FEEDLOT®

FEEDER INFORMATION HIGHLIGHTS

Volume XXVIII Number 3 April/May 2020

$5.00

ROTO-MIX®

You asked for BIGGER... We can deliver.

Roto-Mix
Stationary Feed Mixers & Commercial Feeder Semi-Trailers

New rotary feed mixer with 1220 cu. ft. capacity.

The new Roto-Mix 1220-20 rotary stationary can quickly fill a Roto-Mix CFB Semi-Trailer for rapid bunk delivery. Combine the feed mixing capabilities of Roto-Mix feed mixers with the feed delivery efficiency of Roto-Mix CFB Semi-Trailers and you have the perfect combination. Blend uniform feed rations and deliver to the bunk in a short amount of time.

Dual direction floor

Made in U.S.A.

www.rotomix.com

Call for more information! 620.225.1142

R1220/CFB

ROTO-MIX®

FEEDLOT

Volume XXVIII Number 2
March 2020


Jill Dunkel
Editor
feedlot@st-tel.net


Annita Lorimor
General Manager
feedlot@st-tel.net


Amy Spillman
Digital/Circulation Manager
circulation@feedlotmagazine.com


Greg Strong
Publisher


Robert A. Strong
Editor Emeritus

FEATURES

FEEDLOT FOCUS

COW/CALF

Cover photo by Amy Spillman

MARKETING/MANAGEMENT

BY JILL J. DUNKEL

Staying Positive

This issue of *Feed•Lot* magazine has been a challenge to put together. We strive to provide up-to-date industry news, but the news lately is changing as fast as the ice melts in my water glass. A week ago, COVID-19 known as the coronavirus, was news for the beef industry due to a backup in export demand. Just a few days later, major events are canceled stateside and colleges are moving to online-only classes. It seems about the time we had this issue ready for the printer, something major changed the situation.

That was the case for me yesterday. I just couldn't get things marked off the list because the situation kept changing. I needed a break. I needed to step away for a bit.

My office sits on my family's ranch in North Texas. I look out my window and see cattle and horses grazing across our pastures. It's spring time here, and addition to the pear tree blooms and warmer temps, that means baby calves are hitting the ground. So yesterday evening, I jumped in the UTV and went to check on mommas and babies.

Crossing the cattle guard into the pasture where we calve, the still-pregnant mommas heard the motor on my transportation and hit a long trot. They were hopeful I had a bag or two of cake on board. Then there was the next wave of movement in the pasture…mommas with babies a day or two old. They were coming, but at a slower pace so that the youngsters could keep up as their wobbly legs navigated the terrain. Those would be moved into the neighboring pasture with other cows that had calved.

Then there was the "I'm not coming even for cake" group. There were eight in that bunch. They held back from the crowd and kept checking on their new arrivals that, in their mind, were a wee bit too young to join the others.

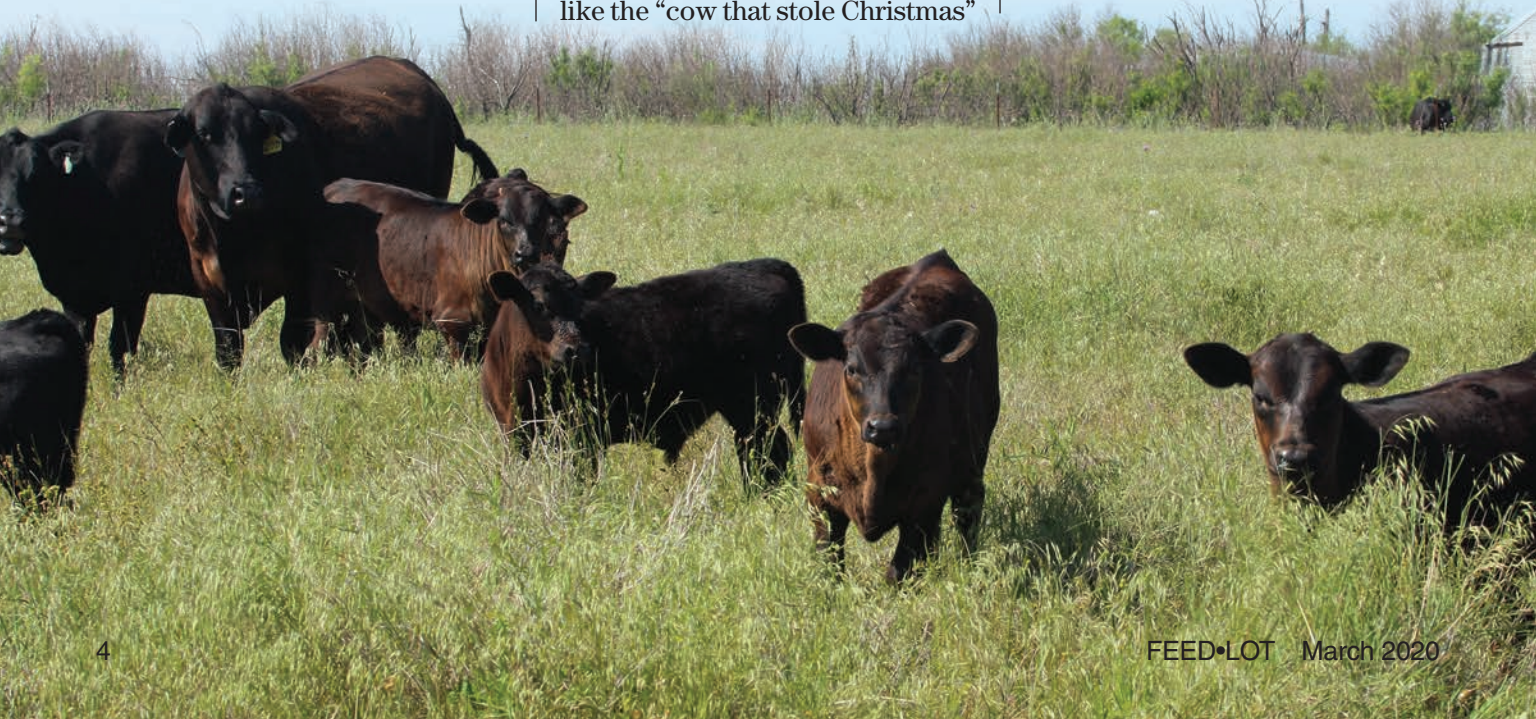
It's always refreshing to see new life in the pasture. Shaky little legs trying to figure out how all four should work together... with mommas on high alert, dropping their head every 10 seconds or so to double check on their little one as I skirt nearby to get a peek or add an ear tag.

Things are tough right now for cattlemen. Markets are wacky, limit down one day and limit up the next. Exports, domestic demand and disposable income could all have an impact. The cattle business can change in the blink of an eye. Just like the "cow that stole Christmas" in 2003, it's likely that COVID-19 will have some sort of lasting effect.

But also like the wild ride in 2003, our industry will prevail. Admittedly, a few might not be able to ride out the storm. There will be some who can't withstand the volatility. However, the industry is strong. Much like that new wobbly calf, time will help us sort out things and get stronger.

Several articles in this issue of *Feed•Lot* focuses on cow-calf production. Several of our readers are cow-calf operators, and that's where it all starts in the production chain. These articles are also helpful for anyone in the industry. Page 6 looks at a genetic approach to animal health. Researchers with Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Australian Angus Association are working on a project to develop a genomic EPD for immune response. How cool will that be? Articles on building the best calf crop and weaning practices for optimum health results are on page 18 and 20, respectively.

