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FEEDER INFORMATION HIGHLIGHTS

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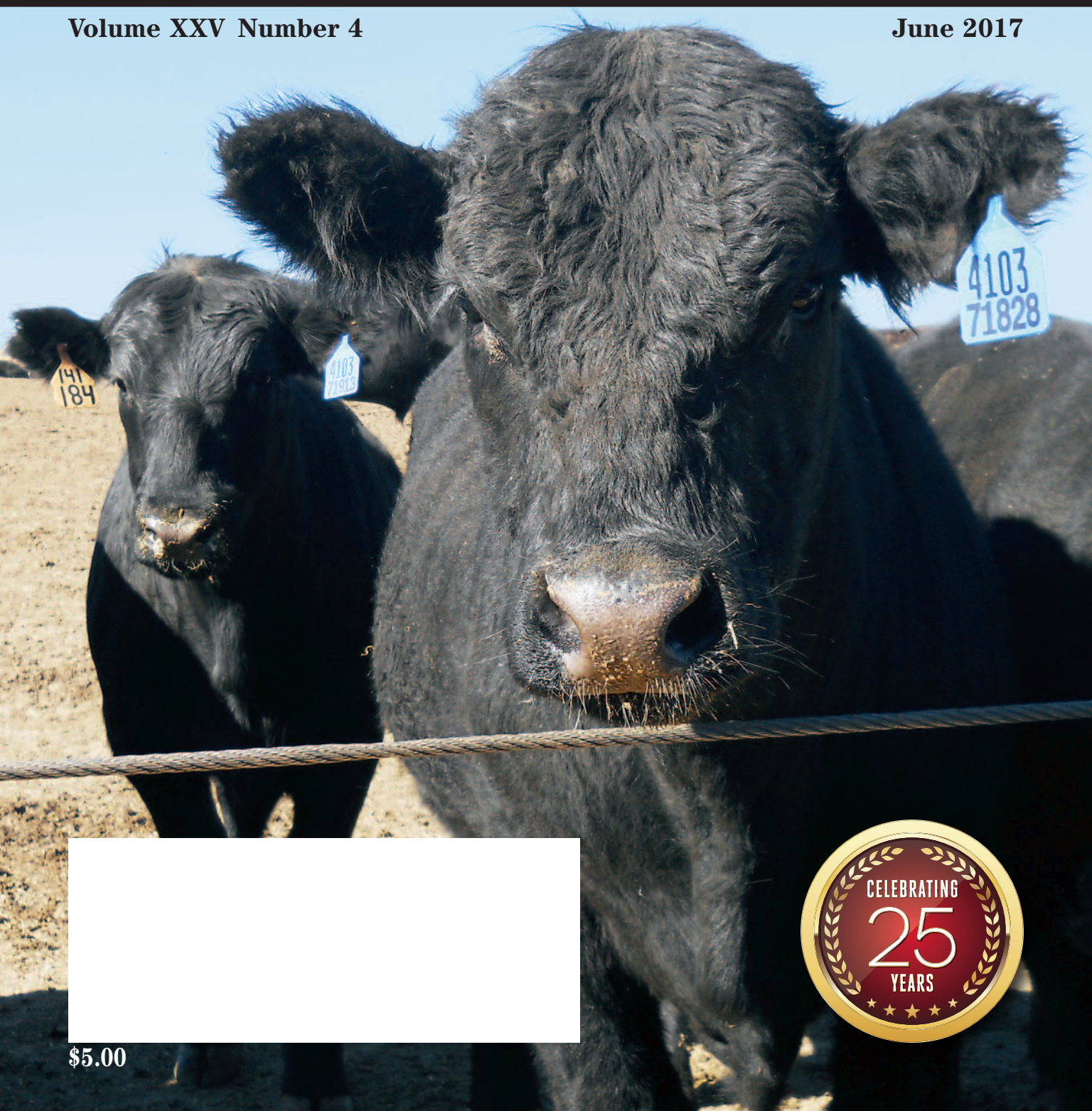

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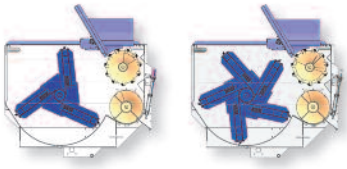

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BY JILL J. DUNKEL

我爱美国牛肉

Trade: When two parties exchange money or goods to derive mutual benefit.

In the last few months, trade has been a popular topic in mainstream media. And more recently, it's been a huge topic in the beef industry. Just days before *FEED•LOT* went to press it was announced that China would begin importing U.S. beef by mid-summer. I haven't seen all the details, and by the very nature of trade, we will be importing more Chinese goods. But with the growth of the middle class in China, this news is a boon for beef producers.

Craig Uden, NCBA president said that China's middle class is larger than the entire U.S. population and those customers are purchasing record amounts of protein. The country already imports a considerable amount of beef – largely from Australia.

"China is becoming one of the greatest importers of beef in the world," Uden said, noting that trade accounts for over $300 per head of the value of beef. As international demand continues to grow, so will its importance of the beef market.

Kent Bacus, director of international trade and market access for NCBA, said the breakthrough is 13 years in the making. China represents one-fifth of the world's population, thus the Chinese market includes 1.4 billion new customers for U.S. beef.

"These people want meat, and we want U.S. beef to be part of those options. Quite frankly, considering the buying power that China represents, this could be a very significant development for U.S. beef sales. And this is exactly what we need with volatile beef prices."

The move is especially welcome with the uncertainty of NAFTA and the withdrawl from the TPP (Trans Pacific Partnership).

In a joint letter from NCBA and their cattle industry partners in Canada and Mexico, the organizations urged President Trump and the leaders of Canada and Mexico to "recognize that the terms of the agreement affecting cattle producers are strongly supported as they currently exist and should not be altered."

They also spoke out against mandatory country-of-origin labeling, saying "MCOOL failed to deliver its proponents' promise to increase customer demand or consumer confidence. Instead it created massive disruptions in live cattle trade that hurt beef producers across North America."

The future of beef trade is unclear. If the pro-beef areas of NAFTA are not jeopardized and China fulfills it's promise to import U.S. beef, the impact of both could be a boon for cattle producers. March beef exports to Japan increased 41 percent in volume, and exports to South Korea posted a very strong first quarter, with volume up 23 percent.

However we must proceed with caution. Other proteins also have their eye on exports. And if things change in the trade agreements, a glutton of beef could be stuck in the U.S. market. Pulling back production is not a quick process in our industry.

My hope is we see this phrase in China: 我爱美国牛肉
Translation: ***I love American beef.***

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Implant Management

BY JILL J. DUNKEL

A few management adjustments could improve the success of your implant program

Implanting cattle is one of the most efficient ways to increase average daily gain. However, if the implant is not placed correctly, or if a pellet is crushed or other factors limit the absorption of the implant, the increased performance simply goes out the window. Correct implanting techniques can make the difference in a 20 to 30% increase in gain versus little to no gain coupled with added stress on the animal.

"Our team spends a lot of time doing implant checks for customers and conducting training," explained Marshall Streeter, Ph.D., Senior Technical Services Manager, Merck Animal Health. "We look at proper implanting as a four-step process that starts earlier than most people think. Cattle management is an important part of that process," he said.

