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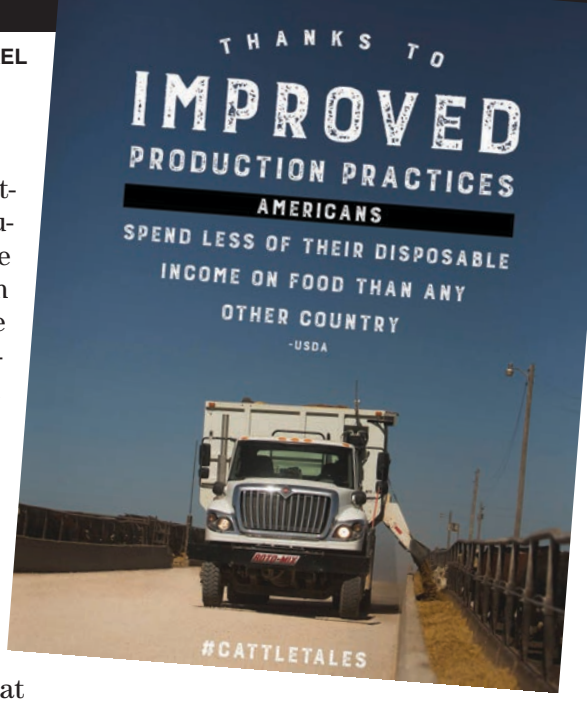
BY JILL J. DUNKEL

Sharing Your Cattle Tales



With the average consumer three or four generations removed from agriculture, it's no surprise most don't understand where their food comes from or the process to get their meat, fruit and vegetables to the grocery store. "Agvocating" has become popular and several companies are encouraging ranchers to tell their story. Degrees are even available geared toward advocating for agriculture.

Even if you don't have a wealth of ag-facts at your fingertips ready to share, you can still participate in advocating for agriculture. A Facebook page known as Cattle Tales makes it easy. Recognizable by the fun play on words in its title and the ever-present use of the hashtag #cattletales, the site offers various livestock-friendly facts and figures that are time relevant.

Did you know a date in March was National Sloppy Joe Day? Cattle Tales did, and it offered beef nutritional facts to help celebrate the kid-friendly meal choice. March Madness didn't slip through the cracks either. Cattle Tales highlighted that 12 basketballs can be made from the hide of one full grown cow. What about National Potato Chip day? Did you promote beef then? Cattle Tales did, noting that cattle are the ultimate recyclers that eat the byproducts of potato chips.

The easiest way to help promote agriculture is to see what others are doing, and that's where Cattle Tales wants to be a resource for cattlemen. Its informational images and facts are on Facebook, Instagram and Twitter and can be shared, retweeted, etc. from each of those platforms.

Using the #cattletales hashtag, users can connect with other #cattletales users for additional ideas and fun facts. Mix up the Cattle Tales info-graphics with your own fun photos, stories and information, and shazam! You are promoting agriculture and the beef industry.

Yes, it really can be that easy. FL

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BY JORDAN BURHOOP, M.S.
& DAN LARSON, PH.D.
RUMINANT NUTRITIONISTS

Enogen corn and cattle production

The cattle feeding industry is based on rations consisting of corn and various byproducts of the corn milling industry. As consultants, we are ever vigilant to changes in feedstuff quality and the effect of new feedstuffs on cattle performance.

Approximately 40 percent of U.S. corn goes to producing ethanol, which led Syngenta to develop a new corn hybrid under their Golden Harvest brand, called Enogen corn enzyme technology. The Enogen technology centers on an alpha amylase enzyme genetically engineered into the corn kernel. Enogen corn reduces the need for added alpha amylase in the ethanol production process, reducing cost and improving efficiency for the ethanol plant.

Enogen does come with one major drawback, it cannot enter the non-ethanol food chain. Thus, if there are production or transportation issues at or after harvest and the corn cannot be delivered to an ethanol plant, producers need an outlet for the product. With the need for an alternative outlet, interest has focused on using Enogen corn as an ingredient in cattle rations. Compared to non-ruminants, ruminant animal's saliva does not contain alpha amylase and levels in the small intestine are relatively low, so cattle themselves are not very good at digesting corn; however, microbes in the rumen digest corn efficiently. The addition of alpha amylase in the Enogen corn kernel helps the ruminant animal digest corn more efficiently.

Early research done by Iowa State University fed cattle rations containing a corn hybrid that expresses a thermotolerant alpha amylase at 0, 10, and 20% of dietary dry matter to determine performance responses in feedlot cattle fed different concentrations. The researchers concluded that corn genetically modified to contain amylase had no effect on performance or carcass characteristics of feedlot steers when fed at 10 or 20% of diet dry matter.

Recent research at the University of Nebraska-Lincoln (UNL) was conducted to determine the impact of Enogen corn on growing and finishing beef cattle performance and carcass characteristics. The objective of the first experiment was to compare Enogen corn to commercially available corn grain fed in rations with or without Sweet Bran. Sweet Bran is a patented form of wet corn gluten feed produced by Cargill. Feeding Enogen corn with Sweet Bran in the ration improved average daily gain by 6.2% compared to feeding commercially available corn grain with Sweet Bran. There was no accompanying increase in DMI due to feeding Enogen corn, so feed efficiency was improved by 8.6%. Interestingly, there was little to no difference in any performance measure when Sweet Bran was not a component of the ration. The researchers hypothesized that ruminal acidosis may be masking the positive impacts of feeding Enogen corn when Sweet Bran was not included in the ration; however, further research was needed to confirm that hypothesis.

In the second experiment conducted by UNL, when wet distillers grains were fed with Enogen corn processed as dry-rolled corn (DRC), the researchers observed a 5.4% improvement in feed efficiency compared with conventional corn. From the first two experiments, the conclusion was made that it would be economical for cattle feeders to take advantage of the improvement in feed efficiency by feeding Enogen corn.