As I get this issue out the door today, I plan to keep the optimism felt during calving season at the forefront. I hope you can as well. FL



MULTIMIN® 90

An injectable aqueous supplemental source of zinc, manganese, selenium and copper

KEEP OUT OF REACH OF CHILDREN

CAUTION: FEDERAL LAW RESTRICTS THIS DRUG TO USE BY OR ON THE ORDER OF A LICENSED VETERINARIAN.

ACTIVE SUBSTANCES PER ML:

Zinc	60 mg/mL
Manganese	10 mg/mL
Selenium	5 mg/mL
Copper	15 mg/mL

OTHER SUBSTANCES:
Chlorocresol 0.1% w/v (as preservative).

DOSAGE RECOMMENDATIONS:

CALVES: Up to 1 year	1 mL/per 100 lbs. bodyweight
CATTLE: From 1-2 years	1 mL/per 150 lbs. bodyweight
CATTLE: Over 2 years	1 mL/per 200 lbs. bodyweight

PRECAUTION:
Selenium and copper are toxic if administered in excess.

Always follow recommended label dose.

Do not overdose.

It is recommended that accurate body weight is determined prior to treatment.

Do not use concurrently with other injectable selenium and copper products.

Do not use concurrently with selenium or copper boluses.

Do not use in emaciated cattle with a BCS of 1 in dairy or 1-3 in beef.

Consult your veterinarian.

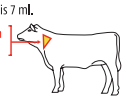
CAUTION:
Slight local reaction may occur for about 30 seconds after injection. A slight swelling may be observed at injection site for a few days after administration. Use standard aseptic procedures during administration of injections to reduce the risk of injection site abscesses or lesions.

DIRECTIONS:
This product is only for use in cattle.

MULTIMIN® 90 is to be given subcutaneously (under the skin) ONLY.

It is recommended to administer the product in accordance with Beef Quality Assurance (BQA) guidelines. Minimum distance between injection sites for the MULTIMIN® 90 product and other injection sites should be at least 4 inches.

Inject under the loose skin of the middle of the side of the neck. Max volume per injection site is 7 ml.



Store Between 15°C and 30°C (59°F and 86°F).

SUPPLEMENTATION PROGRAM	
BULLS	3 times per year
BEEF COWS	4 weeks before breeding 4 weeks before calving
DAIRY COWS	4 weeks before calving 4 weeks before insemination at dry-off
CALVES	at birth at 3 months and/or weaning
HEIFERS	every 3 months – especially 4 weeks before breeding
(program gives planned dates that can be varied to suit management programs)	

DOSAGE TABLE			
ANIMAL WEIGHT (lbs)	CALVES UP TO 1 YEAR 1 ml/100 lb BW	CATTLE 1 - 2 YEARS 1 ml/150 lb BW	CATTLE > 2 YEARS 1 ml/200 lb BW
50	0.5 ml	-	-
100	1 ml	-	-
150	1.5 ml	-	-
200	2 ml	-	-
300	3 ml	-	-
400	4 ml	-	-
500	5 ml	-	-
600	6 ml	-	-
700	7 ml	-	-
800	-	5.3 ml	-
900	-	6 ml	-
1000	-	6.6 ml	5 ml
1100	-	-	5.5 ml
1200	-	-	6 ml
1300	-	-	6.5 ml
1400	-	-	7 ml

Packaged in 100 mL & 500 mL size
NDC No. 49920-006-01 NDC No. 49920-006-05

TAKE TIME OBSERVE LABEL DIRECTIONS

MANUFACTURED FOR:
MULTIMIN NORTH AMERICA, INC.
Fort Collins, CO 80528

℞

ARE YOUR CATTLE *Really* BREED-READY?

Timing is everything – With every cow/heifer you only have one breeding season a year. Wouldn't you want to have as many cows/heifers and bulls as breedy-ready as possible?

DON'T COMPROMISE YOUR CATTLE REPRODUCTION & HEALTH – INJECT MULTIMIN® 90

Learn More ➔

℞ REQUIRED
www.cattlebreedready.com
1.866.269.6467

BY MIRANDA REIMAN

Proactive Animal Health Means a Genetic Approach

Imagine a world where you could breed cattle that never get sick.

It's not reality today, but the American Angus Association is taking the first step toward tools that can help select for greater immunity.

"As we continue to refine genetic selection, we realize that genetics contribute to animal health in ways we probably don't fully understand today," said Mark McCully, Angus CEO. "As we start identifying genetic lines that are less likely to get sick, that has ramifications across the entire industry."

In a world where breeders can place pressure on everything from fertility and growth to end-product merit, "It is kind of the missing link at the moment," said Stephen Miller, director of genetic research, Angus Genetics Inc. (AGI).

At last fall's Angus Convention in Reno, Nevada, the Association talked about possible future projects that will likely include the Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Australian Angus Association to get at more data more quickly.

"We've had increasing scrutiny around the use of antibiotics, so we need to be ready," said Brad Hine, CSIRO research scientist. "Our ability to use antibiotics in our food-producing animals is, in the next few years, going to be rapidly reduced. A really good strategy is to try to breed animals that have improved disease resistance."

Over the next two years, 3,000 U.S. cattle will get three trips through the chute: one to administer a test antigen intramuscularly—similar to a vaccine trial—one to gauge response and administer a second antigen, and a final trip to measure response to that second stimulant.

"It's a way for us to measure healthfulness, or an animal's ability to respond with antibody production," Miller said, that will help identify DNA markers for immunity. "The goal down the road is that we would have a genomic EPD [expected progeny difference] for immune response, based on these phenotypes."

It's all part of a larger project, working with immunologist Bonnie Mallard, University of Guelph, and her team along with Semex. (This work was funded in part by the Government of Canada through Genome Canada and Ontario Genomics.)

The Australians have already measured 4,500 and it is the long-term intention that their dataset could be combined with the North American project's findings in the future.

Hine said their project showed the industry needs to "rethink" health predictions.

"It's easy to make the assumption that the most productive animal is the animal with the best immune system," Hine said. "Obviously, the healthiest animal grew the fastest."

But in some instances disease resistance is negatively correlated with production. For example, high-milking Holstein cows are often more at risk for mastitis, he noted.

"The research tells us, if we select for productivity alone, we increase susceptibility to disease," Hine said.

Different types of pathogens are dealt with in different ways. There's a cellular response for viruses that live inside the cells and antibodies that fight those outside the cells. CSIRO tested for both.

"The risk you run if you select animals that are very good at one arm of the immune system is that sometimes those animals are not as good at handling pathogens that require the opposite arm," he said, noting they measured animals at their most stressful points.

"It's about breeding animals with a really strong immune system so they can handle whatever challenges they face," Hine said.

The heritability appears to be moderate. Correlations to other traits were weak but followed as

expected: temperament was favorable while production traits like growth were negative.

Following indexed animals through the feedlot, the Australians recorded a $3.50 animal-health cost for every animal that scored high for immunity. Those in the low group accrued $103 per head.

Hine said those are conservative estimates that don't account for labor.

"If we can identify low-immune-competent animals and get them out of the system, there is a huge economic benefit for us as an industry," he said.

The low-immunity group, just 11% of the population, accounted for 35% of health costs.

"As tools are developed, I think the adoption rate will be pretty significant," McCully said. "A slight change in the improvement of animal health has huge economic ramification across the industry."

