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PEST & PARASITE CONTROL ISSUE

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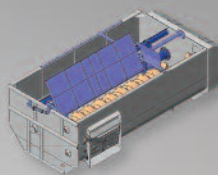
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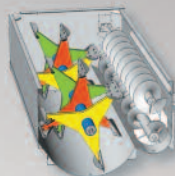
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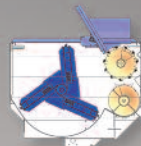
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How to Reposition Gate Open for Additional Cattle?

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Yes, Remote Control Used at Correct Animal Point of Balance

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No, Use Remote Control

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Yes, People in with Cattle

No, People Closing Gate are not at the Point of Balance, but incorrectly behind the animal.

People & Closed Gate are in front of oncoming animals. Must open gate back into waiting animals.

Much Walking or Running

bud box

Yes, People in with Cattle

No, People Closing Gate are not at the Point of Balance, but incorrectly behind the animal.

People & Closed Gate are in front of oncoming animals. Must open gate back into waiting animals.

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Reducing losses

Losses. It's what those of us in the livestock industry try desperately to avoid. And in some cases, we go to great lengths. We hedge cattle. We buy options to cover feed. We hire the very best available to ride pens. We utilize doctoring protocols designed by veterinarians on retainer. We pay nutritionists to balance rations for the most gain, and we spend money on inputs that will give us an edge.

So perhaps our attention to losses makes pest and parasite control such an important topic. Cattlemen have known for years, for decades, that flies, ticks, worms and other parasites reduce production. They cause losses. Maybe those losses aren't evident at first glance. But the lack of attention to parasites will contribute to lost production and efficiency.

For the last few years, *FEED•LOT* magazine has dedicated the June issue to pest and parasite control. In the grand scheme of things, it's one area that advancements in technology has made great strides against — helping reduce losses. The market doesn't have to move a

certain direction. The pen rider doesn't have to spot the sick calf. Quite simply, follow a sound parasite control program, and you will reduce loss. It's a no-brainer.

This issue looks at a variety of aspects of pest and parasite control. First up, we take a look at why it's important to consult with a veterinarian on parasite control. It's not rocket science. My grandfather used fly tags and dewormer when he ranched decades ago. But products have been fine tuned and improved. New technologies exist. Are you taking advantage of every possible one? We have more knowledge about timing and how to get the most for your investment in a parasite control program now than ever before. Cattle are worth a lot of money right now, and it only makes sense to pick up the phone and have a conversation with your veterinarian about parasite control.

Integrated pest management (IPM), or using a multi-prong approach to pest control, is considered one of the best ways to reduce parasites. One aspect of IPM is the use of insect growth regulators and

larvicides. We answer a lot of questions about how those products work, starting on page 8. Page 18 offers insights on the benefits of pour-ons and injectables, and which type of products work best in different situations.

Production losses aren't the only reason to treat for pests and parasites. Some illness are transmitted by flies and ticks, including anaplasmosis. The disease, which attacks the red blood cells, can quickly have members of your herd dropping like flies, pardon the pun. If you've experienced anaplasmosis, you likely won't forget the signs — lethargic cows struggling to get enough oxygen in their bodies to sustain life — and many that don't make it.

Rats are a nuisance, are dirty and a pain, but unless you've tangled with a colony of Norway rats, you may not know just how destructive the nocturnal pests can be. The amount of feed that rats and birds can eat and destroy is amazing. On page 18, we take a look at controlling both rats and birds in livestock settings. It's not as simple as just setting out some rat bait. As one rodent control expert told me, why would a rat want to eat a hot dog (rat bait) when he has a steak buffet (the feedbunk) in front of him?

Lastly, we encourage you to watch where to step when it comes to dung beetles. Those little guys are quite handy when it comes to breaking down manure and carrying it underground to fertilize the soil. You can learn about them on page 20. They are Mother Nature's way of helping control some parasites.

Thanks for taking a few minutes to look at this issue. We hope the information helps you hone in on preventable losses in your business.

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BY TERRI QUECK MATZIE

CONSULT THE PROS TO FIGHT WORMS IN STOCKERS



Those pesky worms. Cattle aren't hungry. They won't eat and gain. The compromise to their immune system leaves them unable to fight off disease and infections.

Internal parasites are costing you profits. Some studies estimate as much as a \$200 per animal impact between those with or without treatment, when improved reproduction and earlier calving are factored in.

A 2005 ISU study, cited by Dr. Michelle Arnold, large ruminant extension veterinarian with the University of Kentucky, further makes the case: "If dewormers were removed [from the production cycle], it would cost an average of \$165.47 more per head to break even due to decreased weaning weight and rate and fewer calves sold to cover the costs of production."

With that kind of money at stake, it's time to call in professional help. "Your veterinarian knows your area, your risks, and your cattle. He's perhaps the most valuable part of your production team," says

Dr. Tony Moravec, Large Animal Veterinarian with Merial. "Your vet is probably the cheapest resource you have. It's hard to estimate the cost of information he gives away in answer to every 'What do you think?' question." But it's always a question worth asking. "At the end of the call you'll have a rational decision and dollars in your production pocket."

That's especially true if you're fighting internal parasites in your stocker operation. While the effects of parasite infestation are felt at nearly every phase of production, it's the stocker phase that may have the most impact on carcass value.