All of the previous research conducted by UNL evaluated Enogen as only dry-rolled corn, so a finishing trial was conducted to determine the effect of Enogen corn processed as either dry-rolled corn or high-moisture corn (HMC) fed with either 18% modified distillers grains plus solubles (MDGS) or 35% Sweet Bran. Cattle fed Enogen DRC with MDGS had a 3.9% improvement in feed efficiency compared with conventional corn; however, the difference was only 2.1% when processed as HMC. Cattle fed Enogen DRC with Sweet Bran had a 1.5% improvement in feed efficiency compared with conventional corn; however, a decrease of 2.1% was observed when processed as HMC. The improvement in feed efficiency in cattle fed Enogen DRC agrees with previous research, although the magnitude of improvement was not as high. Ruminal starch digestion is approximately 77% for DRC as compared to approximately 90% for HMC, while total tract starch digestion is approximately 95% for DRC as compared to approximately 98% for HMC. The starch digestibility values for HMC likely explain why there was not an improvement in feed efficiency for Enogen HMC. Since starch digestion is near 100%, added alpha amylase does not make much of a contribution.

The increased feeding efficiency of Enogen corn processed by dry-rolling led to the hypothesis that starch digestion is being increased when feeding Enogen corn. A metabolism trial was conducted to determine the site and extent of digestion and ruminal metabolism characteristics. In this experiment, cattle fed Enogen DRC had numerically greater post-ruminal starch digestibility, excreted lower fecal starch, and had greater total tract starch digestibility compared to conventional corn. There were no differences observed for any ruminal pH characteristics or VFA proportions due to corn trait or byproduct type. This observation proves that the hypothesis from the first trial was incorrect and that the cattle were not experiencing ruminal acidosis that would mask the effects of Enogen corn. The increase in utilization of an energy source, such as starch, explains the increase in performance that was observed in previous experiments.

Although previous trials have shown an improvement in feed efficiency when feeding Enogen DRC, the response has been variable. A large, well-replicated trial was needed to verify the impacts of Enogen DRC on finishing cattle performance. In this trial, the researchers observed no statistical difference for final body weight, dry matter intake, average daily gain, or feed efficiency for steers fed Enogen corn compared to conventional corn. Although not significant, feed efficiency was numerically 1.6% poorer for Enogen DRC compared to conventional corn.

Although performance data has been variable, if feeding Enogen corn processed by dry-rolling, negative impacts have not been significant and there is potential for improved performance of feedlot cattle. If Enogen corn can be raised or purchased at a similar cost to conventional corn and yields are equal, there is an apparent economic incentive to do so.

Recent interest in Enogen hybrids has focused on utilization as corn silage. There is limited research on Enogen corn silage, especially in beef cattle rations and the data has not shown clear evidence that Enogen corn silage performs better than conventional corn silage. Amylase does not play a part in fiber digestion, so if further research shows an improvement due to feeding Enogen corn silage, there must be another factor contributing to the improvement which is not yet known. Clearly, continued research is needed to determine the value of Enogen corn silage in beef cattle rations. FL

For more information on this or other nutritional topics, visit Great Plains Livestock Consulting, Inc. at www.gplc-inc.com

Growth and change in the Mexican cattle and beef industry

BY DERRELL S. PEEL,
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EXTENSION LIVESTOCK
MARKETING SPECIALIST

The Mexican cattle and beef industry has evolved rapidly in the past decade. Most notable is the expansion of beef exports from Mexico after 2009. Mexican beef exports ranked tenth in the world by 2015 although recent growth in Argentinian beef exports in 2018 may push Mexico slightly out of the top ten list of exporting countries. Growth in Mexican beef exports has been the result of expanded feedlot production, increased federally-inspected slaughter and, most importantly, adoption of boxed beef fabricating technology. Beef carcass weights in Mexico have increased steadily over the past decade.

The U.S. is the biggest market for Mexican beef exports, accounting for 89 percent of total exports in 2017. Mexico is attempting to develop a more diverse set of exports markets, partly the result of natural market growth and partly the result of uncertainty surrounding U.S. trade policy and NAFTA. Mexico is attempting to regain access to Russia and to expand beef exports to China as well as expanded exports to Muslim markets with Halal certification. Mexico was the third largest source of U.S. beef imports in 2017, accounting for 19.2 percent of imports behind Australia (23.2 percent) and Canada (24.7 percent) and just ahead of New Zealand (18.6 percent).

Mexico is a significant importer of beef as well and is projected to be the eleventh largest beef importing country in 2018, just behind Canada. Mexico is a major market for U.S. beef exports, representing 14.7 percent of total beef exports in 2017, behind Japan (28.9 percent) and South Korea (16.5 percent) and ahead of Canada (10.9 percent). Mexico, in recent years, much like the U.S. and Canada have for many years, has significant bilateral flows of beef exports and imports. These represent flows of different mixes of beef products all moving to higher values in various markets. This is markets doing what they do best with the result of maximizing the value of beef production in each market simultaneously.

Mexico has exported about 1.1 million head of feeder cattle annually to the U.S. for the past 30 years. In 2017, total U.S. imports of Mexican cattle were 1.2 million, close to the long term average but up 23.3 percent from 2016. Current USDA-FAS projections for 2018 include a slight increase in Mexican cattle exports but the preliminary weekly data through early March shows a 13 percent year over year decrease for the year to date. Mexican cattle exports are determined by overall cattle numbers in Mexico, U.S. and Mexican market conditions and drought conditions. Continued growth in beef production in Mexico may ultimately lead to fewer live cattle exports from the country. FL

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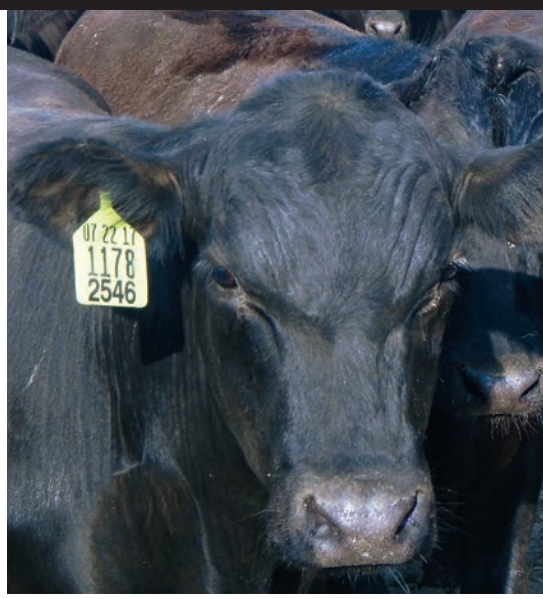
BY JILL J. DUNKEL

Not Your Momma's Cows

As Cattle Have Changed, Are Your Management Practices Changing, Too?



