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Volume XXVI Number 6

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Cover photo by Amy Spillman

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# Risen from the dead?

## — But only for half of the country —

It appears as though a procedural snafu has brought WOTUS (Waters of the United States) back to life, or at least has resurrected the law for the time being.

On August 16, U.S. District Court Judge David Norton issued a ruling for the District of South Carolina, Charleston division, that instantly reinstated WOTUS in 26 states where district court judges have not stayed the law. The ruling was made on the grounds that the Trump administration violated procedure by not allowing adequate time for public comments on Trump's executive order dismantling WOTUS in February 2017.

The executive order suspending the rule was in effect for two years.

A group of conservation groups asked the court to declare that the rule suspension did not follow the Administrative Procedure Act (APA). In a ruling from the court, the judge wrote, "The court reiterates that the issue currently before the court is not the merits of the WOTUS rule, but the procedure by which the



Suspension Rule was implemented. Many other courts are delving into the merits of the WOTUS rule – this court need not enter that fray."

He went on to write, "As administrations change, so do regulatory priorities. But the requirements of the APA remain the same. The court finds that the government failed to comply with these requirements in implementing the Suspension Rule. Accordingly, the court grants summary judgment for the environmental plaintiffs..."

WOTUS was one item that NCBA had marked off their "must do" list when it came to reducing government regulation. Although the suspension was only in effect for two years, it bought livestock owners some time while groups worked for permanent repeal.

Two of the 26 states where the rule immediately took effect are Texas and Oklahoma. The Texas and Southwestern Cattle Raisers Association president Robert McKnight, Jr. issued a statement saying, "Today's court ruling is a tremendous blow for ranchers and landowners who hoped the ill-conceived 2015 WOTUS rule had finally gone by the wayside... In the three years since the rule change was proposed, ranchers and private property rights advocates nationwide have fought to maintain their rights in the face of this blatant federal overreach."

The remaining 24 states in the nation who are not impacted by the ruling are protected by other federal court injunctions against the 2015 Rule (one in North Dakota that covers 13 states, and one in Georgia that covers 11 states.)

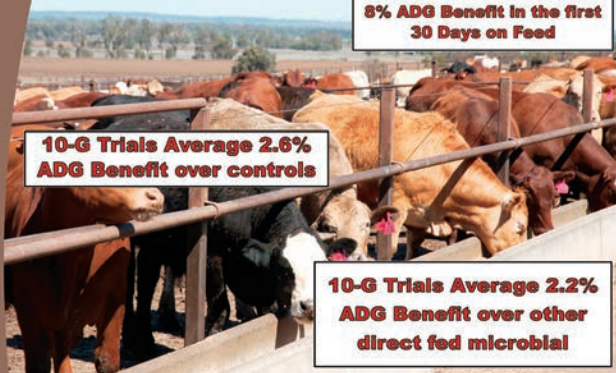
Farmers and ranchers are not against a clean water rule, however they are simply asking for a rule that protects water quality without trampling the rights of property owners. It will be interesting to see how this plays out with only half of the nation governed under the rule. Stay tuned.

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# Nebraska Feedyard Rethinks Silage Management, Reduces Costs

Rhea Brothers GP near Arlington, Neb., already had a successful feeding program. For years, its knowledgeable crew grew, chopped, ensiled and fed their own crops. A little more than 8 percent of the operation's total rations were comprised of corn silage, ryeilage or occasionally high-moisture corn (HMC).

Yet, even experienced crews can run into silage challenges. In 2015, the feedyard saw 30 percent shrink loss with its ryeilage — a figure well above its average. It was a significant hit to the year's feed costs, resulting in both less available feed and lower quality feed.

## Calling In Experts

Tracing the source of the problem led the feedyard to re-evaluate both management practices and forage inoculant choices. Andrew Lancaster, Feedyard Manager, determined the whole crew needed a refresher on silage management and took them to the Silage for Beef Cattle Conference near Mead, Neb., in June 2016.

"The Silage for Beef Cattle Conference was a great learning

experience for our team," Lancaster said. "We noticed that there were small but significant adjustments we could make to our silage program that could help prevent losses like we experienced with our ryeilage."

The conference featured industry experts in silage and provided tips on ensuring a successful initial fermentation, reducing shrink loss and the impact of silage inoculation. With new information on silage management available to the beef industry, Lallemand Animal Nutrition approached extension specialists from Iowa State University and the University of Nebraska-Lincoln. Experts from each of the organizations organized a one-day conference, now in its second year.

Rhea Brothers GP took new tips back to the feedyard. At home, the team reviewed the cost and benefits of their silage program and addressed issues with inoculant selection, pile construction, packing density, face management and aerobic stability.

Lancaster then called in additional help from Lallemand Animal Nutrition.

"The problems Rhea Brothers GP experienced are common, but that doesn't mean producers should put up with high shrink losses," said Renato Schmidt, Ph.D., Technical Services – Silage, Lallemand Animal Nutrition. "In fact, the losses are only part of the story. Producers can see there's less feed available, but what we can't see is what's lost. It's quality that disappears too. The initial nutrient losses are often valuable sugars, organic acids, starch and proteins."

## Packing Up

Lancaster started making changes from the ground up. One of the management problems he identified was the pack density of the bunker pile. He used an online calculator from the University of Wisconsin (available at <https://fyi.uwex.edu/forage/harvest>) to help determine the weight needed for efficient packing. The free calculator accounts for multiple factors, including the base width of the pile, the delivery rate of forage to the pile, the forage dry matter (DM) content and more.

Getting the packing density right helps drive out air and speeds up the fermentation, Dr. Schmidt explained.

"Oxygen is the enemy of high-quality silage. Poor packing can cause problems at ensiling and all the way to feedout," he said "Packing literally squeezes air out of the silage. While oxygen is present, aerobic spoilage microbes can grow. As a result, producers experience reduced silage quality, shrink and nutrient losses."



Since following the recommendations, shrink and spoilage were drastically reduced.



## Managing Microbes

Lancaster also changed up the feedyard's forage inoculant. He selected Biotal® Plus II inoculant because it contained two bacterial strains — *Pediococcus pentosaceus* 12455 and *Propionibacterium freudenreichii* R2453 — proven to provide a fast, efficient fermentation, and help with the stability during feedout, respectively. The rapid action of *P. pentosaceus* 12455 helped Rhea Brothers GP directly combat shrink loss.

Improving fermentation helps improve overall silage quality, which can directly impact the bottom line. In a study conducted by Kansas State University, the two specific strains applied to HMC resulted in steers consuming 4 percent more feed and gaining 6.8 percent faster than cattle fed the untreated ration. Overall, the study saw an overall increase of 6.6 pounds per ton dry matter intake (DMI).

"There are a lot of inoculant choices out there," Dr. Schmidt said. "I always recommend producers choose a research-proven product. Using the right inoculant is one of the most cost-effective ways to help the fermentation process. Driving a fast, efficient fermentation process is the key to reducing shrink loss and improving silage quality."

## The Results

After adjusting management practices and inoculant choices, Rhea Brothers GP saw a significant improvement in their rye silage — reducing their shrink losses from 30 percent down to 11 percent. Lancaster said the quality of the silage was visibly improved and green all the way through the pile.

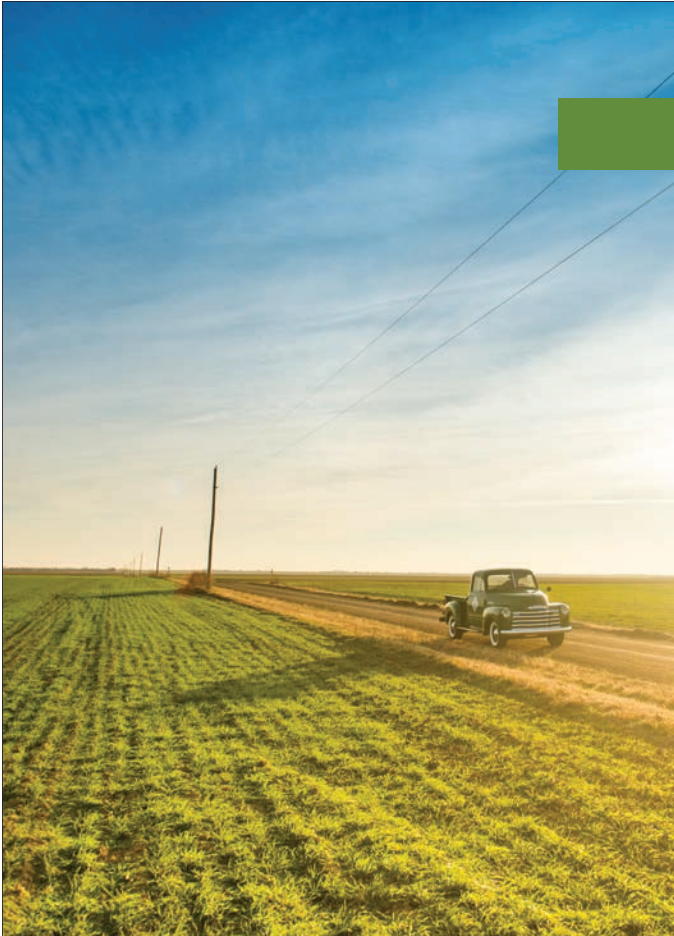
"Since improving our management practices, and adding Biotal Plus II, we have a lot less waste," Lancaster said. "I've noticed that our calves aren't sorting the ration as much as they previously did."

In addition, the crew no longer rushes to feed-out silage before it spoils. Previously, the feedyard saw spoilage on the face of the bunker. Now, Lancaster said there is almost no spoilage.

Rhea Brothers GP significantly improved its bottom line feed costs, and Lancaster attributes the turnaround to his team's willingness to rethink its silage strategy. He also credits the expert assistance from ISU, UNL and Lallemand Animal Nutrition.

"Not only did Lallemand provide us with management tips and inoculant solutions, but the customer service from their field team was top-notch," Lancaster said. "The in-field team they have was willing to go the extra mile to make sure we had the right solutions for our operation. There are a thousand different producers out there, but they made sure we were taken care of."

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## TRACEABILITY OPTIONS ON THE MINDS OF CATTLEMEN

# Pilot Project Tests the Waters on Disease Traceability

BY **TERRI QUECK-MATZIE**

Cattle disease traceability has been a hotly debated issue since the BSE scare of 2003.

Authorities have claimed they need to be able to trace any future disease outbreak to its origins.

Cattlemen have asserted their trademark independence.

Now, a pilot project in Kansas seems to be bridging that gap.

Cattle Trace, a public-private partnership of the state's beef industry players, uses ultra-high frequency technology and minimal data to follow an animal from end to end of the production system should the need arise.

Cattle movement will be tracked using high frequency readers installed at livestock auctions, feed yards and processors. High frequency tags provide the ID number while software supporting the system records the date, time and GPS location of the movement.

"This system answers one of the problems we have had in the past – the ability to track cattle at the speed of commerce," says Matt Teagarden, CEO of the Kansas Livestock Association. "We needed a hands-off system that did not require additional cattle handling, and that could read an alley or a truckload of cattle at a time."

