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FEEDER INFORMATION HIGHLIGHTS

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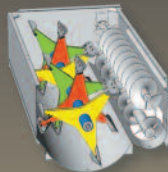
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FEEDLOT FOCUS

Managing Mycotoxins	6
With plenty of damaged wheat available, make sure you are feeding a safe product	
Violative Residue	10
Five things producers need to know	
Capacity Utilization in Milling Systems	14
Getting the most out of your mill	

STOCKER SPECIAL

Managing Stockers on Poor Forage	18
Key concepts to increase gain	

COW CALF CORNER

Get Heifers Off To a Good Start	26
Tips to building disease immunity	


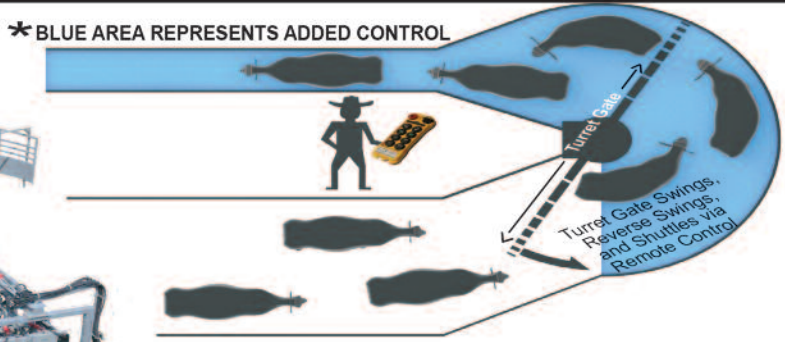
MANAGEMENT

Keep 'em Coming	15
A look at herd rebuilding	
Developing a Performance Improvement Plan	24
Creative ways to reduce labor	

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A River Of Orange Juice...

That's how I first heard the waste spill in the Animas River described. "It looks like a river of orange juice."

And although that provides a lot of imagery, I just couldn't quite imagine the site. But alas, photos abound of the river, with a few folks in kayaks paddling among the orange water. This morning's news report at press time quoted EPA Administrator Gina McCarthy saying the water quality is back to "pre-event conditions." However, now the contaminated water has spread beyond the Animas River to the San Juan River in New Mexico and Utah.

The impact for farmers, livestock producers and other business is real. Portions of the river are closed, and farmers are still waiting to hear if the water is safe for irrigation.

With much discussion on EPA's recent WOTUS (Waters of the U.S.) rule, it will be interesting to see how the EPA's "orange" problem is handled. It's the latest in a series of issues for the agency. Earlier in the year, the New York Times published a story calling into question the lawfulness of the EPA's solicitation of public comments on WOTUS. More recently, dozens of pages of documents show the Army Corps of Engineers repeatedly rebuked EPA officials for their abuse of the rulemaking process related to the rule.

And now they have their own river of orange.

People are asking if the EPA will be held to the same standards as other entities that polluted water. According to an article by Matthew Rocco on FoxBusiness.com, recent notable fines from water

pollution range from \$900,000 in 2009 against Alaska Gold to more recently \$18.7 billion levied against BP for the 2010 Gulf of Mexico oil spill. The article states that cleanup thus far has surpassed \$100 million. Of course, if the EPA was fined – as some are suggesting – where would that money come from...our tax dollars?

I hope in time the Animas and San Juan rivers will return to their pre-EPA glory. Likely arguments against WOTUS will once again be the focus of EPA-related news. Although a good reminder of this debacle might be well earned.

I propose that at any future hearings or meetings on WOTUS, those rallying against the rule should bring their own refreshing beverage to the meeting – a tall glass of OJ. **FL**

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MANAGING MYCOTOXINS

A unique aspect of beef production is that we can utilize feed ingredients that have been “damaged” or “rejected” and are not suitable for other species of livestock, nor marketable for human consumption. However, caution must be taken when feeding these ingredients because they can contain molds which can produce mycotoxins. Mold grows when the right combination of oxygen, moisture, substrate, and temperature are present. These factors, which induce mold growth, become present when a plant is damaged due to drought, insects, or excess moisture. Mold growth can lead to mycotoxin production, which may be detrimental to performance.

The extremely wet spring and summer the middle of the country has experienced this year has led to poor wheat quality throughout much of the mid-west. The low test weight and high mycotoxin levels have led many cattle producers searching for a way to salvage this crop by turning it into feed. However, utilizing toxin-infected ingredients demand a certain level of management to ensure that production losses are not the result of excessive mycotoxin intake. If planning to use wheat as a feedstuff, be sure to get it tested to determine the level of aflatoxin. Also, wheat needs to be ground prior to feeding. If stored properly and used at correct levels, it can be a good tool for many cattle producers.

Mycotoxins in forages can be difficult to manage because cow/calf and growing rations are typically composed of higher roughage

levels than finishing rations. Forage mycotoxins are typically the result of not enough moisture being available for ideal fermentation to occur. Not spending enough time packing silage will create air pockets, which also leads to poor fermentation. When harvesting forages or grains that contain high levels of moisture, an inoculant is always recommended because it will speed the fermentation process, and can greatly reduce the opportunities for mold growth.

Aflatoxin is the most common mycotoxin and is primarily associated with corn and corn silage. It predominately affects the liver, causing hemorrhaging and suppression of the immune system. Reduction in digestibility can also occur, resulting in decreased performance.

Zearalenone is typically associated with losses in reproduction. It is an estrogenic compound that may cause animals to display a constant heat or may inhibit estrus. Therefore, if raising breeding stock, grains contaminated with zearalenone should not be fed. Zearalenone contamination is particularly an issue during years characterized by abnormally wet and cool weather. Symptoms of this toxin are: reduced conception rates, early embryonic death, poor feed efficiency, swelling of female reproductive organs, reduced milk production, reduced growth rate, and increased morbidity or mortality.

Vomitoxin, also referred to as DON, is created by the pink mold that grows in warm wet weather often noted in corn silage. Lower

temperatures may increase toxin production once the corn or small grain is infected. This toxin's symptoms include diarrhea, reduced reproduction, vomiting, reduced growth, poor feed efficiency, neurological problems, and increased mortality. **This is the primary toxin found in damaged wheat.**

Fumonisin is more prevalent during periods of high humidity when preceded by hot and dry weather. Cattle are typically not affected to as great of an extent as other livestock species, but liver damage may still occur.

T-2 toxin causes digestive upsets, hemorrhage of the intestine, poor growth and feed efficiency, bloody diarrhea, and an increase in morbidity and mortality.

Ergot is not a traditional mycotoxin, but is a type of fungus that has become more prevalent in the last few years. Cattle producers accustomed to dealing with fescue may be familiar with it because it is the primary cause of fescue toxicosis. However, it can be found in many other cool season forages such as brome, rye, wheat, and triticale. The primary symptoms of ergot poisoning are loss of tail switches, hooves, and ears due to decreased blood flow. Reproductive losses, suppressed performance, neurological disorders, and even death are other common causes associated with feeding ergot infected forages. Feeding a supplement designed to help increase blood flow and decrease body temperature are two ways to help combat ergot poisoning. Talk to your nutritionist about advice on this

matter. However, if present at high levels, little can be done to bind it or reduce uptake by the animal. In many cases, dilution is the most practical solution.

Because toxin concentrations are not evenly spread throughout a feed source, getting a representative sample can sometimes be problematic. A sub-sample from many different locations should be taken in a large bucket or sack, and then mixed, and a secondary sample pulled from there. The sample should not be frozen, but refrigeration is fine. All air should be removed from the bag and it should be kept out of the heat to prevent further mold growth, and then sent to a lab as soon as possible.