"Even at surprisingly low levels of infection during the stocker phase, parasites can have a significant impact on performance," says a 2014 Iowa State University study headed by ISU Extension and Outreach Beef Field Specialist Chris Clark and Department of Animal Science Assistant Professor and Cow/calf Specialist Patrick Gunn. The study of 43 fall-born

crossbreed beef steers was conducted through the Iowa Beef Center and Armstrong and Neely-Kinyon Research farms, with carcass data collected by the Tri-County Steer Carcass Futurity.

The premise is simple. "They come in heavier, they leave heavier," says Moravec. The animal's health upon feedlot arrival is key.

Indeed, the ISU study bears that out: "Cattle with more significant worm burdens on [feedlot] arrival had lesser body weights throughout the feeding period and tended to have more days on feed." Even with more days on feed, more heavily infected cattle tended to have lesser marbling scores, dressing percentages, KPH, and back fat.

Thus the consensus is clear. Cattle on grass during the stocker phase will require deworming if you want to maximize profits.

"Every bite of grass they take has larvae just waiting to infect them," says Moravec. "The brown stomach worm is the most significant profit-robbing creature in bovine medicine. And they're tricky. They exist in the abomasal wall and erupt when the environment is right. In the north, that's summer time when it's warm. In the South it's fall, when sweltering temps start to drop.

Liver flukes are also profit-robbers, and other worms do their damage as well.

Arnold emphasizes parasite control is a two-part process: "The first is protection of the host from disease and concurrent enhancement of performance. The second goal is to reduce contamination of the pasture by eliminating worm-egg shedding. These goals are accomplished by killing all stages of the parasites inside the cattle."

But infestations can be hard to identify without fecal egg counts, unless you know what to expect.

"Knowing what types of parasites you're dealing with in your geographical area is essential," Moravec says. "That's why your

veterinarian is an invaluable resource.” He also knows the available treatment products. There are short-term, more traditional treatments. And there are new long-term time-release products, like Merial’s LONGRANGE®, that claim effectiveness lasting 100-150 days with a single dose.

The long-term treatments carry over into the feedlot stage of production, eliminating the need for treatment upon arrival. “Cattle come in healthier and hungrier and better able to respond to vaccines for other issues,” says Moravec. Merial studies show cattle treated with their product gained an average of 28 pounds over those without during their 100 days on grass. “Plus immediate deworming treatment on arrival in the feedlot for intestinal worms is not needed.”

According to the ISU study, the performance benefit may end there. It found little difference in performance once animals in the study moved through the feedlot. The edge gained in the stocker phase remained, but was not enhanced by variances in parasite treatment.

That’s all the more reason for a customized approach – one that best suits your operation and your cattle – recommended and monitored by your veterinarian. Vet input is needed, of course, for any treatment requiring a prescription. And the proper dose of most dewormers must be calibrated for animal weight.

Dewormers, like all bovine medicinal products can be costly. No one wants to spend money on treatments that are ineffective, overreaching, or even potentially harmful.

“Every opportunity is different. Everyone wants to do what’s best for, and get the most out of, their cattle,” adds Moravec. “If you can deliver an animal to the feedlot parasite free, it has a chance of producing better at slaughter. And that’s the big thing – more profit at the end of the day.” **FL**



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Options for Fly Control

It helps to have several tools to combat the flies that negatively impact cattle. One strategy that can be effective under certain conditions is the use of insect growth regulator (IGR) hormones. These natural hormones guide development of immature stages of flies and other insects. If normal concentrations in the insects are upset, flies don't progress to adult stage and die as maggots.

Dr. Lee Townsend, Extension Entomologist, University of Kentucky, says several companies make a feed-through product containing a synthetic version of IGR.

"Levels of this juvenile hormone tell the fly maggot whether it should stay a maggot longer or become a pupae and then an adult. Feed-through products containing IGR pass through the animal's digestive tract and end up in manure in small amounts—just enough to disrupt fly development," he explains.

In order to be effective, there must be a certain amount added to manure. "If you are using a mineral supplement for administering this hormone, every animal must eat at least the specified amount, every day. If some animals are under-

consuming the supplement, it won't be as effective for controlling the flies," says Townsend.

Success also depends on the fly situation. "If you have a small acreage with nearby neighbors who do not control their flies effectively, horn flies and face flies can come in from the neighbor's place even if you are getting good control of maggots with a feed-through product on your own cattle. In this situation you need a supplemental fly control strategy such as an oiler or dust bag for cattle to use." A multi-pronged attack usually works best, rather than trying to rely on one control method.

The feed-through insect growth regulators work best for horn flies. In a feedlot, you will still have problems with stable flies, and house flies, because they don't breed in straight manure. "They lay their eggs in spilled feed, moist feed, old rotting hay or straw. If horn flies are the main problem, the feed-through growth regulator can work well. The face fly is a larger maggot and the dose may be too low to be effective. It may give some protection against face flies, but works best for horn fly control." In a pasture situation where horn flies (rather than stable flies) are the biggest problem, with no other herds nearby, an IGR product may be helpful.

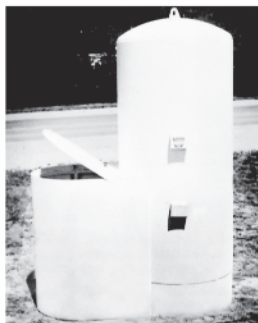
"Methoprene is the most widely used IGR for horn fly control and is available through a number of different brands. You can buy it as a premix in loose mineral or blocks—already mixed in and ready to go—or concentrates (supplements) to blend into feed rations," says Townsend.