KLA is one of the participants in the project, along with Kansas State University, the Kansas Department of Agriculture, USDA, and individual producer stakeholders, including at least 10 feedyards.

Teagarden says KLA members are ready.

"We've had a policy supporting enhancing traceability for a number of years," he explains. "And it is mentioned multiple times in the Beef Industry Long Range Plan."

At its annual meeting last December, KLA members endorsed creating a better system, and requested it be mandatory for all cattle.

"Obviously, it has been a concern for some time, but the mandatory approach is not typical for KLA where we generally advocate for letting the market drive things. For our members to request this is reflective of their desire to move forward with disease traceability."

Teagarden says Kansas, with its representation of all segments of the beef industry, is the perfect testing ground for Cattle Trace. Statewide exercises in disease response have further emphasized the need for such a system.

"Kansas is home to the finest

beef producers and operations in the nation," said Kansas Governor Jeff Colyer at a June 30 unveiling of the project. "We are proud that the Kansas beef industry has taken the lead in this important project that will enhance our ability to protect cattle health here and across the nation."

Focused discussion with industry partners began in early 2018, with the project ready to roll in what Teagarden calls "record time." Data collection will begin this fall and will continue for two years, with the ultimate goal of developing a nationwide program. For now, participation is voluntary.

"The main hurdle all along has been finding a system that works for the way we market cattle," says Teagarden. "We need to run cows all across the country through various regions, production models, and segments of the industry." ►





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**TRACEABILITY...** *from previous page*

The Cattle Trace project addresses two additional primary concerns of producers – confidentiality of information and cost.

Those leery of the government controlling information can be assured the Cattle Trace project is set up as a separate entity to keep and maintain the database. It is that entity that will develop the protocols as to how and when health officials can access the data.

“Public health officials have to have access in a disease outbreak for this to be an effective system,” says Teagarden. “But it is not wide open.” In addition, the minimal data

collected does not include producer information.

Teagarden credits producers’ increasing comfort with technology with increased acceptance of the tracing concept. Some players already have ideas about ways to make the system enhance their operation, by using the data collection and reading technology for inventory management, or feedyard and carcass performance information. Others see potential for animal health monitoring, such as being able to flag an animal as having been treated for disease, and ensuring withdrawal times are met.

To address the cost issue, the

public-private funding enables Cattle Trace to subsidize the cost of ear tags. Those participating in the project can purchase tags at \$1 each, compared to the \$2.50 regular price. “If the project works, and is expanded to everyone, the cost of tags should come down with volume,” says Teagarden.

“We like to think we’ve developed a system that will prove workable and answer questions people have about traceability,” adds Teagarden. “You can compare disease traceability to insurance. You don’t want to make a claim, but you need that protection in a catastrophe.”

# Beef Supply Chain Traceability Could Boost Value

BY **NICOLE LANE ERCEG**

Talk about a national beef traceability system in the U.S. might seem like a broken record. It’s been discussed often, but no efficient structure yet encompasses the entire supply chain.

Advances in technology and evolved consumer buying trends might breathe new life into the idea.

As more beef sells under branded programs, consumers expect a promise with each purchase, from cooking performance to flavor and guarantees about how the meat was produced. Brands may be forced to verify additional marketing claims to maintain consumer trust.

According to the National Meat Case Audit 2015, nearly all beef at retail sells under a brand name, jumping from 51% branded in 2010 to 97% in 2015. With a sea of brands now vying for attention in the meat case, consumers buy their beef based on brand loyalty and label guarantees.

Mark McCully, vice president of production for the Certified Angus

Beef® (CAB®) brand, says a traceability system could have merit.

“Traceability itself is not a marketing claim,” he says. “However, I do believe it can be used in the future as a framework for identifying marketing claims that add value to beef products.”

The added information traceability could provide is the opportunity for branded beef, as McCully told the National Institute for Animal Agriculture earlier this year.

The 2017 Power of Meat study showed nearly 70% of meat consumers want more information about a company’s social, economic, animal welfare and environmental practices, and they are willing to pay for it.

“We continue to see consumers looking for more assurances about products. As a brand that operates in a premium category, we believe scrutiny of our brand is probably even more rigid,” McCully says. “There’s an expectation, not just about how our product performs,

but the social responsibility we have as a brand around the entire supply chain.”

While some labels make claims like sustainably-raised, humanely-raised or locally-sourced, verification and even definitions of these terms depends entirely on the brand’s production chain. Vague assurances without distinct standards lose their value in the consumer’s mind.

A consistent traceability framework could help verify those claims. Combine quality products with verified assurances and the pull-through demand could benefit the entire industry.

“I believe the economics will support traceability,” says McCully. “Certified Angus Beef is an example of how consumer-driven, pull-through demand can support the economics of verification. The key with traceability will be designing a system that fits today’s current pace of business.”

It’s not just domestic consumers



who are hungry for information.

As one of the few developed countries that does not have a mandatory beef traceability system, the U.S. is at a disadvantage when it comes to global beef trade. A new framework could open up American beef to markets around the world where it's currently not available to countries that require traceability for market access.

Many beef brands have already begun using some traceability systems to add marketing value and CAB is no exception. The Path Proven program enables marketing CAB brand with additional production claims, and labels like Georgia Proud, GoTexan and Fresh From Florida are proving the source state.

However, traceability ends at the feedlot, not the ranch of origin.

In this case, information value is only half captured, because a large portion of the beef journey is still unverified. As one system varies from another, it also creates a lack of consistency across the meat case when consumers compare different brands.

A new traceability method could open the flow of knowledge for beef producers, too, McCully says. If information could move forward with the animals, it could flow back to provide a more robust picture of animal and meat quality.

"The progress we could make on the production side through genetic selection based on carcass quality feedback would be remarkable," he says. "Traceability could help provide accurate data backwards so that we could link genomics to performance traits beyond the ranch gate and help improve our overall beef product."

McCully sees a future system as a real possibility because of rapid developments in technology.

"Maybe it's block chain or other technology, but I think we have the capability today to make it work," he says. "What I do know is that it needs to be mobile and inexpensively fit into today's speed of business."

FL



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# Experts Advise Cattle Producers:

## KEEP WATCHFUL EYE ON EXPORT MARKETS

The impact of U.S. beef exports on calf prices continues to rise as experts advise ranchers to stay abreast of trade developments globally.

Randy Blach, CEO of CattleFax in Denver, Colorado, told attendees at the Texas A&M Beef Cattle Short Course in College Station that exports have become an integral part of calf prices and, following the latest trade discussions, are imperative when formulating marketing plans.

"Just look at how fast our export markets have grown since Christmas 2003 when we had BSE," Blach said. "We have the opportunity for that value to go as high \$500."

Those prospects are fueled by a strong economy and consumer demand, he said.

"Consumers across the world want what you produce, which is a safe, reliable, wholesome, high-quality product," Blach said. "As we look down the road, I want you to be thinking; are you doing everything you should be doing to deliver the best product?"

To put the importance of beef export markets into perspective, Blach said the U.S. exports 17 billion pounds of beef worth \$18 billion.

"That's \$365 in value of the calf you are producing," he said. "We've really got to keep an eye on these trade situations."

Industry experts note consumers are wanting more protein at a record pace.

"We will have record meat consumption in 2019 in the U.S.," Blach said. "Never in our history have we consumed more red meat, pork and poultry than we are now. People are eating livestock protein."

Dr. Jason Cleere, Texas A&M AgriLife Extension Service beef cattle specialist, College Station, and Kelley Sullivan, co-owner of Santa Rosa Ranch in Navasota and Crockett, discussed China markets and their potential. Both serve on the Texas Beef Council board of directors and were part of recent visits to China and Japan to learn more about opportunities in trade and share educational programming with representatives in those countries.

"China is encouraging people to eat more red meat," Cleere said. "There are 93 people per square mile.

Beijing has 22 million people. By comparison, Houston has 6.3 million people."

A dense population is creating more opportunity for U.S. beef in China as the combination of online and offline retail shopping trends continue. E-commerce continues to drive a majority of the market and with so many people, living quarters are primarily high-rise apartments with small square footage.

"They don't have an oven, they use a Hibachi type grill and like a very thin-sliced beef product," Cleere said. "We need to think about how do we tap into that market with the products we produce."

Sullivan touted the value of undesirable beef carcass parts in U.S. that are in great demand in Japan and other parts of the world.

"About \$165 to \$170 of the check you get from the sale of a calf comes from that export market," Sullivan said. "Where that's coming from are the parts we don't like, such as beef tongue. In the U.S. we pay \$1 a pound, in Japan \$6 a pound. Beef intestine, in the U.S. there's zero value, but it's \$1.50 a pound in Japan. It's critical to have those export markets."

**FL**

Randy Blach, CEO of CattleFax was one speaker in the line up discussing export markets



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# BRD Treatment Success — Better Drugs or Fewer “Bugs”



## Pathogen load is driver of BRD treatment success

BY T. ROBIN FALKNER, DVM

**T**he primary focus of animal health management and judicious use of antimicrobials is reducing the number of animals that require treatment. Rightly so. But reducing losses and antimicrobial use also requires improving treatment success in animals needing treatment. And even when the number of animals requiring treatment is modest, losses can be severe when treatment success is low.

Many chute-side bovine respiratory disease (BRD) conversations between cattlemen and veterinarians start with, “we need a better drug” and gravitate to discussions on antimicrobial resistance; which is an important topic not only on the minds of people in our industry, but society as a whole. This often results in submitting laboratory work and then a “revolving door” of changing therapy based on culture

and sensitivity results with a hope it will improve BRD outcomes. It usually doesn’t.

Choosing BRD therapy based on antimicrobial susceptibility testing in past treatment failures has been frustrating. Many veterinarians and producers remark that “Product A always looks good on antimicrobial susceptibility testing reports but gives poor results in our treatment programs.” Or the reverse, “We frequently get reports back showing resistance to Product B, but it performs best in data from our treatment program.”

When I recently examined a large volume of investigative field work, where pathogen identification and antimicrobial susceptibility testing was done at the time of BRD treatment, I was unimpressed with the “predictive value” of antimicrobial susceptibility testing on BRD treatment success. But there was information within these lab results that appeared highly

predictive of treatment success or failure: Pathogen Load (PL).

As the number of bacterial and/or viral pathogens found in the upper respiratory tract increased at time of treatment, regardless of antimicrobial sensitivity pattern, BRD treatment success plummeted. The impact of having two or more pathogens present was significant, and three pathogen combinations,

### Biocontainment

**Is the use of management practices to reduce the movement of pathogens between animals and/or groups**

particularly those including *Mycoplasma bovis*, were associated with poor treatment outcomes. If PL is strongly associated with treatment failure, which of our management practices best addresses it? We can agree that many of our animal health interventions, such as



vaccination and antimicrobial use, can function to reduce PL. But what if we ask the question another way: “Which of our management practices increases PL, and can we eliminate some of them?”

