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Cow Herd Management with Limited Forages

Purchasing feed for cattle during times of limited forage is a common producer management strategy. Unfamiliarity with the various feedstuffs available, along with lack of experience feeding to nutrient requirements as opposed to feeding to appetite, often lead producers into unprofitable endeavors. Cost of the feedstuffs along with digestive upsets from misuse of unfamiliar feeds will be the largest drain on productivity and profitability. Below are a series of recommendations for various scenarios where substantial feed resources are imported into a livestock operation.

First limiting nutrient

The first-limiting nutrient is often energy. Producers are often concerned with protein and mineral/vitamin shortages, yet the biggest concern is caloric intake. The goal in stretching tight forage supplies should be to maintain body condition and productivity in the cowherd. A significant hurdle for producers to overcome is changing the mindset to feeding to requirements versus feeding to appetite. The behavioral changes noted (acting hungry) often coerce producers into providing additional feed or utilizing bulky feeds that increase satiety while simultaneously not meeting nutrient requirements.

Comparing costs of feedstuffs

Hay is the closest feed to pasture forage however; it is an extremely wasteful feedstuff that is not nutrient-dense in many cases. A wise approach to cost effectively feeding is to compare feeds on a “Dollars per lb of TDN” basis. Example: 50% TDN hay that costs \$0.05 per pound (\$100 per ton). It is worth \$0.10 per lb of TDN. Make a comparison across several feeds and a “best deal” in your area can be easily identified.

Stretching short hay supply

Minimize hay waste by any means possible. It is recommended to feed one day’s worth of hay at a time to the livestock. Unroll bales to allow simultaneous access to feed and limit hay allowance to 1.0% of cow body weight per day, even if the quality is very poor (last year’s hay stored outside). Pair that with a 50:50 mix of grain and byproduct fed at a rate between 0.5 and 1.0% of BW per day (dependent on nutrient requirements) and nutrient requirements should be met. There is NOT a need to get fancy in balancing the diet to the seventh limiting nutrient. Make sure caloric and protein intake are adequate and worry about the rest later.

What to do if completely out of forage?

Soy hulls, peanut hulls, rice hulls, cottonseed hulls and even sawdust can effectively serve as forage replacements in a ration. They should be included in a diet at 25-50% of the diet on a dry matter basis. They need to be paired with more nutrient dense feedstuffs. If the rest of the diet was made up of a blend of distillers grains (an energy & protein source), that would make a reasonable “complete feed” without having to pay for a branded product.

Limited resources for storing, mixing and distributing purchased feed

Hand feeding 100 cows every bite of feed they get out of five gallon buckets is a daunting task. Producers are often not equipped to store commodity feeds (meals or pellets), let alone deliver those feeds to cattle in an efficient manner. The biggest concern with self-feeders is limiting feed consumption. Cattle will not generally eat more than 0.1% of body weight per day in salt, and it is frequently used as a limiter. Refer to the publication “Limiting Feed Intake with Salt in Beef Cattle Diets” from the University of Nebraska (<http://extensionpublications.unl.edu/assets/pdf/g2046.pdf>) for more information. Feed companies promote their complete feeds, which utilize proprietary intake limiters. Typically, they are no more effective than utilizing high-fiber feeds or salt as an intake limiter. The other concern with self-feeders is waste. Wildlife often learn quickly that free feed is available from self-feeders. Hand feeding is more efficient from a feed utilization standpoint; however, some producers may not have access to that level of time or labor. Producers must evaluate their individual situations to come up with an ideal strategy. Perhaps culling is a better strategy with limited labor than trying to feed with limited forage.

