THE MIDWEST
Cattleman
GRASSLAND FARMING TODAY
February 22, 2024 Volume 30 No. 2

Hereford
Page 18

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THE MIDWEST
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BEEF COW INVENTORY DECLINED FOR 5TH CONSECUTIVE YEAR

By Josh Maples, Extension Economist, Department of Agricultural Economics, Mississippi State University

The number of cattle in the U.S. declined for the fifth consecutive year according to data released recently in the USDA Cattle Inventory report. The report was generally in line with pre-report estimates. The eye-popping statistic is that the total number of cattle and calves (including dairy) was at the lowest level since 1951 after a 1.9 percent decline from 2023-2024. However, for this article I want to focus on beef cows and highlight some of the state-level

changes.

The total number of beef cows was reported at 28.2 million head for the U.S. as of January 1, 2024. This was a 2.5 percent decline from Janu-

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CATTLEFAX FORECASTS CONTINUED PRODUCER PROFITABILITY

Herd Expansion On The Horizon

The popular CattleFax Outlook Seminar, held as part of the 2024 Cattle Industry Convention and NCBA Trade Show in Orlando, Florida, shared expert market and weather analysis.

The smallest beef cow inventory in the last 50 years, coupled with historically strong demand, led to the highest average fed cattle and calf prices in 2023. As reduced cattle numbers and beef production continue over the next three years, leverage and profitability will continue to favor cattle producers.

Despite record prices, expansion will likely be delayed once again. Lingering drought,

continued on page 12

CATTLE NUMBERS LOWEST IN 73 YEARS – THE GLARING HEADLINES

By John Nalivka

USDA's annual January 1 Cattle Inventory was released on January 31 and is consistent with my projections or should I say my projections are consistent with the USDA report? The total U.S. cattle inventory at 87.2 million was down 2% and the lowest since 1951. The number of beef cows at 28.2 million was also down 2% from a year earlier and the smallest herd since 1962. The beef cowherd peaked at about 46 million in 1975. Last year's calf crop at 33.6 million was 2% smaller than the 2022 calf crop. Even in the face of record prices, there was still a general sense of uncertainty among cow-calf producers and cautious optimism was generally the rule. The uncertainty was definitely brought to light with heifer slaughter last year.

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FINKS TO BE HONORED AS STOCKMAN OF THE YEAR

Galen and Lori Fink of Randolph will be recognized February 29 as the 2024 Stockman of the Year. The award is presented annually by the Livestock & Meat Industry Council at the Stockmen's Dinner, which will be held at the Stanley Stout Center in Manhattan.

Galen and Lori (Hagenbuch) grew up on eastern Kansas farms, learning the importance of sound decisions in cattle judging, business, and leadership. That knowledge, coupled with their passion for innovation, is what built Fink Beef Genetics, a successful seedstock operation that uses technology, including embryo transfer and artificial insemination, to provide cattle that work for commercial producers.

Starting by placing embryos in other people's cows, the Finks pioneered this approach, becoming the first in the U.S. to develop such a program. Today, they implant more than 800 embryos per year, host two sales annually and offer more than 600 bulls each year through private treaty.

The Finks have worked with U.S. Premium Beef, Angus and Charolais GeneNet, and Meyer Natural Angus, as well as developed several feedlot partnerships to help customers get premiums. Galen and Lori also have served as leaders in many industry organizations and Fink Beef Genetics has garnered numerous awards.

KLA

HIGHLIGHTS FROM AN INTERESTING CATTLE REPORT

By David P. Anderson, Professor and Extension Economist, Texas A&M AgriLife Extension

USDA released its much-anticipated Cattle inventory report last month. The report revealed an expected decline of 1.9 percent in the total number of cattle in the US on January 1, 2024. The 87.2 million head was the fewest since 82 million in 1951.

While the total number of cattle gets a lot of headlines,

some of the other categories are more meaningful for the

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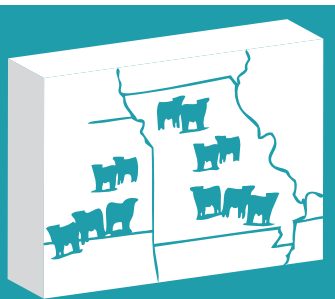

From Our Outfit

It's become quite clear that, of late, I have become my dad or even one of my grandpas. Of course, there are the regular aches and pains and the usual stiffness that makes me move a little slower like they did later in life, but it's more than that. I catch myself doing some odd things and telling stories like they used to tell. I wonder if my children and grandchildren will forgive me.

I remember that after my dad would fasten something, my grandpa would always follow up on him and do it just a little bit more – "just to make sure." It might be a gate, a strap of leather, or a chain – it didn't matter. It just needed another wrap, another twist, another pull, or another coat.

For those who grew up in a world where baling wire was prevalent, you know it was used 'off label' for many, many applications. There was no end to it. It was used to fasten, hold, patch, or substitute for about everything imaginable in the farm and ranch world. My dad was usually in a hurry. If he fastened something with wire and was ready to move on, he never got used to what would surely happen next. If his dad, Pete, was anywhere close helping – he would give the wire another twist or two. He may even cut and add another piece - "Just to make sure." If it was a nut – it needed another turn. If a piece of leather - it needed another pull. If a rivet - it needed another hit. If a grease zert… well, you get the picture.

I find myself doing those kinds of things – "just to make sure." Why is that? Probably for the same reason old folks are wiser and have gray hair. They have already made plenty of mistakes and they don't want to see any more. They have plenty of examples where that extra twist, wrap, or turn would have made the difference.

When I feel like my grandson, who is eight, is slacking a bit, I feel the need to tell him stories about when I was eight. He really has little or no interest how old I was when I went out into the cold to check heifers that were calving, or ewes that were lambing. He doesn't find it interesting what I did at his age – any more than I did hearing those stories from my dad and grandpas. I lose his attention pretty quickly when I start telling him that I could start a John Deere Model 'R' when I was his age, and he completely tunes out when I get to the ten steps of starting one. Even I am surprised that I still remember how to do that. Though I tell him the story, he really has no grasp of what it means for an eight-year-old to start that tractor – a diesel with a gasoline 'pony' motor, hook up a road-drag and then 'grade' 2-3 miles of road by himself. Even though he'll remember very little of it, I just think he should hear it. Why is that?

Both of my grandpas used mules to farm. Don't you know there was some real good stories about those days. Hearing a story is one thing, but unless I harness and then 'gee-haw' a mule down the furrow for 8-10 hours before evening chores, I really have no idea what it meant to 'do a real day's work' in their day. I don't have that. I'm not sure I want to, but I would give a lot to have had some of those stories.

My dad drove a tractor when he was six years old. About all that I remember of that story was that "the clutch and brake petals were extended with blocks of wood." How I wish that I had heard more stories like that one, and how I wish I could remember the ones that I did hear – how I wish I had been listening.

I think they will forgive me - someday.

KwC

February is for Frost Seeding

By Christine Gelley– OSU Extension Agriculture and Natural Resources Educator

February comes with a flood of hearts, flowers, chocolates, and romance. It also brings weather that triggers maple syrup season and the ideal conditions for frost seeding pastures. If your valentine is a pasture manager, I have the perfect gift idea ahead!

Say "I love you" with the gift of clover seed! Instead of a bouquet of roses, consider a bag of red clover. Instead of fancy wine, consider an improved variety of white clover. Maybe just go ahead and get all of the above though, just to be safe.

Not convinced yet? Let me explain why February is a fantastic time to share the love of legumes.

The ideal time for frost seeding tends to be mid-February. When the water in the upper horizon of the soil freezes, the water expands, which leads to pressure that forces soil up and out during a freeze. Then when the water in the soil thaws, it takes up less space, and the soil settles back again.

The freezing, thawing, and soil heaving cycles help work seed that is spread on the surface into the soil. Good seed to soil contact will help seedlings get a jump start on

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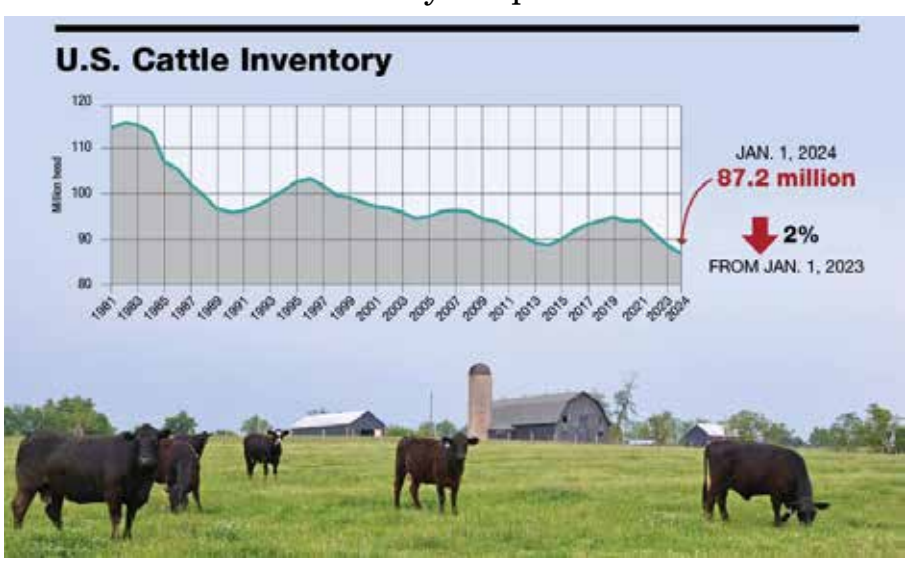
U.S. CATTLE INVENTORY REACHES 73 YEAR LOW

By Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist

Not many ranchers active today will remember the last time the U.S. cattle industry was this small. On January 1, 2024, the All Cattle and Calves inventory was 87.15 million head, the smallest total inventory since 1951. The All Cattle and Calves inventory is 1.9 percent smaller year over year and is the fifth consecutive year of declining cattle inventories, a total decrease of 7.65 million head or 8.1 percent since the most recent peak in 2019. The 2023 calf crop was 33.6 million head, down 2.5 percent year over year and the smallest calf crop since 2014.

Top Ten States	Rank	Beef Cows, 2024	2023-2024 Change	2019-2024 Change
		1000 Head	1000 Head	1000 Head
Texas	1	4115	-185	-540
Oklahoma	2	1922	-69	-228
Missouri	3	1840	-116	-219
Nebraska	4	1637	-67	-304
South Dakota	5	1502	-31	-316
Kansas	6	1264	-51	-265
Montana	7	1251	-20	-197
Kentucky	8	907	+12	-110
Florida	9	862	-26	-52
North Dakota	10	860	-16	-115
Top Ten	Sub-Total	16160	-569	-2346
U.S.	Total	28223	-716.3	-3467.7

Table 1. Top Ten Beef Cow States, 2024 Inventory, change from 2023 and 2019.



Lindsay Pound

The January 1, 2024, beef cow herd inventory was 28.22 million head, down 2.5 percent year over year and a decrease of 3.47 million head or 10.9 percent lower, from the cyclical peak in 2019 (Table 1). The current beef cow inventory is the smallest beef cow herd since 1961. Table 1 shows that the top ten beef cow states, which currently represent 57.3 percent of total beef cows, accounted for 79.4 percent of the year over year decrease in total beef cow numbers and 67.7 percent of the decrease from 2019 to 2024.

The inventory of beef replacement heifers on January 1, 2024, was 4.86 million head, down 1.4 percent year over year. However, the 2023 beef replacement heifer inventory was revised down by 4.5 percent from the initial value reported one year ago. Thus, the 2024 inventory of beef replacement heifers is down 11.4 percent from the 2022 inventory and is the smallest beef replacement

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Identifying The Right Bull for Your Operation

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

This week I address some questions received in response to my two most recent Cow-calf Corner articles.

What is considered a "Good Bull"?

The article outlined the following criteria to meet "Good Bull" status:

- A bull that sells with a registration paper which includes pedigree information and a complete set of genetic values (including EPDs and Bio-economic indices) to be considered in the selection process.

- A bull that has passed a Breeding Soundness Exam (BSE) and selling with a breeding soundness warranty (terms will vary).