The technology is "in its infancy," he said, but the long-term goal would be to create genetic tools for Angus breeders and their commercial customers, such as genomic tests for replacement heifers or to prescreen cattle bound for the feedyard.

"I could definitely see this as a way of being better able to characterize risk," McCully said. "You could modify your management to the risk level."

Protocols at the yard could differ according to test scores. Eventually, market signals should follow, he said.

"If I'm a feeder, I'm still going to want those cattle vaccinated—it doesn't change anything about good calf management we do today," McCully said. "But if I can look at a set of cattle that has all of that, plus the genetics that give them the likelihood of staying healthier, that becomes an economic signal back to the producer to make more of those cattle."

Programs like AngusLinkSM could potentially convey information through the chain.

"I really do see immune competence as just one part of the puzzle when we start to think about the resilience of the animal," Hine said.

Cattlemen still need a focus on management and environments that control pathogens, giving cattle less exposure in the first place.

"We can breed the animals that are the most disease-resistant, but if we put them in a really bad, high-disease environment, then they will eventually succumb," Hine said.

Even with improved tools, cattle will still get sick, although less often. That allows for less antibiotics in the system.

"There are obvious benefits for producers, economically, from breeding for improved immune competence, but I think the biggest benefit is maintaining consumer confidence in our beef," Hine said. "We need to be proactive rather than reactive." FL

Protect Cattle from Exposure to Lepto and Other Feral-Swine Disease Risks

Increasing biosecurity and practicing prevention minimizes disease transmission to cattle

With nearly 77% of all livestock located in regions with feral swine and up to 34 known diseases those swine can transmit, it's crucial for beef producers to protect their cattle from exposure to feral-swine disease risks.

The biggest struggle we're having with feral hogs is that we're starting to see more of them, and in parts of the country we've never seen them before," said Jody Wade, DVM, Boehringer Ingelheim. "They're spreading disease to cattle that, unfortunately, can cause a lot of problems, including reproductive diseases."

The greatest threat to cattle from feral swine is disease transmission. Transmission usually happens when swine contaminate feed and water sources. This can infect cattle with a handful of costly diseases such as Brucellosis, Pathogenic E. coli and leptospirosis, one of the most common reproductive diseases leading to production and financial losses.

The following steps can help beef veterinarians and producers make strides to protect cattle from exposure to feral-swine disease risks:

Increase biosecurity

For producers experiencing feral swine in their area, Dr. Wade recommends making sure that their operation has a good fence. It's hard to keep feral swine away from livestock, and barbed wire fences typically don't offer the best protection. Net wire fences provide a barrier that pigs can't go through or underneath. Not only can fences protect cattle from disease transmission, they can also protect farm equipment and crops from being damaged by feral swine.

Another key component is to avoid feeding cattle on the ground.

A lot of producers don't realize that by feeding cattle on the ground, they are increasing the risk of pathogen transmission. When feral swine have access to feed, it is easy for them to contaminate it with their saliva or urine, putting cattle at risk the next time they eat.

Practice prevention

"When beef producers ask about prevention, I tell them vaccination is the number one tool to protect cattle from exposure," said Dr. Wade.

Killed vaccines that protect against leptospirosis are easy to add to any protocol as a first line of defense. More often than not, when a producer purchases their cattle, they are given limited information on the animals' previous preventive health programs. Since killed vaccines only contain killed antigens, they offer safe and effective protection regardless of previous vaccination status. They can also be administered to cattle of all ages and at all stages of production.

"If we vaccinate routinely for leptospirosis, we know we can control it," Dr. Wade concluded.

To learn more about vaccination plans and protocols to control diseases of feral swine, producers should work closely with their veterinarians. FL

Boehringer Ingelheim Cattle First.

SOMETIMES TWO IS BETTER THAN ONE.

Ask your veterinarian about how you can make the most out of your deworming protocol.

LONGRANGE® (eprinomectin)

LONGRANGE gives you the power to send parasites packing all season long with just one dose. That's just one dose for more weight gain in your cattle and more dollars in your back pocket.

LONGRANGE IMPORTANT SAFETY INFORMATION: Do not treat within 48 days of slaughter. Not for use in female dairy cattle 20 months of age or older, including dry dairy cows, or in veal calves. Post-injection site damage (e.g., granulomas, necrosis) can occur. These reactions have disappeared without treatment.

SYNANTHIC® (oxfendazole)

Effective, efficient and economical, SYNANTHIC is administered at 5 mL per 550 pounds of body weight. The result is less waste, less stress and more accurate dosing.

SYNANTHIC RESIDUE WARNINGS: Cattle must not be slaughtered until seven days after treatment. Because a withdrawal time in milk has not been established, do not use in female dairy cattle of breeding age.

Multiple Factors Impacting Markets

The roller coaster we call the cattle markets are providing a heart-stopping ride, thanks to fears of the coronavirus (COVID-19) and the Russia-Saudi Arabia oil price war. In the U.S., broad market fears started with coronavirus news related to beef exports, which were impacted by the virus. Other global markets also responded with a knee-jerk reaction, which is leading to a possible global economic slowdown. Add to that the fact that OPEC and Russia could not come to an agreement on crude oil prices this weekend, and it's a big "what if" for many aspects of the economy.

Decision making during almost any market can make one second-guess or hope they are on the side of "right," but decision making during turbulent markets can tip the stress meter past the red danger zone. Dr. Derrell Peel, Oklahoma State University extension livestock marketing specialist says the coronavirus is another example of a "black swan," — a rare, unforeseen event that has a sudden, unexpected and dramatic impact on markets. Other "black swans" that had a major impact on the cattle business include the packing plant fire last year, or the first BSE case in December of 2003. But Peel says this situation is slightly different.

"First, those events were within the beef industry whereas the coronavirus is a much broader and varied set of effects in U.S. and global economies. This makes it much harder to assess the multitude of different impacts that are occurring or could occur," he said.

Complicating the matter, Peel said the packing plant fire and BSE case were both single events. Afterwards, it was relatively easy to figure out the time lines of recovery.

"The current situation is not a single event; is still developing; and will end over a period of time at some point in the future. Clearly, the uncertainty has not peaked yet and the best we can hope for, from a market perspective, is that there will come a time when it appears the worst is over and we can see a path to a lengthy recovery in markets," he said.

COVID-19, the latest "black swan" of the cattle industry will have ripple effects for some time in all segments of beef production.

Couple that with the rapid drop in crude oil prices, and it gets complicated. West Texas Intermediate crude oil, the U.S. benchmark for oil prices, plunged as much as 33%, rivaling the price drop during the 1991 Persian Gulf War. Layoffs for oil-related workers were rippling through the industry.

Dr. Stephen Koontz from Colorado State University's department of agricultural resource economics says although the broader U.S. macro economy looks reasonably good, the protein balance sheets show a problem for the first quarter of 2020 for beef.

"Numbers of animals and carcass weights are higher through the first quarter and have the potential to be higher for the rest of the year for the competing meats," Koontz says. Pressures on protein prices with additional supply and weaker export demand, coupled with global economic uncertainty, leads to price pressures in the cattle markets through April and possibly into may, he says.

Increased beef production is the result of a 1.3 percent year over year increase in slaughter numbers, coupled with increased carcass weights, according to Peel. Steer carcasses are averaging 19.6 pounds heavier while heifer carcasses are at 10.6 pounds heavier, year over year.

