed on upland sites compared with cattle that were not herded and did not receive LMB. Placement of LMB blocks appeared to help hold cattle in upland areas where they were herded. In two of three pastures, cattle spent 1.5 to 2 times more time in upland target areas when supplement was available.

Conclusions. Strategic placement of low-moisture blocks can be an effective tool to manipulate cattle grazing patterns. This supplement is highly palatable and can be used to lure cattle to graze areas that typically receive little use.

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Website: www.behave.net
Email: behave@cc.usu.edu