This is a different perspective, and one that challenges us to look beyond relying on critical animal health tools as “baling wire and duct tape patches” on issues we may be causing with (mis) management. A simple example, present on many operations, is placing dosing equipment into the mouths of animals at arrival processing without disinfecting between them. There should be little disagreement that this practice adds to the PL of individual calves, which would be expected to both increase the risk of illness and decrease treatment response

While many others share the view that any perceived “loss of efficacy” of newer therapies is driven by antimicrobial resistance, my opinion is we often overwhelm any improvements in efficacy by offsetting increases in the PLs placed on animals. Things like procuring younger naïve animals in larger numbers from farther away, prioritizing procurement costs over basic animal husbandry, utilizing larger pens in the receiving period, managing hospital pens poorly and other common practices can increase PL.

My grandfather had this advice: “When you are having problems, the first place to take a hard look is in the mirror.” We chase our own tails with an overwhelm-wreck-swab-switch approach to BRD management. It can provide a handy excuse to justify repeating the same mistakes, with the same outcomes. We can blame repeated failure on pharmaceuticals instead of our own flawed management. Our management should instead support sustained efficacy of the therapies available.

The solution to treatment failure is maybe not a new antimicrobial, or waiting for cow/calf producers to do something different. It is

reducing PLs through improved use of sound Biocontainment Principles in our procurement, facilities and management. Better biocontainment for BRD can eliminate exposures, reduce exposures, and/or delay exposures until after the post arrival BRD risk period, resulting in fewer pulls, lower antimicrobial use, and less resistance selection pressure.

Clearly there are situations

where antimicrobial resistance is part of the problem. From a clinical efficacy perspective, is the larger issue that resistance is present on an operation that uses antimicrobials, or that management gaps result in the “loading” of the pathogen(s) into other animals at risk of disease? Let’s not argue the nuances of inarguable Natural Law — animals do not die of ►



## EVEN THE SMALLEST COMPONENTS CAN HAVE A BIG IMPACT

Every ration component plays an important role on overall performance and ensuring you provide the best beef product to the consumer. Consistent performance lies in the details.

Micro-Cell® probiotics are high quality feed additives that feature proven bacterial strains that help your cattle maintain an ideal intestinal balance.

Micro-Cell probiotics are a small yet critical component and another tool to help you produce a top quality product that consumers want.

According to research trials, the strain *Lactobacillus acidophilus* BT-1386 found in Micro-Cell probiotics has been shown to:

- Decrease shedding of *E. coli* O157:H7<sup>1</sup>
- Reduce re-infection of *Salmonella*<sup>2</sup>
- Increase average daily gain<sup>3</sup>
- Improve feed to gain<sup>4</sup>

Probiotic strain *Lactobacillus acidophilus* BT-1386, available exclusively from Lallemand Animal Nutrition, was added to the 2015 pre-harvest production best practice (PBP) document released by the Beef Industry Food Safety Council (BIFSCo). It is commercially available for purchase under the brand names **Micro-Cell FS** and **Micro-Cell FS Gold**.



1 Production Best Practices (PBP) to Aid in the Control of Foodborne Pathogens in Groups of Cattle. Beef Industry Food Safety Council Subcommittee on Pre-Harvest. Spring 2015. Accessed March 19, 2015.  
2 Tabie ES, Oloya J, Doelcott DK, Bauer ML, Gibbs PS, Khaitsa ML. Comparative effect of direct-fed microbials on fecal shedding of *Escherichia coli* O157:H7 and *Salmonella* in naturally infected feedlot cattle. J. Food Prot. May 2008; 3(71): 539-544.  
3 Lallemand Animal Nutrition. Unpublished. United States. 1996.  
4 Hutcheson D and Lallemand Animal Nutrition. Unpublished. United States. 1986.

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Not all products are available in all markets nor are all claims allowed in all regions.

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**Which of our management practices increases PL, and can we eliminate some of them? A simple example, present on many operations, is placing dosing equipment into the mouths of animals at arrival processing without disinfecting between them. There should be little disagreement that this practice adds to the PL of individual calves.**

*Treatment Success... from previous page*

diseases they are not exposed to. BRD in feeder cattle is a complex disease also involving stress and management factors, and better BCP can reduce or delay pathogen exposure long enough for co-factors that increase disease severity to be mitigated.

We often see in disease challenge models a relatively mild disease course when healthy animals are exposed to BRD pathogens singly, as compared with severe illness when we combine two or more “mild” pathogens. These models are consistent with field observations on pathogen loading: the immune system appears to often do quite well with a single BRD pathogen, but struggles with two or more concurrently. Our identifying and prioritizing management practices that reduce multiple pathogen loading early in the receiving period appears to hold tremendous promise in reducing the incidence and severity of BRD. Those same practices could also impede the movement of any particularly virulent or resistant pathogen through an operation.

In a world where antimicrobials

did not exist, reducing pathogen exposure would be our No. 1 priority. It should still be our priority when afforded the privilege of using them.

Maybe this perspective, and a continued investment in BRD research to better understand the role of PL, could help us come up with better approaches that improve treatment success and judicious

use of antimicrobials. It might also help guide us when we ask the question, “What can I do differently from a management and husbandry perspective to reduce the magnitude of pathogen exposure?” We will explore that question more in the next issue.

*T. Robin Falkner is a technical services veterinarian with Zoetis and brings 30 years of professional experience as a private practitioner and Extension veterinarian, as well as serving in a support role to practicing veterinarians and beef producers in his industry positions. Dr. Falkner is recognized throughout the beef industry for his expertise in feeder cattle health and the management of feeder-cattle-based businesses, and his passion for helping producers find better management solutions to the issues they face.* **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.

Subcutaneous injection in middle of side of neck.

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<br>4 weeks before calving                   |
| DAIRY COWS              | 4 weeks before calving<br>4 weeks before insemination<br>at dry-off |
| CALVES                  | at birth<br>at 3 months and/or weaning                              |
| HEIFERS                 | every 3 months –<br>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



**MULTIMIN® 90, IS ON TOP OF OUR LIST. . . IT HAS PROBABLY HAD THE MOST DRAMATIC EFFECT ON WHAT WE DO IN THOSE PROTOCOLS AS ANYTHING WE HAVE DONE OVER THE YEARS.**

I'm Dr. L.D. Barker, my sons and I have a veterinary clinic and practice in Newcastle, Oklahoma. Over the years using health program protocols, we still had high pulls and death loss. We were seeing pull rates drop from 70-80% pulls down to 30's and 40's and we still weren't there. Our goal at some of the backgrounding yards was to get under 15% pull and under 3% dead.

Through research that had been done, we found out that trace minerals are so essential. They are the spark plug that drive the immune system, reproduction and performance. The sooner we could get them into an animal, the better off we could be.

When **MULTIMIN® 90** came out, we saw a real enhancement. In this last year we had the opportunity, for some time, to be in a single digit pull at one of the backgrounding yards that really follows the protocols diligently and worked really well with us and got under a 3% death loss with cattle out of the southeast. And this year on 3,000 head, we are running around 6.7% pull and a .82% death loss. Fantastic! I never thought we would get under a 10% pull. And a lot of that is as a result when you get the trace minerals in the immune system adequate.

In our three legged stool approach addressing nutrition, health and management, we offer **MULTIMIN® 90**. The high risk stocker calves coming out of the southeast are coming from variable farms of management, different trace mineral or no trace mineral program.

**MULTIMIN® 90** is on top of the list to address that. We get all those sources of cattle on the same page in 8-10 hours with **MULTIMIN® 90**. In fact, it is the number one thing on our list of enhancing the health in our animals. It has probably had the most dramatic effect on what we do in those protocols as anything that we have done over the years. What I am addressing is enhancing performance and reducing their costs. And a lot of time these protocols do cost more on the front end, but the dollars returned on the back end is tremendous.

I would highly recommend it.

**Dr. L.D. Barker and sons Dr. Matt Barker and Dr. Mark Barker**

Professional Animal Health Center | Newcastle, OK



R<sub>x</sub> REQUIRED



Sure Trace Mineral Supply by Timed Injection

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# MID-YEAR CATTLE INVENTORY SUGGESTS SLOWER EXPANSION AHEAD



USDA's January Cattle Inventory Report suggested that growth in the size of the US cow herd was slowing. July's numbers generally pointed in a similar direction. Both beef cow numbers and total cattle and calves were up about 1% from July 2017, which suggests a more moderate growth rate. This was coupled with a 2% reduction in heifers held for beef cow replacement. Beef heifer retention as a percent of beef cow inventory was 14.2%, which generally does not suggest expansion. While this is significant, I tend to put more stock in the January numbers than the July numbers and January heifer retention was still pointing to some herd growth.

Several factors drive beef cow numbers, with calf prices likely at the top of the list. Our current calf market is very similar to where it was last year. Given the much higher meat supplies and uncertainty on the international trade front, I actually think this cattle market has been incredibly resilient. While many producers aren't pleased with calf prices, I don't think calf prices are low enough yet to be encouraging liquidation at the national level. On the other hand, weather is becoming a growing concern for many.

While there are always exceptions, this has been an excellent year for forage growth in Kentucky.

A quick glance at the drought monitor would suggest it has been pretty good year for much of the southeast. However, dry conditions are becoming a larger issue for a good portion of cattle country. Significant drought (and abnormally dry conditions) appears to extend from Missouri south to Louisiana and west from there, taking in much of the southern plains. While we don't get state-level estimates in July, it is very possible that this may partially explain the decreased heifer retention. As we move towards fall, it will be interesting to see if we see much movement of cows, or increased cow slaughter, in the region. This has the potential to greatly impact beef cow numbers between now and winter.

Lastly, I would briefly comment on cattle-on-feed numbers. July 1 cattle-on-feed numbers were estimated to be 4% above year-ago levels. I would remind everyone that cattle-on-feed numbers were up 9% in March. From a big picture perspective, feedlot inventory was going to be larger in 2018 because the 2017 calf crop was larger. But, feedlot inventories were also artificially higher this spring due to poor wheat grazing conditions last winter forcing a lot of calves on feed sooner than usual. It continues to appear that we have worked through a lot of that inventory. A summary of the mid-year inventory report can be seen in the table.

**FL**

**USDA July 1, 2018 Cattle Inventory Estimates**

|                                      | 2017<br>(1,000 Head) | 2018<br>(1,000 Head) | 2018 as %<br>of 2017 |
|--------------------------------------|----------------------|----------------------|----------------------|
| Total Cattle and Calves              | 102,200              | 103,200              | 101                  |
| Cows and Heifers<br>That Have Calved | 41,600               | 41,900               | 101                  |
| Beef Cows                            | 32,200               | 32,500               | 101                  |
| Milk Cows                            | 9,400                | 9,400                | 100                  |
| Heifers 500 Pounds and Over          | 16,200               | 16,300               | 101                  |
| For Beef Cow Replacement             | 4,700                | 4,600                | 98                   |
| For Milk Cow Replacement             | 4,200                | 4,200                | 100                  |
| Other Heifers                        | 7,300                | 7,500                | 103                  |
| Steers 500 Pounds and Over           | 14,500               | 14,500               | 100                  |
| Bulls 500 Pounds and Over            | 2,000                | 2,100                | 105                  |
| Calves Under 500 Pounds              | 27,900               | 28,400               | 102                  |
| Calf Crop                            | 35,808               | 36,500               | 102                  |
| Cattle on Feed                       | 12,800               | 13,300               | 104                  |

Source: NASS, USDA



LET'S GEALX TO

# NEW ORLEANS

CATTLE INDUSTRY CONVENTION  
AND NCBA TRADE SHOW

JANUARY 30-FEBRUARY 1, 2019



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# DEAL <sup>OR</sup> NO DEAL



## Suckling calf implants add value

**C**ow-calf pairs are getting moved to green grass and it is a good feeling to see them out grazing. While weaning may be a ways off, calf growth that leads to excellent calf weaning weights is a major goal of this phase of the cow-calf business. If someone asked you to give them \$1.50 per steer calf at spring turn out, in return, for every 37 head (your cost is \$56), they will give you an additional 550 lb steer calf at weaning. Would you take the deal? This is essentially the return cattleman can expect if they place a small hormone implant into the ear of each suckling steer calf at turn out.