"These factors, and the broader macroeconomic concerns, suggest persistent weakness in cattle prices through the spring. And until the dynamics of the health crisis are more certain there will be considerable volatility," Koontz says.

Peel agrees. "Near term, I don't

see good prospects of waiting this situation out for a sudden market recovery. Cattle producers who have to make marketing decisions in the next 30-60 days for sure, and perhaps longer, should look for markets to remain weak with a decent prospect of getting weaker. Obviously, the news about COVID-19 is changing constantly and may support brief short-lived market bounces."

Although Peel says it's hard to tell if the coronavirus has impacted beef demand, it has appeared to hurt export demand.

The backlog of exports started mid-February when the Chinese government imposed travel restrictions that kept tens of thousands of workers in their homes. Ports were at a virtual standstill because workers were told to stay home to avoid the spread of infection. Reefer plugs to power refrigeration units were at 100% capacity, according to multiple sources.

Italy has placed much of the country in a "red zone," restricting movement of its citizens. Schools and universities are closed, and public events are halted, according to the Washington Post. Measures of mass quarantining will likely lead to further export backlogs.

Marketing strategist Robyn Volkening says the impacts could reach beyond the obvious. Items like packaging tape, labels, ink and other mundane items could affect production lines in several industries.

"Something mundane like packaging may seem silly, but if you can't ship your product correctly and it's damaged, what will you find for an alternative? Do you have an alternative printer for your labels if they are required on your product?" she asks.

At press time, many U.S. businesses and schools were modifying plans or canceling large events, which will ultimately restrict commerce. Analysts predict this will lead to shortages of some items and an overflow in others. It will likely affect the disposable income of workers in some industries, such as oil field and entertainment.

Peel says impacts on domestic demand may be yet to come.

"It will be important to watch both demand and supply in the coming weeks to see if the current beef and cattle market expectations will have to be revised significantly. There are a multitude of market factors to sort out including: new trade agreements, macroeconomic changes (stock market, interest rates, etc.), exchange rates, African Swine Fever, and others that will make it more difficult to determine the more direct impacts of COVID-19 on international and domestic beef markets," he cautions. "Stay tuned." FL

BY DON TYLER

THE MANAGER AS ~~COACH~~ COUNSELOR

Feedlot managers have had to adapt to a wide range of new technologies and production strategies, reduced margins, unpredictable external forces and a very tight labor supply. Some of these are more challenging than others. Based on comments and concerns from recent discussions with several managers, they have noticed a significant increase in the employees that come to them with an unusual array of personal problems. As a result, they are often asked to play the role of personal counselor.

These employee's issues seem to fall into two categories. The first are family, financial and relationship problems which may be quite severe and sometimes due to circumstances beyond their control. This can include the stressful situations of divorce, serious medical conditions or loss of a family member.

The other group is a growing and uncanny set of nearly unbelievable, mostly self-inflicted dilemmas that the employee has created through a series of bad personal choices. From my own experience with employees, a sampling of these cases would include someone who decided to deal drugs or fence stolen property, be in multiple relationships resulting in numerous children from several different partners, racking up insurmountable debt, chronic substance abuse leading to multiple stints in and out of rehab, accumulating so many garnishments that their entire paycheck won't cover them all, and being on a first name basis with every sheriff's deputy in three counties.

Practical Strategies

We certainly want to avoid offering help to those with emotion-based issues such as depression or other areas that may be mental illness. Always help these individuals seek professional counseling.

For the other situations, even if you have no training or experience as a counselor you can provide some practical, logical assistance that helps direct the employee toward real solutions. Addressing these employee issues should include a few basic strategies:

- Don't just provide a sympathetic ear. Help the employee seek solutions.
- Avoid solving the problem for them.
- Assist them in finding the best people to help them solve their specific problems.
- For the problems that are self-inflicted, directly and tactfully explain how their choices led to their problems.
- Keep your conversations with them confidential but remember that they may not behave in the same way. Be cautious with what you say.
- It's okay to tell them you don't know how to solve their problem.

Ground Rules for Counseling

When we choose to assist employees with their personal problems it is important to establish clear boundaries. Without some ground rules these employees will consume significant time that can easily interfere with our other management duties as well as our personal interests and family time. Some practical boundaries could include:

- No counseling discussions longer than 15 minutes during work hours, and nothing longer than 30 minutes after work.
- Insist that the employee always work harder on their problems than you. They should be put it at least 70% of the effort.
- At the end of each discussion give them specific actions they must take. For further discussions to occur they must prove that they have acted on your previous recommendations.
- The only true solution is one where they take full ownership of their situation and take appropriate actions. Don't solve it for them.
- Any time that they ask for your time after work let them know that they are taking your personal time away from activities that are important to you.

Encourage them to avoid individuals that might actually be making their problem worse and inhibiting real solutions. If they reveal that most of their advice is coming from their buddies or girlfriends every night at the bar, they are most likely taking the council of fools who can't solve their own problems.

These strategies may seem somewhat harsh and authoritarian for your preferences. Realize though, that if you do not keep the employee in control of and accountable for their choices, you can easily create a situation of subtle dependency on you for solutions to their problems.

For Management and Executive Coaching assistance, conference speaker or help with your employee and family business challenges, Don can be reached at don@dontyler.com, www.dontyler.com or by calling 765-490-0353. FL

BITE BACK.

Bayer knows fly control. That's why we offer easy, effective ear tags in our insecticide product line. **Effective for up to five months,*** our pyrethroid and organophosphate ear tags can be rotated to help reduce the risk of insecticide resistance. Still skeptical? Cattle treated with Corathon® gained **16 lbs more** on average compared to untreated cattle in a 2011 study.[1]

[1]Data on file. Bayer, Shawnee Mission, KS.

Patriot™ Insecticide Cattle Ear Tag

Corathon® Insecticide Cattle Ear Tag

CyLence Ultra® Insecticide Cattle Ear Tag

*See product labels for complete product information, indications and application instructions.

I20817

BY SUSAN HIMES

Rx Required

Food and Drug Administration is continuing the phasing in of a law that requires a prescription for any antibiotic use in animals raised for human consumption,

No longer will producers who need injectable antibiotics for their cattle be able to just grab them at their local feed store or order them online.

Producers should be aware that the U.S. Food and Drug Administration is continuing the phasing in of a law that requires a prescription for any antibiotic use in animals raised for human consumption, as well as for all companion animals.

Prescriptions, livestock and your vet

A prescription is already required for most antibiotics delivered to livestock, and the remaining three categories of injectable antibiotics available over-the-counter will soon be joining the list of medically important antimicrobials that require a veterinarian's prescription.

"It will cause a little bit of difficulty because producers who want and need to use antibiotics are going to have to work with their beef cattle or livestock veterinarians and develop a veterinary client-patient relationship in advance of any disease issues," said Joe Paschal, Ph.D., AgriLife Extension livestock specialist, Corpus Christi.

Paschal recommends producers should, if they haven't already, develop a relationship with a local veterinarian to be prepared for these changes. People should also be aware that these laws apply to companion animals like horses.

"This means that your veterinarian knows who you are, knows the kind of livestock you are raising and what you are doing with them, understands your management, and that you agree if they come out to diagnose an illness and use an antimicrobial to treat a disease or illness, you will follow their directions including dosage, duration and withdrawal," he said.

FDA rules and regulations

The FDA's Center for Veterinary Medicine stated a two-year phase-in period would be allowed once the FDA Government Guidance document is finalized. A draft version is currently available online.