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Current USDA research is looking at the possibility of using this same chemical around a feedlot to treat breeding sites (such as rotting organic matter) rather than dosing each animal. "I haven't seen any products yet that are labelled for this use. It is still in the development phase. Maybe in the future it might be an option, to treat areas where stable flies and house flies are breeding," Townsend says.

"Insect growth regulators tend to last several weeks, so you wouldn't have to retreat these sites very often." If you applied these products to breeding sites just before the peak of fly season, you could cut back the population immensely.

"These methoprene granules are already being used in mosquito control--dropped in standing water to halt mosquito development. Thus it's just a matter of showing that

it works in a livestock situation and seeing if a company wants to label it for that particular use," says Townsend.

Since this is a hormone specific to insects, it would not adversely affect other creatures in the environment. "There would be no concern about it affecting fish or mammals. The dose makes a difference, as well. Small, thin-skinned maggots are more susceptible to absorbing that material than some of the other insects such as predators that are also in the manure, feeding on maggots. Thus it is fairly selective," he explains.

Another type of product, often called a larvicide, interferes with chitin, which is one of the main components of the exoskeleton of the insect. "This product interferes

with formation of the external skeleton. After the insect molts it is very soft until that external skeleton hardens. If it can't harden, the insect will dry up and cannot survive." Larvicides help control house flies, stable flies, face flies and horn flies. There are several brands, also used as feed-through products in cattle.

As with any pest control product, IGRs and larvicides work best as part of an integrated pest management program.

FL



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VECTOR ALERT: ANAPLASMOSIS



With cattle producers restocking herds following drought, experts are urging ranchers to be mindful of bovine anaplasmosis, an infectious disease that can be transmitted among cattle by blood.

“Due to sustained drought in Texas, many cattle operations have been downsized or depopulated,” said Dr. Tom Hairgrove, Texas A&M AgriLife Extension Service program coordinator for livestock and food systems in College Station. “With restocking beginning on some operations, carrier cattle from areas where infection is common could be problematic.”

Cattle can become infected with bovine anaplasmosis through transfer of red blood cells.

“Horse flies and deer flies are mechanical carriers and the infected blood on their mouth parts is the only way they can spread the disease,” he explained. “Contaminated ear tagging instruments, needles and surgical instruments used while working cattle also can be a cause of transmission. Thoroughly clean instruments and change needles between cows.”

Biological vectors such as ticks can also be carriers. Teel said two Dermacentor ticks – the winter tick and the American dog tick – may serve as both vectors and reservoirs to sustain the disease. The different types of ticks are active in different times of the year, posing a year-round risk for anaplasmosis transmission.

“The winter tick attacks cattle and other large animals such as deer and horses from October to April,” Dr. Pete Teel, Texas A&M AgriLife Research entomologist said. “They feed as larvae, nymphs and adult ▶

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a different truck and again left for Nebraska. 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 dry probiotic. As of 2/1/15 cattle had exceptional gains and no health problems.



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Anaplasmosis... from previous page

ticks on the same host, but may be groomed off as bloodfed-nymphs which molt to adults and then attach to another host. If the initial host is an infected cow, and the second is not, transmission of the anaplasma agent may occur.

"The American dog tick attacks a wide variety of animals and feeds separately on three hosts, one for larvae,

nymphs and adults, respectively.

"Small, medium and large-sized animals are included, often in a progressive fashion," Teel said. "However, cattle are known to be attacked by nymphs, which fall off when blood-fed to become adult ticks. The adult ticks can then transmit the agent acquired as a nymph to a non-infected cow. Spring and summer are the primary

seasons of activity for the American dog tick."

For ranchers, the potential for the disease is greater when co-mingling non-infected cattle with those that carry the disease. Such an example is when ranchers introduce purchased cattle to those in an existing herd, the purchased cattle could be carriers – on the flip side, introducing non-carrier cattle into a carrier herd could also be problematic," Hairgrove said.

Cattle that survive initial infection become lifetime carriers of the infection and are important to disease epidemiology.

"Red blood cells have a 160-day lifespan and newly developed erythrocytes must be continually infected to maintain persistent infection," Hairgrove said. "Although all ages of cattle can become infected, the disease is usually not apparent in animals less than a year of age. Disease is more prevalent in cattle more than three to four years of age."

There are preventive aids that ranchers can use.

"Ranchers should use strict adherence to sanitation procedures when using needles, surgical instruments, ear taggers, etc.," Hairgrove said.

As an additional preventive measure, strategically feed Tetracycline during the vector season, he said.

The most popular means of anaplasmosis prevention is the use of mineral mixes that contain chlortetracycline (CTC). When fed at a rate of 0.5 mg/lb. of body weight CTC will prevent anaplasmosis infections, according to Dave Sparks, DVM. It is important to note, however, that CTC is added to minerals for several different reasons, including use as a growth promotant for yearlings, and these other uses require different levels of drug in the mineral. Make sure that the product chosen states on the label that it is formulated at a rate for the prevention of anaplasmosis, and gives the specific amount of daily consumption needed to supply that level. The



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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(7): 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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next step is to monitor the herd to make sure that the product is being consumed at the appropriate rate. If not, other products may be necessary or change your management practices in order to correct consumption deficits. It is very possible to have a few cases even when medicated minerals are provided, because some individuals may not consume them.

