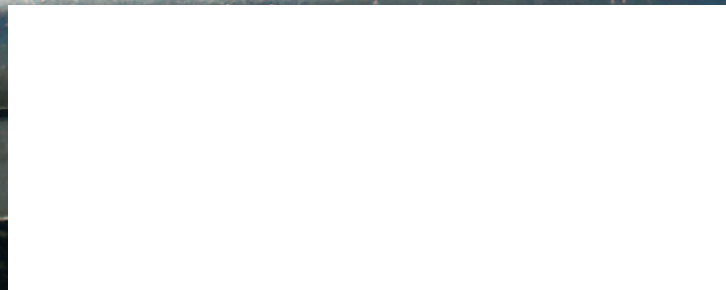
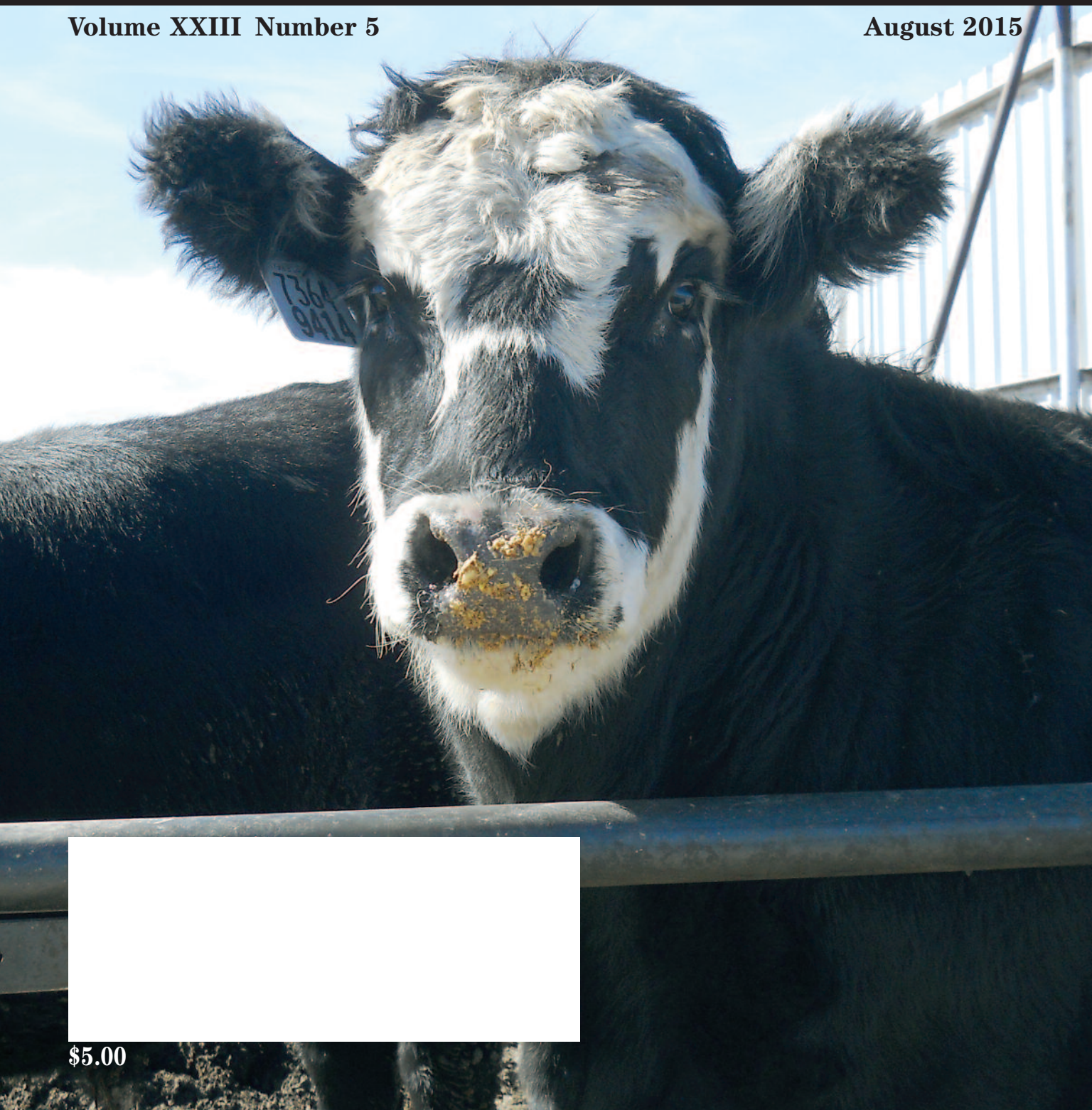


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Volume XXIII Number 5

August 2015



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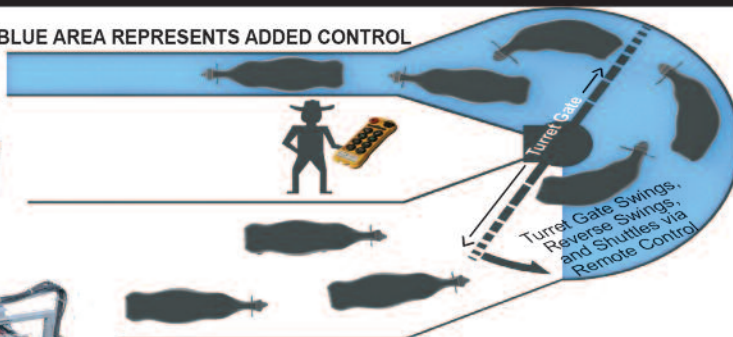
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Join us at the Feeding Quality Forum

BY JILL J. DUNKEL

The fall run of cattle is upon us. The days are long and the chores are many. Even though you're busy, I hope you will take a day to join us at the Feeding Quality Forum. It's a place to find insight and answers among other cattle feeders facing the same challenges.

The 10th annual Feeding Quality Forum is set for Tuesday, August 18th in the Omaha suburb of La Vista, Neb., and Thursday, August 20 in Garden City, Kan. For a decade, producers, feeders and allied industry have joined together annually for an education reunion to reap expert industry insight. This year's topics include the perennial favorite market outlook from AgResource Company, preparing for the veterinary feed directive, tips to combat heat stress, advice on how to adopt current nutrition strategies and a peer

panel on risk management.

The panel discussion has grown into one of our most popular segments. This year's topic is managing risk – cattle are a tremendous investment, and offering fellow cattlemen the opportunity to see how others are managing risk will no doubt be a great conversation.

