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BEAVER COUNTY EXTENSION

Agriculture

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Nutrition Requirements of the Cowherd

Mark Z. Johnson, Oklahoma State University Extension Beef Cattle Breeding Specialist

As we near the winter months and the time of year when feeding harvested forage becomes the norm in Oklahoma, we address the topic of daily nutritional requirements of the cowherd. Grazing and feed expenses account for about 42% – 52% of the input cost of a cow-calf operation. Knowing the nutritional needs of our cows helps us cost effectively meet their needs. Over feeding or underfeeding both rob the profit potential from cow-calf operations. During the normal production cycle cows should gain some weight/body condition during the dry stages and lose some weight/body condition while nursing a calf. With that in mind, having cows at a BCS 5 – 6 going into calving season is optimum. This means that cows are in good shape and have ample energy reserves to draw upon when the "spike" in Crude Protein (CP) and energy (TDN) requirements occur post-calving as the cow begins lactation. Cows need to be in good shape at the beginning of calving season to reduce the rebreeding interval and stay on schedule to breed, calve and raise a calf to weaning each 12 months.

Assuming we have an ample supply of good quality water and an adequate vitamin/mineral supplementation program, the two primary nutritional requirements of cows are CP and TDN. In normal weather, there are three primary influences on the daily requirements of both:

1. Mature Weight
2. Level of Milk Production
3. Stage of Production

Where cows are now in the production cycle and when they will start calving should be considered when making management decisions regarding feeding. The example below follows a 1,300 pound cow through a normal production cycle during the middle trimester of pregnancy, the final trimester of pregnancy, and the first 90 days post-calving based on her level of milk production.

During the middle third of pregnancy, the 1,300 pound mature cow needs:

- CP = 1.64 pounds per day
- TDN = 11 pounds per day

The same 1,300 pound cow in the final third of pregnancy needs:

- CP = 1.84 pounds per day
- TDN = 13.3 pounds per day

The increased nutritional needs reflect not only the cow's maintenance requirements but also the increased growth and development of the fetus as calving draws near.

After calving, during the first 90 days of lactation, the same 1,300 pound cow will have increased nutritional requirements based on how much milk she is producing:
If giving 25 pounds of milk per day at peak lactation, she will need:

- CP = 3.4 pounds per day
- TDN = 19.3 pounds per day

If giving 35 pounds of milk per day, she will need:

- CP = 4.2 pounds per day
- TDN = 22.2 pounds per day

In summary, the same cow has a dramatic rise and fall in protein and energy needs over the normal production cycle. Knowing these requirements is essential to cost effective feeding of the cow herd. Managing our nutritional program correctly plays a huge role in reproductive performance. More details about nutritional requirements of beef cows can be found in the fact sheet referenced below.

Weaning Weight Versus Reproductive Efficiency

Mark Z. Johnson, Oklahoma State University Extension Beef Cattle Breeding Specialist

Economic analysis of cow-calf operations shows a strong relationship between Profitability and both Percent Calf Crop Weaned per Exposed Female, and Pounds Weaned per Exposed Female. This "economic analysis" discussion often leads to a debate of what has more value to the profit potential of a commercial cow-calf operation that sells calves at weaning. Is it reproductive efficiency in the form of a higher Percent Calf Crop Weaned? Or is it the Weaning Weight of the calves? This week we take a look at the value of an extra 50 pounds of Weaning Weight versus an extra 5% Calf Crop Weaned per Exposed Female relative to current market values. We frame the debate as follows:

Herd A
200 cow operation
Average mature weight = 1,300 pounds
90% Calf Crop Weaned, resulting in 180 calves (90 steers and 90 heifers at an average of 525 pounds). Herd A is averaging 472.5 pounds of weaning weight Per Exposed Female.

Herd B
200 cow operation
Average Mature Weight = 1,300 pounds
85% Calf Crop Weaned, resulting in 170 calves (85 steers and 85 heifers at an average of 575 pounds). Herd B is averaging 488.8 pounds of weaning weight Per Exposed Female.

According to the November 17, 2023 USDA Oklahoma Weekly Cattle Auction Summary:

Herd A's Calves
525 pound steer calves are worth $294/cwt, or approximately $1,544 per head.
525 pound heifer calves are worth $243/cwt, or approximately $1,276 per head.

