THE MIDWEST
Cattleman
September 12, 2024 Volume 30 No. 8 GRASSLAND FARMING TODAY

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[1]Varma, KJ, Lockwood PW, Cosgrove MS, Rogers ER, Pharmacology, Safety and Clinical Efficacy of Nuflor (florfenicol) Following Subcutaneous Administration to Cattle. Preceedings of a Symposium Held in Conjunction with the XX World Buiatrics Congress. Sydney, Australia. July 1998: 3-19.
*_Mannheimia haemolytica, Histophilus somni,_ and _Pasteurella multocida._

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MOMENTUM CONTINUES FOR U.S. BEEF EXPORTS

Exports of U.S. beef continued to build momentum in July, according to data released by USDA and compiled by the U.S. Meat Export Federation (USMEF). Pork exports were also well above year-ago levels in July, led by a value record for shipments to Mexico.

Key Asian markets and Mexico fuel strong month for beef exports

July beef exports totaled 110,419 metric tons (mt), up 7% from a year ago and the second largest of 2024. Export value climbed 12% to $910.9 million, also the second highest this year. July growth was fueled primarily by strengthening demand in Japan, Taiwan, Mexico and the Middle East and ASEAN regions.

For January through July, beef export value increased 6% from a year ago to $6.13 billion, despite a 2% decline in volume (754,152 mt).

"It is very gratifying to see demand for U.S. beef trending upward in Asian markets, with Japan and Taiwan leading the way and an outstanding showing in the ASEAN region," said USMEF President and CEO Dan Halstrom. "U.S. beef has weathered severe headwinds in Asia and especially in Japan, but the outlook for the remainder of the year is encouraging. July was also another impressive month for Mexico, which continues to display excellent demand for an expanding range of U.S. beef cuts and variety meats."

US Meat Export Federation

BEEF PRICES SOAR TO RECORD HIGHS, YET FARMERS STRUGGLE TO REAP THE BENEFITS

USDA's Economic Research Service (ERS) reported record retail beef prices for the month of July, with the all fresh value of beef estimated at $8.15 per pound (Figure 1). This marks the first time in history the national average price for all fresh beef moved above $8. Consumers across the country are asking, "Why is beef so expensive?" The answer to this question has been several years in the making. This Market Intel will break down the events that have led to record beef prices in the United States and explain how farmers, despite these record prices at the grocery store, are more vulnerable now than ever.

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NEW VACCINE PROTECTS CATTLE FROM DEADLY TICK-BORNE DISEASE

University of Missouri researchers are working to develop the first-ever vaccine proven to protect cattle from a devastating tick-borne cattle disease known as bovine anaplasmosis. The research is vital to the state's economy as it aims to protect Missouri's $1.6 billion cattle industry.

Bovine anaplasmosis — which is common in Missouri — infects the red blood cells of cattle and causes hundreds of millions of dollars in economic losses nationwide each year and nearly $1 billion in losses worldwide, primarily due to reduced cattle production, treatment costs and deaths.

Roman Ganta, a McKee endowed professor in Mizzou's College of Veterinary Medicine and a Bond Life Sciences Center researcher, led the study that created the new vaccine. The work involved genetically modifying the pathogen Anaplasma marginale — which causes bovine anaplasmosis — in a lab. By deleting a specific gene and then injecting the modified pathogen into cattle, the vaccinated cattle were successfully immunized against the disease.

Roman Ganta. "I often re-

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THE AUGUST 2024 CATTLE ON FEED REPORT

Small Increase in Feedlot Inventories with Higher July Placements and Marketings

By James Mitchell, Livestock Marketing Specialist, University of Arkansas

The National Agricultural Statistics Service recently released the August Cattle on Feed report. As of August 1, 2024, the total inventory of cattle and calves on feed in feedlots with a capacity of 1,000 or more head reached 11.1 million, a 0.3 percent increase from August 1, 2023. July feedlot placements were 5.8 percent higher than last year. July fed cattle marketings totaled 1.86 million head, 7.7 percent higher than last year. The report showed more cattle leaving and en-

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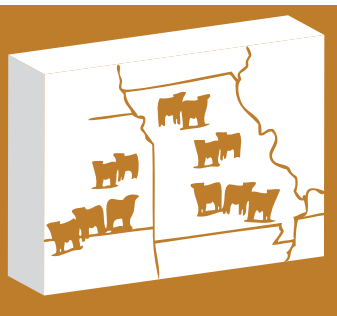

From Our Outfit

The Bronco Twister's Prayer

By Bruce Kiskaddon

It was a little grave yard
  on the rolling foot hill plains:
That was bleached by the sun in summer,
  swept by winter's snows and rains;
There a little bunch of settlers
  gathered on an autumn day
'Round a home-made lumber coffin,
  with their last respects to pay.
Weary men that wrung their living
  from that hard and arid land,
And beside them stood their women;
  faded wives with toil worn hands.
But among us stood one figure
  that was wiry, straight and trim.
Everyone among us know him.
  'Twas the broncho twister, Jim.
Just a bunch of hardened muscle
  tempered with a savage grit,
And he had the reputation
  of a man that never quit.
He had helped to build the coffin,
  he had helped to dig the grave;
And his instinct seemed to teach him
  how he really should behave.
Well, we didn't have a preacher,
  and the crowd was mighty slim.
Just two women with weak voices
  sang an old-time funeral hymn.
That was all we had for service.
    The old wife was sobbing there.
For her husband of a lifetime,
  laid away without prayer.
She looked at the broncho twister,
  then she walked right up to him.
Put one trembling arm around him and said,
  "Pray. Please won't you Jim?"
You could see his figure straighten,
  and a look of quick surprise
Flashed across his swarthy features,
  and his hard dare devil eyes.
He could handle any broncho,
  and he never dodged a fight.
'Twas the first time anybody ever saw
  his face turn white.
But he took his big sombrero
  off his rough and shaggy head,
How I wish I could remember what
  that broncho peeler said.
No, he wasn't educated.
  On the range his youth was spent.
But the maker of creation
  know exactly what he meant.
He looked over toward the mountains
  where the driftin' shadows played.
Silence must have reined in heaven
  when they heard the way Jim prayed.
Years have passed since that small funeral
  in that lonely grave yard lot.
But it gave us all a memory, and a lot
  of food for thought.
As we stood beside the coffin,
  and the freshly broken sod,

With that reckless broncho breaker
  talkin' heart to heart with God.
When the prayer at last was over,
  and the grave had all been filled,
On his rough, half broken pony,
  he rode off toward the hills.
Yes, we stood there in amazement
  as we watched him ride away,
For no words could ever thank him.
  There was nothing we could say.
Since we gathered in that grave yard,
  it's been nearly fifty years.
With their joys and with their sorrows,
  with their hopes and with their fears.
But I hope when I have finished,
  and they lay me with the dead,
Some one says a prayer above me,
  like that broncho twister said.

Editor's Note:
I'm not a 'bronco twister', but I have been twisted by one or two. I guess that is why this poem by Bruce Kiskaddon is one of my favorites. The setting could have been a place like the photo above – a place where there is likely to be graves long forgotten - 'swept by winter's snows and rains'.

The Simple, Yet Most Essential Nutrient for Cattle

Water quantity and quality is critical to cattle health and performance. Hot weather and drought conditions can impact both water quality and quantity for cattle.

By Troy Walz, Nebraska Extension Educator and Aaron Berger, Nebraska Extension

How Much Water Do Cattle Need?

There is an easy answer, and there is a right answer. A general guideline is that lactating cows need two gallons of water per 100 pounds of bodyweight per day. Bulls and dry cows need one to one and a half gallons of water per 100 pounds per day, according to the 2016 Nutrient Requirements of Beef Cattle.

Water needs are influenced by environmental temperature, class of livestock, weight, and stage of production. The warmer it gets, the more water cows need. Cows with nursing calves need more water than dry cows. As cattle gain weight, they need more water.

As an example, spring calving cows will need close to 20 to 24 gallons of water per day for themselves and another 5 to 10 gallons for their calf when it gets hot.

Some water comes from the feed they eat, and grass can be high in water content. Nursing calves meet some of their daily water needs with their dam's milk. However, it's best to plan on making sure cattle have access to the full recommended amount of good-quality water. It's particularly important that calves are able to reach the water levels in a tank, especially in hot weather. If cows come into water first and drink a tank down, calves may struggle to

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The Impact of Beef x Dairy Calves

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

The most common question I get at market outlook presentations is "What is the market impact of all these beef on dairy calves?" There seems to be a perception that these calves represent an additional number of cattle beyond the traditionally available cattle inventory data.

Historically the dairy industry bred all cows to dairy genetics, using the 50 percent heifer calf crop to ensure sufficient heifers from which to select the best genetics for the milking herd. The male calves and culled females became part of the beef industry. The growing production of beef x dairy crossbred calves in recent years is the result of increased commercial feasibility of sexed-semen technology. With sexed-semen, dairy producers can target the production of dairy replacement heifers in a subset of genetically superior cows. This frees up the remaining dairy cows to utilize beef genetics and produce crossbred calves.

Straightbred dairy steers and heifers are heavily discounted in beef markets because the light muscled animals produce carcasses with less desirable muscle conformation. Beef x dairy crossbred calves are significantly more valuable because the resulting carcasses have improved muscling and carcass conformation. Straightbred dairy calves not used for milk replacements previously entered the beef market simply as a residual, with limited or, sometimes no, value in the beef industry. In contrast, beef x dairy cross calves are a significant source of revenue for dairy producers and are subject to management choices regarding genetics and production. Numbers are uncertain but a significant percentage of potential non-replacement dairy calf production today are beef x dairy crosses.

USDA-NASS estimated the January 1, 2024 inventory of dairy cows at 9.36 million head. The dairy herd is relatively stable and has only varied by 130 thousand head, or 1.4 percent, from maximum to minimum in the last ten years. The dairy industry contributes an average of roughly 26 percent of the total U.S. calf crop each year. The contribution of the dairy industry to beef production does not change significantly year to year although the relative share of dairy in beef production increases slightly when the beef industry declines cyclically. Growth in production of beef x dairy crossbred calves does not represent any net additional production of cattle but rather a change in the genetic composition of dairy calf production.

Dairy production, including beef x dairy calves, are included in the cattle inventory and production data that are routinely available. Calf crop, cattle on feed, and slaughter data and other data include beef and dairy sectors and therefore already account for

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Going Against the Grain to Work with Mother Nature

By Dr. Katie VanValin, Assistant Extension Professor, University of Kentucky

Approximately 70% of the nation's cow herd calves between January 1st and June 30th each year, typically calving in February and March, a breeding season ranging from May through July, and weaning calves in the fall. On the other hand, those with fall calving herds will calve in September and October, breed from December to February, and wean in the spring. While fall-calving herds are in the minority and may seem to "go against the grain," this system offers producers unique opportunities to work with mother nature, especially in the fescue belt.

Environmental conditions are often more favorable for fall calving, starting with calving. While heat can be an issue, especially for calves born early, the cold, wet, and muddy conditions often seen in February and March are a non-issue. Cool-season forages pick up again in the fall as the summer heat begins to subside, providing a forage base for the lactating cows. Tall fescue stockpiles well and can be a good option for helping to maintain the fall calving herd. One downfall to fall calving that I often hear talked about is the need to overwinter both the lactating cow and her calf. While this is true, and conserved forage plus energy supplementation is often required to meet the nutritional requirements of the lactating cow, these costs can be offset by marketing calves into what is typically a seasonally higher market in the spring.

One of the most significant environmental differences between spring and fall calving herds is observed during the breeding season. Heat stress occurs when the combination of temperature and humidity reaches a threshold that causes cattle to generate or take on more heat than they can dissipate. Heat stress is compounded by cattle experiencing fescue toxicosis because of the vasoconstrictive effect of the ergot alkaloids found in endophyte-infected tall fescue. Heat stress has profound impacts on reproduction in both the cow and the bull, including temporary infertility. As our climate continues to change, periods of heat stress may become more prevalent during the typical May-July breeding season for spring calving herds, and of course, this will be exacerbated in herds grazing endophyte-infected fescue during this time. Fall-calving herds can avoid complications from heat stress during a winter breeding season. Profitability in the cow-calf sector starts at breeding by getting cows bred on time. In the mid-south, we are more likely to encounter challenges from

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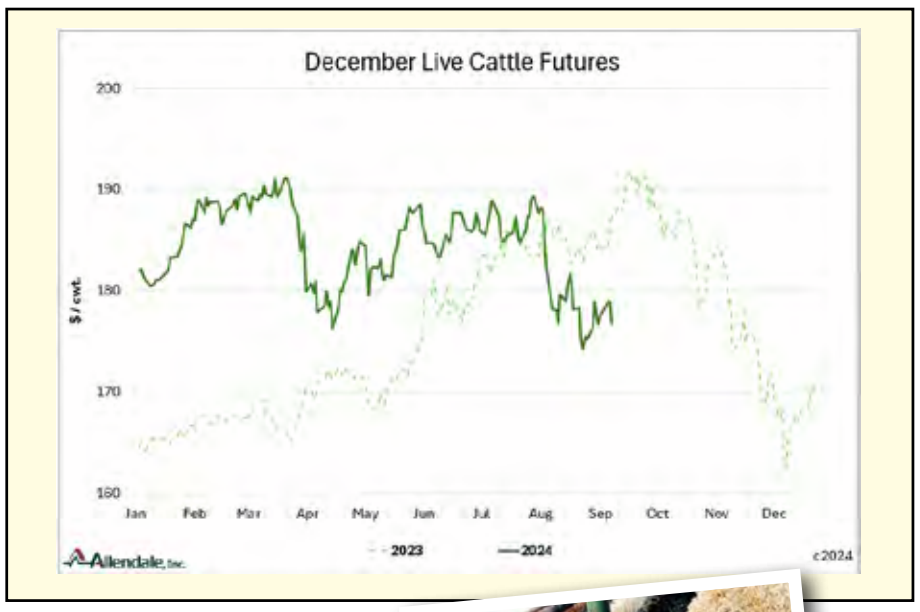

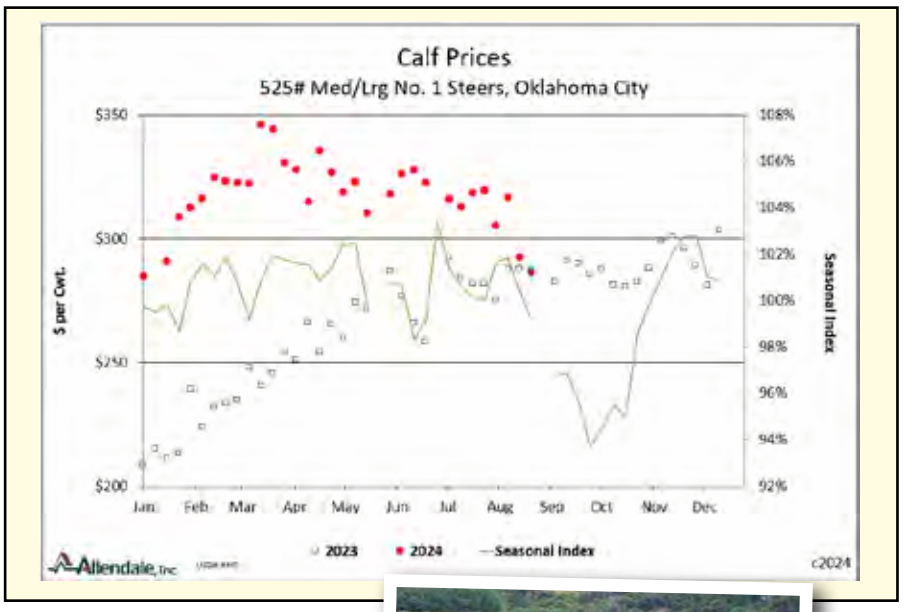

Live Cattle:

Cattle continue to struggle. The trade has reigned in its hope of a restart to the general supply decline. The start of 2025, rather than this fall, is now seen as the period for the next change. Concerns over a recession also remain. The August government jobs report, covering July, posted non-farm payroll gains of 114,000. That was well under 175,000 expectations. Last week's September ADP private market employment report, covering August, showed gains of 93,000. That was under the 145,000 expectation.