In addition, **it is important to identify the right bull for your operation.** Bull selection is not a "one size fits all" proposition. Whether you are buying out of a live auction or private treaty, it is critical to assess your own unique operation in order to determine the attributes your next bull needs to add value to the calf crop he will sire. This needs to be done before you go bull shopping. There are approximately two dozen genetic values in most beef breeds available to consider, in reality only a few can be prioritized when identifying your next herd sire. Selection pressure and your bull buying budget are both precious commodities, don't squander either on traits that are not economic priorities in your operation.

Do You Intend to Keep Daughters to Develop as Herd Replacements?

At this point in the cattle cycle, many producers will be retaining heifers to grow their cowherd. If this pertains to you, the maternal EPDs of your next herd sire will have a long-term economic impact in your operation. The Heifer Pregnancy (HP) EPD is a selection tool to improve fertility in your cow herd. Higher values indicate higher pregnancy rates in replacement heifers during their first breeding season. The Calving Ease Maternal (CEM) EPD is a selection tool to increase the likelihood of unassisted births of the replacement heifers your next herd bull

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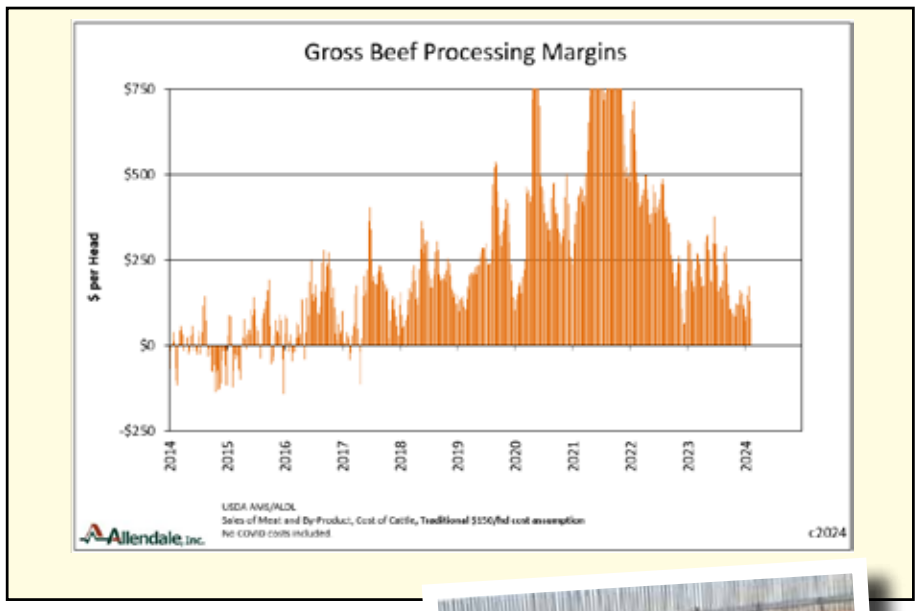

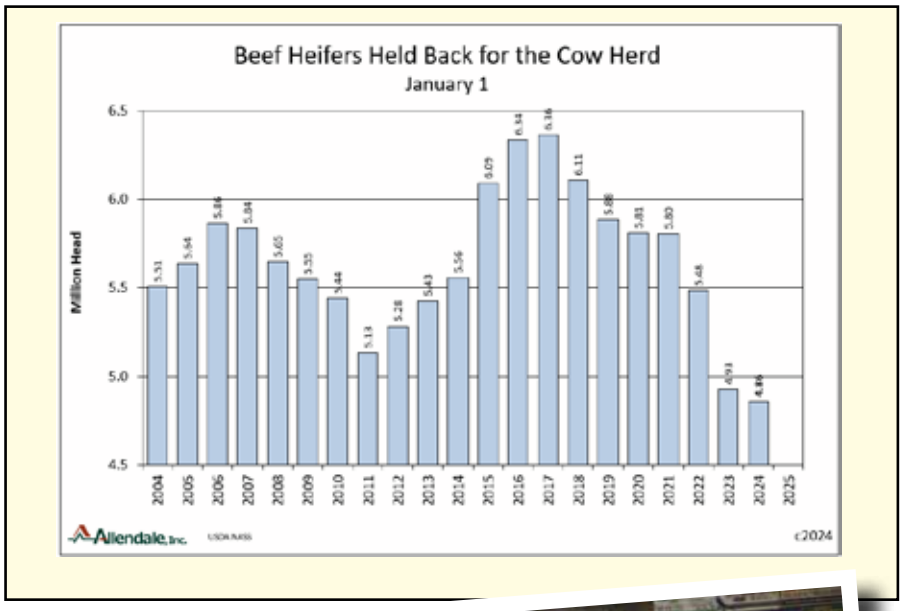

Live Cattle:

The cattle market has posted a good advance in recent weeks. The 2023 – 2026 beef supply decline story will renew later this year. January feedlot placements were sharply impacted by weather. Concerns over a possible recession have abated. This has allowed live cattle futures to advance to our view of economic value, $179 April/$176 June/$179 August, and much beyond. We still have yet to hit our $193 view for December though. We cannot say it is time for feedlots to do serious hedging though. Well known chart gaps left from October, $190 on the April for example, still remain.

We suggest the general 2023 – 2026 period of tightening supplies will result in a sharp reversal for the prior period of strong beef processing margins. Fewer cattle through the front door tightens up the wholesale beef to cattle variable spread. It also means fixed costs applied to each head increases. The processing industry has also worsened the issue with expansion. This was shown with the most recent filing from Tyson Foods. Q4 beef processing saw a 4% loss on sales.

Feeder Cattle:

Calves being offered now, those late summer and fall births, have seen prices rally enough to surpass the entire rally of 2014 to new highs. They are 41% over last year at this time. 7-weight feeders are no slouch either, 37% over last year. We expect the feeder end to really tighten up this summer. As expected, the January Cattle report confirmed no breeding herd expansion yet. This continues to push back the "when" of the likely beef production low to "years ahead".

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What Does this Report Mean to Me?

Q: Is it time to procure corn?

A: USDA's February outlook conference, the AgForum, added to the trade's belief that large old crop supplies will be surpassed by even larger new crop numbers. In the last issue, February 1, we suggested our general downside targets were about filled and suggested procurement for four months of needs. Perhaps a minor planting rally could be seen. We are not bullish long term though. Even with weather forecasts suggesting Western Cornbelt dryness this summer the market needs a significant weather shock to fix this situation. Without a US weather event December may eventually end at $4.05.

Q: What is the plan?

A: After last fall's $248 to $236 protection play using January options our recommendation for producers is to remain unhedged. Feedlots should have all future 2024 feeder cattle purchases locked in from the plan discussed this past fall. This was futures based ($238.37 March/$242.80 April/ $246.47 May/$257.12 August/$257.85 September). Those with unmet needs are encouraged to get it done.

STOCKPILE: TAKE IT NOW, OR TAKE IT LATER?

By Victor Shelton, Retired NRCS Agronomist/Grazing Specialist

I'd quickly take one of the hottest weeks in the summer over some of the frigid weather we have seen this winter. My wife just hopes that the long, icy-cold period was long enough to set back the stink bugs still hanging around.

Cold weather can have some advantages, especially after some of the rains we received lately. If you are having to concentrate livestock or are wanting to graze wet or saturated ground, frozen ground or free concrete has some advantages.

If you are still grazing stockpiled forage, frozen ground helps to protect the soil surface and reduce compaction from hooves. In reality, if you have a good stand of stockpile, it has to get almost bitter cold to freeze that ground. The blanket of forage serves as pretty good insulation. Like I've said before, if I have to dig a hole in the wintertime, I'm for sure going to dig where I have heavy sod, it is most likely not frozen.

On the contrary, ground that has little cover left will freeze quicker and deeper. It will also be more susceptible to pugging and compaction when grazed or walked on when thawed out and wet.

I've had a few people asking if they should go ahead and graze some stockpile that they were not able to graze earlier. This evokes the questions, "How much forage is there and how will it be managed?" If the soil is saturated with water and you don't have an enormous amount of grazable vegetation present, you will probably do more harm than good.

If the soil is frozen, then perhaps even a meager amount of 3,000 pounds of forage per acre might be worth pursuing, but it would also make a great field to possibly graze early in the rotation in the spring because it will certainly rebound quickly and have ample amounts of soil protection and dry matter after the initial green-up. You won't get that from fields that were grazed tighter – they will be slower to rebound.

Fields with quite a bit more than 3,000 pounds of stockpile per acre are pretty rare this time around. But, if you did have some, the more vegetative cover that you have, the more resilient the

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LEGISLATION INTRODUCED TO END DECEPTIVE LABELING PRACTICES

Sen. Roger Marshall, along with Reps. Mark Alford of Missouri, Roger Williams from Texas, Don Davis of North Carolina, and Jonathan Jackson from Illinois, recently introduced the Fair and Accurate Ingredient Representation on Labels (FAIR Labels) Act of 2024. The bill would end deceptive labeling practices on fake meat products and ensure consumers know what they are buying at the grocery store.

"America's farmers and ranchers work hard every day to bring a high-quality, wholesome product to market. We're not afraid of a little competition, but it is unfair for lab-grown or plant-based fake meat products to trade on beef's good name," said NCBA President Todd Wilkinson, a South Dakota cattle producer. "This bill is especially important for ensuring that consumers recognize lab-grown products that may be coming to market in the future. Consumers deserve to know how their food is made and to understand that lab-grown products made in a bioreactor are not the same as the high-quality beef raised by farmers and ranchers."

The FAIR Labels Act would require fake meat products to be labeled as "imitation" to clearly differentiate between real meat and plant-based or substitute protein products. The bill also would provide clarity on lab-grown products, which are created from animal cells that are artificially replicated in a laboratory environment. While no lab-grown imitations of beef have been approved for sale in the U.S., several companies currently are involved in research that soon could bring these products to market. Under the FAIR Labels Act, lab-grown products would need to be clearly labeled as "lab-grown" and bear a statement that the product was not produced by traditional farming and ranching methods.

KLA

CATTLE NUMBERS

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Going forward, from a number's standpoint, there is no doubt that the cow-calf producer is definitely in the driver's seat as cattle numbers continue to tighten over the next 2 years – at least. As I have been saying, there was obviously little, if any, incentive to hold heifers over the past two years. The January 1 inventory report indicated that the number of beef heifers expected to calve was also 2% below a year earlier.

Being in the driver's seat as the result of sharply reduced cattle numbers does not forego the importance of ranchers having in place a sound plan to manage market risk and ultimately their financial well-being. The market has become increasingly dependent on consumer demand – consumers who are both willing and able to continue purchasing beef at higher prices and the Federal Reserve's survey indicating record high credit card debt and payment delinquency cannot be ignored in that regard.

The headlines in the major media outlets (not agriculture) following the Cattle Inventory report were quite pointed on the impact of the smallest U.S. cattle herd in 73 years – consumers will see a surge in beef prices! There is definitely more to the analysis then simply cattle numbers. Yes, it is the lowest inventory in 73 years, but I expect the industry to produce 26 billion pounds of beef this year compared to 8 ½ billion in 1951. Converting that into pounds of carcass beef per person, the estimate is 56 pounds in 2024 compared to 44 pounds in 1951.

Simply put, the discussion of beef prices paid by the consumer is a much more in-depth topic that entails more than simply, "the lowest cattle inventory in 73 years." The comparison of inventories makes for good conversation, but the comparison ends there. Today's U.S. beef industry and the U.S. consumer is vastly different than in 1951 or even 10 years ago for that matter.