Sign-in begins at 9:30 a.m., followed by a quick welcome at 10:00 before informational sessions kick off with Dan Basse, AgResource Company president (Garden City) or AgResource Head Researcher Bill Tierney (Omaha), as they provide the local and global feedstuffs market and economic outlook.

Then Marilyn Corbin of Zoetis will talk about details, implications and how to prepare for the Veterinary Feed Directive. Lunch will honor FQF 2015 Industry Achievement Award winner James Herring, of

Friona Industries, Amarillo, Texas.

Following lunch, University of Nebraska feedlot experts will take the floor. Terry Mader will highlight the details of heat stress management, followed by Galen Erickson's discussion of trending nutrition topics. The forum will conclude around 4:15 p.m., after a panel discussion on risk management in the feedyard.

Feed-Lot magazine is a sponsor of the meeting, as is Zoetis, Purina, Roto-Mix and Certified Angus Beef. This year we also welcome Micronutrients to the group.

You can register for the meeting at www.feedingqualityforum.com and a complete schedule of the one-day meeting is on page 31. I hope in spite of your busy schedule, you will take time to join us!



This issue focuses on a lot of challenges. The challenge of starting fresh cattle, analyzing feed harvesting options, managing heat, hiring worthy employees, managing prolapsed cows and more.

Geroge S. Patton once said, "Accept the challenges so that you can feel the exhilaration of victory." That quote can definitely be applied to cattle feeding and livestock ownership. Managing challenges can be a daunting task, especially with challenges like bovine respiratory disease, volatile markets, unvaccinated calves and more. It's not a short list.

But feeling the exhilaration of victory can be very sweet in this business. Maybe it's selling a load of cattle at the top of the market, or finding a way to manage a health challenge, or possibly finding that great employee that works hard to make a difference.

As you manage this year's fall run, here's to hoping the exhilaration is just around the corner. **FL**



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STARTING RIGHT

Every day counts when cattle are putting on pounds for harvest. Every bite, every morsel, every calorie. Getting calves headed down the path to heavy gains can be a challenge, and depends on getting a sound start. It takes good nutrition and an awareness of the adjustments calves are required to make.

"In a perfect world calves will come from a source with a good, solid vaccination program and are familiar with the feedlot and water tank," says Dr. Matthew Quinn, technical services nutritionist for Zoetis. "That would be ideal, but certainly isn't always the case." The vaccination program is key to minimizing the effects of new-arrival stress.

Stockers wanting to ensure their animals remain profitable down the line should look to their preconditioning program. Research (Avent et al., 2004) shows preconditioned calves have 1.5 percent death loss, compared to 4.3 percent nonpreconditioned; and 36 percent of nonpreconditioned calves require medical treatment, compared to 9 percent that are preconditioned. In addition, preconditioned calves show improved average daily gain and feed conversion. "That means fewer pounds of feed per pound of gain," says Dr. Matt Luebbe, University of Nebraska-Lincoln

Extension Feedlot Specialist. "And a better chance of grading Choice or higher (50.4 vs. 35.8 percent)."

Luebbe says the source of the cattle should be one of the prime considerations when purchasing calves. Risk of problems increases greatly with cattle with unknown sources, shipping conditions, and undocumented preconditioning protocols.

Quinn says it's also important to have a sound mineral program in place for cows and calves. "Transport can cause a loss of key trace minerals and vitamins. Cow/calf and stocker operations can improve immunity and nutritional status by supplying adequate vitamins and minerals prior to shipping."

Once at the feedyard, water takes center stage. "You need to be sure there is adequate clean, fresh water," says Quinn. "A calf that can't drink won't eat."

Multiple sources are desirable if possible, and, while it might be messy, letting the water trickle down the side might help young calves unfamiliar with the water tank identify the water source. Water placed near the edge of the pen may be easier for calves to find than in the center of the lot, especially if newly weaned and walking the fences. You will also want to consider whether or not a calf has



had experience with automatic devices. And take into account the height of the calves. Make sure water sources are at their level.

Likewise, plenty of bunk space, at least 12-18 inches per head, will help those who are not "bunk broke" by eliminating the need to jockey for position.

Feeding loose, long-stem hay can entice calves to the bunk. "It's a familiar feed source," says Quinn. "They're used to consuming it." Some feedyards are able to provide limited grazing during the transition, with adequate supplementation, of course. Those fed for a time on pasture show a lower average daily gain, but only half the pulls for respiratory treatment because of decreased disease pressure on the animals. The roughage also promotes healthy rumen, especially important for young calves adjusting to a new diet.

"The first rule is get them up and eating," says Luebbe, "and if they have the correct nutrition they have a better chance of performing."

Once they're eating, Quinn says the best ration is nutrient rich, balanced, and fortified. "It should have a higher than normal concentration of crude protein, and be high in energy to account for initial lower feed intake during the receiving period." The energy source may vary, depending on what best complements the feedyard operation. Wheat, barley, high moisture or steam flaked corn make good sources.

Distiller's grains can be a good source, with availability increasing in most regions. WDGs are high in energy and protein, but may be unfamiliar, and therefore unappetizing,





to young calves. Pellets can be costly. But they are options worthy of consideration.

High quality legumes can provide a desirable supplement, but beware of scouring. Luebke suggests starting at 1-1.5 percent of body weight, depending on cattle type.

Timing of feeding can matter as well. Consider feeding twice a day if possible, adjusting feed amounts according to consumption. It's important to not let feed sit in the bunk and spoil. Likewise, you don't want to provide too little feed. If calves aggressively run to the bunk, it's a sign they're hungry and want to consume more. Twice a day feedings can help control calf rumen pH levels and reduce the risk of acidosis.

Whatever the feed source, ration conditioners will enhance the nutritional value.

"Your nutritionist can help determine which of his/her products can best be utilized to meet your needs," says Quinn. Aside from enhancing nutrition, any number of products on the market can help fight BRD, parasites, coccidiosis, and other health problems. Zoetis has seen success in increasing feed intake in the first seven days for severely stressed feedyard calves by as much as 45 percent, and feed efficiency in the first 28 days by up to 26 percent. "He or she will know what's available at the best cost in your geographic area to help control disease threats and jump-start average daily gain."

He says the starter ration may very well be the most expensive menu offered. Much emphasis is placed on the performance ration, but the starter ration is what sets the tone for future gains.

Working with your nutritionist and veterinarian is essential. And that includes having a plan in place before the calves arrive at the feedyard. "People do this on the health side of things, but they often forget to include a plan for nutrition," says Quinn. "And it is essential to getting calves up and eating as quickly as possible."