Reduced dry matter intake is typically the first sign that a mycotoxin is present. Cleaning bunks regularly and properly managing silage piles helps reduce the growth of mold that may already be present. Main-

taining a flat face on silage piles and feeding at least 6 inches into a pile or bag per day will keep feed fresh and minimize exposure to oxygen.

Furthermore, hauling silage from a far-away pit and temporarily storing it at the feedlot for periods of time to be mixed into the TMR later should be done with caution. Disturbing fermented feeds and exposing them to oxygen for extended amounts of time can significantly increase mold production. In the winter, do not move more than a one week's supply of feed. During periods of warmer weather, no more than a 3-4 day supply. If you are concerned with mycotoxin infected feeds,

Potentially Harmful Toxin Levels for a Total Diet (DM)

Toxin	Feedlot cattle
Aflatoxin	20
Vomitoxin (DON)	10
Fumonison	7
T-2 Toxin	500
Zearalenone	5
Ergot toxins (combined)	500

*values shaded are PPM, others listed in PPB.

don't hesitate to talk to one of our nutritionists about immediately getting feed tested, the possibility of utilizing a commercially available binder, and diluting the infected ingredient with other feeds so we can help you minimize the negative effects of mycotoxins. **FL**

Luke Miller is a Nutritionist with Great Plains Livestock Consulting (www.gplc-inc.com).

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Research: phages could be behind low salmonella numbers

A study examining the presence of salmonella in beef cattle feedyards was the focus of a series of studies by Texas A&M AgriLife Research scientists and faculty in the department of animal science at Texas A&M University, College Station. The findings could help develop new pre-harvest food safety interventions in providing safe, wholesome food for consumers.

AgriLife Research scientists Dr. Jason Gill, Dr. Matt Taylor and others are researching bacteriophages, or phages, which are viruses that act as predators to bacteria, for use as food safety interventions.

The work was published in the *Journal of Food Protection*. The researchers recovered no detectable salmonella from superficial cervical lymph nodes from cattle in one feedlot, while cattle sourced from feedlot B yielded 100 percent positive salmonella detection from cervical lymph nodes at harvest.

"These results led the research team to question what factors contributed to such dramatic differences in the presence of salmonella in cattle lymph nodes coming from these feedlots from within the same geographic region," Taylor said.

Gill suggested phages might be actively suppressing the indigenous salmonella in the one feedlot, while the other feedlot lacked phages capable of controlling salmonella populations.

The researchers collected samples from feces, feed, drinking water and soil in pens.

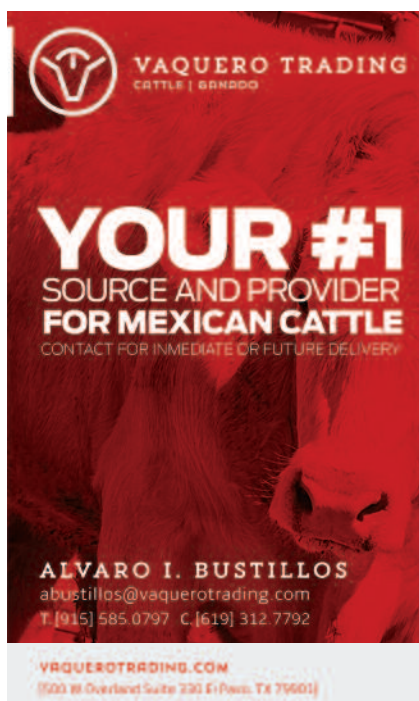
Of all the samples, 85 percent of recovered salmonellae were collected from a single feedlot, with

the remainder from a second feedlot. None were recovered from the feedlot previously testing negative for salmonella in lymph nodes of sourced cattle during harvest.

"Interestingly, recovered salmonellae did not display resistance to multiple types of antibiotic drugs, though resistance to streptomycin was frequently observed, as well as sporadic resistance to other drugs, including gentamicin sulfisoxazole," Taylor said.

"One opportunity from the current data may be to develop new pre-harvest food safety interventions that reduce the numbers of salmonella on cattle hides at harvest by combining salmonella-attacking phages together to kill any salmonella on the animal prior to harvest, Taylor said. "Such interventions already exist for some pathogenic *E. coli*."

"While such an intervention for salmonella would be unable to attack all serotypes of the pathogen, interventions could be designed that work to reduce the serotypes of salmonella. This would benefit not only Texas but also U.S. cattle producers and the beef industry in providing a safe, wholesome food for consumers."

FL


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¹ Zoetis Trial MC013-07-AULA13 (Colorado study). ² Zoetis Trial MC014-07-AULA13 (South Dakota study). ³ Zoetis Trial MC014-07-AULA13 (Oklahoma study). ⁴ Zoetis Trial MC017-07-AULA13 (New Mexico study).

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zoetis



VIOLATIVE RESIDUE:

Five things you need to know

The USDA's Food Safety Inspection Service (FSIS) is charged with maintaining the safety of the nation's meat supply. Chemical residues in meat, including antibiotics, are among many areas the agency monitors. Receiving a

certified letter from them stating there is a residue problem with a carcass that originated from your operation is a sure way to give a cattle producer heartburn.

Not only is a violative residue a food safety concern, it is a sensitive issue with consumers and puts a producer's reputation at risk. Pharmaceutical products undergo strict testing to establish appropriately safe withholding or withdrawal times, but the responsibility for a residue lies with those recommending and using the products. Dr. Bill McBeth, Zoetis Veterinary Services Associate Director explains what producers can do to lessen the likelihood they will receive one of those blood-pressure-raising letters from the FSIS and some steps you can take if you do.

1. Observe appropriate withdrawal times. This may seem obvious, but it's one of the easiest ways to not have an issue. These times are established by the U.S. Food and Drug Administration (FDA) with a substantial safety factor built in. McBeth said standards in the U.S. are higher than in the European Union, and establish with a very high statistical degree of confidence that our meat is entirely safe to consume.

2. Administer the correct dose. Withdrawal times are established based on accurate dosing by weight. Observations from those residues reported to and investigated by Zoetis indicate some producers tend to overestimate the weight of sick animals, said McBeth. "A sick calf is often dehydrated and off feed and may have been so for more than a day. Its actual weight can be deceiving," said McBeth. "Inadvertently overdosing an animal can extend the amount of time it will take the calf to eliminate the drug. A scale under the treatment chute is a great help in reducing the risk of a residue."

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11/10/14 at Bluegrass Sale Barn, Lexington, KY, Jim Dinklage purchased 32 lots of 90 hd, bawling, steer calves averaging 580 lbs. Cattle were vaccinated and drenched with Natur's Way MSE probiotic by barn vet Dawn Crouch, DVM. Cattle were shipped, but returned due to truck problems. Then reloaded on a different truck and again left for Nebraska.



J & D FEEDERS
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Temperature in Lexington was 65°. 1000 miles later cattle were received at J&D Feeders, Atkinson, NE in 0° weather. Cattle were given loose hay top dressed with MSE. Started on a grower ration containing MSE dry probiotic. As of 2/1/15 cattle have had exceptional gains and no health problems.

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3. Understand that a chronically sick animal struggling to respond to treatment may have metabolic issues that might reduce its ability to eliminate a product as quickly. “If you have an animal that has not responded to treatment, there’s a good chance its liver and kidneys are not working as well as they should,” McBeth said. “Whatever route the antibiotic is eliminated through the body, it might be eliminated more slowly due to the status of those body systems.”