Thumb through some old livestock magazines and you'll likely grin. Photos of cattle from the 1940s prove the industry has changed significantly. Short, stubby legged cattle have evolved to larger, bigger framed individuals that have recently developed into cattle with even heavier carcasses on the same frame size. Genetics and technologies to select for particular traits have delivered finished cattle that our 1940s cattleman would shake his head in amazement.

But have our management techniques changed with the times as well? Dr. Jeff Heldt and Dr. Chance Farmer, both beef technical service managers for Micronutrients, ask the question if today's practices are keeping up with the nutritional needs of today's cattle.

"Genetic trends are on an upward increase," said Heldt. "If you look at the 2018 University of Nebraska Beef Report and a 2000 report, dry matter intake hasn't really changed. Average daily gain has gone up a little, but live weight increased 200 pounds. Carcass weight has seen a 150-200 pound increase as a result of improved genetics and more days on feed."

Coupled with that, Heldt says feed yard sickness rates have not changed much, despite new medicine and technologies. In fact, feedlot death loss has actually increased.

"Why is that? Is it nutrition? Are today's cattle so ramped up genetically to perform that we've failed to keep up with them nutritionally? Are we supplying enough trace minerals and macro minerals to support their genetic makeup and potential?" Heldt asked.

The fact is today's cattle are considerably different than those from 30, 20 and even 5 years ago. However, Farmer said it's not necessarily related to frame size.

"Cow size has exploded, and not necessarily from a frame score situation. We are packing way more animal in the same frame. Because of that, maintenance requirements have gone way up, more than people would like to admit," he said.

Heavier cattle require extra nutrition – energy, protein, vitamins and minerals. Farmer said in his 15 years as a field consultant, many people didn't anticipate the additional nutrients they should put into those cows. However, herds that did a good job taking care of cows while pregnant by far had less health problems with their cattle in the preconditioning and feed yard phases.

His conclusion: meeting the true nutritional needs of the cows can impact calf health all the way through the feeding phase.

"It was remarkable. In my years of observation, I say some of our health issues with today's cattle start back at the ranch," said Farmer. "We are feeding 1,400 pound cows today like we fed 1,200 pound cows years ago."

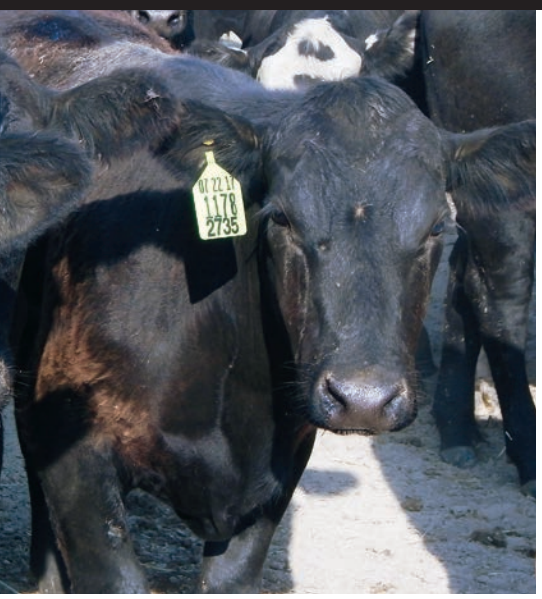
Understanding fetal programming, and the fact that meeting the nutritional needs of the cow and fetus can lead to healthier cattle years later in the feed yard could be the key, Heldt and Farmer said.

Ranchers are selecting bulls and replacement heifers with great genetic potential, said Farmer. But they must realize that means an increase in maintenance requirements.

"We have to accept that with the increase in genetic potential, we've got to take care of those cows. We've got the technologies out there from a nutritional standpoint to help a guy meet those requirements. But it may be at a greater input cost. Sometimes it is, and sometimes it's just being more efficient, but it's a change of mindset," said Farmer. "You just can't keep kicking the same can down the road."

Heldt said there are things a ranch and can do that would still keep a budget in check. He suggested looking to get the "best bang for your buck."

"The timing of when people do various things should be evaluated," Farmer explained. "No April, July or October is exactly the same. There are years when supplemental nutrients need to be provided in a time frame you traditionally wouldn't because of drought, early frost, or whatever the situation. People have a preconceived notion that they will start feeding at a certain time of year, but you might



be way better off feeding a month earlier, with less later because of how the forage shapes up."

Supplementing cattle based on forage quality and cow requirements instead of the calendar is key.

"There are more efficient ways to provide supplemental nutrients at more advantageous times. No one year is exactly like the next," he said.

From a mineral perspective, not keeping quality mineral out year round doesn't make sense, said Heldt. "It's a really small portion of the overall ranch budget for 3 to 4 ounces a day of something that can have a huge benefit in ensuring optimal status for the cow to use how she needs it (health, reproduction, growth, etc). It's not that costly and will really help the cattle."

He said it comes back to how much I can spend, and when do I need to spend it.

"Be creative and understand when the key issue times are, like fetal development and rebreeding. If I need to skip for a few months due to the budget, be wise when and how you do that, and make sure you are using highly available, low rumen reactive mineral sources," Heldt said.

Farmer also said ranchers should use due diligence when selecting breeding stock. "Understand EPDs. That doesn't mean you need to buy the highest-priced bull or one with the best EPDs. The ramifications on the efficiency side may not work in your program."

If you are breeding for replacements, maybe consider other indexes, he said.

