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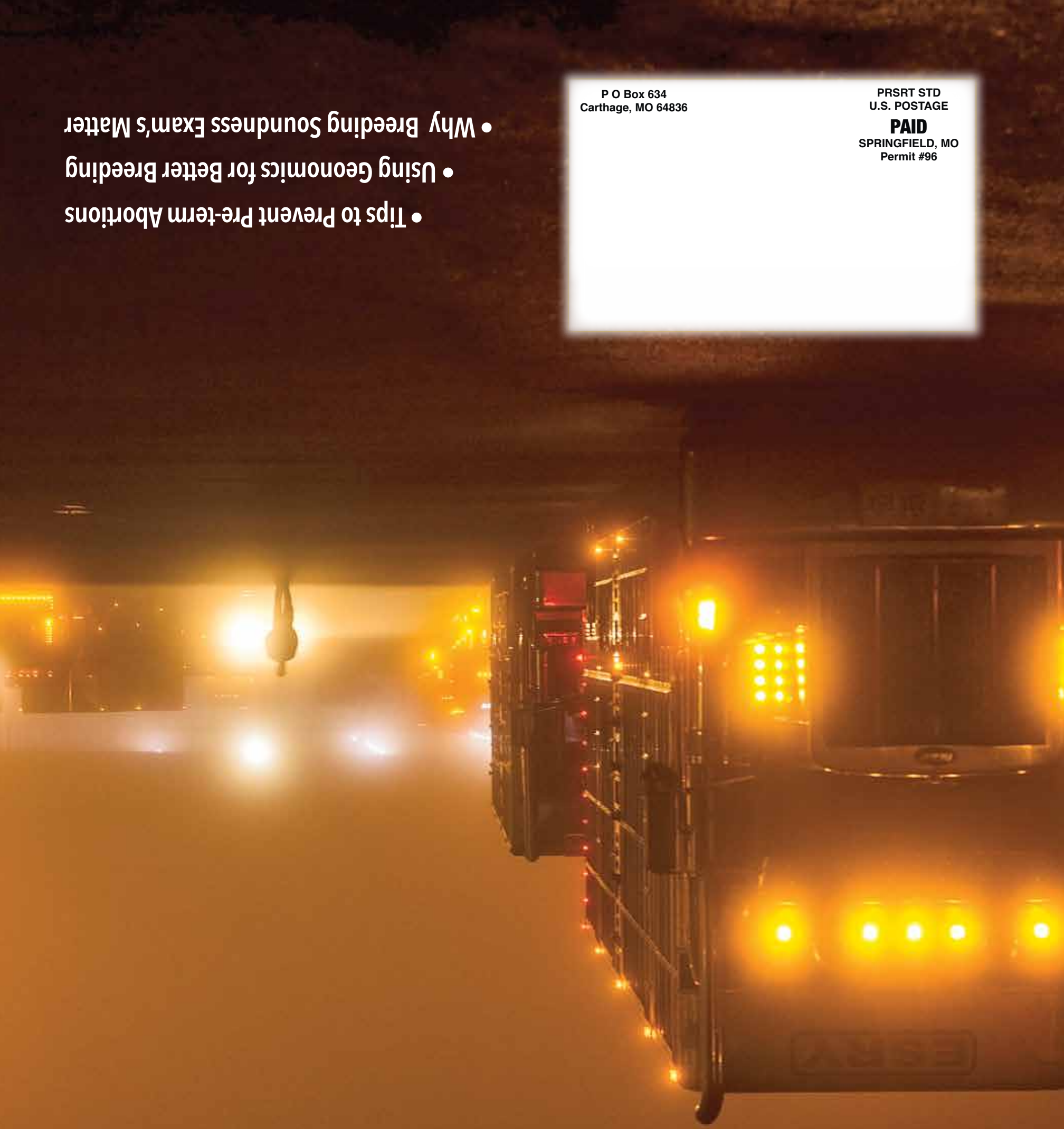

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CATTLEMEN'S NEWS

FEBRUARY 2017

VOLUME 20 | ISSUE 7

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VIEW FROM THE BLOCK

Buying has been active on the grazing cattle that will go to pasture this spring and summer, and not a lot of these cattle are available right now. Fat cattle have been trading around $121.00 to $122.00, and those cattle are making a little money. We also have an ample feed supply right now. All of this has created the perfect storm brewing right now for the lighter-weight cattle. Heavier cattle that weigh more than 700 pounds traded a little higher toward the end of the month, following the weather-related market we saw on Jan. 16. All in all, right now any cattle that weigh less than 700 pounds will sell good.

Calves coming to auction that have been weaned and vaccinated are selling for $5 to $15 per hundred higher than their counterparts. A lot of buyers are asking about preconditioned calves, so they should sell good. We're seeing a lot of value in those cattle right now, especially the lighter-end of them.

As we see the lighter weight feeder cattle trending higher, the stock cow market will kind-of follow suit. It's pretty much a steady affair on the replacement cows. Young, springer cows will sell around $1,500 to $1,600, with some selling for more and some for less. The slaughter cow market is about $3 to $7 higher than we saw a few weeks ago, and it will continue to trend higher this month and next. Despite that, I don't expect we'll see a runaway in that segment of the market.

While we still have some winter left, spring is right around the corner! We've had some moisture, and I'm looking forward to spring. The market is what it is. Just keep on, keepin' on.

Good luck and God bless.

Jackie

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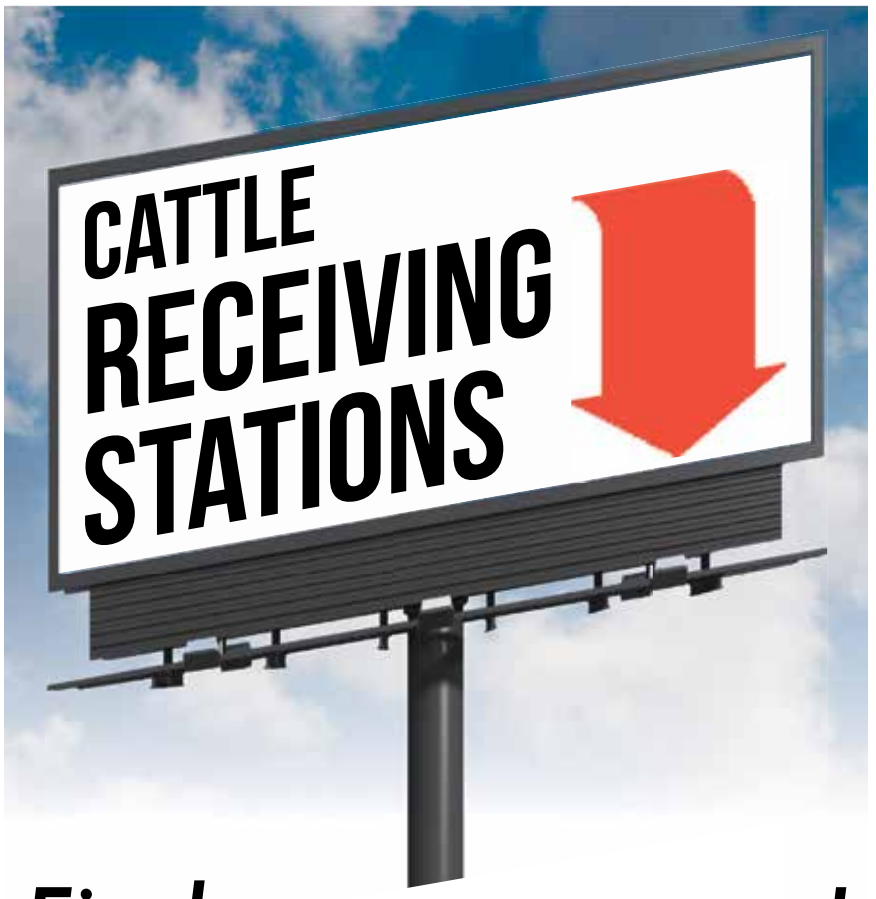

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The semi's are loaded and ready to roll after sale day at JRS.
— Cover photo by Jillian Campbell.

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CATTLEMENS NEWS

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BEEF IN BRIEF

USDA Expands Grasslands Conservation Program to Small-Scale Livestock Producers

U.S. Department of Agriculture Farm Service Agency Administrator Val Dolcini said USDA will accept more than 300,000 acres in 43 states that were offered by producers during the recent ranking period for the Conservation Reserve Program (CRP) Grasslands enrollment with emphasis placed on small-scale livestock operations. Through the voluntary CRP Grasslands program, grasslands threatened by development or conversion to row crops are maintained as livestock grazing areas, while providing important conservation benefits. Approximately 200,000 of the accepted acres were offered by small-scale livestock operations.

—Source: Farm Service Agency release.

November Beef Exports Strong

U.S. red meat exports continued to build momentum in November. Beef exports exceeded year-ago levels by more than 20 percent in both volume and value, according to statistics released by USDA and compiled by the U.S. Meat Export Federation, contractor to the beef checkoff.

November was a very strong month for beef exports, which totaled 342.5 million pounds – up 20 percent year-over-year and the largest since July 2013. Export value increased 21 percent to $619.1 million, the highest since December 2014. This pushed January-November export volume to 2.4 billion pounds (up 10 percent year-over-year) valued at $5.72 billion (down 1 percent).

November exports accounted for nearly 15 percent of total beef production and 11.7 percent for muscle cuts only – the highest levels since 2014. January-November exports accounted for 13.5 percent and 10.3 percent, respectively – up from 13 percent and 10 percent during the same period in 2015. Beef export value per head of fed slaughter reached a 2016 high of $294.39 in November, up 5 percent from a year ago. For January through November, per-head export value averaged $258.48, down 7 percent.

—Source: MyBeefCheckoff.com

Cattlemen Elect Leadership

The Missouri Cattlemen's Association (MCA) elected its 2017 leadership during the 49th Annual Missouri Cattle Industry Convention and Trade Show in Osage Beach, Missouri. Butch Meier of Jackson will serve as the 2017 MCA President.

"I'm looking forward to serving Missouri's cattlemen as president in the upcoming year," Meier said. "The Missouri Cattlemen's Association has seen great achievements over the past few years. From a great 2016 on the legislative front to developing multiple collegiate affiliates, many exciting things have happened in the beef industry."

Greg Buckman from Hallsville will serve as the association's president-elect. Bobby Simpson, Salem, was elected vice president. Matt Hardecke, Wildwood, will continue to serve as treasurer, and David Dick of Sedalia will serve as secretary. Keith Stevens from Bolivar will be the past-president.

Regional vice presidents were elected based on the region they reside in across the state. Luke Miller of Hurdland will represent region one. Chuck Miller from Olean will represent region two. Tony Washburn of King City will serve region four as vice president. Region five vice president will be Bruce Mershon, Lee's Summit, and Clay Doeden of Stockton will represent region six. Dustin Schnake from Mount Vernon will represent region seven. The region three vice president position is vacant at this time.

—Source: Missouri Cattlemen's Association release.

ON TARGET

Measuring a Wild Card

Act now to improve the potential value of your calves

Story By Justin Sexten

When the season's first calves arrive, you begin to see results of your genetic decisions, perhaps eager for more or thinking about what a new bull could bring. Poring through bull catalogs and looking at expected progeny differences (EPDs), you should keep in mind the environment affects what your calves are now and what they will become.

Genotype plus environment equals phenotype. The equation's simplicity lies not in its precision but in stating the relationship, for who can quantify the environment's role from one calf crop to the next?

Perhaps the only solution out on the ranch can be found in averages, once you identify indicators of herd progress. Among weaning weight, overall profitability, annual cow cost, pounds weaned per cow exposed and pounds weaned per acre, each provides insight. None tell where the progress or setback originated because combined effects are so broad.

Consider a 10-lb. improvement in weight of calf weaned per cow exposed. Did that come from fewer open cows, a greater artificial insemination (AI) conception rate, better pasture or not as many health challenges? The answer could be any combination, but which can you most control? If one factor stands out, how did the ranch environment come into play?

These questions are key because your ability to see the success or failure from any decision weighs on whether you stay the course or veer. In the cattle business, feedback on a decision is delayed, imprecise and segmented. Generational turnover is slow, and you don't know about carcass merit until harvest, if then. Knowing that, let's find the traits you can actually measure to assure continual genetic improvement.

At its simplest level and given a strong relationship with a progressive seedstock supplier, that registered breeder's attention to detail can sustain your herd's progress. Breed average improves, and below-average bulls are neutered and finished for beef rather than selling at bull sales. In theory, the average bull keeps getting better, and the rising tide lifts all boats in the beef industry. Some say that's what gave us the decade of sharply improved quality grade. Average marbling scores for all major breeds have improved; combine that with longer days on feed and heavier carcass weights, and you get 75 percent of cattle today grading Choice or Prime.

But remember that's only average, and getting there doesn't take much effort on your part as a commercial bull buyer. You can take charge by selecting above-average bulls that improve your herd's collective genetic merit. EPDs let you objectively evaluate that. Combine each registered bull's numbers into a collective "herd EPD profile" so that you can compare this year's bulls to last, independent of the environment, management or marketing plan. Use across-breed EPD adjustments from the USDA Meat Animal Research Center to evaluate the entire bull battery, regardless of breed.

You can take it a step further, weighting the EPD profiles by number of cows any particular bull could breed. That lets you see possible progress through increasing a bull's exposure to more cows through AI or using an older bull.

Even though you might market calves at weaning, EPDs still provide insight and let you represent your herd ge-

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TRENDING NOW

Cattlemen to Focus on Private Property Rights

Missouri Cattlemen's Association establishes policy

The Missouri Cattlemen's Association (MCA) established policy priorities for the 2017 legislative session. MCA Policy and Legislative Affairs Chairman Jimmie Long said reviewing current policies, establishing new policies and setting policy priorities is a grassroots function of the association that is completed at the association's annual convention, which took place Jan. 6-8 in Osage Beach, Missouri. Long said the association will focus its efforts on private property rights in the 2017 legislative session.

"There is no policy established by staff or a few people in a closed-door meeting," he said. "Our policies generally start at the county level and move up. This is a member-driven process that we take very seriously."

A cattleman from Cole Camp, Long said MCA members made it clear that private property rights were of utmost importance. "Our members made clear that private property rights is of the utmost importance," he said. "The association will support measures that strengthen private property rights in Missouri and will vehemently oppose any invasion of those rights."

Two issues the association decided to tackle this year focus on strengthening private property rights.

Long said if an animal owner is charged with animal abuse or neglect and they are found not guilty, the owner is still required to pay for all expenses associated with his or her case. MCA supports legislation led in the House by Rep. Sonya Anderson (R-131) that ensures owners who are found innocent are not liable for the costs associated with holding their animals and that their animals must be returned immediately.

Long said MCA policy opposes the use of eminent domain for private, for-profit entities that provide little-to-no benefit to the citizens of Missouri. He said the association supports revisions to state law that clearly prohibits the condemnation of private property for transfer to a private owner for the purpose of economic development that only indirectly benefits the general public. Long said the association will work with Rep. Craig Redmon (R-4) and others to strengthen Missouri's eminent domain laws.

—Source: Missouri Cattlemen's Association release.

MEASURING A WILD CARD
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netics to other segments of the supply chain. Compare weaning to yearling growth for an idea of what those genetics offer the stocker operator. A yearling-to-carcass-weight spread shows what your herd's genetics mean to feedyard operators. Check your calves' potential carcass merit by benchmarking their sire's EPDs against the current breed averages.

It's not a perfect system and it won't replace objective cattle measures, but a combined bull-battery EPD provides a simple way to evaluate the impact of your sire selection decisions earlier, and independent of environmental effects. Certainly, those will continue to influence and often limit the expression of genetic potential. Being proactive in taking stock of your genetic resources only helps counter some of the unknown.

As the saying goes, you cannot manage what you cannot measure. In a business where information flow is segmented and delayed, acting now to improve your calves' potential value for the next owner opens more marketing doors. Just "keeping up with average" is getting harder and harder to do without a sustained effort.

—Justin Sexten is director of supply development for Certified Angus Beef LLC.

Hand-in-Hand

Animal health and reproductive success begins in the cowherd

Story By David Rethorst

Reproductive success can be simply defined as weaning a healthy calf from every cow every year. This definition is the basis for the percent-weaned calf crop formula, calves weaned per cow exposed to breeding that is used to measure the reproductive efficiency of cow-calf production systems. What this number should be to indicate efficient production varies from herd to herd and depends on how the system is managed. Nationwide, the average percent-weaned calf crop is just south of 80 percent. In some systems, that might be efficient production, but in most systems, this number is indicative of a system that is not up to par. To correct these inefficiencies, we need to understand the components of the system and understand that changes in one component often impact others.

A healthy cow and healthy calf are the backbone of an efficient production system. The health plan for a cow-calf operation is more than a vaccination protocol. A health plan to improve the immune system of calves and improve the overall health of the cows and calves is best summarized in six factors put forth by a close friend of mine, Dr. Jerry Stokka, extension veterinarian and professor of animal stewardship at North Dakota State University. His six factors are:

1. **Biosecurity**
2. **Genetics**
3. **Nutrition**
4. **Colostrogenesis**
5. **Calving and environmental stress**
6. **Handling stress**

Biosecurity, or not importing disease into the cowherd, can deal with several diseases such as bovine viral diarrhea (BVD), trichomoniasis, Johne's disease, anaplasmosis, and bovine leukosis. While it is important to keep each of these out of a cowherd, keeping BVD out or controlling it if it is present, is of primary importance, if one wants to improve the immune status of his or her calves.