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BEEF COW INVENTORY

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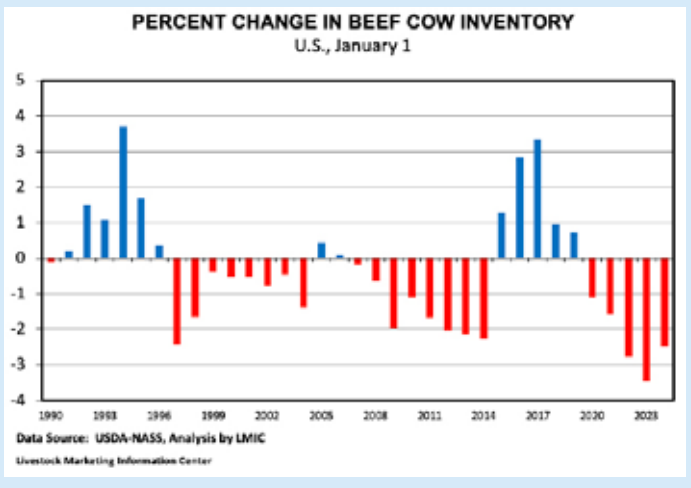
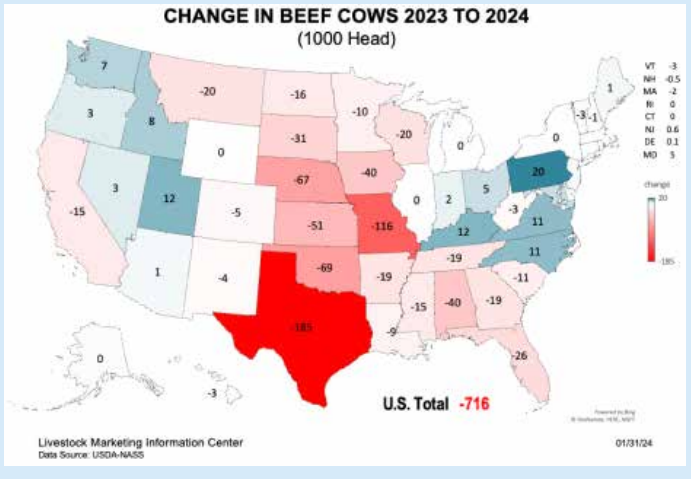
ary 1, 2023, and was the third consecutive annual decline of greater than 2 percent. The beef cow herd is now 11 percent smaller than it was in 2019.

At the state level, 33 states experienced declines in the number of beef cows from 2023 to 2024. Kentucky is the 8th largest state in terms of beef cows and was the only state in the top 17 that saw an increase in beef cows (up 12 thousand head). Arkansas and Mississippi experienced 19 thousand and 15 thousand head declines in beef cows, respectively. Alabama had the largest drop in the southeast with a 40 thousand head decline. Beef cow head counts dropped the most in the three largest beef cow states: Texas, Oklahoma, and Missouri. The combined 370 thousand head decline in these states represented more than half of the total U.S. decline (716 thousand head).

The tighter supplies of beef cows will mean a smaller calf crop in 2024. This will lead to fewer cattle in feedlots and ultimately less beef produced over the next few years. The 2023 calf crop (beef and dairy) was estimated at 33.6 million head which was the second lowest total since 1949. The U.S. beef cattle industry is certainly more productive than it was decades ago. Advances in management and technology have led to increased beef production from fewer animals. So, we aren't dropping back to 1950's beef production totals. But the impact of fewer cattle will lead to tighter beef supplies than we've had in recent years.

When will expansion in the beef cattle sector occur again? The simple but incomplete answer is expansion will occur when expected calf prices reach levels that encourage most producers to absorb the cost of retaining heifers and keeping cows. Rising costs of production have complicated that decision in recent years. Moderating drought conditions and feed prices could set the stage for the start of some expansion in 2024. Cattle prices are high and are likely to go higher. Heifer retention has not yet begun by any widespread metrics. Cattle prices are being supported by tight feeder cattle supplies which will get even tighter when producers start holding back more heifers for breeding purposes. Overall, the estimates in the Cattle Inventory are supportive of strong cattle prices in 2024.





DON'T GAMBLE WITH YOUR HERD'S REPRODUCTIVE HEALTH

The value of breeding soundness exams

By Lacey Fahrmeier, Technical Service Veterinarian / Valley Vet Supply

Be sure not to skip the breeding soundness exams on your herd sires, which is pivotal to ensure reproductive success on your operation.

Your herd's reproductive health is too important to leave to fate.

While statistically, most mature bulls, year in and year out, are going to be satisfactory breeders, if you're on the wrong side of those numbers and you bet wrong on that gamble, it can have a huge impact on your bottom line. I can't emphasize enough the importance of testing all of the bull battery. This includes any new or yearling bulls recently purchased – even those tested earlier in the year. While they may have had a breeding soundness exam done prior to sale day, those are bulls that still need to be reassessed before turning them out. Things can – and do – change rapidly with a bull's health, and that can have a serious impact on their semen quality.

A rather typical timeline is for a bull to be sold in April. His first breeding exam may have been done in February. It's possible the bull may not be delivered to a producer until May for turnout in June – therefore, four months have gone by since that yearling bull had his last semen evaluation. That's enough time for things to change – possibly for the better or unfortunately for the worse.

Breeding soundness exam

The purpose of a breeding soundness exam is to assess a bull's ability to service cows and to identify subfertile or infertile bulls. A breeding soundness exam should be conducted on all bulls four to six weeks before turnout on pasture to provide time to intervene, should a treatable abnormality be detected. Common health problems identified include infections of the reproductive tract, lameness, penile warts or other anatomic abnormalities that can impede a bull's ability to service a cow, or really any disease that could

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high input costs, limited labor availability, high interest rates, and market uncertainty all serve as headwinds against growing the cowherd. The current cattle cycle anticipates slower and more prolonged expansion, with heifer retention causing a supply decline with expected lows in fed slaughter by 2026. Higher cattle prices and reduced feeding costs will continue to improve margins for cow-calf producers for the next several years, a much-needed improvement to drive expansion as weather patterns allow, according to CattleFax.

After several months watching El Niño's influence on the global weather pattern, Meteorologist Matt Makens said the El Niño event that placed moisture on the South and Southeast is fading away and La Niña is showing signs of making a rapid return.

"During the next several weeks, we will continue to see strong and wet storm systems move across the central and southern states. Increased odds for snow and cold as far south as Texas will mean possible impacts on calving and wheat," he said. "Take this moisture now and make the most of it; look for a good start to this grazing season overall but be mindful that drought conditions will increase for the Southern Plains during summer and fall as we see our pattern change quickly."

As La Niña's influence grows, increased heat and drought-related issues are expected for the Central and Southern Plains. The moisture pattern will favor the northern tier of states and the Ohio to Tennessee Valleys.

Kevin Good, vice president of market analysis at CattleFax, reported that the U.S. beef cow herd declined 2% with inventories at 28.2 million head at the beginning of this year.

"Though drought conditions did improve in many regions, over a third of the cow herd was affected by drought in 2023, causing limited heifer retention and more liquidation in some regions. This will limit growth to the cow herd near-term," Good said.

Cow and bull slaughter is forecast to be 6.5 million head in 2024, down around 800,000 head, from 2023. CattleFax predicted feeder cattle and calf supplies outside of feedyards will be 1 million head smaller than 2023 at 24.1 million head. Commercial fed slaughter in 2024 is forecast to decline by 750,000 to 24.8 million head.

Cattle on feed inventories began 2024 up about 2% at 11.9 million head. Good noted, "Though inventories may remain somewhat elevated for a few months, they are expected to decline significantly through the second half of the year."

After about a 1.3-billion-pound decline in 2023, beef production is expected to be down another billion pounds in 2024 to total about 25.9 billion pounds. The decline in production in 2024 will lead to a 1.7-pound decline in net beef supply to 56 pounds per person.

Mike Murphy, CattleFax chief operating officer, forecasted the average 2024 fed steer price at $184/cwt., up $9/cwt. from 2023. All cattle classes are expected to trade higher, and prices are expected to continue to trend upward. The 800-lb. steer price is expected to average $240/cwt., and the 550-lb. steer price is expected to average $290/cwt. Utility cows are expected to average $115/cwt., with bred cows at an average of $2,600 per head.

"When thinking about what demand looks like, we need to think about what our consumer looks like with the U.S. economy being the driving factor going into 2024," Good said. "Though inflation has moderated, consumer debt and interest rates, cheaper alternative proteins, and economic uncertainty may limit spending and impact purchasing decisions."

2024 USDA All-Fresh Retail Beef prices are expected to average $7.90/pound and, while higher beef prices may soften consumer purchasing habits, Good predicted the consumer preference for the quality, consistency and safety of U.S. beef will continue to support relatively strong demand. "Premiums for higher quality beef should remain as consumers have shown a willingness to pay for Choice grade or better beef."

Global protein demand has continued to rise around the world and tighter global protein supplies should broadly support prices in 2024. U.S. beef exports saw large declines in 2023, down about 13% and another 5% decline is expected in 2024, driven by smaller U.S. production and higher prices. Japan and South Korea remain the top U.S. beef export destinations.

Troy Bockelmann, CattleFax director of protein and grain analysis, said national Dec. 1 on-farm hay stocks were up 6.9% from a year-ago at 76.7 million tons with hay prices averaging $220/ton in 2023. "Another good hay crop needs to be seen in 2024, to help rebuild stocks from the lows in 2022 and return prices to a more historically normal range. The first half of 2024 will likely see prices supported at more elevated levels before dropping by roughly $30/ton following harvest."

He noted that corn stocks-to-use are at just under 15% and should keep the market below $5.50/bu. with a yearly average price of $5.00/bu. expected. "Overall, when thinking about watch items for 2024, look at March perspective planting report, soybean exports, and the total principal crop acres."

On the energy front, Bockelmann said that, for 2024, not much will change. He said crude oil is expected to average around $80/barrel and noted that the geopolitical environment will be the driver of price relative to oil markets.

Randy Blach, CattleFax chief executive officer, concluded the session with an overall positive outlook, and noted that the current cattle cycle will be much slower and prolonged compared to the last as heifer retention has not yet started on a nationwide basis. He expects the peak in cattle prices is likely to occur in 2025-2026 and, in the meantime, industry profitability will continue to swing in favor of the cow-calf producer as excess feeding and packing capacity chases a declining supply of feeder cattle and calves.

NCBA

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direction of cattle markets in coming years. The report indicated that there were 28.2 million beef cows in the US on January 1. That is the fewest number of beef cows since 27.3 million head in 1961. The 2.5 percent decline was pretty much in line with pre-report expectations. The beef cow inventory was even smaller than following the drought of 2010-2013. Cow numbers hit their previous low of 28.96 million on January 1, 2014. While the national beef cow numbers were fewer than those following the drought, that was not the case in Texas. Texas' cowherd did decline by 4.3 percent, a larger percent decline than the national herd, - down 4.115 million head. The herd remains larger than following the drought.

The number of heifers held for beef cow replacement declined again, down 1.4 percent. As a percent of the cow herd, it does not appear to be a large enough number to suggest herd expansion. There were some significant revisions to heifer replacements in the previous year's report, but the revisions don't change the overall picture of herd numbers.

The report includes an estimate of the number of stocker cattle out on small grain pastures, like wheat pasture. The data includes the states of Kansas, Oklahoma, and Texas. It indicated that there were 1.59 million head on small grain pastures. That was the fewest since 1.5 million in 2018. The number of stockers on wheat pasture over the last decade has totaled 1.73 million, so this year's figure is smaller than average. This number certainly fits with more cattle on feed than a year ago as cattle were likely placed earlier rather than put on pastures. Fewer stockers on winter grain pastures combined with data on calves still on farms and ranches gives an estimate of the number of feeder cattle outside feedlots, adding to our information on available feeder cattle supplies. Feeder cattle supplies outside of feedlots were calculated to be 24.2 million head, 4.2 percent fewer than last year and the fewest in decades.

This report can be thought of as longer term in nature. The number of cows gives a better estimate of calves to be born and future beef production. The small number of feeder cattle outside of feedlots indicates tighter supplies ahead and even higher prices once expansion starts.

The Markets

Local auction markets report sharply higher calf prices. Prospects have certainly been helped by abundant rain in local areas. Markets appear to be getting past the winter storm turbulence with higher fed cattle prices and some pressure on the cutout. Much higher primal brisket prices over the last couple of months have put some pressure on BBQ restaurants.