Feeding through limited forage is a great way to drain cash reserves in beef cattle operations, but is a popular management practice. Utilizing commodity feeds instead of branded products is a great way to minimize cost. Identifying the least cost feed per unit of nutrient needed (\$ per lb of TDN) is another highly recommended strategy. Before utilizing unfamiliar feedstuffs, be sure to check with your local extension livestock specialist for guidance on proper use. Cows are an extraordinary beast in that they can utilize numerous waste streams (byproducts, human inedible products, etc...) for feed. A cost-effective solution to the lack of feed resources is out there, if a producer is willing to be creative and to ask for help.

Source: *Dr. Eric Bailey, beef nutritionist*

Missouri Land Values

The Missouri Farm Land Values survey is conducted annually by MU Extension economists. Respondents include lenders, rural appraisers, MU Extension Specialists, realtors, and other related occupations who provide their opinions to questions concerning current farmland values and trends. Tracts smaller than 40 acres or land being converted to development or commercial use are excluded from the survey.

Below are the summarized answers to the main questions asked on the September 2018 survey.

Average Value of Land

Respondents were asked to give estimates of land values for three classes of cropland and pasture (good, average, and poor), timberland (with valuable trees), and hunting/recreation land. The survey results provide statewide averages and are also broken into regions. The data below are the state averages.

Cropland Values per acre

Good Cropland - \$5,217

Average Cropland - \$4,175

Poor Cropland - \$3,200

Pastureland Values per acre

Good Pastureland - \$2,915

Average Pastureland - \$2,469

Poor Pastureland - \$2,022

Timber and Hunting/Recreation Values per acre

Timber Land - \$2,086

Hunting/Recreation Land - \$2,155

This year's survey showed good cropland values were up by 7%. Good pasture land remained the same from last year. Timber land was up by \$73/acre, and hunting/recreation land was up \$107/acre. Overall the average land values held steady or showed slight growth.

Factors Affecting Values

Comments from respondents in all areas of the state indicated surprise at how strong land values have remained. Reasons cited for land prices rising included investors and old money. Farmers, whose financial reserves were sufficient to allow them to purchase land, were keeping the limited amount of land coming into the market from falling. Investors intending to rent the land were able to keep land prices stable to increasing. Buyers looking for recreational land were also a factor in keeping land prices up.

Who is Buying Land?

The survey showed that 61% of farmland buyers planned to farm the land themselves. The number planning to rent out the land increased to 30%, and the number planning to use for non-farm purposes decreased to 8%.

Outlook

For the next 12 months, respondents expect cropland values to fall 0.6%, pasture values to decrease about 0.4% and timber, hunting and recreational values to increase 0.4%.

The full survey is online

<http://agebb.missouri.edu/mgt/landsurv/> For a printed copy, contact your county extension office.

Source: *Karisha Devlin, ag business specialist*

Christmas Tree Selection & Care

For many families, the selection and purchase of a Christmas tree is an annual tradition. Bringing home the tree often signals the official start of the holiday season. Proper selection of a tree will help to make the season even more enjoyable. With today's live-tree market, healthy, fresh, fragrant, and affordable Christmas trees are abundantly available to anyone who wishes to have a real tree.

There are a variety of Christmas tree species to choose from on retail lots or growing on cut-your-own farms. Christmas trees can be identified by the size, color, and arrangement of their needles. The four common types of Christmas trees are pine, fir, spruce and cedar/cypress. Scotch pine is one of the most popular Christmas trees in the Midwest. The dark green foliage and stiff branches are well suited for decorating with both light and heavy ornaments. It has excellent needle retention characteristics and holds up well throughout harvest, shipping and display. White pines have good to excellent needle retention; however, the needles are very soft to the touch and unable to hold heavy ornaments. White pine has very little aroma and is reported to result in fewer allergic reactions than more aromatic species.

Christmas trees are available in a variety of sizes and one must first consider the ceiling height in the house where the tree will be placed. Most standard rooms will easily accommodate a 7-foot tree. Always check for freshness before purchasing a tree. Trees should have a healthy, green appearance without a large number of dead or browning needles. Needles should appear fresh and flexible and should not fall off into your hand if you touch a branch. Lift a cut tree a couple of inches off the ground and let it drop on the cut end. Green needles should not drop off the tree. A few dried, inner needles may fall, but the outer, green needles should not be affected.