Weather can be a factor, Dr. Streeter explained, particularly in the summer with hot, humid days. Working the pen early in the morning before it gets hot is one important management strategy. For feed yard cattle being reimplanted, the goal is not to knock the pen off feed.

"It's a good idea for a feed yard to work with their nutritionists and cattle department on how to manage those cattle prior to reimplant. There's really not a hard and fast set of rules, but in terms of lost intake around reimplant time, you might need to reduce feed a few days beforehand to try and manage the issue," he said.

Another management technique that can help is moving cattle through the pen and processing area relatively slowly to minimize the risk of injury both in the processing area and squeeze chute, Dr. Streeter noted.

Cleanliness is also a management practice that is important. "Prior to implanting, implants should be kept away from dirt. If you've removed the implant from the packaging, store it in a clean box or a rubber tote to keep dust and dirt away from the implants," Dr. Streeter explained. Implant trays with rollers or sponges should be used and prepped with a sanitary solution diluted with water according to directions. Make sure the implant gun is ready and operational and extra needles are available.

In terms of placing the implant, the middle third of the ear is the optimal place. However, Dr. Streeter said it's not uncommon for an ear tag or ear notch to be relatively close to that location.

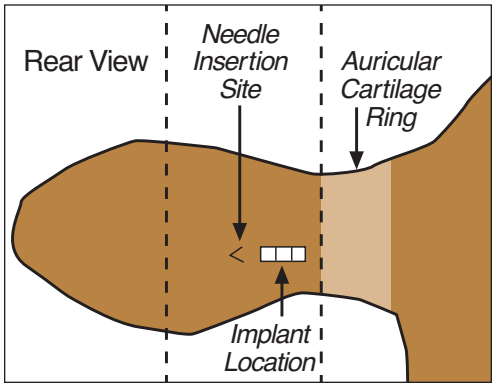
"There could be scar tissue around the area, so the implant should be placed at least one finger width away from the scar tissue. The blood flow pattern may have changed around the scar tissue and it may not absorb the implant properly. It's always something to consider."

A clean ear is also important. Scrape off dried material with a clean brush that has been soaked in chlorhexidine or a disinfecting solution. Then use the backside of the brush to scrape off the extra moisture. Taking the extra step to dry the ear is ideal, Dr. Streeter said.

"Many times those things don't always happen. Crews are in a hurry. But you are running a higher risk of infection if you don't take those steps. And you're less likely to deal with an abscess down the road."

Another step to minimize infection is disinfecting the implant needle between each animal.

"If you get a skip (the needle doesn't go directly under the skin) you need to disinfect the needle again because you can pick up bacteria on the tip of the needle,"



according to Dr. Streeter.

As processing continues throughout the day, notice changes in the color of the chlorhexidine solution. The product starts as a turquoise color but is no longer active when it turns green. Streeter encouraged changing the solution with every pen, and if it changes color mid-pen, change it then. A cloudy solution also means the solution is losing its disinfecting qualities.

Once the needle is inserted, make sure it is in the ear all the way to the hub of the implant gun.

"A challenge we see is some individuals do not push the implant needle into the ear far enough. This increases the potential for one or more pellets to fall out leaving a partial implant in the ear. An important quality control check that the person implanting should conduct is to run ones thumb over the implant to make sure all pellets are present and straight then pinch the incision to help it close."

A processing crew is often faced with several hundred head to work in a day, and they can be under pressure to work faster. However, Dr. Streeter said, as in other things in life we may need to slow down to go fast. It is important for management to reinforce how important proper processing is.

"In the case of an improperly placed implant or one that comes out, sometimes people view the loss as just the cost of the implant," he said. "But if it's a steer, you're looking at 100 pounds of live weight and 80 pounds of carcass weight that you're giving up on that individual. That's the big loss."

It's up to management to focus on quality assurance and explain to the processing crew the importance of their job. "As one of our guys said, the processing crew is not the most glamorous job in the feed yard, but it's one of the most important." FL

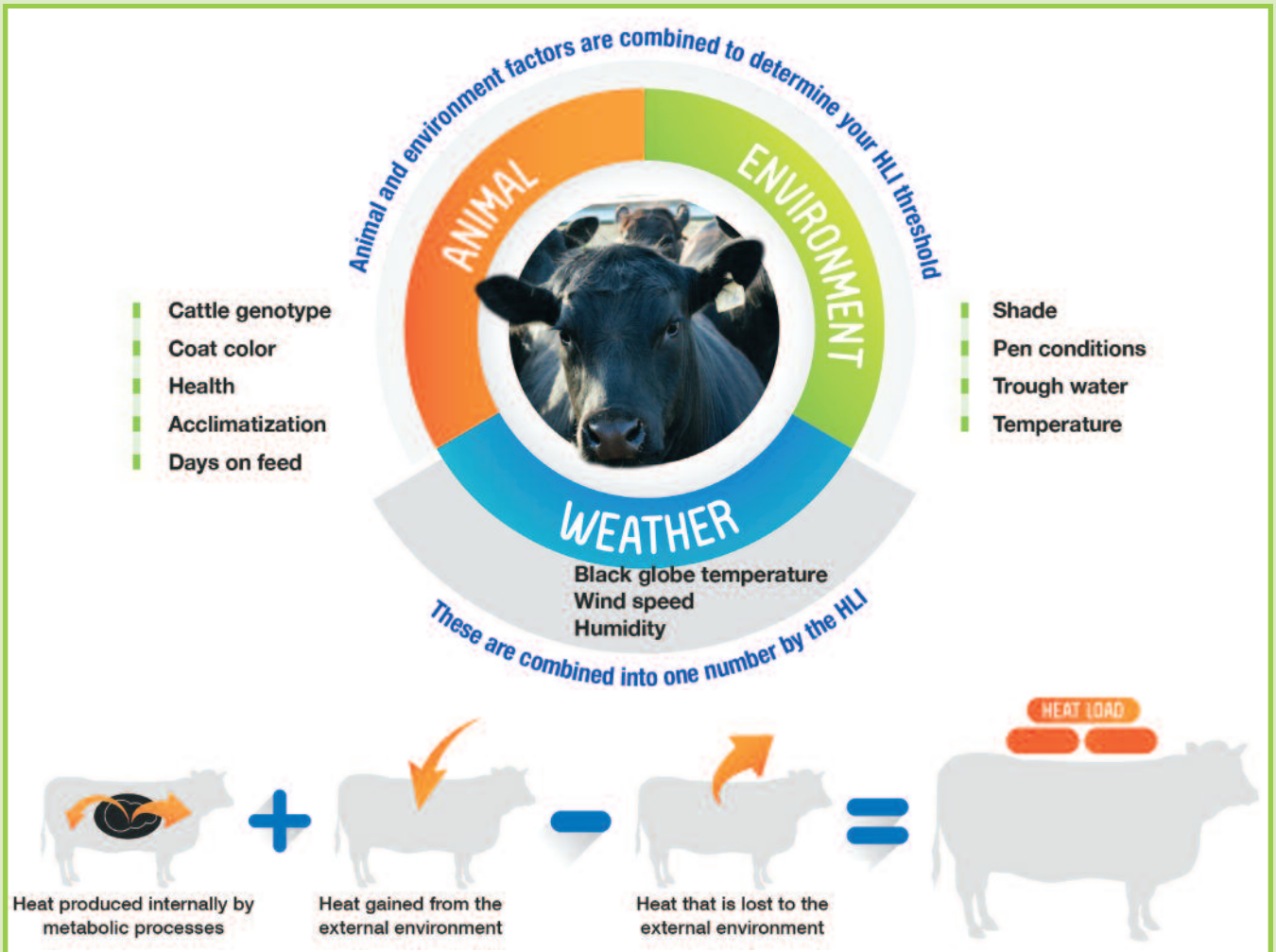
In the next issue of FEED•LOT, we will look at the importance of implant checks related to quality assurance.