In addition, Quinn stresses good management practices. Making sure pens are clean upon calf arrival, and the environment is comfortable. Pads and aprons should be easily

accessible and mud-free, making it desirable to approach the bunk.

Animal handling is crucial as well. Naïve calves unfamiliar with people and feedyard activity require extra care and calm.

That special care upon arrival can ultimately mean dollars in your pocket.

"Everyone wants to give cattle the best opportunity to perform and stay healthy," says Quinn, "and that means giving them a sound start." **FL**

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An ounce of prevention is worth a pound of cure. So when it comes to foot rot, why don't we see cattle with little rubber boots on? Or when pens or pastures are muddy, why don't we just move them indoors?

Those prevention techniques sound great, but are far from practical. So instead, cattlemen must resort to ways of preventing foot rot that fit within the production model – sans rubber boots.

FOOT ROT PREVENTION STRATEGIES

A sound, bioavailable trace mineral program is important.

Dr. Connie Larson, Ruminant Research and Nutritional Services Manager with Zinpro Corporation said anything cattlemen can do to minimize environmental issues that lend themselves to foot rot, such as cleaning pens regularly or building mounds so cattle have a dry place to be, are important.

"Wet, muddy pen conditions are perfect for foot rot. In confinement or pasture cattle when the conditions are wet, skin between the claws may soften. When that skin gets soft or has an abrasion, it allows the entrance of bacteria that can lead to foot rot," she said.

Beyond minimizing environmental factors, nutrition can play a key role in prevention and managing claw lesions such as foot rot. When included in a ration or mineral package, certain trace minerals help protect the integrity of the foot. Zinc has a critical role in helping improve epithelial tissue integrity, as does iodine and copper, Larson said.

Dr. Jeff Heldt, Ruminant Business Manager with Micronutrients said zinc plays a critical role in keratin formation. "That is why zinc and foot health are often paired together," he said. "When we start having foot problems, we reach to do something to help or prevent an outbreak. Zinc is one of the first things we look at."

However, providing effective zinc, iodine and copper supplementation is not just as simple as grabbing a bag from the feed store. It's important that the trace minerals fed are from a bioavailable source, and that cattle are getting adequate consumption of the minerals.

The most common forms of trace mineral sources are inorganic. However, these forms are inconsistent, varying in terms of absorption. Feeding a highly-available form of trace minerals allows for more metal to be absorbed into the blood stream where it can be readily utilized by the animal.

Minerals that are more bioavailable do cost more, however the absorption of the trace minerals is an important cost consideration when looking at improved minerals, versus inorganic minerals.

Providing a highly-available source of mineral likely won't improve the situation overnight. From a prevention standpoint, it takes more time.

"It takes around 45 days to get the trace mineral status in the liver to adequate if the animal was deficient," said Heldt. "That's why it's important to use a bioavailable source early on to shorten that time. Instead of 45 days, maybe we can get those calves to adequate in 21 to 30 days."

Larson said ideally a bioavailable trace mineral, should be fed 30 days ahead of a bacterial challenge in order to enhance the immunity of animals and help prevent an outbreak.

FL

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Animal Health

BY KI FANNING, PHD, PAS

CORN SILAGE VALUE

For the past 15 years, the price of byproducts and crop residue reduced the price that many of us could pay for corn silage (per ton) to much less than 10 times the bushel price of corn. The result is that, economically, many of us were not able to justify cutting or buying corn silage. Over the past year, the price of corn has dropped more dramatically than the price of the byproducts and crop residue. Additionally, demand for byproducts has been high due to the export markets being strong, the widespread use and the higher inclusion rates of byproducts. As for crop residue, short hay crops coupled with long winters have run forage availability short. The proliferation of bedded barns has also

increased the demand for crop residues used for bedding, particularly in areas in the northern U.S.

Table 1. Effects of Corn Silage and mWDG Level of Feedlot Performance and Carcass Characteristics.

	Control 0:40	15:20	15:40	45:20	45:40
ADG, lb.	3.70	3.95	3.64	3.44	3.62
F:G, lb	7.87	7.46	7.87	8.55	8.20
Marbling	540	583	548	554	532
Dressing %	60.3	60.3	60.3	59.1	59.6

2014 Nebraska Beef Report, Burken et al.

Table 1 shows recent research results from the University of Nebraska. This study examined feeding differing levels of modified wet distillers grains (mWDG) at either 20 or 40% of the diet on a dry matter basis (DMB), with 15 or 40% DMB of corn silage. The control diet used corn stalks as the roughage source instead of corn silage. There was not a significant difference in performance between the 15% corn silage and the corn stalk diets.

Table 2. Corn silage % in the Diet

	10	20	30	40	50	60	70	80
ADG, lb.	2.52	2.49	2.43	2.36	2.28	2.17	2.05	1.91
DMI, lb.	15.3	15.7	16.0	16.1	16.2	16.0	15.6	15.1
F:G, lb.	6.06	6.32	6.58	6.84	7.10	7.36	7.62	7.88
Profit, \$	25.09	25.10	26.49	29.33	32.03	34.74	37.10	39.27

Corn: \$3.50/bu.; Silage: \$26.45/ton (32% DM)
Goodrich et al., 1974

Table 2 shows data from forty years ago where ADG and F:G improved with each incremental reduction in corn silage from 80% down to 10%. When applying \$3.50 corn and a value of 7.5 times the price of corn for corn silage, the most profitable level of corn silage was the high level of 80%. There is no doubt that the hybrids have changed significantly as well as our farming and silage harvesting practices. Additionally, distiller's grains have changed feeding practices. Either way, the difference in performance in the lower two levels is slight and I would argue that corn silage cannot be harvested and delivered to the bunk for 7.5 times corn's bushel price. The old rule of thumb of 10 times the price of corn still calculates very close to most operations true value. For your own operation simply multiply the estimated bushels of corn per acre by the price per bushel (or use the total expenses per acre including land rent and taxes) and then divide by the tons harvested and then divide it by 1 minus the shrink (i.e. if shrink is 15% then divide by 0.85 or 85%). That dollar figure is your cost per ton of silage. Adjusting the corn silage price in Table 2 to 10 times the price of corn for 240 days (assuming the same days on both

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10 and 80%) would reduce the magnitude of the difference in profitability from its \$14 to only \$5 for the 80% diet compared with the 10% diet; however, the 80% ration would still be the most profitable.