"EPDs are great tools, and we are further advanced than ever. But a better understanding of how to use them is important. And understand how you are changing your herd with those genetics."

Genetics have changed, and Heldt and Farmer said to ask yourself if you have changed your program. It shouldn't be the same program from 20 years ago, they said.

"As you improve your herd, if you select for bigger cattle, you've got to be ready to improve your nutrition, and understand the implications of that," Farmer said. "What you're selecting for now are decisions that will affect you for 10 to 15 years down the road." FL

Recent studies expand knowledge on shade and nutritional supplementation's impact on heat stress

The dog days of summer are just a few turns of the calendar way. Documentation of heat stress in livestock, especially in feed yards, is nothing new. Significant research has been conducted in the High Plains and major cattle feeding areas documenting the effects of heat stress. Two newer studies looked at heat stress and shade on replacement cattle, and how a feed additive can reduce heat stress.

Researchers at the North Florida Research and Education Center (NFREC) Beef Research Unit conducted a study providing artificial shade for replacement heifers grazing bahiagrass pastures through the summer and determined replacement cattle are very much impacted by shade. Sixty black-hided, bred replacement heifers that averaged 920 pounds were separated into two treatments: artificial shade vs. no shade from July 17 to September 2, 2017. The heifers included both Angus and Brangus cattle, with equal numbers of each in the research groups.

At the beginning and end of the study, heifers were weighed on two consecutive days to reduce the effect of gut fill on average daily gain. A total of 12 pens were used in the study: 6 with shade and 6 without.

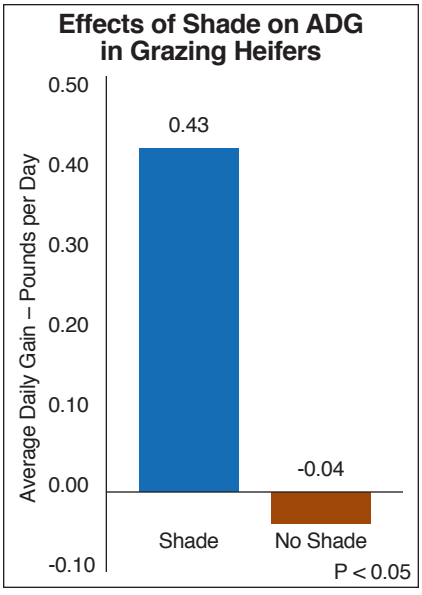
During 47 days of the shade study, a difference of 0.47lbs/day in weight gain was observed in the heifers that had shade in their pens, versus heifers in pens without shade. Those with shade had an average daily gain of 0.43lbs, where as those without shade lost 0.04lbs on average per day.

Researchers commented while the overall results were not surprising, the magnitude of the drop in ADG was. Additional data collected in the study will compare the amount of time spent in the shade vs. grazing, as well as the effects on animal temperature each day.

Another recent study looked at how a feed additive could help reduce heat stress in livestock. RumeNext-Beef from ADM Animal Nutrition is comprised of specially selected plant extracts that are standardized and protected in a micro-encapsulated matrix. Although early work with the product was for rumen fermentation for efficiency and performance, research discovered the feed additive provided beneficial effects on heat stress.

A study conducted in Nebraska during the summer looked at 600 head of feeder cattle in dry lots. The study compared cattle supplemented with RumeNext-Beef and Rumensin versus only Rumensin. The study showed a positive effect on ADG during the heat stressed portion of the feeding period of 4.06 lbs/day with both products, compared to 3.75 with Rumensin alone.

ADM Beef Field Nutritionist Brian Fieser, Ph.D. said the RumeNext-Beef acts as a vasodilator, expanding the blood vessels to help cattle dissipate heat. The supplement can be used in a feed yard setting as part of a ration or can be included in a free choice range mineral. FL



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MERCK
Animal Health

BY MICHAEL J. THOMAS

Feed efficiency data plays an important part in genetic research

Data collected from feed efficiency trials continues to play a large role in research aimed to improve the cattle industry. Discoveries, based on these trials, have made positive differences in all aspects of the industry: from the cow/calf operator to the feedlot.

Dr. John Hall, superintendent of the Nancy M. Cummins Research Extension Education Center (REEC) said, "We've done a variety of feed efficiency related research using the GrowSafe™ system over the years."

Dr. Hall explained that they have run feed efficiency trials on Wagu bulls and heifers for agri-beef companies in the past, and have been working with the American Simmental Association's carcass merit system for the past four years.

The Nancy M. Cummins REEC uses Simmental bulls on their cows. They do feed intake studies on all of the steers, before they go to the feedlot, and then share that information with the American Simmental Association. This information is then input into the large body of data used to generate EPD's for the American Simmental Association.

Another ongoing trial involves the center's heifer calves. All of the heifers go through feed efficiency testing.

Dr. Hall said, "We are keeping track of the lifetime performance of those heifers, as it relates to feed efficiency, as well as the reproduction efficiency of those heifers as productive cows – a combined study."

The Nancy M. Cummins REEC has collected about five years feed efficiency data on these heifers. This will be an ongoing and long term study following these heifers through their lives as productive cows.

As cow/calf operators have come to trust and rely on other genetically predictable traits, the ability to predict the fertility and longevity of a mother cow will be very important to cow/calf producers.

Dr. Hall said, "Some of the work we have done on the reproduction side is showing a slight advantage to the inefficient heifers in terms of reproductive performance. At this point we can't say that the inefficient heifers are negatively affected in terms of reproduction. I don't think we can make that statement. We have seen some trends that the inefficient heifers are heifers that reach puberty a little earlier. They don't necessarily have a better or worse pregnancy rate. That's kind of an interesting aspect of the research. We are continuing this research, because at this point we don't have the answer one way or the other."

The data collected to this point of the trial, while limited, suggests that the inefficient heifers reach puberty earlier, or cycle earlier than the efficient heifers. "If we think about that from a biological perspective, the efficient heifers are probably partitioning more of the nutrients toward growth, where the inefficient heifers have more of their nutrients available for reproduction," said Dr. Hall.