For genetics, select traits that promote good health. These traits include calving ease, mothering ability and udder and teat conformation. Also included are adequate, but not excessive, milk and adequate performance. Gentics can also impact the docility trait. We now have docility EPDs at our disposal, and I strongly encourage their use. A recently published study showed that the quieter heifers were in the chute and the slower they left the chute, the better the pregnancy rate was in synchronized, yearling heifers. This provides documentation that little things make a difference.

The goal of the nutrition plan should be to achieve an optimal balance of protein, energy, minerals and trace minerals throughout the year. Excesses or deficiencies of any of these can have detrimental effects. Monitoring body condition score (BCS) is an easy way to assess the nutrition program. Maintaining cows in a BCS of 5 to 6 ensures the cows will produce adequate colostrum and return

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to estrus while avoiding excessive feed costs. Adequate protein during the last three months of pregnancy has a positive impact on the lifetime health and performance of the calf.

Colostrogenesis is the building of adequate colostrum. The essential components of colostrum are antibodies, fat, fat-soluble vitamins A and E, as well as white blood cells — especially lymphocytes. Providing antibodies early in life impacts immune system function. If adequate colostrum is not consumed in the first 3 to 12 hours of life, the likelihood a calf will have to be treated with antibiotics prior to weaning increases more than six times.

Fat serves as an energy source for the newborn calf and helps warm the calf quickly. A BCS of 5 or greater ensures adequate fat in the colostrum. Vitamins A and E help get the immune system off to a good start as do the lymphocytes, which are necessary for viral immunity.

Addressing calving and environmental stress involves making both cow and calf as comfortable as possible during calving season. It is assisting the heifer or cow experiencing calving difficulty sooner rather than later. Not only does early intervention reduce stress on the heifer or cow so she will return to estrus sooner, but dystocia also increases the stress on the calf and the need for colostrum shortly after birth. Environmental stress is created by wind, rain, mud and snow. Windbreaks, bedding and moving to a new calving area are all ways of dealing with this stress. Adjusting calving season to a warmer time of the year is another consideration.

The manner in which we handle cattle has been shown to have a significant impact on their immune function. Cattle should be gathered in a calm manner and staged near the corrals prior to weaning. Sorting should also be done in a calm fashion, and processing should be done with a minimum of hot shot and sorting stick use. Proper use of systems such as a Bud Box will also help reduce this stress. Fenceline weaning or other low-stress weaning methods are recommended.

Once these six animal husbandry areas have been addressed, consider the area where most people start, the vaccination program. If the six areas are addressed adequately, vaccination programs can become very simple, yet quite functional. A good veterinary-client-patient relationship should result in the proper recommendations from your veterinarian.

As was stated earlier, a healthy cow and healthy calf are the backbone of an efficient production system. A healthy heifer calf becomes a healthy cow that raises a healthy steer to go to the feedyard or a healthy heifer to go into the production system. If the system is operating efficiently, not only does it improve the profitability, but it also sends a healthy calf to the feedyard. This, in turn, reduces the number of animals that require treatment for respiratory disease and the number of cattle that die, improving feedyard performance. But, it has to start in the cowherd.

Quite frankly, we are wasting many of the resources that have been entrusted to our care every time a calf gets sick or dies from respiratory disease. All of the inputs required to get the calf to that stage of life whether it be grass, harvested feed, labor or pharmaceuticals are wasted. Included in that is the inputs necessary to get the cow pregnant and carry that pregnancy to term.

We should remember that good animal health and well-being is the practice of good animal husbandry. We should not accept less than good animal health and wellbeing for less than 100 percent of the cattle that have been entrusted to our care.

—Dr. David Rethorst is veterinary practitioner and consultant, Beef Health Solutions, Wamego, Kansas.

NEXT GENERATION

Make Farm Legacy Planning a Major 2017 Goal

What vision and values do you have for your farm?

Story By Darren Frye for Cattlemen's News

As the calendar recently turned over into a new year, it's an opportunity for a fresh start. I believe it's also a good opportunity to reflect not only on the past year, but also to think about what you want for the future of the farm – and for your legacy.

Weigh your wins

First, take some time to review the past year. Don't do this only in terms of how the year went financially — although, of course, that's important to do, too. Consider the biggest wins your farm business had in 2016.

You might do this in light of your overall vision for your farm. What's your long-term vision for your operation? What do you want your farm to become? What type of legacy do you want to leave? What do you want for the farm's next generation?

Then, consider some of the ways your vision took shape this year. You might start by thinking about decisions where you intentionally took your vision into account and how your farm moved toward what you want it to be. How did your farm move closer to your vision for your legacy?

Celebrate your farm's wins from 2016. Even if the overall year didn't go exactly as you hoped, you might still have had some wins. Maybe you made quite a bit of progress in training and developing your farm's next leader. Maybe you initiated some important conversations about the future with other family members.

Think big

Next, begin thinking about your biggest farm goals for 2017. Consider your vision and your values as you begin to lay out these major goals. Think as big as you can at this point, listing multiple possibilities.

You might find you create a list that seems overwhelming or broad. Some of the goals might be all-encompassing, even something like 'Get a legacy plan in place.' It's tough to even know how to start achieving such a major goal since so much is involved when it comes to the process of farm legacy planning.

Break it down

The key is to start breaking down these big goals into smaller, more manageable chunks so you can start taking concrete action. For example, if your goal is to start your farm's legacy plan this year, you might break that goal down further into smaller action steps, such as meeting with each member of your farm legacy planning team – or working to put that team together if you don't yet have one.

A legacy advisor is a central part of your farm's legacy planning team. He or she helps to coordinate the process and all of the other people who make up that important group.

Having a legacy advisor on board for the planning process can help when it comes to making sure the right conversations are had with family members. They keep the planning process moving and can be a helpful sounding board when you feel stuck,

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2017 GOAL • FROM PREVIOUS PAGE

because they've walked through the process with other farm families.

Walk the path

Once you've created the right steps toward your goal, put them in a logical order you can execute. For a very large goal, you might take action on one of the steps each day. It can be empowering to know you're working toward the major goal of getting a legacy plan in place for your operation.

With a path to take toward a big goal, suddenly that goal might not seem quite so unmanageable or overwhelming anymore. It can also be helpful to have a legacy advisor or 'coach' to help create those steps and then help you stay accountable to completing them. This winter, you might get in touch with our advisors to help create plans to reach your 2017 goals.

Read the new winter issue of the Smart Series publication, bringing business ideas for today's farm leader. This issue features tips on how to harness the power of your farm's numbers, ideas for your farm's employee strategy and a checklist to help ensure your operation is protected from the unexpected. Your free issue is available at: www.waterstreet.org/smartseries.

—Darren Frye is President and CEO of Water Street Solutions, a farm consulting firm that helps farmers with the challenges they face in growing and improving their farms – including the challenge of transitioning the farming operation to the next generation. Contact them at waterstreet@waterstreet.org or call (866) 249-2528.

NEXT GENERATION

Former Georgia Governor Tapped for Ag Secretary

Cattlemen's association supports Trump's choice to lead USDA

National Cattlemen's Beef Association President Tracy Brunner released the following statement in support of President-elect Trump's nomination of former Gov. Sonny Perdue to be Secretary of the U.S. Department of Agriculture:

"Governor Perdue's an excellent pick to head the Agriculture Department. As a lifelong agri-businessman and veterinarian, as well as the two-term governor of a state where agriculture's the largest industry, Gov. Perdue has a unique and expert understanding of both the business and scientific sides of agriculture. In a time of increasing regulations and a growing governmental footprint, we have no doubt that Gov. Perdue will step in and stand up for rural America so that we can continue to do what we do best - provide the safest and most abundant food supply in the world."

Perdue is a well-known supporter of agriculture with a background in agribusiness and veterinary medicine. He's a graduate of the University of Georgia College of Veterinary Medicine.

—Source: Adapted from the NCBA Beltway Beef Newsletter.

TRENDING NOW

Feedout Losses Continue

Sickness contributes to lower returns

The 121 steers that were sent to the Tri-County Steer Carcass Futurity (TCSCF) on June 7 as part of the steer feedout have been harvested according to Eldon Cole, livestock specialist with University of Missouri Extension.

According to Cole, the financial statement this year shows a per head loss of $215.06. One steer died, and one did not respond to treatment and was sold as a feeder. Their losses were in the final tally.

"There are several reasons for the losses during the feeding phase," Cole said. "Their initial value was $148.20 per hundredweight (cwt) on average for their 719 pounds in June. There was considerable sickness early due to mycoplasma."

Individual treatment costs for the 53 head totaled $4,638.02 or about $87.50 per head.

Cost of gain for feed was $56.66 per cwt. The total cost of gain averaged $86.05 when accounting for treatments, freight, routine vaccines, carcass data gathering, tags, interest and yardage.

Gains were 0.13 lbs. below the past year's TCSCF average of 3.50. Feed-to-gain was also poorer, 6.88 to 6.70 lbs. per pound of gain.

"The estimate was that our steers ADG and feed-to-gain was 10 percent below the average of TCSCF cattle over their bigger data set," Cole said. "The primary reason given was the health issue. The selling price for the finished steers was not very helpful either."

Steers were sold on Nov. 1 and received $165.17 on the first kill and $177.21 on the December date. For comparison purposes, those prices were given a weighted average price of $172.28.

"Even though there are negatives, we had two steers that actually returned a profit," said Cole.

Prairie View Farms, Vandalia, had the best profit steer at $91.48 per head. He was born Sept. 6, 2015, out of a Sim x Angus cow bred to a Simmental bull. He arrived at the feedlot weighing 685 lbs. He sold on Dec. 6 weighing 1,453 lbs. Those weights gave him an overall gain per day of 4.22 lbs. His set-in price in June was $153 per cwt. He made low Choice with a 2.3 Yield Grade, 0.42-inch fat, 16.3 square inches of ribeye. He did not receive any individual treatment.

The other profitable steer came from Steve Jones, Mt. Vernon. He was out of a Simmental cow and an Angus bull. He was born Oct. 19 and began the finishing phase at 770 lbs. His final weight was 1,391 lbs. on his kill date, Dec. 6. His overall ADG was 3.41 lbs. Rib fat thickness was 0.41 inch, ribeye area was 12.4 square inches, and his carcass yield grade was 3.3 with a Choice carcass grade. This quality grade boosted his profit as he netted an $11 per cwt Certified Angus Beef premium. He did not get sick so treatment cost also aided his closeout profit.

Next Feedout

Persons with an interest in putting steers in the next feedout might obtain details from their Missouri Extension livestock specialist or go online at: www.swmobcia.com

The next feedout will begin June 7 for steers born after July 1, 2016.

—Source: University of Missouri Extension release.

PASTURE PLANNING

Check in on Wheat Maturity

When to respond to wheat stages

Now is a good time to make wheat management decisions, according to a University of Missouri Extension agronomist.

Wheat maturity does not follow a calendar. Instead, wheat development depends on weather and planting date, says Anthony Ohmes.

During the spring, wheat's growth stages help producers decide when to top-dress nitrogen to improve tiller development and stands. Growth stages also indicate when it's time to apply post-emergence herbicides for weed control, and scout for soil-borne viral diseases and early-season foliar diseases. Livestock producers should also remove grazing cattle just prior to wheat's jointing when the base of the stem is hollow, Ohmes says.

He suggests Purdue University's free guide "Managing Wheat by Growth Stage" at extension.purdue.edu/extmedia/ID/ID-422.pdf.

"Initial evaluation of fields should include overall condition of stand and number of tillers present," Ohmes says. "With the warm fall and December, wheat tiller numbers might be more than 80 per square foot. When tiller numbers reach approximately 80 or more, hold off nitrogen applications until pre-jointing green-up."

This practice could also reduce nitrogen loss and excessive early spring growth that can decrease sensitivity to freeze injury. Fields with fewer than 80 tillers per square foot in the fall to late winter could benefit from split applications of nitrogen.

Ohmes recommends urease inhibitors containing the active ingredient NBPT when applying urea-based fertilizer. He also recommends tissue tests just before jointing to determine nitrogen needs.

—Source: University of Missouri Extension.

February is a good time for wheat growers to review management decisions. Wheat's growth stages help producers decide when to top=dress nitrogen to improve tiller development.
— Photo courtesy of Tyler Mudd, a graduate of the University of Missouri and Monroe County farmer.

ECONOMIC INDICATORS

Managing Risks Key to Market Uncertainty

Long-term price outlook normal; unexpected news can change prices

"Why do you hang on to your calves?" the beef economist asked cow-herd owners in the room.

Scott Brown answered his own question: "Because their price is going up. Right?"

Brown, University of Missouri Extension, cautioned, "There are still downside risks."

Risk remains in spite of slowing of sharp price declines since October. Some stability appears in beef prices.

"Unforeseen events cause volatility," Brown reminded the gathering of producers of Show-Me-Select replacement heifers. "Market shocks occur in response to news."

For example he said that a release of the USDA cow inventory Jan. 31 might contain surprises. "If cow numbers are sharply higher, that could cause a drop in beef prices."

"I get arguments in both directions, up and down, on cow numbers," he said. However, he admitted he thought more cows would be reported in the U.S. herd. One reason is continued holding back of more heifers.

Brown explained that a mountain of meat—pork, chicken and beef— already faces U.S. consumers. A growing cowherd will only add to the supply of beef to be sold.

News after the cow count release could drag markets down. "You might consider future downside risks when deciding when to sell calves," Brown said.

However, when he asked producers if they increased their herds, few held up their hands. "I could be wrong on a growing cow herd," he said.

Brown said that international trade plays a big part in the price of domestic meat. Trade policy and value of the dollar both affect that foreign trade.

"Recognize that those changes affect your marketing decisions," he said.

A strong dollar makes prices higher in other countries for buyers of U.S. beef. "If we can't sell beef abroad, that means that meat must be consumed here at home," Brown said. "The main way to move more meat is to lower prices."

Brown also urged producers to consider risk management in their marketing.

In his overall outlook on cattle prices, he said, "We may be returning to what is a long-term normal price level."

Brown said managers must realize that input expenses don't adjust down as quickly as market receipts.

He reminded producers that weather is a big player in determining the size of the cowherd. Drought, especially in the south-central plains, started the huge drop in cowherd size that led eventually to record high cattle prices in 2014.

Changing economics can also affect individual farm decisions, and major events affect all of agriculture. Commodity price swings can cause planning headaches for beef producers.

To prevent at least some of those headaches, the Show-Me-Select heifer producers follow management and genetic guidelines developed at the University of Missouri. Protocols, such as for calving ease, add value to heifers coming into the herd.

Heifers with proven genetics add price premiums to replacements sold in the annual spring and fall heifer sales.

Repeat buyers at the sales learn that heifers with better genetics outperform old cows they replace. Return buyers bid more at the next sale to buy quality

Brown told beef producers that adding quality is a form of risk management.

Is She a Keeper?

Improve pregnancy rate with a pre-breeding exam

One of the early requirements in the Missouri Show-Me-Select Heifer Program is the pre-breeding examination.

"The exam, done by a veterinarian, normally four to six weeks before breeding will increase the pregnancy rate in virgin heifers," said Eldon Cole, a livestock specialist with University of Missouri Extension.

The exam is done by rectal palpation. The veterinarian feels for the normalcy and stage of development of the female's reproductive tract. They score the tract on a 1 to 8 rating system. Heifers scoring a 1 have an infantile tract and the chances of them breeding are very low.

The freemartin condition, normally seen when a heifer calf is born — or carried some time — with a bull calf, is scored an 8. Each of these scores, basically means they're poor candidates to be artificially bred or turned out with the bull.

The other scores should be considered as follows: 2 indicates the heifer is not cycling and needs more time and probably more feed to start cycling; a 3 is not cycling but getting close. A 4 is cycling or soon will, a 5 definitely has cycled, a 6 is given if the heifer is pregnant, and a 7 indicates a shot was given to abort her.

After the veterinarian tract scores the heifer, height and width of the pelvic opening are measured. The Show-Me-Select program requires heifers to have a minimum of 150 square centimeters pelvic opening.

Heifers close to the minimum are given a second chance and are measured a second time at the first pregnancy test. At that time, they must have at least a 180 square centimeters opening.

During the exam in the Missouri program, heifers are checked for phenotype problems such as lameness, temperament, pinkeye scars, light muscling, extreme frame size and other blemishes such as frost-bitten ears and tails.

Exam Reduces Problems

"The veterinarian's information improves the virgin heifer conception rate and the bunching of their calf crop," said Cole.

The recommendation for top first-service conception is to have at least one-half of the heifers scoring a 4 or 5 at pre-breeding.

"Just because a heifer is the biggest one in the bunch showing great eye appeal doesn't mean she's a keeper."

–Eldon Cole
University of Missouri Extension
Livestock Specialist

Back in November, Cole received data on the pre-breeding scores of 40 heifers.

"Four of the 40 were eliminated because of either a very small pelvic opening or a 2-tract score," said Cole. "The veterinarian found one heifer 4.5 months pregnant and another was a freemartin."