Starting in December, 2016, minerals that contain CTC can only be obtained through a Veterinary Feed Directive. Thus it is important to involve your veterinarian in an anaplasmosis prevention program.

Overall, Hairgrove stressed there is not a widespread problem with the disease, but ranchers should become educated about bovine anaplasmosis.

"We are not saying the sky is falling, but if you have cattle that are carriers and then you start comingling cattle with those that aren't infected, that's when you

have problems," Hairgrove said.

The signs of the disease include orange coloration of the mucous membranes due to breakdown pigments released from red blood cells that are destroyed. As more red blood cells are destroyed the animals become slow and short of breath. They may exhibit aggressive behavior due to a shortage of oxygen supply to the brain. By the time signs are noticed, the disease is usually far along and you may easily cause the death of the infected animal while trying to bring them in for treatment.

If you suspect an anaplasmosis problem contact your veterinarian who can make a definitive diagnosis and recommend a course of treatment before other animals are exposed. Sick animals are about 10 times as infective as recovered carriers are, so it is important to either move them away from their herd mates, or if this is not possible, move the herd mates away from

them. If infected cows do not abort, their calves can become infected in utero. These calves will likely not show symptoms but remain carriers for life.

It is popularly believed that anaplasmosis only affects mature animals. Recent information out of Kansas State University, however, shows that young animals can be infected and suffer with the disease, although not as severely as older animals. This is due to young animals' ability to produce new red blood cells much faster than adults, Sparks said. In young animals, anaplasmosis can easily be confused with bovine respiratory disease because in both instances the animal has a fever and experiences labored breathing. With anaplasmosis, however, the increased respiratory rate is due to a decreased capacity for the blood to carry oxygen rather than to any lung involvement. The two syndromes can also occur together. **FL**



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A: Manure contains significant Nitrogen which could be a concern if it reaches concentrations in groundwater higher than 10 mg/l as Nitrate (NO_3). Nitrate in drinking water can be a concern for both infants and the elderly. This fact and the presumption that Nitrogen from livestock manure presents widespread potential to convert to Nitrate and migrate into groundwater has been the impetus for a lot of regulatory focus and constraints.

As a student and researcher of the Nitrogen Cycle in lagoons and soils fifty years ago, I learned early on that the chemistry, physics, and biology of Nitrogen transformation and transport constitute an effective "Safety Net" against Nitrate in groundwater below feedlots or in



lagoons. How can that be when seemingly the entire environmental establishment is paranoid about this risk? To understand nature's Nitrate "Safety Net" one needs to understand not only the Nitrogen Cycle but also soil chemistry.

Nitrogen in manure degrades under anaerobic conditions from complex organic Nitrogen to the simple Ammonia form (NH_3). Anaerobic denotes the lack of free Oxygen in the biological stabilization processes which act upon organic Nitrogen in the environment. Microbes convert Ammonia to Nitrate only in the presence of free Oxygen by a process called Nitrification. There

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is no free Oxygen in a feedlot manure pack and/or lagoon because the demand for free Oxygen always exceeds the rate of natural Oxygen replenishment. Therefore Ammonia is normally the terminal form of Nitrogen in the manure pack and/or in a lagoon.

The soil profile under a lagoon or feedlot manure pack has many ion exchange sites which attract and hold onto Ammonia in its cationic form Ammonium (NH_4^+). Since there are many ion exchange sites compared to Ammonia quantities, Ammonia never moves deep into the soil profile. Free Oxygen cannot exist in the soil under a lagoon or a feedlot manure pack, so the ammonia typically stays locked up indefinitely.

In contrast to this "Safety Net" of Ammonia storage, when Nitrogen is applied to land, the soil profile will undergo aerobic conditions at some point in time. It makes no difference if Nitrate forms from organic or inorganic commercial fertilizer. Once in the Nitrate form, Nitrogen is mobile in the soil solute. If Nitrate moves below the root zone before taken up by plants, it may end up in groundwater. If Nitrate-N encounters anaerobic conditions as it moves downward, however, denitrification reduces it to elemental Nitrogen (N_2) and it is released back to the atmosphere.



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 JR, 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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STOP PRODUCTION LOSSES FROM RODENTS & BIRDS

Many pests and parasites cause losses directly to livestock through decreased production and illness, but other pests – like rodents and birds – can also cause substantial losses to livestock operations. The destruction to property can be tremendous, and the feed these pests consume and waste is extraordinary.

A single rat will eat, spoil or damage approximately \$25 worth of grain per year, according to Canadian research. Put in perspective, a colony of 100 rats will consume over 1 ton of feed in a single year. A rat will contaminate 10 times the amount of feed it eats with urine, droppings and hair. It doesn't take long to see that grain losses can really add up. In fact, the USDA estimates more than \$2 billion in feed is destroyed by rodents each year.

Birds can also eat enough grain to impact a feed yard's bottom line. According to J. W. Schroeder of North Dakota State University Extension Service, a starling can eat up to one-half of its weight in livestock feed per day. Schroeder said a

small group of birds can easily consume 100 pounds of grain in a day.

Birds feeding on livestock rations can also disrupt the nutritional value of the feed, says Rick Willis of Bird Gard, LLC. "Birds tend to pick out only the protein, like corn and protein pellets. They don't care about the roughage, so they screw up the balanced ration."