The FDA has had a law in place since 2017, which made most antibiotics administered to livestock by prescription only. These new guidelines further extend the need for veterinarian oversight by including the remaining injectable antibiotics.

"The amount of antibiotics used by agriculture has been dropping in recent years," said Thomas Hairgrove, DVM, AgriLife Extension specialist, College Station. "The producers I've spoken with don't seem concerned that these remaining injectables will now require a prescription too."

After a peak in 2015, FDA studies show antibiotic use has declined. In 2017 alone, use of medically important antibiotics dropped 33%.

Tylosin, penicillin and tetracyclines are among some of the more popular antibiotics still available over the counter as injectables – for now. In 2018, the FDA published a five-year plan for phasing out all antibiotics without a veterinarian's prescription. The plan should be fully implemented by 2023, although compliance is expected as soon as 2020.

Practicing good biosecurity

"In the long run, practicing good biosecurity, correctly diagnosing illnesses and the proper prescription of the right antibiotic may help shorten the incident of the disease, improve the productivity or return of the health of the animal, and reduce overall antibiotic use in livestock, pets and in humans," said Paschal.

Since some antibiotics are used in both livestock and humans, the FDA's concern is that antibiotic-resistant bacteria could develop more quickly from the widespread use of certain antibiotics that are medically important to humans – negatively affecting both humans and animals.

"Antibiotic resistance is not new, penicillin was discovered in the late 1920s and widely used in humans by the 1940s," said Paschal. "By 1950, the first case of resistance was discovered in humans. This is a step in the right direction to protect these valuable compounds to prevent diseases."

The greater the use of antibiotics, across all species, the greater the number of antibiotic-resistant bacteria or "superbugs" that can develop.

"Although the percentage of antibiotics used in agriculture is declining, we want to continue to use them judiciously and intelligently," said Hairgrove. "Data shows ag is responding in a positive way, and I think our industry is doing a heck of a job." FL

Can you guess which supplement they prefer?

The research shows calves prefer supplements with IntelliBond® trace minerals

Three studies confirmed it. When given a choice, **beef calves are more than twice as likely to consume supplements with IntelliBond® trace minerals** compared to sulfate or organic sources of trace minerals.[1-3] Switch to IntelliBond trace minerals for better palatability, plus higher bioavailability, increased fiber digestibility, less leaching and less binding with antagonists.

Smart minerals, smart nutrition... smart decision

Check out the data and discover the benefits of a sulfate-free trace mineral program at **micro.net/species/beef**.

IntelliBond®
a Selko product

www.micro.net
(317) 486-5880

SULFATE FREE Trace Mineral
No Sulfate · No Copper Sulfate · No Zinc Sulfate · No Manganese Sulfate

MADE IN USA

[1] Wiebusch, 2015. JAM.
[2] Caramalac et al., 2017. J. Anim. Sci. 95:1739-1750.
[3] Micronutrients trial #2017BC106USCZM.

BY KI FANNING, PH.D., PAS

Slow Is Fast

Cattle Handling and Injury Prevention

Cattle handling is an everyday activity in most feedlots, and can either be a low stress and relatively easy task or a high stress, unpleasant event for both cattle and their handlers. The more stressful cattle handling is, the more dangerous of a work environment it is for both people and cattle. Regarding people, dangerous work environments have significant financial implications in the form of lost work time, medical costs, and insurance to name a few.

For cattle, the effects of stressful or dangerous handling on health and performance are numerous and have gained more attention in recent years. Stress increases cortisol levels, which will reduce the immune response resulting in vaccine failure and/or a higher morbidity rate. In addition, animals that are repeatedly handled in a fast paced, stressful way will tend to be more high-headed (nervous). High-headed cattle gain slower and do not convert as well as their calmer counterparts, and they tend to have more bruising and injuries. It takes 20 minutes for the heartrate of severely agitated cattle to return to normal.

Tom Jones with Hy-Plains Feed Yard talked about taking time processing cattle in a recent video from the American Angus Association. "Nothing here in the feed yard is a timed event. We move cattle slowly, we process cattle slowly; we get asked all the time how many cattle we run through a day, and I really don't know; not as many as everyone else. It doesn't matter to us how the cattle are handled. Cattle will tell you how fast they want to go."

He also echos the "slow down" mindset in his approach to management.

"I just want to make sure we are taking care of the cattle needs right. Cattle will always tell you what they need. The problem is the business is so fast we don't have time to stop to see what they are asking for."

He says it's important for all employees to embrace a low-stress mindset.

When moving a herd, walk in the direction you want them to move while retreating from their flight zone. When they quit moving, enter their flight zone, walking in the opposite direction you want them to move. When moving cattle through a gate (i.e. counting cattle), move in and out of their flight zone to increase or decrease the rate at which the cattle move. Cattle have a herd mentality so by calmly driving the alpha animal (not the most high-headed or aggressive one) where you want them, the others will follow. When driving cattle, do not yell or use high-pitched sounds, including whistling and whip cracking. Cattle have much more sensitive hearing than humans. Making noise will attract attention to yourself instead of the way you want cattle to move. Sounds should be quiet and calm, including music, motors, equipment, air and hydraulic lines. Looking directly at an animal is also more pressure than looking down or away.

All the movements by cattle handlers should be slow and calm. Processing cattle is not a race, and one can still work in an efficient manner by handling cattle slowly and calmly. Arm waving or vigorous waving of sorting sticks should be avoided whenever possible. Flags and paddles can be used as an extension of the body/arm but should not be moved rapidly or loudly. Electric cattle prods should only be used on stubborn cattle (approximately 1% of the cattle). ATVs, while often handy and convenient, are loud and are very difficult to drive at a slow enough pace to be low stress. If an ATV is used, make sure that the cows are always at walking speed; take your time. Likewise, with a horse or a dog, cows should be at a walking speed and remember not to drive cows from directly behind due to their blind spot.

With everything that must be done around the feedlot on a daily basis, it is easy to get in a hurry and rush when handling cattle. The industry is becoming more aware of the negative impacts of stress and poor stockmanship on cattle wellbeing and performance, as well as the health and wellbeing of caregivers. We can all learn and improve in this area, regardless of how many years of experience we have with cattle. Please do yourself and the industry a favor by slowing down a little, and be as safe as possible while handling cattle. Handle cattle in a manner that if someone not from rural America was watching, they would let you take care of their pet.

For assistance with livestock consulting issues, visit www.gplc-inc.com. FL

Slower cattle handling techniques can reduce cortisol levels and improve performance.

For the second year in a row American AgCredit issued a full 1% cash patronage distribution, resulting in a record $115.4 million cash back to our members for 2019.

It pays to be a member.

AMERICAN AGCREDIT
MONEY FOR AGRICULTURE

Find out how it works at AgLoan.com/patronage
or call us at 800.466.1146.

BY DAN LARSON, PH.D. AND CHRIS MUEGGE, M.S.

Building the Best Calf Crop

Most producers are mired in, or careening toward, spring calving season 2020. Bringing the next crop of calves into existence is no small feat and it is easy to get lost in the day-to-day grind. Many of you have dotted all the I's and crossed every T regarding precalving vaccinations and cowherd nutrition.

Now is the time to create a checklist of all components needed to create a calf crop with the greatest value. It goes without saying that the type of operation, whether it be seedstock, commercial cow/calf or a mix thereof will influence that checklist. The important thing is to have a plan, based on goals and market dynamics, that will help you achieve those goals.