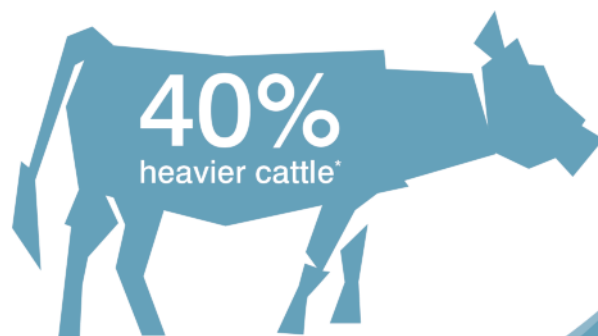
4. Document your treatment processes. “Documentation is critical,” said McBeth. “The FDA is the enforcement arm of the government when it comes to food safety, and coordinates these efforts with the FSIS. If you are ever inspected by the FDA, lack of documentation is a red flag that you are not managing anti-infectives appropriately. If something goes wrong, the processes you put in place to document and track your treatments will serve you well during an inspection.”

5. Present an animal for harvest that is healthy and fit to eat. “This is key,” McBeth said. “If the animal does not appear healthy and you wouldn’t want to eat it or feed it to your family, then don’t send it to slaughter. Not only are such animals unwholesome, they are likely to be flagged by the FSIS inspector for violative residue testing, increasing your risks of a residue violation. If you are ever in doubt, don’t sell or ship the animal and consider more time to heal – or euthanasia, composting and rendering.”

Two violations in a calendar year will result in your operation being placed on the FSIS repeat violator’s list, which is posted online to assist FSIS and packers in managing residues. This information is also readily available to the public. Repeat violators have an increased chance of receiving a visit from the FDA. Such an inspection could lead to a warning letter from the FDA (also a matter of public record), restrictions on how you bring cattle to slaughter and injunctions, fines or other punishments.

If you do receive a certified letter from the FSIS notifying you of a residue, McBeth recommends first emailing or calling the contact information contained in the letter and then following up in writing. He said those who handle residue issues for the FSIS are helpful and understand livestock production practices. He also recommends contacting the manufacturer of the antibiotic who has a real vested interest in food safety and the success of your operation. Contacting them and analyzing your records are also useful in figuring out what went wrong and preventing future residues. **FL**

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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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Temperature Matters

Pharmaceutical products are valuable tools in the livestock business. A bottle of vaccine left out in the elements or kept in a refrigerator that's too warm can render the product useless. That's money most do not want to squirt on the ground or toss in the trash. Just as a mechanic is often particular about how his tools are put away, cattlemen should be just as particular when it comes to proper storage of pharmaceutical products. The Pacific Northwest Extension Service offers these tips for proper pharmaceutical storage.

Many products require refrigeration at 35-45°F. However 2010 research from the University of Idaho found that 67% of producer refrigerators and 66% of retailer refrigerators were not within that temperature range. Monitoring refrigerator temperatures is an easy way to ensure products are maintained at the correct temperature. A minimum and maximum thermometer is suggested.

Also keep in mind the external environment of the refrigerator. A refrigerator located in a noninsulated barn can be adversely affected

by high and low ambient temperature extremes and can reduce the efficiency and accuracy of how the refrigerator operates.

Many are aware of vaccines getting too warm, but what about too cold? Storing animal health products at temperatures below 35°F is the most damaging to killed vaccine products, according to the publication. Freezing temperatures will change the adjuvant structure. This change affects vaccine efficacy by altering the immune response to the antigen. Frozen killed vaccines may have deadly consequences due to the release of bound toxins from the adjuvant. Do not use any vaccines that have frozen.

Conditions chute-side are just as important. Extreme temperatures, as well as UV light can damage vaccines. Keep vaccines in a cooler next to the chute, and move the cooler out of the sun. Be sure to use any modified live vaccines within two hours and discard any leftover. Do not keep modified live vaccines for use later.

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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.

¹ Sifferman RL, Wolff WA, Holste JE, et al. Field efficacy evaluation of gamithromycin for treatment of bovine respiratory disease in cattle at feedlots. *Intern J Appl Res Vet Med*. 2011;9(2):171-180.

² Lechtenberg K, Daniels CS, Royer GC, et al. Field efficacy study of gamithromycin for the control of bovine respiratory disease in cattle at high risk of developing the disease. *Intern J Appl Res Vet Med*. 2011;9(2):189-197.

³ ZACTRAN product label.

⁴ Kahn, CM. *Merck Veterinary Manual*. 10th edition. 2010:1319.

⁵ Van Donkersgoed J, Merrill JK. A comparison of tilmosin to gamithromycin for on-arrival treatment of bovine respiratory disease in feeder steers. *Bovine Practitioner*. 2012;46(1):46-51.



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RUMIOTD1301-C (04/14)



CAPACITY UTILIZATION IN MILLING/FEEDING SYSTEMS



Last week, as I was reading a feed industry publication, there was a story about the dedication of a new pork feed mill in Iowa. The \$29 million facility is slated to operate 24 hours/day, six days per week and will produce 350,000 tons annually. The thought struck me for the umpteenth time, “I wonder why beef is the only segment of the meat industry that is unwilling to operate feed mills around the clock?” Virtually all kinds of grain processing – flour mills – ethanol plants – high fructose corn plants – export elevators – and large integrated feed mills for pork, chicken and turkey feed, run around the clock. In feed yards, however, it is more typical to see mills that run 8 to 10 hours/day, although there are a few exceptions.

Cattle feeding exploded across the High Plains in the 1960's and 1970's, so many of our mills are 35 to 50 years old. Some have not been well maintained and owners are faced with replacement decisions. Thus, it seems timely to consider this question. The first and most obvious item is the capital investment which we'll look at in terms of

depreciation costs and interest costs. Take a hypothetical 30,000 head yard. We'll say that a new mill will cost \$10 million, will have average depreciation of 20 years and interest of 5.5%. We'll need three feed trucks and one front end loader and we'll use five years for depreciation. We'll have annual depreciation and interest of \$922,875 or 8.43¢/hd/day. This same equipment could feed 75,000 head and now the cost becomes 3.38¢/hd/day for a difference of \$8.08/hd when feeding 160 days.

What about other aspects? The labor force for shift work will require some adjustment time, but will become quite stable. It can help reduce or eliminate babysitting costs for some families.

Work schedules become more dependable – you know when you'll be going home because someone will be taking your place. If you are feeding 18-20 hours/day and have adverse weather, it's easy to stretch both shifts to 12 hours and cover the cattle 24 hours/day until you are past the situation. This enables you to give ultimate care to the cattle without overburdening

your people. You reduce the incidence of digestive upset, most of which occurs because a pen has become a little too hungry. You also eliminate the wasted time and frustration of trying to restart a mill that's been idle for 15 hours when the temperature is 10 or 20° below zero. You also eliminate the off quality product that comes with start-up and shut down of your steam flaking operation.

I've heard it said that “cattle won't eat at night,” but in my experience that's simply not true. I should note here that in the facilities where we've fed multi shifts, there was reasonable yard lighting. By reasonable, I mean that the cattle could see each other, fences, water tanks, bunks, etc. I have not experienced night time feeding in pitch blackness. The best feeding performance that I have witnessed has come with multi shift feeding.

With the high cost of mills and equipment, there are compelling reasons not to indulge in having such excess and underutilized capacity for both feed production and feed delivery. **FL**



Keep 'em Coming

We've been hearing it for years. It's time for the U.S. to grow its beef herd. Cattle numbers are at the lowest in decades, and demand, especially export demand, continues to increase.

Producers have tried. Mother nature fought back.