BY SHANNA KIPNIS, *KESTREL AGRICULTURE BUSINESS DEVELOPMENT*
AND DR. DAN THOMSON, PHD, DVM, *KANSAS STATE UNIVERSITY, FOUNDER OF THE BEEF CATTLE INSTITUTE*

Measuring HEAT STRESS in Feedlot Cattle

For those who make a living in the cattle industry, it's well-known that heat stress is a major problem. It can have a serious impact on cattle breeding efficiency, feed intake, weight gains, and carcass quality—directly hitting your bottom line. On the other hand, interventions to keep your cattle safe and productive during heat events cost time, work, and money. The answer is monitoring conditions for heat stress and implementing the right strategies at the right time to minimize the impact on cattle to prevent injury, illness, and death.

With summer right around the corner, now is the time to develop your heat abatement plan. It doesn't take a significant heat wave to cause harm to herd health. Depending on



Losses can develop in feedlot cattle when a combination of local environmental conditions and animal factors exceed the animal's ability to dissipate body heat.

The beef producer already knows the detrimental and costly impact of heat stress on his stock. Unfortunately, there is not a one size fits all management plan for cattle heat stress abatement. A variety of options are utilized today. However, each of these practices ALSO cost money, so your goal is to implement management practices every time they are needed, but ONLY when they are needed. Implementing a measurement-based heat stress management plan helps you to understand when and where to take action in order to maximize herd performance and profits. With the summer season bringing the threat of heat stress, take advantage of the best possible measurements to provide the vital information required to make informed, data-backed decisions to better manage the overall health, productivity, and profit of site operations.

the stock, mild heat stress can begin in fair weather when temperatures reach the mid 70 degrees. Local forecasts can give you an idea of what type of weather to expect, but cannot give you an accurate representation of what your cattle will experience in the feedlot. Studies have shown that cattle areas and individual pens pose "significant microclimatic variations" compared to the general environment of the farm. This is why even the data from a weather station installed on your property, while helpful, may not reflect the real conditions of your barn, pasture, and individual pens. Weather channel forecasts and reports from local news websites unfortunately provide an incomplete picture for producers who must make time and budget-sensitive decisions based on the real, onsite conditions. To anticipate when detrimental heat stress conditions will occur, it's best to actively monitor environmental conditions right where cattle are contained.

Which measurements should you be paying attention to?

Three measurement schemes have been developed and recommended for use within the cattle industry to provide cattle-specific guidance for when heat stress management plans need to be implemented: Temperature-Humidity Index ("THI"), Heat Load Index ("HLI") and Accumulated Heat Load Units ("AHLU").

Dr. Dan Thomson, Phd, DVM & Founder of the Beef Cattle Institute at Kansas State University, discusses why these measurements can best help determine heat stress level and what actions to take to protect your herd:

Why do you recommend US beef producers use HLI and AHLU as measurements for monitoring heat stress in cattle?

HLI and AHLU are more accurate measures of true heat stress in cattle than the human heat stress index. HLI includes the solar radiation which is very important for dark-hided cattle. AHLU also takes into account the magnitude and length of the environmental heat stress event. The higher the magnitude and the longer the heat stress event lasts, the more heat load the cattle accumulate. This means that cattle need longer time to recover from the heat stress event before normal cattle activities in the processing barns can resume.

It's pretty well understood that heat stress results in reduced weight gain and possible death.

What are the other compelling reasons a producer should manage heat effects?

The most catastrophic results of heat stress are death as well as stress to cattle when they are handled for processing, reimplanting and relocating. Heat stress will affect the largest animals the most, so these are the animals that need care and consideration first in a heat stress event. Heat stress decreases intakes which leads to decreased weight gain as well as feed losses. It is also important to remember that cattle cool their bodies through evaporative cooling during respiration. Cattle suffering from BRD (bovine respiratory disease) will have less ability to cool their bodies during heat stress events.

What are the most effective mitigation measures available to beef producers to minimize heat stress conditions?

The most effective and surest preventative of extreme heat stress, especially for black-hided cattle, is some sort of shade structure. We often see the effectiveness of simple shade in pasture cattle even in extremely hot humid conditions, if cattle can find shade during the hottest part of the afternoon, they will then be back out grazing after the sun begins to set and heat begins to abate. Shades can be sturdy, permanent structures; mobile, portable structures; or temporary structures using a frame with cloth overhead. Costs will tend to follow the permanence of the design. Also, the shade portion of the structure does not need to be solid; partial shade is better than no shade. The structure should provide twenty square feet of shade area per animal, and it is best if the structure can be oriented lengthwise north and south so that the shaded area moves from west to east, which will help keep the ground dry and prevent mud holes from developing under the shade structure.

Another preventive measure is light-colored bedding. Recent K-State research suggests that during high heat days, especially days with little or no cloud cover, the surface temperature of chopped hay or straw is 25°F cooler than that of the bare dirt floor and provides a cooler place for cattle to lay down and rest—and resting improves performance.

Cutting down weeds around the pens to allow air flow is important. Also, building mounds in the pens for animals to go up and catch a breeze can be beneficial.

Lastly, water, water, and more water for the cattle. Get extra water tanks for larger cattle or even use the feed bunk for water rather than feed to get the cattle more access.

What are some of the best practices to follow when using THI, HLI, and AHLU measurements to monitor cattle heat stress?

1. Map the pens with larger cattle housed in them to know which pens to be alerted to when HLI and AHLU are increased to a dangerous level.
2. Track HLI and AHLU to know where and when to implement heat management strategies such as increased shade, increased water, changes in feed, and manure removal. Doing so reduces the risks of experiencing decreased performance.
3. Know when cattle are accumulating heat load and do not move cattle for processing, shipping, or reimplanting during those times until they have recovered. Using this information is particularly critical to preventing Fatigued Cattle Syndrome at the time of shipping to slaughter.

For more information, please visit www.cattleheatstress.com. FL

Implant + Fly Control = Economic Sense

A Kansas State University study has shown that cattle producers can improve their profits and add another layer of safety for their herds by fly control in combination with growth implants.

Beef cattle specialist Dale Blasi said using the two technologies increases weight gain and reduces horn flies, a nuisance that costs the U.S livestock industry approximately $1 billion in losses each year, according to a recent study from Oklahoma State University.

The Kansas State University study showed that when using the two technologies separately in stocker cattle grazing for 90 days, those animals increased live weight gain by 15 or 16 pounds.