The primary concern recently is with food safety, illness and herd health, Willis says. "Statistically 50% of starlings carry either E. coli, salmonella, encephalitis or listeria in their intestinal tract. Birds have a nasty habit of pooping where they eat. Veterinarians will tell you it's impossible to keep a herd healthy if they are constantly ingesting an incredible load of bacteria. So birds present both a health and financial impact on an operation."

Rodents are also recognized carriers of approximately 45 diseases, including salmonellosis, pasteurellosis, leptospirosis, trichinosis, toxoplasmosis and rabies, according to the Ontario Ministry of Agriculture, Food and Rural Affairs.

Mice and rats can carry disease-causing organisms on their feet, increasing the spread of disease.

Any way you look at it, birds and rodents can make a significant impact on a livestock operation's bottom line. Cary Slagh of Agri-Rodent Control in Amarillo, Texas, knows first hand the destruction these pests can cause. Before working as a rodent control specialist, he was cattle manager at a feedyard. Now he controls rodents and several major feedyards in the Texas panhandle.

Slagh has seen large colonies of Norway rats burrow under feed alleys, destroying the roadway enough to cause damage to feed trucks and other vehicles. He has seen rats chew through wiring in feed mills, bringing the operation to a standstill. He has also seen feed bunks sitting on cinder blocks to hold them up because rats have tunneled under the concrete, destroying the bunk footing.

"Some people don't think you need rodent control. They think you will always have rats at a feed yard. But you don't have to have

Norway rats. With some work, we can get those under control. It doesn't mean it's cheap, and it doesn't mean it's easy. It's labor intensive, but it is possible," Slagh says.

Controlling rodents such as the Norway rat takes knowledge about their habitat, where they are traveling and what they are eating.

"Rats are nocturnal. I go into feed yards at night and camp out. I spotlight rats and write down what I see, then go back the next day to begin the control program," Slagh says. "I've got to find out if they are going to take a type of bait, and for how long. They don't become resistant to it, but they do get bait shy. They get to a point where they quit eating it. God made them a survivor."

Slagh says back in his days of working at a feed yard, he tried the do-it-yourself method of rodent control. "I went to the co-op and bought rat bait. I read the instructions. I did what the package said, and it did nothing."

He explained that getting rats to consume baits can be tricky because of the abundance of available feed. "Why would they want to eat a hot dog (aka bait) when they can eat steak (aka feed yard ration) all of the time?"

Regulations also control what products can be used in sensitive areas, like the feed mill.

Bird control can be achieved with professional products, including items that utilize recordings of specific distress and alarm calls of birds that "warns" the other birds to leave the area. Other control methods include baits that affect the bird's nervous system and cause it to emit a distress call. Additional options are avicide products that contain the chemical DRC-1339, fogs and laser devices, netting, air guns, plus other options.

Willis says his experience in dairies shows milk production goes up at least three to five percent when birds are controlled with Bird Gard. He attributes the increase in production to a balanced ration that is not altered due to bird consumption of certain parts of the

ration, and believes feed yards see a similar production response when the birds are removed.

"Controlling birds is important for cattle comfort, health and proper utilization of feed. There are estimates of 1 million birds in some feed yards. When you start running the numbers and see a tonnage a day of grain loss, it's a big deal. If we do our job right, we are 90-95% effective getting birds out," he says.

Slagh says keeping a feedyard clean and tidy can go a long way to reduce the impact of Norway rats. "Cleanliness and maintenance are essential. Keeping dirt pushed up to the bunk pads and water tank pads makes it harder for rats to tunnel under the concrete," he says. "Make sure water tanks are tight and access plates for plumbing are tight. If there's a way in, they will get in there." **FL**

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"We were filthy with birds. You'd drive up the feed alleys and the sky would be dark. We put Bird Gard up before the bird season and they never came! We are installing Bird Gard in our other feedlots this year."

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INJECTABLE vs. POUR-ON

Which One is Right For Me?

Controlling internal parasites in cattle is serious business. A variety of products are available – in a variety of forms. Choosing the right solution for your operation can be challenging.

Dr. Sonja Swiger, Livestock Veterinary Entomologist with Texas A&M AgriLife Extension, says factors to be weighed are time, labor, cost, and effectiveness.

Key to effectiveness is making sure each animal gets the required dose for its weight. “Your vet will most likely prefer injectables, because the dosage can be closely controlled,” says Swiger. “You can be sure each animal gets exactly what they should.” Under dosing can lead to parasites developing resistance, a problem in years to come.

Injectables require clean syringes and needles. Always



BY TERRI QUECK-MATZIE

withdraw medication via the needle through the rubber stopper on the bottle. Never open the bottle for risk of contamination that can cause infection at the injection site. Injections should be given under the skin of the neck, not into the muscle, and not into the hindquarters.

Injectable treatments are more expensive than pour-on varieties, and will require containing the animal – adding labor to the cost

But they can be more effective due to the controlled dose, and new products claim to require only one injection per year. Depending on the specific product, injectable medications can also control liver flukes as well as common varieties of stomach worms.

Pour on treatments generally require two or more doses per year, and dosage for each individual animal may be inconsistent. However, they are less expensive and require less cattle handling.

Care must be taken not to get medication into the lungs due to risk of pneumonia, and timing with the weather can be critical. “You don’t want to treat animals right before it rains, or the medication will wash off,” cautions Swiger.

She says geographic location is a factor in deworming protocol. More humid climates, like the Southeast and parts of the Midwest, have higher moisture counts favored by parasites. While the dry Southwest creates a less hospitable environment. “There you might be able to get by with only treating once per year,” says Swiger. “In the moist areas, you will probably need to treat at least twice.”