We will agree that much of this demand concern reminds us of last year. December 2023 futures posted a -$30 break, -16%, from September highs to December lows based on its own recession talk at the time. Cash cattle dropped -$15 from November highs, -9%, to December lows. For comparison, December this year has posted a break of -$17, -9%, from highs in July. Given the recession talk, which we cannot argue is true or not for several months, the near term implication for futures may not be off. It implies the current break from $190-$192 cash cattle highs to now $180, is not yet done. 2025 contracts clearly have some recession risk already dialed in. They are currently priced -2% to-4% from 2024 levels despite a drop in supply also coming in that same time.

Feeder Cattle:

Calf prices started their normal seasonal downtrend into fall marketing lows a little early. Current pricing, even with last year, shows a struggle in the market. 2024 spring calvings were about -2% from last year. The market is pricing in a little pushback due to recession and feeding profitability concerns. For the long term cow/calf liquidation we are in a lull. Cow slaughter has stepped back from 2023 but it is still historically good sized. So far, we have not heard of any major changes with heifer retention.

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What Does this Report Mean to Me?

Q: How do corn yields look?

A: Our nationwide yield survey suggested 182.5 bpa, just under USDA's higher numbers from August at 183.1. But the point from a market perspective remains. Futures, when priced below $4.00, were pricing in a belief back in August of 185 – 187 bpa. Reigning in yield expectations could allow for a rebound to $4.40 futures. Noted in the prior issue, this Aug – Sep period is the time for procurement for feed needs through Dec via basis and call options. We are also suggesting cattle feeder prices procure all replacement needs through next March via purchased appropriate futures.

Q: Will recent dryness impact delay heifer retention to next year?

A: There was not a big expectation for it to begin this fall anyway. The change from good spring moisture, now to dryness into fall, certainly will not help.

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ANTHRAX KILLS WYOMING MOOSE, MORE THAN 50 CATTLE, FOR FIRST TIME IN DECADES

No humans have been infected during the outbreak in south-central Wyoming, though officials advise people to avoid dead animals with no obvious injuries.

By Christine Peterson

One moose and more than 50 cattle have died of anthrax in the past month in south-central Wyoming, officials confirmed.

Anthrax occurs naturally in soil but has not been documented in Wyoming in livestock since the 1970s and in wildlife since 1956. No humans have been infected, according to the Wyoming Department of Health.

Wildlife and veterinary health officials ask that anyone in Carbon County who encounters a dead animal such as elk, moose, deer, antelope or cattle with no obvious injury to leave it alone and call health officials.

"For cattle, the main concern is for producers located within that region," said Dr. Hallie Hasel, Wyoming's state veterinarian. Cattle deaths can be a "serious economic loss" for ranchers, but Hasel notes veterinarians can order an effective vaccine that can be given annually for any cattle in at-risk areas to help curb the losses.

Cattle are omnipresent in the Laramie Mountains, seasonally grazing private pastureland along the range's lower-elevation fringes and higher-elevation federal grazing allotments in summer.

Even though anthrax has not been documented in Wyoming in more than half a century, outbreaks do occur in livestock in places like Texas, the Dakotas and western Canada, said Dr. Samantha Allen, the state's wildlife veterinarian. The bacteria can also live in soil for decades.

Wildlife and livestock officials don't know exactly why the spore-forming bacterium, Bacillus anthracis, began killing cattle in the Elk Mountain region, but they said drought followed by heavy rain can sometimes trigger an outbreak.

"While anthrax can sometimes be a human health concern, we have no worries at this time about a risk to the general public in Wyoming," said Kim Deti, a spokesperson for the health department. "People can get sick with anthrax if they come in close contact with infected animals or contaminated animal products. Anthrax does not spread person to person."

WyoFile.com

NEW VACCINE

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ceive calls from cattle producers who are excited about our research and want to know how soon they can get the vaccine," Ganta said. "There is currently no effective, widely available, vaccine for the disease, and cattle farmers are very worried about the disease harming or killing their cattle. We want to help farmers in Missouri and around the world and are working hard to come up with a viable solution."

Moving The Needle Forward

Ganta, who has been researching molecular genetics and vector-borne diseases for more than 30 years, was hired at Mizzou in 2023 as part of MizzouForward, a 10-year, $1.5 billion transformational effort that focuses on faculty expansion, infrastructure growth and student success.

Throughout his career, Ganta has published more than 100 studies in peer-reviewed journals and earned more than $22 million in grants from organizations such as the National Institutes of Health, the U.S. Department of Agriculture, the Centers for Disease Control and Prevention, industry partners and foundations. He is an example of why Mizzou is a leading research university and a member of the prestigious Association for American Universities.

Working at a land-grant university, Ganta's research will ultimately help improve the health of cattle — and the agricultural economy — throughout Missouri, particularly in rural areas.

"Missouri is a hotbed for tick-borne diseases, and bovine anaplasmosis causes massive economic losses both here in Missouri and around the world," Ganta said. "Mizzou has already made substantial contributions to protecting cattle against ticks. For example, many farmers currently give their cattle an antibiotic called chlortetracycline, which was first discovered at Mizzou's Sanborn Field in 1945. While effective, that medicine doesn't fully eliminate the infection, so this new vaccine is an innovative step forward to fully eliminate the infection."

Ganta said the new vaccine has been proven to give immunized cattle protection against bovine anaplasmosis for at least a month, and he and his team are eager to conduct additional research to determine how long the genetically modified pathogen can provide immunity for cattle. Ganta is also collaborating with industry partners to discuss future distribution of the new vaccine — which has been patented — to cattle producers.

"The genetically modified live vaccine offers protective immunity against wild-type Anaplasma marginale tick-transmission challenge" was published recently in Vaccine. Funding for the study was provided by the National Institutes of Health and Russell L. Rustici Rangeland and Cattle Research Endowment, University of California, Davis.

Leading The Charge in Tick Research

Mizzou — the state of Missouri's flagship and most prominent research university — has been on the frontlines of tick research for years. A 2021 Mizzou study found recent increases in both the number and severity of tick-borne diseases in the Midwest, particularly in the humid climates of Missouri, Kansas, Oklahoma and Arkansas. The documentation of what, when and where ticks are present helps public health officials better understand the threat of tick-borne diseases to people, pets and livestock.

Researchers in Mizzou's College of Veterinary Medicine and College of Health Sciences also were the first to identify the invasive longhorned tick in northern Missouri in 2022 and in Boone County, Missouri, in 2023. Mizzou's Veterinary Medical Diagnostic Laboratory assists livestock producers who notice various health issues in their cattle with tracking down the causes of such signs in an effort to support Missouri's agriculture industry.

University of Missouri

US HAY PRODUCTION EXPECTED TO INCREASE AGAIN IN 2024

By Dr. Kenny Burdine, Extension Professor, Livestock Marketing, University of Kentucky

While row crop estimates get the most attention, USDA's August Crop Production report also provides an initial estimate of US hay production and includes projections for individual states. Hay production and stocks have major implications for winter feed supply and winter feed costs for cattle operations. Widespread drought in 2022 led to low hay production levels and left very limited hay supplies coming into 2023. This can be seen in the May 1 Hay Stocks figure. Note that hay stocks in the US on May 1 of last year were at their lowest levels since 2013. A sharp increase can also be seen in 2024 as the larger 2023 crop helped to replenish hay supplies.

Last month's report suggested increases in production were likely at the national level for both "Alfalfa and Alfalfa Mixes", as well as "All Other Hay" in 2024. These are the only two categories of hay for which estimates are made by USDA-NASS. In this article, I will focus on the "All Other Hay" (non-Alfalfa) category as that is typically more reflective of hay that is fed to beef cows over the winter. At the national level, non-Alfalfa hay production was estimated to be up by 8.1% from 2023, largely due to higher expected yields across the country. While this is encouraging for hay supply in aggregate, hay markets are very localized since transportation costs tend to be very high. This is especially true for large roll bales, which are most often fed by cow-calf operators.

As I have done in the last few years, I selected some state estimates from the August report to provide some regional perspective on likely hay production levels. As can be seen in the table, non-Alfalfa hay production is expected to be higher in most states. Texas and Missouri especially stand out and it is worth noting that they are projected to be the two states with the highest production levels nationwide. Oklahoma stands out to the downside, but that decrease is driven by a sizeable drop in expected harvested acres. Hay production was projected higher in Kentucky, Arkansas, and Mississippi, with Tennessee (down 10.2%) being the outlier in the Southeast.

While a lot can still change with respect to hay produc-

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The Story – Drought, Inflation and Inventory

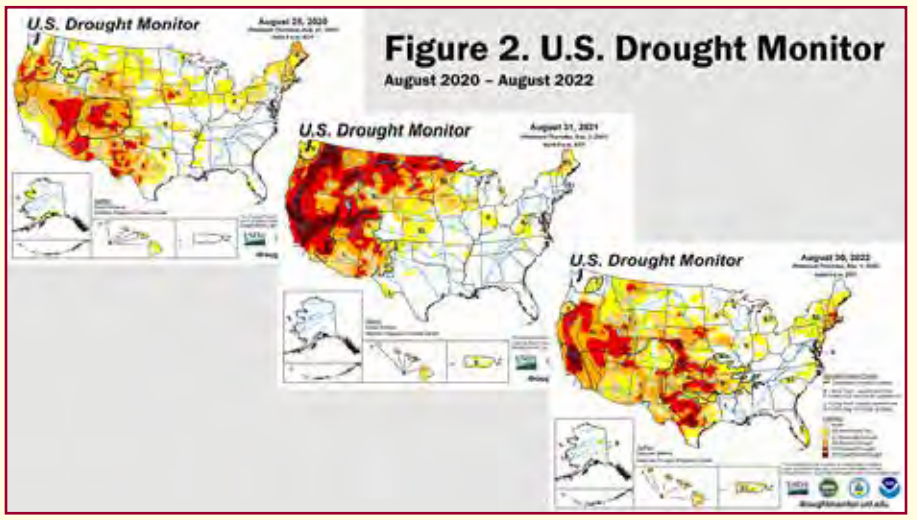
Pasture conditions began to deteriorate across the United States in 2020. The La Niña-driven drought would press on for the next three years causing pasture conditions to deteriorate and sending prices for feed grains to record levels (Figure 2). At the same time, inflation began to rise, driving up costs for everyone in the United States, including farmers and ranchers. The combination of drought and high input costs compelled farmers to place a higher-than-normal percentage of female cattle on feed for slaughter, rather than keeping them for replacement breeding, resulting in increased short-term beef production but contraction in the cattle inventory.

This contraction has led to the smallest cattle inventory in 73 years and a reduction in the U.S. beef supply. The cattle inventory takes more time to rebuild than other livestock inventories because it takes 18-24 months from a calf's birth until it is fed to slaughter weight and ready for market. For cow-calf operations, where farmers breed cattle and sell the calves, once a female calf is held back for breeding purposes – rather than sent for feeding and slaughter – it takes about a year before that cow produces a calf that is added to the cattle inventory. Fewer cattle on feed in the long run will result in more upward pressure on beef prices. Retail beef is already hitting record prices, but ranchers have not yet begun holding back females so retail beef prices are likely to climb higher.

Cattle on Feed

This year has been an anomaly with regards to cattle on feed. Despite a lower cattle inventory and higher prices, the number of cattle on feed has remained elevated. According to the latest Cattle on Feed report, released on Aug. 23 by USDA's National Agricultural Statistics Service (NASS), there were 11.1 million cattle on feed on August 1, up slightly from 2023. Placements were 1.7 million head, up about 6% from 2023. This is a strong number for placements and indicates that the inventory of cattle on feed will remain strong through the third quarter of 2024, keeping prices from rising dramatically until the number of cattle on feed begins to decline. USDA cancelled the July 2024 Cattle Inventory survey for budget reasons, so the exact size of the calf crop is unknown; but it is expected to be near record lows, which means when the current supply of cattle available for placement on feed dries up, there will be fewer calves coming to fill feedlots.

Cash prices offered by packers dropped substantially over the last couple of weeks. Feed grain prices are down about 25% in 2024, which has incentivized placing more cattle into feedlots as well as keeping them on feed longer. This large quantity of very heavy cattle available in the short run has resulted in a short-term reduction in price that allowed packers to secure a lot of fed cattle at a low price while selling for a high cutout (processed and boxed beef) value. Marketings of fed cattle in August were 1.855 million head, a strong number that shows that the packing sector has been able to aggressively buy cattle when markets are edging downward to help secure profitability. Packers are gaining from high grocery store beef prices, while farmers are losing from the drop in price packers pay them.