But when the treatments were used together, "the relative gains were impressive," Blasi said.

"We were picking up 30 or 40 pounds of live animal gain relative to doing one or the other alone."

Though the actual benefit to producers' profits will vary, Blasi said the added value could be $25-$35. "And after you remove the cost of the products, you're still several dollars ahead."

The university's work was a follow-up to an earlier study in which researchers looked at the effectiveness of ear tags in reducing horn flies, which slow cattle's growth due the stress and resulting energy loss they cause. The Kansas State study showed that cattle with one ear tag gain an additional nine pounds of live weight, and those with two ear tags gained 12 pounds.

A separate study tested the use of growth implants in combination with an injectable dewormer called LongRange, a product that is not labeled presently to be a deterrent to flies. LongRange is labeled for the treatment of internal and external parasites of cattle on pasture for up to 150 days.

In the early days of the product release, Blasi conducted a study that was published in the 2015 Kansas State Cattlemen's Day looking at the weight gain of stocker cattle on grass that were treated with the injectable dewormer. At that time, the researchers noted a reduced number of flies on the cattle treated with product.

In fact, the injectable dewormer kept horn fly numbers significantly below the economic threshold of 100 flies per side of the animal, where the control and another deworming product did not.

With that in mind, Blasi decided to look specifically at fly numbers of cattle treated with the injectable dewormer in his most recent study, combining the product with a growth implant.

Blasi and his Oklahoma State University colleagues used a digital camera and software to count horn flies in the pastures where cattle were grazing.

"What we observed was a significant decline in the number of flies compared to another product," he said. "There was a dramatic difference."

The product, combined with a growth implant, provided substantial weight gain in the study. "If you stack an implant on top of the use of this compound, there's a nice synergy between the two. They work hand and glove."

The injectable dewormer provided about 10 weeks of control for horn flies, and a single ear tag provided about eight weeks of protection.

Although an ear tag is less expensive, Blasi said it's important to look at your marketing plan for the cattle to determine what makes the most sense.

"You need to look at the payout and your scenario. If you have cattle turned out through September and October, and you put in a fly tag in May, it's going to be running out at the end of grazing. You'll need to think about other ways to augment late season fly control to knock down the population," he explained. "However, LongRange is not approved for use in cattle managed in feedlot or drylot settings. Rather, it's intended for use on pasture environments. So you need to consider your plans with the cattle." FL

BY CATTLEMEN *FOR* CATTLEMEN

Jaylor's Horizontal Quad Auger TMR Mixers are designed by cattlemen for cattlemen. We've built our reputation on decades of manufacturing vertical TMR mixers from 50cu.ft. to 1250cu.ft with a focus on nutrition and innovative, simple designs. The recent acquisition of MMI International by Jaylor has resulted in a powerful union. Over its 60-year history, MMI has become renowned for building rugged and reliable products that last. Together we provide customers with simple equipment that incorporates the latest innovations, is built to high quality standards, and can promise top tier customer service.

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BY JILL J. DUNKEL

PESKY PROCRASTINATION

It's not too late to address horn flies with an insect growth regulator.

In some parts of the country, fly season is in full swing. Other areas may be just experiencing the first flies thanks to a late winter blast from Mother Nature at the end of April. Regardless, horn flies are extremely detrimental to pasture weight gain, costing the industry more than $1 billion annually. Various fly control methods can keep the horn fly population below the economic threshold of 100 flies per side of the animal. Some require gathering cattle, while other options like feeding an IGR (insect growth regulator) can provide pest control in a pasture setting.

Ideally, IGRs should be placed in the pasture starting 30 days prior to the last frost to get ahead of the horn fly population. But even in the midst of fly season it's not too late to implement the technology. An insect growth regulator moves through a calf's digestive system and works in cattle manure where horn flies lay their eggs and prevents larvae from developing into breeding, biting adult flies.

According to Casey White, Director of Product Development for Central Life Sciences, Altosid IGR is available in several forms including loose mineral, tubs and blocks, as well as liquid feed on a custom basis.

White said although starting an IGR program in June will initially leave producers with an existing fly population, it can help get a handle on the rest of the summer fly season. "While the IGR will not offer initial control of the adult flies, it will prevent new flies from emerging, essentially knocking out the population in three to four weeks," he explained. "After two or three days, it will be in all of the manure being deposited by the animals consuming it. But it's important to control the flies that can still emerge from untreated manure deposited before that."

To help combat adult horn flies, White recommended starting an IGR and giving the product about three days to a week to get in the manure. That gives the developing flies time to emerge. Then a producer can spray a non persistent adulticide to knock down the adult fly population. After that, the IGR will continue to control the fly population for the remainder of the fly season.

"A combination program is good if you are starting the IGR after the fly season has begun," White said. "But relying just on spraying means producers must spray every few weeks, depending on the fly pressure. If you start the IGR and then spray a week out, you can expect long term control as long as the IGR products are consumed by the cattle."

White recommended continuing the IGR until 30 days after the first frost in the fall.

"In some areas like Texas, we may get a first frost in the middle of October, but then it might warm up and horn flies may continue to lay eggs and develop all the way through mid-November. If you stop feeding right after the frost, there would be a month of adult horn flies laying eggs and those larvae would develop in untreated manure and result in overwintering pupae. These overwintering pupae would be the first generation of horn flies next spring," he said.

By continuing to feed the IGR for another 30 days, the IGR will impact the adult flies that continue to lay eggs after the first frost. This decreases the number of overwintering pupae which will reduce the initial fly burden next spring.

Although some flies will remain, research shows properly consumed Altosid IGR will keep the fly population below the economic threshold. A study in 2011 in northeast Oklahoma demonstrated a 15.8% increase in average daily gains compared to cattle that went untreated. White said even if a producer is "behind" on fly control, starting mid-season can make an impact on the fly population and on the average daily gain of the cattle for this season and give you a head start the following year.

"It's not too late to see a benefit," he said. FL

Pinkeye: Can You Afford It?

A complete management approach aids in reducing infections.

Flies are a pain, sometimes literally. Large numbers of biting flies can result in reduced weight gain and added stress on cattle. But flies can also be a disease vector, spreading bacteria from one animal to another. Such is the case with pinkeye, a disease that costs the industry more than $150 million annually.

With younger animals more susceptible to pinkeye, it is often seen as a cow-calf problem. Older animals tend to develop immunity to the bacteria that cause pinkeye. Virginia Cooperative Extension reported calves diagnosed with pinkeye weighed 19.6 pounds less at weaning than healthy calves, while another study showed the loss to pinkeye 36 to 40 pounds at weaning. Also, it is estimated that a calf that is blind will gain 60 pounds less by weaning time. Pinkeye is the most common condition affecting breeding age beef heifers, and the second most common disease of nursing calves greater than three weeks old, eclipsed by scours as the most common.

The Bugs

Pinkeye is a general term for Infectious Bovine Keratoconjunctivitis, or IBK. For decades, the majority of pinkeye was caused by *Moraxella bovis*. Other infectious organisms include *Moraxella branhamella ovis* (*Moraxella bovoculi*) and more recently *Mycoplasma bovis*.