By doing the exam, the owner eliminated 15 percent of the potential replacement problem upfront before wasting time with heat synchronization protocols, artificial insemination, and the associated costs.

"Just because a heifer is the biggest one in the bunch showing great eye appeal doesn't mean she's a keeper," said Cole. "Let your veterinarian help you decide which ones to keep."

How to Manage What You Can Measure

Getting a handle on late-term abortions

Story By Rebecca Mettler for Cattlemen's News

The heifer or cow is bred; the pregnancy survived the early embryonic loss time period, and the first and second trimesters are passed. Even though many things have gone right, and late-term abortions are not necessarily a commonplace, they can happen.

Producers should get concerned and consider it an abnormal situation if a group of cows beyond the sixth month of gestation experience a three percent abortion rate. If that's the case, producers need to document when the abortion(s) happened, which cow(s) were affected and collect the fetus if they want to send it to a lab for diagnostic testing, according to David Cupps, D.V.M., senior staff veterinarian at Barry County Veterinary Service in Cassville, Missouri.

"A lot of abortions are not diagnosable," Cupps said. "I would suspect that more than half are not infectious or toxic pathology, but are genetic in nature."

However, if a communicable disease is suspected as the cause of late-term abortion, the producer needs to contact his or her veterinarian and discuss a plan of attack to identify the disease culprit.

Cupps says leptospirosis infectious bovine rhinotracheitis (IBR) is the most prevalent disease that causes abortions in cattle in southwest Missouri. Other causes include bovine viral diarrhea (BVD), infection from the protozoa Neospora and mycotoxins.

A commonsense approach to working with producers who have had a late-term abortion in their herd can be applied, Cupps says. When a producer calls him with a third-trimester abortion, he asks if it's possible to collect a blood sample on the cow or heifer that aborted. Once the blood sample is collected, Cupps refrigerates the sample for a period of time in case there's another late-term abortion in the same herd. If so, he requests an additional blood sample from the cow that he received the first sample from and will run serological tests on those blood samples to get an indication of changes in immune status that reflect the presence of a communicable disease.

"There's always the old adage that you can't manage what you don't measure," Cupps said. "It's important to keep track of how many aborted and when it happened for epidemiologic purposes during an abortion outbreak. It's a what, when, how, why kind of scenario."

A producer can choose to send a freshly aborted fetus to a diagnostic testing lab. However, Cupps said that according to research, under the best circumstances, a definitive answer to why the abortion occurred is obtained only 30 percent of the time.

"Once you get into a late-term abortion storm, it's too late," Cupps said. He prefers to work from a preventative approach.

The best defense against late-term abortion is to implement and maintain an effective vaccination program focused on reproductive diseases. Consulting with a trusted veterinarian that knows the producer's operation and specific region is key.

If using a modified live vaccination program, the administration of a vaccine must be completed pre-breeding to provide protection to the fetus. Producers need to make sure they are administering vaccines according to label instructions.

Losing a calf to late-term abortion is not easy for producers to accept, but sometimes it happens. Cupps wants producers to remember these four points:

1. Consult a veterinarian to get on a good vaccination schedule.

2. Consider diagnostic work with the help of a veterinarian to determine the most cost-effective route.

3. Don't be surprised if you don't find out what caused an abortion.

4. Don't be discouraged. It's possible that by the time you receive the diagnostic testing results naming the disease responsible that the disease has already passed through the herd.

In the end, having a good relationship with a local veterinarian can help more easily navigate through many questions that might result from an increase in late-term abortions in an operator's beef herd.

Live calves help protect a cattleman's bottom line. The best defense against late-term abortions is to implement and maintain an effective vaccination program that focuses on reproductive diseases. —Photo by Joann Pipkin

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MERCK Animal Health

Better Bull-Buying

Prior, proper planning precedes profitable purchases

Story By Bob Weaber

As the bull-buying season gets underway, commercial cattlemen should do their homework to help ensure the bull(s) they purchase this year meet their needs. Like most things in life, preparedness is the key to making an informed decision — in this case, an informed purchase. Remember, bull selection accounts for more than 75 percent of the gene flow in your herd. Take the time to do the $500 per hour work in bull selection and let some of the $5 per hour work wait until after bull purchases are made. Before you crack open the sale catalogs of seedstock suppliers, you should possess a few resources and skills.

First, make sure you understand the use of Expected Progeny Differences (EPD) and selection indexes. While EPDs are not the only selection information you should consider, EPDs are the most effective tools available to describe the genetic differences between animals within and across herds. EPDs are much more effective genetic predictors than actual or adjusted performance records. If an EPD is available for a trait, it should be used instead of an animal's own performance record for that trait. The EPD removes age and environmental effects that can bias a decision based on actual or adjusted performance records. Use Calving Ease (CE or CED) EPD, rather than birth weight (BW) EPD, if it's available to select bulls that minimize calving difficulty. CE EPD calculations include BW data and other sources of information that affect dystocia.

Not all EPDs are the same, so make sure you know the appropriate information for the breed of cattle you are purchasing. For a useful reference on EPDs and other genetic topics, see the Beef Sire Selection Manual available through the National Beef Cattle Evaluation Consortium. You can find it online at http://www.nbcec.org/producers/sire.html. Obtain the breed average EPDs and a percentile rank table available from the most current genetic evaluation for the breed of interest. Percentile rank tables can be found on most breed association websites. These tools will enable you to compare the relative genetic merit of individual animals to other animals in the breed.

Second, make sure you know what traits you would like to improve in your herd. What breed(s) fit in your mating system? If you are using a crossbreeding system, make sure the breed you selected fits your objectives. Other factors to consider include the source of replacement heifers and progeny marketing endpoints such as weaning, back-grounded or in the beef. Assessment of these factors will help point you to the best breed for your needs and the combinations of maternal/growth/carcass traits that best fit your operation and environment. Be sure to apply selection to traits that have direct economic importance in your production system.

Third, set a realistic budget for bull purchases. Like most things in life, price is driven by quality. Evaluation of a seedstock supplier's prior year sale averages will give you an idea of what to expect in terms of purchase costs. A good rule of thumb is that a quality seedstock bull costs roughly the same as the value of four to five feeder steers in the current market. The purchase cost highlights the importance of making a well-thought-out decision.

CONTINUED ON NEXT PAGE

Live calves help protect a cattleman's bottom line. The best defense against late-term abortions is to implement and maintain an effective vaccination program that focuses on reproductive diseases. *—Photo by Joann Pipkin .*

Before You Buy Your Next Bull:

1. Make sure you understand the use of Expected Progeny Differences (EPD) and selection indexes.

2. Make sure you know what traits you would like to improve in your herd.

3. Set a realistic budget for bull purchases.

4. Get to know your seedstock supplier and make sure he or she knows you and your operational goals.

BETTER BULL BUYING FROM PREVIOUS PAGE

Fourth, get to know your seedstock supplier and make sure he or she knows you and your operational goals. Seek out recommendations from your supplier well in advance of the sale. Once you receive the sale catalog, make a short list of bulls — roughly three times more than you actually need to purchase — that fit your specifications. Arrive at the sale site early to inspect the bulls on your short list. Shorten this list of candidates based on conformation and updated data to identify your purchase candidates. Keep the sale order in mind. Stay focused on the bulls you selected earlier. Sticking to your plan will avoid impulse purchases. Remember: Failure to plan is planning to fail.

—Source: Bob Weaber is Kansas State University Extension cow-calf specialist.

MANAGEMENT MATTERS

Technology for Your Toolbox

Genomic testing for commercial cattlemen

Story By Austin Black for Cattlemen's News

Genomic testing helps determine the genetic potential of animals early in life. It measures the same information as EPDs, but provides more accurate data sooner. What about generations to come?

"To get a genetic prediction of what an animal is worth as a parent of the next generation, we have to have some measure of their genetics or how they relate to other animals," said Dr. Jared Decker, University of Missouri assistant professor beef genetics.

For years, EPDs have provided this measurement. Using pedigree information and several sets of offspring, EPDs measure an animal's expected performance. EPD accuracy is low until enough data is collected on calves to confirm the number. Genomic testing increases the accuracy without the need for numerous sets of data. Genetic data replaces pedigree information. Now, EPDs have a more accurate number to begin with since they are based on true genetic data.

Genomic testing started in the seedstock industry. But the technology has a place in commercial operations also. Cow/calf producers can use genomic testing to improve their cowherd through better breeding decisions.

Less risk

Commercial producers can buy bulls with genomically enhanced EPDs (GE EPD). Those who buy young bulls with GE EPDSs can get data only available otherwise from a proven sire. "In my opinion, genomic testing for purchasing a herd bull is absolutely necessary," Decker said. "As a commercial producer, we want to buy bulls we have confidence in so there's less risk in our purchasing decision. We see that if a bull has an EPD accuracy of .05 and we do DNA testing, that accuracy will jump to a .25, .3 or .4."

That's a big jump for unproven bulls. More accurate EPDs give producers confidence the bull will perform as needed.

University of Missouri Beef Geneticist Jared Decker said genomically enhanced expected progeny differences (GE EPDs) can help commercial producers make purchasing decisions. Buyers of young bulls with GE EPDscan get data only available otherwise from a proven sire. — *Photo by Joann Pipkin.*

"When buying a bull for heifers, we want to make sure it's a calving ease bull," Decker said. "We don't want to wait nine months to find out."

Planning is key

Cow-calf producers can use genomic testing within their own herd, too. Testing heifers helps identify superior females and those that should be culled. Producers can test for weaning weight, marbling and mature cow size, among other traits.

"Now, with these commercial heifers that we know little about, we have genetic predictions that we wouldn't know unless they were registered," Decker said.

The key is having a plan to get a return on the investment. Decker said the easy return is retaining ownership of steers in a feedlot. "Genomic testing gives producers more data on females that will raise steers sent to the feedlot and hung on the rail," he said. "Genomic testing can help benchmark where their operation is and if they're ready for that or not."

Genomic testing adds value to steers, regardless of whether or not ownership is retained. Decker said the testing average on heifers equals the average on steers. This means a producer can test his heifers and use the information to market his steers. "You don't have to retain ownership of your steers to get paid for their value in the industry," he said. "Companies like Top Dollar Angus and Reputation Feeder Cattle allow producers to DNA test their heifers and more aggressively market their steers."

Testing heifers also improves the cowherd long-term. But, producers should understand change won't happen immediately. "We're selecting cattle with better stayability, fertility and genetics profiles for a more profitable herd," Decker said. "It's about making improvements year after year. You won't see a difference in one calf crop. It will be four or five calf crops later."

It's also important to test more heifers than are needed for replacements. This provides a better return on investment for the operation. "If we're keeping 20 heifers for breeding and just test those heifers, we haven't used the information," Decker said. "We need to test at least double the number of heifers we plan to keep and let the DNA rank them."

If this is the route producers choose, index EPDs work well. These combine several traits in one EPD, making the most effective use of the technology. Decker recommends this approach if producers plan to sell their calves at weaning.

Cost versus return

Producers should consider a few points before testing their herd. Decide if the cost is worth the return. "If you're trying to run a very low-input and low-cost operation, it probably doesn't make sense to DNA test those heifers," Decker said. Producers can still use the technology to make sire selections though.

Genomic testing is breed-specific so it's important a producer's herd be eligible. Producers with purebered cattle can contact their respective breed association for more information. Decker said crossbred cattle should be comprised of the purebred breeds that utilize genomic testing. Igentity and Zoetis both offer tests for these crosses. "There are a lot of options, but make sure the heifer genomic panel is designed for the breeds in your herd," Decker said.

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MANAGEMENT MATTERS

Putting the Preg Check Results to Work

Find out overall cowherd fertility and prepare for next calving season

Pregnancy check day is one of the most important days on the ranch as it is the day when we find out what cows are pregnant and how many calves we can expect come calving season. So now that the veterinarian has left the yard and the open cows are sorted off, what's next? Before throwing the preg check list on the dashboard never to be looked at again, try to reflect on the results. Take some time to sort through them to uncover valuable information such as breeding season management and what to expect for the upcoming calving season.

Analyzing Your Results

First start by finding the following information:

- Number of cows at the start of breeding season
- Start and end dates of breeding season
- Cow death loss, culls, non-breeders

Utilizing pregnancy check results and the above information to determine the following:

Pregnancy Rate (%)

(# of cows diagnosed pregnant / # of cows exposed to breeding) x 100

Pregnancy checking can determine the overall fertility of the cowherd. If pregnancy rate is lower than desired, areas such as type of breeding program and bull-to-cow ratio should be analyzed to pinpoint where adjustments are needed. Also, evaluate pregnancy rates by sorting cows into age groups to see if a certain age group is falling out of the herd, such as 2-year-olds or old cows.

Pregnancy Distribution

(number of cows that became pregnant during days 1 – 21 of the breeding season, days 22 – 42, days 43 – 63, days 64 – 84, and 85 or more days after the start of the breeding season)

Analyzing pregnancy distribution can be used as a guide to prepare for the calving season. Not only can the barn be ready by the time the first calf hits the ground, but you can also determine when the majority of the calves will be born, and adjust labor and feed resources accordingly. For example, Figure 1 shows the pregnancy distribution from a cowherd where 66 percent of cows became bred during the first 21 days of the breeding season. The strength of the cowherd in Figure 1 is that more than 80 percent of calves will be born during a 40-day period resulting in a larger, more uniform calf crop to take to market.

Culling Rate (%)

(# of cows died, open or sold / # of cows exposed to breeding) x 100

If a greater than normal cull rate is observed, records can help identify what might have gone wrong. Start by assessing the body condition and health records as poor nutrition or sickness could be reasons for more open cows. Keeping track of culling rate will help determine the number of replacement heifers needed to maintain herd size.

In addition, if bulls become injured early in the season, more cows will likely be bred during the 2nd or 3rd cycle. Reproductive diseases such trichomoniasis (trich) can also be spread if an exposed bull is carrying the disease or if a neighboring bull with trich jumps the fence and joins the herd for a period of time. While cows can clear the infection, bulls remain positive for life and throughout the breeding season and cause loss of pregnancies. Figure 2 shows what the pregnancy distribution might look like if a bull injury went unnoticed or if a herd was exposed to trich during the breeding season.

Benchmarks

Records such as pregnancy and cull rates are critical in that they give insight into management areas that affect reproductive and economic success of the herd. Keeping consistent records from year to year will allow benchmarks to be created unique to each herd, which can then be used for comparisons and performance analysis. If cowherd records are sparse, industry averages or benchmarks can be utilized for initial comparison until more years of records are collected.

—Source: South Dakota State University Extension.

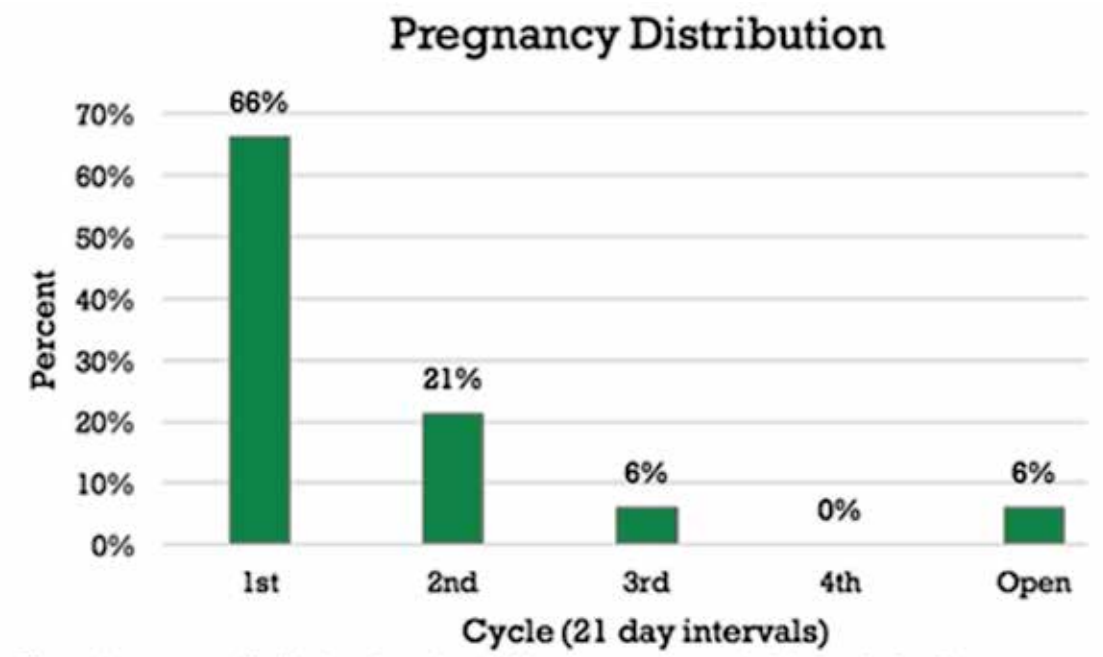

Figure 1. Pregnancy distribution shows when and how many cows were bred during the breeding season.