She also says it is good to rotate products to reduce risk of developed resistance.

Reducing pasture contamination is also important to parasite control. High densities of grazing cattle or re-use of the same pastures year after year can result in highly contaminated forage. Timely deworming prior to the grazing season will greatly reduce the subsequent contamination of pastures once cattle are turned out.

Pregnant cows dewormed in the fall can expect to winter better, wean heavier calves, and have higher conception rates the next season. Some products should not be used during the first 45 days of gestation.

Be sure to thoroughly read all product labels, and, as always, check with your veterinarian for the best approach for your location and herd.



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Parasite control online training tools available

Learning how to properly manage pest problems has just gotten easier, thanks to Bayer HealthCare Animal Health.

Bayer has released four new online training tools to help producers learn and educate employees about proper pest management throughout their operations. The tools, consisting of video modules and quizzes, focus on the defense point system, a four-part program to determine the insecticide needs for your operation.

"We saw the need to create simple training tools for producers so they could get the information they need to not only choose the appropriate products for their operation, but also do so safely and effectively," says Bruce Brinkmeyer, product manager for Livestock Insecticides at Bayer.

The modules include the following:

- **Insect Identification Module** – Trains viewers on common livestock insects. It reviews insects' characteristics, habit, environment, mode of attack on animals and impact on production.
- **Defense Points Module** – Discusses the four defense points on producers' operations and the relevance of

different product categories for insect control.

- **Mode of Action Module** – Addresses the three major insecticide mode of action groups and how they function. Also, it discusses resistance among pests and how to rotate products to prevent resistance.
- **Safety Module** – Focuses on the importance of personal protection when using insecticides and how to use and handle products safely.

Producers can access the modules, which are available in English and Spanish, by visiting www.bayerlivestock.com/show.aspx/education/training-tools/defense-point-training-modules. **FL**



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The "Green" Beetle

When looking at pest and parasite control in cattle, there's a bug that is friendly to mankind and livestock – the dung beetle. The economic benefit of dung beetles is difficult to pin-point, but a 2006

study by Losey and Vaughan suggested dung beetle activities were worth close to \$380 million annually in the U.S.

Many old-timers recall watching dung beetles roll ball-shaped pieces



of cattle manure. The beetles work as Mother Nature's recyclers, breaking up pats of manure that are ultimately used to feed their young in underground tunnels. Research has shown that because dung beetles compete with flies and internal cattle parasites for dung material, the beetles serve as biocontrol agents of pest populations.

A 1970 study showed that dung beetles can reduce the number of emerging horn flies by 95 percent, according to a white paper by Dr. Justin G. Fiene. Subsequent studies in the mid-1970s demonstrated reduced nematode infection rates of cattle were 55 to 89% lower in the presence of dung beetles.

In addition to the beetles' work in the dung pat, they have also been shown to promote pasture productivity. As nature's "nitrogen haulers," the beetles have been shown to bury up to 78% of cattle manure applied to the surface of pastures.

This is important because undegraded cattle manure can reduce the carrying capacity of the pasture by smothering the underlying forage, states Fiene, and creates an area around the pat that is not grazed.

Dung beetles fall into three categories: tunnelers, who build tunnels beneath the dung pat; dwellers, who live in the dung pat and lay their eggs; and rollers, beetles who roll a dung ball way from the pat to a tunnel where they lay their eggs. "Dung beetles, particularly the

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tunneler and roller types, can promote pasture productivity by enriching the soil, modifying soil properties and promoting pasture retention,” says Fiene in his white paper.

“Essentially, if the beetles carry the dung down into tunnels in the soil, you get more nitrogen into the soil,” explained Dr. Jerry Woodruff with Boeringer Ingelheim. “The tunnels the beetles dig also provide aeration to the soil. We classify those as below ground benefits.”

A study in Australia showed the burial of manure by dung beetles resulted in a 30% increase in pasture production. This was also associated with increased earthworm populations, water retention and organic matter of the soil. A separate study showed that pastures with beetles have been demonstrated to have improved grass yield, the equivalent to applying 200 pounds per acre of nitrogen fertilizer. Nearly 130% deeper water permeation was noted in pastures with dung beetles than in pasture without.

“When you add it all together, dung beetles have a huge benefit to cattle and livestock operations,” Woodruff said.

However dung beetle populations can be negatively affected by parasiticides that are used to treat internal and external parasites in cattle, according to Fiene. “The active ingredient in the parasiticides gets excreted in cattle manure

where the dung beetle will make contact with it. The impact of parasiticides on dung beetles can vary depending on the formulation and dose, route and frequency of administration, and regional and seasonal differences in climate,” he says.

Woodruff encourages cattlemen to consider the health of the dung beetle when choosing parasite control products. “Some products are more toxic than others when it comes to the dung beetle. Over the years, it crept up on us. We were revolutionizing how we control parasites, but one of the down sides is we have had a negative impact on the dung beetle population.”

Toxicity of parasiticides depends on the formulation and route of administration. Fiene cited that slow release bolus, pour-ons and injectables are generally more toxic to dung beetles, while ear tags are the least toxic. The active ingredients in parasiticides can also

make a difference, Fiene stated, noting that macrocyclic lactones appear to have more of an impact on dung beetles, while maxidectins appear to have less of an effect. Synthetic pyrethroids can also affect dung beetles. However, according to Fiene, limited information exists on the effects of organophosphates, growth regulators and amines. **FL**

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BY LUKE SCHWIETERMAN,
PRESIDENT, SCHWIETERMAN INC.