According to a published veterinary article by John Angelos, DVM, PhD, University of California, Davis, bacteria colonization can occur in the absence of clinical disease and can be cultured from the eyes of healthy cattle.

Plant awns, face flies, ultraviolet radiation from bright sunlight, dry and dusty environmental conditions and shipping stress are all risk factors associated with IBK in cattle. Additional risk factors that should be considered when making herd management decisions include trace mineral deficiencies such as selenium and copper deficiency. Flies can also serve as vectors.

Good management techniques can reduce the opportunity for a pinkeye outbreak. Those measures include a vaccination program, sound fly control and reducing the opportunity for corneal abrasion

or injury.

Peggy Thompson, DVM, Professional Services Veterinarian for Boehringer Ingelheim said the ideal time to vaccinate calves is prior to the fly season so that calves have time to develop immunity from the vaccine. Producers should consider a pinkeye vaccine when they are turning cattle out on grass at two to three months of age.

Thompson said as far as vaccinating cows, she recommends an as-needed basis. Although cattle of all ages can be affected by IBK, most cases occur in cattle between two and 12 months. But if a producer is experiencing an outbreak, vaccinating cows can help slow the spread of the infection and reduce the duration of the disease.

Although it is not as common in older cattle, the disease can be found in stockers and even cows and bulls, especially if there are other factors that irritate the eye.

"Pinkeye is an infectious disease, but I look at it differently than some other vets," said Robin Falkner, DVM, Technical Services Veterinarian, Zoetis. "I try not to manage it as much as an infectious disease, but a secondary disease to corneal insults like the eye getting scratched, UV radiation, blistering, etc. When that happens, pathogens invade the damaged corneal tissue. Generally, in the absence of a corneal irritant, pinkeye is a minor infection for older animals."

If you can limit the opportunity for corneal abrasions, you can reduce the opportunity for pinkeye, Falkner said. Look for situations that can damage the eye, such as cattle grazing deep into the sides of round bales, tall weeds, or excessive heat or flies causing cattle to bunch and swat each other with their tails.

Even though it's not as prevalent in older cattle, it can be very costly.

In feeder cattle, managing pinkeye is about managing your marketing window, he explained. "That's when it can decimate ►

Pinkeye... *from previous page*

you the worst, at the time of marketing. Both calves and yearlings graze summer grass and are often marketed in the fall when pinkeye instances are high. I need to control the risk to my marketing."

If we take a calf to the sale with pinkeye, it's going to get a big discount, he said. But it can hit an operator on a bigger scale.

"What if I'm on a marketing contract to sell 500 yearlings, and I have a pinkeye outbreak just before I ship the cattle? So instead of sending five loads, I've only got 3½ loads of marketable cattle. The buyer can walk away from that contract if I can't fill it."

Vaccine Options

Federally licensed vaccines are available from multiple pharmaceutical companies and protect against the most common bacteria known to cause pinkeye, Moraxella bovis. Label claims vary by product and range from "aid in reduction in disease" to "aid in the prevention and control."

Thompson explained it's important for a producer to read the label on the vaccine. Some pinkeye products on the market require a second shot. Without the booster, the vaccine is not as effective.

"We have a single dose pinkeye vaccine that is combined with blackleg called Alpha 7 MB1," she said, "which eliminates the need for an additional shot at branding and does not require a booster."

In addition to both brand name and generic products for producers to choose from, multiple modes of administration are also available.

An implant-style, single dose vaccine that is administered at the base of the ear or subcutaneously in the neck is a newer technology known as Solidbac Pinkeye IR/PR from Zoetis. The implant contains two small pellets, an Immediate Release (IR) pellet, offering initial protection, and a Programmed Release (PR) pellet, which serves as a second dose within one administration.

Some veterinarians recommend an autogenous vaccine made specifically for the bacteria in a given herd. According to Jessica Newberry, DVM, Technical Services Veterinarian, with Phibro, 52% of eye swabs sent to their lab from producers experiencing IBK in 2015 and 2016 had more than one bacteria present.

"We study a lot of samples and run further diagnostics, and direct producers to work with their veterinarians to choose the strains to give the best protection in the form of an autogenous vaccine," Newberry said.

An autogenous vaccine can be developed in four to six weeks after isolates have been collected.

"It's a tailor made solution for each producer. We also work with vets to bring several producers together under the nonadjacent use regulations set forth by the USDA. If you can establish an epidemiological link between farms then you can get permission to use on multiple farms for broad coverage," Newberry explained. "If you have a certain bacteria on your place and share a fence line, you can bet your neighbor will have that bacteria as well."

According to the USDA, licensed autogenous vaccines are only prepared for use by or under the direction of a veterinarian or client with a valid VCPR (veterinary client patient relationship.) Autogenous products are not subject to the same licensing requirements and proof of efficacy as federally licensed vaccines.

Regardless of the type of vaccine chosen, a complete approach will improve the success of limiting a pinkeye outbreak in a herd.

"Just a fly tag won't do it. Just the pinkeye vaccine doesn't do it," Falkner said. "It's a multi-bacterial disease, and we have to put systems together to mitigate the risk of those diseases occurring. That means utilizing a sound fly control program, weed management, shade management and vaccinations." FL

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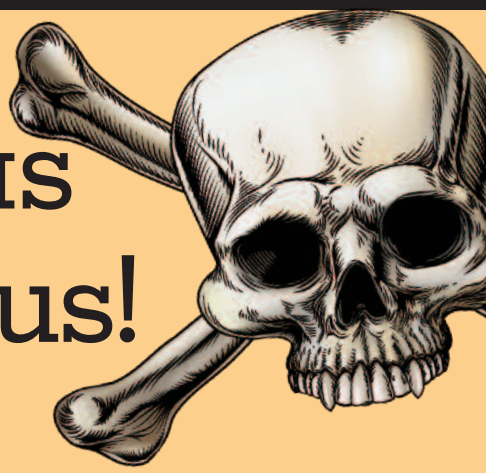
MERIAL

BY DON TYLER

I Didn't Know It Was THAT Dangerous!



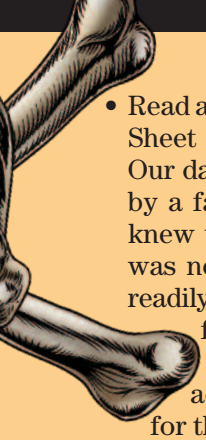
I recently interviewed a dairyman that had barely survived a life-threatening reaction to a cattle drug. He was in a hurry to get some heifers treated and when going over a gate, accidentally stuck a syringe filled with the drug in his leg, just above the knee. He was unconscious before he hit the ground and laid in snow and mud for around four hours before waking up just enough to call for help. A quick thinking family member called their veterinarian so he could contact the EMT's to be sure they used the right treatment. If they had used their standard procedure for this type of reaction, they would have killed him instantly. Still, he had to be revived three times on the way to the hospital.

They believe he survived because he landed in that cold surface, and the freezing temperature slowed his heart rate enough to hinder the drug's activity.

He's alive today, but has lost 35% of his heart capacity, 45% of his lung capacity, and much of the muscle tissue just above his knee in that leg. For a dairyman and the core of the labor force of his family operation, that's a lot of physical limitation to overcome.