All of the heifers in the trials have been estrus synchronized and artificially inseminated. To date the trials have not shown a difference in conception rates, short or long term, but more testing will be required to determine if this is affected by synchronizing and AI-ing the animals.

A relatively new facet of the trials involves following these cows through their productive lives on different pasture environments. The recent acquisition

of the Rock Creek Ranch, near Hailey, Idaho, allows the Nancy M. Cummins REEC to split the herd and run half of the mother cows in a more traditional Idaho range environment, while the other half remains at the center on irrigated pasture.

Using feed efficiency information that was gathered on the heifers at the Nancy M. Cummins REEC, Dr. Jim Sprinkle has been running a trial to find out if the first-calf heifers and young cows that are efficient use the range differently than young heifers and cows that are inefficient. This involves using GPS collars on the heifers and young cows to see how those animals utilize the range.

Dr. Hall said, "Looking at lifetime productivity is going to take us awhile. We have efficiency testing that was done when they were heifers, and now they are four and five year old cows. It's going to take us awhile to look at the longevity side of things, unless there is something that is really dramatic."

As cow/calf operators have come to trust and rely on other genetically predictable traits, the ability to predict the fertility and longevity of a mother cow will be very important to cow/calf producers. Many of us in the industry will be curious to follow the results of the trials on the Nancy M. Cummins REEC mother cows. FL

Give Calves the Advantage at Sale Time

Implement an implant program to help calves 'break the barrier' at weaning

When Missouri cattleman Nick Jones sets out to try his hand at something new, he goes all in — whether it's team roping or building his cow/calf operation from the ground up in southwestern Missouri.

Jones returned home from college one summer, and with not much to do, he and his uncle set out to the local roping arena. While on the back of his uncle's horse, a gentleman approached him, saying, "The next time you come, you either have your own horse or bring your own rope and I'll have you a horse."

"So, I did it. The next week I brought my own rope and one of my uncle's roping horses," Nick Jones said, reminiscing. "It took off from there. Roping just came naturally to me since I played baseball; it was all hand-eye coordination."

Jones grew up helping his father with cattle on the ranch, but his interest in building his own cow/calf operation developed in college. Soon after he first swung a rope on his uncle's horse, he was awarded a full-ride rodeo scholarship for team roping.

"I went to Fort Scott Community College in Kansas on a rodeo scholarship and started helping some feedlots out there and got more involved in the industry," Jones said. "Kansas was a different lifestyle than Missouri. It was all about farming and ranching. Anytime someone needed wild cows caught, we'd go catch them and help round up cattle. Anything we could do to make extra money in college. I think that sparked my interest [in raising cattle] maybe more than growing up on the farm."

Building a successful operation

After college, Jones set off to build a farm of his own, beginning with 12 longhorn cows.

"We rented ground for six years until we had enough cows paid for that we could buy our own land," Jones said. "I was driving an hour one way just to feed cows so we could sell and save enough to buy our first farm. We've put three farms together since then."

Now, Jones runs Black and Red Angus cow/calf pairs across nearly 500 acres. To help guarantee his herd's health and performance, Jones works closely with his veterinarian, Max Hartman, DVM, and the team at Animal Medical Center in Marshfield, Missouri.

"When you're buying farms and have to find enough money to make farm payments, you find ways to sell bigger calves at market to bring more money in," Jones said. "Needing to find more money to help make farm payments sparked my interest in implants."

Jones talked with Dr. Hartman to see what others were doing to increase gain in calves.

Implanting calves, increasing gain

Dr. Hartman and team helped Jones implement an implant program for his calves. For three years now, his 9-week-old steer and heifer calves have been implanted with Synovex® C. At weaning, steers receive Synovex S. He credits the implant program for added gains and is pleased with not only the added weight gain but also the successful heifer conception rates he continues to see.

Jones keeps back 10 to 30 heifers every year as replacements, and he's seen great breed-back results following implanting. Synovex C is safe when used in suckling heifer calves, allowing cattlemen the flexibility to increase gain and profit for their operation without affecting reproduction.

"If your goal is to get your heifers to breed at 15 months of age and have a calf at 24 months — and that should be our goal in the commercial beef industry — there's nothing that's going to impact your bottom line more than having a heifer that doesn't breed," Dr. Hartman said. "If they don't breed because they didn't develop well, or didn't obtain an optimum body weight, then that's huge."

"I don't see why more people aren't implanting when you can spend $2 to gain almost 20 pounds," Jones said. "This is better odds than making money from a scratch-off ticket."

When it comes to team roping, Jones hasn't hung up his hat. He still ropes after church on Sunday and he raises roping stock, Corrientes, and credits his implant program for getting calves to roping weight earlier than anyone around. FL

Five tips from Nick Jones and Dr. Hartman on developing a successful implant program:

1. Disregard any misconceptions you might have heard. It is not "wrong" to implant.
2. Have a defined breeding season for more uniform calves.
3. Take advantage of time spent vaccinating and processing calves by implanting to help increase gain.
4. Prioritize nutrition at both the cow and calf levels. Cows require energy and protein to provide ample milk to help calves achieve a healthy, productive start.
5. Talk with your local veterinarian about developing an implant program that is right for your cattle.

MULTIMIN® 90

An injectable aqueous supplemental source of zinc, manganese, selenium and copper

KEEP OUT OF REACH OF CHILDREN

CAUTION: FEDERAL LAW RESTRICTS THIS DRUG TO USE BY OR ON THE ORDER OF A LICENSED VETERINARIAN.

ACTIVE SUBSTANCES PER ML:

Zinc	60 mg/mL
Manganese	10 mg/mL
Selenium	5 mg/mL
Copper	15 mg/mL

OTHER SUBSTANCES:
Chlorocresol 0.1% w/v (as preservative).

DOSAGE RECOMMENDATIONS:

CALVES: Up to 1 year	1 mL/per 100 lbs. bodyweight
CATTLE: From 1-2 years	1 mL/per 150 lbs. bodyweight
CATTLE: Over 2 years	1 mL/per 200 lbs. bodyweight

PRECAUTION:
Selenium and copper are toxic if administered in excess.