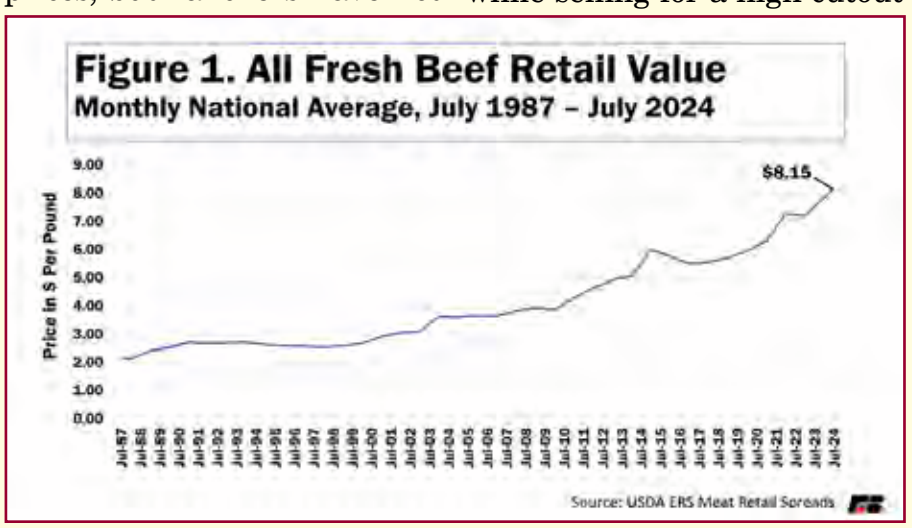
Cold Storage

NASS's Cold Storage report, which provides data for the national stocks of meats, dairy products, fruits and vegetables in public, private and semi-private warehouses, shows the supply of all meat products in the survey decreased from the previous month. Beef, pork and lamb are all down year-over-year, while poultry meat in freezers is up about 2% from July 31, 2023. More specifically, the latest report, released on Aug. 23, estimates that total red meat supplies on July 31 fell 3% from the previous month and 3% from July 31, 2023. Beef supplies were down slightly from the previous month and down about 1% from July 31, 2023. Keep in mind, while beef in cold storage is only down 1% from one year ago, it's down about 20% over two years from July 31, 2022. This decrease in supply when paired with strong domestic demand provides a snapshot of why consumers are seeing record beef prices in grocery stores.

Obstacles to Expansion

One of the positive results of lower cattle supplies is higher prices for ranchers. However, higher prices do not affect all farmers and ranchers equally, especially during an economic downturn in agriculture. The national 5 area market average weekly fed steer price for all grades for the week of Aug. 25 was $185.54/cwt, up just 1.5% from the same week in 2023, but 56% higher than the 2018-2022 average. The weekly average price in the southern Plains for 500-600 medium and large steer calves for the week ending Aug. 25 was $288.91/cwt, up 3% from $280.65 during the same week in 2023 and 67% higher than the 2018-2022 average (Figure 3).

While prices have come up, so have expenses. According to ERS' February 2024 Farm Sector Income Forecast, pro-



duction expenses in all of agriculture are forecast to increase 4%, or $16.7 billion, in 2024 to reach a record-setting $455 billion. This marks the sixth consecutive year of production expense increases, and the fourth consecutive year production expenses have hit a new record high. This rise in prices combined with the lingering effects of drought and higher production expenses, provided farmers incentives to liquidate cattle rather than trying to hold on.

Higher prices are helpful if a farmer is selling calves or getting out of the business. But what about when they are trying to buy, expand or buy cattle to get started? While higher prices benefit the seller, they make things hard for the buyer. This perspective, along with the current financial conditions in the overall farm economy, makes it difficult to predict when expansion in the cattle industry will happen again.

The Farmers' Perspective - Why We're Not Expanding

According to USDA's 2022 Census of Agriculture, the average age of a farmer rose from 57.1 years old in 2017 to 58.5 years old in 2022. Put yourself in the shoes of the aging farmer or rancher. Prices are high enough to make money from sales. Expanding might require borrowing at the unusually high current interest rate and paying top dollar to buy any additional cattle. Selling cattle avoids these extra costs and time needed to pay off debt and gives the farmer a good price for his or her cattle. This makes selling some or all of the herd a tempting proposition.

The same factors are also obstacles to new and beginning farmers. Livestock used to be a way for new and beginning farmers to get into farming. Rather than having to buy expensive equipment and land involved with crop production, a new farmer could start out with a few cows and limited resources and build their herd, purchasing additional resources over time as needed. My family's farm in North Dakota got its start in livestock this way. Two orphaned calves were purchased, bottle-fed in a neighbor's barn and later sold. This was the first step in building our current livestock enterprise, but our expansion ultimately depended on buying cattle. A new farmer doing this today faces the high cost of buying cattle to start out, elevated supply costs and high interest rates for any borrowed money needed to supply working capital. This makes starting out and being profitable extremely difficult in the short run and is an obstacle to expanding in the long run.

Conclusions

The crux of this story is the U.S. cattle inventory has decreased to a seriously low level, but the market isn't providing incentives for farmers to grow the herd again, causing beef prices to rise to record levels. From a business standpoint it may not make a lot of sense to enter the cattle business or expand because, while the cash price for cattle is elevated, increased costs for supplies, along with market uncertainty, have become obstacles to profitability, and it is uncertain whether the cattle prices two or three years out will reward this investment. The U.S. is home to the most affordable food supply in the world, in part because of the risks that farmers and ranchers take to make it so, even when it won't necessarily pencil out.

American Farm Bureau Federation

Grazing Cover Crops

The amount of pasture acres has decreased in the region over the last several years while the amount of row crop acres has increased. With this increase in row crop acres, grazing cover crops in cropping rotations has generated some interest. People feel that grazing cover crops is the final step in making a cover crop program reach its full potential. Producers who are in the crop business as well as the beef cattle industry say that grazing cover crops helps significantly save on feeding costs. Research has shown cover crops help improve the soil health at the same time. Before deciding to graze cover crops, several points should be considered.

The first consideration is, are you already in the cropping business? If so, any initial cost for equipment is already considered, as the same equipment is used to plant cover crops. The cover crop is often planted in late fall after row crops have been harvested. Cover crops help keep soils from washing, blowing, or simply being left bare for several months. Using cover crops during winter months can help control nutrient levels in the soil.

Many different varieties of forages can be used as cover crops. They can serve many different purposes, one of those being feed for grazing livestock. Common choices for cover crops include wheat, radishes, cereal rye, and crimson clover. Many producers who use cover crops for grazing have successfully used a mixture of wheat and cereal rye.

Selection of what to seed as a cover crop will depend on what time of year the row crop gets harvested. Additional considerations include: the cost of seed, whether you want a cover that survives the winter, and whether you want a grass versus a legume. The most common cover crop used in Kentucky is wheat because it can be planted late in the fall, October 1-15, provides a good quality forage, is high yielding, and is fairly inexpensive. Cereal rye is similar to wheat except it produces more fall growth for late season grazing, but it is lower in quality once the seedhead emerges. Some producers may plant crimson clover or include crimson clover in their cover crop planting. The challenge with this species is it has a tendency to winter kill. Radishes are not ideal for grazing because

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THE AUGUST 2024

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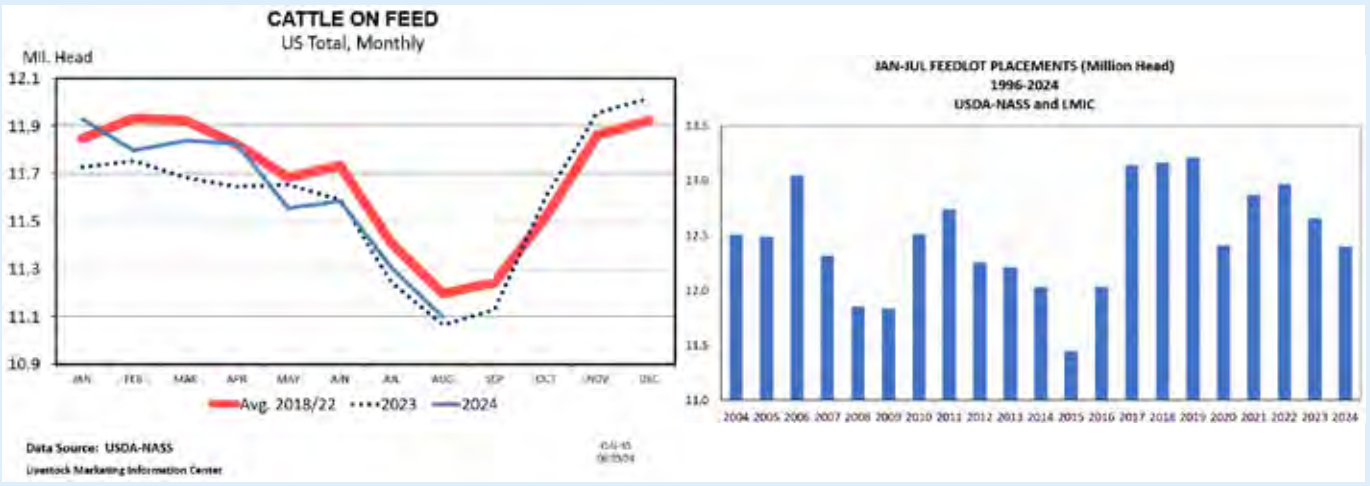
tering feedlots compared to a year ago, but this is not an indicator for larger total cattle supplies in 2024.

July feedlot placements totaled 1.70 million head, an increase of 94 thousand head compared to a year ago. It is important to remember that July 2023 placements were the lowest July placement total since 2016. For the 2014-present cattle cycle, July placements have averaged 1.67 million head. This year's July placement is being compared to a small number.

The second graph in this article shows cumulative feedlot placements through July of each year for the 2004-2014 and 2014-present cattle cycle. In 2024, cumulative January-July feedlot placements are 12.40 million head, a decline of 2.0 percent compared to 2023. We have had fewer total cattle entering feedlots this year.



Grazing Small Grains

Small cereal grains, such as wheat, rye, oats, and barley, are multipurpose crops that can be used for grazing, silage, or hay production. Grazing pure stands of small grains is an effective way to extend the grazing season into the late fall and early winter, and then again in February/March for early spring grazing. Small grains are commonly planted in the crop rotation with corn and soybeans. They also serve as a cover crop to reduce soil erosion and utilize previous nitrogen applications.

For grazing, small grains are typically planted in the early fall. They should be seeded at a depth of one to two inches. Refer to the table for specific seeding rates. Small grains are typically higher in digestible energy and protein than other forages, specifically tall fescue. Forage quality in small grains drops markedly with maturity, so it's important to graze while in the vegetative stage of maturity.

Rotational grazing is recommended to keep small grains in a vegetative state and allow a rest period for regrowth. Grazing can begin when forage is well established at a forage height of six to eight inches. Animals should be removed when forage height reaches three to four inches. Once regrowth reaches six to eight inches, the forage can be grazed again.

Wheat

Wheat is one of the most versatile small grains. It is well adapted to most soils in Kentucky and is commonly used in rotation with corn or soybeans. Wheat can be sown later in the fall (early to mid-October) as it is more winter hardy than barley. It is advised not to plant too early in the fall due to susceptibility of the Hessian fly if a subsequent grain crop is desired. The Hessian fly emerges in the early fall and lays its eggs on wheat, causing damage to the stand and affecting yield and quality. Seeding later in the season after the Hessian fly has laid its eggs can help to avoid this and prevent damage to the stand. It is recommended to seed between October 6 and 15 to avoid the Hessian fly. There are some new winter wheat varieties with Hessian fly resistance that can be sown as early as late August; however, Hessian fly resistance is dependent on the type of Hessian fly present, so there still may be some risk when planting early in the season.

Managing Small Grains for Livestock Forage

Management practices for planting differ depending on intended use. For example, you can graze small grains and then harvest for grain, or you can simply graze with no harvest. If a grain crop is desired, typically 30 lbs of nitrogen per acre is recommended for proper establishment. When the forage is to be grazed, an additional 30 lbs of nitrogen should be applied at seeding. Also, if planning on harvesting wheat after grazing, animals need to be removed before the jointing stage, or stem elongation. This stage usually occurs in late February when the head of the plant moves up from below the ground and into the plant. If the head is bitten off, there will be no seed head to emerge, and the main stem will die. As a result, new tillers will emerge at the base of the plant to compensate for the loss.

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Briarwood Angus Farms Salutes 4-H & FFA Angus Carcass Contestants at Missouri State Fair

Dr. Curtis W. Long of Briarwood Angus Farms awarded youth Angus steer exhibitors championship belt buckles and $5,100 in prize money at the 2024 Missouri State Fair Angus Carcass Contest.

Ten junior exhibitors participated in the Open Carcass Show, and also entered in the 4-H or FFA Angus Steer classes. Contestants included five sets of siblings vying against one another and rooting for each other.

Duane Robertson, Russellville, Mo., judged the On-Foot Open Steer Carcass Show. When the dust settled, Clara Warfield of Butler, Mo., led her steer to the top slot as the Champion of the On-Foot Carcass Show and earned $300 for her accomplishment with her 1,370 lb. Angus steer.

For the third year in a row, Clara's brother Luke Warfield of Butler, Mo., claimed the Grand Championship for the Angus Steer Carcass with his class-winning calf. Luke's Angus Carcass Championship included $750 in prize money. His steer, weighed 1,310 lbs., and dressed at 61.8% to render a hanging weight of 809 lbs. The ribeye area measured 12.1". Luke's steer Yield Graded 3.25 with a Quality Grade of High Choice and Percent of Retail Cuts scoring 49.54.

Connelly Ward of Oak Grove, Mo., earned Reserve Champion Angus Carcass and $550 in cash winnings. Her steer weighed 1,230 lbs. and hung at 759 lbs., dressing at 61.7%. The ribeye measured 12.1" and the carcass Yield Graded 3.16 and Quality Graded Choice, with 49.77% Retail Cuts.

Lillianne Eaton, Canton, Mo., came in 3rd place in the Angus Carcass Contest winning $250. A 1,315 lb. steer delivered a hanging weight of 793 lbs., and dressed at 60.3%. Ribeye area was 13.2", Yield Grade 3.19 and Quality Grade Choice.

Taking a $250 prize-earning for the Highest Revenue or dollar generating Angus steer was Larissa Larrick of Shelbina, Mo. Her 1,480 lb. Angus calf dressed at 63.2% and had a carcass weight of 935 lbs. The Ribeye measured 13" and he Yield Graded 4.54 and Quality Graded Low Prime.

Teagan Schnurbusch from the University of Missouri, Columbia, served as the Carcass Judge.

Back in the ring, 4-H and FFA steer exhibitors submitted an exceptional set of Angus calves to the critical review of Dr. Mark Johnson, Orlando, Ok.

Faith Williams, Gasconade County, showed the Grand Champion 4-H Angus Steer, taking $300 in prize money. Tyne Lehenbauer, Marion County stood in the Reserve Champion spot in the 4-H Division and won $200.

Ella Jordan, Savannah FFA, exhibited the Grand Champion FFA Angus steer earning $300 in prize money, while Addison Ward of Fort Osage FFA took the Reserve Champion FFA title and $200.

*Dr. Curtis W. Long and manager David Warfield of Briarwood Angus Farms, award Faith Williams, Gasconade County, with her trophy buckle for exhibiting the Grand Champion 4-H Angus Steer. *Photo courtesy of Briarwood Angus Farms / by Pearl's Pics.*

Dr. Curtis W. Long and manager David Warfield of Briarwood Angus Farms, award Ella Jordan, Savannah FFA, with her trophy buckle for exhibiting the Grand Champion FFA Angus Steer. *Photo courtesy of Briarwood Angus Farms / by Pearl's Pics.

