The Right Spot

Location-based wintering strategies work.

Story & photos by ***Ed Haag***

►Slotted fence provides a cost-effective windbreak option.

"Location, location, location" doesn't just apply to Donald Trump and real estate anymore. The timeworn adage applies equally well to wintering pregnant cows under less-than-ideal climatic conditions.

Cow-calf operators who winter their cows on the open range know how their feeding costs can vary dramatically depending on the severity of the season. While there isn't a whole lot a person can do about the wind and the cold, Bok Sowell, Montana State University (MSU) Department of Animal and Range Sciences, believes there are ways to minimize the effects of inclement weather on a beef producer's bottom line.

This is Sowell's conclusion, after conducting several winter grazing studies with his MSU colleagues. They determined the key to cost-effective cold-weather cow management was to plan ahead to make sure cattle had access to protected areas and winter-long access to ground forage.

"In the west there is a tendency to throw hay at bad weather," he says. "That will get your cows through, but it costs you."

Sowell notes that outside of labor, in the West, feedstuffs are a cow-calf operator's greatest expense. This is particularly true today, when the cost of all high-energy feed sources is rising with the price of corn.

He admits that under some circumstances, purchasing and feeding high-priced hay or grain is unavoidable, but this certainly shouldn't be the rule if one properly implements a location-based wintering strategy.

"It might happen in the very worst of winters," Sowell says. "But in most years, proper planning will help you avoid spending that kind of money."

Some pastures better-suited

To develop a successful location-based wintering strategy, the first step is to assess existing pasture resources, then match wintering needs to the best-suited sites available.

Just because a pasture is a big producer in the summer doesn't mean it is the best choice for winter forage. Often, the opposite is true, Sowell says. Flat bottomland may produce more forage than a less fertile hillside, but will that forage be accessible in the winter?

In a joint study conducted by the U.S. Department of Agriculture's (USDA) Agricultural Research Service (ARS) and MSU at Fort Keogh, Mont., during what was categorized as a cold winter, pregnant cows that pastured on terrain with topographical variation lost an average of 127 pounds (lb.) less than animals pastured on flat, open sites.

Sowell attributes the difference in weight loss to two factors: First, the land with an uneven surface was more likely to provide natural shelter — gullies, slopes and indentations. Cows that had access to these areas during cold, windy weather required a lower draw on their fat reserves to produce maintenance energy than cows with no shelter. Second, uneven ground offers greater variations in snow depth and texture than ground that is flat.

During severe winters, when the snow is deep, cows on mixed terrain are more likely to find accessible forage than those pastured on the flats. This is particularly true on more

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southern slopes, where cows are sheltered from north winds and blowing snow, and they are likely to find pockets of exposed ground forage.

While sheltered sites do generally offer greater opportunities for wintering cattle to maintain weight and body condition, there are exceptions. Some studies conducted in cold, dry weather with lower wind chill factors show no detectable difference in weight loss between animals that had access to shelter and those that did not.

From studies conducted by researchers at Kansas State University (K-State) and Colorado State University (CSU), cold driving winds, poor coat condition and wet weather do play pivotal roles in reducing an animal's ability to withstand cold temperatures without drawing on fat reserves to produce maintenance energy.

Close not necessarily best

Two factors that often play into winter-feeding scenarios are convenience and access, Sowell says. "Most ranchers want to feed as close to the house as possible because it is so tough to get into some of these other areas." This can severely limit grazing options.

For those who are concerned about isolating younger and weaker animals, Sowell recommends separating them from the main herd in the fall and grazing them closer to the farmstead. The remaining animals can then be put on the more remote pastures that offer some real winter grazing opportunities.

Cow-calf operators who have no options but to winter-graze on the flats can get similar results to what they would get from a more varied topography by planting windbreaks or building artificial barriers that offer cows shelter from the winds, thus reducing the need for them to draw on their fat reserves to produce maintenance energy.

One cost-effective windbreak option used extensively in North Dakota is the slotted fence. Recommended height is 9 feet (ft.) with 1×6-inch (in.) boards set vertically 1½-2 in. apart. Total open space is equal to 25% of fence surface. Research conducted by North Dakota State University's Dickinson Branch Station shows that the slotted fence provided as effective a windbreak as a solid one and was approximately 25% cheaper. The researchers concluded that there were no marked differences in rate of gain, efficiency of feed conversion or health of the cattle in these trials.