There are many facets of calf rearing that need to be considered. These include vaccination strategy, calfhood implant program, to creep feed or not, castration timing, early weaning, and replacement female selection, among others. This article will not delve deeply into vaccination. However, neonatal, turnout and preweaning vaccinations are an integral part of creating a highly valued calf crop.

Personal observation and veterinary interactions, clearly show that the more confined a cowherd is during calving, the more important vaccine intervention can be to calf viability. Make it a point to visit with your veterinarian on an annual basis to review your neonatal health program because diseases and vaccines are dynamic and the protocol that worked last year may not work this year. Survey data from North Dakota State (NDSU) revealed that preweaning vaccination increased calf value by $2.50/cwt. Moreover, if a vaccine is given at turnout time, preweaning vaccines will be a better booster and promote healthier calves at weaning.

Timing of castration is also an important consideration. Generally speaking, there is no economic advantage to delaying castration until weaning if calves are implanted at turnout/branding time. Kansas State data indicate that calves castrated at 90 days of age and given an estrogenic implant (Ralgro, Synovex C) at that time were 17 lb heavier after a 28-day receiving period compared to calves castrated at weaning.

However, in this study, the weight advantage was lost if the early castrated calves were not implanted. Data from the University of Nebraska also predict about a 0.1 lb/day reduction in Average Daily Gain (ADG) for every month of age delaying castration. Again, taken together, these data suggest castrating early and implanting is clearly beneficial. Furthermore, if you are in a non-hormone program, castrating early is likely a wash with late castration. Regardless of timing, the NDSU survey revealed a

$6.20/cwt lower price if males were left intact vs. castrated. Clearly, castration pays. As a side note, the NDSU also revealed that dehorning improves calf value by $2.50/cwt.

Early weaning is perhaps a more difficult area to assign economics. However, in the case of drought, a high percentage of young cows or a lack of available pasture, early weaning is a viable option. There are numerous studies on early weaning, loosely defined as calves 70-90 days of age and the data show a clear improvement in feed efficiency of early weaned calves. Some studies also demonstrated an improvement in cow pregnancy rate, a reduction in cow feed intake, and an improvement in carcass traits of the calf.

There are definite challenges in managing a 90-day old calf weaned in the feedlot, however; those are not insurmountable. The recent trend toward drylot cow programs spurred increased interest in early weaning. However, as the calf is consuming a Total Mixed Ration (TMR) based diet with cow, UNL research does not predict an improvement in total system economics with early weaning drylot raised calves. Early weaning is more appropriate as a management tool for pasture-based cow systems in times of added environmental stress.

Creep feeding is a more debatable decision. Clearly, there are instances where creep feeding is a sound decision. If the decision is based upon creating a heavier calf for bull sales, show calves, etc. where phenotypic characteristics are of utmost concern, it is a logical choice. However, if the choice is simply based on economics, evaluate creep feeding very critically, as the success is based on creep feed cost and calf price. The primary challenge with creep feed economics is the poor feed efficiency of creep feeding. The University of Nebraska conducted a trial where calves were or were not creep fed using a limiter. Average creep intake was 3.9 lb/day, which increased average daily gain by 0.48 lb/day. That resulted in a creep feed efficiency of 8.1 lb of feed/lb of gain. The creep cost of gain was $1.36/lb, which is significantly higher than what can be achieved once the calf reaches the lot.

At weaning, the creep fed calves were heavier and grossed about $20 more per head. However, when the cost of feed and labor were included, and a price slide was applied, creep feeding resulted in a net loss of $71/head. These data were generated from a single location in a multiyear study and certainly using different economic criteria, the results may be different. However, this data should at least provide pause when making the decision to creep feed and encourage you to evaluate the economics. In addition to economic considerations, heifer development research conducted in many environments clearly suggest that added energy early in life provides little to no benefit to mature cow performance and may in fact be a detriment. If the decision is made to creep feed, it is advisable to avoid creep feeding any replacement females except under special circumstances.

These decisions will have substantial impacts on profit and long-term effects on your cowherd. The data presented are only part of the decision-making process. Every producer needs to add their goals into the equation and make a choice on every component of this checklist. Your GPLC nutritionist can help with these decisions. We have the opportunity to visit with hundreds of producers and can provide a unique perspective based on experience. Please let us know how we can help.

For assistance with livestock consulting issues, visit www.gplc-inc.com. FL

BY BRUCE DERKSEN

WEANING PRACTICES LINKED TO HEALTH RESULTS

The choices that ranchers, feedlot owners and cattlemen make in their day to day practices and the results that are realized from them, affect and reach into all corners of their operations, including herd health. Anything from base dam and sire genetics, quality and quantity of feed provided, and expected moisture conditions have a distinct effect on end results. Overall health of the herd and the operation in general needs to be the desired outcome for all decisions made, for at its basic core — good health means enhanced productivity and efficiency which equals increased financial profits.

Herd health can be thought of as the goal of numerous choices and work processes or expressed as links in a chain. Distinct plans of action represent these links and depending how and when they are attached in the sequence of events, can help to reach this ultimate goal of herd health, whether realized in a producer's own pastures and pens, or in the commercial grow lot or finishing feedlot.

The first link in the chain would be the work process needed to wean calves in the best possible condition that is supportive of the next link. It is important to examine what is practical for each operation considering all factors and circumstances. What is the status of the existing infrastructure? How much pasture or feed is available and what quality is it? What about finances?

Constructing goals and strategies to reach them is essential but care should be taken to not allow this process to become too rigid. Completing tasks in the same way they have always been done may be easier and more convenient but might not provide the best results for both the producer and the animals.

The most obvious and accepted link in any overall chain is controlling and limiting the stress of the calves. Less stress is the key to better health which in turn will assist in producing all the attached positive benefits such as higher weight gains, better feed conversion and superior carcasses.

It should not be ignored that each link in the chosen chain must be supported by sound management practices or the chain will be weakened and eventually break. It is not enough to choose a direction such as truck weaning or preconditioning of calves without ►

MAY 29 - JUNE 7 · 2020

BEEF EMPIRE DAYS

RANCH RODEO

"RELY ON REVELOR" LIVE AND CARCASS SHOW

PARADE

BEEF, BEER, & BOOTS

JUST TO NAME A FEW!

www.beefempiredays.com

Weaning Practices... from previous page

installing the proper infrastructure, fencing, vaccinations, experienced manpower, knowledgeable pen riders and barn workers, quality feed and veterinarian-based expertise. Each link must be reinforced to support its neighboring link, or the result of optimum herd and overall operation health will never be reached.

Sale barn weaning

For spring calves, there are different processes or chains to choose from with the easiest being weaning directly from the cow to the auction barn. This is the most limited chain with very few links along the way. Gathering and sorting the calves and arranging their transport to auction completes the process. The herd health results of these calves are usually an unknown and while there is nothing wrong with this approach, it can deliver limited positive outcomes for the producer and the receiving lot.

A report by the Beef Checkoff of the National Cattlemen's Association in Centennial, CO., showed a myriad of factors negatively impacting weaned calves regarding trucking and shrinkage alone that may play into a producer's decision to wean directly to auction. Transportation pressures coupled with the co-mingling of cattle can greatly increase stress, shrinkage and the incidence of respiratory diseases for the feed yards that purchase them, making them potentially less desirable.