Congratulations to all of the Angus youth exhibitors who participated in the MSF Angus Carcass Contest: Lillianne Eaton, Canton, Mo.; Morgan Eaton, Canton, Mo.; Larissa Larrick, Shelbina, Mo.; Peyson Larrick, Shelbina, Mo.; Kye Lehenbauer, Palmyra, Mo.; Tyne Lehenbauer, Palmyra, Mo.; Addison Ward, Oak Grove, Mo.,; Connelly Ward, Oak Grove, Mo.; Clara Warfield, Butler, Mo.; and Luke Warfield, Butler, Mo. For their entries, these exhibitors will each receive a $200 Participation Award. All cash prizes will be presented during the Missouri Angus Association 2025 Annual Banquet in February.

*Angus Carcass Contest Grand Champion Luke Warfield, Butler, Mo., and Reserve Grand Champion Connelly Ward, Oak Grove, Mo., receive belt buckles and combined winnings of $1300 from sponsor Briarwood Angus Farms. Pictured L-R: 2024 Missouri State Fair Queen Claire Walker, Missouri Director of Agriculture Chris Chinn, Angus exhibitors Connelly Ward and Luke Warfield.*Photo courtesy of Briarwood Angus Farms.*

For more information about the annual State Fair Carcass Contest, visit https://www.mostatefair.com/ or https://www.briarwoodangusfarms.com/carcass-contests/. And to learn more about the Missouri Junior Angus program, visit https://www.missouriangus.org/boards/juniors/ .

Alternative forage option when the rain finally comes

By Jason Hartschuh, Extension Field Specialist, Ohio State University

They always say if you don't like the weather in our part of the world just wait a few hours and it will change. Unfortunately, we may have to wait more than a few hours for the weather to change and bring rain, but it will. Unfortunately, when this rain does come it may be too late to grow more pasture forage for your livestock without causing even more long-term damage to your pastures. If you have crop land especially corn silage, early soybeans, or even pasture that could use renovation, now is the time to find seed and be optimistic for rain sometime this fall. Your decisions on the possible forage crop to plant will depend on when the rain finally comes, and the timing of your forage needs. These forages can be planted as single species or as a mix. However, a mix may reduce yield especially since moisture will be lacking for a while even when it does finally rain.

Oats

The first option for fall forage is spring oats or winter oats. These are both oats, but they are not the same. Spring oats is our most common type of oats that we have successfully used as a forage crop planted in the late summer, but we have planted oats through mid-September in Fremont, Ohio with yields of almost three quarters of a ton dry matter per acre. These yields may not be enough to mechanically harvest but can be successfully grazed. 2021 oats planted September 1st yielded .5 tons/ac DM when 46 pounds/acre of nitrogen was applied at planting and .69 tons/ac of DM when 92 pounds/acre of nitrogen was applied. In 2022 Oats was planted again on September 1st with an additional planting on September 15th. Yield data from this trial is shown in Table 1). Both planting dates were harvested on November 17th before a 4-day cold spell that would have killed the spring oats.

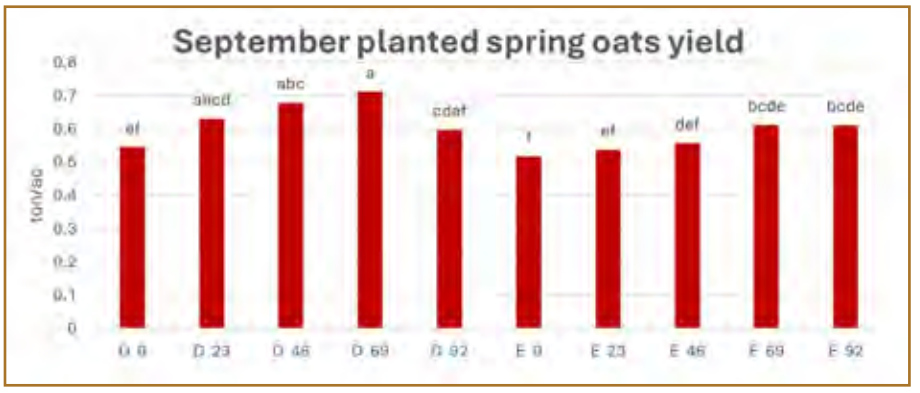

Table 1. September 1st (D) and 15th (E) 2022 planted oats at the North Central research station in Fremont Ohio. The letter represents the planting date and the number of the pounds/acre of Nitrogen applied as urea at planting.

The September 1st planting growing degree days total was 669 while the September 15th planting had a total of 403 growing degree days. Each year is different, but the first of October is the latest you would want to plant spring oats for grazing forage, however black oats or winter oats could possibly be planted through mid-October for forage. Winter oats will germinate with temperatures as low as 38°F but will germinate and grow faster with warmer temperatures. Winter oats survive until temperatures are at or below

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get a drink if there is a slow recharge on the water tank. This can lead to stress and health problems for calves. Depending on the watering system, giving calves "creep" access to a water tank they can reach separate from the cows can help to ensure calves stay hydrated.

The importance of water to beef cattle is often overlooked, and cattle performance can be affected by water intake. Nutritionists balance diets for carbohydrate (energy), protein, vitamins, and minerals but water is the most critical of these nutrients. Several factors make water needs difficult to assess.

Because feeds contain some water, not all the water needs must be provided as drinking water. Feeds such as silages, green chop, or growing pasture are usually high in moisture, while grains and hays are low. When cattle consume feeds high in water content, they drink less water.

Table 1. Approximate total daily water intake of beef cattle[1].

Weight	40°	50°	60°	70°	80°	90°
	Temperature in °F[2]					
Lb.	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons
	Growing Heifers, Steers, Bulls					
400	4.0	4.3	5.0	5.8	6.7	9.5
600	5.3	5.8	6.6	7.8	8.9	12.7
800	6.3	6.8	7.9	9.2	10.6	15.0
	Finishing Cattle					
600	6.0	6.5	7.4	8.7	10.0	14.3
800	7.3	7.9	9.1	10.7	12.3	17.4
1,000	8.7	9.4	10.8	12.6	14.5	20.6
	Wintering Beef Cows[3]					
900	6.7	7.2	8.3	9.7		
1,100	6.0	6.5	7.4	8.7		
	Lactating Cows[4]					
900	11.4	12.6	14.5	16.9	17.9	18.2
	Mature Bulls					
1,400	8.0	8.6	9.9	11.7	13.4	19.0
1,800+	8.7	9.4	10.8	12.6	14.5	20.6

[1]1996 National Research Council Nutrient requirements of Beef Cattle, Seventh Revised Edition, 1996. Table derived from an article by C. F. Winchester and M. J. Morris, Vol 15, No 3, Journal of Animal Science, August 1956.
[2]Water intake is a function of dry matter intake and ambient temperature. Water intake is constant up to 40°F.
[3]Dry matter intake influences water intake. Heavier cows are assumed to be in greater body condition and require less dry matter and, therefore, less water.
[4]Cows larger than 900 pounds are included in this recommendation.

Amount of Water for Cattle Chart (UNL)

Water quality for cattle

Water quality is important for cattle health and performance. It's important to check water for nitrates, sulfates, and blue-green algae if a problem is suspected.

Nitrates

Nitrates are of elevated concern in drought conditions. The total intake limit for cattle is the combined amounts from both feed and water. So if you have feed that's high in nitrates, but within acceptable limits, and water that is also high, but acceptable, the combination could exceed recommended limits and cause problems.

- A safe level of nitrate nitrogen (NO3N) in the water for cattle is less than 100 ppm.
- The sulfate upper limit for calves is less than 500 ppm (167 ppm sulfur as sulfate).
- For adult cattle, the upper limit is less than 1,000 ppm (333 ppm sulfur as sulfate).

Symptoms of nitrate poisoning include brownish discoloration of the blood, difficult and rapid breathing, muscle tremors, low tolerance to exercise, incoordination, diarrhea, frequent urination, collapse, and death.

Blue-Green Algae

Blue-green algae can be toxic to cattle, and it grows in stagnant water, lakes, and ponds. When there's a lot of blue-green algae, it makes the water look like someone has dumped a bucket of light green or turquoise paint in the water.

Signs of blue-green algae poisoning are diarrhea, lack of coordination, labored breathing, seizures, convulsions, and possibly death. Warm temperatures and sunlight can cause algae to grow rapidly, so keep an eye on that in both ponds and tanks. Routinely cleaning tanks and utilizing a copper sulfate treatment or chlorine treatment can help keep water tanks free from moss and algae.

Cattle standing in the water to fight flies or walking through it to drink increases the solids suspended in the water, and the added nutrients from manure and urine may encourage algae growth. Limiting cattle access to only a portion of a pond can reduce pond water contamination. Pumping water in the deep part of a pond to a water tank is a way to still utilize pond water for cattle while reducing the risk of cattle consuming blue-green algae. Fly management can also help cut down on the amount of time cattle spend in the water.

Water Testing

Monitoring water quality is a way to manage risk. Knowing if there's a problem before symptoms show up in the cowherd is the best way to prevent losses to cattle performance, or death.

Taking a water sample and submitting it to a lab for analysis may take a few extra minutes, but if you're out checking water anyway, it's not much extra effort for the knowledge that the water is safe. While ponds and dams are often the most questionable in quality, the water in tanks and troughs may also need to be tested. Occasionally, events such as drought or flooding may impact the quality of water from a well or other source of water that is being used for livestock. Testing the water provides information needed to know if the water is safe for use. There are a number of labs available where livestock water can be tested. Prior to collecting a sample, contact the lab for a test kit and collection instructions to ensure a representative sample is taken and that the lab can complete the analysis needed.

University of Nebraska

GOING AGAINST

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mother nature during the spring-summer breeding season than during fall-winter.

Weaning is another critical dichotomy between the spring and fall calving seasons. With spring calving herds weaning in the fall, producers looking to pre-condition or background their calves may have limited forage resources for both the cow herd and weaned calves. Fall-calving cows weaning in the spring are often weaned at a time when grass growth is plentiful, and it can often grow faster than our cow herd can graze it. Keeping with the theme of working with mother nature, one consideration with fall calving herds is to delay weaning until calves are a bit older. Running fall-born calves on grass can be a great way to take advantage of the relatively cheap cost of gain while adding value and pounds to the calf. Once calves have reached 5-6 months of age, the cow produces much less milk compared to peak lactation, as the calf, at this point, is getting most of its nutrients through grazing. Keeping the calf on the cow a bit longer in the spring can also help to prevent fall cows from becoming overly conditioned after weaning. By delaying weaning later into spring, fall calving producers can also avoid the cool, wet, and muddy conditions often seen in March. March in the mid-south seems to be one of the dreariest months of the year, and I have found myself saying on more than one occasion, "I don't like weaning in March for the same reasons I don't like calving in March."

Nearly ¾ of the nation's cow herd calves in the first part of the year, and there is a reason for that. As a nutritionist, I know fall calving has its challenges and managing winter feeding is a big one. It is critically important that those fall-calving cows don't lose condition during the breeding season while typically consuming stored forages. However, when considering the big picture or the overall system, fall calving can have much to offer cow-calf producers in the fescue belt. In the fall calving system, we can work with Mother Nature and avoid extreme heat and fescue toxicosis during the breeding season and cold, wet, and muddy conditions at both calving and weaning (if timed correctly). In return, fall calving herds can market calves at a time of the year when markets are expected to reach their seasonal highs. Fall calving won't be for every operation, but it is something to consider when managing cows in the fescue belt. Sometimes it pays to go against the grain.

THE IMPACT

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the beef x dairy calves now being produced in the dairy sector. Beef x dairy calf production is not having much impact on total beef production and market prices beyond what is already considered in market analysis. There are some impacts in specific meat markets because the beef cuts from beef x dairy carcasses may have access to markets previously closed to dairy beef. Arguably, the biggest impact of beef x dairy production is the blurring of the historical demarcation between beef and dairy sectors in the U.S.

GRAZING COVER

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the cattle will pull them out of the ground and generally will not eat the bulbs. The Natural Resource and Conservation Service has a mixture of different species that some producers use for grazing as well.

Lengthening the grazing season by grazing cover crops during late fall through early spring can help save money on hay costs. If a beef cattle producer does not have row crops or the equipment, they may be able to contract with a neighboring crop farmer to graze their cover crops.

Another consideration is the class of cattle you intend to graze the cover crops. Using cover crops can be a great way to put weight on growing cattle without a lot of expense. On the other hand, it may not be economical to graze dry cows on cover crops since they do not require such high-quality forage to keep body condition. Nutritional requirements vary among cattle classes, as will performance from these forages, so consider this before investing money into cover crops for grazing or make sure to graze cover crops with growing animals or for milk production.

The soil type in a field can affect the ability to graze cover crops. You may not know the exact name of the soil types on your farm, but likely have a good feel for the productivity and the moisture holding capacity. Generally, early spring is a wet time of the year. Soils that are extremely heavy and wet are problematic because cattle can cause compaction and create muddy areas in the field. A lot of soils in Kentucky are sloped or rolling and have good drainage so this is not a major concern for most producers.

The fencing situation is also something a producer needs to consider. Most cropland is not fenced. A producer has to ask themselves what amount of fence they are comfortable with installing. For fields that have a good perimeter fence but no interior fence, temporary strip fencing can be used to graze cover crops and maximize forage usage. Using temporary fencing solely, a producer must think about the temperament of his/her cattle, and if they trust only having a perimeter fence with a couple strands of wire. If no perimeter fence exists and an excessive amount of fencing supplies are needed, it may not be financially feasible for a producer to graze cover crops.

Cover crops can be an economical source of high-quality forage to extend the grazing season when used properly. Not everyone will be able to use cover crops in their operation, but those that can should consider grazing these forages in the spring. For those who do not have access to cover crops, cover crop species can be part of the pasture renovation process. For more information, contact your local extension agent.

UK Master Grazer

US HAY

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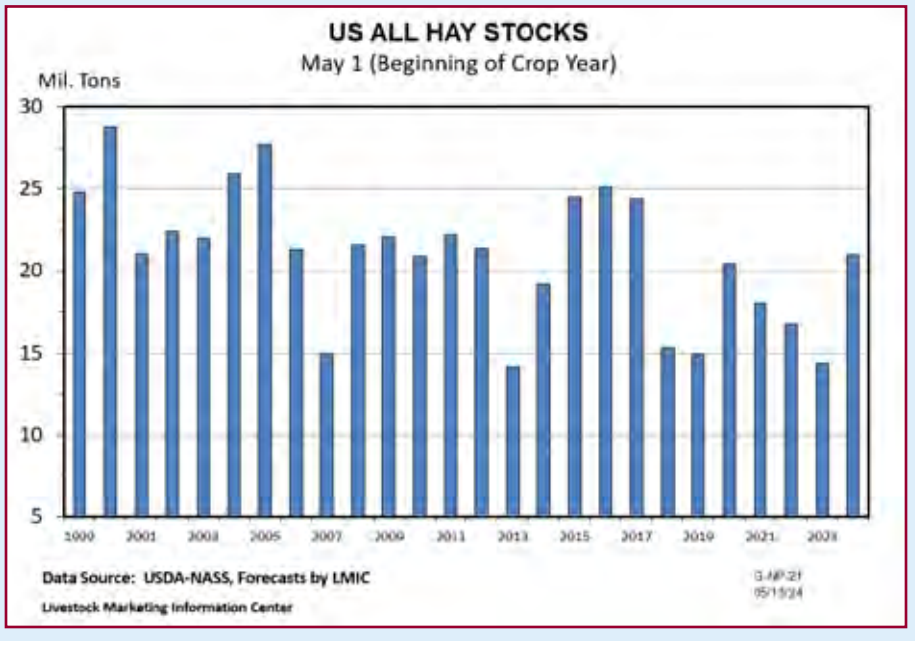
tion this fall, the August Crop Production report does paint a picture of increased hay supplies in many areas. In addition to hay production, fall grazing prospects will also impact how much hay will be needed in the upcoming winter. It is also important to understand that these production estimates say nothing about hay quality, which is another important element of the discussion. I like to examine hay production estimates and do think it provides some general perspective, but I would also reiterate how different hay availability can be across the country. It's never too early to think about winter hay needs and make plans to source additional hay, if needed.