90 steers x $1,544 = $138,960
90 heifers x $1,276 = $114,840
For a total gross value of $253,800

Herd B's Calves
575 pound steer calves are worth $273/cwt, or approximately $1,570 per head.
575 pound heifer calves are worth $235/cwt, or approximately $1,351 per head.

85 steers x $1,570 = $133,450
85 heifers x $1,351 = $114,835
For a total gross value of $248,285

The Bottomline
Under current market conditions, Herd A's advantage of 5% more Calf Crop Weaned results in $5,515 in extra revenue over Herd B's 50 pound advantage in actual Weaning Weight. Reproductive efficiency (in the form of a higher percent calf crop weaned) is a very economically important trait in a cow-calf operation.

Winter wheat research educates producers on short-season crop

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Oklahoma State University 2020 winter wheat variety Butler's Gold is growing more prominent on the commercial market, and researchers want to ensure that producers know when and how to plant it.

"Wheat producers are interested in the late planting system," said Dr. Amanda Silva, assistant professor and state Extension specialist for small grains. "There are producers in Oklahoma wanting to harvest cotton and soybeans in late October, so they need to delay wheat planting. It's important for them to find a variety well adapted for planting in November and December."

Silva's research shows Butler's Gold is the only short-season winter wheat variety in the U.S. In a recently completed three-year study, Silva and her master's student, Israel Cyrineu, compared the performance and seeding rate of the short-season variety with eight other varieties of winter wheat planted in October and December at two locations.

"Sometimes, producers plant late because they are trying to fit in double cropping systems, but sometimes weather or other factors prevent them from planting in time," Silva said.

She added that Oklahoma producers commonly increase the seeding rate when planting late due to having a shorter tilling period. However, more research is needed to understand optimal seeding rate at different planting dates using modern varieties.

In the previous study, Silva's team found the maturity pattern of the short-season variety was adequate for late planting and fared better when planted in December rather than October.

"Although we did not see yield differences among these varieties, the maturity differences are the most important thing with a late planting system, especially for producers who want to plant a summer crop afterward," Silva said.

After late planting, Butler's Gold grows fast and matures early before spring to avoid a delay in wheat harvest and soy bean planting.

This winter, Silva and her team are comparing Showdown, Doublestop and Butler's Gold at three seeding rates for planting dates in October, November and December at separate locations.

"These varieties have different maturity patterns, so we can inform producers on how those varieties with different maturity patterns will perform when they are planted at different times," Silva said. "The more we talk about this type of research with producers, the more we find that it is very useful for them."

Wheat producers Brent and Zack Rendel in Miami, Oklahoma, provided their farm as one of the three locations for the research trial. Silva said due to having specialized equipment, the Rendel Farms location will study two wheat varieties with five seeding rates and three planting dates.

Brent Rendel said he has partnered with OSU Ag Research off and on for more than 20 years and has learned participation is the best way to collect new information about wheat production.

"I always have three to four ag research projects in any given year," Rendel said. "I value that the answers we come up with are always geared toward the questions I want to see answered as a producer. Hosting one of the research locations helps researchers get a state-wide view of the question while helping me get a local view."

Just How Do Santa's Reindeer Get the Job Done?

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist & Mark Z. Johnson, Oklahoma State University Extension Beef Cattle Breeding Specialist

It is the "most wonderful time of the year" and this week Dr. Glenn Selk joins us to address the age-old questions of what permit Reindeer to pull Santa's sleigh all over the globe on Christmas eve.

Have you ever wondered how Santa's reindeer can make that monumental journey on Christmas Eve? Let's look into some key facts about reindeer that may help us understand how they transport Ole St. Nick on his appointed rounds over the world. First of all, historians report that reindeer have been domesticated by humans for over 5,000 years. Since Santa himself is no spring chicken, we can assume that they have worked together for quite a while. They should not have any trouble finding their way around. There is no need to worry about them getting lost. We do know that reindeer are like ruminants. They are like cattle in this regard. They have four compartments to their stomach. Of course Santa gets them filled up with hay before he leaves the North Pole, so they should have plenty of feed stored in the four compartments to make it all around the globe. Also, cattle nutritionists have known for years that hay digests more slowly than grain, therefore the big meal that the reindeer eat before the journey should last even longer. Or just like your mom says, "It'll stick to their ribs!". As for drinking water, that should be no problem whatsoever. In their homeland the water is all frozen so they are used to getting the moisture they need by eating snow. So as the sleigh is parked on snowy rooftops in cold weather cities, the reindeer can take on the moisture they need if they get thirsty.