Table 3. Corn Silage % with 40% mWDG

	15:40	30:40	45:40	55:40
Final BW, lb.	1426	1403	1375	1335
DMI, lb.	23.15	22.77	22.70	21.92
ADG, lb.	4.04	3.92	3.76	3.53
F:G, lb.	5.73	5.81	6.03	6.21
Dress %	63.3	62.6	61.2	61.1
Marbling	556	557	543	532

Table 3 shows the results of a study with four different levels of corn silage with 40% mWDG. Table 3 agrees with Table 2 in that ADG and F:G improve as the level of corn silage is reduced in the diet. It is also similar in the fact that the performance loss is slight when the corn silage is less than 30% of the diet (DMB).

According to Burken, et al. 2013, corn silage included in the diet at 45% on a DMB, compared with 15, 30 and 55% had the lowest cost of gain when corn was \$3.50 and \$5.00 per bushel and corn silage was priced at 8, 8.5 and 9 times the price of corn. When corn was

priced at \$6.50 per bushel, the lowest cost of gain inclusion rate of corn silage was 55% of the diets DMB. All these diets contained mWDG at 40% on a DMB. Increasing mWDG to 65% of the diet with 30% corn silage or removing mWDG completely with 45% corn silage was not as profitable. A comparison to corn stover was not made in this study.

The overall result is that corn silage is not only economical to add into the ration but is also a great way to secure some forage for this fall. So how much should you plan on cutting? A rule of thumb is that 6 pounds of corn silage will replace 1 pound of hay, 1 pound of corn and 4 pounds of water in a ration. The bulk density of corn silage can range from 35 to 55 pounds per cubic foot, wet; but would average around 45 pounds per cubic foot, wet. If you are sizing a bunker, a minimum of 6 inches of silage should be removed per day for minimal shrink and maximum quality. A typical feedlot steer will need 6 to 8 pounds to meet their roughage needs but as we have seen corn silage could be 2 to 3 times that level without significantly impacting performance. Growing calves can use 15 to 30 pounds in their ration and cows can utilize 10 to 30 pounds. Consult a nutritionist at Great Plains Livestock Consulting, Inc. for a customized feed budgets and recommendations. **FL**

Ki Fanning is a ruminant nutritionist with Great Plains Livestock Consulting (www.gplc-inc.com)



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FIVE STEPS TO AVOIDING HEAT STRESS IN YOUR HERD

BY GRANT DEWELL, DVM, IOWA STATE UNIVERSITY EXTENSION BEEF VETERINARIAN

- 1 Plan ahead.** After cattle get hot, it's too late to prevent problems.
- 2 Don't work cattle when it is hot.** Finish working cattle early (before 9 to 10 a.m.) in summer, and remember that during a heat wave it's best to not work cattle at all.
- 3 Provide plenty of fresh clean water.** When it's hot and humid, consuming water is the only way cattle can cool down. Make sure the water flow is sufficient to keep tanks full, and ensure there's enough space at water tanks (3 inches linear space per head.) Introduce new water tanks before a heat event occurs so cattle know where they are.
- 4 Feed 70 percent of ration in the afternoon.** Heat from fermentation in the rumen is primary source of heat for cattle. When cattle are fed in the morning, peak rumen temperature production occurs during the heat of day when they can't get rid of it. By feeding 70 percent of the ration in late afternoon, rumen heat production occurs when it is cooler.
- 5 Provide ventilation, shade and/or sprinklers.** Environmental temperatures compound the heat load for cattle during a heat wave. Remove objects that are obstructing natural air movement. Indoor cattle will benefit from shade provided by the building as long as ventilation is good. Outdoor cattle will benefit from sprinklers to cool them off. Make sure cattle are used to sprinklers before employing them during a heat wave.





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FOR USE IN ANIMALS ONLY. NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. TO AVOID ACCIDENTAL INJECTION, DO NOT USE IN AUTOMATICALLY POWERED SYRINGES WHICH HAVE NO ADDITIONAL PROTECTION SYSTEM. IN CASE OF HUMAN INJECTION, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THE PACKAGE INSERT OR LABEL TO THE PHYSICIAN. DO NOT USE Zuprevo® 18% IN SWINE. Fatal adverse events have been reported following the use of tildipirosin in swine. NOT FOR USE IN CHICKENS OR TURKEYS. Cattle intended for human consumption must not be slaughtered within 21 days of the last treatment. Do not use in female dairy cattle

20 months of age or older. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal. The effects of Zuprevo® 18% on bovine reproductive performance, pregnancy and lactation have not been determined. Swelling and inflammation, which may be severe, may be seen at the injection site after administration. Subcutaneous injection may result in local tissue reactions which persist beyond slaughter withdrawal period. This may result in trim loss of edible tissue at slaughter. Brief summary available on adjacent page.



SHOULD YOU WEAN EARLY?

Certain weaning time scenarios could take advantage of increased calf feed efficiency while improving cow forage resources and body condition.

The majority of U.S. cattle producers wean calves at around 205 days of age, or roughly seven months, and typically make the decision on weaning time based on calf age, calf weight or because 'it's what they've always done.' But, there are certain scenarios where weaning earlier makes sense from both a cow and calf health standpoint and from an economic perspective.

"There are a variety of economic

benefits to implementing early weaning strategies," says N.T. Cosby, Ph.D., senior consulting nutritionist with Purina Animal Nutrition. "For the calf, we're looking at feeding during a time in their lives when they are extremely efficient at converting feed to gain."

"For the cow, we're able to give her some forage resources that would typically go to the calf, thus allowing her to pick up condition score going into the winter months.



Putting on that extra condition means we can save on some winter supplementation by not having to play nutritional catch-up," adds Cosby.

Here are three scenarios where implementing early weaning might make sense:

1. Drought or low forage situations

"One of the most common reasons for a producer to consider early weaning would be if they're in a summer drought situation," says Cosby. "Considering early weaning in this scenario would save some of your valuable forages for the cow."

According to Cosby, each day an early weaning strategy is implemented saves 10 pounds of forage for the cow. Implementing an early weaning program two to three months earlier than the industry average means that a significant amount of forage could be saved for the cow.

Those extra pounds of forage may go a long way towards increasing the condition score on the cow herd going into the winter months, as cows are likely either late in the second stage of pregnancy or early in the third stage.