Data Source: USDA-AMS Market News		Week of 2/2/2024	Week of 1/26/2024	Week of 2/3/2023
			$/cwt	
5-Area Fed Steer	all grades, live weight	$177.80	$175.44	$158.17
	all grades, dressed weight	$279.53	$276.87	$249.88
Boxed Beef	Choice Price, 600-900 lb.	$295.61	$299.81	$265.82
	Choice-Select Spread	$10.26	$11.97	$13.32
700-800 lb. Feeder Steer	Montana 3-market	$245.26	$247.13	$187.00
	Nebraska 7-market	$256.08	$250.00	$186.91
	Oklahoma 8-market	$241.12	$232.26	$179.95
500-600 lb. Feeder Steer	Montana 3-market	$319.96	$316.88	$219.37
	Nebraska 7-market	$318.30	$316.13	$227.03
	Oklahoma 8-market	$303.13	$286.17	$210.30
Feed Grains	Corn, Omaha, NE, $/bu	$4.58	$4.65	$7.11
	DDGS, Nebraska, $/ton	$218.33	$218.33	$297.00

HOW MUCH WATER DO COWS REALLY NEED DURING COLD WEATHER?

By Dana Zook, NW Area Livestock Specialist, OSU Extension

It's no surprise that the main topic of conversation in the winter is how to help cows maintain condition through cold temperatures. Supplementation and feeding are always on producers' minds, but one often overlooked topic during cold weather is water. How much water do cows really need during cold weather?

Growing up in Nebraska, our cows were always grazing crop residues during the winter and there was rarely a natural water source. Because of this, water was hauled. Some Oklahomans look at me aghast when I tell them this, but I can honestly say it was just part of the job. Instead of supplementing cows with feed most of the winter, we hauled water.

A fact of beef production is that decreased temps increase the need for additional energy. This extra energy often comes in the form of dry feeds such as hay, by-product cubes, or commodity blends. Water is essential to helping cows digest this additional feed. Limiting water will in turn compromise feed intake and make it very hard for cows to maintain weight. Another factor that affects water need is the stage of production. The need for water will increase with the demands of production. For example, lactating cows will require more water than pregnant, dry cows. Water intake data collected by OSU and other research institutions has provided baseline water intake data for all production stages of cattle so that people hauling water or building new water infrastructure can estimate total water needs by cattle.

So how much water do they need? Water requirement guidelines are listed in OSU factsheet AFS-3299 "Estimating Water Requirements for Mature Beef Cows". This factsheet reports 1300-pound cows experiencing 40°F require approximately 9-15 gallons of water daily. The lower end of that scale would apply to open or pregnant, non-lactating cows while the upper limits apply to lactating cows.

Further research evaluating this range of water intake is currently being collected by Dr. Dave Lalman and his research team. In the current study, 5-year-old cows weighing an average of 1363 pounds with calves at side have been consuming an average of 15 gallons since mid-November. Consumption by the calves is included in this average but Dr. Lalman said it would be accurate to assume they are drinking 1-2 gallons of this total amount. That brings up a good point about the importance of water for calves. To ensure calves get enough to drink, fill tanks high enough so shorter animals can reach the water level. Natural water sources should be chopped so that calves can access the water source safely.

Water is usually a "hot weather" topic, but its importance should not be overlooked in the winter. Dehydration is an added stress for cows in cold weather. Help cows deal with winter stress and maintain their body condition by ensuring they have adequate water.

Photo by Erik Steffens

Ensuring Healthy Herds: The Critical Role of Water Management for Livestock in Winter

By Kate Hornyak, OSU Extension Program Coordinator

Water stands as an essential nutrient for beef cattle, much like it does for humans. It plays a vital role in various bodily functions, including growth, reproduction, lactation, and the regulation of body temperature. However, the winter season intensifies the challenge of providing a sufficient and accessible water supply. This difficulty is compounded by the freezing temperatures and changes in the behavior of the livestock during colder months.

Challenges in Winter Water Management

Managing water for livestock during the winter months presents distinct hurdles. The primary issue is the freezing of water sources, limiting cattle's access to water. Cattle often increase their water consumption in colder weather to meet their heightened energy needs. This requires more focused management strategies to ensure they receive sufficient hydration.

In colder temperatures, cattle consume more feed to maintain body heat. If water availability decreases, feed intake also drops, leading to poorer body condition. This is particularly critical if the birthing season is in spring, as reduced water and feed intake during winter can lead to poor fetal growth rates and lower lactation levels.

Methods to Deliver Water in the Winter

Having electricity at your winter-feeding areas is a huge plus. It unlocks several effective methods to prevent your cattle's water supply from turning into an icy hazard. A straightforward solution is to use a plug-in heater, which can be installed in the drain plug of a large stock tank. This approach is simple and efficient, ensuring that water remains in a liquid state for your herd.

Large stock tanks with larger capacity are another option that can be considered. Stock tanks need to be checked often to allow livestock access to water and ensure filling purposes. Opting for ones with a larger capacity can make a difference

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the growing season without the risk of disturbing soils in the early spring when conditions may be too wet to tread on. Broadcasting seed at this specific time is called "frost-seeding".

Frost seeding is an effective and low input method for thickening up pasture and hay field stands (or even lawns) with a broadcast application of seed. It is a method that is most successful with varieties of red clover and white clover.

Frost seeding can be implemented in both fields with and without livestock present. If livestock are in the field, hoof traffic can assist with seed to soil contact in combination with soil heaving. You can broadcast the seed by hand, with a hand crank, or with a seed broadcaster on an ATV. Seed could also be aerially applied via plane or drone if the service is available to you.

Frost seeding rates vary depending on the type of forage seed you choose. Frost seeding isn't just for legumes. Some grasses can successfully be frost seeded as well. For best success, start with high quality seed and broadcast the seed during weather patterns where nighttime temperatures drop below freezing and daytime temperatures rise above freezing.

Forage Type	Seeded Alone (lb./ac.)	Seeded in a Mixture (lb./ac.)
Red Clover	4-8	3-4
Ladino (white) Clover	2-3	1-2
Alsike Clover	2-4	1-2
Birdsfoot Trefoil	4-6	2-3
Alfalfa	5-8	3-5
Perennial or Annual Ryegrass	8-15	2-3
Orchardgrass	3-4	1-2
Novel Endophyte Tall Fescue	6-8	3-4

Table information sourced from The Ohio State University and University of Wisconsin-Madison

There are many situations where frost seeding legumes is advantageous. The practice can help remediate areas where bare ground is present. Whether the bare ground is a result of high-traffic, herbicide application, or soil disturbance, clover is likely to provide good cover to these areas in the spring. Soil coverage as soon as possible helps prevent weeds from establishing in these sensitive areas.

It is important to consider that some broadleaf herbicides may have residual impacts on the establishment of legumes. There may be a recommended timeframe to wait between treating for broadleaf weeds and adding legumes or forbs back into the pasture. That time frame could vary from a few weeks to several months. Be sure to fully read all labels, keep accurate application records, and follow any restrictions dictated on the label.

Legumes are beneficial additions to pastures and hayfields for their ability to form mutually beneficial relationships with nitrogen fixing soil bacteria. These rhizobia fix atmospheric nitrogen into plant available nitrogen in the root zone around the legumes and thus benefits the other plants growing in the area. To ensure fixation occurs, purchase inoculated seed. Legumes also provide a greater percentage of digestible nutrients and proteins than most grasses, which improves the nutritional value of the pasture or hayfield.

Frost seeding is an economical way to gradually improve pasture condition in combination with providing appropriate fertility and harvest practices. For both legumes and grasses, the recommended seeding rates are less than 10 pounds of seed per acre. In our area, we have access to improved varieties of clovers with rhizobia inoculant for $3 to $5 per lb. The impact of that investment could repay itself several times in the first year of growth.

If you are officially considering frost seeding now, note that the window for frost seeding typically spans from February 1 to March 15. The recommended seeding rates for the forages that deliver good establishment through frost seeding are provided above.

The ease of frost-seeding makes it appealing, but the seeding step alone isn't all it takes for establishment to be successful.

It is important to provide time for frost seeded plants to grow substantial and healthy roots and leaves before allowing animals to graze them. Legumes need adequate sunlight to thrive. It may be necessary to clip a pasture in the spring before grazing to allow light to get through the canopy of already established plants. This allows the seedlings to get enough sunlight to be healthy, strong, and resilient to defoliation when grazing or haymaking begins.

Every farm has its own special traits that set it apart from others. Therefore, it may be beneficial to talk in more detail with a professional about your plans to improve the current status of your forage systems. Contact your local Extension Office for free consultation and take the time to shop for good quality seed before the ideal day to plant it arrives.

Tips to Stretch Short Hay Supplies

By Dr. Jeff Lehmkuhler, PhD, PAS, Beef Extension Professor, University of Kentucky

Here are a few tips to consider stretching limited hay supplies. For additional information contact your local Extension agent. It is recommended to consult with your feed nutritionist or County ANR Agent before making drastic changes in your feeding program.

1.Inventory hay – know how much hay you have available; weigh a few bales to get an average weight or estimate the weights based on available information from Extension publications.

2.Minimize storage losses – keep hay off the ground on a surface that will allow water to drain away; keep bales covered or stored inside a barn; if bale grazing limit the number of bales placed in the field to provide 2-4 weeks of feeding to reduce weathering losses.

3.Reduce feeding loss – consider minimizing feeding losses; using hay rings with skirts / metal on the bottom, tapered ring designs, chains to suspend bales, or cone inserts to keep hay inside the feeder has been proven to reduce hay feeding losses compared to hay rings with openings at the bottom; using an electrified temporary poly-wire placed down the center of unrolled hay will reduce losses from cows laying on the hay, trampling it into the mud, and defecating on the hay; feeding processed hay into a bunk or large industrial tire reduces

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McCorkill Family Farms

By Austin Black

For over 100 years, Andy McCorkill's family has kept pastures stocked with Hereford cattle in Southwest Missouri. It's a rich heritage that he's proud of and hopes to pass on to his kids to continue.

In the 1920's, McCorkill's great, great grandfather on his mother's side, Benton Wilson, journeyed to Northern Missouri with his sons and their high school ag teacher to look at a herd of Hereford cattle. He believed the cattle would be hardy and rugged, but also easy-doing, important traits for the rough country he called home. Wilson ended up buying a carload of heifers and shipped them by rail back to his farm.

Fast forward to 1965 and McCorkill's paternal grandfather entered the Hereford business himself by trading for a handful of cows. Interestingly enough, around that same time, the Wilson's stopped keeping registrations on their herd, making both sides owners of purebred cattle with no pedigrees.

Eventually, McCorkill's parents married, and Andy entered the picture himself. In 2009, after several years of running a "commercial" operation of Hereford cattle, McCorkill's dad Mike joined forces with Andy to create McCorkill Family Farms. They started transitioning back into registered cattle to capture more market value for their Hereford genetics. Now Andy, along with his wife, children, and sister Erin's family, are the 5th and 6th generations to carry on the family's legacy.

All hands on deck

The three families all convene to make McCorkill Family Farms a success, with each maintaining their own distinct ownership of the operation. Mike, Andy, and Erin each have cattle of their own and cattle owned together, but most of the daily care and responsibility is handled by Mike and his wife Myra. "I live 60 miles from mom and dad and most of the cows are closer to them," Andy said. While his parents live and work "full-time" on the farm, Andy serves as a Livestock Specialist for the University of Missouri Extension. His time commitment limits his ability to help much on the farm during the week. Still, he is active with the decision making and management, and leads the AI breeding efforts for the entire herd. "We all pitch in and do everything together," he said.

McCorkill Family Farms runs around 30 registered cows in addition to some commercial Hereford and Hereford influenced females, some whose genetics can be traced back to the original

herd from Northern Missouri. As with any purebred breeder, Andy & Mike focus on raising high quality bulls and replacement females for commercial producers. They calve a majority of the females in the spring but keep about 25% as fall calvers to raise show calf prospects for the kids and ensure they have bulls available to sell throughout the year.

Their first set of bulls were sold in 2011 and they've consistently marketed between 5-12 bulls a year to local cattlemen. "We pick our top end bulls at weaning and sort them a little more as yearlings to get the ones we want to market as bulls," McCorkill said. Those that qualify are developed on grass with a limited supplement and sold around 15-18 months old private treaty. The lower end bull calves are castrated and finished on the farm to sell as freezer beef or sold as feeders.

Admitting that they try to keep their best replacement heifers in the herd, McCorkill said they routinely sell some of their best bred heifers in the Missouri Opportunity Sale, hosted by the Missouri Hereford Association, and they consign bulls, pairs and bred heifers through the Central Mo Hereford Association sale in Cuba, Mo.