How do they keep warm while flying around on Christmas Eve? The fur that they have is very thick and can hold a lot of air. The "blanket" of insulation combining fur and air helps keep them warm in even the coldest of climates. Plus flying around Christmas night in many areas of the world that are warmer than they have at home should not be a problem.

How do they fly? Well that's a tougher question, and we really do not have that one completely answered. However, let's look at what we do know about them. Reindeer are amazingly fast runners on the ground. A newborn baby reindeer at one day of age can out run the fastest person on earth. By the time that they are fully grown it is hard to tell what speeds that they could reach. Next remember those huge antlers. Antlers of adult male reindeer can be as much as 4 feet long! Just think about it. Each reindeer has 2 sets; that's 8 feet of antlers and with eight reindeer (or nine if we count Rudolph on foggy nights) that is 64 to 72 feet of total antler span. A typical small airplane only has about 20 - 30 feet of wingspan. Certainly it seems feasible those eight reindeer running that fast with all that antler span could get off the ground.

There are a couple of myths about reindeer that we should clear up. You have probably heard the poem that says that they have tiny reindeer feet. Actually they have a very wide large hoof that they use at home to dig through the snow to find grass and moss to eat. You've got to think that those wide hooves would come in handy for sliding to rather sudden stops on the small landing sites that Santa has to work with on Christmas Eve. And you've probably heard the song about "up on the house top click, click, click". Well it is true that reindeer do make a clicking sound as they walk. They have a tendon that snaps over a bone joint and makes a clicking sound on every step. These are just a few facts about Santa's Reindeer. Maybe this will help us understand that age-old mystery that occurs every Christmas.

In Cow-Calf Corner, Mark Johnson invites Glenn Selk back to Cow-Calf Corner to discuss the most important ruminant animals of the season: Santa's reindeer on SunUpTV.

GENERAL GARDEN TIPS FOR DECEMBER

Keep all plants watered during dry conditions even though some may be dormant. Irrigate all plantings at least 24 hours before hard-freezing weather if soil is dry. (HLA-6404)

- Order gardening supplies for next season.

Now is a great time to design and make structural improvements in your garden and landscape. (HLA-6425, HLA-6440HLA-6441)

- Send for mail-order catalogs if you are not already on their mailing lists.

Christmas gift ideas for the gardener might include tools, garden books, magazine subscriptions or membership to The Botanic Garden at OSU (http://botanicgarden.okstate.edu).

- Clean and fill bird feeders.
- Till garden plots without a cover crop to further expose garden pests to harsh winter conditions.
- Visit your county extension office to obtain gardening fact sheets for the new gardening season.
- Join a horticulture, plant or urban forestry society and support community "greening" or "beautification" projects.

Review your garden records so you can correct past mistakes. Purchase a new gardening journal or calendar to keep the New Year's gardening records.

GENERAL GARDEN TIPS FOR JANUARY

If precipitation has been deficient (1" of snow = ~ 1/10" of water), water lawns, trees, and shrubs, especially broadleaf and narrowleaf evergreens. Double check moisture in protected or raised planters.

Check on supplies of pesticides. Secure a copy of current recommendations and post them in a convenient place. Dilution and quantity tables are also useful.

Check that gardening tools and equipment are in good repair—sharpen, paint, and repair mowers, edgers, sprayers, and dusters.

Inspect your irrigation system and replace worn or broken parts. (HLA-6615)

Control overwintering insects on deciduous trees or shrubs with dormant oil sprays applied when the temperature is above 40°F in late fall and winter. Do not use "dormant" oils on evergreens. (EPP-7306)

A product containing glyphosate plus a postemergent broadleaf herbicide can be used on dormant bermudagrass in January or February when temperatures are above 50°F for winter weed control. (HLA-6421)

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CALENDAR

FEB 3 ..... BEAVER Local Stock Show

FEB 10 ..... BEAVER COUNTY Stock Show

FEB 12 ..... BALKO Local Stock Show

Oklahoma State Division of Agricultural Sciences and Natural Resources

Oklahoma farmers and ranchers generated more than $9.55 billion in 2022—let's dig in.

Livestock

Cattle and calves, $4.5 billion

Hogs, $1.4 billion

Broilers, $1.2 billion

Dairy products, milk, $200 million

Crops

Wheat, $648 million

Cotton lint, Upland, $295 million

Soybeans, $117 million

Corn, $211 million

Hay, $145 million