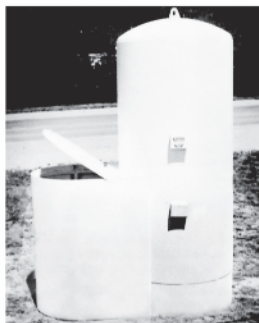
Early weaning also means the nutritional requirements of the cow decrease as she no longer needs to put resources towards milk production, allowing her to shift those energy resources to gaining condition.

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2. To hit your marketing window

“Early weaning may help producers hit a more lucrative calf marketing time, given what the cattle markets are signaling to customers,” says Cosby.

There are some scenarios where selling lighter calves means a higher price per hundredweight. There are also scenarios where selling calves earlier than the typical months when calves are marketed (typically mid- to late-fall) means a higher price floor.

“If the marketing scenario is right, it’s always good to consider options to capitalize,” adds Cosby.

3. When stocking density is increased

“A reason to wean early that’s becoming more prevalent is land cost, and subsequently increased stocking density,” says Cosby. “Some cattle producers today are trying to run more cows on the same acreage to potentially increase profit.”

More cows on the same acreage means that the forage resources are limited, and that both cows and calves could potentially be short-changed on nutrients.

“If we’re short on forage, either quantity or quality-wise, it’s often a good plan to start calves on a higher plane of nutrition by going ahead and weaning them,” adds Cosby.

With any of these three scenarios, it’s critical to get early-weaned calves on a quality nutrition program.

“These early weaned calves can’t hold a lot of feed because of their small rumen size,” says Cosby. “At the same time, the calf’s requirements per pound of body weight are quite high. You need a high-quality, nutrient dense, com-

plete feed to get them off to the best start.

Nutrition lays the foundation for a successful starting program, getting calves on feed quickly and keeping them healthy. The Purina® Great Starts® calf feeding program has customizable feeding options designed to fit a producers given forage availability, feed type and feeding facilities. **FL**



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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: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, Khalitsa 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; 31(5): 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.

LALLEMAND ANIMAL NUTRITION

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www.lallemandanimalnutrition.com





Brief Summary for use in Cattle:
See Package Insert for full Prescribing Information

Draxxin®
(tulathromycin)
Injectable Solution

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, mono(hydroxy) (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-xilo-hexopyranosyl]oxy]-1-oxa-6-azacyclotridecan-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-xilo-hexopyranosyl]oxy]-1-oxa-4-azacyclotridecan-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 levii*.

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*.

DOSE 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-VEIS or online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

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Going once Twice, No Bidders!

BY MIRANDA REIMAN

Imagine you've got a load of calves headed for the salebarn. You know that feeling of anticipation and hope, and perhaps some worry.

"How many buyers will be there?"

"What will they bring?"

Now try to imagine when you got to the auction market with those cattle, there simply was no market for them. You had to take them home because not a single hand went up.

File that under the "highly unlikely to ain't-gonna-happen," category, but stay with me. If every single background and cattle feeder decided they weren't going to purchase "high risk" calves; if they refused to take unweaned, unvaccinated calves, that's virtually what would happen. In a world of no bidders, sellers of those type of calves would have to reevaluate their strategy.

You'd have a pretty quiet trip back from the sale. And I'm guessing those at home might feel a little like Jack's mom when he sold their milk cow for a bag of magic beans.

This story isn't likely to end in a beanstalk and a golden-egg-laying goose, but it could have a fairy-tale ending.

Earlier this year Purdue veterinarian W. Mark Hilton suggested a plan that would rid the industry of high-risk cattle.

"What if every buyer of feeder calves agrees not to bid on high-risk calves? As the auctioneer goes down and down in price, '\$2.80, \$2, \$1.50, 23 cents? Sorry, boys, no takers. Take them back home.' In

30 days, you think that would change the industry?"

Well, do you?

It's a scenario cattle feeders might welcome. They hate sick calves. No one wants to spend the time, energy and money treating a "wreck," and preconditioning is a proven way to reduce those instances.

Beyond that, those finishers know the lasting effects. Performance suffers. Final quality grade goes down. That's before we even mention consumer perceptions.

If you don't precondition, this might be the time to start.

Hilton shared an 11-year analysis of the Indiana cattle business that showed an average profit of more than \$80 per head for programs that span more than 60 days. By retaining the calves for just a couple of months, profit went up nearly eight-fold in some instances.

When feed prices are low and calf prices are high, that just puts an exclamation point on those values.

Sure, when Hilton introduced that "no bidders" plan to a large group of producers it got a lot of chuckles, but the reality is that to some degree that IS happening in a much slower fashion across the countryside. Take a look at any salebarn study or video auction analysis and it will show the advantages for preconditioned, reputation calves (or the discounts for the opposite).

What side of that equation do you want to be on?

FL

Jarret Corn
Feedyard owner
Jarret Corn Cattle Company
Plains, Texas

I GOT BACK 30 BUCKS A HEAD. I ALSO GOT BACK MY FAMILY.

Using DRAXXIN® (*tulathromycin*) Injectable Solution has helped Jarret's operation deliver fewer re-pulls, re-treats, chronics and mortalities. That's because DRAXXIN provides long-lasting treatment and control of all four major bovine respiratory disease (BRD) pathogens. Plus, using DRAXXIN helped accelerate Jarret's shipment days. "Having cattle here 15 days less reduces feed costs. The \$2-per-head savings per day over 15 days returns \$30 back in our pocket," Jarret says. "And with the time I've saved doctoring and pulling, I've been able to reconnect with my family." Talk with your veterinarian or visit draxxin.com/jarret.



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.

NEW CHALLENGES IN HIRING

BY DON TYLER
TYLER & ASSOCIATES

Staffing a feedlot has been difficult for many years and that challenge will persist for some time. Differentiating the candidates with the best fit from those that are mediocre would be much easier if we could ask questions about their current health status, how much work they have missed in the last year, or if they have adequate child care. Just to clarify... No, you cannot legally ask these types of questions.

In addition to these limitations, former employers are restricted in the type of information they can provide on past employees. It would be great if we could ask references questions like, "Are they honest?" "Are they hard on equipment?" "Do they have a pickup that will go more than 5 miles without breaking down?" This information is considered private and discriminatory if revealed by a former employer.

Now there is a new challenge to the hiring process—avoiding the animal welfare activist who tries to get

a job solely for the purpose of misrepresenting our industry. It would be great if we could ask, "Are you one of those animal rights whackos trying to come into my operation, create some fake videos, and put them on the internet so you can use them to make millions of dollars for your so-called charity?" Once again... No, you cannot legally ask this question.