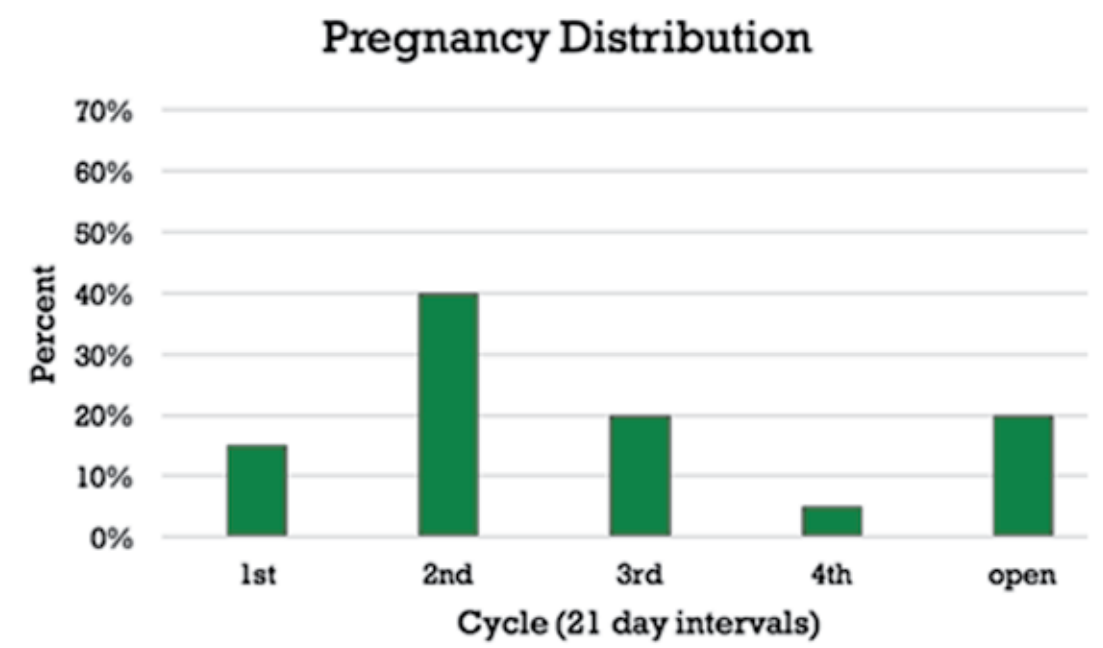

Figure 2. Pregnancy distribution of a cowherd with bull injury early in the season and a trich infection resulting in more open cows at the end of the season.

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MANAGEMENT MATTERS

Hitting the Target

Calving distribution impacts the bottom line

Story By Lisa Henderson for Cattlemen's News

Calving season is upon us, often a time of long hours and sleepless nights for ranchers. It marks the beginning of your year's work and will ultimately determine the size of your fall payday.

Proper cow nutrition and animal health programs are critical to your herd's production, but one management practice that costs little and provides a significant return is often overlooked — calving distribution. That's the term that describes the percentage of your herd that calves in a given window of time. For calculation purposes, the start of the calving season is when the third mature cow calves, or calculated based on a known bull turnout date, using a 283-day average gestation length.

Your target, according to extension beef specialists, is to have 65 percent of your herd calving during the first 21 days of the season, and 85 percent of your herd calving within 42 days. The more cows that calve in the first 21 days the better — for health, reproduction, calf weaning weights and carcass quality.

"Calving distribution reflects the reproductive response and fertility of the herd," explains Sandy Johnson, Kansas State University extension specialist. "Different patterns of calving distribution can indicate how well the genetics and nutrient demand of the herd match what was supplied. It is a score card of cumulative management decisions over an extended period of time."

Kansas State University Extension Specialist Sandy Johnson said shortening the yearling heifer breeding season might help correct any difficulty in getting 2- and 3-year-olds re-bred.
—Photo by Joann Pipkin.

For many ranchers, calving distribution might represent the only score card they have of their herd's reproductive success. That's because most herds don't know the exact date each cow was bred, unless artificial insemination was used. Therefore, the only reproductive event that is easily trackable is calving date.

University of Nebraska Extension Beef Specialist Rick Rasby describes the importance of calving distribution, saying, "Spring-calving cows that calve in adequate body condition (BCS = 5) tend to breed and calve earlier in the calving season and have calves

CONTINUED ON NEXT PAGE

that are older and heavier at weaning compared to those cows that breed later. In a cow herd that calves in a short calving period, most cows are in a similar stage of production and it is easier to develop rations that meet the requirements of the majority of the cow herd."

While the benefits of early-calving cows are significant, early-calving is even more important for heifers.

"Heifers that are born early have higher pregnancy rates as yearling heifers and more calve in the first 21 days of the subsequent calving period," Johnson says. "Heifers that conceive early the first breeding season have greater longevity in the herd and in one study produced 350 more pounds of weaning weight by the 6th calf."

At today's prices for 500-pound weaned steer calves, that extra 350 pounds would produce an additional $575 by the sixth calf, or nearly $100 per year.

"Male calves that were steered and data recorded from birth to harvest indicated calves born the first 21 days of the calving season had a significant advantage compared to calves born in the second or third 21-day period," Rasby says. "Early-born calves were heavier at weaning, had more carcass weight at harvest, and more had a USDA Marbling Score of Modest or greater (grading Choice or Prime) when compared to calves born in the second or third 21 days of the calving season."

Managing your calving distribution also provides advantages for the replacement heifers that will enter your herd. Rasby says early-born heifers are heavier at weaning; more likely to be cycling at the beginning of their first breeding season; had higher pregnancy rates than heifers born in the third 21-day calving period; and,

"Calving distribution reflects the reproductive response and fertility of the herd."

–Sandy Johnson
Kansas State University Extension

more calved in the first 21-day period of their initial calving season.

Research also suggests that when a heifer initially calves during the first 21-days of the calving season she is more productive and stays in the herd for more years than those that initially calve during the second or third 21-day periods of their first calving season.

"If producers have difficulty getting 2- and 3-year olds to rebreed," Johnson says, "shortening the yearling heifer breeding season may help correct that problem over time, although other factors may need to be addressed."

Heifers generally need more time after calving to return to a normal estrous cycle, a fact that might be associated with calving difficulty or the higher nutritional demands of a still-growing and now lactating 2-year-old. Giving heifers a head-start at breeding is one solution.

"Breeding heifers to calve ahead of the cow herd might be helpful," Johnson says. "By using a short breeding season for yearling heifers (30-45 days), you don't even create the time-challenged 2-year-old that doesn't start cycling until late in the mature cow breeding season."

MANAGEMENT MATTERS

Maximize the Female Potential

Make a long-term commitment to match cows with their environment

Story By Lisa Henderson for Cattlemen's News

Weather and markets might influence ranch profits, but unlocking the potential of the cows in your herd could be the ultimate key to your long-term success.

Describing the influence of cows on ranch profitability, Oklahoma State University Animal Scientist Dave Lalman said cows should to match their environment efficiently.

"Efficient cows reach sexual maturity early, have a high rate of reproduction, low rates of dystocia, longevity, minimum maintenance requirements, and the ability to convert forage resources to pounds of beef," Lalman said.

Lalman stressed that ranchers must make a long-term commitment to improve their cow's environmental match without needing to increase inputs. He suggests that moderation in size, milk and muscle is needed, and that producers should keep only early-born and early-bred heifers.

Nutrition is always important to maximize the potential of your cows, and as calving season nears for many ranches, now is a key time for the cow and her unborn calf.

"In the third trimester, energy and protein requirements begin increasing rapidly as the fetus continues to grow," said Mark Corrigan, beef technical services manager with Merck Animal Health. "We need to ensure that the feeds available meet energy, protein, vitamin and mineral requirements for the cow at the stage of production she is in."

Corrigan said producers should look at the value requirements for beef cows and ensure that your nutrition program is adequate. That usually requires that feedstuffs be tested so that nutritional value can be assessed. Once that is accomplished, make sure your cows are body condition scored.

"Increasing body condition score during late gestation and early to mid-lactation can be a challenge because the cow's energy requirements are relatively high during these periods," Corrigan said. "The rapidly growing fetus increases the cow's energy demands and these demands will only continue to increase as cows are rebred and reach peak lactation."

Assessing body condition score before and after calving will allow you to determine if your nutrition program is adequate for the breed, weight of cows and your environment.

Your cows' condition will be critical to their re-breeding success, which is generally 30 to 90 days after calving. This is the period of peak energy need for the cow herd.

"Her energy requirements are continually increasing because she is working toward peak lactation, which occurs somewhere around 60 days after gestation," Corrigan said. "Because of the increasing energy requirements, cows need to be on an increasing plane of nutrition through late gestation and early lactation to ensure that body condition is adequate. Additionally, vitamins such as Vitamin A, D, and E as well as minerals like phosphorus, copper and zinc must be adequate to ensure acceptable conception rates."

Adequate nutrition is a critical component to help her reach her potential, and it's vital for her calf, too.

"Proper nutrition of the cow not only impacts her growth, health and reproduction, but her nutrition plane during gestation can also have long-term impacts on the growth and health of the calf she produces," Corrigan explained. "During gestation, the nutrition plane of the cow will determine gene expression of the calf, and inadequate nutrition can impact the growth and health of the offspring for a lifetime."

Nutrition is important for your cows, and even more critical for your replacement heifers. Beef specialists say your goal for breeding heifers is to reach a target weight of 60 percent to 65 percent of mature weight at a body condition score of 6, which should be accomplished 30 to 45 days prior to breeding.

"To reach that goal, heifers typically need to gain between 1.25 pounds and 1.75 pounds per day to ensure that growth is adequate without getting too fat," Corrigan said. "When heifer development is done in a dry lot, achieving the proper plane of nutrition is relatively simple. However, in a grazing situation, lush pastures might allow heifers to deposit more fat than desired, and drought or mature forage conditions will require supplemental energy and protein. Again, inadequate supply of vitamins and minerals can impact conception rates here as well."

Additionally, Corrigan said ranchers must consider parasite control for their herd if the goal is to help cows reach their potential.

Internal parasites impact the nutritional status of the animal in three ways: they reduce feed intake; they reduce nutrient absorption in the digestive tract; and they increase protein and energy requirements of the animal, he said. Internal parasites also alter the immune response and can have a negative effect on responses to both vaccines and pathogens.

"The largest technology-related economic return available in a cow-calf operation is a proper deworming program," Corrigan said. "A strategic deworming program to manage parasites in the animals and on the pasture is the foundation of a good herd nutrition and health program. If we don't manage internal parasites, they will impact both the health and nutrition status of the herd."

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Bunostomum phlebotomum – Adults and L_4	*Dictyocaulus viviparus* – Adults
Cooperia oncophora – Adults and L_4	
Cooperia punctata – Adults and L_4	
Cooperia surnabada – Adults and L_4	
Haemonchus placei – Adults	**Grubs**
Oesophagostomum radiatum – Adults	*Hypoderma bovis*
Ostertagia lyrata – Adults	
Ostertagia ostertagi – Adults, L_5, and inhibited L_4	
Trichostrongylus axei – Adults and L_4	**Mites**
Trichostrongylus colubriformis – Adults	*Sarcoptes scabiei* var. *bovis*

Parasites	Durations of Persistent Effectiveness
Gastrointestinal Roundworms	
Bunostomum phlebotomum	150 days
Cooperia oncophora	100 days
Cooperia punctata	100 days
Haemonchus placei	120 days
Oesophagostomum radiatum	120 days
Ostertagia lyrata	120 days
Ostertagia ostertagi	120 days
Trichostrongylus axei	100 days
Lungworms	
Dictyocaulus viviparus	150 days

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Animals intended for human consumption must not be slaughtered within 48 days of the last treatment.
This drug product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows.
A withdrawal period has not been established for pre-ruminating calves. Do not use in calves to be processed for veal.

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The product is likely to cause tissue damage at the site of injection, including possible granulomas and necrosis. These reactions have disappeared without treatment. Local tissue reaction may result in trim loss of edible tissue at slaughter. Observe cattle for injection site reactions. If injection site reactions are suspected, consult your veterinarian. This product is not for intravenous or intramuscular use. Protect product from light. LONGRANGE® (eprinomectin) has been developed specifically for use in cattle only. This product should not be used in other animal species.

When to Treat Cattle with Grubs

LONGRANGE effectively controls all stages of cattle grubs. However, proper timing of treatment is important. For the most effective results, cattle should be treated as soon as possible after the end of the heel fly (warble fly) season.

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Not for use in bulls, as reproductive safety testing has not been conducted in males intended for breeding or actively breeding. Not for use in calves less than 3 months of age because safety testing has not been conducted in calves less than 3 months of age.

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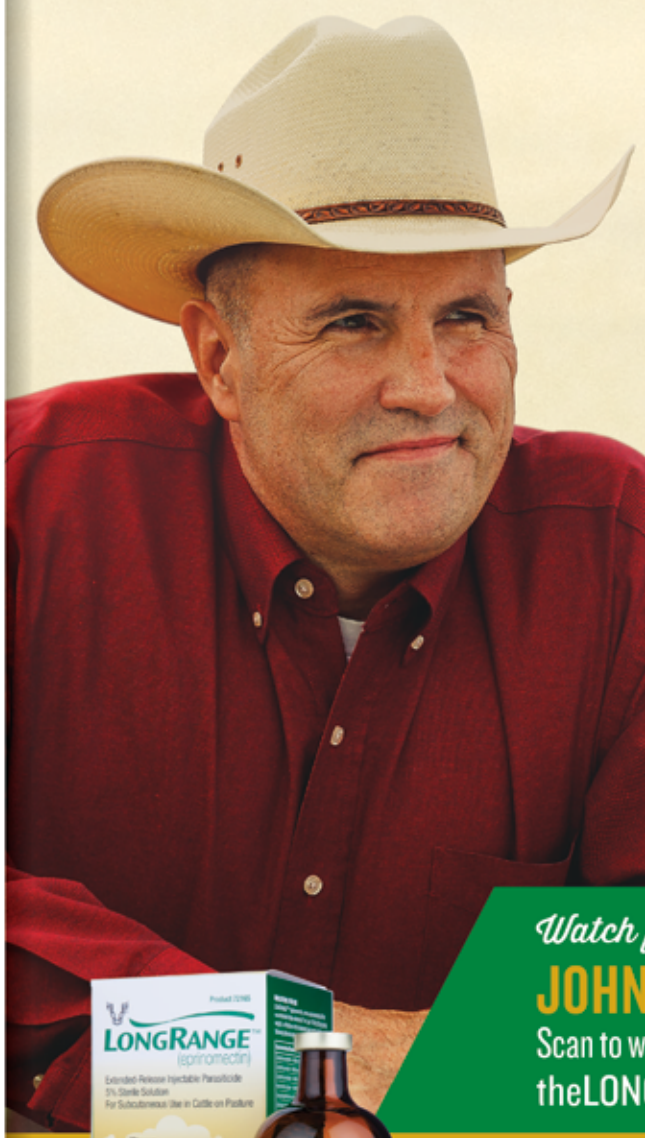

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[1] **Dependent upon parasite species, as referenced in FOI summary and LONGRANGE product label.**
[2] LONGRANGE product label.
[3] Data on file at Merial.

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[a] Average 2014-born bulls, adj. to Angus base, U.S. Meat Animal Research Center Across-breed EPD Adjustments, BIF 2016. [b] Here's the Premium study, 2014, Certified Angus Beef LLC
[c] Packer Premium Survey, 2015, Certified Angus Beef LLC

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MANAGEMENT MATTERS

BSE 101

Breeding Soundness Exams can play a key role in reproductive success in the cowherd

Story and Photos By Jillian Campbell for Cattlemen's News

Imagine, you're at a bull sale with plenty of spending money, and you come across a real eye-catcher. You picture yourself owning this bull and introducing his phenomenal traits into your herd. While nothing appears to be wrong with the bull based off of his favorable physical appearance, you can't be sure that he's sound reproductively. Do you purchase him or wait until a breeding soundness exam (BSE) can be performed?

Dr. Paul Gautz, D.V.M., a seasoned large animal practicioner, suggests you choose the second option.

How BSEs work

More than familiar with how BSEs work, Gautz estimates that he performs about 100 BSEs on bulls annually for his southwest Missouri-based clinic. Even if he was unfamiliar with veterinary work, Gautz says he would still be sure to see a bull's BSE score before purchasing or selling him.

BSEs should include a physical analysis of soundness, a test for Trichomoniasis (trich) and a microscopic sperm analysis, he says.

"First of all, you should observe the bull walking in to make sure he is sound, and then you'll palpate the reproductive organs, being the testicles and the penis," Gautz explains. "Then, the actual ejaculation process is very variable. It sometimes takes longer than others, but 15 to 20 minutes is probably a normal period."

"BSEs can also help identify good bloodlines before your first calf crops so you can see a bull that might sire bull calves that are apt to hit puberty at an earlier age."

– Dr. Paul Gautz, D.V.M., Sarcoxie, Missouri

BSE tests for trich in non-virgin bulls have become more important at this point in his career, as the prevalence of the venereal disease is on the rise, he notes.

According to a University of Arkansas Livestock Health Series article, trich is a protozoa organism, scientifically known as Tritrichomonas foetus, which is transmitted from an infected bull to a cow during breeding. Trich can cause infertility and early embryonic death within a herd, ultimately affecting a producer's bottom line.

"Trich tests begin with a collection of fluid and skin cells from the prepuce (foreskin)," Gautz says. "I'll attach a vacuum with a syringe on it while aspirating some of the surface cells and fluid, and then I'll put this in a special medium before sending it to the lab. Those results take about four days to get back."