Although small in numbers, the herd at McCorkill Family Farms is managed with a strict focus on performance and profitability. Andy said the cowherd stems

predominantly from Journagan Ranch genetics. They have two herd sires, one of which is home raised and comes largely from Journagan Ranch breeding, and a younger bull purchased from Ellis Farms in Illinois. They also utilize artificial insemination to bring added genetic value to the herd and increase the market advantage for their AI sired calves.

"We try and stay with genetics that are semi proven and have been around for a while," he said. "We want to make sure the product we produce will work for our customer and the more information available on potential sires, the more likely we are to produce a consistent end product for our customers."

With proven genetics as their foundation, McCorkill's management and selection process for bulls and females is pretty simple. "We try to find something that will check all the boxes," he said. He focuses on cattle that have strong maternal and growth traits, while also improving carcass performance.

Heifers must be born early in the season and out of cows with a strong phenotype. "We do pelvic measurements and reproductive tract scoring on all the heifers, following the Show-Me Select protocol," he said. If a heifer passes the tests, she gets a ticket into the herd, but then she's on her own to prove herself. McCorkill said he doesn't push his heifers very hard developing them and allows natural selection to weed out which females to cull. "We AI all the heifers one round and then

turn a bull out with them," he said. The expectations continue as heifers remain in the herd too. "We're not very forgiving on our cows. If they don't calve in the primary window, they'll be marketed to go somewhere else," McCorkill said.

Bulls are managed to perform on minimal inputs to improve profitability and longevity. "We don't push the bulls as hard as a lot of people," McCorkill said. He utilizes grass, good hay and tries to limit supplements to 10# of feed each day. "The bulls we have now are on stockpiled fescue and supplement," he said.

McCorkill relies on genomic information and EPD's when it comes to breeding decisions and selecting what calves make the cut. "Genomic data provides an improvement in predictability equivalent to a year's calf crop for some traits. If you can do that at an early age, you're able to weed out those that are less likely to be productive before a lot of money is tied up in them," he said.

Focusing on the fundamentals

When asked what his family's ticket to success in the Hereford business is attributed to, McCorkill quickly credits their grass management program. "Every day you're feeding hay, it costs at least $3 per day per cow as opposed to less than $1 per day with grazing," he said. In addition to creating a managed grazing system on their farms, Mike and Andy have incorporated annual forages into the fescue pastures to increase the available nutrients during key phases of the year. "If you don't pay attention to the grass for your spring calving cows, between calving and their peak lactation 60 days later, you'll need to supplement," he said.

McCorkill doesn't just talk the talk, though. "We host one of the grazing schools at our place sponsored by the University of Missouri Extension, NRCS, and the local Soil and Water Conservation District. It's nice to be able to show that what we do works, and we have grass when other producers don't," he said.

Still, the family's success in the cattle business hasn't always been easy. When Mike and Andy entered the registered game, it took a while to get their reputation built up. "You have to let your cattle sell themselves a little bit," he said. "I haven't embraced the social media for selling cattle but that seems to be a pretty big marketing tool and it's relatively inexpensive."

Outside of marketing, the McCorkill's have struggled to find a good balance in how many bulls they need to raise each year. "You either don't have enough or you have too many," he said. Gauging the demand months ahead of time has proven to be a challenge as they continue to expand the customer base and sell more bulls each year.

As they grow the herd, invest in new genetics and service new customers, though, the future and legacy of McCorkill Family Farms is looking bright. "We're proud of our heritage and we're willing to try to work with anyone," McCorkill said.

Magnified Economic Returns

New economic analysis highlights how much more Hereford and heterosis contribute to the bottom line of commercial cow-calf operations.

By Wes Ishmael

Using Hereford bulls rather than Angus bulls in commercial Angus herds significantly increases an operation's net worth per cow and the average income generated per cow over time, according to a recent analysis conducted by the University of Tennessee (UT).

"The key reason is the value of maternal heterosis, in general terms, and the specific performance advantages inherent to the Hereford breed," explains Charley Martinez, UT Extension livestock economist. "For instance, previous research conducted for the American Hereford Association (AHA) documented a 7% pregnancy advantage and a weaning weight advantage of 12.1 pounds for Hereford-sired commercial black baldies compared to Angus-sired commercial Angus calves. There are fewer open cows with the black baldy females each year, less cow depreciation and more calves to market. At the same time, direct heterosis adds weaning and yearling weight to each calf marketed."

Martinez conducted the analysis for the AHA, utilizing previous AHA research documenting the performance of Hereford bulls compared to Angus bulls when used on Angus-based cowherds. Specifically, he examined the impact for a herd of 30 cows and a herd of 500 cows.

Martinez used 10-year price projections from the Food and Agricultural Policy Research Institute (FAPRI)

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WEIGHING THE RETURNS

Increased post-weaning growth may not offset increased cow cost.

By David Lalman and Wes Ishmael

Without significant focus on controlling mature cow weight, cows are going to continue to increase in size, and that's important because cow weight is a proxy for feed intake," says David Lalman, Extension beef cattle specialist at Oklahoma State University (OSU).

Even though OSU's pioneering research into cow feed efficiency on forage identifies some outliers, such as big cows that consume less low- to moderate-quality forage than smaller ones and some smaller cattle that are less efficient than their heavier counterparts, generally speaking, Lalman explains feed consumption increases with cow weight.

In fact, according to OSU research, cow feed consumption (ad libitum) increases 2.1 to 2.5 pounds per day for every 100 pounds of additional mature cow weight. That can be a concern for individual operations, as well as for the collective beef cow business.

Added cow weight costs

Looking at USDA data, Lalman says steer carcass weights have increased an average of 5 to 6 pounds every year since 1971. The equivalent mature cow weight increased 7.3 pounds per year over the same period (Figure 1). Increases for both are due in part to many breeds' aggressive selection for increased post-weaning and yearling growth over the past couple of decades (Figures 2 and 3).

In terms of input expense, in a majority of operations Lalman says each additional 100 pounds of mature cow weight costs $75-$100 per year in increased feed consumption.

On the production side of the equation, Lalman explains, "As a general rule of thumb, based on our research, an additional 100 pounds of mature cow weight yields an added 6 to 28 pounds of calf weaning weight in commercial operations."

More specifically, Lalman explains the lower end of the weight range for additional calf weaning weight is expected in a tough environment where nutritional resources are limited. Conversely, the upward end of the range favors an environment where nutrition is adequate or abundant.

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Figure 1: Steer and Cow Carcass Weights

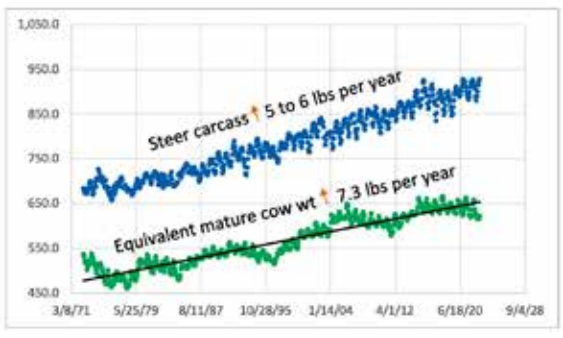

Figure 2: Genetic Trend Weight: Angus

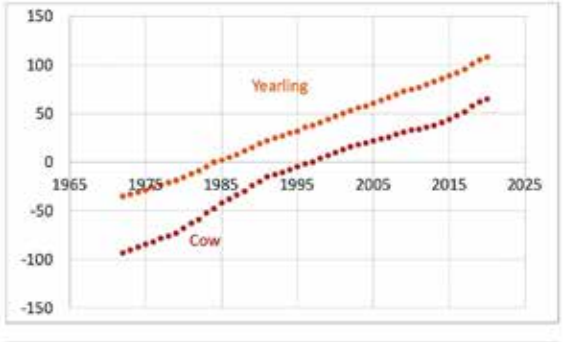

Figure 3: Genetic Trend Weight: Hereford

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"In general, you're not going to be able to pay for the added weaning weight if you sell calves at weaning unless you have customers willing to pay more for the added growth potential of the calves or you retain ownership in the calf beyond weaning," Lalman says.

Otherwise, you incur the cost of maintaining larger mature cow weights without also benefiting from the extra post-weaning growth.

"The industry assumes the additional income from extra-weaning growth far outweighs the increased cost of mature cow weight," Lalman says.

As mentioned, additional economic benefit can be reaped if marketed appropriately. Even then, however, Lalman points out maintaining larger cows comes with added production risk.

"During times that forage resources are challenged, such as drought, you're going to have to sell more cows, and if you don't modify the environment artificially through supplemental feeding and higher input costs in order to avoid reproductive failure, you could have a disaster on your hands," Lalman says. "It might not be evident every year, but cattle further away from matching their environment are going to be more susceptible to environmental extremes."

> The important thing is for you to know what's going on in your own operation.
>
> — David Lalman, Oklahoma State University

Reaching the weaning weight plateau

Thinking back to the average 7.3 pounds of increased mature cow weight each year — that's an added 73 pounds across a decade.

"How much added production can an individual ranch stand?" Lalman wonders.

Various data suggests the average weaning weight growth at the ranch level is about tapped out.

Based on breed phenotypic data for Angus, Charolais and others, weaning weight is beginning to plateau, according to Lalman. Standardized Performance Analysis across decades suggests weaning weight is mainly stagnant to declining.

Moreover, Lalman worked with analysts at Kansas State University to evaluate data from Superior Livestock Video auctions. They looked at sale lots identified as unweaned calves and projected delivery weights based on delivery dates as a proxy for weaning weight. Weaning weights for cattle in the northern tier of the country (Kansas and further north) began to plateau in approximately 2005-06. Across the southern tier, researchers see continued weaning weight growth, similar to what occurred in the north. The working hypothesis is that weaning weights in the south will also reach a plateau.

"The important thing is for you to know what's going on in your own operation," Lalman says. "If your calf weaning weights continue to increase to offset the added cost of heavier cows and you're selecting aggressively for growth, then there's a good chance it can pay off if you have a good relationship with those purchasing your cattle or if you retain ownership."

On the other hand, Lalman says, "If your weaning weights have stabilized, then it suggests more focus on cow cost is likely appropriate."

As time goes on, OSU research also indicates there is an opportunity to identify individuals that bend the curve by producing the heaviest weaning weights while consuming the least feed.

WHEN TO ASSIST WITH CALVING

By Mark Z. Johnson

There are three stages of bovine parturition. Stage 1, dilation of the cervix is variable in length and can occur over hours or days. During Stage 1, you may or may not notice a mucus string hanging from the vulva, cows with less appetite or cows separating themselves from herd mates. Stage 2 is the delivery of the calf. Stage 2 officially begins with the appearance of the placenta (water bag) at the vulva.

Deciding when/if to provide assistance to a female is based on what you observe at the onset and during stage 2 of the birth process. Stage 3 is the delivery of the placenta or afterbirth, typically happening within a few hours after delivery of the calf. Understanding the birth process, the normal timelines associated with Stage 2 and what a normal presentation of the calf fetus looks like are all critical in making the judgement call of when to offer assistance during calving. Intervening in the calving process too soon or too late can lead to a bad outcome. Unusual disturbance or stress too early in the process can slow down contractions and delay calving. Don't jump the gun! Give the natural birth process time to run its course before intervening. By that same token, waiting too long to assist can lead to weakened or dead calves.

When to Assist?

"Start your clock" at the appearance of the water bag at the beginning of Stage 2. Normally, at this point, the fetus has entered the birth canal, a portion of the water bag can be observed, and the heifer/cow is usually lying down. Uterine contractions occur every couple of minutes and are accompanied by contractions of the diaphragm and abdominal muscles. Surrounded by the water bag, the calf's front feet and possibly nose are beginning to protrude from the vulva. After the nose is exposed, the dam exerts maximum straining to push the shoulders and chest through the pelvic girdle.

Once the shoulders have passed, the abdominal muscles of the calf relax and its hips and legs extend back to permit easier passage of the hip region. At this point, the water bag has ruptured and the calf is normally free of fetal membranes, because they remain attached to the cotyledons of the uterus. This ensures an oxygen supply for the calf during birth. Upon passing though the vulva, the umbilical cord breaks, respiration begins, filling the lungs with air and the lungs become functional.