Always follow recommended label dose.

Do not overdose.

It is recommended that accurate body weight is determined prior to treatment.

Do not use concurrently with other injectable selenium and copper products.

Do not use concurrently with selenium or copper boluses.

Do not use in emaciated cattle with a BCS of 1 in dairy or 1-3 in beef.

Consult your veterinarian.

CAUTION:
Slight local reaction may occur for about 30 seconds after injection. A slight swelling may be observed at injection site for a few days after administration. Use standard aseptic procedures during administration of injections to reduce the risk of injection site abscesses or lesions.

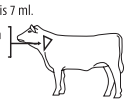
DIRECTIONS:
This product is only for use in cattle.

MULTIMIN® 90 is to be given subcutaneously (under the skin) ONLY.

It is recommended to administer the product in accordance with Beef Quality Assurance (BQA) guidelines. Minimum distance between injection sites for the MULTIMIN® 90 product and other injection sites should be at least 4 inches.

Inject under the loose skin of the middle of the side of the neck. Max volume per injection site is 7 ml.

Subcutaneous injection in middle of side of neck.



Store Between 15°C and 30°C (59°F and 86°F).

SUPPLEMENTATION PROGRAM	
BULLS	3 times per year
BEEF COWS	4 weeks before breeding 4 weeks before calving
DAIRY COWS	4 weeks before calving 4 weeks before insemination at dry-off
CALVES	at birth at 3 months and/or weaning
HEIFERS	every 3 months – especially 4 weeks before breeding
(program gives planned dates that can be varied to suit management programs)	

DOSAGE TABLE

ANIMAL WEIGHT (lbs)	CALVES UP TO 1 YEAR 1 ml/100 lb BW	CATTLE 1 - 2 YEARS 1 ml/150 lb BW	CATTLE > 2 YEARS 1 ml/200 lb BW
50	0.5 ml	-	-
100	1 ml	-	-
150	1.5 ml	-	-
200	2 ml	-	-
300	3 ml	-	-
400	4 ml	-	-
500	5 ml	-	-
600	6 ml	-	-
700	7 ml	-	-
800	-	5.3 ml	-
900	-	6 ml	-
1000	-	6.6 ml	5 ml
1100	-	-	5.5 ml
1200	-	-	6 ml
1300	-	-	6.5 ml
1400	-	-	7 ml

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BY HEATHER SMITH THOMAS

PORTABLE WATER SYSTEMS MAKE ROTATIONAL GRAZING EASIER

Rotating livestock through pastures, providing recovery time for parcels recently grazed, can greatly increase pasture production. The drawback for many producers is having to move the temporary fencing and to provide water in each small pasture. Portable water tanks improve the flexibility of rotational grazing systems, being easy to move, and provide an inexpensive way to get water to all of the paddocks.

Portable tanks can be created from plastic barrels or purchased inexpensively and in a variety of sizes—from 50 to 1,000 gallons–at most farm supply stores. Plastic and fiberglass tanks are less expensive and last longer than steel, and are easier to move because they are lighter. The smaller tanks are easiest to move and often adequate in a rotation system because the cattle in a small area won't be all drinking at the same time. A simple over-the-ground system of hoses or flexible pipe can often work during summer when it's not vulnerable to freezing, according to Ian Gerrish, at Cobb Creek Farm in Hillsboro, Texas.

Gerrish has a cattle operation and also partners in a fence and water system business. He says many producers are reluctant to invest in a permanent system on leased pasture. A portable system can be taken to your next place or from one paddock system to another. He suggests using HDPE (high-density polyethylene) roll pipe.

These "plastic" pipes can be rolled on a reel and unrolled somewhere else. "Big reels can be obtained inexpensively from cable companies that have leftover spindle reels. You can roll the reel over the top of the pipe and gather it that way, but I created an adaptation with plates on my bale unroller on my tractor. I hook that into a reel to roll it up, and pick it up with the tractor to move it around," he explains.

"There are several different types of fittings that will work if you have to roll it back up. Some you tighten with a wrench, or you can use barbed fittings with hose clamps. With hose clamps, always use two, and go opposite ways with

Risers located throughout the pastures offer easy access to water.

them, and the fitting won't come loose," he says.

"In hot weather, make sure the water doesn't get too hot in above-ground black pipe. If water gets hotter than 100 degrees cattle won't drink it," he explains.

He uses Rubbermaid tanks, which are very durable—withstanding hot weather without melting and cold weather without becoming brittle and breaking. "I use Apex extra-flow valves that go through the tank. These 3/4 inch valves will accommodate from 4 to 175 pounds of pressure," says Gerrish.

He recommends selecting a tank size to fit your herd size, and that could be 100 to 300 or more gallons. "I use the 300 and the 150-gallon tanks. Even a 300-gallon tank is light enough (when empty) that one person can pick it up and put it on the back of an ATV," he says.

Some producers pump water or use gravity flow systems. "If you have to haul water, I feel it's hard to justify the cost, but for some people it might work. You might use a water truck and tie it into your system, and then fill it up again in a day or two," he says.

Some people use portable tanks on a permanent water system with the pipes buried. Underground or overground PVC or HDPE pipes can be situated along an existing fence line where the risers are out of the way of the cattle. "A quick-coupler valve or a hydrant enables you to tap into the line wherever you need to, and move your portable tank to each new location," says Gerrish. Portable tanks can also be placed under fences to supply two to four separate paddocks.

He likes plenty of hookups—the closer together the better. "Most of mine are set 200 feet apart, allowing flexibility for where we put the tanks when we do high-density grazing and move the cattle often. Just make sure those quick-coupler valves are protected so the cattle don't walk or rub on them."

He tries to put tanks on high spots in the pasture, rather than in low areas so they don't make a muddy mess if they run over, and always tries to keep the walking distance to the water tank less than 800 feet. "Then the cattle won't mob the tank all at once and are more likely to come individually," he explains.