Once home, a tree's freshness depends upon the type of care provided. The tree should have a fresh cut across the bottom, about 1 inch above the old base. This removes any clogged wood that may not readily absorb water. The tree should be placed in a stand with a large reservoir of water and it is important that the tree always has water. If the tree dries out, it may not adequately absorb moisture once it is re-watered, and may shed needles prematurely. A properly watered tree does not represent a fire hazard.

After the holiday season, a Christmas tree can be utilized in a variety of ways. Many communities have curbside pick-up or drop-off locations for recycling. Christmas trees can be chipped and used for mulch or

composted. They can also be used in a yard, garden or pond as habitat or shelter for wildlife. With proper care and selection, Christmas trees can be enjoyed throughout the holiday season and beyond.

Source: Jennifer Schutter, horticulture specialist

Soil Aggregate Stability

Over the past several years, soil health in Agriculture has become a focus for producers and researchers, alike. Several producers have implemented practices to increase soil health on their operations, but determining how much the soil health potential has changed can be a challenge. Soil health cannot be determined by measuring a single outcome, such as yield or water quality. Soil health cannot be measured directly, but instead is determined by measuring a number of soil health indicators. These indicators are broken down into physical, chemical and biological categories depending on how they influence soil function. One of these physical indicators is soil aggregate stability.

Aggregate stability is the ability of soil aggregates to resist disintegrating into smaller pieces when outside forces are applied. Soil aggregates are groups of soil particles (sand, silt, and clay) bound together by organic matter, calcium, and metals. Soil aggregates are formed by natural wetting and drying of the soil and by organic "glues" produced by root exudates, soil fauna, and microbial by-products. Size and shape of the aggregates coupled with the pore space between them determine soil structure. Larger aggregates (macro-aggregates) are comprised of multiple micro-aggregates and are largely cemented by organic substances. Macro-aggregates improve soil structure by allowing air circulation and water infiltration. Soils with stable aggregates protect organic matter, improve soil structure, and increase water holding capacity. Soils with less aggregate stability may have more erosion, compaction, crusting, drought, and root health.

Aggregate stability is largely affected by inherent soil properties, properties that do not change with management including soil texture and climate. Soil texture is a large factor in aggregate stability because silt and clay are able to bind together more than sand. Clays with a high shrink-swell capacity will also influence aggregate stability, particularly when the particles contract and break apart soil aggregates. Climates with warmer temperatures will have faster organic break down, resulting in less organic matter and a reduced aggregate stability. Producers cannot change soil texture or climate, but can control field management practices.

Field management, including tillage operations, organic amendments, and crop rotations can have a large impact on aggregate stability. Aggregate stability declines rapidly in heavily tilled soils. Tillage not only physically breaks apart aggregates, but it increases the rate of organic matter decomposition. These smaller aggregates can fill soil pores and lead to crusting, poor infiltration, and more compaction. Practices that reduce tillage and leave crop residues will reduce the loss of organic matter and aggregate destruction. Crop rotation, cover crop use, and manure amendments will also help increase aggregate stability. Keeping the soil covered will minimize physical destruction from rain and wind.

Living roots and manure additions will increase soil biology, leading to more organic “glue” production and ultimately improving aggregate stability over time.

Soil aggregate stability is a crucial for healthy soils. It is one of several soil health indicators that can be tested in a lab; however, it is not part of a traditional soil chemical test. Measurements of aggregate stability and many other soil health indicators are available through several soil health labs including, University of Missouri Soil Health Assessment Center. <https://cafnr.missouri.edu/soil-health/>

Source: *Wyatt Miller, agronomy specialist*



Wishing you a Merry Christmas and
Happy New Year!

from the Northeast Missouri Ag Staff