In 1997 Selk from the Oklahoma Agricultural Experiment Station summarized 23 research projects evaluating performance of suckling steer calves implanted between 30 and 90 days of age, with 36 mg of a product containing the growth-promoting Zeranol. At the end of the experiment they documented a 5.3% increase in average daily gain. Over a 130 day pasture

period implanted steers would wean off 13 pounds heavier than their non-implanted counterparts. Since genetics have changed and improved over the years, it is important to note that Bayliff and colleagues recently found similar results when they studied a group of cattle in Oklahoma. In a 130 day pasture period, suckling steers weaned off 17 pounds heavier than their non-implanted counterparts. Additionally, work by Pritchard and colleagues at SDSU in 2015 documented implant technology can increase weaning weights of suckling steers by 22 pounds.

The SDSU study looked at the effects of suckling calf performance from implants based on timing of the implant and age of dam. They implanted calves in May or August and classified dams into two groups: less than or greater than four years of age. Overall steers from mature dams weaned heavier calves than younger dams. Steers from mature dams that were

implanted in May, weaned off 40 pounds heavier than their non-implanted counterparts. However, if they were implanted in August they only added an additional 17 lbs. Conversely, steers from young dams (< 4 years of age) implanted in August weaned off 25 pounds heavier than non-implanted steers. Steers from young dams implanted in May only posted a 9 pound increase in weaning weight. Cow age definitely impacts the response that cattlemen can expect from using implant technology. Planning the implant timing based on the dam's age will give the best possible response in suckling calves. Implant earlier in the grazing season for steers suckling older dams or later in the grazing season for steers suckling younger dams.

The amount of added gain potential that implants provide would make one think nearly every steer turned out should have one in its ear. However, according to the 2008 National Animal Health Monitoring System (NAHMS) survey, the use



of implant technology in suckling calves has actually declined from 14 percent to 9.8 percent over a ten-year period. The reasons for this decline are not fully known or understood. Some of these non-implanted calves are likely being sold into specialty or branded programs that prohibit anabolic implant use. However, another reason cattle managers leave suckling implants out of their tool box is the “stigma” that calves implanted in the suckling phase are discounted at the sale barn.

In 2015 Rogers and colleagues published results from studying the effects of growth-promoting implant status on sale price of beef calves sold through livestock video auction services from 2010 to 2013. Over the three years they noted about 28% of the weaned steers marketed had received an implant prior to weaning. They found that implant status of calves had no effect on the sale price of beef calves. In other words there were no discounts as a result of using implant technology or more over no cattle received premiums for their non-implant status.

Another reason suckling calf implant use may have declined is the thought that previously implanted calves do not respond as well to subsequent implants in the growing and finishing phase. Two SDSU studies, one by Pritchard and colleagues (2015) and one by Web and colleagues (2017) further studied the impact of suckling calf implants on post-weaning live animal and carcass performance. Both studies found there were no effects on average daily gain, or feed efficiency in the receiving, backgrounding or finishing phase if a calf was previously implanted during the suckling phase of life. Both studies found there were no negative impacts from suckling implants on subsequent carcass characteristics.

So after ruminating on all that—who will take the deal proposed in the first paragraph?



**THERE'S  
FINDING  
WHAT  
WORKS.**

**AND  
THERE'S  
KNOWING  
HOW  
IT  
ALL  
WORKS  
TOGETHER.**



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Some of the biggest successes in nutritional additives were invented in our labs. By our employees. And that expertise helps us better understand the components that go into our products, and pushes our team to develop unique combinations for greater performance. Find some of your own at [PMIadditives.com](http://PMIadditives.com).

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# ESTABLISHING MANAGEMENT AUTHORITY

**New and younger employees sometimes struggle to understand the importance of accountability and how their position fits into the company's objectives. If your organization has clear levels of authority that are well-defined and fully established, your entire staff will know who is in charge of each area and to whom they are personally accountable.**

Additionally, employees often don't fully understand how having clear accountability and authority is to their advantage, how it helps the quality of the decisions that are made in the operation and its effect on overall efficiency and measurable results.

Some situations where it would be beneficial to reinforce the level of authority each person has would include when a new family member joins the operation in a management role, when a new manager has been hired from outside the organization, when an employee has been promoted from within the system, or other times when there is a need for clarity on who is ultimately accountable for each area. It might also be helpful when there are several new people in the operation that have been added in different areas, several people within the organization have been reassigned, or at the beginning of the year when you are making adjustments to the organizational structure.

## Simple Strategies

Here are some techniques to help your supervisors and managers establish their level of authority

with their direct reports.

- During the hiring process by including them in interviews and final selection.
- Updating your job descriptions and have these new managers present the updates to each employee individually.
- Anytime that you are revising standard operating procedures.
- During disciplinary actions and terminations.
- Having them lead staff meetings with you present, which shows that you are deferring to their authority in this area and have trust in their ability and management.
- They should be accountable for the safety training in their department and all safety initiatives.
- When new employees are hired they should lead that employee's orientation and training.
- They should do performance evaluations and develop the performance improvement plans for their direct reports.
- Anytime there are staff meetings, be sure to have your managers present information relevant to their department while you are there to show all employees that you see them as a person with authority.

These simple strategies help your managers and supervisors gain confidence in their ability to lead and helps build trust throughout the organization. The more you show your confidence in them, the more their employees will show the same confidence in them as the manager of their area.

While implementing and reinforcing these authority-establishing strategies it is very important to

not allow their employees to try to work around them and go directly to you. This will undo all efforts to establish that manager as the authority with that employee. If an employee comes directly to you rather than speaking directly with their manager, you should ask that employee several questions. Some questions would include, "What did your manager suggest you do?" or "Did you ask your manager about this?" or "Why are you coming to me instead of talking directly with your manager?"

Once you've gotten the answers to these basic questions you can then get in touch with their manager, while you are talking with this employee, and determine what should be done.

These questions and this strategy help the employee understand that their manager is the person that they need to be going to for these issues and if they come to you you're going to go directly back to their manager any time they come to you.

Many feedlot owners and managers have found that when they utilize these strategies and continually work to establish and enhance the level of authority of their key people, they are free to spend much more time on the major issues of their business such as long-term planning, marketing, working with customers, sourcing inputs and the other activities with significant financial impact.

*Don Tyler is founder of Tyler & Associates Management Coaching. For assistance with this and other challenging employee management issues contact him at [dhtyler@frontiernet.net](mailto:dhtyler@frontiernet.net) or by calling 765-490-0353.*





# WHISPER

listen smart, treat smarter



## A SMARTER WAY TO LISTEN

Diagnose and treat BRD  
more effectively

The Whisper Veterinary Stethoscope is a simple electronic tool that enables you to accurately diagnose Bovine Respiratory Disease (BRD) according to a clearly defined five point scale.

This helps you make treatment decisions for individual animals more effectively, improving the overall health and productivity of feedlot cattle.

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**WHISPERCATTLE.COM**



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**Introducing the new American Angus Association® feeder cattle program.**

With Angus Link<sup>SM</sup>, you can verify the genetic performance potential in the feeder calves you buy. Backed by the world's most comprehensive genetic database, Angus Link is a new tool that helps you manage risk to make profits more predictable. The program's three genetic scores are easy to understand and work across all breeds.

**Go to [AngusLink.com](http://AngusLink.com) to learn more.**



# ANGUSLINK<sup>SM</sup>

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Know the score.





## PIONEER AND GENERIC PRODUCTS UNDERGO STRICT PROCESSES TO REACH THE MARKETPLACE

Today's producer has a wide range of pharmaceutical products available to prevent disease, treat disease, control parasites, regulate estrus and so much more. Products range in price from less than a dollar per head to \$30 or more per treatment. Some products are fairly new on the market while others are decades old. Regardless, all pharmaceuticals are regulated by the FDA's Center for Veterinary Medicine (CVM), and the process to bring products to the marketplace is a very expensive one.

Bringing a pharmaceutical to market is a time-consuming, expensive, and scientifically rigorous

process. Companies must demonstrate that the pharmaceutical is safe and effective in animals. According to the Animal Health Institute (AHI), the development of a major new animal drug takes seven to 10 years and can cost up to \$100 Million.

### Pioneer Product

To eventually reach the store shelves, a pioneer product goes through the following steps, according to the FDA.

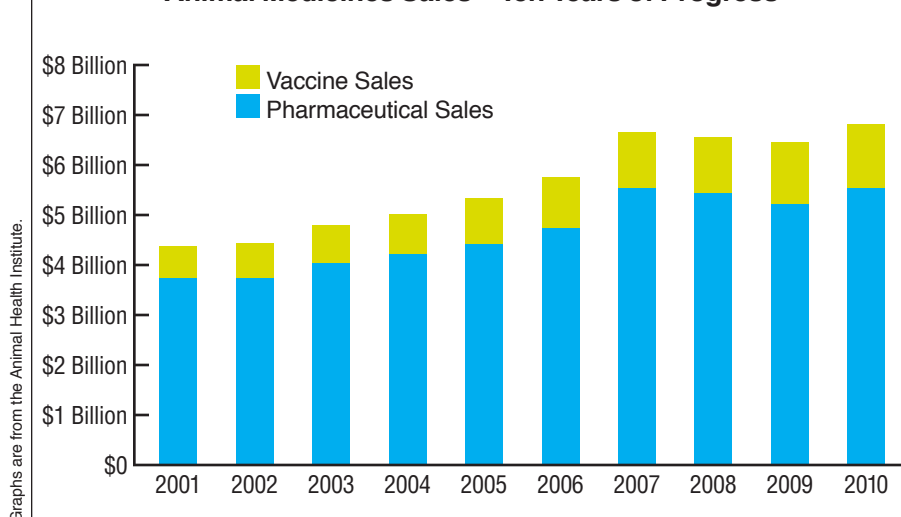
- The drug sponsor (typically a pharmaceutical company) collects information about the safety and effectiveness of a new animal drug. The sponsor may

need to conduct studies to get this information. For any studies that are performed, the sponsor analyzes the results.

- Based on the collected information, including any study results, the sponsor decides if there is enough proof that the drug is safe and effective to meet the requirements for approval.
- The sponsor submits a New Animal Drug Application (NADA) to CVM. The NADA includes all the information about the drug and the proposed label.
- A team of CVM personnel, including veterinarians, animal scientists, biostatisticians, chemists, microbiologists, pharmacologists, and toxicologists, reviews the NADA. If the center's team agrees with the sponsor's conclusion that the drug is safe and effective if it is used according to the proposed label, CVM approves the NADA and the drug sponsor can legally sell the drug.