"There are many kinds of pumps that work for a water system. In some situations you may be just rigging up something for an over-the-ground system." A producer who is trying to figure these things out for the first time can often get good advice from someone who has been doing rotational grazing with portable water systems. Some of the best tricks and tips are learned by experience, trial and error, and someone who has been doing this for a while can help you avoid problems. FL

BY DON TYLER

Increasing Your Training RETENTION

For many in agriculture, our training consisted of watching dad and grandpa do their regular activities and learning to do it their way through observation and the occasional explanation. "Teachable moments" (to be generous) came when we messed up and had to be taught the right way to do it. Not to take anything away from their instructional style, but mistakes and oversights were often our best teachers.

Today's employees need something much more safe, efficient and effective. They probably don't have the benefit of years of extensive agricultural experience prior to working with us, nor do they have the basic common sense that will protect them from hazards and help them understand regular procedures.

Traditional Learning Strategies

Until recently, the most common way that companies provided training for their employees was in a classroom or on-site training. They used the same methods that high schools and colleges use, which made their employees feel like they were back in class. This technique provided the content, but employees were bored, trainers felt they weren't getting the attention the topic deserved and as a result, retention was low. When teaching safety, poor retention can lead to a serious injury or fatality.

In the last 5 to 7 years many companies have realized that their trainees, the learning environment and personal training preferences have changed significantly. Instead of a process where specific content is delivered and success is measured by the trainee's ability to recite key points, they need to use a variety of technologies, training media, presentation styles and personal interactions to maximize the retention of the material.

Forward-Thinking Adult Learning

Many companies have modified their adult learning strategy because they realized most of their learners have short attention spans, are accustomed to watching videos as an element of their training, can absorb visual information rapidly, and their employees have experiences they want to share. Additionally, when they provide training during work hours they need the training to be worth their time. They need answers to today's problems.

Here are specific strategies to enhance retention of all training:

- Know your learners at a personal level. What is their comprehension capacity? Is there a language or literacy barrier? Are they comfortable taking an individual, written quiz of the material? Do they prefer to learn as a group or individually?
- Use a Blended-Learning approach. Provide group/classroom training as well as individual lessons and personal coaching. This is very important to ensure that all types of learners get the information at their pace and style.
- Provide participants with ample opportunity to share what they know. Make it easy for them to contribute to the main topic being taught.
- Whenever possible, provide hands-on experience. Take the training outside to the area you are discussing. Don't talk about machinery guarding in the lunch room, do it in the feed mill. Do your training on cattle processing in the working facility.
- Pose several questions during the training to draw out their experiences and get employees talking among themselves rather than the instructor or supervisor doing all the talking.
- Encourage them to talk about challenges or problems in their area and develop solutions during your discussion. Decide on clear action steps that they can take, and those you will take, to resolve that issue as quickly as possible.
- Leave them with an assignment to encourage them to continue learning about today's topic and come to the next session with answers or observations. Possibilities include: "Keep an eye on the new cattle in pen 86 for the next month. How does their behavior change? What changes do you see in their appearance? When did they really start eating good?" Be sure to include specific areas of focus that you are trying to teach. You might even give them a weekly record sheet on pulls, feed consumption, growth projections, etc. to help them learn about these key factors.

To confirm retention, watch for specific examples that they are applying their learning in their everyday duties. FL

Don Tyler is founder of Tyler & Associates Management Coaching. He can be reached at dhtyler@frontiernet.net or by calling 765-490-0353.


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Even Inoculant Application is Key for Quality Silage

Uniform distribution of silage inoculants is an important factor in their ability to control the ensiling fermentation, and even gravity may be holding back inoculant performance. Some formulations may quickly settle out in the applicator tank — resulting in uneven application.

"Inoculants contain live bacteria that are diluted and applied in small quantities during harvest," says Renato Schmidt, Ph.D., Forage Products Specialist, Lallemand Animal Nutrition. "In as little as an hour, the bacteria, which are heavier than water, can sink to the bottom of the tank. Producers can end up applying the correct concentration of bacteria for the first 30 to 60 minutes, then applying a more concentrated suspension as the bacteria settle out. Producers could apply pretty much just water later on in the application."

To address these issues, producers should look for inoculants with advanced suspension technology, like the high concentration (HC) technology from Lallemand Animal Nutrition. These formulations resist sedimentation for up to 24 hours after dilution to produce a more homogenous product application. Plus, HC technology inoculants are more compatible with low-volume applicators as there is less risk of clogged pumps.

"HC technology produces a more stable suspension and improves bacterial stability," Dr. Schmidt says. "With traditional inoculants, bacteria may only survive a few hours in the tank. If growers don't use a full tank each day, they may have to drain and add fresh inoculant each day to get the optimum effectiveness. With HC technology, the bacteria can remain viable — and the tank is well mixed — into the following day."

To further improve application, Dr. Schmidt recommends producers calibrate application rates, and check the rates several times a day. Using insulated tanks also helps keep the product cool to help maintain viability.

"Even application, and keeping the product cool, helps make the most of your inoculant investment," he concludes. "Combined with good ensiling practices, inoculants can help growers produce high-quality silages that help lower feed costs and improve productivity." FL

ELD waiver extension a win for agriculture, but a permanent solution needed

The Federal Motor Carrier Safety Administration (FMCSA) announced another 90-day waiver on the electronic logging device (ELD) mandate for agriculture in mid-March.

"We essentially got an additional 90-day extension for ag commodity haulers from the last 90-day extension," said Allison Cooke, NCBA executive director of government affairs. "During this time, FMCSA hopes they can continue to do outreach on the devices themselves and provide guidance on the 150-air mile exemption and put out further information that will be helpful as we move down this path on ELD and Hours of Service."

Cooke said although the ELD mandate is what brought attention to the topic, the larger issue at hand is Hours of Service. The 11-hours of drive time, 14 hours on duty and a 10-hour rest doesn't really work for the live haul community, she explained.

"We have an animal welfare issue and weather to deal with when hauling animals. We have a lot of Congressional member support and are working on language to fix hours-of-service so it works for livestock haulers."

NCBA President Kevin Kester said it is good news for agriculture, but it will take more time for the industry to work on solutions for the Hours of Service rules.