CONTINUED ON NEXT PAGE

Dr. Paul Gautz said scrotal circumference has been linked to fertility and puberty onset in females. He also cautions cattlemen that just because a purebred bull might be destined to perform well in a sale, doesn't guarantee him to pass a breeding soundness exam.

Bull breeding soundness exams (BSE) are best performed three to four weeks before breeding season and should include a physical analysis, a trichomoniasis test and a microscopic sperm analysis. To pass a BSE, a bull must have at least 30 percent sperm motility, 70 percent normal sperm morphology and a minimum scrotal circumference based on age.

BSE 101
FROM PREVIOUS PAGE

A good amount of time during BSEs is spent behind a microscope in hopes to identify a healthy and active sperm count, Gautz says.

"We look for the numbers of lives compared to deads, the amount of forward-moving sperm, and if it's a poor sample, you should do a stain to look for normality," Gautz says. "That's not always necessarily a part of the process, but it can be done."

Gautz says the best time to perform a BSE is three to four weeks before breeding season, which is enough time to make adjustments if needed. He also suggests that buyers and sellers of bulls make prior arrangements for a BSE to be performed. Gautz explains that BSEs have been useful in identifying good bloodlines in groups of cattle that are known for higher fertility rates.

Another important part of the BSEs performed by Gautz occurs during the measurement of the bull's scrotal circumference.

"A minimum scrotal circumference for a 15-month-old bull is 30 cm, so you would like it to be above that," Gautz says. He has a scale that also makes adjustments for age.

Just as he believes in microscopic analysis, Gautz also believes in the science behind scrotal circumference calculation.

"They have linked scrotal circumference to fertility and puberty onset in females," he explains. "BSEs can also help identify good bloodlines before your first calf crops so you can see a bull that might sire bull calves that are apt to hit puberty at an earlier age."

Table 1. Minimum scrotal circumference requirements for bulls to pass a breeding soundness evaluation, by age.

Age in months	≤15	>15-18	>18-21	>21-24	≥24
Scrotal circumference (cm)	30	31	32	33	34

Source: Chenoweth, P.J., J.C. Spitzer, and F.M. Hopkins. 1992. A new bull breeding soundness Evaluation form. *Proceedings of Annual Meeting, Society for Theriogenology, San Antonio, Texas. Pp 63-71.*

What's in a BSE score?

According to guidelines set by the American Society for Theriogenology, to pass a BSE, a bull must have at least 30 percent sperm motility, 70 percent normal sperm morphology and a minimum scrotal circumference based on age.

Gautz explains that after all calculations are made, a BSE will be given as a numerical score that should be in the high 80s or 90s range. While he always hopes to find that passing BSE score, Gautz also wants producers to realize that by recognizing a bull's failure to pass a BSE, they are saving themselves from a lot of reproductive failure within their herd.

And, that ultimately saves the producer time and money.

"There have been several purebred bulls I have seen that have been destined to perform well in a sale that couldn't pass their BSE, and some of them were just young bulls that went ahead and passed later, but then again, some were not," Gautz says. "Other bad things I've seen include those great-looking bulls that didn't get tested and resulted in poor calf crops later on. That's a sad story as well."

Room for Error

Although Gautz believes that producers would benefit by making BSE appointments with their local large animal veterinarians, he doesn't always find BSE results foolproof.

Gautz explains that one of the larger issues facing BSEs is their failure to calculate libido in bulls and the difficulty of getting a true sperm sample during unnatural testing.

While Gautz still has faith in the success and importance of BSEs in the cattle industry, he also understands that in-pasture evaluation is just as important, if not more so, than receiving a good score.

"I cannot emphasize enough how important it is to observe the mechanics of the breeding and also the settling of the cows in your herd," Gautz says. "If you are seeing more than a few cows cycle after the first three weeks of your breeding season, even if your bull scored a perfect BSE, you will know that something is wrong. Don't be waiting."

MANAGEMENT MATTERS

From the Inside Out

Fetal programming leaves imprint on calf long after birth

Story By Austin Black for Cattlemen's News

Genetics alone don't dictate a calf's growth and performance. Its' development depends on the dam's environment and nutrition during gestation.

"We have to remember there's a lot that happens in between breeding and calving," said Dr. Allison Meyer, University of Missouri assistant professor of ruminant nutrition.

Nutrition affects fetal development at every stage of pregnancy. Limited resources in early gestation will often cause an abortion within 50 days. That's why maintaining a proper body condition score (BCS) is so important. A good BCS aides in conception and ensures cows have enough condition to sustain a pregnancy.

As gestation continues, the fetus develops. What started as a tiny cell now has organs, hair and bones. During mid-gestation, the fetus has low nutrient requirements. But, managing them is still important for the calf's development. Muscles, reproductive tissues, lungs and the GI tract all start to develop in mid-gestation. "The theory is we can change more of the organ structure and cell differentiation in a fetus," Meyer said.

Just as decreased nutrition limits the fetus, increased nutrition ensures proper organ and tissue development. Producers know the highest amount of fetal growth occurs during the last trimester. The lungs and digestive tract finish maturation and the calf prepares to function on its own. Quality nutrition at this time aids in growth and maturity of the calf after birth.

Environment affects nutrition

Cows rarely get the exact nutrition they need. But, making sure nutrition is optimal during pregnancy helps improve calf development. The three areas producers should focus on are protein, energy and minerals. Whether pregnant cows are on a forage diet or receive grain supplement, be certain proper nutrients are present. A forage test helps provide this information. Meyer said forage is often lower quality than producers realize. Testing hay after harvest can determine what nutrients are available. If nutrients are short, a supplement is necessary.

Producers should understand if cows can afford to eat lower quality feedstuffs. Meyer suggests producers consider what they feed cows after weaning.

"With spring calving cows, it's not unusual after weaning to put the cows on good fall growth and then feed them bad hay in December," she said.

Since cows have the lowest nutrient requirements right after weaning, consider a different approach. "Switch them to the bad hay after weaning and feed stockpiled fescue, better quality hay or haylage the last two to three months of pregnancy," Meyer said. This method provides more

CONTINUED ON PAGE 34

Poor Nutrition Causes Pre-weaning Death Loss

Pre-weaning death loss is the biggest problems cattlemen face from poor cowherd nutrition.

"Data from a study by Larry Corah in the 1970s showed that calves from nutrient restricted cows were more likely to be dead at birth or die pre-weaning," said Dr. Allison Meyer, University of Missouri assistant professor of ruminant nutrition.

But even if calves are born alive, success isn't guaranteed. Meyer said data from the U.S. Department of Agriculture Animal Plant Health Inspection Service shows three main time periods where pre-weaning death occurs: one-third of calves die within 24 hours of birth; one-third from 24 hours to three weeks; and one-third from three weeks to weaning. Each period has is own anticipated cause.

Meyer said many of the calves that die within 24 hours either never get up, don't nurse or don't nurse well. The death could be caused by dystocia, poor calf vigor or environmental stress.

Calves that die between 24 hours and three weeks likely have scours or respiratory problems. "This may be due to poor passive transfer, inadequate colostrum or intake of colostrum," Meyer said.

Passive transfer is how a cow provides immunity to a newborn calf. Poor passive transfer and low-quality colostrum are often results of inadequate nutrition. Meyer said research in the 1980s showed low body condition scores had a negative effect on immunoglobulin (lg) concentration in colostrum. Immunoglobulins function as antibodies in the immune system. Poor concentrations result in reduced immunity.

"We also know that poor mineral nutrition will decrease mineral and lg concentration in colostrum," she said.

Good genetics are expressed when enough nutrients are given to a calf at all stages of development. "We probably lose a lot of potential calf performance by not giving enough resources to the cow between conception and calving," said Dr. Allison Meyer, University of Missouri assistant professor of ruminant nutrition.

—Photo by Joann Pipkin.

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MERCK Animal Health

FROM THE INSIDE OUT
FROM PAGE 32

nutrients at the right time and might reduce labor in the winter.

A cow's environment plays a big role in her nutrient requirements. "A lot of time, in beef cattle, it's not just about what you feed them, but having the nutrients they need based on their genetics, stage of pregnancy, age, environmental conditions, health problems, etc.," she said.

What producers might not realize is cold and heat stress can impact fetal development. A cow's nutrient intake and/or requirements can change in these conditions. Limiting her resources might have a negative result.

"Having a wet hide and standing in the wind in a moist environment that is constantly changing adds a lot of cold stress to spring calving cows right now," Meyer said. "We used to say a cow would take everything away from herself and give it to the calf. Now we know she keeps some for herself when things get bad. This means her fetus may not grow and develop as it should."

High-quality feed helps cows maintain their condition while providing nutrients to the fetus.

Meyer said information is lacking about the implications of heat stress. "We do know that fall calves generally weigh less at birth due to heat stress," she said. "Fall cows will give birth earlier if they are on endophyte-infected tall fescue pasture."

Heat stress reduces blood flow to the core, sending it to the skin to cool the cow. "We believe one of the reasons that spring calves weigh more at birth than fall calves is that there's more blood going to the visceral organs to keep the animal warm," Meyer said.

Long-term results

The impacts of nutrition during pregnancy don't end at birth. Meyer said studies show implications can last through maturity and even slaughter. Cow nutrition affects calf birth weight, especially during late gestation. Calves that weigh less at birth are often smaller at maturity also.

"We can see a 10 percent decrease in birth weight for the calves whose mothers were nutrient-restricted for the last 90 days," Meyer said. "We take that as a bad thing because the calf did not reach its genetic potential for fetal growth. The best way to decrease birth weight is through genetics, not nutrition."

Because nutrient availability appears to change some of the tissue and cellular development that occurs in the fetus, Meyer said it's likely reproductive tissues can also be changed by cow nutrition. This impacts ovary development in heifers. Conception rates can drop, and heifers might be later-maturing if their dams received poor nutrition during gestation.

Finally, consider feedlot performance. Feed efficiency can decrease and treatment rates can increase on steers if their mothers weren't fed well. Carcass quality suffers too. "In the final product, we can see decreased yield with poor nutrition," Meyer said. "There's less muscle fiber and fat formed in the fetus. Quality grade can be hurt too."

"We can see a 10 percent decrease in birth weight for the calves whose mothers were nutrient-restricted for the last 90 days.

–Dr. Allison Meyer
University of Missouri

To express good genetics, enough nutrients must be given to the calf at all stages of development. "We don't think as much about what we're doing to the calf early," Meyer said. "We probably lose a lot of potential calf performance by not giving enough resources to the cow between conception and calving. We can breed a fetus to qualify for CAB (Certified Angus Beef) at 14 months easily, but if the nutrition isn't there, it won't happen."

ECONOMIC INDICATORS

Consider the Dynamics Behind the Market

Lower retail beef prices on tap for this year

Story By Derrell S. Peel

Retail beef prices will continue adjusting down this year due to retail market dynamics and continued growth in domestic beef consumption. The most recent all fresh retail beef prices in November were $554.20 per hundredweight, down 7.5 percent from one year earlier. All fresh retail beef prices peaked in July 2015 and have decreased 9.8 percent from the peak through Nov. 2016.

The average monthly price decrease since the peak has been 0.6 percent per month but the rate of decrease accelerated in the fourth quarter (Q4) of 2016. November all fresh beef prices were down 1.7 percent from October following a 1.9 percent monthly decrease in October from September. A faster decrease is not surprising given the jump in beef consumption in Q4 of 2016. Fourth quarter beef production was up a projected 8.3 percent year over year, and when adjusted for fewer beef imports and increased beef exports, resulted in a projected 6.5 percent increase in per capita retail beef consumption compared to Q4 of the previous year. Sharply higher Q4 beef production in 2016 contributed to a projected annual increase in per capita beef consumption of 3.1 percent for the year.

Beef production is forecast to increase year over year by 3.5 to 4.0 percent in 2017 leading to an expected increase in consumption of 1.3 percent year over year. The consumption increase on a quarter-by-quarter basis will be relatively modest compared to the sharp jump in domestic consumption in late 2016. The current projection for 2017 domestic beef consumption hinges on the projection for total beef production as well as continued improvements in the net beef trade balance.

Increased beef consumption might be interpreted as better beef demand while lower retail prices might suggest lower beef demand. In reality, it is the magnitude of retail price adjustments relative to increased consumption that defines the level of beef demand. In general, lower retail prices in the face of increased beef supplies are the expected response for a given level of demand. However, other factors such as pork and poultry prices and macroeconomic conditions might shift beef demand.

The fact that retail beef prices will be lower this year does not inevitably imply additional pressure on cattle prices. The dynamics of retail price adjustments are slower than for cattle and wholesale beef markets. This is true for both price increases as well as decreases. For example, from early 2013, calf prices increased nearly 80 percent to a monthly peak in Nov. 2014. All fresh retail beef prices did not peak until eight months later in July 2015 having increased just over 25 percent from early 2013 levels.

Likewise cattle prices have adjusted down more and faster whereas retail beef prices have adjusted less and more slowly. This is because not only is it typical for retail prices to adjust more slowly, but also because retail prices began adjusting down eight months after peak cattle prices. Even if beef supplies were unchanged in 2017, we would expect retail beef prices to continue adjusting for several more months. Of course, total beef supplies are expected to increase in 2017, and overall market price pressure will depend critically on both domestic and international demand for U.S. beef in 2017.

— Derrell S. Peel is Oklahoma State University Extension livestock marketing specialist.

Nutrition First

Nutrition and reproduction go hand in hand

Story By Elizabeth Walker for Cattlemen's News

A nutritional management plan for your cows is crucial to meeting the reproductive goals for your herd. However, maximal nutrition does not equal maximal fertility nor maximal income. Knowing when to supplement is just as important as what to supplement. Energy, protein, vitamins, minerals and water are all essential for cattle. However, insufficient intake of energy is probably the most important to reproductive efficiency. A ruminant's metabolic use of energy is delegated in an order that takes care of her survival first with estrous cycle and initiation of pregnancy being at the end of her list of priorities.

Studies have shown that a cow's nutritional status has an effect on her eggs within her ovaries. In fact, her nutrition can affect the physiology of her grand-offspring. Managing current cows properly can affect replacement animals two generations away. Because a cow's primary feed source is forage, knowing the nutritional profile of your forage or hay is essential to a nutritional management plan. Keeping out a quality vitamin-mineral mix is part of the overall nutritional plan, and certain minerals and vitamins should be increased or decreased as the season changes and as environmental conditions are more or less conducive to a cow's health.

The reproductive system is connected to the digestive system by an array of nerves and chemical messengers. Located just above the upper pallet of the mouth, lies the pituitary gland and the hypothalamus. These two glands, along with the vagus nerve, are the major controllers of the organs that make up the reproductive system. Nowadays, respectable scientists are finally agreeing with me that fat behaves more as an organ than as a tissue. Fat sends signals to the brain that influences the reproductive status of both females and males. At times, nutritional status of the animal can be estimated via a visual appraisal of the animal by estimating the body condition of that animal. A body condition score (BCS) will range between 1 and 9. A linear relation exists between BCS unit; about an 80-pound to 100-pound difference in weight exists between each score.

Leptin, produced by fat cells, communicates to the hypothalamus about the animal's overall body condition. On average, a cow with a body condition score of 7 will produce more leptin than a cow with a body condition score of 4. In the brain, leptin triggers an array of other hormones which regulate reproduction in both the female and the male. When leptin reaches an acceptable level, as determined by that animal's brain, the animal knows she has enough fat to maintain the stress of pregnancy. She will then cycle. If the animal is thin, not enough leptin is produced, the brain will sense this lack of leptin, and the animal will probably come up open. However, pregnancy is a stress to the animal and therefore, if leptin is too high, because the animal is obese, this will also alter her reproductive abilities. Maintaining an animal at an optimal body condition — between a 4 and 7 — is important and can be cost effective.

Not all reproductive hiccups are noticeable. Perhaps an animal was thin and did not ovulate or conceive when a bull was first introduced. If after 30 days she recovered enough body condition or was placed on a higher plane of nutrition, you might only note that she delivered her calf in the

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NUTRITION FIRST
FROM PREVIOUS PAGE

middle or at the end of your calving season. Potentially, she could have had that calf sooner, tightening up your calving interval. Again, overnutrition can be just as hard on an animal as undernutrition. Obese female animals tend to have decreased lifetime milk production and increased incidence of dystocia.

Obese bulls might not have the sperm concentrations of their thinner cohorts. Fat tissue is found around the scrotum, and too much fat will cause an improper regulation of testicular temperature. If the testicles get too hot, a negative effect on sperm numbers will be present. Again, problems might not be noticeable, yet still exist.

If you feel the need to supplement your cattle, studies have shown that increasing the nutritional plane — increasing energy — following parturition increases conception and pregnancy rates and decreases postpartum interval to first estrus. Again, though, too much energy can delay the return to estrus post-partum. Cows that are "heavy milkers" need more energy than cows with more moderate milk levels. If you don't have the forages or supplement necessary to maintain your heavy-milking beef cows, you might want to consider culling them and fitting your animals more to your nutritional management style. Also, keep in mind that second calf heifers will probably need to be on a greater nutritional plane than older or younger cohorts. A second-calf heifer is still growing, so some of that energy will go to her needs before going to milk or in coming back into estrus. Managing those animals separately might be justified before or after calving.