Although the time intervals presented here may vary among types and breeds of cattle, and among individuals of the same breed, most recent research indicates healthy heifers, calving for the first time and with a normal presentation of the calf should calve unassisted within 60 minutes of the appearance of the water bag. Healthy cows with normal calf presentation typically calve in less than 30 minutes after the onset of stage 2.

Deciding when to offer assistance is a judgment call and good judgement is the result of experience. Obviously when we come upon a heifer or cow with the front feet and nose of the calf showing and water bag ruptured, but don't know how long they have been trying, it can lead to anxious moments. When cows are lying down and having contractions and no water bag or calves' feet can be seen, it can be a sign of an abnormal presentation or a very large calf. When you don't know when stage two started, or it is apparent no progress is being made, or all signs are normal, but the timelines mentioned are expiring, you will need to conduct a vaginal exam to determine what is going on and if help is needed.

HEIFER PERCENT MATURE BODY WEIGHT AT BREEDING

What does it mean for pregnancy rates and calf performance?

By Josie Crouch, MS Animal Science, Kacie McCarthy, UNL Cow-Calf Specialist, and Travis Mulliniks, former UNL Beef Cattle Nutritionist, Range Production Systems

To remain in the herd, it is crucial for a replacement heifer to conceive and maintain pregnancy. However, since females within a herd offset input costs with a live calf born each year, focus should not only be placed on pregnancy rates as a yearling, but subsequent pregnancy rates as a cow.

The traditional recommendations have heifers reaching 65% of their mature body weight by breeding to maximize pregnancy rates. However, multiple studies across various regions have shown heifers developed as low as 48% mature body weight at breeding showed no impact on reproduction.

These studies have been conducted over 3 years or less, which may limit the ability to interpret results. However, developing heifers to a lower percentage of mature body weight at breeding could potentially serve as a management strategy to reduce input costs without sacrificing performance. This study determined how differing heifer percent mature body weights (50, 55, 60, 65, and 70%) at breeding affected heifer performance, calf performance, and subsequent pregnancy rates.

This study used data collected from 2005 through 2019 at the University of Nebraska, Gudmundsen Sandhills Laboratory using 1,434 March- and May-calving Red Angus x Simmental crossbred heifers and cows.

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U.S. CATTLE INVENTORY

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heifer total since 1950. Since 2001, USDA has provided the portion of beef replacement heifers that are expected to calve in the coming year. The current inventory of these bred beef heifers is 3.05 million head, the smallest in the data back to 2001.

The estimated supply of feeder cattle outside feedlots is calculated by summing the inventories of other heifers, steers >500 pounds and calves.

The smaller cattle inventory is projected to result in a decrease of about five percent in total beef production to roughly 25.5 billion pounds in 2024. That's three times as much beef as was produced in 1951, the last time the total cattle inventory was this small; impressive growth in productivity in the beef cattle industry. Nevertheless, the current ability to produce beef is smaller than market potential today and the industry will look to rebuild numbers and increase beef production when conditions allow.

IDENTIFYING

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will sire. Milk EPDs indicate the milk level in the form of pounds of calf cows will wean based on the nutrition provided. Higher Milk EPDs not only result in daughters weaning heavier calves but also in higher nutritional requirements in the cow herd so there is an optimum value depending on your production environment. Mature Weight (MW) EPDs indicate the mature size of a bull's daughters. Optimums in mature cow weight also depend on your production environment. The Sire Search feature at angus.org indicates considerable variation in MW EPDs among sires combining better than average genetic values for Calving Ease Direct, Weaning Weight, Yearling Weight, HP, CEM Milk and Marbling.

Will You be Using Your Next Bull on Cows or Virgin Heifers?

No one wants to pull calves. That being said, there is an extremely low incidence of dystocia in mature cows. Selection for calving ease bulls in the form of higher Calving Ease Direct (CED) and low Birth Weight (BW) EPDs is a priority when bulls will be used on heifers.

What Else Should Be Considered?

Marketing endpoint of your calf crop should influence selection priorities when bulls are used as terminal sires.

Your existing cowherd. Breed composition, disposition and body type, mature size, percent calf crop weaned, and percent of mature weight weaned all should impact what you prioritize in bull selection.

Summary

Every operation should establish a budget for herd sire purchases. The return on this genetic investment is based on identifying the right bull (or bulls) that offer the best fit for your operation. Over time, 80 – 90% of genetic improvement is the result of sire selection. Herd bulls will either increase or restrict the profit potential of your operation.

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field will be. Heavy stockpile will have more and deeper root systems, helping to create more resilient structure and more soil surface protection unless under very saturated conditions.

You might ask how to estimate available forage. If you took a grazing stick or yardstick and measured the forage height in the potential field and measured it from the ground to a compressed height and multiplied that by 250 for normal dense stand, you would get a quick estimate of the total pounds of dry matter present.

It's best to use a "compressed" height to be more accurate. I usually have a light clipboard with me and lay it on top of the forage and measure below that. You will quickly note that it takes quite a bit of standing forage to be even 3,000 pounds. Not all of that will be desirable or grazable, nor should it be.

If you want a more accurate estimate of the vegetation present, you can make yourself a clipping frame that is approximately 12 x 23 inches or 1.92 square feet. Lay that frame on the ground and clip the forage that is within the frame and place it in a preweighed paper bag. If time allows, set the bag of forage in a warm dry spot until the forage is air dry – this normally takes several days depending on conditions. You can also carefully dry the forage in a microwave, but this too is time consuming, a bit precarious, and also usually annoys my wife if done in the kitchen.

Once the forage is dry, weigh the sample in grams. If you don't have a gram scale, weigh it in ounces and multiply it by 28.35 to get grams. Multiply the grams of dry weight by 50 and you have an estimate of total pounds per acre of dry matter. I've only seen one field since December that was over 3,000 pounds.

Pastures that are grazed or treaded on by livestock during the winter, especially when the ground is not frozen and saturated, will usually have quite a bit of sod disturbance that will not only increase compaction, reduce desirable plant density, and increase opportunities for annual weeds, but also increase the likelihood of erosion. Be careful grazing this winter, especially after such a dry, lower production fall.

We should still have some good opportunities to get a little fresh snow which is ideal to frost-seed legumes into. I especially like it because I can see my tracks and know where I've been and get a better pattern with the seeder. With most fields having slightly less forage than usual left behind, frost seeding some clover into these fields and getting a good stand should be pretty easily done.

Slightly higher seeding rates are best for frost seeding than for conventional seeding. White clovers can be seeded at 1-1.5 lb. per acre. Remember it is a very small seed – you can get it on too thick if not careful. I've found that mixing it with another seed as a carrier is good. Red clover should be seeded at 6-8 lbs. per acre; birdsfoot trefoil at 5 lbs. per acre and common lespedeza with hulled seed at 10 lbs. per acre. Those are single species rates, if mixing, then each would be reduced.

All legumes should be inoculated with the appropriate inoculants (rhizobia) for that species to ensure proper bacteria, good germination and growth. Coated seed, when available, can solve lots of problems including seed size, the inoculants and it can even help the pH for the seedling.

Remember, it's not about maximizing a grazing event, but maximizing a grazing season! Keep on grazing!

when temperatures drop. To combat ice formation, consider installing a continuous flow valve. This valve will prevent freezing and ice from accumulating in the tank.

In areas where electricity isn't an option, natural sources like ponds and springs come into play for livestock hydration. However, during winter, these natural waterways can present challenges, especially on extremely cold days when freezing is a concern. To navigate this, one can employ innovative methods such as a collection trench combined with solar-heated devices. These systems often include heat tubes buried deep underground, capturing solar energy to prevent water from freezing. However, it's important to note that even with these measures, on particularly frigid days, with frequent visits by the herd to the water source, a thin layer of ice may still form. In such instances, breaking the ice becomes necessary to maintain uninterrupted access to water for your livestock.

What is Ideal

Keeping the ideal temperature of drinking water for cattle is a balance – it should neither be hot nor frozen. The sweet spot lies between 40 and 65 degrees Fahrenheit. It's interesting to note that steers with access to cool drinking water have shown to gain an additional 0.3 to 0.4 pounds per day compared to those consuming warmer water. This underscores the importance of regularly checking the temperature of water, especially in waterers equipped with heaters, to avoid what's known as a "runaway" – a situation where the water gets too warm.

To accurately gauge the water temperature, use a thermometer, but remember to keep it suspended in the water rather than letting it touch the bottom of the container. The bottom, especially if heated, might show a higher temperature than the actual water. Conduct these checks over several cold days to ensure consistency. Maintaining water temperatures at least at 40 degrees Fahrenheit is crucial not just for the mechanical aspects of water delivery systems, but also for sustaining optimal animal performance.

Furthermore, according to the "Beef Housing and Equipment Handbook" from 1987, a guideline for water access is that 16 cows should be able to drink from each foot of a water fountain or tank perimeter. This is based on the assumption that cows are penned and have continual access to water throughout the day. Practical experiences often suggest that this number can be exceeded if the water flow is consistently adequate.

Understanding and implementing these insights about water temperature and accessibility can significantly impact the health and growth rates of cattle, especially in controlled environments like pens. Regular monitoring and adjustments as per weather conditions are key to ensuring the well-being of your livestock.

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impact the bull's overall health, which can have effects on semen quality and production.

Routine assessment includes an examination for physical soundness – such as hoof structure, body condition, scrotal circumference, and penile extension – as well as an assessment of sperm production ability and semen quality. A breeding soundness exam reflects the bull's breeding soundness on that day, and the sperm assessed at that time are a result of spermatogenesis from more than 60 days prior to the breeding soundness exam. The motility of the sperm is tested to see what percent are moving progressively forward – a minimum of 30% should be alive and swimming in a forward direction. Morphology (proper structure) of the semen is also assessed; the bull must have at least 70% normal sperm cells to pass.

Additionally, bulls are palpated rectally to ensure normality of internal structures and seminal vesicles. It isn't uncommon for young bulls to get infections within the seminal vesicles. This can show up as white blood cells in the semen sample, which would be a reason to defer or possibly fail a bull, and treatment with antibiotics would be required. Yearling and younger bulls tend to have a higher fail rate. Bulls often overcome maturity defects when identified early, but this is not always the case, so we can't just assume the maturity defects that have a negative impact on fertility will go away. I prefer to wait at least three weeks to retest, so I'm giving the bull a chance to resolve these maturity defects or fight off the infection if they were treated.

Contributing factors to be aware of

As living beings are faced with stressors, the reproductive system is the first thing that goes on the chopping block. Meaning, the body no longer delegates resources to the reproductive system, which can impact a bull's ability to produce semen. A number of events or risks can impact semen quality and bull productivity, including:

- Stressful events such as severe weather challenges
- Scrotal frostbite
- Injury effects compounded by chronicity
- Poor nutrition or mineral program
- Missed or inconsistent feedings
- Pain associated with lameness
- Health challenges (i.e., high parasite load, respiratory disease)
- Excess fly pressure

Ensure success with a solid health program

Try to do everything you can to ensure the bulls stay healthy prior to and throughout the breeding season so that they're in tiptop shape to go out and get the job done.

For a bull's success, provide proper nutrition (even in the offseason), and be sure they are included in your herd health program. It is important that they receive vaccinations against common diseases in your area and, of course, the best resource to guide you on this topic is your herd veterinarian. Generally, the major viral respiratory and reproductive pathogens (bovine viral diarrhea, infectious bovine rhinotracheitis, bovine respiratory syncytial virus, parainfluenza type 3), as well as bacteria such as leptospirosis and clostridial diseases should be included in your vaccination plan. Other considerations, depending on disease prevalence, might be to include a foot rot and pinkeye vaccine. Fly control is extremely important for your entire herd, especially the bulls. Bulls tend to attract an even higher fly burden than cows. We want to make sure that they aren't so preoccupied with fighting flies that they're not concentrating on the job at hand. I recommend using tools like fly tags, sprays and incorporating insect growth regulators or natural insect repellent components like garlic into your mineral program to keep the fly population down.

In today's beef industry, we are faced with many external forces beyond our control that greatly impact an operation's profitability (weather, regulations, operating costs, volatile markets, etc.). We have to manage risk wherever we can; don't gamble on your herd's reproductive efficiency and health. The time and resources invested in your bull's breeding soundness exam and proper health plan is the best insurance you can buy to ensure you are turning out a herd sire that is capable of getting the job done and will give you the best chance at success.