Now, finally, progress is on the horizon according to Oklahoma State Agricultural Economics Expert Dr. Derrell Peel.

"We won't see any huge changes in 2015," says Peel, "but we are making headway. Last year's numbers showed around a 2 percent increase, more than the 1 percent we expected to see."

Peel says the key component here is attitude: "Throughout the drought, producers acted like they were in expansion mode, even though they were forced to liquidate."

That attitude now has the industry ready to leap forward as weather, and market, conditions improve.

"We could be looking at a 3 percent or more increase this year," says Peel.

It's not been an easy road. Producers gambled on aggressive heifer retention through scarce forage and water and high feeder calf prices. And Peel says it appears they are set to continue through 2016.

The effort to get the U.S. cowherd back to where it needs to be will continue to face challenges. One fear is that the expansions will occur too fast for the market's well being. Peel says the numbers could overshoot the market in 2018 or 2019, but the international potential will likely create a soft-landing when all the action stabilizes.

"We'll have enough time to see problems coming and put measures in place," says Peel. "At this

point, we need 2 million more cows than we have, and we're hoping the January 2018 inventory numbers will put us where we need to be." But that will require unprecedented

growth. "It's hard to grow more than 3 percent a year especially for more than one year. We aren't likely to get there before 2018."

There are other forces at ►



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For Subcutaneous Use in Beef Cattle, Non-Lactating Dairy Cattle and Swine Only.

Not for Use in Female Dairy Cattle 20 Months of Age or Older Or In Calves To Be Processed For Veal.

Brief Summary: Before using Enroflox[®] 100, consult the product insert, a summary of which follows.

CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian. Federal (U.S.A.) law prohibits the extra-label use of this drug in food-producing animals.

PRODUCT DESCRIPTION: Each mL of Enroflox 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.

INDICATIONS:

Cattle - Single-Dose Therapy: Enroflox 100 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; and for the control of BRD in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica*, *P. multocida*, *H. somni* and *M. bovis*.

Cattle - Multiple-Day Therapy: Enroflox 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in beef and non-lactating dairy cattle.

Swine: Enroflox 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Haemophilus parasuis* and *Streptococcus suis*.

RESIDUE WARNINGS:

Cattle: Animals intended for human consumption must not be slaughtered within 28 days from the last treatment. This product is not approved for female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Swine: Animals intended for human consumption must not be slaughtered within 5 days of receiving a single-injection dose.

HUMAN WARNINGS: For use in animals only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with copious amounts of water for 15 minutes. In case of dermal contact, wash skin with soap and water. Consult a physician if irritation persists following ocular or dermal exposures. Individuals with a history of hypersensitivity to quinolones should avoid this product. In humans, there is a risk of user photosensitization within a few hours after excessive exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. For customer service, to obtain a copy of the Material Safety Data Sheet (MSDS) or to report adverse reactions, call Norbrook at 1-866-591-5777.

PRECAUTIONS:

The effects of enrofloxacin on cattle or swine reproductive performance, pregnancy and lactation have not been adequately determined. The long-term effects on articular joint cartilage have not been determined in pigs above market weight.

Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Enroflox 100 contains different excipients than other enrofloxacin products. The safety and efficacy of this formulation in species other than cattle and swine have not been determined.

Quinolone-class drugs should be used with caution in animals with known or suspected Central Nervous System (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation which may lead to convulsive seizures.

Quinolone-class drugs have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. See Animal Safety section for additional information.

ADVERSE REACTIONS: No adverse reactions were observed during clinical trials.

ANIMAL SAFETY:

In cattle safety studies, clinical signs of depression, incoordination and muscle fasciculation were observed in calves when doses of 15 or 25 mg/kg were administered for 10 to 15 days. Clinical signs of depression, inappetence and incoordination were observed when a dose of 50 mg/kg was administered for 3 days. An injection site study conducted in feeder calves demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue and underlying muscle. In swine safety studies, incidental lameness of short duration was observed in all groups, including the saline-treated controls. Musculoskeletal stiffness was observed following the 15 and 25 mg/kg treatments with clinical signs appearing during the second week of treatment. Clinical signs of lameness improved after treatment ceased and most animals were clinically normal at necropsy. An injection site study conducted in pigs demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue.

Norbrook Laboratories Limited,
Newry, BT35 6PU, Co. Down, Northern Ireland
104 March 2015

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“As the herd rebuilds, it will not be located in the same areas.”

— Darrell Peel



Keep ‘em Coming... from previous page

play, including a geographical shift in cattle numbers. The growth in numbers the past few years has occurred mainly in the Western Plains, from Texas to North Dakota, where recent rains have grass growing in places ranchers almost forgot it could. It takes time for grazing lands to naturally rejuvenate, but it's coming, and ranchers are ready.

Texas cattle numbers are up 7 percent. Oklahoma's herd has grown 6-7 percent. “They've recouped two-thirds of their loss, and will continue to make progress,” says Peel.

It's an issue of quality as much as quantity. Forced to liquidate in 2011-2013 due to lack of forage, it was the older cows that were first on the truck. “They culled cows beyond the normal criteria,” says Peel, “but they retained the heifers. Now, going forward, they have a young, productive herd.”

Meanwhile, the Midwest and Southeastern states are seeing their expansion contained by a loss of pasture acres. Corn prices upwards of \$6 in 2012, prompted farmers to plow up pasture for cropland, a trend that is not likely to reverse itself even though commodity prices have leveled.

“A decade or more of long-term structural change has been occurring,” says Peel. “The pasture and hay is just not there.”

A study released by the Iowa Beef

Center looked at pastureland changes from 2007 to 2012 based on a statewide pasture rent survey, and found Iowa lost 21 percent of its pasture base over the five year period.

During that time Iowa's beef herd shrunk 2 percent, compared to a nationwide decline of 13 percent. That leaves little room for expansion for producers who would like to follow the market signals to do so. They must rely on stout pasture management and supplementation – and weigh benefits against potential row crop profits.

The picture in Iowa is typical of states across the Corn Belt and the Southeast. “As the herd rebuilds, it will not be located in the same areas,” says Peel.

But it is growing, and will likely continue to do so. “The market gets what the market wants,” says Peel.

Producers will continue to weigh the tease of high prices against long-term herd expansion – wondering if they can afford to not sell, and contemplating when it's too late to pay for heifers and cows.

“Prices will top out eventually,” says Peel. “The cure for high prices is high prices.”

How long that will take is anybody's guess, but Peel doesn't expect to see a drop until at least 2016.

“I would urge producers to get in the game now,” says Peel. “Make sure you have an exit strategy if you're nervous, but get going and seize the opportunity.”

FL

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Managing Stockers on Poor Forage

Trying to grow stocker cattle on sparse forage is tricky business.

Purina Animal Nutrition Cattle Consultant Chance Farmer, Ph.D, says the first element to tackle is producer expectation. "They're not going to gain an enormous amount," says Farmer. "It's just not logical to expect they will."

Most stocker producers would like to see gains of 2 pounds per day, but Farmer says 1.5 is more likely – that's with supplemental feedings. And even that requires a strategy to maintain adequate energy and protein.

Crude protein levels in forage decline through the season, making already suspect forage even more so. "There just may not be

enough forage to get cattle to gain," says Farmer. "Sometimes levels aren't even enough to properly utilize the forage that is there."

The first consideration is maintaining pH levels of the rumen. "The bacteria that digests fiber is very sensitive to low pH. If pH is too low, it won't digest the forage." Farmer says rumen pH levels need to remain at 6.2 or above.