Pasture weaning

Many producers choose to wean their spring calves on pasture and while this system can be less stressful for them, if bouts of sickness take hold, it can be harder to carry out proper treatments if infrastructure is weak or non-existent. Will planned vaccinations and parasite control, castrating or dehorning to qualify for certification in preconditioning programs be a link in this chain? Timing is key, as a buffer period should follow these processes before weaning to ward off potential sickness. To limit the stress of the calves, many producers leave them on the original pasture and remove the cows which in turn requires extra pasture land. New Mexico State University research showed that pasture-weaned calves had greater average daily gains than dry-lot weaned calves for the first three weeks post weaning but were over-taken by the dry-lot calves after that period of time, so producers need to realistically assess their operation's abilities and choose the next link in this chain carefully.

Dry lot weaning

The conventional dry-lot method of weaning provides more flexibility for the producer by offering a wider variety of links and routes for this chain to travel but it is also dependent on more work processes and resources. Pens or pastures to hold and maintain the calves need to be in place. Different choices can be made to either sell the calves at the end of the short weaning period before they hit the sickness wall, or to hold them for longer periods of time waiting for desired price outcomes. With the flexibility of choices in this chain comes the higher risk of illness. How strong is the feed supply link? Are booster shots for earlier vaccinations required? Is full-fledged preconditioning an option? This chain can be strong if the calves will be retained and fed or backgrounded at the farm or ranch of origin but can be weak and faulty if an extended plan is not in place at the time of weaning.

Preconditioning

The chain of preconditioning calves is another good option as it can be a part of both dry-lot or pasture weaning processes. Although it requires the most work and management practice links, it can also yield higher positive results when it comes to overall operation and herd health. Pre-planning is needed to limit the number of stressors by arranging booster shots 4 to 6 weeks after weaning with all vaccinations, castrating, branding, de-horning and parasite controls administered earlier in the season when the calves are still nursing, but veterinarians and pharmaceutical companies can still offer solid advice and protocols to help qualify calves in other productive programs if windows of opportunity are missed.

Feedlots desire preconditioned groups of calves to avoid bringing in singles and doubles to fill orders and pen lots. These calves have less propensity for sickness, will go onto feed quicker and usually demand a premium. The vaccination protocols involved assume the necessary time for a calf's immunity to raise their level of resistance to viral and bacterial pathogens before being challenged by disease.

There is no doubt that on average preconditioned calves will realize higher weight gains, plus potentially lower morbidity and mortality rates. An 11-year Purdue University study of Illinois farms showed that 63 percent of weaned calf profits came from the added weight sold of preconditioned calves. Every correctly focused management practice or link in the chain aimed at reducing the stress of the volatile weaning season will undoubtedly increase the possibilities of this extra weight being available for sale.

Overall operation and herd health, cattle performance, weight gain, feed conversion, carcass yield and grade quality are all links in a chain that a rancher or farmer chooses for their own enterprise or a feedlot of destination. Whether spring calves are weaned directly onto the truck destined for the auction barn, pasture or dry-lot weaned with improved flexibility of sale dates and conditions, or enrolled in a preconditioning program to be moved to a grow lot or feedlot, if the management practices and work processes are not sufficiently supported to ensure the strength of the desired chain, the goal of overall operation and herd health will never be achieved. FL

Elanco

BY TERRI QUECK-MATZIE

Meeting the Cow's NUTRITIONAL NEEDS

Successful breeding depends on a targeted nutritional program. Producers must know the stress periods when a cow can experience nutritional deficiencies, as well as how to supplement available forage during those times.

That was the message from Travis Mulliniks, Range Cow Nutritionist at the University of Nebraska West Central Research and Extension Center in North Platte, Nebraska.

He presented material outlining a cow's nutritional requirements through the reproduction cycle at the 3-State Beef Conference held earlier this year in Greenfield, Iowa, Savannah, Missouri, and Syracuse, Nebraska. The conference is an annual event sponsored by Iowa, Missouri and Nebraska Extension.

Mulliniks says producers must know the stress periods when a cow can experience nutritional deficiencies, as well as how to supplement available forage during those peak times.

"Late gestation, generally 90 days before calving, and early lactation, 50-100 days after calving, are the times to pay the most attention to the cow's nutritional needs," says Mulliniks.

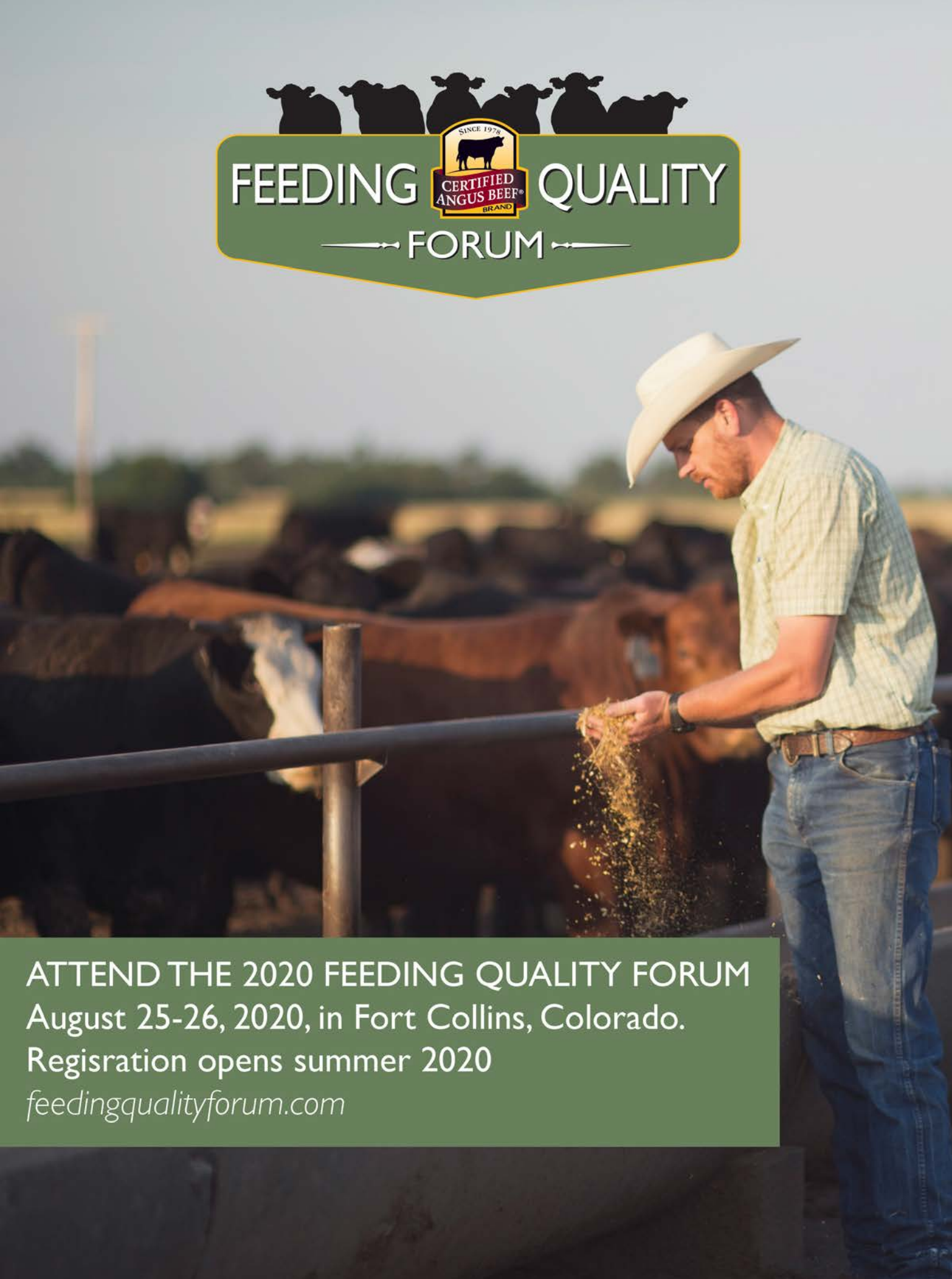
While some are reticent about over supplementing in the third trimester for fear the calf will be too large at birth, Mulliniks emphasizes the need to maintain a Body Condition Score (BCS) of 4 to 6. "A cow's body condition score is a crucial element in her breeding and raising a calf successfully," says Mulliniks.