Here is what you can do... You can use the same social media that they use to disparage our industry, to investigate them. Social media and internet search engines are a wealth of information on these groups and in some ways has made getting background information much easier. The people that participate in these activities tend to like personal publicity, and will tell anyone and everyone their personal opinions.

Go on social media—Facebook, Google, Twitter, Linked In, etc. It is amazing what people are willing to post on these sites about their personal lives and interests. Their

desire to passionately promote their personal opinions should show up either prominently or vaguely with a quick review of these online coffee shops. While they express their views on topics they also reveal their core values, character and priorities.

We must also use a robust Job Application form. Be sure to ask if they have ever gone by a different name, and allow ample space so they can share all past work experiences. Along with the standard questions about skills, certifications, qualifications, education, etc. be sure to include space for all references and all the contact information that can be used to reach this person or company. Get e-mail, cell phones, mailing address,



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business phone, best time to reach them, type of reference and if they are related to the applicant. This form must also have a signature line that states, under penalty of perjury, that the information they are providing is true and accurate to the best of their knowledge. This may allow you to pursue perjury charges in the event that one of these individuals provided false information and gets past the cautions that you have in place.

When developing a Job Application form consult a labor attorney for what is legally acceptable in your state.

Be sure to check references, and confirm that their references are actual employers or supervisors — and not their college roommate. Take the time to research the company they claim to have worked for if you are not personally familiar with that business.

Be wary of an applicant that is very overqualified for the position, someone who says they “just want to see how things are done in this kind of business...” or someone who simply doesn’t fit the part. Some will even volunteer to work for no pay, or ask to work for only a few months. Other warning signs are someone with a new driver’s license, or someone that is very hard to get any background information on.

A general rule of thumb is, use at least as much diligence in selecting employees, as you do picking your next herd bull!

FL

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.



ProTernative®

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¹ KEYSER SA, MC MENIMAN JP, SMITH DR, MACDONALD JC, GALYEAN ML. EFFECTS OF *SACCHAROMYCES 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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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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NEW TECHNOLOGIES EMERGE TO HELP FIGHT RESPIRATORY DISEASE

BY JILL DUNKEL

Bovine respiratory disease. It's been around the cattle industry for decades and still is a significant nemesis. In a talk last year at the BRD Symposium, Mark Hilton, DVM at Purdue University said BRD contributes to 70 to 80 percent of the morbidity in North American feedlots, as well as 40 to 50 percent of the mortality. A 2011 NAHMS study said that 16.2% of all calves are treated for BRD.

Simply put, that's not good enough.

"We can do better. The calves deserve better," said Hilton. "We have more information today than ever, and we can do a better job."

Known risk factors like weaning, lack of immunity, abrupt diet changes, castration, parasites, mixing cattle, dusty conditions and concurrent diseases all contribute to the BRD battle. Hilton believes BRD is much more likely "when we have an accumulation of errors in the calf's preparation or his lack thereof, to leave the ranch and enter the feedlot."

In an ideal world, preconditioning all cattle with a sound nutrition program would be common place and the resulting BRD rates would plummet. However, the ideal world has never been part of the cattle

business. Thus we are left with a push in educating cattlemen about the benefits of preconditioning and utilizing the technologies available today to fight disease.

Companies are always working on new technologies to help cattlemen in the BRD fight. One new technology that is fresh on the scene is unlike current pharmaceutical products on the market. ZelNate™ from Bayer is a DNA immunostimulant that was recently introduced. It is not a vaccine nor an antibiotic. Instead, it is an immunostimulant that rapidly triggers the animal's innate immune system, preparing it to better fight infection.

"In addition to sound management practices, the tools to manage BRD consist of vaccines, for prevention, and antibiotics, for therapy," explained Dr. Jason Nickell, a veterinarian and Manager of Farm Animal Product Efficacy with Bayer Animal Health. "This product leverages the animal's own innate immune system to help fight disease."

This is a new approach to manage BRD by modulating the innate immune system, Nickell said. The product enhances the calf's own ability to respond quickly

and effectively to *Mannheimia haemolytica*, the most prevalent bacteria within the BRD complex.

He explained that there are two "arms" to the immune system. The adaptive immune system is targeted by vaccinations, and animals generate a response to a specific antigen provided within the vaccine. This immunity is long lasting, but it generally does not kick in fully for two to three weeks.

The other arm of the immune system is the innate immune system. It is always on alert and is constantly "on patrol" for the threat of bacteria, viruses, parasites, etc. The innate immune system then attempts to clear the infection when the animal is infected with the pathogen. Additionally, a sound innate immune response is necessary for an adaptive immune response observed with vaccines.

"Animals are exposed to pathogens (e.g. bacteria, viruses, etc...) on an ongoing basis. If infection does occur, the reason illness is averted is that the immune system effectively clears the infection/pathogen. When disease is observed, it's likely that the immune system is overwhelmed (by the pathogen) or stress compromises its efficacy," Nickell explained.

ZelNate™ is designed to be administered at the time of or within 24 hours of a stressful event. Product research has shown a reduction in lung lesions (which have consistently been associated with a significant reduction in average daily gain among feedlot cattle) and mortality associated with BRD. Bayer plans to have the product available to the market to help manage BRD as early as this August.

"The management of BRD will never be found solely in the form of a syringe and needle; however, our hope is this will be another tool veterinarians and producers can



use when managing this disease,” Nickell said.

Advanced Animal Diagnostics hopes to add yet another tool to the toolbox with a new blood differential test. With a single drop of a calf’s blood collected chute side and diagnosed by the QScout Lab, the QScout Blood Leukocyte (BLD) test can detect an infection in a matter of seconds, according to Allen Moczygemba, vice president of marketing.

“In just a matter of seconds, the test will diagnose if there is a bacterial, viral or parasite infection,” Moczygemba said. “This test has the potential to change how we treat and manage cattle.”

Too often viral infections get misdiagnosed as bacterial infections, and Moczygemba said this test would tell a cattle feeder whether they really do need to treat a calf with an antibiotic or not. He also sees the test as a great value in dealing with chronics.

“If a producer is able to confirm that a calf has a viral infection, you can manage those cattle differently,” he said.

The QScout BLD test is not currently on the market, but Moczygemba hopes to have a test product available in early fall. It will not be commercially available likely until the end of the year.

“Everyone we talk to about this, they ask how soon we could have it on the market. It could be a win-win for everybody. It’s good for the cattle feeder who can more efficiently use his products. It will be good for the animal health suppliers as their products will be used in the manner in which they’re labeled since cattle will be diagnosed more precisely and it will be good for the consumer in terms of antibiotic use,” he said. “At the end of the day, producers will know what a calf is battling – not the specific pathogen – but if it’s bacterial, viral and/or parasitic.”