Researchers recommend that slotted fences be constructed within an enclosed area rather than along its fenceline. This allows the effective use of either side of the windbreak, depending on the wind direction.

►Land with an uneven surface was more likely to provide natural shelter in the form of gullies, slopes and indentations.

A good thing made better

For Sowell, the key to cost-effective cow wintering is cutting the energy a cow expends keeping warm while maximizing her intake of ground forage. "You want to graze your pastures as much as possible over the winter," he says. "That will reduce your dependence on hay and lower your overall costs."

Research data from the University of Guelph in Ontario, Canada, shows that for each week that the grazing season is extended, total annual feed costs for a forage-fed animal are reduced by approximately 1%.

An effective way to accomplish this, Sowell says, is to develop a selective grazing program that takes into consideration areas particularly well-suited for wintering cattle. By setting aside these sheltered pastures for winter grazing, animals will be encouraged to remain out of the wind and close to their feed source, thus reducing their overall weather-related stress.

To calculate the winter grazing capacity of a particular site, researchers at the University of Guelph suggest using existing annual yield records or historic carrying rates to establish a baseline. If the total year's grass production is required for winter grazing, then the entire season's growth is set aside. If only a portion of the growth is needed, then some spring and early summer grazing might be acceptable with the animals being removed from the pasture in time for regrowth to occur.

One consideration in establishing a winter grazing program is the relationship between yield and quality. With all things equal, the longer grazing is deferred the higher the yield, but the lower the quality. This presents an opportunity for the cow-calf operator to develop grazing programs for the nutritional needs of specific groups of animals. For example, first-calf heifers that can benefit from higher-quality forage could be placed on regrowth, while mature dry beef cows would have access only to pastures grown to maximize quantity.

Grasses for winter grazing

For Sowell, an excellent way to enhance a winter grazing program is to grow grasses that are best-suited to specific locales and the seasonal needs of the livestock. He cites, as an example, the importance of establishing grasses that are accessible throughout the winter.

"Plants like crested wheatgrass stand more erect than most and, as a result, they have a tendency to stick above any snow," he says,

noting that, in general, grasses that form a stem in the regrowth and are more upright in their growth habit, such as tall fescue, reed canary and smooth brome, will stand up better in wet fall weather or after snow.

On the other hand, plants such as orchard grass and bromegrass, which do not form a true stem in the regrowth, tend to lodge and shade themselves out when excessive regrowth occurs. While this limits their accessibility as a winter forage, the rapid regrowth potential of these plants offers the cow-calf operator the opportunity to graze or harvest a site intensively before setting it aside for a winter program. This is particularly advantageous in areas where the soil moisture is high enough to not limit grass production.

Grazing in snow

As Sowell points out, cattle can effectively access forage through 6 in. or more of snow, but trampling can occur in the process. In areas where cattle movements can be controlled, damage from grazing activities can be minimized by moving the livestock more often and decreasing the size of the area they inhabit. Larger areas allow excessive trampling to occur, and the trampled snow can refreeze into a crust that prevents cattle from accessing their forage.

One recommendation is to use temporary electric fencing to introduce a system of strip grazing. Frozen ground can be penetrated by using a cordless electric drill to make a pilot hole for fence posts.

Another management issue is providing water at the winter grazing site. Beef cows require a minimum of 5 gallons (gal.) of water per day in cold weather. Snow is always a viable option, but remember it takes 10-12 in. of snow to produce 1 in. of water, and crusted snow can prove to be a challenge for some beef cows.

One innovative watering system that is well-suited for remote areas is the motion detector water pump system, which allows a cow to drink from a small bowl that only fills with water when a motion sensor activates a pump. Once the animal is finished drinking and leaves the detection area, the pump shuts off and the water drains back down into the well. The system is powered by solar DC batteries that must be protected from severe cold. This can be accomplished by burying a discarded household freezer chest and using it as an insulated battery storage compartment.

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