Likewise, the animal needs to maintain plenty of ruminal ammonia. "Rumen ammonia is typically the first limiting nutrient for bacteria responsible for digesting low-quality forage. That's why a supplementation program should have enough protein to address this deficiency."

To ensure proper digestion and



utilization of existing forage, Farmer recommends a balanced protein/energy supplement at a rate of up to 1 percent of body weight per head per day. The supplement should contain 15 percent crude protein or higher.

He says as crude protein levels start to fall through the hot, dry summer the idea is to establish a rumen environment similar to what existed in the spring, back when forage was good, and that includes attention to nitrogen levels.

Managing nutrient levels of pasture can be tricky; especially when conditions can change almost daily. That's why it pays to turn to the professionals.

"Consult your nutritionist," says Farmer. "He or she will know your property, your goals, and what your minimum levels need to be. If you try to shoot from the hip, it can get really expensive, really fast."

It can also be counterproductive. "You want to make the best use of available forage. If you supplement too much, or don't maintain proper rumen pH levels for digestion, you're just feeding out cattle on forage, not using the feed-stuffs nature provides."

Minerals are important, too

Making sure cattle are receiving adequate minerals is also a concern

A Hot Item for Feedyards This Year

Add Fat or Molasses to the Ration

This year the price of grain and hay have shown the benefits of fat and molasses in feedlot rations. But a critical factor in their use is the storage for fat or molasses. Palmer has been building a heated, sloped bottom, all welded steel tank for fat and molasses storage for over 25 years. The heaters, gas or electric, are in a heating chamber below the storage area. This prevents the products from scorching. The top of the heat chamber is the bottom of the storage tank, it is sloped so all fine solids flow with gravity out the bottom with the liquid ingredients.



Here's what nutritionists say:

- A good alternate source for energy.
- Gives some performance edge.
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- Just generally dresses up a ration to look good and feed well.



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when forage quality is low. There are 14 essential minerals cattle need daily. Lack of phosphorous, in particular, can be a problem. Key to skeletal growth and energy use, it is crucial for stockers continuing to grow.

Trace minerals copper and zinc are also necessary. "They support the immune system, so cattle are healthier, and more likely to grow." Zinc also helps with foot integrity. Hooves are part of the skin, and skin requires zinc. Hoof problems can be prohibitive to stocker performance, and a simple cut or abrasion can turn to foot rot.

Again, Farmer recommends a professional approach to determining correct supplement levels. "Too much of each mineral can be toxic. You need to maintain well-balanced levels for your specific geographical region."

Selenium is another example. Extremely important to the immune system, it works with vitamin E as an antioxidant. But too much can cause vasoconstriction. The lack of blood flow can cause hooves and tail switches to fall off, as well as circulation problems that inhibit overall health.

Water, water, water

Of all the elements needed for healthy stocker growth, water is

perhaps the most significant. "Water is the first thing you need to consider," says Farmer. High quality forage is likely high in moisture. Lower quality forage is likely not. And as the weather grows hotter, the need for water increases – cattle need as much as five times as much water in summer as during the winter.

Water sources need be not only adequate, but clean and fresh.

"Fresh, clean water is directly related to stocker nutrition," says Farmer. "Without it, forage consumption is not as good. Cattle simply won't eat as much. And if they don't eat, they don't gain. No matter what else you do, if you don't have water, cattle won't perform." **FL**



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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.

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- Decrease shedding of *E. coli* O157:H7¹
- Reduce re-infection of *Salmonella*²
- Increase average daily gain³
- Improve feed to gain⁴

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).



For information on Micro-Cell probiotics, visit www.LallemandAnimalNutrition.com.

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 Tabe ES, Oloya J, Doetkott 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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Brief Summary for use in Cattle:
See Package Insert for full Prescribing Information



Antibiotic
100 mg of tulathromycin/mL

For use in beef cattle (including suckling calves), non-lactating dairy cattle (including dairy calves), veal calves, and swine. Not for use in female dairy cattle 20 months of age or older.

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

DESCRIPTION

DRAXXIN Injectable Solution is a ready-to-use sterile parenteral preparation containing tulathromycin, a semi-synthetic macrolide antibiotic of the subclass trimide. Each mL of DRAXXIN contains 100 mg of tulathromycin as the free base in a 50% propylene glycol vehicle, monothioglycerol (5 mg/mL), with citric and hydrochloric acids added to adjust pH.

DRAXXIN consists of an equilibrated mixture of two isomeric forms of tulathromycin in a 9:1 ratio.

The chemical names of the isomers are (2R,3S,4R,5R,8R,10R,11R,12S,13S,14R)-13-[[[2,6-dideoxy-3-C-methyl-3-O-methyl-4-C-[(propylamino)methyl]-α-L-ribo-hexopyranosyl]oxy]-2-ethoxy-3,4,10-trihydroxy-3,5,8,10,12,14-hexamethyl-11-[[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-6-azacyclodecan-15-one and (2R,3R,6R,8R,9R,10S,11S,12R)-11-[[[2,6-dideoxy-3-C-methyl-3-D-methyl-4-C-[(propylamino)methyl]-α-L-ribo-hexopyranosyl]oxy]-2-[(1R,2R)-1,2-dihydroxy-1-methylbutyl]-8-hydroxy-3,6,8,10,12-pentamethyl-9-[[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-4-azacyclodecan-13-one, respectively.

INDICATIONS

Beef and Non-Lactating Dairy Cattle

BRD – DRAXXIN Injectable Solution is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*; and for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*.

IBK – DRAXXIN Injectable Solution is indicated for the treatment of infectious bovine keratoconjunctivitis (IBK) associated with *Moraxella bovis*.

Foot Rot – DRAXXIN Injectable Solution is indicated for the treatment of bovine foot rot (interdigital necrobacillosis) associated with *Fusobacterium necrophorum* and *Porphyromonas levis*.

Suckling Calves, Dairy Calves, and Veal Calves

BRD – DRAXXIN Injectable Solution is indicated for the treatment of BRD associated with *M. haemolytica*, *P. multocida*, *H. somni*, and *M. bovis*.

DOSAGE AND ADMINISTRATION

Cattle

Inject subcutaneously as a single dose in the neck at a dosage of 2.5 mg/kg (1.1 mL/100 lb) body weight (BW). Do not inject more than 10 mL per injection site.

Table 1. DRAXXIN Cattle Dosing Guide

Animal Weight (Pounds)	Dose Volume (mL)
100	1.1
200	2.3
300	3.4
400	4.5
500	5.7
600	6.8
700	8.0
800	9.1
900	10.2
1000	11.4

CONTRAINDICATIONS

The use of DRAXXIN Injectable Solution is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS

FOR USE IN ANIMALS ONLY.

NOT FOR HUMAN USE.

KEEP OUT OF REACH OF CHILDREN.

NOT FOR USE IN CHICKENS OR TURKEYS.

RESIDUE WARNINGS

Cattle

Cattle intended for human consumption must not be slaughtered within 18 days from the last treatment. Do not use in female dairy cattle 20 months of age or older.

PRECAUTIONS

Cattle

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

ADVERSE REACTIONS

Cattle

In one BRD field study, two calves treated with DRAXXIN at 2.5 mg/kg BW exhibited transient hypersalivation. One of these calves also exhibited transient dyspnea, which may have been related to pneumonia.

NADA 141-244, Approved by FDA

To report a suspected adverse reaction or to request a safety data sheet call 1-888-963-8471. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-YES or online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

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For additional DRAXXIN product information call: 1-888-DRAXXIN or go to www.DRAXXIN.com

TAKE TIME



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Revised: February 2014



Q: What is An Off-Line Pond and Why Are They Important?