Advanced Animal Diagnostics has a similar test currently used in the dairy industry that identifies

subclinical mastitis in a milk sample, enabling dairy producers to diagnose cattle early in lactation and at dry-off which allows for more precise use of antibiotics. .

New technologies like these hope to give cattlemen the upper hand in fighting respiratory disease. However, it’s important that producers also contribute by producing cattle that are ready for the

next step in the process of raising beef. Experts underscore the importance of proper management decisions like vaccinations, pre-conditioning and other steps that producers can take to ready cattle for the stocker and feed yard phase. When that happens, technology will continue to be an ideal complement to producing a quality, safe food supply. **FL**



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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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A LOOK AT PRICES

Summer time nearly always seems hard on cattle prices. It seems the selloff makes it difficult to believe that price will likely trend higher into the winter months. So far this year, the top practical cash price in Kansas (from our weekly survey of Kansas Feedlots) was the first week in January at \$170.50. For the week ending July 17, 2015 the "practical" cash price was \$148.00. That \$22.50 drop in price comes during a time when slaughter numbers are less than 2014 as well as 2013. Even larger slaughter weights have not compensated for the lower slaughter levels as beef production is lower than both 2014 and 2013. On the surface, you would think that cattle prices would be higher than the previous year but, compared to 2014, price is \$8.00 per hundred weight lower yet, \$29.00 higher than 2013. Trade analysts argue that high box beef prices and higher retail prices are limiting demand and lower retail price in the competing meats (pork and poultry) is causing a shift in meat case demand. Perhaps.

Let's take a look at what cash price has done from the week ending July 17 and see what price has done going into winter. In 2011, the cash price was \$111 and rallied to \$123 during the week of 12/21 (+\$12.00). In 2012, from \$115 to \$128 (+\$18.00). 2013, from \$119 to \$137 (+\$18.00) and 2014 from \$156 to \$173 (+\$17.00). Pretty impressive trend for the last four years. Given the current fundamentals it is logical to think that perhaps the

tendency for price to improve into December is fairly good. USDA forecast for 4th quarter average price is projected to be somewhere between \$155 to \$167. If the average cattle price comes in at the middle of the projection, that would be \$161. Keep in mind that the USDA estimate is an average so the winter top cash would be higher. It looks as though the odds of higher prices are in the making.

On the grain side, there are lots of questions about corn and soybean acreage as well as yield potential. It's going to take another couple of months to get a good handle on both. However, with the information we have, there does not appear that there will be a full fledged bull market. Rather, the market will trade in a range from 380 to 450 for the current time. We would advise buying call options on input needs on pull backs to cover feed costs. There is still a chance for corn prices to surprise us on the upside. **FL**

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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 tilimicosin 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)



BY JOHN GEORGE, P.E.
AGRICULTURAL ENGINEERING ASSOCIATES

10 DEWATERING DAYS

How Did EPA Come Up with the 10 Day Time Limit for Dewatering Runoff Detention Ponds? This requirement can be difficult for my yard to meet.



This Google Earth Photo of Ingalls Feedyard illustrates the basis for the 1970s EPA presumption that every large CAFO is surrounded by numerous large center pivot irrigation circles, and thus can easily re-establish the minimum required runoff storage in ten days.

When the Clean Water Act (CWA) was passed, EPA was to define pollution control performance metrics for each class of discharging facilities. For CAFOs, the prescribed performance level reflected runoff detention ponds capturing all manure and wastewater runoff

resulting from a 25 year – 24 hour duration precipitation event; the largest local rainfall that occurs once every 25 years.

While the sizing of detention structures was addressed by the CAFO technology assessment, the timing for pumping captured stormwater out of the detention pond(s) was not addressed. Permit conditions, however, must provide for timely dewatering of runoff detention ponds to re-establish holding capacity for ensuing runoff events. There was no data available at the time to define what the pump-out requirements should be? As EPA's primary focus was the burgeoning development of large open feedlots throughout the arid high plains, the permit writers were tasked to assume that every feedlot would have a number of nearby center pivot irrigation fields to utilize in accomplishing runoff removal. Permit conditions were written requiring detention pond pump out within 10 "dewatering days." A "dewatering day" was defined as one where the temperature is above freezing, the ground is not frozen, and there has not been more than 0.05" of precipitation on any of the last three days prior.

The CWA focus and impact has progressively broadened to encompass thousands of CAFOs, many of which are located in wetter climates where irrigation often is neither needed nor practically achieved. For such CAFOs the burden of dewatering a detention pond in 10 days can be really daunting. As the early permit writer tasked with conceiving the dewatering requirement, I had anticipated from it's inception that the requirement would morph within the bounds of climatic/environmental practicality as more knowledge and experience evolved. Such has never happened nor apparently even been broached within the environmental bureaucracy.

FL

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Managing PROLAPSES

Prolapses – when internal tissue bulges out of the vaginal opening of a cow – are a medical condition that cattlemen need to identify and treat in order for the most favorable prognosis for the cow. Both vaginal and uterine prolapses must be corrected, but a uterine prolapse is an emergency. Uterine prolapse occurs soon after the cow calves, while vaginal prolapses generally occur before calving—sometimes as much as several weeks.

Uterine Prolapse

A prolapsed uterus occurs within a few minutes to a couple hours after calving, while the cervix is still dilated, according to Dr. Robert

Cope, a veterinarian in Salmon, Idaho. If the cow keeps straining because of continued contractions, she may push the uterus out. This can happen whether the birth was easy or difficult.

The far end of one or both uterine horns may begin to turn inside itself. “This allows the cow to push against it. To lessen likelihood of prolapse, I try to get the cow up as soon as possible after pulling a calf. Getting her up and moving around will usually make the uterus drop back down in the abdominal cavity and straighten the uterine horns. Without a partially inverted horn against which to strain, it is difficult for a cow to prolapse.”

A prolapsed uterus is a serious emergency. “That forty-odd pound mass of fragile tissue hanging out of the cow can be a life-threatening situation unless it is replaced quickly. If weather is cold, the exposed uterus serves as an outlet for loss of body heat; the cow may chill or go into shock. If she happens to lie on, step on, or kick the tissue hanging past her hocks, she may rupture a major artery and quickly bleed to death,” says Cope. During pregnancy the uterus has a large blood supply for the developing fetus, and these large arteries can be nearly the size and pressure of a garden hose.