Again, energy is the most important nutrient other than water for most animals, and that stage of production right after calving is a crucial time. Nutrition and reproduction, thanks to chemical messengers, are linked and sound nutrition can help with a sound reproduction management plan.

—Elizabeth Walker is associate professor of animal science at Missouri State University.

Beef-Up AI Breeding

Semen handling can have a big effect on conception rates

Story By Joann Pipkin, Editor

While cutting corners might be an option for some tasks on the farm and ranch to do list, doing so when handling bull semen and embryos for artificial insemination (AI) could mean a less-than-successful breeding season in the end.

Select Sires Beef Specialist Jon Herrick said proper semen handling is very important and ultimately affects conception rates.

Because semen exposure risk typically occurs at the negative 160-degree frost line in a semen tank, Herrick said cattlemen should be sure all necessary equipment is on hand before removing the straw of semen for breeding a cow.

"You can be a great arm technician in the cow, but if you're sloppy with semen handling it really doesn't matter what you do in the cow because you have subdue product before you ever get there," Herrick said.

Having good quality, clean equipment is a critical step in helping to maximize conception, he added.

"Incorrect water temperature at thawing is one of the most common errors seen with semen handling," Herrick noted.

To beef up the number of live semen cells when placing the semen in the cow, he said water temperature should be maintained at 94 to 98 degrees when thawing semen in a water bath. The optimal temperature is 95 degrees.

Herrick outlined eight steps to follow when breeding a cow by AI:

1. Identify the cow.

2. Remove the neck plug from the semen tank.

3. Select the canister containing the semen required. Next, use tweezers or your fingers to select the desired straw. The advantage to using tweezers is keeping the canister and rack of semen below the frost line, causing less than exposure to the semen straw.

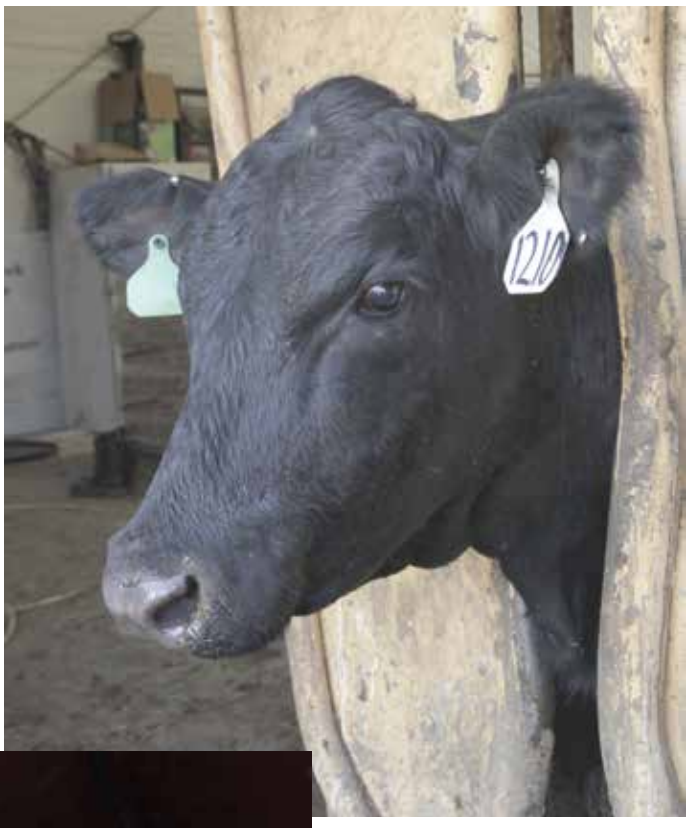
4. Follow the 8 to 10 second rule. When bringing semen into the neck of the tank, identifying the desired straw and placing it in a water bath held at constant temperature for thawing must take place in 8 to 10 seconds.

5. Transfer the semen straw immediately to thaw unit. If using a water bath, the temperature should be 94 to 98 degrees F. Thaw the straw for at least 40 seconds, but not more than 15 minutes.

6. Remove the straw from thaw unit and place it in a paper towel. Pat dry. Always use a paper towel when handling semen because water kills sperm cells.

7. Check the code on the semen straw and identify the correct bull. Give the straw a quick shake if the semen is in the tip of the straw.

8. Be sure the semen is placed in a warm AI gun. The gun can be heated by placing it against the body or in an insulated gun warmer.



The first step in breeding by artificial insemination should be identifying the cow. Cells can be damaged by thawing and refreezing semen straws, ultimately impacting conception rates.
—Cattlemen's News stock photos.

Another common error seen in semen handling is bringing the semen canister up over the frost line of the tank, Herrick said. That causes thawing and refreezing, damaging semen cells.

"Once ice crystals form and hit the head of the semen, then failure occurs," Herrick said. "That can hurt motility of the semen or can cause actual physical or morphologic damage to the semen."

Water bath temperature changes also occur when three to five straws of semen are thawed at a time, making it difficult to maintain a constant temperature.

When handling embryos, Herrick said thawing and transferring should be done one at a time because of the toxicity of ethylene glycol, which is the freezing media used in embryo storage.

Manure and other dirt can also hamper conception rates by contaminating an AI gun. Herrick said hot steaming water or rubbing alcohol is the best means to clean AI equipment. An AI gun should not be cleaned with soap or put in a dishwasher.

"Make sure equipment is in quality shape at the beginning of breeding season, before you have the cow in the chute," Herrick said. "Having good, quality equipment that is clean is the bottom line."

Storage, thaw and post-thaw temperature as well as water contamination and equipment hygiene can all be controlled when handling semen. Herrick said focusing on what can be controlled goes a long way toward ensuring a successful AI breeding season.

—Editor's Note: Jon Herrick was a featured speaker during an Angus University session at the 2016 Angus Convention in Indianapolis, Ind. Full coverage of the Angus Convention is available at www.angus.media/news/Angus-Convention.

HOW VACCINE CHOICE COULD BE IMPACTING REPRODUCTION

Getting back to the basics of reproduction

When considering the profitability of a cow/calf herd, reproductive efficiency is one of the most important factors influencing success. That's why it's critical — especially in today's declining market — to ensure reproductive success.

"When it comes to getting back to the basics of reproductive performance, we really need to be able to evaluate herd performance measures, such as calves born per cows exposed," said W. Mark Hilton, D.V.M., DABVP and Elanco technical consultant. "If we can evaluate these metrics, it helps us identify gaps in reproductive efficiency in your herd."

Implementing industry best practices, such as estrus synchronization (ES) and artificial insemination (AI), can help ensure a successful breeding program, but several other factors can also influence reproductive efficiency, from nutrition to health management. One factor — vaccine choice — may be impacting your reproductive efficiency more than you realize.

Vaccine impact on reproduction

Recent research at South Dakota State University demonstrates how the vaccine you may be using 30 days prior to breeding can impact reproductive performance.[1] The trial was conducted on previously vaccinated cattle with known vaccination history from heifers to 13 years of age, comparing Vira Shield® (an inactivated vaccine) to Bovi-Shield® (a modified-live vaccine).[1]
"What surprised us when we looked at the modified-live versus the inactivated vaccine was the differences in AI conceptions between the two vaccines — inactivated having higher conception rates throughout the season compared to MLV," said George Perry, Ph.D., Professor and Beef Reproductive Management Specialist, South Dakota State University.

The data show:[1]

- Treatment of cows and heifers with Bovi-Shield during pre-breeding decreased pregnancy success compared to treatment with Vira Shield
- Treatment with Bovi-Shield tended to reduce the percentage of cows that calved in the first 21 days of the calving season compared to Vira Shield
    - This decrease in calving percent remained over the entire calving season

"The results translated to calving results," said Perry. "Cows that were bred earlier, calved earlier, which impacts weaning weights. After you get a late start, everything else is negatively impacted from a performance standpoint."

Rethinking vaccine options for reproductive success

"If a producer's focus is the same as a traditional cow/calf producer, where they're not bringing in lots of outside animals, the question that comes from this data is, 'Can I improve conception rates by switching to an inactivated vaccine?'" said Perry. "From what we have seen in this data, there is a benefit to that — 5 to 8 percent is the average difference in conception rates. Many producers think that's a large enough increase to look into how they can get better AI conception rates."

To protect their bottom lines, producers are constantly evaluating opportunities to improve reproductive parameters.

"This is new information and represents a change from traditional thinking," said Hilton. "In the past, we didn't know the impact of a vaccine on future estrus cycles. But now, we can use this data to consider the potential impact on your herd."

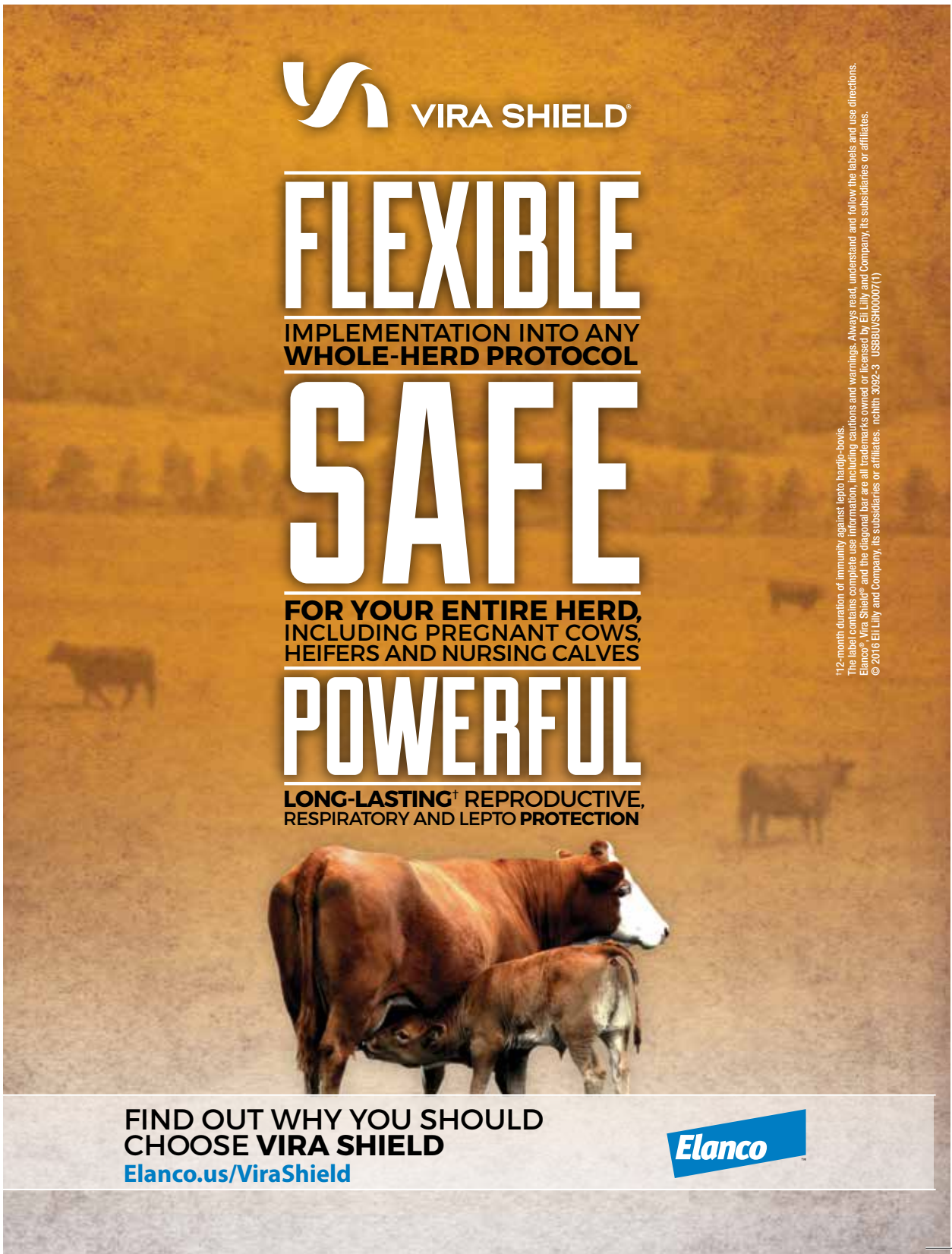
Why choose Vira Shield?

Establishing lifetime immunity is critical in setting yourself up to win by preventing reproductive and respiratory diseases that can negatively impact performance. Vira Shield helps establish lifetime immunity by providing a complete line of flexible, safe and powerful inactivated vaccines that protect against up to 13 respiratory, reproductive and leptospirosis diseases.

"This data demonstrates that using Vira Shield 30 days before breeding provided improved reproductive performance compared to Bovi-Shield," said Hilton. "It's critical to evaluate your clients' vaccine progams to ensure you're helping them get the most out of their breeding program."

To learn more, talk to your Elanco technical consultant or sales representative or veterinarian.

[1]Perry, G., Larimore, E., et al. 2016. "Influence of vaccination with an inactivated or modified-live viral reproductive vaccine on reproductive parameters in beef cows." South Dakota State University.



How to Manage Broomsedge Bluestem

Manage fertility concerns in winter to help control weeds

Story By Sarah Kenyon

Broomsedge bluestem — also called broomsage, bromesedge and yellow bluestem — was a major weed problem in 2016. Here are some tips to manage this complex weed.

Broomsedge is a warm season perennial grass found throughout Missouri. Like other warm season grasses, it is dormant from the fall through early spring. Broomsedge growth begins as temperatures consistently stay above 60ºF. It produces many seeds that are distributed by wind. It has poor forage quality and low palatability. Broomsedge can quickly become the dominant species in overgrazed, low pH (<5.5), low phosphorus, thin or eroded soils where desired vegetation will not thrive.

Since broomsedge is a perennial and is usually well established when many consider management, elimination within a single season is generally not practical. Also, controlling a grass weed in a grass crop has limited control options. Because of these two factors, good cultural control practices are important.

The first step is to conduct a soil test. Since this plant thrives on low pH and low fertility soils as well on fertile ground, soil testing is the first step in managing a broomsedge-infested field. Improved soil pH and fertility will shift the competitive advantage toward the desirable forages. This component will take various lengths of time depending on soil test levels. If your budget is limited, the priority should be adjusting pH with limestone.

A correlation between broomsedge populations and low soil phosphorus levels is believed to exist, where broomsedge is more abundant in low-phosphorus conditions. It is important to note that if both pH and phosphorus are low, then the low pH should be corrected first. However, if soil pH is adequate then increasing phosphorus can reduce broomsedge populations over time. A demonstration conducted at Mount Vernon, Missouri, observed that when soil pH was similar, adding 30 lbs. per acre of phosphorus decreased broomsedge after a three-year period.

A very short window exists when vegetative growth just begins, prior to early boot, that cattle might graze broomsedge, but even then it is not choice forage and generally avoided in a continuous grazing system. Broomsedge is also a poor competitor with other forage species. Managed rotational grazing will help shift the pasture back to desirable forages.

If broomsedge is shading desirable species lower in the canopy, mowing might be necessary to bring in more light. However, neither mowing nor prescribed burning will reduce broomsedge populations.

The application of glyphosate during active growth, either as a spot spray or rope wick, can be an effective herbicide option. A broadcast application of glyphosate in a spray-smother-spray program when establishing a new pasture will also help reduce broomsedge populations.

Fertility concerns are best addressed in the fall or winter. Correcting fertility prior to spring growth of fescue and other cool season grasses can help those crops to compete with broomsedge.

—Source: Reprinted from South Central Missouri Ag News. Sarah Kenyon is an agronomy specialist with University of Missouri Extension.

How Big Is It?

Determine land area and distance with your smartphone

Story By Austin Miles

How big is that pasture? How long is this fence line? How far is it to the nearest water point? All of these questions and more can be answered using the GeoMeasure application, a free download for both iOS and Android smartphones.

Knowing the area of a pasture or field is very useful information, especially when calculating application rates of a sprayer or determining stocking rate. GeoMeasure allows you to assess area in a multitude of units including square feet and acres. Users have two options to retrieve the area of a determined space: manual measurement, which entails dropping markers on your device's screen, or measurement by GPS, which simply means the device tracks your movement as you walk the perimeter of the given area. I have found the second option to be more precise because I cannot achieve the same level of accuracy dropping markers with my finger on the phone's screen. Much like Google Maps or the built-in map function on your phone, users can also choose from four map layouts: normal, satellite, hybrid or terrain.

The app also measures distance with remarkable accuracy. Users can choose from a variety of units including feet, meters and miles. As with area calculations, users can choose from either a manual or GPS measurement. After you are done dropping markers on the map or walking the distance in question, the application totals the distance and displays the final reading at the bottom of the screen. From there, you can clear the measurements and start over; save the measurements as a photo on your phone; or share them via email, text message or through social media. This information can be quite handy to have when estimating the cost to build a fence or road, lay a waterline, or simply calculate how far livestock have to travel to water. GeoMeasure also tracks and provides elevation change along a given route or in a certain area.