Non-Alfalfa Hay Production Estimates in Selected States and US (2023 and 2024)

State	2023 Production (1,000 tons)	Est. 2024 Production (1,000 tons)	Change from 2023 to 2024
Arkansas	2,204	2,684	+21.8%
Kansas	2,781	3,028	+8.9%
Kentucky	4,158	4,466	+7.4%
Mississippi*	1,102	1,276	+15.8%
Missouri	4,380	5,805	+32.5%
Oklahoma	6,630	5,270	-20.5%
Tennessee	3,740	3,360	-10.2%
Texas	8,280	10,780	+30.2%
United States	68,853	74,450	+8.1%

*Mississippi Estimates include Alfalfa and Alfalfa Mixtures
Source: USDA-NASS August 2024 Crop Production Report



Drought and Dust: Preparing for Winter Feed Shortages

By Ted Wiseman, OSU Extension

Depending on where you are in the state, you might be dealing with dry conditions or even severe drought. Here in southeastern Ohio, pastures are parched, and hay production has been disappointing, with very little to show for second or third cuttings.

This year, forage quantity is becoming a significant concern for many producers. Reports indicate that first cuttings yielded only 40-50% of what they should have, particularly in grass forage fields. Second and third cuttings have fared even worse, with some fields producing only 25% of a typical harvest, if anything at all. Many producers have already started feeding hay, raising concerns about whether there will be enough to last through the winter. Given the variable pasture conditions across the state due to ongoing dry spells, it's crucial to start planning now to be better prepared for the fall and winter.

Know Your Inventory and Its Value

The first step in planning is to inventory your forage supplies. Will what you have be enough to feed all your livestock until next spring? Regardless of your current hay stock, it's essential to sample and analyze your forages. Proper sampling techniques vary depending on the forage type, so reach out to your local Agriculture Extension Educator for a forage probe and instructions on submitting samples to a laboratory.

Exploring Alternatives

If forages are in short supply and expensive this fall, consider other feeding options. With current low corn prices, it might be more economical to feed grains or concentrated feeds instead of relying solely on forages. Limit feeding is one approach where grains and supplements are fed in just the right amounts to meet the animals' energy requirements, maintaining body condition while keeping costs in check.

In a 1996 Ohio State University study involving 71 beef cows, one group was fed 10 pounds of corn, 2.6 pounds of pelleted supplement, and 2.6 pounds of hay per day. In this group corn was increased to 11.9 pounds of corn from January to April to meet en-

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Don't Strike Out Next Breeding Season

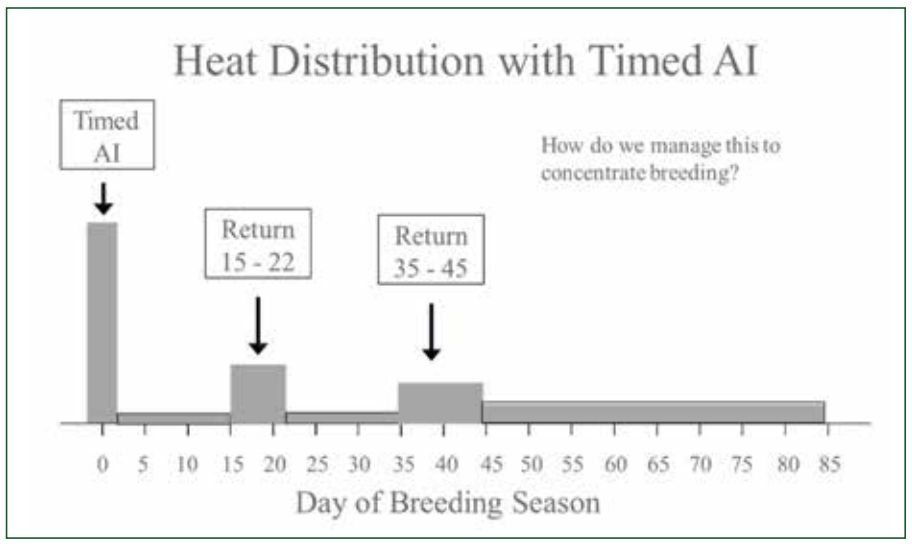
By Garth Ruff, Field Specialist Beef Cattle and Livestock Marketing, Ohio State University

Many livestock economists have demonstrated over the years that there is a premium in the marketplace for uniform lots of calves. For further proof, just watch what happens at the local auction market when it comes to selling feeder cattle and then tune into one of the western video auctions and compare prices.

Offering a more uniform calf crop is one advantage of a FTAI program.

Even if all else is equal the larger, often semi load lots sell for higher prices, Dr. Kenny Burdine at the University of Kentucky has shown that lots of 10 outsell lots of 3-5 head and those lots outsell single calves. Why discuss this now? As cattle remain at historic highs, I am beginning to hear producers question the return on managing reproduction in their cow herds.

Reproduction is the single most economically important trait in any commercial cow calf operation, I think it's time to revisit why that is.



1. We must have a live calf to sell. A live calf, no matter when it's born, generates more revenue than no calf at all. This remains true in all instances.

2. Cattle producers are in the business of selling pounds. More pounds of calf to market equals more revenue generated per cow.

How do we get heavier calves to market? It's a combination of improving genetics within the herd (which is never a bad idea), proper animal nutrition (also recommended), and managing a breeding/calving season, i.e. managing reproduction.

Just synchronizing a group of females has great benefits when it comes to creating uniform lots of weaned calves. Add in artificial insemination and then we capture some improved genetics.

When we teach A.I. schools in Ohio we spend a significant amount of time talking about Fixed Time A.I. (FTAI) breeding for beef cows. The reason being, what is it worth having 50 to upwards of 70 percent (in our OSU cow herds) bred on the first day of the breeding season?

Many cow-calf producers market a year's worth of cattle on one day. Therefore, because of how those calves are marketed, they might as well have the same birthdate. By using FTAI we can tighten up the calving dates for a significant portion of the cow herd.

If we set the entire herd up for FTAI, those cows who do not conceive to the artificial insemination will be back in estrus in roughly 21 days to either be artificially inseminated again or to be bred by the bull. At approximately day 42 of the breeding season, those females that were synchronized and did not get pregnant after the first two matings should be in heat a third time.

A 45-day breeding window seems short, but if a cow herd is synchronized and bred FTAI on day one, that 45-day season gives that female three chances to be bred. Think like a baseball umpire, three strikes and you're out. Consider culling sub fertile cows.

A 45-day breeding window will certainly make for a more uniform calf crop in terms of weight and size but there has to be sufficient resources and management in place for that system to be successful.

First and foremost, cow nutrition needs to be on point. A goal should be to have cows at a body condition score of six at breeding. In the hierarchy of nutrient use, reproduction is towards the bottom of the list when nutrients are partitioned. Maintenance, development, growth, lactation all take preference over reproduction in post-partum cows. Secondly, having enough bull power is key. Can your bulls breed up to 50% of your cow herd on day 21 of the breeding season?

I wouldn't recommend that a producer with a non-defined breeding window or even a long 90-day breeding season make the immediate jump to a short breeding season. However, working towards a short-defined breeding season over a couple of years will lead to a more uniform calf crop at marketing and should improve cow fertility as sub fertile cows are identified and culled from the herd.

MAKING DECISIONS DURING DROUGHT

By Garth Ruff, Field Specialist Beef Cattle and Livestock Marketing, OSU Extension

In areas that are experiencing drought, farmers are faced with making decisions on how to 1) feed their livestock and 2) conserve resources. To accomplish those goals there are a number of options to consider.

Feeding Hay

Livestock producers who are short on grass, may turn to feeding hay to hold livestock over until soil moisture and forage growth reboot. While feeding hay is often the first consideration in a drought, hay inventories coming into 2024 were already lower than average. Couple that with the dry conditions and many producers are making a second cutting of hay that is 25-50% of normal.

Hay as an energy source is relatively expensive given the current market. Feeding poor quality or leftover hay from last year is an option, is it the best option?

Supplementing Corn

Grain prices are as low as they have been in several years. If a livestock producer can purchase some corn from a neighbor or has uncontracted corn that is available to feed, there may be an economic opportunity to "walk" the corn off the farm rather than hauling it at today's cash price.

We have known that corn has to be awful expensive to not be the best return on investment when considering purchase of energy rich feedstuffs. At current grain prices I would argue that supplementing corn is considerably more cost effective than purchasing hay.

Early Weaning

I have had a few reports of cattlemen in our area beginning to wean calves a bit ahead of schedule to con-

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Getting the most out of your cull cows

By Julie Walker, South Dakota State University Extension beef specialist

Pregnancy detection is a tool that producers can use to manage cow herd expenses.

An open cow continues to incur feed and health expenses until they are marketed. Early pregnancy diagnosis may increase profitability if open cows can be culled earlier.

Spring calving herds (January through April) can have pregnancy status determined as early as late August, which indicates the open animals that could be sold. The seasonal price index shows that the highest cull cow prices are received in August and decline from there.

There are a variety of alternatives for managing such cows.

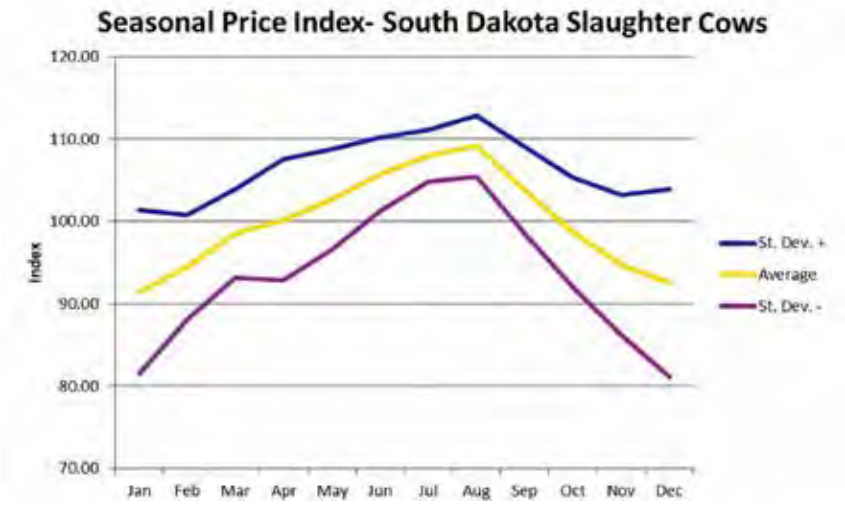
Cull cow prices rapidly decline from August through January, so selling non-pregnant cows earlier provides better prices and greater income.

Declining forage quality in August and September results in weight loss for cows, especially for females that still have a nursing calf. However, early weaning their calves and selling the cow may be the most profitable option.

Cows typically weigh more in August than October and November, and calves at this age will often gain sufficiently on pasture with supplemental feed for adequate protein.

Producers may choose to rebreed non-pregnant cows for fall calving herds. The "new" breeding season would be November to January. However, these females will continue to incur expenses until sold.

Not all open females should be kept around for a fall herd. Young cows (3 to 6 years old) with good conformation, udders and body condition scores are the best candidates. Late-spring calvers may have just not conceived due to the length of the breeding season and have nothing to do with fertility, making these females good candidates to retain.



Producers can feed cull cows to move them from yellow to white fat. Feed trial data suggest it takes between 70 and 90 days to change yellow fat to white fat. Most feedlots target at least 90 days on a high grain finishing diet.

Cows selected for this option should be sound and healthy and in thin to moderate condition. Gain during this period should be expected in excess of 3 pounds per day depending on the ration.

While the increase in price for white fat animals is certainly appealing, feeding culled cows does not result in an automatic profit.

Market data is sporadic related to feeding cull cows to target the premium white fat grade. For cows sold on a live basis, those grading premium white typically weigh 120 pounds more than those grading as breakers. The difference in dressed weights is typically 130 pounds of carcass weight more for those grading premium white.

The price difference is often or typically 5% higher for premium white versus breaker grade cows. In addition, the dressing percentage for a premium white is typically 53 to 55% and that of a breaker is 48 to 51%. Thus, a premium white will be more pounds sold at a higher price.

Given the current stage of the cattle cycle, demand for productive females is expected to remain strong. If a producer is trying to expand, it may be reasonable to not cull all open females.

South Dakota State University

MAKING DECISIONS

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serve what pasture they do have. Early weaning can be a good tool if the calves are managed properly. Cattle health and a marketing plan should be considered if early weaning is the pasture conservation plan of choice.

If feed is of a concern, cattlemen may choose to forgo some of the backgrounding programs that typically generate a premium in the marketplace. Consider the value of those premiums against the price of supplementation when making decisions about timely marketing. The lack of feed may dictate the selling of stock earlier than when one would traditionally do so.

Culling Females

When drought conditions persist over time, culling females from the herd is perhaps the most extreme management strategy. If this is the management strategy of choice, begin moving females that have other potential reason for culling. Poor productivity, feet and legs, docility, low body condition, and age are potential culling criteria. Young productive females should be the ideal candidates to provide supplemental feed to.

Bottom line is that farmers have options to combat feed shortages due to drought conditions.

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14°F for multiple hours while spring oats winter kill after a couple hours of temperatures at or below 20°F. Both types of oats should be planted at 100-120 pounds per acre to maximize yield.

Winter Annual Cereal Grains

Winter annual cereal grains allow for 2 possible grazing periods and increase the chance of your forage getting the necessary rains to grow. All of these follow similar grazing rules in that you want at least 5 to 8 inches of winter growth before grazing in the fall and then allow to regrow in the spring with a goal of keeping the crop less than 10 inches in the spring for the highest quality forage. Cereal Rye is the hardiest of these options that continues to grow in the winter on warm days. Cereal rye will germinate when soil temperature is as low as 33°F and grows any time temperatures are above 38°F allowing for the greatest possibility of over winter growth.