As we wrapped up the conversation he said, *"You know… I've been using that stuff for over 10 years and I knew it was dangerous, but I didn't know it was* ***that*** *dangerous!"*

As we begin the season of the year where we use many pesticides and other chemicals in feedlots, we need to be sure that our people are aware of the dangers of all the pharmaceuticals, insecticides and other chemicals they use. Here are some keys to feedlot employee safety for any of these applications:



- Read and follow the Safety Data Sheet (SDS) for that chemical. Our dairyman friend was saved by a fast thinking person who knew that a specific treatment was necessary. Have the sheet readily available, explain that information to your employees and train them in the actions they need to take for their personal safety.
- Wear the proper Personal Protective Equipment (PPE). The SDS information will explain what is needed and ensure that your employees have that equipment available, they know how to use it, and they actually use it. This might include goggles or face shield, respirator, gloves, long pants, long sleeves, covered shoes, etc. Be certain that they wash any skin surfaces that have potentially been exposed immediately after use.
- Only trained employees should be allowed to do treatments or applications.
- If treating an area with insecticide or herbicide, be sure to mark those areas in accordance with SDS instructions to ensure that no one enters those areas while the chemical is still harmful.
- If using chemicals in a closed or semi-enclosed area like a processing facility, be sure to provide adequate ventilation to prevent respiratory damage to those workers.

When considering which products to use, ask your vendor for the ones that are safest for your employees. We tend to focus on what provides the most effective treatment, but it may not occur to us to see if there is something just as effective yet much safer for handlers. Get the information, and then weigh the safety, cost and effectiveness as factors in your final decision.

Due to incidents of fatalities and serious illness during or after chemical applications in crop operations, a new training standard has been developed by EPA. This new Worker Protection Standard (WPS) requires annual training for applicators, handlers and workers. Though not required for insecticide or herbicide applicators in livestock operations, the training is very thorough and would provide valuable information for your employees. You can search for it online, or get in touch with me at don@gooddayswork.ag and I'll share a few options.

Providing targeted safety training to our employees is a great way to show them we care about their wellbeing and want them to be satisfied, healthy and secure. FL

Don Tyler is the Founder of Tyler & Associates management coaching and President of Good Day's Work safety training. For more information on these and other employee management topics, contact him at 765-490-0353 or don@gooddayswork.ag

Fly Control Options for Cow Herds

The summer battle against flies is constant, but there are ways to reduce these pests. Different flies have different habits and behavior, so a combination of tactics is most effective, according to Sonja L. Swiger, PhD, veterinary/medical extension entomologist, Texas A&M. Stable flies breed in rotting organic matter: old hay, silage, bedding. Horn flies breed in fresh cattle manure. Horseflies/deerflies breed in swamps, and black flies breed in flowing water--often miles away—so it's impossible to control them at breeding sites.

Fly control includes physical removal of breeding sites, biological strategies like parasitic wasps and dung beetles, and chemical control (pesticides). "In cow-calf herds the most problematic species is horn flies, though we've gotten calls this spring about stable flies. In Texas the stable flies emerged earlier than usual; we didn't have much winter," she says.

Some producers are trying to avoid using chemicals and pesticides, looking for other ways to help control these pests. "One benefit of rotation, if you can leave a pasture long enough, is that dung beetles can tear down the manure. They are our most beneficial insect, but you often don't see them. They decrease in numbers sometimes because of the use of pesticides, but there are still some there, hiding under the manure," Swiger says.

Some products for parasites are harmful to dung beetles. "New products are coming out that are more natural. Some have research to show they work, while others do not. The impact on dung beetles is minimal however, unless you are over-using products."

"For horn flies, integrated pest management tactics include pasture rotation, leaving fresh manure behind and going to a new site. You can decrease flies even more if you also drag the pasture you just left, to break up manure pats so they dry faster. Then there will be fewer horn fly eggs laid and fewer larvae able to mature. If the pats are still mounded up, they develop a crust and the larvae can continue to live inside them."

The horn fly life cycle is short. It only takes about a week from egg to adult. Rotating pastures often, getting away from manure, can make a difference she says, if a person has the space to do this. Calving season may affect a rotation program, however—whether the herd is still calving and whether you can change location

Chemicals

"We recommend waiting as long as possible in the spring to start using a chemical product—until after you count 50 to 100 horn flies per animal. Cattle can tolerate a few flies so we wait until control is more important. If your animals look uncomfortable because of flies, it's time to treat. Most products applied to the animal will only kill adult flies, and you want the biggest impact for your efforts, knocking down the population that would soon be laying eggs in manure."

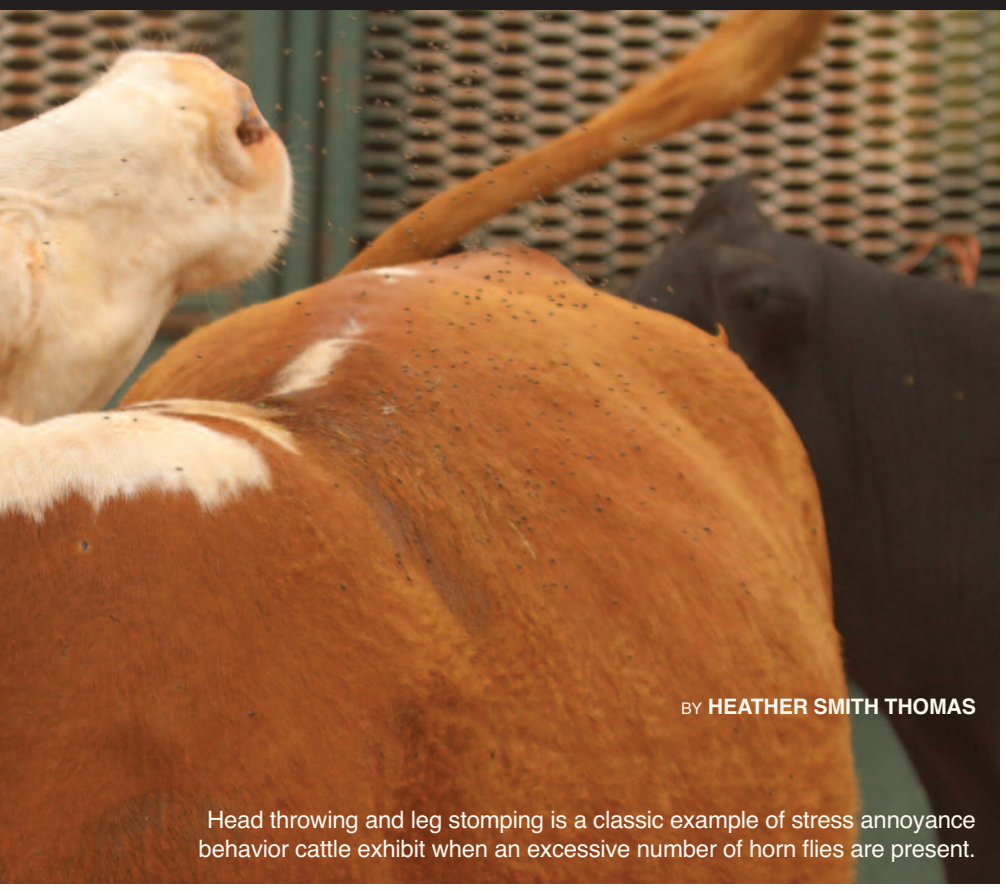
Horn flies live on the animal (while other biting flies are only there long enough to get a blood meal) so anything you put on the animal will get to them. "Make sure you use a product that will kill them, because they quickly develop resistance to chemicals. Unfortunately we are limited in products to rotate. We recommend rotation (to minimize resistance), such as switching between an organophosphate and a pyrethroid, but the only way we can now use organophosphates is in ear tags," says Swiger.