A: The CAFO permit provides coverage for discharges to Waters of the U.S. from detention ponds built, maintained, and dewatered in accordance with permit conditions.

The permit requirement to re-establish capacity for the design storm in ten dewatering days anytime pond level rises above that elevation is often a great burden. This is normally not a problem in dry enough climates/seasons with abundant irrigation land, equipment, and pumping capacity. Unfortunately, permit conditions don't make any allowance for the many factors attendant to the large number of CAFOs located where they can't count on all of the above parameters the majority of the time.

Thus many CAFOs have found it prudent/necessary to build additional runoff holding capacity. Many expand their primary pond. Others build additional ponds below the primary pond. While such actions stem from a sense of environmental compliance and stewardship, there is a dark side. Additional on-line runoff storage capacity often results in larger volumes of runoff being accumulated, and thus more runoff to pump out, and/or more discharge volume in case of an embankment failure or

the occurrence of precipitation events resulting in an overflow.

In comes the "Off-Line" or "Pump To" pond! If additional runoff storage is provided by a pond not impacted by or "on the flow line" of feedlot runoff, it essentially becomes a user friendly runoff storage pond without permit restrictions on pump-down timing. Thus, if there is capacity "Off-Line" to accept the required pump down volume from "On-Line" ponds, the transfer can usually be made quickly, easily, and efficiently regardless of the weather. Stored runoff can be saved for optimum utilization of the water and nutrients. The "Off-Line" pond facilitates easy compliance with the ten day dewatering of primary ponds without incurring the additional wastewater storage and discharge risks of ever increasing pond capacity. By meeting the permit required dewatering of the primary ponds, any precipitation induced discharge that might occur is "permitted"! Putting all excess runoff storage capacity above the minimum required in the primary pond into an "Off-Line" pond reserves "Off-Line" storage capacity for the Owner's benefit instead of a potential additional liability as with additional capacity in a primary pond.

FL

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On your phone, use the bar code scanner app to scan this code and watch a video about the Karges family operation.

Important Safety Information: DRAXXIN has a pre-slaughter withdrawal time of 18 days. Do not use in dairy cattle 20 months of age or older. Effects on reproductive performance, pregnancy and lactation have not been determined.

For more details, please see full prescribing information.

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NEW PRODUCTS

Norbrook Announces FDA Approval of Norfenicol®

Norbrook Laboratories, Ltd. announced the FDA approval of Norfenicol® (florfenicol) Injectable Solution, a fast-acting treatment for Bovine Respiratory Disease.

According to Chip Whitlow, Marketing Manager for Norbrook, Inc., Norfenicol has the same active ingredient as Nuflor® (florfenicol) and will include two additional, innovative product features. "The

first is Norfenicol will have a shorter withdrawal period than Nuflor when administered Sub-Q (33 days vs. 38 days). In addition, Norfenicol will be the only injectable antibiotic for cattle sold in the US in an unbreakable plastic bottle. This eliminates the expense of product breakage when mishandled," announces Whitlow.

Bayer introduces new immunostimulant

Bayer HealthCare LLC Animal Health introduces DNA Immunostimulant Zelnate™, a new innovation for the cattle industry that aids in the treatment of bovine respiratory disease (BRD) due to Mannheimia haemolytica. Developed in alignment with Bayer's pursuit of 'Science for a Better Life,' Zelnate is the first immunostimulant that effectively reduces mortality and lung lesions by enhancing the animal's own immune system to help fight this infectious disease, potentially reducing the need for antibiotics.

Zoetis introduces PredicGEN for heifer selection in commercial cow-calf herds

A new genomic test from Zoetis enables producers to affordably

and accurately predict carcass quality (marbling), yield grades, grid merit and tenderness in a range of straight-bred or crossbred British and Continental breed animals that are less than 75% Black Angus. This easy-to-use new tool, named PredicGEN™, evaluates key carcass traits to inform producer decisions regarding replacement females, sire assignment and value predictions for feeder and fed cattle certification and marketing programs.

JustiFLY Feedthrough available in minerals

Champion USA announced today the availability of new JustiFLY® Feedthrough in a convenient add-pack for use with free choice minerals to control all four major species of flies affecting cattle. JustiFLY Feedthrough is available in a 4-lb. bag that treats 5 X 50-lb. bags of free choice mineral. JustiFLY Feedthrough – a non-toxic insect growth regulator (IGR) – is the first feedthrough larvicide available for use on-farm that effectively treats all four fly species – horn fly, face fly, stable fly and housefly. **FL**

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DEVELOPING A PERFORMANCE IMPROVEMENT PLAN

BY DON TYLER, TYLER & ASSOCIATES



Nearly all managers and supervisors dislike terminating employees and prefer to do everything possible to help an employee correct their performance or behaviors. Some are adept at coaching employees through this improvement process, but many struggle to implement the appropriate plan. The process is called a Performance Improvement Plan (PIP) and should have a consistent pattern regardless of the change that needs to occur.

The focus of any PIP should be the actual expectations of the job. One study showed that 82% of employees that were terminated did not realize that there was a performance issue. This high number could reflect poor management, poor communication, a lack of understanding, low skills or any number of potential causes. The bottom line is that any PIP must have a clear, consistent process so the employee knows exactly what is expected of them.

These steps include:

1. Clearly define the areas requiring improvement. Be specific in your descriptions. Focus on what is expected and use the employee's current Job Description as a basis for these expectations.
2. Some HR advisors prefer that you have a separate PIP for every issue, but I have found that in most cases you can cover a few key areas at the same time so long as you limit it to no more than 3 or 4. It is important to ensure that each area is measurable. Focus on duties that will show clear results if completed

correctly, there are understood levels of performance, and areas where the individual can be monitored to be sure they are working at the expected pace. Some examples might be: Attendance; Loads of feed delivered; Number of pens cleaned; Feeding accuracy; Pulls and re-pulls, etc.

3. Provide them with a written list of expectations with the specific goals for them to accomplish and the deadline to make the improvement. For each area, talk

The manager or supervisor has the opportunity to improve the performance of their employee, build their self-confidence and learn valuable coaching techniques.

to them about where you feel their performance is now (try to use data as much as possible to make your case) and then tell them where you want their performance to be. I like to see these initial deadlines be 30 days or less, and then reevaluate at that time. Make sure your list of expectations can be accomplished in that timeframe by a typical employee.

4. Base your performance standards on the expectations for them in their job, not in comparison to another employee. Any comparison causes resentment

of that example employee and they may begin to criticize that person's performance rather than improve their own.

5. The supervisor and employee must sign and date the PIP.
6. Tell them that you are willing to coach them throughout the process as they make improvement. Continue to monitor their progress throughout the time period. Encourage them to take the initiative to ask questions and get regular updates about their performance improvement. Reinforce with them that this process is designed to help them improve, not punish them.

To ensure that your process is fair and appropriate, get a second opinion from your HR person, a manager or a supervisor from another department. Their perspective can help ensure the most important areas are being targeted and the appropriate processes are in place.

When done correctly, this process is best for everyone involved. The manager or supervisor has the opportunity to improve the performance of their employee, build their self-confidence and learn valuable coaching techniques. The employee is allowed to make informed decisions about their future. They can choose to accept the terms of the PIP and improve their performance, or they can reject the terms and opt to terminate their employment. Either scenario gives the supervisor clear direction for praise, correction or termination—all driven by the choices of the employee. **FL**



REWRITING THE BOOK ON BRD TREATMENT

Zelnate™ DNA Immunostimulant is a new chapter in BRD management.