“If an artery ruptures, the cow may bleed to death quickly. By the time you realize what is happening, it is too late to do anything about it,” says Cope.

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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



Stitches hold the prolapsed tissue inside while still allowing the cow to urinate.

lege of Veterinary Medicine, University of Saskatchewan, says most vaginal prolapses occur in late pregnancy, but a few occur during a cow's first heat after calving, when cows start riding each other. "Most cases occur a few weeks prior to calving, when there is pressure in the abdomen from the increased size of the uterus. The ligaments

in the pelvic region are also relaxing," he explains.

When the cow is lying down, this pressure may cause the vaginal tissue to prolapse. Mild prolapse (a bulge the size of an orange or grapefruit) will usually go back in when the cow gets up. But if she starts to prolapse each time she lies down, or strains a little while lying there, the tissues may be forced out farther, to the point they cannot go back in. The presence of a mild prolapse may stimulate the cow to strain, making the situation worse. The mass of vaginal tissue bulging out becomes damaged and dirty.

According to Cope, the vaginal wall is not a sterile environment, so infection is not the primary concern. "The main problem is that once these tissues are turned inside out, the returning blood supply from the prolapsed area becomes restricted, making the tissue swell. The longer it is left outside the body, the more swelling occurs, and the harder it becomes to replace. If the cow is near calving, this swelling may make birth difficult. Vaginal prolapses should be repaired as soon as possible," he says.

"If a cow prolapses, we try to get her through to calving. The prolapsed tissue needs to be cleaned up, replaced, and kept in place," says Barth. Wash it gently with warm water and a mild disinfectant.

If a prolapse has been out for several days, the tissues may be dry and damaged, and harder to clean up and push back in.

Make several stitches across the vulva to hold it closed and prevent future prolapses. Umbilical tape is ideal—less apt to pull out than suture thread. A large curved surgical needle is best for making the stitches. They should be anchored in the haired skin at the sides of the vulva. This skin is thicker and won't tear out as easily as the skin of the vulva.

"It usually takes at least three cross-stitches to keep the vulva safely closed so the inner tissue cannot prolapse if the cow strains. She can still urinate through the stitches, but the vulva cannot open enough for prolapse, says Cope.

If she's stitched, monitor her closely for calving. The stitches must be removed when she starts to calve or she'll tear them out or have difficulty calving. When she goes into labor, stitches can be cut with surgical scissors or a sharp knife—whatever you have on hand to cut them with quickly without poking the cow—and pulled gently out.

Once the calf is born, the vagina rarely prolapses again (until next season, when the cow gets closer to calving again). "There is no need to put a stitch back in after she calves. All the pressure against the tissue has been relieved," says Barth. You can let the cow raise that calf, then sell her before she gets close to calving again. Once a cow prolapses, she almost always does it again, often worse the next time. Most ranchers cull a cow once she has prolapsed.

The big challenge is the few that prolapse sometime after calving, usually associated with riding during estrus. If cattle are out in large pastures at breeding time, you may not see this happen and the vagina may be prolapsed for several days before you see it, becoming very dry, dirty and damaged. **FL**

Managing Prolapses... from previous page
anesthetic when beginning the task of cleaning up and replacing the inverted organ, to keep her from straining. The uterus must be thoroughly cleaned and washed, and put back in.

Another injection of local anesthetic may be needed afterward to keep her from straining, or a few sutures across the vaginal opening to keep the organ from being pushed out again, until the cervix has contracted and there is no danger of recurrence. The stitches can be removed in a few days.

If the uterus is not out very long, and is kept clean and undamaged until it can be replaced, the cow generally recovers. Most cows that prolapse will rebreed, and have no problems with the next calving. Repetition of this condition is rare, according to Cope.

Vaginal Prolapse

This is a more common problem, and generally occurs before calving. Some cows have an inherited structural weakness that allows part of the vagina to prolapse during late pregnancy; some bulls sire daughters that tend to prolapse, and they may pass this tendency to their offspring. Never keep a bull from a cow that prolapses, cull any cow that prolapses, and never keep a daughter from her.

Dr. Albert Barth, Western Col-

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10:00 a.m. Welcome

10:15 a.m. **Protein & Feedstuff Market Outlook**
Dan Basse, President, AgResource Company (Garden City)
Dr. Bill Tierney, Head Researcher of AgResource Company (Omaha/La Vista)

11:30 a.m. **Preparing for the Veterinary Feed Directive**
Dr. Marilyn Corbin, Zoetis

12:15 p.m. **Lunch featuring the Certified Angus Beef® brand**
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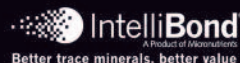
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New Holland partners for education

National Agriculture in the Classroom Organization (AIRC), an organization dedicated to increasing agricultural literacy among students and their teachers, has recently partnered with New Holland Agriculture in its mission to teach the importance of agriculture in the classroom.

"As an advocate for agriculture, New Holland is pleased to sponsor National Agriculture in the Classroom," said Mark Hooper, New Holland's Senior Director of Marketing in North America. "We look forward to working with AIRC to teach students the importance of agriculture and hopefully encourage them to explore careers in the industry." **FL**

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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.

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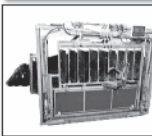
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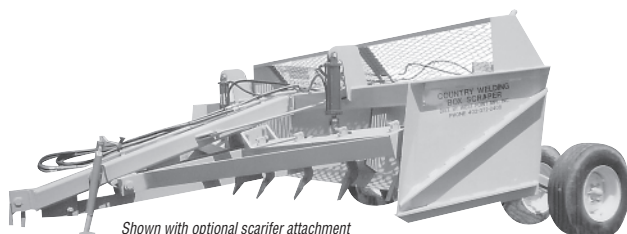


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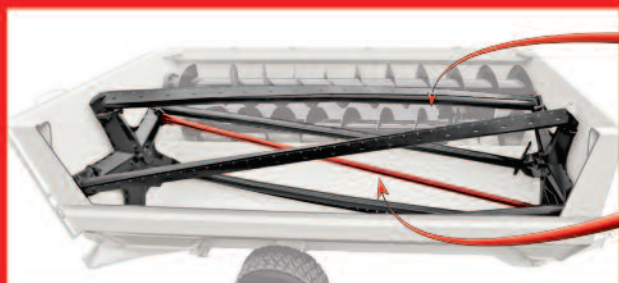
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