A cow needs to be able to channel nutrients to the calf during this period of heavy calf growth without damaging her own condition.

Gestational nutrition can affect placental efficiency, fetal organ development, calf weaning weight, age at puberty and carcass quality. Calves may also experience passive immunity, with a greater risk of morbidity and respiratory infections. Calves born to cows who were thin at calving are shown to have ongoing immunity issues, with increased sickness and death in the feedlot.

Added to the challenge of keeping late-term spring calving cows well fed, in many parts of the country, is cold stress. Cattle energy needs to increase about 1% for each degree below 32 degrees in dry cold, in wet weather its 2% for each degree below 59 degrees. Kansas State University research shows a 1,200-pound cow subjected to 20 F in a 14 mph wind requires about 28% more energy than at 32 F with no wind.

"If you're not providing what they need, cows can lose BCS quickly. A cow can drop .5 BCS (~35 lbs.) in about 2 weeks in a wet, cold snap," says Mulliniks. "It's important to intervene quickly in that environment."



ATTEND THE 2020 FEEDING QUALITY FORUM
August 25-26, 2020, in Fort Collins, Colorado.
Regisration opens summer 2020
feedingqualityforum.com

Nutritional Needs... from previous page

Mulliniks recommends sending forage/hay samples off to be analyzed for quality. Understanding the quality of feedstuff can help you save money and meet the nutrient requirements of your cows. Keep in mind, dry matter intake decreases as calving nears.

Get ready for breeding

A cow in poor condition is also less likely to rebreed on schedule, making the period following calving the second crucial segment of the breeding cycle. Cows in early lactation have the greatest protein and energy requirements of the production cycle.

The lactating cow needs ample high quality forage/roughage, preferably immature high quality grass or corn silage. Additional protein or energy may be needed in the form of a fiber-based energy supplement such as Dry Distiller Grains (DDGs) or wheat midds plus a protein supplement. Mulliniks says use caution with starch-based energy due to its impact on increasing milk production and potentially decreasing energy intake.

Protein supplements of more than 20% Crude Protein (CP) can be fed 1, 3 or 7 times per week without changing performance. Energy supplements need to be fed daily or at least every other day with a fiber-based energy source.

"It's crucial to get them gaining as soon as possible," says Mulliniks. "That's more important in young cows than older ones who have been through it a few times." And it isn't easy. The cow will channel nutrients into her milk before reproduction. Mulliniks adds selecting breeding stock for high milk production may add to the problem, putting pressure on the cow's ability to recover and rebreed.

If a cow is not recovering fast enough, the calf may need to be weaned early to allow the cow to improve her body condition before

winter. Mulliniks says some producers find it helpful to sort thin and young cows from older cows to make early weaning easier and to reduce young cows competing for feed with older ones.

While her nutritional needs decrease once the calf is weaned, the cow still has some time to improve BCS. Mulliniks says a cow that is thin at weaning (BCS <5) needs protein and energy. If her BCS is >5, she needs protein. Both need a chance to consume abundant immature grass 3 to 5 weeks ahead of breeding season.

Not only does BCS affect the cow's success in breeding back, but whether she is gaining or losing BCS matters. Research shows cows gaining BCS have a higher rate of conception and those losing BCS have a lower rate – no matter the starting point.

"Body condition score plays a big role in your breeding program," says Mulliniks. " It's your insurance policy. But if you're always playing catch-up on BCS post weaning, there's something wrong – with your genetics, your timing, or your nutrition. Make sure you understand your cows' nutritional requirements, especially during the stress periods, utilize as much good quality forage as you can, and supplement the nutritional shortages." FL

China Moving Forward With Phase One Agreement

U.S. Secretary of Agriculture Sonny Perdue announced that China has continued its progress in implementing the U.S.-China Phase One Economic and Trade Agreement and has taken several additional actions to realize its agriculture-related commitments. The agreement entered into force on February 14, 2020, and the actions announced today build upon the measures announced on February 25. The most recent actions includes conditionally lifting a ban on imports of beef and beef products from animals over 30 months of age, subject to other relevant import requirements.

In addition, China's new tariff exclusion process went into effect on March 2 and importers can now apply for exclusions from retaliatory tariffs.

"These implementation measures are promising steps showing that China is taking steps to fulfill their purchase commitments," Secretary Perdue said. "Under President Trump's leadership, this agreement will produce positive gains for the entire economy, especially our agriculture sector. We look forward to China continuing to achieve their commitments in future months." FL

Greg Strong, *publisher;* Jill Dunkel, *editor;* Annita Lorimor, *general manager*; Amy Spillman, *digital/circulation manager*; Robert A. Strong, *editor emeritus.*

The editor assumes no responsibility for unsolicited manuscripts and photographs. Publisher reserves the right to reject advertising matter.

FEED•LOT is published under ISSN 1083-5385

Audited by: BPA WORLDWIDE

FEED•LOT (ISSN 1083-5385) is published eight times per year in February, March, April/May, June, August, September/October, November and December at no charge to qualified recipients, by FEED•LOT Magazine, Inc. 116 E. Long, Dighton, KS 67839. Periodicals postage paid at Dighton, KS 67839 and additional mailing offices. Non-qualifying subscription rates: $55 per year within USA. $80 per year for foreign, including Canada. Back issues $10, including postage and handling. Please call FEED•LOT Magazine, Inc. for reprint and copy authorization, 620-397-2838. POSTMASTER: Send address changes to FEED•LOT Magazine, Inc. PO Box 850, Dighton, KS 67839.a

LAIRD MANUFACTURING

"We are the Exception not the Compromise."


Freestall Filler


Vertical Truckmount


Vertical Trailermount

Worldwide Leader in Cattle-Feeding Equipment


Delivery Box


Manure Spreader

Full Line of Stationary ← Mixers

CONTACT US FOR THE DEALER NEAREST YOU

209-722-4145

LAIRD MANUFACTURING, 531 S. HWY. 59, MERCED, CA 95341
SALES@LAIRDMFG.COM WWW.LAIRDMFG.COM

RETHINKING 4-AUGER MIXERS

KUHN KNIGHT

BTC 100 SERIES BOTEC® COMMERCIAL MIXER

550, 630, 720 and 900 cu. ft. mixing capacities • truck & trailer models

- **Faster, more even feedout with a 4-auger discharge**
- **Stronger auger to driveshaft connections provide more power transfer and longer life**
- **Low horsepower requirement resulting from raised lower auger and offset upper auger**

Ask about other KUHN Knight mixers and spreaders!

Visit our website www.kuhn.com to locate a Dealer near you!