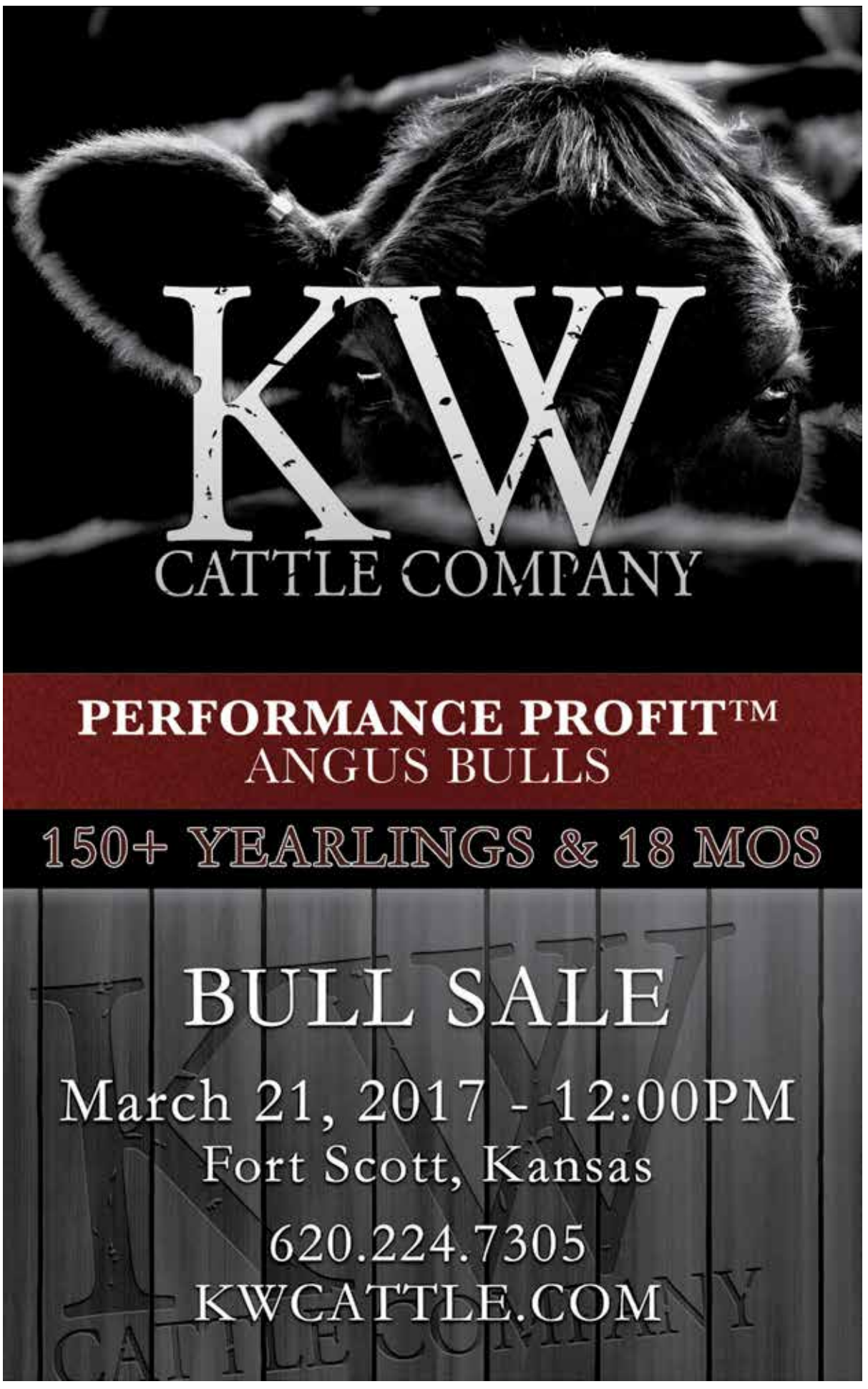
I really like the functionality and overall design of the app, as well as the built-in tutorial and ability to offer suggestions to the developer for future features and updates.

One interface I have not used is the ability to import a Keyhole Markup Language (KML) file, a format used to display geographic data in an Earth browser such as Google Earth.

While there is no charge to download or use the application, users will notice an abundance of advertisements around the border of their screens as well as the occasional pop-up ad. There is an option to remove ads for $2.99. While nominal, I choose to look past the ads and continue to use the free version.

The next time you need to measure something, leave the tape measure in the toolbox and use your phone.

—Source: Austin Miles is research associate with the Samuel L. Roberts Noble Foundation for Agriculture. Visit the Noble Foundation on the web at www.noble.org



TRENDING NOW

Take Notes, Record the Numbers

Score cows to make keep, cull decisions

Story By Kris Ringwall

The concept of scoring various traits for cattle is common.

Recently, I had the opportunity to udder score a set of 82 first-calf heifers after they weaned their calves. The process was not very difficult.

The new Beef Improvement Federation Guidelines at http://tinyurl.com/BIFGuidelines provide ample explanations and diagrams to score the udder suspension and teat size: "Udder and teat quality are among the most important functional traits of beef females. Udder suspension and teat size scores are numerical values that reflect differences in udder and teat quality. Udder suspension scores are subjective assessments of udder support and range from 9 (very tight) to 1 (very pendulous). Teat size scores are subjective assessments of teat length and circumference and range from 9 (very small) to 1 (very large)."

As with all subjective scores, the person doing the scoring will vary the range of scores, but generally, the recording of the relative difference within the trait being evaluated is noteworthy. Pendulous udders and large teats typically shorten the productive life of a cow. Pendulous udders and teats that were difficult for a newborn calf to nurse are not acceptable. Generally, the calf will nurse a quarter or two and the un-nursed quarters dry up or become problematic.

As with any scoring system, begin by looking at your cattle to see differences. As I walked through the young cows, I saw that udders were good today. However, I also saw some that

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Scoring udders and teats can help you keep track of the problem cows in your herd and earmark those for culling.
—Photo by Joann Pipkin.

RECORD THE NUMBERS FROM PREVIOUS PAGE

caused me to ponder just how long they will hold up.

After the initial walk-through and becoming comfortable with the amount of variation present in the heifers, I scored them. The average score was 8 for udder suspension and 7.8 for teat size, perhaps typical of young cows weaning their first calves. Nine heifers had the makings of a pendulous udder (score 7), three heifers had significantly larger teats (score 6) and 14 heifers had large teats (score 7).

So, what does this mean? A point: If one does not record the scores today, the answer never will be known.

Today, all the first-calf heifers had sound udders. With time, the heifers will mature slowly and each udder will do the same. I already could see in those lower-scoring heifers the beginning of a challenge.

A bigger point: Had I not written down the udder scores, I would have no record of those heifers. The udder score could become important if the feed supply changes and the center has a need to reduce cow numbers. As difficult as selling a pregnant cow is, cows with potential problematic udders would be candidates for the market cow list.

While I reviewed the udders, I also noticed the variation in the quantity and quality of the cows' hair coat to combat the cold and harsh winter. Some first-calf heifers had good, solid hair coats, and some did not. I regret not scoring the hair coat because hair condition is an indication of animal health.

Efforts at finding comfort and lowering stress directly relate to how a cow or calf is clothed to meet the demands of the environment. Obviously, hair in cold climates is important. Now is the time to observe the hair coat.

Well-fed cattle produce a lot of heat, particularly when fed high-roughage feedstuffs. As the weather gets colder, the frost eventually will settle on their backs, and those well-insulated cows will look like walking frost balls. The body is well-protected from the devastating cold that can confront us all.

Inside, underneath that winter haircoat, is a very warm, comfortable cow that really is not stressed by the cold. She does not need to depend on constant eating, but rather, eats what she needs and returns to a protected, comfortable spot on the range and quietly ruminates and waits for the warm days of spring.

Contrast that to thin, poor-conditioned cattle that have not developed a good hair coat. They are not comfortable; they are stressed and they are forced to eat more feed to maintain their body temperature.

Now would be a good time to look at your cattle and evaluate hair coats. Add those with poor hair coats to the list of potential high-input cattle to sell if the need arises.

—Source: Kris Ringwall is with North Dakota State University.

PASTURE PLANNING

Get More Grass

How to use exclusion cages to better manage cattle stocking rates

Story By Rob Cook

Developing a proper stocking rate is among the most important practices a manager can accomplish. No fertilization plan, brush management plan, rotational grazing plan or herd genetic selection can overcome overgrazing from a continually high stocking rate. While short-term financial gains might be seen from overstocking pastures, long-term financial and ecological sustainability is not feasible.

Stocking rates are developed by balancing livestock numbers with the forage available for the animals to consume. This can be accomplished in several ways. A range and pasture consultant will use production estimates from clip sampling forages, the soil's production potential, species composition, plant health and vigor, and grazeable acres in each pasture to determine the amount of forage available in addition to animal demand to estimate an initial stocking rate. This estimated stocking rate is based on the current health of the grazing land and a normal year of rainfall. It attempts to balance animal demand with the forecasted forage production for the upcoming growing season.

As you can imagine, this forecast is very dependent on the weather and thus very dynamic. The stocking rate will also need to be dynamic. Adjustments will need to be made to match the actual forage production. Implementing a monitoring plan gives grazing managers the information they need to make timely decisions on stocking rates. This type of decision-making is a trait shared by the most successful grazing managers.

Grazing exclusion cages are just one component of an effective monitoring plan. A monitoring plan gives timely information to manage a grazing plan and also helps the grazing manager learn how vegetation, grazing animals and rainfall interact with one another, and what changes those interactions will cause across the landscape. Managers must monitor and document changes to ensure management is not causing damage to soil and plant communities and to evaluate whether or not past actions are producing desired results. Managers who are dedicated to improving the quality of their pastures will ultimately see results in profitability, with economic and environmental changes that benefit the sustainability of their business.

Grazing Exclusion Cages: A Tool for Monitoring Forage Production

Grazing exclusion cages are one of the most effective tools for observing grazing utilization within a monitoring plan. The cages exclude grazing animals from a small representative area so that grazed vegetation outside the cage can be compared to un-grazed vegetation inside.

Why use cages

Cages give timely and intuitive information on grazing that can be used to adjust stocking rates or make changes to a rotational grazing plan. Overuse is an indication that a pasture could be overstocked. For more in-depth monitoring, forage production can be measured inside the cage and compared to production outside.

How to construct cages

Bending welded wire cattle panels at 90-degree angles and combining two panels to form a square can construct the cages. A T-post can be driven at all four corners and attached to the panels to anchor them in place. For a simpler cage, one panel could also be bent

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GET MORE GRASS • FROM PREVIOUS PAGE

around on itself and a T-post used as an anchor where the two ends meet with another post on the opposite side of the ring. This will result in a teardrop shape.

Cage size

Cages should be large enough that forage production measurements can be collected at multiple times during the growing season and then again after frost. A 2-meter-by-2-meter cage will give enough room to sample at least four times during the year.

Where to place cages

Cages should be placed on key sites that are representative of the entire pasture. Make sure they are not in high-use areas or so far away from water that use is limited.

What to observe

Visually monitor the cages periodically to determine grazing utilization. In native rangeland pastures, no more than 50 percent of the leaf area of plants available for grazing should be consumed, stomped down, urinated on or otherwise used.

How to gain information

Compare the monthly or seasonal forage production to forecasted production to make timely decisions to balance forage production and animal demand. The un-grazed or unsampled forage inside the cage after frost is the total production for the growing season. Compare total yearly production to the expected production and to production from previous years, relative to rainfall amounts, to help determine if grazing land health is increasing, decreasing or stable.

How to reuse for next year

Cages should be moved to a new area within the key site every winter. Previous season growth should be removed inside the cage to ensure it is not included in sampling the upcoming growing season's production.

—Source: Rob Cook is pasture and range consultant for the Samuel L. Roberts Noble Foundation for Agriculture. Visit the Noble Foundation on the web at www.noble.org.

BUSINESS BYTES

New Area Rep for Multimin

Hi, my name is Joe Brown, and I am the new Multimin USA territory sales representative for Multimin®90 in Missouri, Illinois and Iowa.

I am a local guy from Greenfield, Missouri, and am excited to help with all of your Multimin®90 needs.

I grew up working my family farm in Greenfield and continue to do so. I have worked with many local producers as well as veterinarians. I have a quality background in the cattle industry and look forward to working with you in the future. Please feel free to contact me with any questions you might have about Multimin®90 and how it can help improve your cattle business.

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MANAGEMENT MATTERS

Leverage Your Operation

Meet protein requirements of cattle eating low-quality forage through supplementation

Story By Aaron Berger

Archimedes said, "Give me a lever long enough ... and I can move the world."

High points of leverage in a cattle production system are places where strategic inputs of time and resources potentially have impacts that are beneficial and significantly greater than the cost. The challenge in managing systems is that the areas of highest leverage might not be the most obvious.

Examples of common points of leverage in a cattle operation include:

- Meeting protein requirements of cattle eating low-quality forage through supplementation;
- Designing and executing a strategic herd health management plan;
- Constructing water resources and fence for implementation of a grazing system;
- Evaluating equipment and labor costs per unit of production; and
- Monitoring moisture conditions and the timely execution of a drought plan.

Obviously, this list of points of leverage is limited and could be expanded to include many additional items.

Where are the points of leverage for your operation? Where are places where strategic investments of time and resources have the greatest potential to impact profitability and the resiliency of production systems in your operation? What management strategies or plans could you implement to position yourself to take advantage of those points of leverage?

Cattle production is a challenging business where we work with dynamic, complex, biological systems where impacts of choices or management decisions made are often distant in time and space from the initial inputs. In addition, the information needed to assess cause-effect relationships might be limited or difficult to evaluate. When circumstances happen beyond our control ,our efforts or impact points of leverage in a production system are often thwarted. High points of leverage can be challenging to identify, but the process of thinking through where leverage points are is well worth the time and effort. These are places where a change in management or an input can have significant benefit to the system as a whole.

Consider taking time to identify points of leverage in your operation and write down strategies to position yourself to take advantage of these. The value to your operation could be significant.

—Source: Aaron Berger is University of Nebraska Extension educator.

Take time to identify points of leverage in your operation and write down strategies to position yourself to take advantage of those points.
—Photo by Joann Pipkin.

TRENDING NOW

Yield Grade Opportunities Detailed

Settle with status quo or do we need improvement?

Story By Steve Suther

When anyone thinks about beef grading, USDA quality grades such as Prime, Choice and Select likely come to mind. Quality grades have been in effect for nearly a century, but yield grades have been required in the United States for more than 50 years.

While research continues to prove how well quality grades work, the same can't be said for yield grades. To be fair, quality grading has been updated regularly, while today's yield grade (YG) system is exactly the same as what went into effect in 1965.

West Texas A&M University animal scientist Ty Lawrence explained the issues at this summer's Feeding Quality Forums (FQF) in Grand Island, Nebraska, and Amarillo, Texas. He authored a research paper on the topic this fall entitled, "Beef Yield Grading: History, Issues and Opportunities." The full paper is available online at www.cabpartners.com/news/research.php.

"When the government's General Accounting Office looked at grading in the late 1970s, they learned that if you sold half of a large pen of cattle to Packer A and the other half to Packer B, you would get two different results," he said. "Grading was a human, subjective determination."

The nation that had long since put a man on the moon wanted better. In fact, Lawrence said NASA was asked for help, but the Agriculture Research Service soon turned to Kansas State University's more focused expertise "in 1980, to estimate red meat yield using a camera."

Published data proves the "very rudimentary camera" worked. Regardless, for the next decade, the industry "took a left turn toward nuclear magnetic resonance, near-infrared imaging," the animal scientist said.

More promising technology allowed for a return to video image analysis in the 1990s, as grid marketing emerged amid inconsistent grading by humans. Empathy led them to resist imposing discounts while more readily granting premiums.

"Now you take a picture of a ribeye, convert that to red and white pixels, and you're counting pixels," Lawrence said. "This technology gained approval [in 2009] for measuring ribeye area, yield grade, marbling score and back fat thickness." It cannot measure the kidney, pelvic and heart fat (KPH, part of the YG equation), so the system accounts for that with a constant or algorithm.

"Now you can take a pen of 500 cattle, sell half to Packer A and half to Packer B, and if they're both using the camera, you're going to get the same answer," he said.

Still, trying "to predict a predictor of a predictor" without accounting for thin meats, brisket or trimmings, using data on 162 carcasses from the mostly Hereford cattle of 60 years ago that ranged from 350 to 900 pounds presents inescapable challenges. It accounts for just 40 percent of the variation in red meat yield for today's average fed cattle, and 0 percent for Holsteins.

The non-linear stair steps for premiums and discounts represent another major flaw in the system, Lawrence said. When the camera calls one carcass a YG 3.99 and the next a YG 4.00, the grid might suddenly impose a $15-per-hundredweight discount.

This system based on a few cattle "of a biological type that no longer exists" predicts red meat yield of cuts from carcasses "increasingly more variable in genetic type and management."

"We apply that estimate to carcasses that weigh beyond the inference of which [the system] was designed, and we have ignored the opportunity to develop new yield estimates afforded by camera grading," Lawrence summarized. "Leadership within the beef community must decide if the status quo is acceptable, or if improvement is warranted."

The Feeding Quality Forums were co-sponsored by Micronutrients, Feedlot magazine, Zoetis, Roto-mix and Certified Angus Beef LLC. To view presentations and summary information, visit www.feedingqualityforum.com.

—Source: Steve Suther is director of industry information for Certified Angus Beef LLC.