FDA gives "marketing exclusivity" to a drug company that gets a brand name animal drug approved. Starting on the date of approval, marketing exclusivity is the time period during which FDA will not approve a generic copy of the approved brand name animal drug. The marketing exclusivity lasts for five years for a first-time approval

Animal Medicines Sales – Ten Years of Progress



Graphs are from the Animal Health Institute.

of an animal drug and three years for subsequent approvals of that drug. For example, the first time FDA approves a dewormer in horses, the drug company receives five years of marketing exclusivity. If FDA later approves that same dewormer for cows, the company receives three years of marketing exclusivity specific to the additional cattle claims.

“Exclusive marketing rights” apply to designated brand name animal drugs for minor species or minor uses in a major species (called “MUMS drugs”). FDA gives seven years of exclusive marketing rights to a drug company that gets a brand name MUMS drug designated and then approved, or conditionally approved. This means FDA cannot approve a generic copy or another brand name version for seven years from the date of approval, or conditional approval, of the designated brand name MUMS drug.

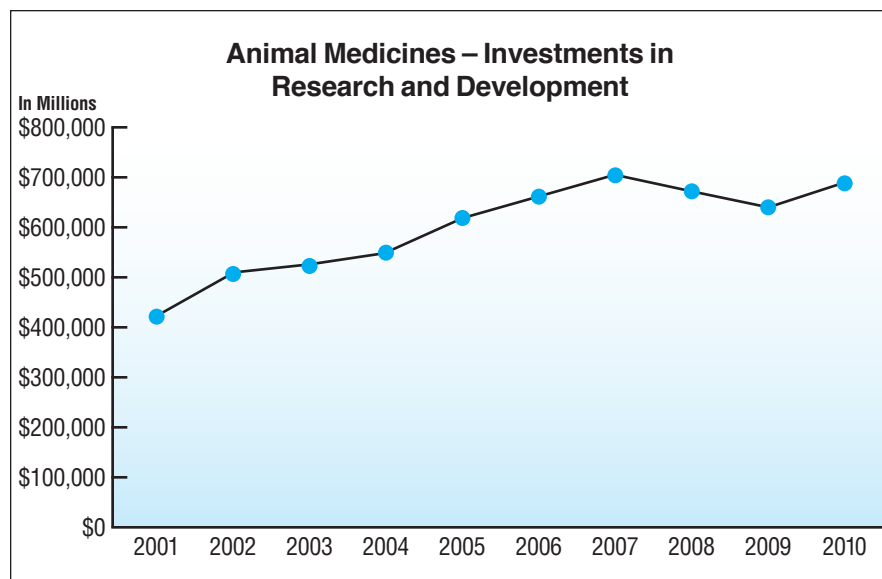
### Generic Product

After the patents and marketing exclusivity periods for an approved brand name animal drug have expired, another drug sponsor can obtain approval for a generic copy. Generally, a generic drug sponsor will begin the registration process several years earlier. A generic animal drug goes through the Abbreviated New Animal Drug Application process, which is different than the full approval process for the pioneer drug.

The FDA requires a generic drug to have the same quality, performance, and intended uses as the brand name drug. Before marketing a generic animal drug, the drug company must prove to the FDA that the generic copy is the same as the approved brand name animal drug in:

- Active ingredient;
- Strength;
- Dosage form; and
- Dosage regimen, including route of administration.

According to the FDA, the process is abbreviated because the sponsor doesn't have to conduct



new safety and effectiveness studies with the generic drug. Instead, the drug company must prove to the FDA that the generic copy is bioequivalent to the approved brand name drug. This means that the generic drug is absorbed by and performs the same way in the animal's body as the brand name drug. The FDA requires that the generic drug be manufactured under the same strict manufacturing standards as the brand name drug. The manufacturing processes for the generic drug must consistently produce a product that is equivalent to the brand name animal drug in identity, strength, purity, and quality.

After approval, the quality and monitoring processes continue for the generic product, just as they do for the pioneer product. Those include reporting any manufacturing changes, ongoing stability testing, adverse event monitoring and submission of all advertising and promotional materials to the FDA.

The science behind bringing products to the market is considerable and requires significant investments. The approval process is the same for any new animal drug, whether it's an over-the-counter (OTC), prescription (Rx), or veterinary feed directive (VFD) drug. All must go through the NADA process, but one difference between these three categories of animal

drugs is whether CVM has determined that veterinary oversight is required for the safe and effective use of the drug. If the center determines that adequate “directions for use” can be written on the drug's label in such a way that a non-veterinarian can use the drug safely and effectively, then it can be marketed as OTC. If not, then the drug must be marketed as either Rx or VFD.

Both Rx and VFD drugs require veterinary oversight to be used safely and effectively. The main difference between these two categories of animal drugs is whether the drug is used in or on animal feed.

According to AHI, member companies spent 10 to 12% of their sales investing in new innovations in animal health. That investment is used to cover animal health innovations for the world's 24 billion chickens, more than 1 billion cattle and sheep, 750 million pigs and goats, 500 million dogs and 400 million cats. The time, care and investment put into the research and development of animal medicines ensures a steady stream of products that improve the health and well-being of animals.

*Considerable information for this article was obtained from the FDA. For additional information on how pioneer and generic products reach the marketplace, visit [www.fda.gov/AnimalVeterinary/GuidanceComplianceEnforcement/ComplianceEnforcement/UnapprovedAnimalDrugs/ucm249392.htm](http://www.fda.gov/AnimalVeterinary/GuidanceComplianceEnforcement/ComplianceEnforcement/UnapprovedAnimalDrugs/ucm249392.htm).* **FL**





150 mg/mL ANTIMICROBIAL

NADA 141-328, Approved by FDA

For subcutaneous injection in beef and non-lactating dairy cattle only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

**Caution:** Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

**READ ENTIRE BROCHURE CAREFULLY BEFORE USING THIS PRODUCT.**

#### INDICATIONS

ZACTRAN is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni* and *Mycoplasma bovis* in beef and non-lactating dairy cattle. ZACTRAN is also indicated for the control of respiratory disease in beef and non-lactating dairy cattle at high risk of developing BRD associated with *Mannheimia haemolytica* and *Pasteurella multocida*.

#### CONTRAINDICATIONS

As with all drugs, the use of ZACTRAN is contraindicated in animals previously found to be hypersensitive to this drug.

**WARNING: FOR USE IN CATTLE ONLY. NOT FOR USE IN HUMANS. KEEP THIS AND ALL DRUGS OUT OF REACH OF CHILDREN. NOT FOR USE IN CHICKENS OR TURKEYS.**

The material safety data sheet (MSDS) contains more detailed occupational safety information. To report adverse effects, obtain an MSDS or for assistance, contact Merial at 1-888-637-4251.

**RESIDUE WARNINGS:** Do not treat cattle within 35 days of slaughter. Because a discard time in milk has not been established, do not use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

#### PRECAUTIONS

The effects of ZACTRAN on bovine reproductive performance, pregnancy, and lactation have not been determined. Subcutaneous injection of ZACTRAN may cause a transient local tissue reaction in some cattle that may result in trim loss of edible tissues at slaughter.

#### ADVERSE REACTIONS

Transient animal discomfort and mild to moderate injection site swelling may be seen in cattle treated with ZACTRAN.

#### EFFECTIVENESS

The effectiveness of ZACTRAN for the treatment of BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* was demonstrated in a field study conducted at four geographic locations in the United States. A total of 497 cattle exhibiting clinical signs of BRD were enrolled in the study. Cattle were administered ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline as a subcutaneous injection once on Day 0. Cattle were observed daily for clinical signs of BRD and were evaluated for clinical success on Day 10. The percentage of successes in cattle treated with ZACTRAN (58%) was statistically significantly higher ( $p < 0.05$ ) than the percentage of successes in the cattle treated with saline (19%).

The effectiveness of ZACTRAN for the treatment of BRD associated with *M. bovis* was demonstrated independently at two U.S. study sites. A total of 502 cattle exhibiting clinical signs of BRD were enrolled in the studies. Cattle were administered ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline as a subcutaneous injection once on Day 0. At each site, the percentage of successes in cattle treated with ZACTRAN on Day 10 was statistically significantly higher than the percentage of successes in the cattle treated with saline (74.4% vs. 24% [ $p < 0.001$ ], and 67.4% vs. 46.2% [ $p = 0.002$ ]). In addition, in the group of calves treated with gamithromycin that were confirmed positive for *M. bovis* (pre-treatment nasopharyngeal swabs), there were more calves at each site (45 of 57 calves, and 5 of 6 calves) classified as successes than as failures.

The effectiveness of ZACTRAN for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica* and *Pasteurella multocida* was demonstrated in two independent studies conducted in the United States. A total of 467 crossbred beef cattle at high risk of developing BRD were enrolled in the study. ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline was administered as a single subcutaneous injection within one day after arrival. Cattle were observed daily for clinical signs of BRD and were evaluated for clinical success on Day 10 post-treatment. In each of the two studies, the percentage of successes in the cattle treated with ZACTRAN (86% and 78%) was statistically significantly higher ( $p = 0.0019$  and  $p = 0.0016$ ) than the percentage of successes in the cattle treated with saline (36% and 58%).

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## Positive Step: Public Comment Period Open on Hours of Service Rules

The Federal Motor Carrier Safety Administration (FMCSA) announced in late August an Advanced Notice of Proposed Rulemaking on Hours of Service (HOS) regulations. FMCSA is seeking public comment on revising HOS regulations for interstate truck drivers.

Advanced notice for the public comment was limited, with the first public listening session taking place just three days after the press release announcing the public comment period was published. The comment period will be open for 30 days.

Earlier this year, the congressionally mandated electronic logging device (ELD) rule, which required most FMCSA-regulated motor carriers to convert their records from paper to an electronic format, became effective. According to FMCSA, compliance with the ELD rule has reached nearly 99 percent across the trucking industry, however it has also brought focus to HOS regulations, especially with regard to certain regulations having a significant impact on agriculture and other sectors of trucking.

Almost immediately, an ELD exemption was granted to those hauling livestock and other sensitive agricultural commodities, citing that animals and other items like produce could not survive or would be damaged sitting on the side of the road during mandated breaks.

In June, the Transporting Livestock Safety Across America Act was introduced to the U.S. House of Representatives. NCBA president Kevin Kester said, "The House version of the Transporting Livestock Across America Act is another important step toward fixing the current Hours of Service rules for livestock haulers. The status quo

presents major challenges for the beef industry and can often jeopardize the health and well-being of livestock. We are grateful that Representative Yoho and 45 bipartisan cosponsors stepped up to support the legislation."

A similar bill, the Modernizing Agricultural Transportation Act, was introduced in the Senate.

According to FMCSA, the upcoming Advanced Notice of Proposed Rulemaking (ANPRM), which will be published in the Federal Register, responds to widespread Congressional, industry, and citizen concerns and seeks feedback from the public to determine if HOS revisions may alleviate unnecessary burdens placed on drivers while maintaining safety on our nation's highways and roads.