Boxed beef tops charts

Retail beef price remains strong

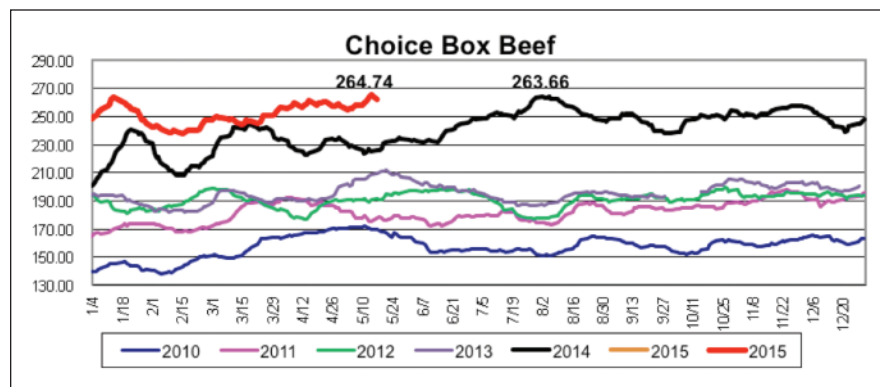
On May 14th, Choice Box Beef made a new record all time high of 264.74. It's hard to be very bearish when the product market is holding up so well. Last year at this time, choice beef was making a spring low and trended higher into August. Can we expect the same this year? Not necessarily. It seems to me that the supply/demand balance is getting tighter as we get into the 2nd quarter and begin the 3rd quarter. The latest price estimates from USDA bears this out. 2nd quarter range is 160-164 and 3rd quarter is 157-167. Reasonable estimates. Really impressive is that retail price has not shown any real weakness and in my opinion probably won't anytime in the near future. The idea that beef would price itself "out of the market" just hasn't happened (yet?).

When retail price trended higher in 1999, once the high was discovered, price pretty much went sideways. Also in 2003 and 2011. The breakout higher in 2013 will probably do the same in my opinion. Food inflation for beef is likely here to stay. Input costs from conception to retail sales will likely continue to keep retail price steady. That means that lower prices in cattle price should be supported but it doesn't mean we won't see large swings in live cattle price. Prudence dictates, in this case, to advise buying put options on all cattle on feed. The risks are simply too large to ignore the potential downside price swings. Strength in feeder cattle price seems apparent into fall. In general, until the market sees that beef production will increase substantially, prices should remain at the higher levels that have occurred. Once the market see beef production increasing,

pressure will be applied to decrease cattle price.

USDA released in May the first look at new crop grain supply and demand balance. All in all, it appears that corn, wheat and beans will be plentiful again this year. However, it is a long time until harvest. Planted acreage and weather can still affect the price enough that it would be advisable to buy corn call options

on dips for at least six months' worth of feed needs even though hand to mouth purchases of cash corn is the program to be on. **FL**



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Are your managers struggling from a DIFFERENCE OF OPINION?

Differences of opinion on priorities, procedures or which pens to sell next are everyday occurrences in many cattle operations. Though this may seem to occur more often in family businesses, non-family operations can experience this as well. Each individual with responsibility comes from a different perspective and will have a unique approach. There are often good reasons for each opinion that is expressed, but in some cases the differences are significant and the positions become entrenched to the extent that the business suffers from a lack of focus and direction. If one person says "Go left" the other automatically says, "Go right!"

In coaching managers, leaders and/or family members that have reached this level of contention, I challenge them to ask the following questions of themselves in an effort to determine the root causes. I usually give them a list of these questions in an e-mail so they can send me the replies ahead of a follow up discussion to review the results. The questions include:

1. What is your personal view of the business—its' Direction, Purpose, Vision, etc.?
2. In what areas do you tend to see eye-to-eye?
3. What are your Personal Values—i.e. what matters to you more than anything else?
4. What are your Priorities? Personal Goals? Professional Objectives?
5. Do you really want to be in this business? Why?
6. Do you feel that you have alternatives to this career path that are more suited to your values, skills and passions?

my way



your way



I review their individual responses prior to the next visit and then discuss individual responses with each person to get clarification. We then meet as a group to collectively understand where we are in agreement in our passions, values, interests and business direction—and where we have stark differences. During this group discussion clear patterns tend to emerge that they failed to realize. Some of the differences can actually be resolved as a result of a clearer understanding of the other person's perspectives and concerns. In other cases they realize that they have deep philosophical differences about how to run a business, their personal values and priorities, and the direction the business should be going. We discuss possible alternatives that will meet their individual objectives, and develop specific action steps for moving forward.

In some cases we negotiate an acceptable strategy to keep the individuals working together in their roles. This is done through specific agreements to follow new divisions

of responsibility, authority, decision-making and control. We may even clarify which employees work under each individual.

In other situations the best solution for everyone is to develop separate pathways for their individual futures. We may develop a list of alternative careers through an assessment of skills, interests and values and then use that to determine the most appropriate field for an individual to seek. We have seen many times where this has resulted in great outcomes for everyone in the business and/or the family because tensions have been reduced and each person is doing something more appropriate for their overall interests.