Winter wheat is also a common choice but usually has less winter tonnage and slower spring growth than cereal rye. Wheat truly goes above ground dormant in the winter only growing roots anytime when temperatures are above freezing. Wheat takes 4-6 weeks of temperature at or below 50°F at the soil surface/crown for the wheat to become winter hardy. Once wheat goes dormant for the winter it takes approximately 14 days of temperatures above 41°F to break dormancy and begin to grow again. Wheat can be grazed while it is dormant but if you want spring growth overgrazing can increase crown damage and decrease spring regrowth.

Triticale is another option that grows more tonnage than wheat but matures slower than cereal rye. As a genetic cross between the two it brings the cold hardiest of rye with the higher feed quality wheat. It will germinate when soil temperatures are at 38°F and grows very slow when temperatures are above 38°F.

For all of these winter annual cereal crops, seeding rates should be between 2-2.5 bushels per acre. While these crops can germinate on the soil surface, having good seed to soil contact will greatly improve germination and your success. Seeding depths should be between ¾-1 ½ inches deep "into the moisture" when possible. Most of these crops require soil moisture to be at 34% for the crop to germinate. One of the greatest risks is a crop that gets just enough moisture to germinate but not enough to grow. Deeper seeding depths can assist with this issue. Cereal rye and triticale generally have more fall growth than winter wheat but there is about 1100 pounds of grazeable dry matter per acre for fall/winter grazing from a winter wheat crop and additional spring green up grazing.

Nitrogen fertilization is critical with these crops to maximize tonnage. Winter of 23-24 we conducted a research project at the North Central Research Station in Fremont, Ohio with cereal rye looking at fall nitrogen rates and plant growth. From this project we found that the amount of ground cover increased when 30 pounds/acre of nitrogen was applied compared to no nitrogen, but 60 pounds/ace of fall nitrogen did not increase fall growth. This cereal rye was planted the first of October with ground cover readings being taken at the end of November. However, when 60 pounds/acre of nitrogen was applied the amount of ground cover increased by 10 percent in the spring compared to the 30 pounds/acre of nitrogen treatment. We did not test the forage quality at this growth stage, but 60 pounds/acre of fall nitrogen may create high nitrate forages. In the spring we applied additional nitrogen to this crop. Our yield and quality were maximized when at least 30 pounds/acre of fall nitrogen was applied and 100 pounds/acre of spring nitrogen. However, we were also able to maximize tonnage with 90 pounds/acre of fall nitrogen and 30 pounds/acre of spring nitrogen. Spring nitrogen was critical to maximizing spring harvested forage crude protein. Our crude protein was maximized when our spring nitrogen rate was 75 pounds per acre.

One additional crop that can be incorporated when these crops are used for grazing is winter turnips. Livestock will eat both the tops and the turnip bulbs. Depending on the variety, turnip tops will survive until temperatures fall below 15°F with bulbs often staying firm through temperatures as low as 0°F. Turnips can assist with soil compaction remediation and provide livestock with a very digestible forage source. Seeding rates are usually 1-3 pounds per acre with lower rates preferred for most forage mixes.

OSU

Pinkeye can lead to blindness in cattle if left untreated

Anyone who has ever had a scratch on their eye or had dust get under their eyelid can attest to how painful an eye condition can be.

Like people, cattle can also experience irritants in their eyes that can often lead to pinkeye, say the experts at Kansas State University's Beef Cattle Institute on a recent Cattle Chat podcast.

"Pinkeye is an eye infection that often first starts with watery eyes and then progresses to a swollen eye and even a white spot in the eyeball," K-State veterinarian Bob Larson said in a news release.

Along with those symptoms, K-State veterinarian Brad White says cattle will tend to squint in the infected eye.

"Left untreated, cattle can develop corneal ulcers that are painful and make cattle light sensitive," White said. "If you see the ulcers, likely damage to the eye has already been done."

The veterinarians say the earlier the treatment begins the better the outcome will be.

"As soon as you identify the problem, the cattle can be treated with antibiotics, and sometimes we will put an eye patch on them or sew the eyelid shut to give them some comfort as they recover because this is a painful condition," Larson said.

When treated early, most calves are likely to recover, said Larson, but once the disease has progressed and there has been scarring to the cornea, the recovery time is much longer and there may be some or total vision loss in the infected eye.

While pinkeye can develop any time of year, the veterinarians say it tends to be more common in the summer.

"One way that pinkeye is passed from one animal to another is by face flies, so fly control is important in trying to reduce the likelihood of the disease spread," Larson said.

He explained that face flies are the size of house flies and tend to feed on secretions on the face and can cause damage to the cornea of a calf's eye.

"Because face flies spend relatively little time on cattle, it makes fly control more challenging because of the amount of time they spend away from the cattle," Larson said.

Along with flies, other irritants to the eyes can come from seedheads, weeds and dust in pastures, White said.

"Mechanical irritations, such as grass seeds, allow bacteria to get into the eye more easily and cause problems," he said.

Larson added that if producers are experiencing a pinkeye outbreak in the herd, they may want to consider moving the cattle to a different grazing pasture.

"Sometimes we will move pastures to try to get them out of the field with the irritating factors such as seedheads or weed seeds," he said.

USDA

DROUGHT AND DUST

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ergy requirements. The other group was fed first cutting rounds bales free choice. The results of this study showed total feed cost per day was $0.77 group one and $1.50 for the second. At this time corn was $2.00 per bushel and hay valued at $150 per ton. Other research has been conducted using various grain sources with similar results. While this approach can be cost-effective, it's worth noting that the cows in the limit-fed group displayed behaviors such as eating tree bark and gnawing on boards, likely due to reduced feed satisfaction. However, their nutritional needs were met without negative performance effects.

Considering Other Feed Sources

Grain-based feeds generally contain rapidly fermentable starch, which can lower rumen pH and affect feed intake and forage digestibility. Alternatives like soybean hulls, corn gluten feed, beet pulp, and brewers grains provide energy with a slower starch degradation, which is gentler on rumen pH compared to traditional grain sources like corn. It's important to understand the impact of any feed used and to adjust the entire ration accordingly, as by-products are rarely suitable as a single feed ingredient.

Proceed with Caution

When implementing a limit-feeding program with grains or concentrated supplements, proceed with caution. In the study mentioned earlier, animals on a restricted diet were fed at the same time each day to prevent issues like acidosis. Ensuring adequate fiber intake is crucial to keep the rumen functioning properly, and ruminants should be adjusted slowly to a limit-feeding program. High-grain diets can lead to acidosis, bloat, and founder if not managed carefully.

In Summary

While limit feeding can reduce costs, it requires careful management and animal husbandry skills. Grazing remains the most economical way to feed livestock, and it doesn't look like pasture conditions will be improving in the new future.. This has been a challenging year, and we all hope to avoid struggling this winter to keep our livestock fed. Planning now will help mitigate some of the challenges ahead.

GRAZING SMALL

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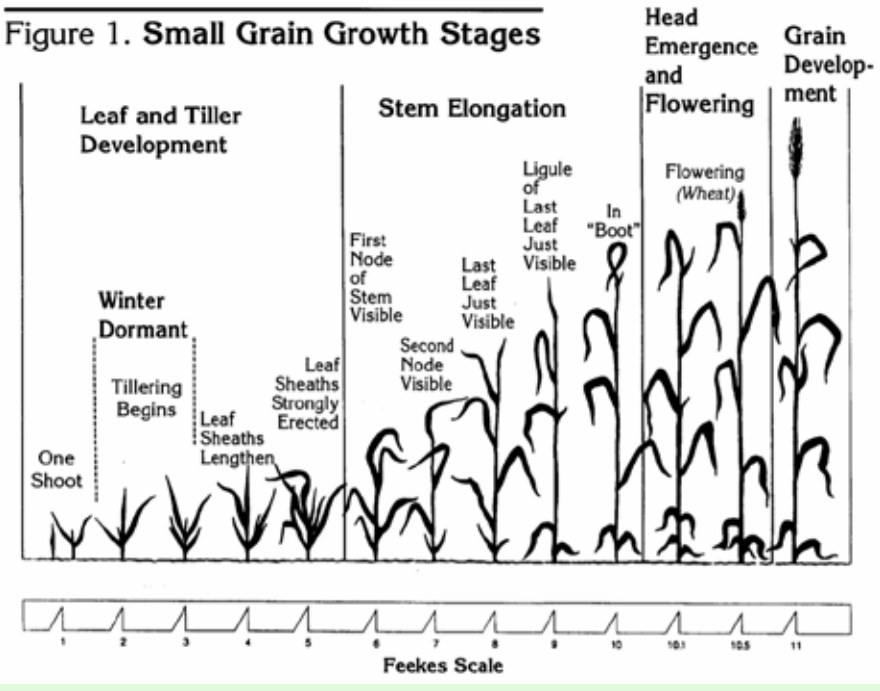
Barley, Rye, and Oats

Barley should be seeded in the early fall (mid-September to early October). Barley must be well established before winter as it is not as winter hardy as the other small grains. From a forage perspective, it produces lower yields but is higher in quality with greater digestibility than the other species. **Rye** is the most winter hardy of all the small grains. Its rapid growth makes it one of the most productive small grains. However, due to its early maturing nature, it must be closely monitored to ensure it is in the vegetative stage or the boot stage for grazing or harvesting as stored forage, respectively. **Winter oats** is similar to barley in that it should be seeded in the early fall to allow time for establishment before winter. Oats generally produce more tonnage in the fall compared to wheat, making them a good option for fall and early winter grazing. Oats are less winter hardy than the other small grains. Oats are at a higher risk for being killed off during the winter and less likely to be available for early spring grazing, especially with Kentucky's freeze and thaw patterns. Keep in mind that each species and variety is adapted to different soil types and should be considered when choosing a species and variety.

Small Grain	Seeding Rate (For Forage)
Wheat	2-2.5 bu/acre
Barley	2-3 bu/acre
Rye	1.5-2.5 bu/acre
Winter Oats	2.5-3 bu/acre

UK Master Grazer

Figure 1. **Small Grain Growth Stages**



Balancing Quality and Cost When Feeding Your Cow Herd

By Shaye Koester-Wanner

Wouldn't it be nice if we could graze 365 days out of the year? Think about the feed, fuel, time and overall money you would save! While it's a great goal to aim for, it simply isn't realistic for all climates or ranches. If you fall into the category of cattlemen and women who simply must supplement feed at some point during the year, understanding the quality of your feed and how to reduce feed waste is vital to your success each year. Dr. Karl Hoppe, Livestock Systems Specialist at the Carrington Research Extension Center, offers insight into how cattle producers can better understand the nutritional requirements of their cows and how to pair that with the quality of feed they have available.

Body condition scoring is a common method of evaluating if your cows' nutritional needs are being met. To use this information effectively, ranchers must know how long it takes to move their cows up a score if they are thinner than desired.

"When it comes to winter feeding, you need to think six months ahead," Hoppe says.

Depending on the cow, there is approximately an 80-pound difference from one body condition score to the next. How long it will take you to make that gain depends on the genetics of your herd and a variety of environmental factors, one being feed quality. To set your herd up for optimal performance, you must know what they need for nutrients and what our feed sources have to offer.

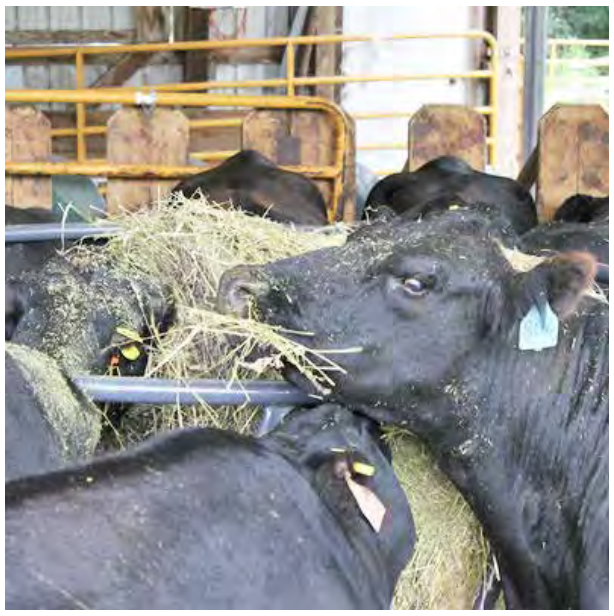
"People often think if cows are thin, they can just throw a few extra bales out for them," Hoppe says. "This happens during cold, wintry days too. But the cows need energy, not just extra feed. We tend to miss this and don't realize how much energy our cows need."

The solution is simple, test your hay each year.

As soon as your hay is put up, you can test it and get results back within a few days. It is encouraged to test for energy, protein, calcium, phosphorus and trace minerals. However, it can be beneficial to test for toxins such as nitrates which are more common during dry years.

When it comes to collecting samples, Karl says, "Make sure you get at least a quart bag full of corings for an adequate sample."

Additionally, it is wise to test bales from each field because there can be large variances between different types of hay and the land it was grown on. For those who grind and mix different quality hay, test before you grind as the ground hay pile isn't mixed enough to offer a representative sample. If you don't have a probe to collect samples, reach out to your extension agent, feed store or feed company representative for help. If you need to test feed that is supposed to be ensiled, be sure to allow this process to take place before collecting samples. For distillers, ask the plant or location you are purchasing from if they have averages for quality so you can formulate an accurate ration. Feed and hay samples can be sent to commercial laboratories that run these tests often. The National Forage Testing Lab website is a good resource for cattle producers to find a lab near them.



Testing the feed is one thing. Raising high-quality, cost-effective feed is another. We tend to do a lot of things like generations before us, but our cows and economy are not the same. This makes it important to explore different options and be flexible with our environment and weather to raise cost-effective, high-quality feed. This might look like grazing or haying different feeds like rye, barley, winter wheat, sorghum-sudan mixes, oats, forage sorghum or corn silage. From an energy standpoint, corn silage is a great feed source to include in your total mixed ration (TMR), which can also be cost-effective. Your location may also provide access to different byproducts such as wheat middlings, soy hulls, beet pulp or corn gluten-feed just to name a few examples. Hoppe helps North Dakota producers incorporate these into their rations.

You can raise it. You can test it. How do you make sure you don't waste it?

There are numerous strategies to reduce feed waste depending on what and how you are delivering this feed. For those feeding a TMR, feed bunks are the best option to reduce waste. For round bales, look at different feeders to help keep the hay in the feeder and not on the ground. Karl reminds producers, "Cattle don't waste high quality hay. Cattle do waste poor quality hay." So, take this into consideration when deciding how and what to feed your herd. There are opportunity costs to consider when deciding to feed a TMR or stick to bales. Hoppe said, "It costs money to grind hay, run two tractors and own a mixer wagon; so if you own a small number of cows, it might be cheaper to let cows waste a greater percentage of hay rather than feed a TMR. But don't forget to consider the cost of that hay that is now considered bedding. Your hay could be $100/ton which is expensive bedding compared to $40/ton straw or stover." Before you get into the argument of which option is best for you, be sure to know your costs to get the most accurate picture.