The four specific areas under consideration for revision are:

- Expanding the current 100 air-mile "short-haul" exemption from 12 hours on-duty to 14 hours on-duty, in order to be consistent with the rules for long-haul truck drivers;
- Extending the current 14-hour on-duty limitation by up to two hours when a truck driver encounters adverse driving conditions;
- Revising the current mandatory 30-minute break for truck drivers after 8-hours of continuous driving; and
- Reinstating the option for splitting up the required 10-hour off-duty rest break for drivers operating trucks that are equipped with a sleeper-berth compartment.

Instructions on making public comments on the issue can be found at [www.fmcsa.dot.gov/regulations/hours-service-advanced-notice-proposed-rulemaking](http://www.fmcsa.dot.gov/regulations/hours-service-advanced-notice-proposed-rulemaking)



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**Important Safety Information:** For use in cattle only. Do not treat cattle within 35 days of slaughter. Because a discard time in milk has not been established, do not use in female dairy cattle 20 months of age or older, or in calves to be processed for veal. The effects of ZACTRAN on bovine reproductive performance, pregnancy and lactation have not been determined. Subcutaneous injection may cause a transient local tissue reaction in some cattle that may result in trim loss of edible tissues at slaughter. NOT FOR USE IN HUMANS. KEEP OUT OF REACH OF CHILDREN.

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# Weaning and Starting Calves on Feed

School is back in session and many children have recently experienced the stress of their first trip to school. Undoubtedly, both parents and children experience a certain level of stress the first day they have to go their separate ways. Children are exposed to a variety of new people, new experiences, and new challenges. Perhaps it is not the perfect metaphor for weaning calves, but there are some similarities. Is it any wonder that the stress and exposure can lead to a rash of sickness in both cases? The following are suggestions for managing the weaning

phase to improve profitability, quality of life, and reduce morbidity and mortality.

First and foremost, understanding the kind of calves you are receiving is important. There is quite a difference in the level of risk between fully preconditioned calves direct from a single well-managed ranch versus put-together fly-weights collected over the course of 2–3 days at 1 or more sale barns. From a health standpoint, we strongly encourage you to talk to your local veterinarian and customize a program for your operation and the kind of calves you deal with. A weaning and

receiving program should include nutrition and health protocols including target intakes, injectable and feed-grade antibiotic treatment protocols, and necropsy protocols.

Prior to calves arriving at your operation, make sure your feed inventory is fresh and you have your receiving rations ready to go. Pens should be scraped clean and waters should be cleaned and disinfected. As calves enter the pen, they should have immediate access to highly-palatable grass or prairie hay.

Aside from being highly palatable, receiving rations should

**GET PROACTIVE  
ABOUT THE HEALTH  
OF YOUR CATTLE**



**1.55%** Dry matter intake of calves following arrival can be as low as 1.55% of body weight<sup>1</sup>

**75%** Rumen fermentation can be reduced by as much as 75% during and after transport and may take up to five days to recover<sup>2</sup>

Treating sick cattle is expensive and time consuming. It's time to explore alternative technologies that support disease prevention by maintaining the well-being of the gut and enhancing nutrient digestibility. The Tri-Lution® Receiving Cattle program is a two-step process to ensure your cattle get off to a great start.

**STEP 1**

Administer Agri-King Drench to calves on arrival

**STEP 2**

Follow with Tri-Lution® in feed for 10 days



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IN FEEDS IS THE KEY TO PROFIT."

<sup>1</sup>Cole and Hutcheson, 1985, J. Anim. Sci. 60:772-780  
<sup>2</sup>Hutcheson, 1990, Feedstuffs 62(11):14

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be nutrient dense as intakes will likely be low during the first few days, particularly on bawling calves. Rations for incoming cattle should generally be at least 14.5% crude protein, 40% moisture or less, and 35 to 65% roughage. Fermented forages should be introduced



Jeremy Martin, Ph.D.

slowly, after the calves are readily coming to the bunk. We recommend receiving cattle with high quality grass hay in the bunk, and top-dressing 0.5% – 1.0% of body-weight (BW) on a dry-matter (DM) of starter ration over the hay 12–24 hours later. Over the following days, increase intake of the calves carefully and consistently. Your goal should be to achieve an intake of 1.7–2% of BW DM basis by day 7–10 depending on your program.

I cannot stress enough that “reading the bunk” is a misnomer when starting calves, you must read the cattle. If you don’t read your cattle, you will always get ahead of them, resulting in decreased intakes and feed left in the bunk. In reality, everybody gets ahead of calves some time and knocks

them off feed. At the first sign it has happened to a set of calves, I recommend cutting intake substantially in order to make the calves aggressive again. It is better not to “chase them down” on intake, but rather to get underneath them immediately. Do not

be afraid to cut DM intake by 25% or more in order to do so.

Nutrition of highly-stressed calves is a topic of frequent discussion amongst the GPLC nutritionists, and as a group we agree that a starter program benefits from addition of certain key ingredients. We believe a starter supplement should contain a high proportion of their trace minerals from chelated sources, and chromium propionate should be included at a dose proven to drive intake the first 30 days on feed. Additionally, the supplement should contain yeasts designed to enhance energy utilization and/or gut health. All of these products add cost, but during the first 30 days on feed, we are focused on best cost, not least cost – and the two are absolutely not the same

during this time period. On a per head basis, the additional cost of these ingredients amounts to approximately \$4–5 over the first 30 days. In other words, it represents far less than 1% of your investment in the cattle. We would be happy to share the research we use to make these decisions with you if you desire, but rest assured we have your return on investment in mind.

For more information, visit Great Plains Livestock Consulting at [www.gplc-inc.com](http://www.gplc-inc.com). **FL**

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**PRODUCT INFORMATION**

NADA #141-450, Approved by FDA

**Banamine®  
Transdermal**  
(flunixin transdermal solution)

Pour-On for Beef and Dairy Cattle 50 mg/mL

**BRIEF SUMMARY:** (For full prescribing information, see package insert)

**Non-Steroidal Anti-inflammatory Drug**

Only for topical use in beef and dairy cattle. Not for use in beef bulls intended for breeding; dairy bulls; female dairy cattle 20 months of age or older, including dry dairy cows; and suckling beef calves, dairy calves, and veal calves.

**CAUTION:** Federal law restricts this drug to use by or on the order of a licensed veterinarian.

**DESCRIPTION:** Each milliliter of Banamine Transdermal pour-on contains 50 mg flunixin (equivalent to 83 mg flunixin meglumine), 150 mg pyrrolidone, 50 mg L-menthol, 500 mg propylene glycol dicaprylate/dicaprate NF, 0.20 mg FD&C Red No. 40, and glycerol monocaprylate NF q.s.

**INDICATIONS:** Banamine Transdermal pour-on is indicated for the control of pyrexia associated with bovine respiratory disease and the control of pain associated with foot rot in steers, beef heifers, beef cows, beef bulls intended for slaughter, and replacement dairy heifers under 20 months of age.

**CONTRAINDICATIONS:** NSAIDs inhibit production of prostaglandins which are important in signaling the initiation of parturition. The use of flunixin can delay parturition and prolong labor which may increase the risk of stillbirth. Do not use Banamine Transdermal pour-on within 48 hours of expected parturition. Do not use in animals showing hypersensitivity to flunixin meglumine.

**USER SAFETY WARNINGS:** Not for use in humans. Keep out of reach of children. Flunixin transdermal solution is a potent non-steroidal anti-inflammatory drug (NSAID), and ingestion may cause gastrointestinal irritation and bleeding, kidney, and central nervous system effects.

This product has been shown to cause severe and potentially irreversible eye damage (conjunctivitis, iritis, and corneal opacity) and irritation to skin in laboratory animals. Users should wear suitable eye protection (face shields, safety glasses, or goggles) to prevent eye contact; and chemical-resistant gloves and appropriate clothing (such as long-sleeve shirt and pants) to prevent skin contact and/or drug absorption. Wash hands after use.

**In case of accidental eye contact, flush eyes immediately with water and seek medical attention.** If wearing contact lenses, flush eyes immediately with water before removing lenses. **In case of accidental skin contact and/or clothing contamination, wash skin thoroughly with soap and water and launder clothing with detergent.** **In case of ingestion do not induce vomiting and seek medical attention immediately.** Probable mucosal damage may contraindicate the use of gastric lavage. Provide product label and/or package insert to medical personnel.

**RESIDUE WARNINGS:** Cattle must not be slaughtered for human consumption within 8 days of the last treatment. Not 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 or heifers. Not for use in suckling beef calves, dairy calves, and veal calves. A withdrawal period has not been established for this product in pre-ruminating calves.

**PRECAUTIONS:** As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal, and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with renal, cardiovascular, and/or hepatic dysfunction. Banamine transdermal should be used with caution in animals with suspected pre-existing gastric erosions or ulcerations. Concurrent administration of other NSAIDs, corticosteroids, or potentially nephrotoxic drugs should be avoided or used only with careful monitoring because of the potential increase of adverse events.

NSAIDs are known to have potential effects on both parturition (see Contraindications) and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. NSAIDs are known to have the potential to delay parturition through a tocolytic effect. The use of NSAIDs in the immediate post-partum period may interfere with uterine involution and expulsion of fetal membranes. Cows should be monitored carefully for placental retention and metritis if Banamine Transdermal pour-on is used within 24 hours after parturition.

Not for use in dairy or beef bulls intended for breeding because reproductive safety has not been evaluated.

**HOW SUPPLIED:** Banamine Transdermal pour-on, is available in 100-mL (NDC 0061-4363-01), 250-mL (NDC 0061-4363-02), and 1-L (NDC 0061-4363-03) bottles.

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# Corn Can Make Good Silage

Growing conditions have been ideal for corn in several parts of North Dakota this year, and many livestock producers are preparing to produce corn silage.

“Even under ideal conditions, dry-matter losses between the time that corn is harvested and when the silage is consumed by animals can approach 15 percent,” cautions North Dakota State University Extension livestock environmental stewardship specialist Miranda Meehan.

“With poor harvest and management, these losses can be in excess of 50 percent,” she notes. “Therefore, proper harvest and management are important to ensure you are maximizing the amount of good-quality silage available for feeding your livestock.”

Harvesting corn silage at the appropriate moisture level is key to getting proper fermentation for preservation and forage quality, according to Carl Dahlen, an associate professor in NDSU’s Animal Sciences Department. Moisture levels outside of the ideal range will lead to improper fermentation, which can impact packing and feed loss through spoilage.

Traditional indicators of when to start chopping silage, such as when corn reaches the 50 percent milk line, can be deceiving with different silage hybrids. Dahlen and Meehan recommend producers harvest based on whole-plant dry matter. For bunkers and piles, they recommend a moisture content of 60 to 70 percent.

“If you are utilizing a custom harvester, it is important to keep the harvester updated on the status of your crop so it can be harvested at optimal conditions,” Dahlen says.

When harvesting, having the chopper set at the proper length

and clearance between the processing rolls is important when using a kernel processor. Particle size influences digestibility.

To obtain optimal digestibility, researchers found that approximately 90 percent of the particles should be between 0.31 and 0.75 inch. Kernel processing equipment on choppers can ensure that a greater proportion of particles falls into the ideal range. The equipment breaks down large pieces of cob and stalk, helping achieve an ideal particle size and enhancing silage compaction.