"We apply that estimate to carcasses that weigh beyond the inference of which [the system] was designed, and we have ignored the opportunity to develop new yield estimates afforded by camera grading," said Lawrence. "Leadership within the beef community must decide if the status quo is acceptable, or if improvement is warranted."

Lawrence told the 200 FQF attendees that numerous studies have cast doubts on the reliability of the YG system, finding weak to only moderate correlations between yield grade and all of the carcass measurements it was intended to predict, so that those measurements could predict red meat yield.

"We're trying to predict a predictor of a predictor," he said, noting it all started with the 1960-published data on 17 independent variables on 162 "representative" cattle processed in the 1950s.

MANAGEMENT MATTERS

Improve Performance, Generate Revenue

Artificial insemination adds value to cowherd

Story By Evan Whitley

Due to the considerable herd expansion that has occurred during the last three years, forecasters predict that 2017 and 2018 cattle markets will be considerably lower than even the transition that took place during the latter half of 2016. Only time will tell, but cattle producers are pretty resilient, and most have seen this market transition before. A silver lining to keep in mind about this one is that we are transitioning from all-time record calf prices in 2014-2015. Hopefully, cow-calf producers took advantage of those market conditions to identify areas of opportunity to address as prices soften and are willing to implement measures that can either reduce costs or increase revenues in the event that we do need to buckle down due to choppy markets.

One such area that has potential to add value to a cow-calf operation is the implementation of an artificial insemination (AI) program. While not new, I still find very few commercial producers — regardless of size — actually implement AI as a management tool to improve herd performance and revenue generation. The reasons are varied and in many instances ultimately appropriate. However, the sentiment of "I have never done it," or "It looks too hard," often rules the overall decision-making process, and the potential benefits are left untapped.

Depending upon the individual situation, arguably the biggest benefit in utilizing AI is access to superior genetics as AI studs are selected. Electronic databases, available through many of the breeding services suppliers, can be easily sorted based upon a prioritized list of genetic traits that are specific to your operation. Often, this results in access to AI studs that wouldn't otherwise be available with greater genetic predictably than is available when purchasing younger, relatively unproven natural service sires

Doing so leads to another important potential benefit of AI, which is the possibility for the AI event to target specific traits in subsequent offspring such as replacement quality and/or carcass merit, and the cleanup event to target paternal endpoints such as weaning and/or yearling weight. The result will be heifer calves that are born early in the calving season and possess the maternal traits desirable to either go back in the herd or market as replacements as well as later born calves that possess the growth potential to overcome their lack of age and still wean at an acceptable weight.

With the AI program, consider whether to inseminate based upon standing heat or at a timed interval. The vast majority of commercial operations elect to implement a synchronization program and inseminate at a specified interval within the resulting heat cycle. Realistically, only expect around 50 percent conception from the timed AI event. But, by synchronizing you should get more females bred earlier during the cleanup period.

Depending upon the individual situation, arguably the biggest benefit in utilizing AI is access to superior genetics as AI studs are selected.

Keep in mind several different synchronization programs are available; they are specific to whether mature cows or heifers are the target animal and whether they are English or Brahman influenced. Implementing the appropriate estrus synchronization program and not synchronizing more animals than you can breed at any one interval are important points to learn from others' mistakes as opposed to making them yourself. An extremely helpful tool in implementing an AI program/protocol is the Estrus Synchronization Planner offered through Iowa State University.

Although other potential reasons exist such as costs, labor availability, AI technician access and desire that would yield AI infeasible, the only true deal breaker is if the operation doesn't have access to safe facilities for both personnel and animals. AI technicians are similar to many veterinarians in that they can do a lot with very few resources in the form of fancy pens, yet if the basic functionality of your working pens is questionable, then definitely use the adequate number of bulls. It will make everybody happier, including the bulls.

—Evan Whitley is manager, Center for Advanced Agricultural Systems and Technologies, for the Samuel L. Roberts Noble Foundation for Agriculture. Visit the Noble Foundation on the web at www.noble.org.

The Estrus Synchronization Planner offered through Iowa State University is a helpful tool in implementing an AI program.

Get more information about the planner online at:

http://www.iowabeefcenter.org/estrussynch.html.

Access to superior genetics through AI studs is arguably the greatest benefit to using artificial insemination in a commercial cowherd. *—Show Me Agri-Comm stock photo.*

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ON THE CALENDAR

Silent Losses Impact Your Farm's Bottom Line

Fescue renovation schools scheduled for March

When beef herd profit margins shrink, the losses from grazing toxic tall fescue gain attention.

Convincing cowherd owners to eradicate their old fescue and plant new novel-endophyte fescue is difficult in the best of times. Now, the case will be remade by the Alliance for Grassland Renewal.

"Changes in pasture management are more important than ever," says Craig Roberts, forage agronomist with University of Missouri Extension.

Three schools will be held March 6-9 in Kansas, Missouri and Kentucky.

"What makes it difficult to sell the idea of conversion is that most farmers never see the serious silent losses," Roberts says. Cows that must be put down because of fescue foot grab attention, he adds. However, greater losses come from poor reproduction, reduced gains of calves, low milk production in cows and more, Roberts says.

"When all calves in a herd gain only a half-pound per day instead of a pound a day, that's not noticed in day-to-day checking the herd," he says. "If all herds in the region are on toxic fescue, low gains look normal."

From the beginning, farmers liked Kentucky-31 tall fescue. It is productive and persistent. Roberts says, "It is almost impossible to kill the old fescue with mismanagement."

The reason K-31 tall fescue survives is an endophyte fungus. That's an unseen fungus between plant cells that protects grass from insects, drought, diseases – and grazing.

The endophyte toxin causes heat stress. Cattle that graze infected fescue soon stop and go cool down. They head to the pond or to stand in the shade.

In winter, the vasoconstrictors in the endophyte cause frozen feet, tails and ears. Blood flow is reduced. That is bad in the heat of summer and the cold of winter. Constriction costs money year-round.

The biggest unseen loss is at the beginning of the life cycle. Heat stress keeps cows from conceiving. Cowherds on toxic fescue have lower calving rates.

Calves that do survive gain slower from birth to sale as feeder calves. The main symptom of calves on toxin is a shaggy hair coat that does not shed. That adds to heat stress.

The Alliance for Grassland Renewal, a national group formed in Missouri, works to convince farmers to convert.

Now many varieties of tall fescue are bred with endophytes that do not create toxins. Those novel endophytes protect the grass and don't cause financial losses.

Each school runs 9 a.m. to 5 p.m. Dates and locations are:

• **March 6**, Mound Valley, Kansas, at the Community Center.

• **March 7**, Mount Vernon, Missouri, at the MU Southwest Research Center.

• **March 9**, Lexington, Kentucky, at the University of Kentucky Veterinary Diagnostic Lab.

Advance registration for limited seating is required at all schools. Registration details are at http://grasslandrenewal.org/.

"Farmers who have used novel endophytes for years are our most convincing teachers," Roberts says. "They give dollar results from grazing novel-endophyte fescues."

Instructors say help comes from a novel-endophyte fescue, not a no-endophyte fescue. Fescue pastures without protection of the endophyte don't survive.

—Source: University of Missouri Cooperative Extension.

EVENT ROUNDUP

February

9 — 6 p.m. Private Pesticide Applicator Training
First Baptist Church, Lamar, Missouri
FMI: 417-682-3579

13 — Fence Law Webinar
Webster County Extension Center, Marshfield, Missouri
FMI: 417-859-2044

13 — Fence Law Workshop
Community Center, Pineville, Missouri
FMI: 417-223-4775

13 — Fence Law — Skype
Cedar County Courthouse, Stockton, Missouri
FMI: 417-276-3313

14 — 9 a.m. Barton County Soils and Crops Conference
Thiebaud Auditorium, Lamar, Missouri
FMI: 417-682-3579

16 — Stone County Livestock & Forage Conference
First Baptist Church, Crane, Missouri
FMI: 417-357-6812

17 — Cow Camp Ranch Spring Bull Sale
at the ranch, Lost Springs, Kansas
FMI: 785-466-6475

18 — 9 a.m. - 4 p.m. Newton County Hay School
Neosho High School FFA building, Neosho, Missouri
FMI: 417-455-9500

18 — Genetic Blend Bull Sale
Joplin Regional Stockyards, Carthage, Missouri
FMI: 417-830-8180

18 — Monthly Cow and Bull Sale
Joplin Regional Stockyards, Carthage, Missouri
FMI: 417-548-2333

21 — Taney County Livestock & Forage Conference
High School Cafeteria, Forsyth, Missouri
FMI: 417-546-4431

22 — 6 p.m. Private Pesticide Applicator Training
Crowder College, Neosho, Missouri
FMI: 417-455-9500

23 — 6 p.m. Private Pesticide Applicator Training
Southwest Research Center, Mount Vernon, Missouri
FMI: 417-466-3102

24 — 1 p.m. Private Pesticide Applicator Training
Municipal Building, Taneyville, Missouri
FMI: 417-546-4431

28 — Southwest Missouri Spring Forage Conference
Springfield, Missouri
FMI: 417-532-6305 Ext.3

March

4 — Hilltop Farms Gelbvieh & Balancer Bull & Heifer Sale
Joplin Regional Stockyards, Carthage, Missouri
FMI: 417-842-3225

4 — Mead Farms Multi-breed Bull Sale
west of Versailles, Missouri
FMI: 573-302-7011

4 — Satterfield Angus & Charolais Bull Sale
at the farm, Evening Shade, Arkansas
FMI: 501-944-9274

March

7 — Novel Tall Fescue Renovation School
Southwest Research Center, Mount Vernon, Missouri
FMI: 417-466-3102

9 — Bull Breeding Soundness Exam Clinic
Barry County Vet Service, Cassville, Missouri
FMI: 417-847-2677

11 — Jacs Ranch Angus Bull Sale
at the ranch, Bentonville, Arkansas
FMI: 479-273-3030

11 — Salyer's & Sons Cattlemen's Kind Production Sale
at the farm, Billings, Missouri
FMI: 417-744-2025

11 — Wright Charolais Bull Sale
Kearney, Missouri
FMI: 816-776-3512

14-15 — Bull Breeding Soundness Exam Clinic
Dake Veterinary Clinic, Miller, Missouri
FMI: 417-452-3301

16 — Jasper County Livestock & Forage Conference
Water & Electric Building, Carthage, Missouri
FMI: 417-358-2158

17 — Sunflower Cattle Co. Annual Production Sale
Maple Hill, Kansas
FMI: 785-256-6461

18 — 1 p.m. Aschermann Charolais Bull Sale
at the ranch, Carthage, Missouri
FMI: 417-793-2855

18 — Circle A Ranch Angus Bull & Heifer Sale
at the ranch, Iberia, Missouri
FMI: 800-CIRCLEA

20 — Bull Breeding Soundness Exam Clinic
Countryside Animal Clinic, Aurora, Missouri
FMI: 417-678-4011

21 — Bull Breeding Soundness Exam Clinic
Animal Clinic of Diamond, Diamond, Missouri
FMI: 417-325-4136

21 — KW Cattle Angus Bull Sale
Fort Scott, Kansas
FMI: 620-224-7305

21 — Greene County Ag Production Conference &
Greene County Soil & Water District Annual Meeting
Springfield Livestock Mktg. Center, Springfield, Missouri
FMI: 417-881-8909

22 — Bull Breeding Soundness Exam Clinic
Christian County Vet Service, Clever, Missouri
FMI: 417-743-2287

22 — Stevens Land & Cattle Bull & Female Sale
at the ranch, near Carmen, Oklahoma
FMI: 580-327-7367

23 — Christian County Livestock & Forage Conference
High School Cafeteria, Clever, Missouri
FMI: 417-581-3558

25 — Seedstock Plus South Missouri Bull Sale
Joplin Regional Stockyards, Carthage, Missouri
FMI: 800-486-1160

MARKET WATCH

Joplin Regional Stockyards

JRS Sale Day Market Phone: (417) 548-2012
Mondays (Rick Huffman) | Wednesdays (Don Kleiboeker)
Market Information Provided By Tony Hancock
Mo. Department of Agriculture Market News Service
Market News Hotline (573) 522-9244
Sale Day Market Reporter (417) 548-2012

Market Recap | Feeder Cattle & Calf Auction

Receipts through Jan. 23, 2017: 36,556 (auction); 1,419 (video) – TOTAL: 37,975
Compared to sales through Jan. 20, 2016: 28,716 (auction); 1,032 (video) – TOTAL: 29,748

Summary

Feeder Cattle Auction Report for 1/23/2017 Receipts: 7,257 Week ago: 2,656 Year ago: 6,259 ***CLOSE*** Compared to a light, sharply lower test last week, steer calves 400 to 550 lbs 5.00 to 10.00 higher, steer calves under 400 lbs and steers over 550 lbs 2.00 to 5.00 higher, heifers under 600 lbs steady to 4.00 higher, over 600 lbs steady. Demand good, supply moderate. The sun has been shining and mild temperatures is giving cattlemen some relief from the recent rain and ice. Feeder supply included 61 percent Steers, 36 percent Heifers, and 3 percent Bulls. Feeder Supply over 600 lbs was 59 percent. Please Note: The below USDA LPGMN price report is reflective of the majority of classes and grades of livestock offered for sale. There may be instances where some sales do not fit within reporting guidelines and therefore will not be included in the report. Prices are reported on a per cwt basis, unless otherwise noted.

Gety the complete Joplin Regional Stockyards Feeder Cattle Market Summary online at www.joplinstockyards.com.

2016 Total Sales: 410,359 (including 82,422 sold on video)

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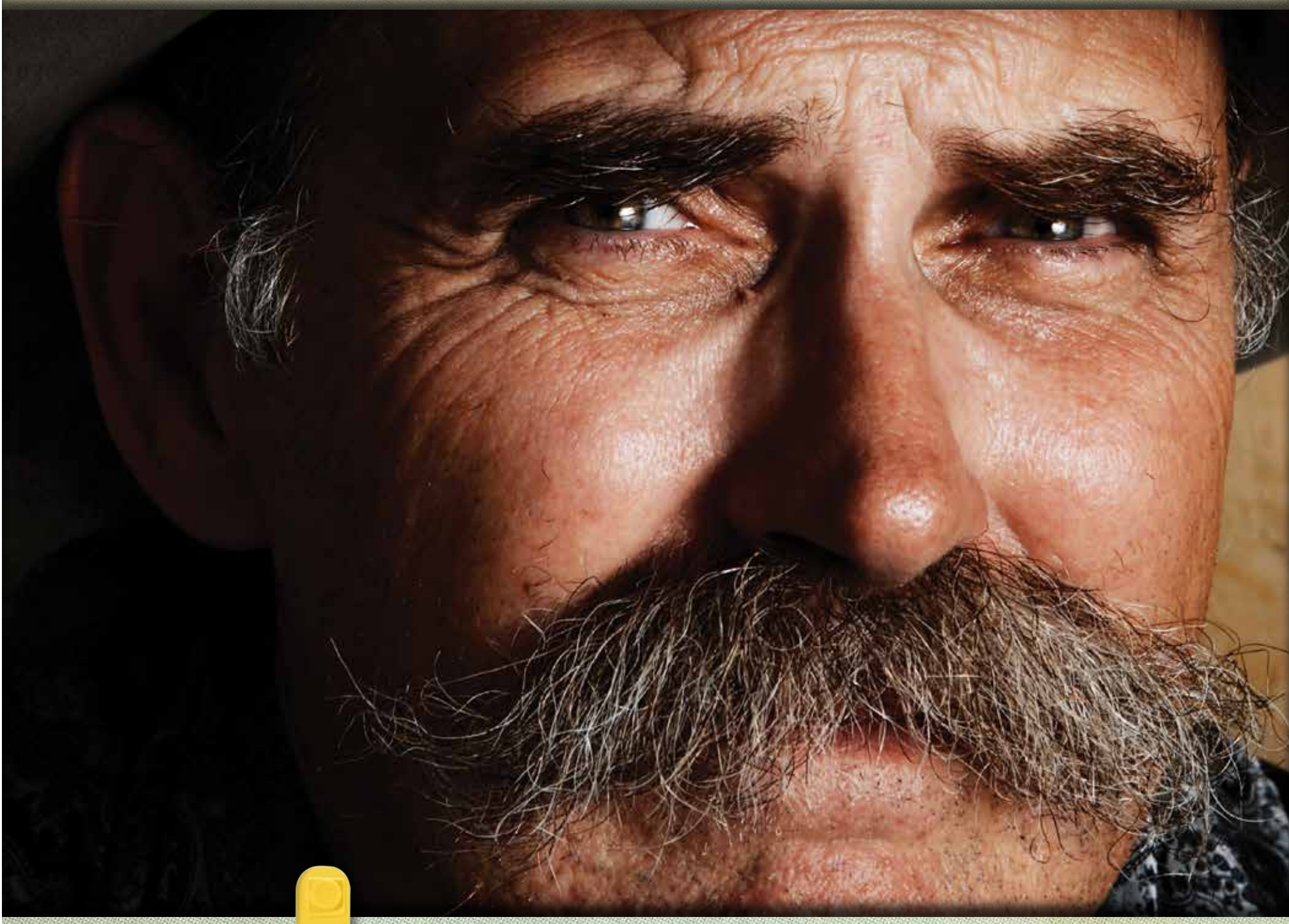

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