The Simple Economics of Extended Wheat Grazing and Why it's a Bad Idea

By Eric A. DeVuyst, Department of Agricultural Economics, Oklahoma State University

With the current above average temperatures, first hollow stem in wheat pastures will likely be here earlier than is usual. So, it's a good time to look at the benefits and costs of grazing wheat past first hollow stem. Let's start with the research.

There are two Oklahoma studies that looked at the impact of extended wheat grazing on wheat grain yield. Fieser et al. (2006) looked at grazing stockpiled wheat forage, where Redmon et al. (1996) looked at wheat pasture that was grazed over the winter months. So, when looking at Fieser et al., the results show far less wheat loss from extended grazing. Meaning, if wheat pastures have been grazed over the winter months or are behind normal growth, Redmon et al. results are where we should focus.

Table 1. Wheat yield grain yield loss from extended grazing*

Days past first hollow stem	Wheat grain losses
0	
1	5%
2	10%
3	15%
4	20%
5	24%
6	29%
7	33%

*Derived from Redmon et al. (1996).

In Table 1, wheat yield losses are given as a percentage of wheat yield. Assuming 35-bushel wheat grain yield (without extended grazing), one day of extended grazing is a loss of 1.75 bushels. At $6 per bushel, that's $10.50 per acre in lost grain. Next, let's calculate the value of one day of extended stocker grazing. Assuming a stocking rate of 0.64 head per acre, $1.80 value of gain, and 3 pounds per day gain, one day of extended grazing generates $3.46 per acre in added revenue. The difference in returns per acre from one day of extended grazing is -$7.04 per acre. The losses increase quickly as extended grazing continues. By just three days past first hollow stem, extending grazing has a net return (value of stocker gain less wheat grain loss) of -$21.13 per acre. At seven past first hollow stem, the loss is over $45 per acre. This is before charging opportunity cost to the stocker enterprise.

The results are robust to changes in wheat prices and stocker gains. If wheat price is $6 per bushel, the stocker value of gain would need to be $5 per pound to roughly breakeven on extended grazing. Alternatively, at $1.80 value of stocker gain, wheat price would need to be about $2 per bushel to roughly breakeven on extended grazing.

The economics are clear: don't graze past first hollow stem if you intend to harvest wheat grain.

TIPS TO STRETCH

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waste compared to feeding processed hay on the ground.

4.Cull – consider selling less productive females, open cows, and cows with structural/functional issues to reduce the number you must over winter; consider selling the bull as the market may provide the opportunity to sell a mature bull and replace him with a younger bull next spring.

5.Limit time access to hay – research has shown dry cows in mid-gestation can be maintained on good quality hay when they have restricted access time to only 6-8 hours a day; the hay savings comes from less waste as feeding behavior is altered; all cows must be able to access hay at any given time; this is not recommended for young or thin cows, lactating cows or growing animals.

6.Substitute hay with grain – calories and protein can be provided from supplements; grain/commodity mixes can be used to replace hay; cows can be maintained on a low hay diet by using grain supplementation that balances the nutrient supply and animal requirements; consult a nutritionist before making extreme feeding changes.

7.Deworm young animals – animals with an internal parasite burden will have reduced efficiency.

8.Feed an ionophore – if grain supplementation will be used, consider adding an ionophore to increase the energy efficiency of the feed consumed. Consult your nutritionist to discuss inclusion rates and developing a supplement program. Previous work has shown that feeding 200 mg of monensin allowed cows to maintain body condition on 10-15% less hay.

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at the University of Missouri. Estimated acreage and management decisions were based on USDA's Structure, Management Practices, and Production Costs of U.S. Beef Cow-Calf Farms (2023). Annual budgets were created based on state cow-calf budgets.

"Using the USDA publication, we have the number of acres associated with the operations, the fixed costs associated with them, the feed costs and any cash reserves that a producer would have, on average, and then we project forward using FAPRI prices," Martinez explains.

In broad terms, for each herd size of the Hereford-sired and Angus-sired calves, the model uses random pools of performance data, cost data, expenses and income. Each model represents 500 simulations for each year of the 10 years. Next, Martinez evaluated the difference between the Hereford and Angus models for annual net farm income and net worth.

"Cash is king. Producers always ask us about net farm income. That's what determines their tax liability and cash reserves," Martinez says. "Any decision that impacts cashflow has long-term effects. The decision to alter what you buy or not sell, for instance, has a short-run effect on a producer's net farm income in a given year."

Longer term, all of those decisions contribute to net worth over time.

"People who choose to run cattle on their land are choosing to utilize those resources to generate wealth into the future rather than using the same resources to invest in the stock market, as an example," Martinez explains. "Take your three classic financial documents, the income statement, your cashflow statement and your balance sheet. They show your operation's net worth, and a key part of that is current assets including cash on hand. That's why cash is king from an accounting standpoint."

Analysis results

Net Farm Income1

•At the end of 10 years, breeding commercial Angus cows to a Hereford bull returns an average of $90 more per cow per year in a 500-cow herd, compared to breeding commercial Angus cows to an Angus bull.

•At the end of 10 years, breeding commercial Angus cows to a Hereford bull returns an average of $76 more per cow per year in a 30-cow herd, compared to breeding commercial Angus cows to an Angus bull.

•Net farm income is larger in the Angus-sired herds for the first two years as Hereford-sired herds retain more replacements, foregoing increased cash sales.

Net Worth2

•Across 10 years, breeding commercial Angus cows to a Hereford bull returns an average of $305 more per cow per year in a 500-cow herd, compared to breeding commercial Angus cows to an Angus bull.

•Across 10 years, breeding commercial Angus cows to a Hereford bull returns an average of $1,326 more per cow per year in a 30-cow herd, compared to breeding commercial Angus cows to an Angus bull. The significant difference in value, compared to the 500-head herd is because each single head contributes more relative value to the smaller herd.

Martinez emphasizes the magnitude of difference rather than the specific dollar amounts is the key takeaway from the analysis since every operation is unique. For instance, the average income generated per cow was 21% more for the 30-head herds using Hereford bulls rather than Angus. It was 24% more in the 500-head herds.

"As a producer retains more black baldy females over time, the net impact of maternal heterosis is magnified. That's what is driving the significant economic advantage over time," Martinez says. "The bottom line is that with the rational assumptions made in these models, Hereford bulls returned significantly more average annual net income per cow per year and significantly more average annual net worth per cow per year than using Angus bulls in a commercial Angus herd over time."

While economic advantages are similar for both herd sizes, Martinez notes, "There is added benefit for smaller herds in that they are able to achieve the economic gain although they lack the economies of scale typically associated with the larger herds."

Martinez also calculated net present value associated with the decision to use Hereford rather than Angus bulls. "Whether it was the 30-head herd or the 500-head herd, using Herefords offered a three to one advantage," he says.

Control what you can

The UT analysis also underscores the impact of management decisions over time and the value of managing for the longer term rather than year to year, according to Martinez.

"The bull someone buys is one of the most consequential decisions of a cattle operation," Martinez says. "For the most part, we don't have much control over what we get in terms of price, but what we can control is management and our inputs. We do have control over how we use everything in between to help with the variable costs, help with the fixed costs and help our bottom line."

Model Assumptions and Details

Ten-year models were developed for 30-cow and 500-cow commercial Angus herds utilizing a Hereford bull or an Angus bull. These models incorporated cattle-cycle effects on returns to enterprise cattle sales (premiums for black-hided animals) and fluctuating input prices (estimates taken from Food and Agricultural Policy Research Institute — FAPRI). Model results were compared to analyze impacts on an operation's net worth and net farm income.

For each model, estimated acreage and management decisions were based on *Structure, Management Practices, and Production Costs of U.S. Beef Cow-Calf Farms, USDA* (2023). Replacement percentages started at 15% and gradually increased to 35%.

Nutritional Considerations Going into Calving

By Lawton Stewart, Extension Beef Cattle Specialist, UGA

As we start 2024, many beef cattle producers are about to start the calving season. Across the state, forage availability is variable. Some places have seen severe drought in late summer/early fall, causing producers to feed more hay and deplete their winter hay supply.

Many producers were able to put up plenty of hay. However, we have received several emails and phone calls dealing with hay quality being lower than expected this year. Entering the peak of hay feeding season, here are a few situations we are seeing, and the potential ramifications.

1. I will restrict feed in the last trimester to decrease calf birth weights.

2. I need more protein to go with my hay.

3. There is a tendency to underestimate crude protein and overestimate energy.

I will restrict feed in the last trimester to decrease calf birth weights.

Is this correct? Absolutely! The problem is that is not the only thing it will affect. Recent research has focused on fetal programming. Fetal programming is the concept that maternal stimulus or insult during fetal development has long-term effects on the offspring.

One of the most critical aspects of fetal programming involves adequate nutrition, or lack thereof, for the dam. Research has shown minimal impact on calf birth weights, however restricted nutrition during the last trimester decreased weaning weights, finishing weights, and hot carcass weights. Additionally, research from Nebraska indicated that heifers from nutritionally restricted cows reached puberty 14 days later than those with proper nutrition.

I need more protein to go with my hay.

Is this correct? Possibly, however protein is only half of the equation. From April

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1 to December 1 of last year, 924 bermudagrass hay samples and 151 fescue hay samples were submitted to the UGA lab. The mean crude protein (CP) and energy (TDN) values were 10.6% and 54.1%, respectively for bermudagrass, and 10.6% and 54.9%, respectively for fescue. Figure 1 represents the CP and TDN requirements of a brood cow throughout the production year. As you can see, as cows are entering the final trimester, their CP requirement is exceeded by the average bermudagrass and fescue sample, but the energy requirement falls short for bermudagrass. More importantly, there is a slight deficiency for CP for peak lactation but falls tremendously short for TDN.

There is a tendency to underestimate crude protein and overestimate energy.

The cheapest money you will ever spend in a beef cattle operation is a forage test, guaranteed!!! In a recent Master Cattlemen's Program, free forage testing was offered to participants along with a survey asking producers to estimate what they thought the quality of the hay was (prior to testing). This survey resulted in 83% of producers under estimating the protein of their hay compared to the actual. This would result in purchasing protein supplement when not needed. For energy, 50% over estimated energy. This would result in depriving needed energy during late gestation and early lactation. In addition to the previously discussed fetal programming issues, this could also cause delayed breeding. An actual example of over estimation of energy is illustrated in Figure 2.

The over estimation could likely result in breeding delayed 42 days. The resulting loss in weaning weight could easily reach 80 lb, resulting in an approximate $176 decrease in value per calf. Through forage testing, the producer would know to feed 4 lb/d of a supplement such as corn gluten feed. Based on a 25-cow herd, this could easily return $3,575 above cost. That is a no-brainer!

Brood cow nutrition is a crucial part of a beef cattle operation. Between fetal programming and maintaining the proper calving interval, it is imperative for producers to pay close attention to the nutrients available in their forages, and if they meet the requirements of their herd.

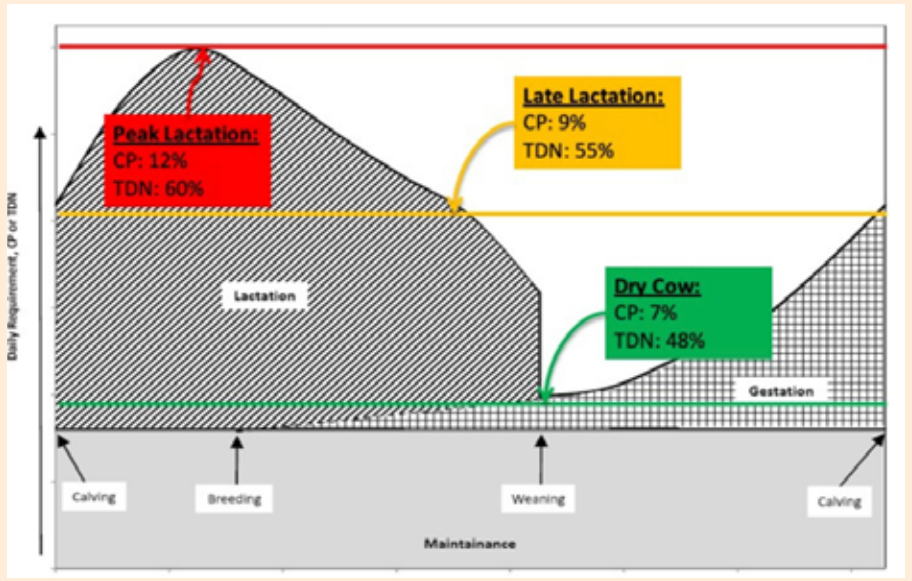

Figure 1. The nutrient requirement of a mature brood cow through a 365-day calving interval.