Meehan and Dahlen advise that prior to harvest, producers should select a location for the silage pile and determine the proper pile size.

Factors to consider when selecting a location include:

- Drainage
- Distance to water well
- Snow movement/drifts
- Distance to feeding area
- Space to maneuver equipment
- Ability to exclude livestock and wildlife

Dahlen recommends keeping the silage face as straight as possible and removing at least 6 inches of silage from the entire face of the pile on a daily basis. Producers can use this concept to determine the appropriate dimensions of silage piles.

“Corn silage can provide a high-quality feed for livestock if it is harvested and ensiled properly,” Meehan says. “Careful planning of the harvest, pile size and location, and feeding management can ensure quality and reduce the amount of silage lost due to spoilage.”

“Considering the high variability in quality due to harvest conditions, harvest methods and ensiling methods, we recommend that producers test forage quality to ensure they are meeting animals’ nutritional requirement,” she adds.

**FL**

# BRD KEEPING THEM **OFF FEED?**

## Reduce fever and get 'em back to the bunk sooner.<sup>1</sup>

You know the signs. Cattle hanging back from the bunk, fighting the fever of BRD. It can feel like they're a far cry from getting back on feed.

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1. Hellwig D, Kegley E, Johnson Z, Hunsaker B. 2000. Flunixin meglumine as adjunct therapy for bovine respiratory disease in stocker cattle. Arkansas Animal Science Report. AAES Research Series 478.

**IMPORTANT SAFETY INFORMATION: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.** Only for topical use in beef and dairy cattle. Do not use Banamine Transdermal pour-on within 48 hours of expected parturition. Do not use in animals showing hypersensitivity to flunixin meglumine. Cattle must not be slaughtered for human consumption within 8 days of the last treatment. Not 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 or heifers. Not for use in suckling beef calves, dairy calves, and veal calves. A withdrawal period has not been established for this product in pre-ruminating calves. Not for use in dairy or beef bulls intended for breeding because reproductive safety has not been evaluated.

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# Injectable Minerals Can Enhance Stocker Calf Health

BY GILDA V. BRYANT

**S**ale barn calves are often high-risk animals, simply because the buyer has no way to know exactly what environment they come from. Sometimes bull calves and steers have not received extensive preconditioning, mineral supplementation or additional health protocols. The producer's goal is to promote calf health, aiming for a two-pound average daily gain. Successful stocker operators frequently rely on injectable trace mineral supplementation to increase the well-being and productivity of these cattle.

Larry Hollis, D.V.M., retired Kansas State University veterinarian, says injectable minerals give producers a chance to improve trace mineral deficiencies.

"The huge difference with an injectable mineral vs. oral is speed, how fast we get it into the animal so it goes to work," Hollis reports. "We know that injectable mineral's peak absorption occurs eight to 10 hours post-injection. The majority of the product is absorbed within the first 24 hours, moving to the site of need. If there's excess above what is immediately needed in the body, it'll go to the liver, where it is stored and used over time. Injectable minerals don't replace a good oral trace mineral program, which

calves need for maintenance."

Stephanie Hansen, Ph.D., Feedlot Nutritionist with Iowa State University, has conducted several injectable trace mineral trials. In a recent study, stockers were backgrounded in the university's feedyard on a high roughage diet, some of them receiving antagonists, sulfur and molybdenum. Sorted into separate mineral supplementation groups, Hansen found a significant boost in trace mineral status 14 days after calves received Multi-min®90, an injectable mineral. Data suggests animals treated with inorganic and chelated-organic mineral blends reached the same level after 28 days as cattle treated with injectable trace minerals. The group receiving only inorganic minerals took about a month and a half to reach the same trace mineral status as the injected calves.

"We actually found that regardless of dietary antagonists, the Multi-min®90 response was extremely consistent," Hansen explains. "That tells us it can be a powerful tool to quickly improve [mineral] status of animals, even when they're being fed a high-antagonist diet."

Producers often feed distiller's byproducts, however they should account for sulfur in molasses, lick tanks, lick tubs or distiller's byproducts. Sulfur can tie up copper, zinc, manganese and selenium,



all essential trace minerals. Hansen recommends testing water sources for concentrations of sulfur or iron. Other antagonists, such as molybdenum, also bind trace minerals in the rumen, making them unavailable to the animal.

"Injectable minerals can be a powerful tool to quickly improve the trace mineral status of cattle," Hansen concludes. "Producers need to have a good understanding of other products, especially selenium, going into calves when they are received. If you're a stocker operator, you need to have an appreciation for what the previous mineral status of that calf is, particularly if it received injectable minerals recently. Be careful not to double dip on that. Definitely, read the label and follow the instructions."

David Sturgeon, D.V.M., operates a pre-conditioning yard in Cordell, Oklahoma, where he raises high-stress, commingled calves with unknown backgrounds.

"There's a good chance a percentage of them could either be below normal levels or at the low end of their trace minerals," Sturgeon reports. "Using injectable trace minerals is a good way to make sure we start that set of calves, so our



injecting trace minerals in the neck, a hand-breadth away from other injections. Better yet, inject vaccinations and injectable minerals on opposite sides of the neck. Thanks to trace mineral injections, his stocker calf health program is more consistent, providing adequate immune responses in calves. He strives to enhance calf health, performance and minimize expenses. Barker suggests operators invest on the front end to get a return on the back end. When he first

vaccines perform closer to the way we expect them to. We know we can optimize their performance in terms of growth, immune function.”

He advises producers to check with their local veterinarian or extension expert to learn if their area has trace mineral deficiencies. Animals with marginal trace mineral levels quickly become deficient during stress events, resulting in a poor immune response, and illness.

Surgeon noticed trace mineral deficiency symptoms in his cattle 20 years ago. They had poor reproduction rates, and some calves experienced extra bleeding at castration, a sure sign of copper deficiency. He reports poor hair coats, slow growth rates and susceptibility to infectious disease are much more common in these calves. In his search for a suitable trace mineral solution, he tried several products but was dissatisfied with the results.

“I went to an Academy Of Veterinary Consultants meeting,” Surgeon recalls. “Multimin [representatives] showed their research, and I decided to try it. Once I did, I never quit using it.”

In Newcastle, Oklahoma, L.D. Barker, D.V.M., recommends

used trace mineral injections, he reduced pull rates from 50 to 60 percent down to below 17. Death losses also dropped from 12 percent to under five.

“We see healthier calves respond to the first treatment so much better,” Barker explains. “We’re reducing retreats by two-thirds. It’s so essential for animals to overcome infection. They respond to

treatment much better and are turned out quicker. It diminishes your cost of antibiotics. I feel really good about the tools and technology we have today to minimize our issues and problems. It has reduced a lot of frustration and economic losses by having a product we know will get all those animals on the same page and maximize their response performance. It’s cost-justified from that standpoint.”

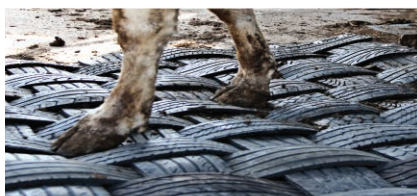
Scott Williamson also raises stocker calves in the Texas counties of Jones and Baylor, and the headquarters is located between Anson and Stamford. At two dollars a head, an injectable mineral like Multimin®90 is an affordable tool for his management strategy. When his stockers reach a healthy trace mineral status, death loss is significantly reduced.

“I have experienced reduced labor from pulls and calves are going to take to feed faster and gain faster, particularly the ones that you reduced illnesses in,” Williamson reports. “In the big scheme of things, that cost is so minimal, and the returns on that animal so huge, that it is a necessary staple in my processing battery.” **FL**



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# Cattlemen Honored For Environmental Stewardship

**SIX OPERATIONS IN THE LIVESTOCK INDUSTRY were honored as regional winners of the Environmental Stewardship Award Program (ESAP) during the 2018 Cattle Industry Summer Business Meeting in August. The award recognizes each operation's outstanding stewardship and conservation efforts.**

"Cattlemen and women everywhere understand that the land, air and water resources in their care are the cornerstone of their success and they are only stewards of those resources for a short time," said NCBA President Kevin Kester. "Each of us understands the importance of improving those resources and leaving them better for future generations. This year's nominees are outstanding examples of what is possible for the beef industry and they serve as an inspiration for producers everywhere to continue improving their stewardship practices."



**T**he **BIRDWELL AND CLARK RANCH** spans across 14,000 acres in North Texas. The ranch was established in 2004 by husband and wife Emry Birdwell and Deborah Clark. They have 340 paddocks and rotate their one herd of 5,000 stocker cattle 3-6 times a day depending on the size of the paddock and the quality of the grass. The ranch has implemented an intense grazing management plan because they don't

want the cattle to stay in one place too long, and they don't overgraze.

Using stocker cattle to graze the ranch lets them achieve the stock density and hoof action they desire to knock down old plants, break up the soil surface and incorporate litter and manure into the soil. Because of the ranch's grazing management, plant diversity has increased to include eastern gama grasses, a highly palatable native

perennial, which has been grazed out on most Texas ranches.

"We were seeing positive impacts from grazing separate herds but when we moved to one herd grazing, the benefits that were produced were explosive," said Deborah. "The diversity of the grasses and the forbs and covering the bare ground made a big difference."

Birdwell and Clark knew that one day they would have to find a better solution of getting water to each paddock. They partnered with NRCS and put in 25 miles of pipeline throughout the ranch. Emry had the idea of creating a mobile water trough that connected to all the water valves in the pastures. The mobile water trough offers flexibility for the ranch and has also allowed Emry and Deborah to fence the cattle out of riparian areas and stock tanks to allow better grazing distribution.

"I believe that people can look and see what Emry and Deborah have done here with just grazing management," said Tony Dean, District Conservationist, USDA-NRCS. "They have turned this place around and the condition of the ranch is in an upward swing. It is a much healthier environment with the ranch being in great condition."

With plant diversity, wildlife habitat is abundant and Emry and Deborah host visitors to share how they are continuing to improve the ranch. Each day they work together to build a legacy on the land.

"Right now, I love growing grass and improving this ground," said Emry. "There isn't going to be any more land, and this is our legacy and our chance to make a difference."





Operated by the Hahn family, the **HAHN RANCH** raises 550 cattle across nearly 28,000 acres of public and private land and has been doing so for nearly a century. Today multiple family members work together on the Hahn Ranch.

"I'm the third generation on the ranch," Chuck Hahn said, "and my sons are the fourth. The fifth generation is coming up with nieces and nephews."

With fewer than 12 inches of rain each year, the Hahns have installed more efficient irrigation systems and have added new stock water tanks to allow them to fence their cattle out of riparian zones.

"We're looking at ways to maintain water quality in those watersheds to maintain a healthy ecosystem and also to do things to improve the streambank health," said Dusty Hahn, Chuck's son and the fourth generation on the ranch.

The Hahn family was also part of the restoration of Deep Creek, the Missouri river tributary that crosses the Hahn Ranch. The family worked with private and public partners to install the Montana ditch siphon, rerouting irrigation water under instead of through the creek, reducing sediment issues, improved water flow, and allowed fish to return.