"We continue to work on that legislation, and work with FMSCA," Cooke added. "We've been attacking ELDs and Hours of Service from any way possible, and we will continue to do so. When you're out and about and your members of Congress come home, please remind them this is still an issue to you. We got another 90 days, but this is important so you can haul your cattle around the country and feed people." FL

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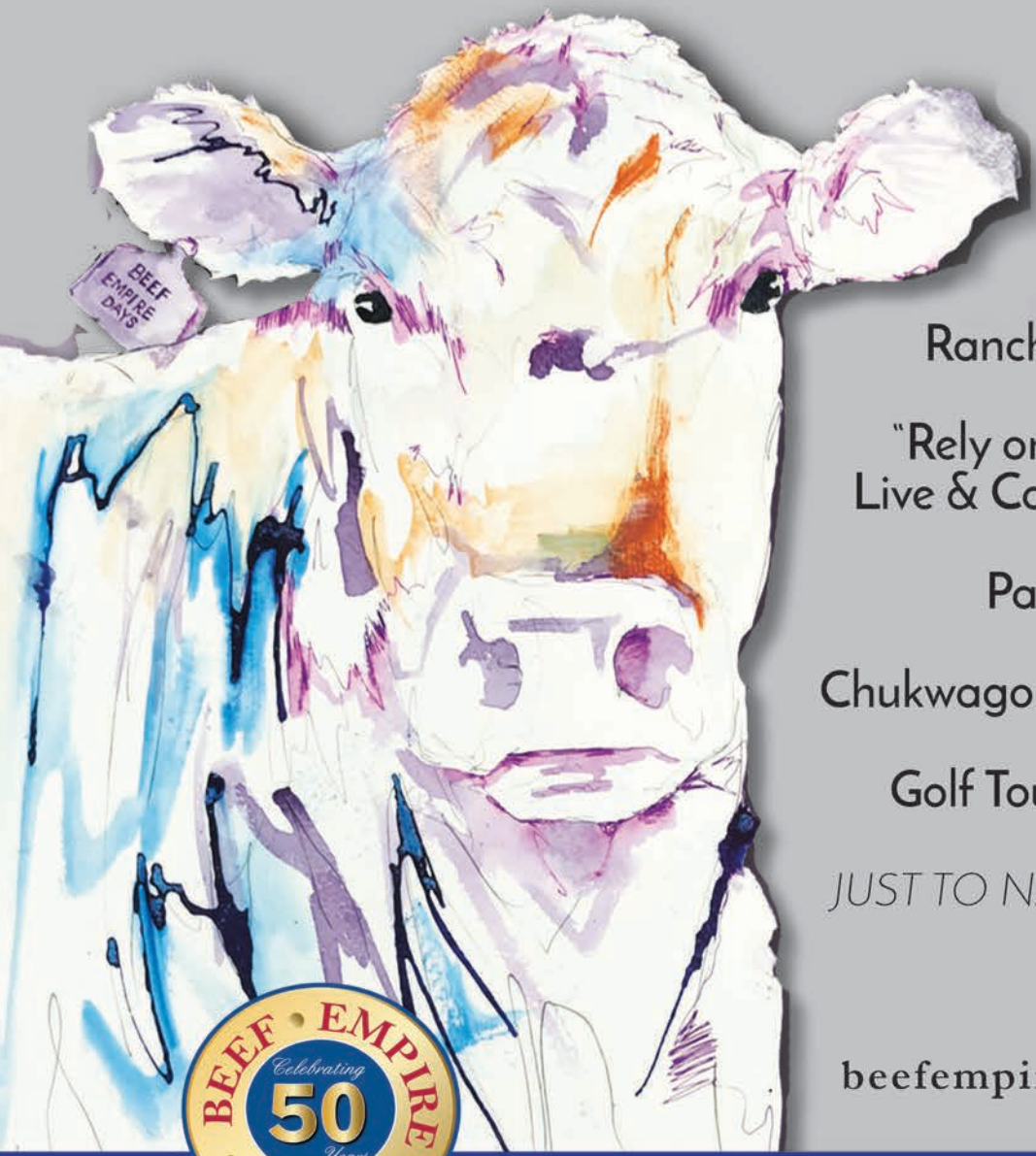

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NCBA Encouraged by "Positive Developments" in Omnibus Spending Bill

NCBA Senior Vice President of Government Affairs Colin Woodall said the omnibus spending bill in Congress includes a number of positive developments for cattlemen and women. Included is language that would prevent 200,000 farms and ranches from being regulated like toxic waste sites, plus a delay the implementation of electronic logging devices for livestock haulers for another six months. The bill also provides a critical fix for wildfire funding that also provides expedited authority to implement much-needed vegetation management on federal lands.

"We are also glad to see refinements to the tax code that address the 199A issue," he said. "NCBA and our affiliates have been working closely with Congress to ensure the spending bill addresses issues of concern for U.S. ranchers and beef producers, and we are glad to see our policy priorities reflected in the legislation. We urge Congress to take the next step and vote 'Yes' when the bill comes up for a vote."

Details on each of these topics include:

• CERCLA Reporting: A provision would relieve livestock producers of the emissions reporting requirements under CERCLA, protecting 200,000 farms and ranches around the country. NCBA has been urging affiliates and members to support stand-alone legislation in the House and Senate that would also exempt agricultural producers from CERCLA reporting requirements. Passage of the omnibus spending bill would achieve the same goal.

• Electronic Logging Devices: The bill includes a provision that would grant livestock haulers an exemption from ELDs until September 30, 2018. A further delay will provide the Federal Motor Carrier Safety Administration (FMCSA) more time to educate our livestock haulers on the ELDs while industry works on solutions to the current Hours of Service rules that do not currently work for those truckers driving livestock across this great nation.

• Section 199A Fix: The 199A fix included in the bill will equalize tax treatment of commodity sales to cooperatives and non-cooperatives, while also providing flow-through deduction from co-ops to their members similar to the old Section 199 deduction for domestic production activities. FL

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