As we work toward increasing our grazing days and decreasing our feeding days, remember there is no one-size-fits-all approach. Start by knowing your costs, what resources you have available, the needs of your cows and your goals. From there, don't be afraid to ask around and try new methods to determine which feeding strategies best fit your operation. And of course, TEST YOUR HAY!

CasualCattleConversations.com

Forage Nitrate Toxicity a major concern in drought conditions

By Jason Hartschuh, Extension Field Specialist, Ohio State University Extension

Weather conditions across the region have been challenging this growing season with some areas reaching a D3 drought status. Other areas may not currently be under drought status but are drier than normal and at risk of quickly experiencing a flash drought. These adverse growing conditions can cause unforeseen challenges with forages. We have had multiple reports of high nitrate levels this year in early harvested summer annual forages as producers needed feed.

Plants readily take up nitrates from the soil, even under dry or cool conditions. Once in the plant, nitrate is converted to nitrite, then ammonia, and finally into amino acids and plant protein. Any environmental stress that significantly slows down plant photosynthesis and metabolism can lead to excessive nitrate levels in the plant because the nitrate uptake from the soil will be faster than its metabolism into plant protein. Such stresses include drought, frost, extended cold weather, cloudy conditions, or hail damage. While frost is a concern for increasing nitrates in forage a few months from now, the sorghum family also has prussic acid concerns when plants die quickly because of a frost. Prussic acid and nitrate poisoning are not the same.

The highest level of nitrate accumulation in corn occurs from V6 through pollination. While all drought-stressed corn can be at risk of high nitrate levels the greatest risk is in corn that was not drought-stressed from V6 through pollination and then became drought-stressed. This corn took up much of the nitrogen that was applied to the field but did not produce grain to utilize that nitrogen.

When ruminants consume excessive levels of nitrate in their diet, the nitrate is converted to nitrite by rumen microbes faster than it can be converted to ammonia, amino acids, and eventually plant protein. Accumulated nitrite in the rumen is then absorbed into the bloodstream where it prevents oxygen transport, which leads to death. Livestock sensitivity to nitrates ranked from highest to lowest is: pigs > cattle > sheep > horses. Older or sick animals are generally more sensitive than young healthy animals. The fetus in pregnant animals is very sensitive to high nitrates ingested in the diet.

One of the common solutions for forages that have slightly elevated levels of nitrates is to mix them with another forage source that is low in nitrates. The best way to do this is to truly mix the two forages so that your cattle eat both at once as a balanced lower nitrate diet. When this is not possible, feed the low nitrate forage first, allowing them to fill up on it, then offer the higher nitrate forage keeping them full for the day alternating forages each feeding. This year it may be important to test those dilution forages to be sure they are truly low in nitrates. Nitrate levels in forage are commonly reported in 3 different ways, ppm NO3 DM, percent NO3, and ppm NO3-N (DM). Table 1 below summarizes how to interpret the results.

Any time forage growth has been significantly slowed

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due to dry conditions, extended cold nights, cloudy weather, or premature plant death, nitrates may be an issue. All these stresses can lead to higher nitrate levels in plants due to slowed growth. Nitrogen fertilizer or manure applications made to forages increase the risk for higher nitrate levels in plant tissue, especially if excess nitrogen is available and forage growth is slow.

Nitrate accumulation is possible in many forage species, including all cool-season perennial forage grasses, alfalfa, all cereal forages (oat, rye, triticale, wheat, barley, spelt, etc.), and brassicas (might be present in cover crop mixes). Nitrates can also accumulate in warm season annuals (corn, sorghum species, millet, and many weeds). Weed species are heavy nitrate accumulators, including lambsquarter, pigweed, dock, some mustard species, johnsongrass, horse nettle, nightshade, quackgrass, and jimsonweed. Heavy infestations of those weeds when harvested with the forage will increase the risk of nitrate toxicity.

Nitrate levels are generally higher in younger than more mature growth. Delaying forage harvest to the dough stage and other forages to flowering/heading stages can significantly reduce nitrate levels. Cutting height can also affect levels as nitrates accumulate in the lower one-third of plants more than in the upper two-thirds.

Plant nitrate concentrations are higher in the morning than later in the day (plant metabolism during daylight drives the conversion of nitrate to plant protein). Mowing hay late in the afternoon on a sunny day can reduce nitrate levels in forage. Once hay is mowed, nitrate levels do not change much during the drying process, so dry hay levels will be similar to levels at the time you mow. Prior to mowing, nitrate levels vary across the field based on plant growth and variable soil nitrogen. This variability increases even more in a field based on mowing time. If we start in the morning and mow all day, the evening mowed forage should have lower nitrate levels.

However, ensiling can reduce nitrate levels from 10-65% provided fermentation is good. But if the forage is initially very high in nitrates, the silage could still contain toxic nitrate levels, so this is not an automatic fail-safe option. Be very cautious as high nitrate forages ferment, the bacteria break down the nitrate and release deadly nitrogen gas. Nitrogen oxide gases are heavier than air, may be reddish or yellow brown in color, and have a bleach-like smell. Nitrogen oxide gases will accumulate in low-lying places, such as around the base of a silo or in the feed room below a tower. When ensiling forage that may have high nitrate concentrations, do not enter the silo for at least three weeks after harvest. If you must enter the silo to level or cover the silage, do it immediately after filling and leave the blower running while anyone is in the silo. If you usually run the blower for an hour prior to entering the silo, it may be necessary to run it for 2 hours to be sure the gas is cleared, and fresh air is present.

Silage must be harvested at the proper moisture for complete fermentation (Table 2). When forages are harvested too dry, they do not ferment properly, and nitrate reductions will be less. Baleage is often harvested on the drier side, and even when it is harvested in the ideal moisture range, reductions will not be as much as well-packed silage. Baleage densities are much lower than properly packed silage, so the additional oxygen slows fermentation. If nitrate levels are reduced in silage in about 3 weeks, it will take 6 or more weeks for levels to be reduced in baleage. Since nitrate levels can vary across a field, the harvested forage can be quite variable in nitrate concentration.

The bottom line is that if you suspect the forage could be high in nitrate, the safest thing to do is to sample the forage and have it tested before it is harvested, because if levels are high, you can delay harvest to reduce the levels. You should certainly sample the stored forage before feeding it if you suspect higher levels! Call your forage lab and follow their guidelines closely for sampling the forage, packaging, and shipping the sample to them.

ppm NO_3 (DM)	Percent NO_3	ppm NO_3-N (DM)	Interpretation of results
0-3,000	0-0.3%	<350	Generally safe for all cattle.
3,000-5,000	0.3-0.5%	350-1130	Generally safe for non-pregnant beef cattle. Low risk of reduced breeding performance and early-term abortions. Total ration for dairy cattle should be less than 2500 ppm NO_3.
5,000-9,000	0.5-1.0%	1130-2260	Some risk for all cattle. May cause mid to late-term abortions and weak newborn calves. May decrease growth and milk production.
>9,000	>1%	>2260	Potentially toxic for all cattle. Can cause abortions, acute toxicity symptoms, and death.

Table 1.

Type of Silo	% Moisture Content	% Dry Matter Content
Horizontal (bunker) silo	65% - 70%	30% - 35%
Bag silo	65% - 70%	30% - 35%
Tower silo	62% - 67%	33% - 38%
Oxygen-limiting tower silo	55% - 60%	40% - 45%
Baleage	50% - 60%	40% - 50%

Table 2. Ideal moisture content for forage stored as silage or baleage.

Herd Selection Takes More Than One Man's Opinion

By Justin Sexten

For months, families across the country have spent extra hours in the barn listening to the drone of fans and blaring radios to get ready for Junior Nationals, state and regional jackpots and county fairs. There are few activities capable of strengthening family bonds like blazing summer temperatures, loading the trailer and uncooperative cattle. Some might suggest taking sale pictures or processing cattle at Thanksgiving are comparable family bonding events, but I digress.

A good friend of mine used to say, "Cattle shows are as relevant to the beef industry as a tractor pull is to the crop farmer." From a practical perspective, I suppose he isn't wrong, but I'd argue cattle shows play an important role in exposing the next generation to the beef industry. Everyone needs a hobby and there are far worse options than spending summers as a family feeding and training show cattle.

Caring for livestock regardless of species and scale should be celebrated in an age where fewer people are involved in food and fiber production every day. My only regret as a youth was my poor understanding of the return on invested capital and labor and, as a result, never showing meat chickens. My youth livestock experience was rooted in maximizing gross revenue without regard to the time and labor investment of market steers.

Showing cattle offers young people an opportunity to hone their stockmanship skills. Training a show heifer to walk past a stroller, over a storm grate or next to a photo backdrop requires a keen understanding of animal behavior that one day may help solve the challenge of loading feedlot cattle when the sun causes cattle to balk. Skills gained by adjusting rations and filtering water to minimize the transportation stress of a new environment will pay dividends when getting ready to receive those bawling calves this fall.

One aspect of livestock shows we celebrate and curse at the same time is the subjective evaluation by judges. I'd suggest exhibitor satisfaction follows a normal distribution: a few exhibitors are happy with the outcome, the majority enjoy the experience of showing cattle and meeting friends, while a few are unhappy or disappointed. While the unhappy are relatively few, the number who completely agree with the judge's assessment of their livestock is likely skewed away from normal.

Subjective evaluation by judges will be debated for as long as there are spectators at livestock shows. A judge's preference in trait prioritization is something most ringside spectators will agree to disagree with. Structural soundness in market animals is a classic example -- just how sound does a market steer need to be once he reaches market weight? Breeders and feeders have different standards for structural correctness in market cattle.

The ability of a judge to subjectively determine their priority traits and repeat those assessments throughout the day is where most evaluators get in trouble with the crowd. Judging and sorting the cattle knowing the crowd is evaluating you is why judging requires a lot of confidence and thick skin. After the 25th class of Angus heifers, even the best evaluator may struggle to be consistent the entire day.

One common refrain a judge uses to escape criticism is "This is one person's opinion on one day." From a visual evaluation perspective, the present-day reference is fair, but really how many cattle do we truly want to sort only on one given day? Back to the market steer example, if the evaluation is focused on one day and he can walk on a truck that steer is structurally sound enough.

Judges and spectators alike can quickly sort off the bottom few cattle they don't like. We all tend to spend more time in the middle and top of the "class" because the trait differences get smaller, and the tradeoffs get harder to prioritize. Now imagine the decision to place a heifer 6th or 7th meant keeping one in the herd for 10 years and sending the other to the feedyard. Not an imaginary scenario, one many of you will make when sorting replacements to keep this fall.

When you think about the development expense and deferred revenue associated with your keep/cull decisions it's time to diversify your replacement female selection methods beyond a subjective evaluation. Consider incorporating an objective genomic test to help allow you to look at a heifer's future potential productivity, evaluate multiple traits, and rank those traits against other cattle in your herd. Even tractor pulls use objective distance and weight measurements.

Effective pasture management: Crucial for sustaining long-term productivity and environmental health!

By Victor Shelton, Retired NRCS Agronomist/Grazing Specialist

This is the 200th issue of Grazing Bites—time flies, but the need for good pasture management remains as crucial as ever.

In the book "Observations on the Means of Improving the Cultivation of the Soil and the Management of Livestock," Scottish gentleman farmer, botanist, essayist and scholar, James Anderson, provided a detailed approach to managing livestock on pasture. He strongly advocated for rotational grazing, a method that involves moving livestock between different pastures. This technique helps prevent overgrazing and allows pastures to recover, thus maintaining soil fertility and forage quality.

Anderson also emphasized the importance of avoiding overgrazing to prevent soil degradation and ensure adequate forage availability. He urged farmers to closely monitor grazing intensity to avoid depleting pastures excessively. Alongside this, he highlighted the need for maintaining high-quality pastures through effective soil management practices, such as applying manure and managing soil pH.

A key aspect of Anderson's recommendations was providing access to fresh, nutrient-rich forage. He noted that livestock perform best when grazing on nutritious, fresh plants. Anderson suggested that pastures should be grazed when plants are at their most nutritious and allowed to recover between grazing periods to promote optimal regrowth.

While Anderson supported effective pasture management, he also acknowledged the necessity of supplemental feeding during periods when pastures are insufficient to meet livestock needs, such as in winter or during droughts. His recommendations aimed to ensure sustainable practices that support the long-term health of both pastures and livestock.

continued on page 35

K-STATE HOSTING KANSAS LANDOWNER CONFERENCE

The Kansas State University Department of Agricultural Economics will be hosting the Kansas Landowner Conference October 10-11 in Manhattan. This conference is specifically tailored to those who own agricultural land in Kansas but may not reside on the property or even in the state.

Some of the topics for this year's event will focus on lease basics, land values and trends, landowner-tenant communication, estate planning, carbon credits and conservation programs.

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FEDERAL DELEGATION CONDEMNS OVERREACH BY U.S. DEPARTMENT OF ENERGY

U.S. Sen. Jerry Moran announced plans to introduce legislation that would protect the private property rights of Kansans impacted by the U.S. Department of Energy's (DOE) proposed national interest electric transmission corridors (NIETC), one of which would extend across much of the state. The creation of these corridors would enable the Federal Energy Regulatory Commission (FERC) to use eminent domain for the siting of new transmission lines under certain circumstances, including when a state regulatory authority has denied a proposed transmission line siting. According to Moran, his proposed legislation would ban federal funds from being used to condemn private property to be used in a NIETC designation and prohibit FERC from using its authority to overrule a state regulator's rejection of an electric transmission project.

Other members of the Kansas federal delegation have been vocal on this issue as well, including Congressman Tracey Mann. In a letter sent to DOE, Mann urged the agency to refrain from using eminent domain in its NIETC designation process and to publish clear geographical boundaries for the proposed corridors that feature only areas solely within DOE's control and not the control of private landowners.