"These tags are one of the better options, but sometimes horn flies are resistant to that product. And when the population gets really high you can't just rely on one product."

Feed-through products end up in manure and contain insect growth regulators which affect larvae. They don't mature to become flies.

"We usually recommend using several methods—like a pour-on as well as a feed-through, or combine one of those with an ear tag."

Some producers also use backrubbers, oilers, dusters, etc. for cattle



BY **HEATHER SMITH THOMAS**

Head throwing and leg stomping is a classic example of stress annoyance behavior cattle exhibit when an excessive number of horn flies are present.

to self-treat. "Cattle can use these in a walk-through to water, for instance, and do a daily treatment," says Swiger. This can be a good addition to any control program but may not work as a stand-alone strategy if some animals don't use it or the product runs out.

"Read labels before applying products to calves. Most are not labeled for calves. Young calves get their protection from the cow. If she is treated, and has fewer flies, her calf won't have as many flies either," Swiger explains. Calves get some benefit from topical products on the cow, since they rub against mom while nursing. Some fly tags can be used on calves, if they are over a certain age/weight.

Fly Traps

There are several kinds of traps for biting flies. "Most traps work best for horse flies and deer flies, and there are also some traps for stable flies (sticky traps they land on). Those flies take a blood meal and leave, whereas horn flies never leave the host animal. Traps for house flies don't work on biting flies because they are attraction baits; they don't use the same food source," Swiger says.

One trap that removes horn flies is a cow vacuum. "It's an enclosed area the cows walk through. It blows flies off the animals and sucks them into a bag where they die. It's expensive, and used mainly in dairies, since it has to be set somewhere the animals have to go through it. It also utilizes electricity and might not work in a pasture situation."

Resistent Cattle

There can be individuals in the herd that have fewer flies. Some producers are selecting and breeding for fly-resistant animals. Bulls tend to attract the most flies. "This may be due to testosterone levels, but we don't know why," says Swiger. Sometimes color is a factor (more flies on dark-colored cattle) but not always. FL

BY MIRANDA REIMAN

THAT MUCH BETTER?

Predicted Beef Dollars Really Add Up

Cattle genetics have made big improvements since the American Angus Association released its beef value ($B) index in 2004.

Often called "dollar beef," it was one of the first tools to combine expected progeny differences (EPDs) for feedyard and carcass traits with economic measures.

At the time, the breed average was +$23.79, and $45.48 represented the top 1%.

"Now today, we're three times that, or higher," says cattle feeder Sam Hands of Triangle H, Garden City, Kan. "So, are the cattle really three times better?"

A recent demonstration project, cosponsored by the feedyard along with Gardiner Angus Ranch, Top Dollar Angus and Zoetis, found the resounding "yes" in a $215.47 difference between divergent groups of calves from registered Angus parents.

"High $B Angus outstrip low $B genetics with great consistency. However, we also recognize the importance of real-world comparisons," say study authors in their summary report, "Field-Testing of $B in Purebred Angus Cattle."

They created a Low $B group by purchasing older embryos in storage, and used current genetics from Gardiner Angus Ranch to provide High $B comparisons. Random recipient dams calved in a 44-day window in April and May 2015 and raised calves until late fall weaning. By June 2016 they were on feed at Triangle H.

"We were never told, 'these are the superstars and these are the lesser achievers,'" Hands says, but he could see differences as marketing approached. "The better dollar-beef ($B) cattle were more efficient in reaching that end point quicker, and when they got done were just a little more expressive in their muscling."

Harvested in three drafts at 0.5-inch backfat, the High $B group was nearly 16 days younger with 27 lb. greater carcass weight. On an age-constant basis, that advantage jumped to 56 lb.

"Not only did they finish quicker, but they also graded better," Hands says, noting a $48.65/head feed and yardage savings for the higher performing group.

That's exactly the answer Mark Gardiner was looking for.

"Our customers use the index a great deal and many retain ownership and go all the way through the U.S. Premium Beef system," he says, suggesting a sole focus on weaning value ($W) is like "quitting football in the third quarter."

The High $B cattle went 100% Certified Angus Beef® (CAB®) brand and Prime, with 72% of the latter. The Low $B group made 52% CAB, 44% low Choice and 4% Select because, as the paper suggests, top management,

	High $Beef Advantage Versus Low $Beef	Statistic Difference	
Sire/Dam Average $Beef	$ 93.69	Yes	P<0.001
$Beef Difference in Breeding Value Terms (This amount predicts the per head financial difference between the two groups)	$187.38	Yes	P<0.001
i50k Average Percentile Rank Difference* *Average of YW, CW, MARB & REA	75.2%	Yes	P<0.001
GeneMax Feeder AdvantageScore (Points)	67	Yes	P<0.001
Weight Per Day of Age (LB)	0.158	Yes	P<0.001
Age at Harvest (Days)	-15.9	Yes	P<0.001
Carcass Weight (LB) Non-Age-Constant Basis	27	Yes	P<0.05
Carcass Weight (LB) Age-Constant Basis	56	Yes	P<0.001
Marbling Score (MS Units)	227	Yes	P<0.001
Ribeye Area (Square Inches)	1.41	Yes	P<0.001
Backfat (Inches)	-0.05	No Difference	
Calculated Yield Grade (YG Units)	-0.46	Yes	P<0.01
Carcass Value Per Head	$166.82	Yes	P<0.001
Feed & Yardage Saving Per Head	$ 48.65	Yes	P<0.001
Total Financial Difference Per Head	$215.47	Yes	P<0.001

health and nutrition let both groups shine.

"Feedlots don't want a big surprise, so the more genetic guarantee we can provide, the more comfortable our feedyards are going to be in aggressively bidding on high-genetic Angus calves," says Kenny Stauffer, Top Dollar Angus general manager. "Even if they have to pay more, in the end those calves produce greater profits for the cattle feeder."

The pedigree $B varied $93.69, but that doubles in the "estimated breeding value" for progeny, to $187.38 (see table). The actual data bested that by more than $28, coming in at that $215.47.

"The EPDs and indexes are not just numbers on a page in a sale catalog; they're very accurate tools that people can use," Stauffer says.

Genomic predictions followed as expected, with an average GeneMax® Advantage™ Feeder score of 94 out of a 100-point scale for the High $B group, compared to 27 for the lower ones. The i50k test for yearling weight, carcass weight, marbling and ribeye showed the High $B cattle in the top 12.3% of the Angus breed, while the Low $B were in the bottom 12.5%.