These are challenging discussions that often involve tough choices by everyone involved, but the end result is a better working environment and a more focused business philosophy. **FL**

Don Tyler is the owner of Tyler & Associates, Clarks Hill, IN. For more information on these and other business or employee management topics, contact him at 765-523-3259 or don@dontyler.com

Producers Give VetGun High Marks

AgriLabs® announced the results of its first VetGun™ customer satisfaction survey aimed at measuring its customers' experiences with and perceptions of VetGun,™ an innovative delivery system to apply insecticides to cattle without any handling.

"Just one year after launching at the 2014 National Cattleman's Beef Association (NCBA) trade show in Nashville, we couldn't be

more excited about the response from our marketing efforts and how producers have embraced the VetGun," said Steve Schram, president and CEO, AgriLabs. "We've heard remarkable feedback from our launch efforts across the Gulf states and Midwest where producers repeatedly acknowledged the advantages of no stress handling of their cattle and ease of application." **FL**

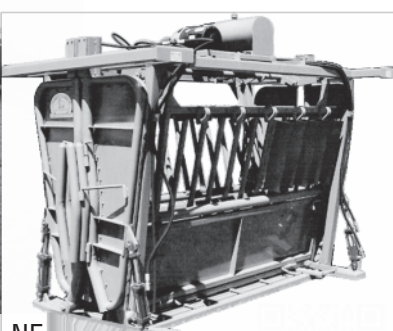
Humane bird control options

Bird B Gone, the leader in bird-control products for commercial, industrial and residential applications now offers a complete line of bird control solutions for today's grain storage and manufacturing facilities. Pest birds create a number of problems for these facilities. Besides damaging buildings, machinery and vehicles, birds often contaminate grain with diseases that can lead to respiratory problems and other illnesses.

While it's often tempting to use lethal means to eliminate birds (shoot, trap or poison), most birds (except pigeons, house sparrows and starlings) are protected by federal and state laws. Property owners/facilities managers may NOT trap, kill or possess protected species without federal and state permits. Regulatory officials are serious about enforcing these laws and will impose high fines for violations. Bird B Gone solutions are specifically designed to provide humane bird control in and around grain storage and manufacturing facilities. **FL**

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House Ag Committee Passes COOL Repeal Legislation

The House Agriculture Committee approved legislation that would repeal Country of Origin Labeling (H.R. 2393) by a bi-partisan vote of 38 to 6. National Cattlemen's Beef Association President of Chugwater, Wyoming, cattleman Philip Ellis applauded today's action. "I thank Chairman Conaway (R-Texas), Rep. Costa (D-Calif.), and their colleagues for the swift introduction of this legislation and today's passage," said Ellis. "Following the WTO's ruling Monday, the next step for Canada and Mexico is retaliation, which could take place as early as this summer. The time to negotiate and consider alternatives is long past; COOL has been around in one form or another for over a decade without benefit, and now is time to act to repeal this broken legislation. We ask the full House to take up this legislation as soon as possible, as it is the only way to avoid retaliation."

Introduced in the 2002 Farm Bill and implemented in 2008, COOL has been detrimental to the U.S. livestock industry and without benefit to U.S. consumers. **FL**

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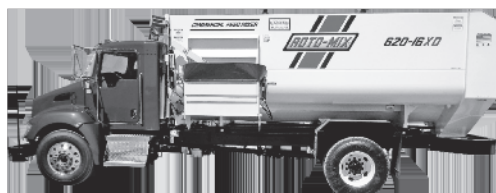


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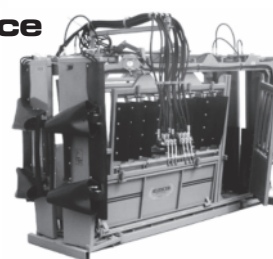


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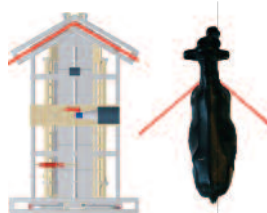


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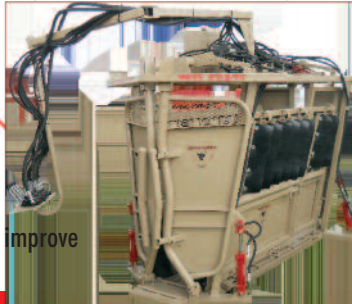
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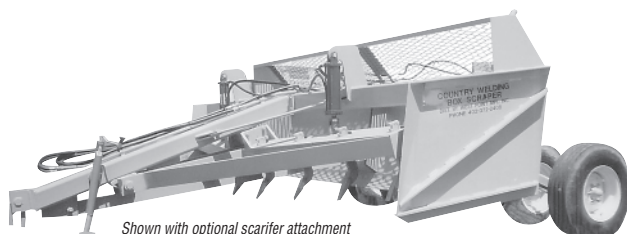


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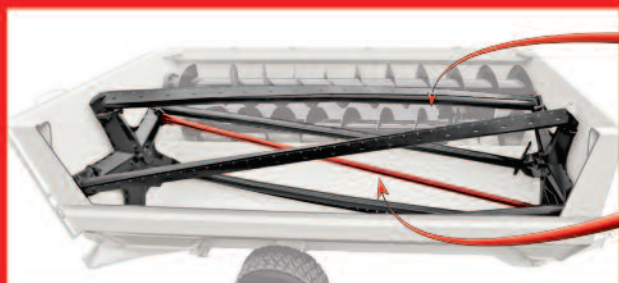
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