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2024 Seasonal Price Pressures Differing from 2023

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

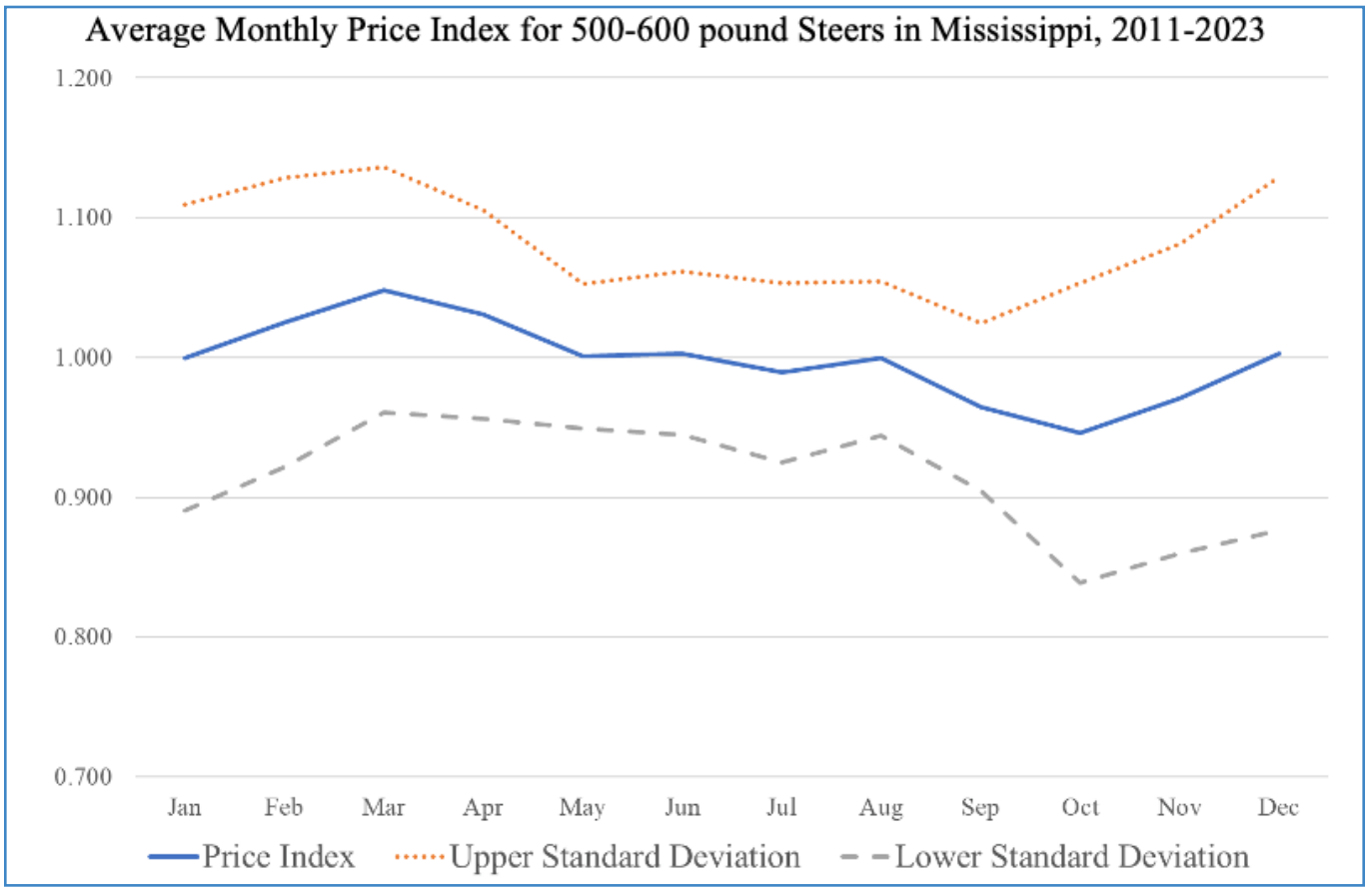
Cattle prices have dipped the past few weeks at auction markets across the southeast. In Mississippi, average prices for 500-600 pound steers hovered around $270 per CWT for the past few months before slipping closer to $250 per CWT since mid-August. Futures market contract prices have been volatile and also dipped during August. For example, the CME October feeder cattle futures contract (700-899 pound steers) is trading close to $240 per CWT today as compared to roughly $256 at the end of July.

Prices in other Southeastern states may be at different levels but have mostly followed a similar pattern. While market participants remain generally optimistic about relatively strong prices into 2025, the dip in prices recently suggests 2024 will not follow the same pattern as 2023 when calf prices seemingly defied seasonal pressures in many markets.

The chart below shows the seasonal index levels of 500-600 pound steer prices in Mississippi. Prices from 2011-2023 were used to calculate the averages. The numbers are not dollars. Instead, the seasonal price index measures the seasonal changes in prices relative to the annual average price. Monthly index values greater (less) than 1 indicate that prices in that month are above (below) the annual average. The upper and lower lines show the upper and lower standard deviations which are measures of how variable prices are during those months compared to the annual average.

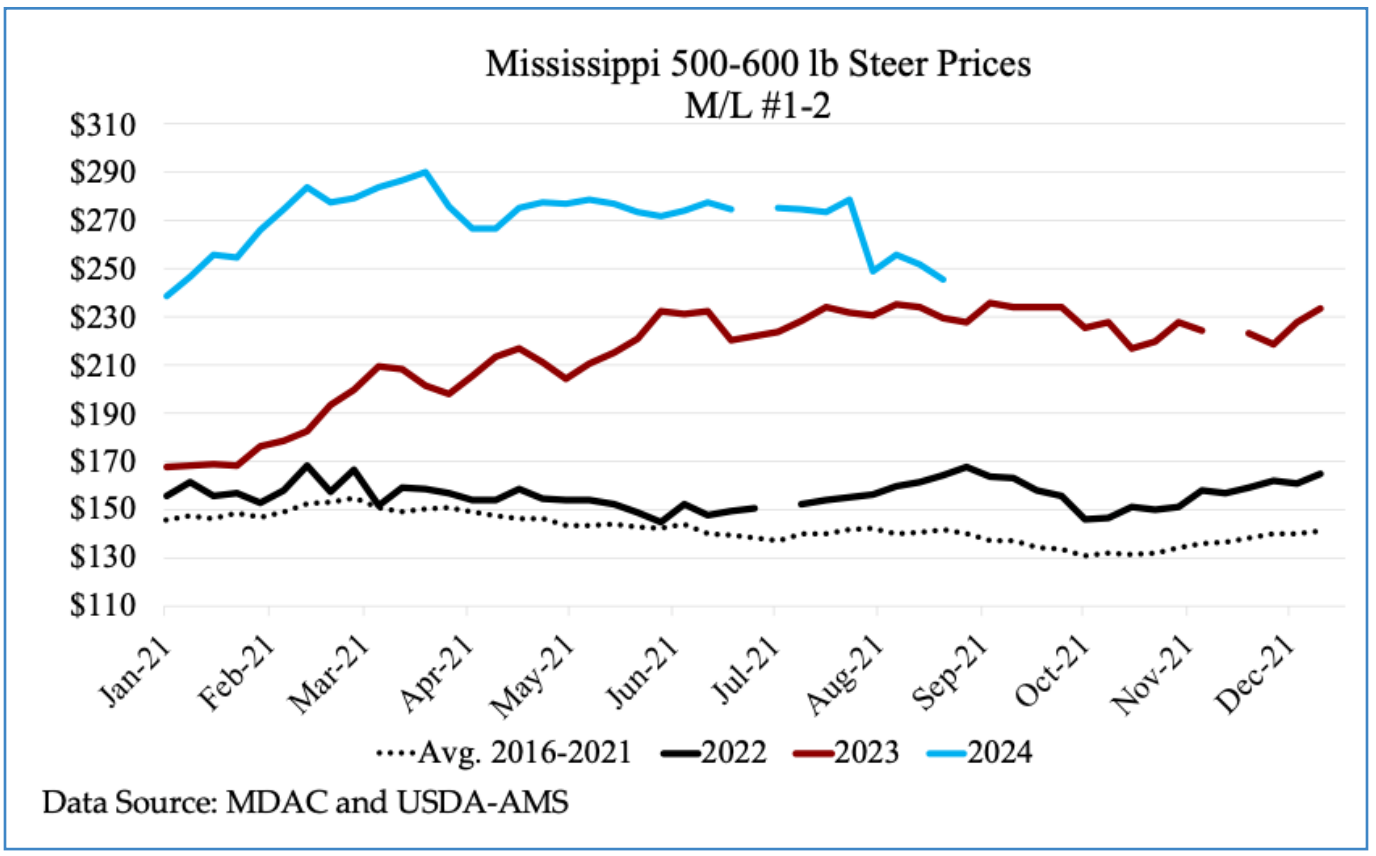
Prices for 500-600 pound steers usually dip seasonally into the fall months with October typically being the low point in Mississippi. This corresponds with the typical seasonal production pattern of producers weaning and selling calves this time of year. The seasonal price index of 0.95 for October suggests that average prices for 500-600 pound steers in Mississippi are typically five percent lower than the annual average.

The second chart shows average prices in Mississippi for 500-600 pound steers over the past few years. 2023 did not exhibit a seasonal decline in prices during the usual seasonal-low months. A similar pattern occurred in 2014. Prices during September and October were some of the highest of the year. Pretty much all of 2023 and early 2024 was a transition period from relatively low prices toward the higher price levels we see now. This transition



masked many of the seasonal patterns we'd normally expect.

Prices over the past few weeks suggest seasonal patterns may be more evident in 2024 than they were in 2023. There has not been a clear fundamental shift in cattle supply or demand to suggest the recent price declines are a push toward a persistent lower price environment. Year-over-year cattle supplies are still tight and herd expansion does not yet appear to be occurring. However, seasonal patterns within a year are still important and a dip in prices during the heavy calf-selling time of the year is typical in most years.



EFFECTIVE PASTURE

continued from page 32

James Anderson wrote about grazing management to improve agricultural efficiency, soil health, and livestock productivity in 1777. He aimed to optimize pasture use, enhance soil fertility, and ensure sustainable practices that would benefit both the financial stability of farms and the well-being of livestock. His work focused on systematic grazing methods to prevent overgrazing, reduce feed costs, and promote long-term environmental and economic sustainability. Does this seem familiar?

The message of effective grazing management remains critically important today due to its significant impact on agricultural sustainability, environmental health, and economic efficiency. Ensuring that grazing practices support long-term pasture health is vital for maintaining agricultural productivity and meeting the growing food demands of an increasing global population.

Proper grazing techniques are essential for preserving soil health. They help prevent soil degradation, erosion, and nutrient loss, which are pressing concerns in modern agriculture. By promoting effective grazing management, we support regenerative agricultural practices and safeguard soil quality for future use.

The environmental impact of grazing management practices is also substantial. Effective grazing can influence biodiversity, water quality, and carbon sequestration.

Economically, efficient grazing management reduces the need for costly supplemental feeds and inputs. With fluctuating input costs and economic pressures on farmers, optimizing pasture use helps improve financial stability and farm profitability. This economic benefit is crucial for the long-term viability of farming operations and keeping the next generation on the farm.

Additionally, proper grazing management supports better livestock health and productivity. High-quality, well-managed pastures provide adequate nutrition and reduce the risk of health issues related to poor forage quality, ensuring the well-being of the animals.

As weather patterns and forage availability fluctuate, adaptive grazing practices become increasingly important. Effective management helps pastures withstand extreme weather conditions and maintain farm resilience, contributing to overall adaptability.

Finally, ongoing advocacy for grazing management is necessary to keep farmers informed about the latest practices and technologies. By sharing knowledge and promoting effective practices, we support industry-wide progress toward sustainability and address contemporary agricultural challenges.

Jonathan Swift, an Irish writer and satirist best known for his works such as "Gulliver's Travels," once remarked on the value of practical contributions to society, particularly in agriculture: "And he gave it for his opinion, that whoever could make two ears of corn, or two blades of grass, to grow upon a foot of ground, where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."

I share this quote to underscore why I am passionate about what I do. It's not about the accolades but the tangible benefits that effective pasture management can deliver.

Advocating for effective pasture management is crucial for sustaining long-term agricultural productivity and environmental health. It maintains land productivity, supports a high-quality forage supply, and ensures the well-being of livestock. Proper management practices enhance soil health, contribute to environmental conservation, and improve economic efficiency. They also promote better livestock health and adaptability to varying conditions, while adding to the visual and economic value of rural landscapes. Overall, these practices are fundamental to productivity, sustainability, and the well-being of both livestock and land.

As Jonathan Swift aptly put it, practical contributions to agriculture can have a profound and lasting impact. My passion for pasture management stems from this very belief—it's about making meaningful improvements that benefit both the land and those who depend on it.

So, as we move forward, remember it's not about optimizing just one grazing event, but about maximizing the entire grazing season. Here's to continuing the journey of effective pasture management. Keep on grazing!

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Sept 21	Rex Ricketts Dispersal Sale, Paris, MO
Sept 22	Brockmere Farms Angus Female Sale, Brookfield, MO
Sept 23	Gardiner Angus Ranch Fall Production Sale, Ashland, KS
Sept 27	Diamonds of the Flint Hills Sale, Paxico, KS
Sept 27	Kansas Angus Assoc Female Sale, Manhattan, KS
Sept 27	KL3 Female Sale, Poplar Bluff, MO
Sept 28	417's Finest Hereford Sale, Fair Grove, MO
Sept 28	Flint Hills Classic Bull Sale, Paxico, KS
Sept 28	Heart of the Ozarks Angus Assoc Sale, West Plains, MO
Sept 28	Jeffries Red Angus Bull & Female Sale, Checotah, OK
Oct 2	Halfmann-Beckton Red Angus Sale, Miles, TX
Oct 4	Birk Genetics Fall Production Sale, Jackson, MO
Oct 5 *	Lucas Cattle Co Fall Bull Sale, Cross Timbers, MO 417-998-6512
Oct 5	Bradley Cattle & Hankins Farms Charolais & Red Angus Sale, Republic, MO
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Oct 16	Peterson Prime Angus, New Boston, MO
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Oct 19	Angell – Thomas Charolais Bull & Female Sale, Paris, MO
Oct 19	Blackjack Angus & Guests Female Sale, Seminole, OK
Oct 19	Bradley Cattle Bull Sale, Springfield, MO
Oct 19	Gerloff Angus Bull Fest, Bland, MO
Oct 19	Natural State Prime Angus Sale, Scranton, AR
Oct 19 *	Seedstock Plus Fall Bull & Female Sale, Carthage, MO 877-486-1160
Oct 19	Shaver Angus Bull Sale, Norwood, MO
Oct 21	Hinkle's Prime Cut Angus Fall Sale, Nevada, MO
Oct 26 *	Lacy's Red Angus & Pld Herefords Sale, Drexel, MO 913-909-1912
Oct 26	Mead Angus Fall Production Sale, Versailles, MO
Oct 26	OHOA Fall Roundup, Mountain Grove, MO
Oct 27	Missouri Angus Ladies of Autumn Sale, Lebanon, MO
Oct 28	Buck Ridge Cattle Bull Sale, Seymour, MO
Oct 28 *	SW MO Performance Tested Bull Sale, Springfield, MO 417-345-8330
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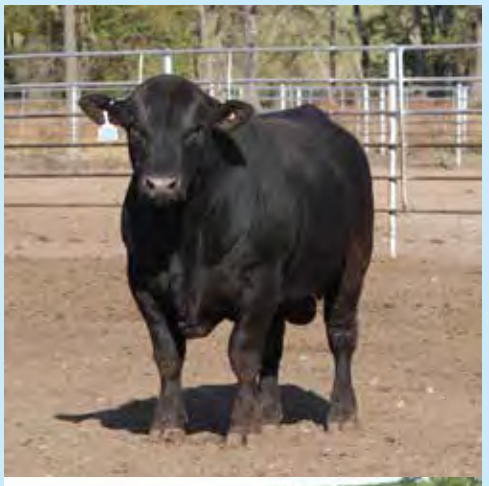

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