The data points to all the advantages of selecting for more feedyard performance and carcass quality, yet many argue the cattle owner at harvest reaps all the benefits.

"The bulls we use are in the top 5% for dollar weaning ($W) also, but it's very short-sighted to stop at that point," Gardiner says. "Even if you sell at weaning, the guys that are buying those are not going to buy them again if they don't perform in the feedlot and on the rail."

Both groups were exactly the same in mature height though the High $B half were about 66 lb. heavier, and there was a $32.76 difference in the cow energy value ($EN), favoring the Low $B group.

Gardiner explains that having high-growth males automatically hurts the $EN figure. If a female is taking up too many resources, she'll come up open—a clue she can't perform in that nutritional scheme, he says.

The paper notes annual cow feed costs could be $65.52 higher for the better performing group. Subtracting that from the financial advantage of the progeny still gives the High $B nearly a $150-per-head advantage.

"We all want low-input cattle, but we sell outputs for a living," Gardiner says. In the end, net profit favors the more productive, higher quality cattle.

"There's not an Angus calf born out there that shouldn't be destined to be efficient in the feedyard and hang up the value-added carcass on the rail," he says.

For additional information on the $B index, attend the Feeding Quality Forum in August. The Forum is sponsored by Certified Angus Beef, Zoetis, IMI Global, Micronutrients, Roto-Mix and FEED•LOT *magazine. For more information on the meeting, visit www.feedingqualityforum.com*

The full white paper on this research can be viewed at www.cabpartners.com/news/research.php. FL

BY **KATRINA HUFFSTUTLER**

Noble Project Strives to Enhance Cull Cows' Value

Cull cow revenue represents one-third of all income from the typical cow-calf operation, and yet little has been done to improve the economics of it. The Center for Economic Analysis and Information at the Samuel Roberts Noble Foundation is trying to change that.

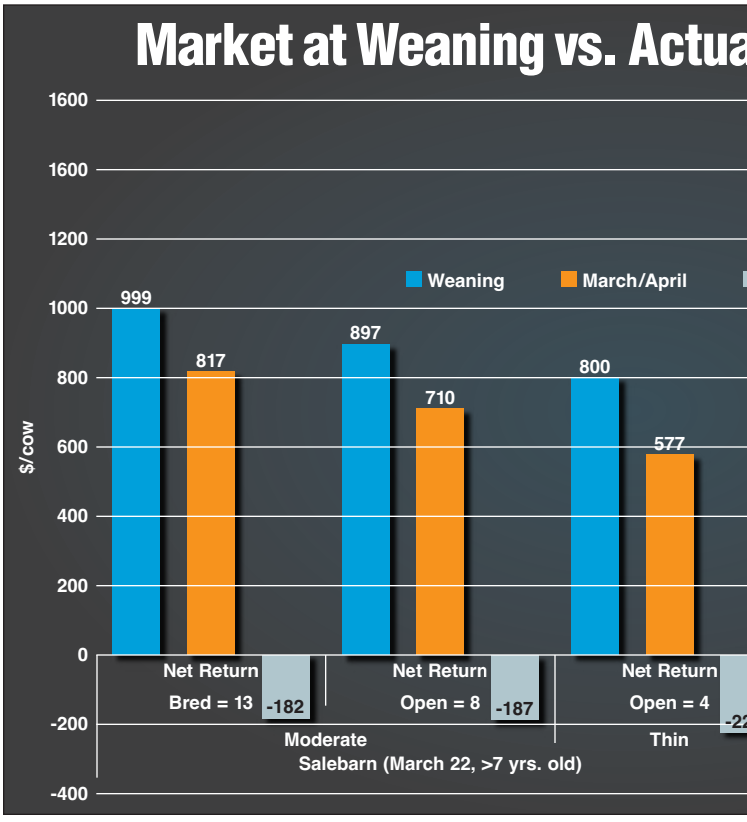
In his presentation titled, "Alternative Management and Marketing Strategies for Enhancing the Value of Cull Cows" at the Texoma Cattlemen's Conference in February, Jon Biermacher gave an update his ongoing research project.

He said while historically the approach has been to cull and sell immediately after weaning in the fall, while cows are in relatively poor condition and the markets experience the lowest seasonal prices for cull cows, there may be a better way.

"The question is," Biermacher said, "Can we use intensive feeding programs, resting breeding bulls, and value-added markets to improve cull cow economics?"

The project kicked off in October 2015, just after weaning time, with 88 cows. The researchers collected data on each cow, including age at weaning, body condition score and weight; USDA graders predicted dressing percentage, backfat and fill on each, so the cattle could be placed in grades.

"There's two components to this project," Biermacher



said. "One is how we manage the animals, and the other one is how we market them. We manage them using the body conditioning information that we're collecting."

They intended on sorting the first year's cows into three groups (thins, moderates and heavies), but since they only ended up with six that fit the heavy category, they instead broke them into two groups and developed appropriate feeding programs for each.

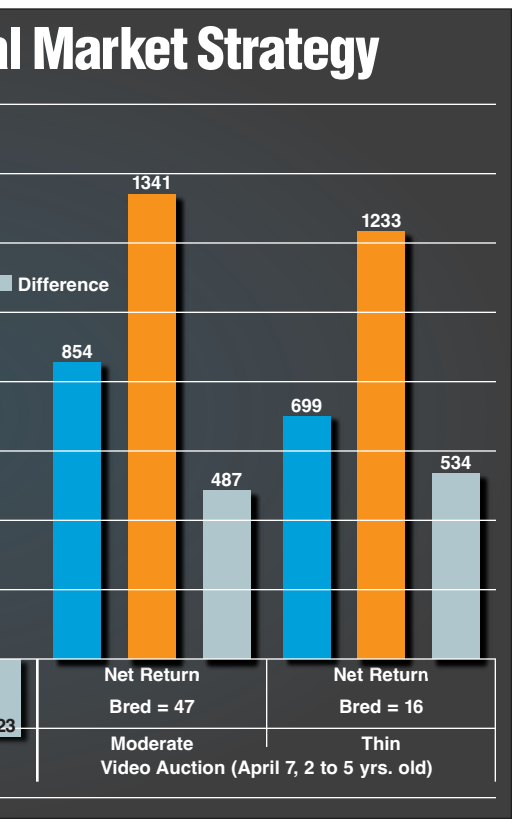
"Our goal was to hang onto them, put rations into them, and try to get all of them at around a six body condition score," he says.

They placed bulls on both groups on December 1 and left them there for 60 days. 30 days after they removed the bulls, they blood tested to verify whether the cows were bred or not.

After the initial data was collected, Biermacher said they continued to get monthly updates to track the cows' progress. He says thanks to the customized feeding plans, they were very successful in getting those cattle to be about the same weight and desired condition by the end of the project.

"At this point, we had a whole group that was essentially the same weight and the same condition," he said.

Younger cows were sold in a video auction special sale, while the older cows were taken to an auction market. Once feed and management costs were factored in, the cattle that went through the auction market profited less ►



Noble project strives... *from previous page*

than they would have at weaning, but the younger cattle that sold through video auction profited about $500 more per head.

In short? The answer to their question at this point in the study? Biermacher said, "It depends." FL

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

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