Zelnate is the first licensed immunostimulant that aids in the treatment of BRD associated with *Mannheimia haemolytica*. By jumpstarting the innate immune system — which has been shown to provide a rapid, potent and broad protective response to infectious agents — Zelnate helps reduce lung lesions and mortality in cattle. Administer Zelnate at the time of, or within 24 hours after, a perceived stressful event.

visit zelinate.com for more information

This product is based on technology developed by Juvaris BioTherapeutics and is patent protected. Animal health applications are being exclusively developed by Bayer Animal Health and are the subject of Bayer patent applications.

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GET HEIFERS OFF TO A GOOD START FOR DISEASE IMMUNITY

It's important to start building good immunity in replacement heifers before they enter the cow herd, and to time their vaccinations appropriately throughout their adult life to keep immunity strong. Dr. Chris Chase, Department of Veterinary and Biomedical Sciences, South Dakota State University, says the key in heifer development is start with vaccinations at a young age. "The big problem with heifers is when people buy them and don't know their vaccination history. It is important to get a couple doses of vaccine into them before they are bred," he says.

"The three diseases I'm most concerned about and which we can do the most good in terms of vaccination are IBR, BVD and leptospirosis. There are some other reproductive diseases like neospora and trich but we don't have good vaccines for these protozoal diseases," says Chase.

"The lepto strain *Leptospira borgpetersenii* serovar hardjo type hardjo-bovis (HBP for short) are more of an issue in a dairy herd if they are present. Dairy heifers are often vaccinated very young for the HBP strain since cows act as a reservoir for that one. The ones we

generally think of in beef cattle (*Leptospira hardjo*, *Leptospira pomona*, *Leptospira canicola*, *Leptospira icterohaemorrhagiae*, *Leptospira grippotyphosa*) are the strains we find in wildlife and in the environment." We need to vaccinate beef heifers with lepto when they are ready for their first breeding season.

"By the time a beef heifer is between 6 and 10 months old, she needs a couple doses of MLV vaccine—for IBR-BVD. If a person wants to use killed vaccine, this is an acceptable option, but when it comes to BVD and persistence, we

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need to get a couple doses of BVD MLV vaccine into heifers early on," says Chase.

"A lot of people give IBR-BVD to calves at branding time. My personal opinion is that vaccinating at this age is generally to prevent respiratory disease. After those calves are weaned, we need to get a couple doses of MLV vaccine into them. This can be done at weaning age and again before their first breeding season. If you are giving something to younger calves, at branding time, research at Oklahoma State University shows that this first dose starts the immune process and the second dose a couple weeks after weaning acts as a booster. This can be as effective as giving it to the calves 3 weeks before weaning and then a booster a couple weeks after weaning. But I like to get a couple doses into them after they've been weaned, to be safe. We can include leptospirosis with those, either as a combination, or given separately," he says.

"We need to give all breeding heifers Brucellosis by weaning time. I prefer to give this vaccination completely separate from any others (especially MLV vaccines). I'd rather give the Bangs vaccination

to them when giving a clostridial or some kind of killed vaccine. If given at the same time as MLV vaccines, this can decrease immune response," he says.

"Once the heifers are bred, after you've done a good job of heifer development and they've had their 2 doses of MLV vaccines before breeding, the only time I use MLV vaccine is when they are open (between

calving and next breeding). For optimal protection against PI in BVD, we want to give the vaccine prior to them getting bred."

Regarding colostrum, time the vaccination so cows/heifers will give their calves the benefit. "Most people are vaccinating a little too early for that benefit because they are vaccinating at preg-check time, (late fall) and the cow may not be calving ►

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If Your Calves Aren't Ready, You Must Be

New options to manage stress and get calves on feed

As a cattleman, you are very familiar with stress – both from the pressures of managing day-to-day activities, and the heightened risks with today's high-priced calves. Now is the time to consider new strategies to combat arrival stress head-on, get calves on feed and maximize your return on investment.

You need to move quickly

Things kick into high gear when new calves arrive. Today's cattle market means the risk and reward is greater than ever before. Record prices also mean more calves are arriving to your operation with little or no preconditioning or backgrounding. The clock is ticking to get your calves on feed and past the critical arrival stress period with as few pulls as possible.

Calves that don't eat have a higher tendency of getting sick. This results in higher pull rates – or worse, greater mortality — and translates to more days on feed and dollars lost.

The times are changing

Old habits die hard, but having a proactive arrival plan can help reduce costs for treating sick cattle. Don't wait until the trucks arrive this fall – planning ahead and trying something now can help get your calves on feed and reach their genetic potential sooner.

One way to help limit the impacts of shipping and arrival stress is by feeding a proven probiotic — also known as a direct-fed microbial. Probiotics are natural, proactive alternatives to help improve overall cattle performance. Probiotics are not used to treat disease, but some have been shown to naturally prompt positive effects to the calves' overall well-being

and immunity while limiting the negative effects of stress.

Develop a ProTernative arrival plan

ProTernative®, *Saccharomyces cerevisiae boulardii* strain CNCM I-1079, is an active dry yeast from Lallemand Animal Nutrition. It is an example of a probiotic that has scientifically been shown to improve feed uptake¹, lower morbidity¹, lower mortality¹ and improve average daily gain² among stressed calves. ProTernative helps to balance microbes in the intestinal tract to get calves on feed, even during arrival stress.

In recent university trials, ProTernative significantly improved feed uptake during the receiving period, reduced BRD morbidity rates by about 40 percent and improved gain.^{1,2}

ProTernative is leading the charge by advancing feeding practices for arrival calves as an additional management tool before treatment.

A responsible choice

Cattlemen are always pushed to get calves on feed and gaining weight with the fewest setbacks. When you add ProTernative to your arrival protocol, your starter ration is taking action against stress with an advanced alternative to get calves on feed and have fewer pulls.

It's time to try something different – be proactive, be ProTernative.



SCAN HERE

See how one cattleman uses ProTernative to help naturally combat the impacts of stress, or visit IAmProTernative.com/feedlot for more information.



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¹ KEYSER SA, MC MENIMAN JP, SMITH DR, MACDONALD JC, GALLYAN ML. EFFECTS OF SACCCHAROMYCES CEREVISIAE SUBSPECIES BOULARDII/ CNCM I-1079 ON FEED INTAKE BY HEALTHY BEEF CATTLE TREATED WITH FLORFENICOL AND ON HEALTH AND PERFORMANCE OF NEWLY RECEIVED BEEF HEIFERS. J ANIM SCI. 2007(95):1264-1273.

² LALLEMAND ANIMAL NUTRITION. UNPUBLISHED. UNITED STATES. 1996.

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Disease Immunity... from previous page until early to mid-spring," he says.

"For scours vaccine, give it closer to calving. This is especially important in heifers, to get that into them 10 to 12 weeks before calving for the first dose and then 4 to 6 weeks before calving for the 2nd dose."

After the first calving, some herds get by with one annual MLV vaccination during the open period before next breeding season. "Vaccination is cheap insurance and this kind of program seems to work. It all depends on risk, regarding how often a person needs to vaccinate. If you have to use BLM and FS pastures, or any community pastures, with cattle intermingling from multiple ranches, you don't have any biosecurity, and your risks are higher," he says.

"If we can get the proper vaccinations into the young heifer—while she's growing and developing, and not while she is pregnant for the first time or under stress—then she will have better protection. If cattle are on a good nutritional plane and minerals in diet are well balanced, and you do a good job of developing immune memory, that memory doesn't go away. That's why proper immunization during the heifer stage is so important. Once that basis is there, and heifers have solid immunity, they'll do fine in the herd. Even if you miss one in later years when vaccinating, the chances they will respond later will be excellent," he says.