Example of over-estimation energy for 25 cows:

- Estimated TDN: 60% ACTUAL TDN: 55.5%
  DIFFERENCE: 4.5%
- No feed – cows lose condition, slip 2 cycles
- Calf is ~80lb lighter than contemporaries/expected WW
- At $2.20/lb, **$-176/calf**

IF ONLY I'D KNOWN...

- **$25** for forage test ($1/cow)
- 4 lb/d of Corn Gluten for 60 days ($300/ton) **= $36 TOTAL**
- **$36 investment/cow returns $179/cow**
- X 25 cows = **$3,575 return on investment!!!!**

Figure 2. Actual example of over-estimating energy.




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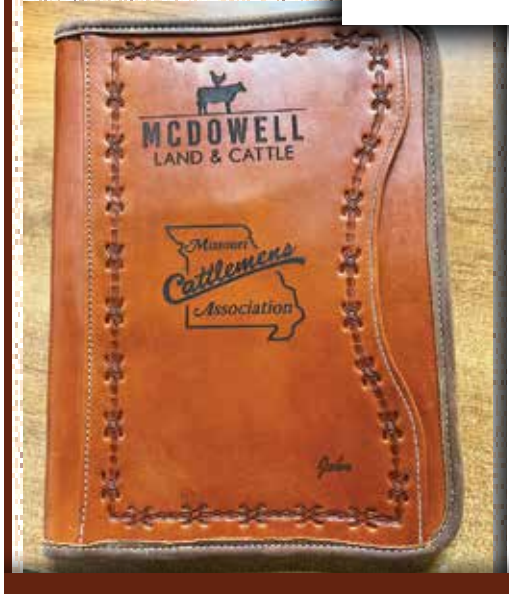

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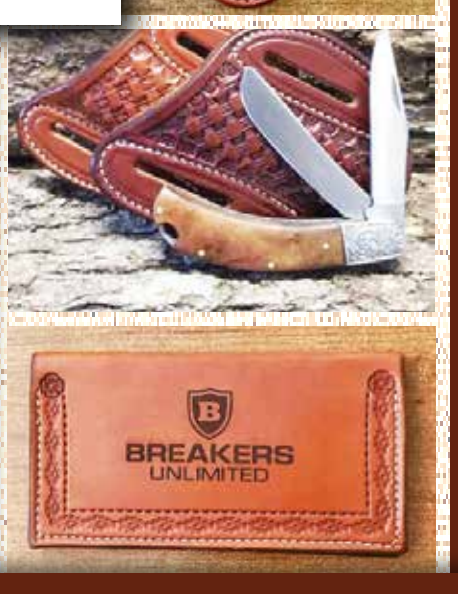


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Conclusions and Implications

During the development period, it is crucial to make management decisions that focus not only on initial performance, but also on how subsequent performance may also be impacted (ex. plane of nutrition, high versus low rate of gain, natural service versus artificial insemination). Producers should consider developing heifers in a way that optimizes reproductive performance and best encompasses the goals of their operation, rather than striving for a specific target weight.

Calculations

The average herd mature body weight from the March- and May-calving herds were calculated by the average body weight of 5, 6, and 7-year-old cows at weaning, with weight being adjusted to a common body condition score of 5. The average weights for March and May cows were 1,107 and 1,072 lbs., respectively.

To determine heifer actual mature body weight percentages within the breeding groups, heifers' recorded body weights at breeding were divided by their respective herd average mature body weight. March-calving heifers were at an average of 60% mature body weight at breeding, with a range of 42% to 85%. Heifers in the May-calving breeding ranged from 46% to 92% mature body weight at breeding with an average of 67%.

A retrospective regression analysis was conducted on percent of estimate mature body weight to determine predicted responses of initial pregnancy rates, subsequent pregnancy rates (2-, 3-, 4-, and 5-year-old cow), and calf production at differing heifer mature body weight percentages. Differences in calving season, year, and when the heifer was born in the calving season were all accounted for in the statistical analysis.

See Table 1 for specific numbers associated with each group of heifers.

Table 1: Summary of impacts percent mature body weight (BW) at breeding has on

Percent mature BW	Pregnancy rate (initial)[a]	Pregnancy rate (2-yr-old)[b]	Pregnancy rate (3-, 4-, 5-yr-old)[c]	Calve first 21d[d]
70	85	92	___	65
65	85	90	___	65
60	83	87	___	76
55	80	82	___	77
50	73	75	___	75

[a]Heifers at a greater percent of mature BW at breeding (60-70%) had greater initial pregnancy rates.

[b]Heifers at a greater percent of mature BW at breeding (60-70%) had greater pregnancy rates as a 2-year-old.

[c]Heifer mature BW percentage at breeding had no impact on pregnancy rates as a 3, 4, 5-year-old.

Results

- A greater percentage of mature body weight at breeding showed higher pregnancy rates as heifers and as 2-yr-olds.
- Percent mature body weight of heifers at breeding had no impact on subsequent pregnancy rates after 2 years of age.
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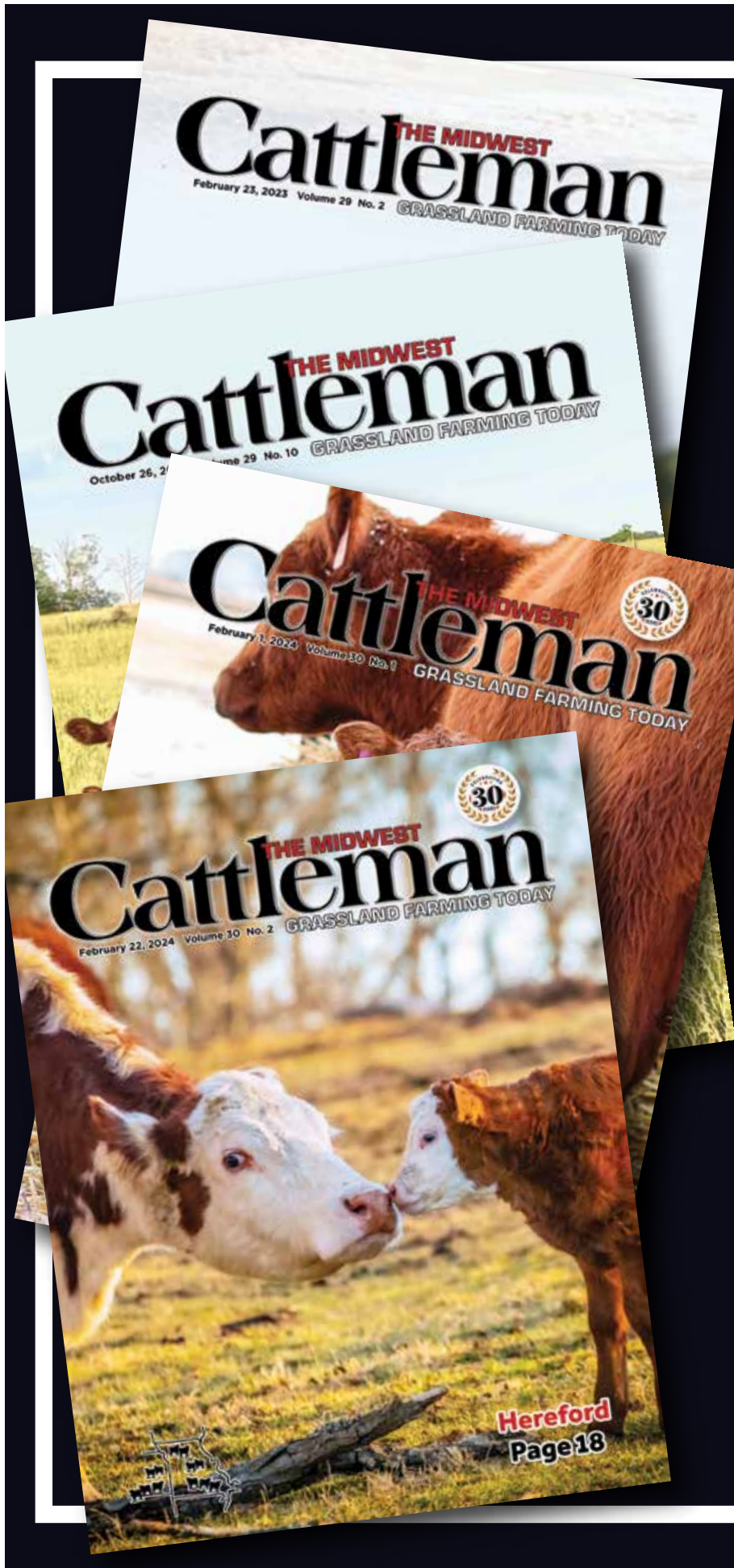

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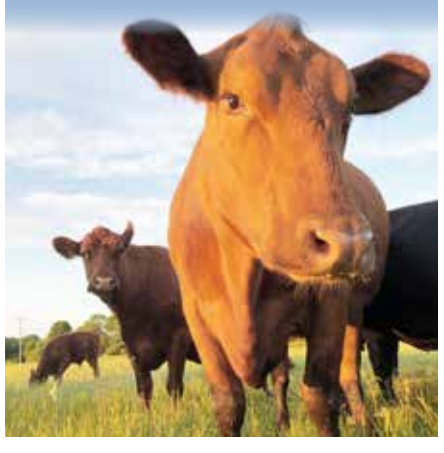

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Monitor Cow Condition During Weather Stress

By Jacob Klaudt - K-State Research and Extension

Cold temperatures followed by muddy conditions from melting snow has created special challenges for beef cattle producers, said Kansas State University beef extension specialist Justin Waggoner.

"We're getting muddy, but at the same time we've got these cold temperatures, so it really starts to add up, if you will, in terms of the impact it can have on cattle," he said.

Waggoner said monitoring the body condition of gestating cows during times of cold stress becomes critical for calving and rebreeding.

"I would encourage cow-calf producers to pay close attention to body condition score on cows, especially as we begin to get closer to calving," he said. "The other side of that is we need to prepare ourselves that if we're seeing some thin cows at calving, then we need to consider what that looks like in terms of the upcoming breeding season. Likely, it's going to take longer for those cows to cycle back."

Observing the weights of replacement heifers experiencing cold stress relative to target weights at breeding should also be monitored, according to Waggoner.

"We get this implication of cold stress, and these heifers aren't able to gain as much," he said. "Take the opportunity to do a weight check on those heifers 45 to 60 days before the expected breeding season."

Bulls require management during harsh winter weather as well, Waggoner said.

"We talk about the importance of bull management oftentimes in providing bedding for those bulls, but the other piece of that is we certainly want to encourage producers to do a semen test prior to turnout," he said. "We're more focused on the calves and the upcoming calving season, so it's just really easy to overlook those bulls."

Management of feeding sites is also important.

"We need to consider moving the location where we're feeding those livestock. If we're still feeding cows out on pasture, rolling hay, then we need to make sure that we're minimizing the damage to a particular location, or we may need to do some clean-up of those long-term feeding sites once conditions improve," he said.

Concerning the growing and finishing sectors of the industry, poor pen maintenance and muddy conditions take a toll on the gain of fed cattle, Waggoner said.

"Hoof deep mud can start to impact cattle performance and reduce it by as much as 15%," he said.

Additionally, backgrounding and growing operations may need to account for reduced animal performance in their marketing plans, Waggoner said.

"If we're in a system where we'd like to market eight-weight (800 pound) calves in March, and if we're colder and wet, there's some likelihood that those calves are going to be lighter," he said. "So re-evaluating the performance of those calves relative to their optimum marketing date certainly will be beneficial to producers."

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