"Immediately after that project was done, we started having fish

move up from the Missouri river into Deep Creek here to start spawning," said Ron Spoon, a fisheries biologist with Montana Fish, Wildlife & Parks.

"There's more grass on the range units due to the rotational grazing system that the Hahns are implementing, getting stock water away from the creeks and the springs so those areas can be left for wildlife with less livestock impacts," said Justin Meissner, a district conservationist with USDA NRCS.

The Hahn Ranch also grows wheat, barley and hay crops, extending the grazing season to allow for longer rest periods on the range. Additionally, reduced tillage and cover crop rotations have had a positive impact on soil health.

"I want to do things better and

leave the land in a better condition than I found it for the next generation who will hopefully take as good or better care of it than we have," said Dusty.



Owned by the Baldwin family for nearly six generations, **HALEAKALA RANCH** is a family held corporation with about 100 shareholders that are all family members. The ranch covers nearly 30,000 acres on the island of Maui. Over time, the ranch has evolved, and lands that once belonged to Haleakala Ranch are now part of the Haleakala National Park, with nearly 1 million visitors annually traveling through the ranch to get to the summit of Haleakala.

"In the late 1920s there was an exchange, and that beautiful world-class crater area was conveyed to become a national park," said Jordan Jokiel, a land manager for Haleakala Ranch. "To me that speaks to the commitment and history of land stewardship at Haleakala Ranch."

Haleakala Ranch covers a diverse climate, with some of the herd of 1,200 cattle foraging in drier country near the ocean while other parts of the herd are rotated through mountain pastures at higher elevations.

Cattle and rotational grazing ►





*Stewardship... from previous page*

play a key role in the fight against a wide variety of invasive species on Maui. “Gorse is a weed in Hawaii. It’s native to Western Europe and the British Isles and was brought in the late 1800s to Hawaii. Like everything else, the genie got out of the bottle once it arrived to Hawaii, and it’s spread across Haleakala Ranch, covering a couple thousand acres of high quality pasture.”

The team at Haleakala Ranch works with conservation partners to protect the watershed and improve their natural resources, including restoring native rainforests.

Haleakala Ranch is also a member of the Maui Cattle Company, finishing their cattle to be sold as local beef.

Each year the ranch hosts a variety of groups including the Ag in the Classroom program. “It’s a very important program that Haleakala Ranch and the rest of the community gets involved with because these kids are very disconnected from where their food comes from,” said Greg Friel, livestock operations at Haleakala Ranch, “and the more we can get involved with exposing them to [the ranch], the better it is for them and for us as the agriculture community.”

“The family has the same goals that I have,” said Friel. “They want to see this ranch get better and better every year. We just celebrated 130 years of this ranch being founded. We’re looking forward to that 150th anniversary, and that 200th anniversary.”

**MOES FEEDLOT** got started in 1987, with 20 bred heifers in 1988. The operation got to the point where they were feeding 400 head on outside lots without much in the way of their own facilities, but changed when John Moes’ son, Bryan, returned to the operation. The Moes family knew that they needed a way to support future generations, so they installed a new monoslope



facility in order to increase the capacity of the feedyard.

“We didn’t really have the availability to buy any land,” said Bryan, “so we started investing in the feedlot. In 2011 we did another expansion to have 1,999 head.”

With the feedlot expansion came the need to control any runoff. All of the facilities were carefully designed so water and nutrients are captured before they can reach sensitive wetlands and watersheds.

“It was very important for us to make sure that all of our runoff was contained and handled in a safe matter to the environment,” said Bryan. “So, everything is collected from the manure for rain runoff where nothing goes to our slews. That was very important for us to coexist with the water holes we have around us.”

Manure scraped from the pens is a valued asset and applying it to the fields has improved soil quality and crop yields while decreasing the use of commercial fertilizer.

“We’ve raised our organic matter from a two to a 6½,” said John. “With that, every percent of organic matter that you increase you get an extra inch of holding capacity. We’re keeping the water on the ground, and it’s going up to the atmosphere and coming back down on our area instead of running down the river.”

The Moes family is always on the lookout for new technology

that can help them become better stewards of the land. Their feeding systems includes identification tags to allow for increased efficiency in sorting. They also use their tablets and smartphones to keep track of the feed wagon and monitor the health of the cattle—even when they’re away from home.

For more than a decade, John has worked with South Dakota State University (SDSU) on beef cattle reproduction projects. The research has helped them tighten up their breeding and calving seasons. “This family’s really willing to try new things,” said Stephanie Perkins, a lab technician at SDSU. “Every year when we finish with the study John wants to know the results right away. He’s very keen on knowing what the next step is and what he can do to better his operation.”

The Moes family has also planted 25 acres of trees to serve as a windbreak and to provide habitat for wildlife. Their pastures are currently in a 10-year easement program, and they put a perpetual easement on 230 acres. Over the years they’ve cross-fenced pastures and installed pipelines and water tanks to help improve their rotational grazing system.

“When we do all this, we’re thinking of the next generation,” said Bryan. “We want to make this land as good—or better—than ►



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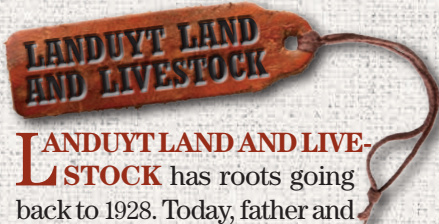
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*Stewardship... from previous page*

when we got it for them. So by making it as good or better for them they can keep growing and expanding, and keep this symbiotic relationship with the livestock and the wildlife."



**L**ANDUYT LAND AND LIVESTOCK has roots going back to 1928. Today, father and son George and Mike work together to care for their crops and cattle. The operation originally was a dairy farm, but Mike's grandfather also had beef cattle. He exited the beef business in the 1950s and it took until 1999 for Mike to bring the cattle back to the farm. Since then Landuyt Land and Livestock has built a hoop barn and a monoslope barn.

"Our operation is a fourth-generation cattle feedlot and farm. We have about 2,200 acres of crops and about 700 cattle on feed at a time," said Mike Landuyt. "We feed all our cattle under roofs here and it works well for us. It keeps the environment steadier for the cattle and we have zero run-off from the barns."

On the crop side of the farm, the Landuyts use a reduced tillage system to prevent erosion. To protect water quality they have installed

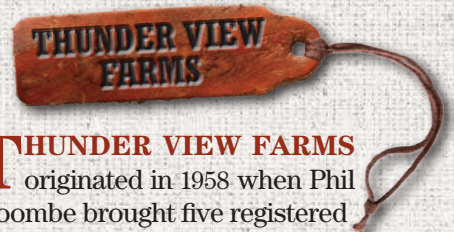
buffer zones along their fields to prevent run-off. They have intensified their soil sampling to better apply their crop inputs and to make sure they are properly utilizing the manure as a valuable fertilizer.

A significant challenge on the farm is controlling erosion due to rainfall. The Landuyts have partnered with NRCS to build 15 water retaining structures. The basins are there to control heavy rains and most of them can hold a 6-inch rainfall. The basins hold the water and slowly release it back into the stream by a metered system.

"We are able to treat the water in the watershed before it gets to the stream. That's important for the streams and rivers here in Minnesota, and they are getting better all the time," said Brian Pfarr, Resource Specialist, Soil and Water Conservation District. "It's because of people like Mike and the Landuyt family; they are practicing better management."

From crops to cattle, everything works together on Landuyt Land and Livestock and it's clear that the family tradition of doing what is right for the land is in good hands. The goal is to have the farm be around for at least another 90 years.

"Take care of the earth," according to George Landuyt. "Sure, it will take a little bit of money, but if it's going to save the soil and the earth you just need to do it."



**T**HUNDER VIEW FARMS originated in 1958 when Phil Coombe brought five registered Angus cows to the farm. Phil's brother Dick joined the operation soon after and they have been running the operation together ever since. Today, the farm has more than 200 seedstock cows on 1,500 acres 100 miles north of New York City. It sits between two of the state's biggest reservoirs supplying drinking water to the nine million people in the city. In the 1990s, New York City proposed tough watershed regulations that would have driven most farmers out of business, but the Coombe family, along with other families in the area, convinced officials that a way to keep land and water in pristine conditions was to keep the land and forests in well managed farms.

"I think it's been a huge advantage to the beef industry that we fought the battle with the city and won and now have a strong partnership," said Dick Coombe. "We've turned a negative that should have put us out of business into a positive."

As part of this effort, Thunder View Farms has installed a gravity flow system to deliver clean water to all their pastures and allow them to fence cattle out of the streams. The Coombe family developed an approach to avoid nutrient and sediment runoff. They installed heavy feeding pads that are placed more than 1,000 feet away from any streams to protect surface water. They use silage bags to feed the cattle, which provides a healthier environment for the cattle while reducing feed waste and workload.

"They have been excellent stewards of the land," said Paul Rush, Deputy Commissioner, New York City Department of Environmental Protection, "They work very closely with the water supply to protect it while producing high quality beef."







To supplement their electrical needs, the Coombe family built a wind turbine and installed solar panels. These systems provide enough electricity to operate the farm shop and their freezer beef business. Selling their quality beef to consumers lets Thunder View

Farms share their conservation story with the public.

"People that buy our beef really like to come to the farm and see the cattle and the green grass," said Ric Coombe. "They appreciate it and it makes a loyal customer for a very long time."

Creating a sustainable family farm was the goal of the Coombe brothers. Over the years, Thunder View Farms has exceeded their expectations. The family is proud of the operation, but they are prouder of what they have done to protect the land from development, preserving it for generations to come.

Established in 1991 by the National Cattlemen's Beef Association to recognize outstanding land stewards in the cattle industry, ESAP is generously sponsored by Corteva Agriscience,<sup>™</sup> the Agriculture Division of DowDuPont,<sup>™</sup> McDonald's; USDA Natural Resources Conservation Service (NRCS); U.S. Fish and Wildlife Service; and the National Cattlemen's Foundation.

This year's regional winners will compete for the national award, which will be announced during the Annual Cattle Industry Convention in New Orleans, La., in February 2019. **FL**

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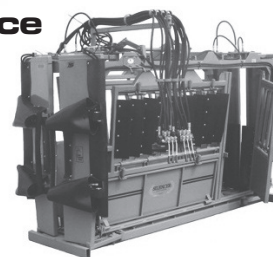
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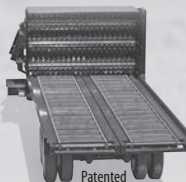
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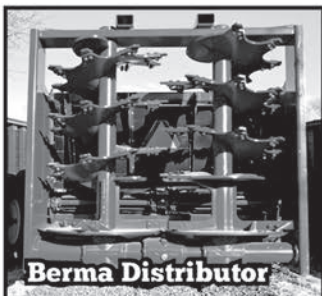
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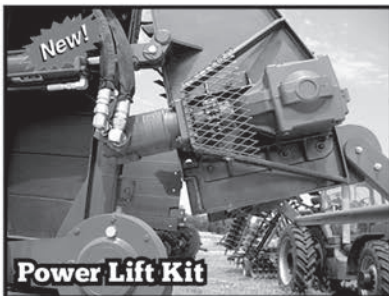
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