"If you have an issue with leptospirosis, it obviously has to do with exposure, such as waterways contaminated by wildlife. If your cattle have continual exposure, you might want to vaccinate twice a year."

Every vaccine program should be tailored for a particular ranch or farm. You can't go by what your neighbor does or what the vaccine company says you should do. "Assess your risk. Work with your veterinarian on herd health, to figure out what is best for your herd," says Chase.

FL

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PRODUCT INFORMATION

NADA 141-299, Approved by FDA.



(Florfenicol and Flunixin Meglumine)
Antimicrobial/Non-Steroidal Anti-Inflammatory Drug

For subcutaneous use 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.

BRIEF SUMMARY: For full prescribing information, see package insert.

INDICATION: RESFLOR GOLD® is indicated for treatment of bovine respiratory disease (BRD) associated with: *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, and control of BRD-associated pyrexia in beef and non-lactating dairy cattle.

CONTRAINDICATIONS: Do not use in animals that have shown hypersensitivity to florfenicol or flunixin.

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains material that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information.

For customer service or to obtain a copy of the MSDS, call 1-800-211-3573. For technical assistance or to report suspected adverse reactions, call 1-800-219-9286.

Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Toxicity studies in dogs, rats, and mice have associated the use of florfenicol with testicular degeneration and atrophy. NSAIDs are known to have potential effects on both parturition 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. The effects of flunixin on imminent parturition have not been evaluated in a controlled study. NSAIDs are known to have the potential to delay parturition through a tocolytic effect.

RESFLOR GOLD®, when administered as directed, may induce a transient reaction at the site of injection and underlying tissues that may result in trim loss of edible tissue at slaughter.

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 38 days of treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk residues. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

ADVERSE REACTIONS: Transient inappetence, diarrhea, decreased water consumption, and injection site swelling have been associated with the use of florfenicol in cattle. In addition, anaphylaxis and collapse have been reported post-approval with the use of another formulation of florfenicol in cattle.

In cattle, rare instances of anaphylactic-like reactions, some of which have been fatal, have been reported, primarily following intravenous use of flunixin meglumine.

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May 2009

US 3446 JV

GRAIN ANALYSTS SURPRISED

BY LUKE SCHWIETERMAN,
PRESIDENT, SCHWIETERMAN INC.

In the August Supply and Demand report, the USDA did what the USDA does best confuse everyone. Expectations of analysts going into the report were for reduced corn acres and reduced yields. USDA left acres unchanged and increased yield by two bushels an acre from the July report. Yield at 168.8 bu/ac was four bushels higher than the average trade guess which resulted in a 30 cent lower "knee jerk" reaction in the futures market. Post report, analysts are looking forward to the September report which will have better surveys behind it including prevented acreage reports and ear weights and measurements. Regardless of

the estimates we are reasonably assured of a fairly decent crop in the US this year. Any significant upward price pressure in the corn market will have to come from weather related problems such as an early frost or increased use of ethanol or exports. Keep in mind however that price does not stay static. As in any typical year, corn will put in a harvest low and then begin to rally into spring. We suggest that, as end users, you be watchful for the harvest low and begin to buy March call options to cover nearby feed requirements.

USDA currently projects 4th quarter average price to land between 148 on the low side to 158 on the high side. Last month's projection was 155-167. In the text ►



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IMPORTANT SAFETY INFORMATION

NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains material that can be irritating to skin and eyes. Animals intended for human consumption must not be slaughtered within 38 days of treatment. This product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal. Do not use in animals that have shown hypersensitivity to florfenicol or flunixin. Not for use in animals intended for breeding purposes. The effects of florfenicol and flunixin on bovine reproductive performance, pregnancy, and lactation have not been determined. When administered according to the label directions, RESFLOR GOLD may induce a transient local reaction in the subcutaneous and underlying muscle tissue. Brief summary available on adjacent page.

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7/15 BV-RG-53719

Grain analysts surprised... from previous page of the Supply and Demand report, USDA sighted reduced demand for the price reduction. Reduced exports were also indicated because of reduced demand and the value of the dollar. We are not in total agreement with those comments. Overall, we think exports will actually improve. Beef is a unique product and we don't think that demand has actually decreased for the higher end cuts. Analysts can get wrapped up in the latest hype or controversies and miss judge

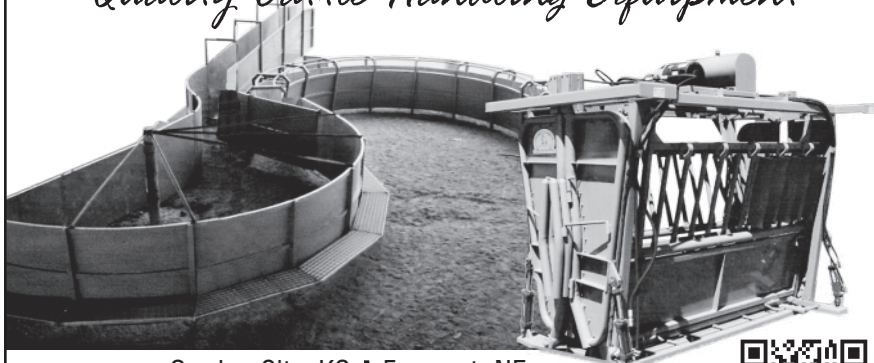
the overall economy which appears to be alive and well. The US, as well as the world economy, seems to be humming along nicely. It's just not expanding or inflating as fast as traders and analysts would like to see therefore gloom and doom analysis.

All in all we think 4th quarter cattle prices will approach 160 in the cash market. There will be ups and downs as we go along however. We do caution that, as always, some disastrous occurrence can happen. That's why we suggest put

options on all live cattle and feeder cattle being fed. Your investment is too great not to have some price insurance in place.

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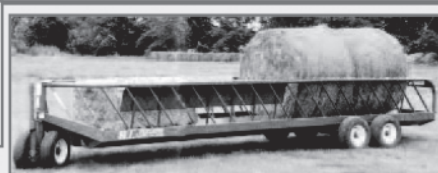
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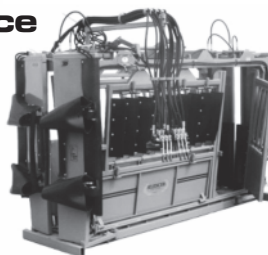


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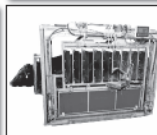
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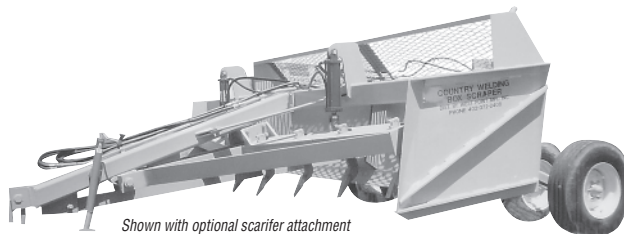


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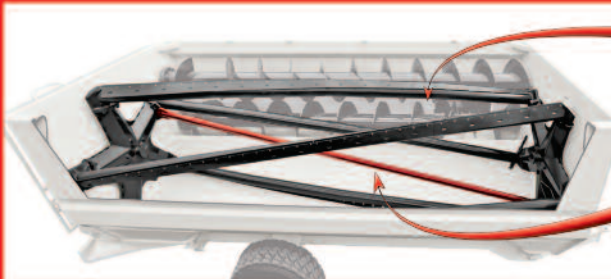
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