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VALUE-ADDED

SOLUTIONS

IN THIS ISSUE

Roadmap to Sustainable Beef Cattle Production in the USA

8 Feedlot research leads scientists to seek Charolais-influenced cattle

12 How you feed hay this winter is more important than ever



By Dr. Clint Rusk Executive Vice President American-International Charolais Association

On December 14th, I presented a keynote lecture at an International Symposium in Hyderabad, India on the topic of "Novel technologies and policy interventions for a sustainable meat value chain." During this presentation to the 11th Conference of the Indian Meat Science Association, I discussed components to a *Roadmap* to Sustainable Beef Cattle Production in the **USA.** As an invited speaker to this Symposium, our charge was to: "develop novel technologies for sustainable meat production" to produce an adequate supply of meat animal protein to feed the world population in the year 2050 and beyond. This is a huge task and one that will require using the very best in animal genetics, growth promoting technologies and the latest in scientific techniques.

At the current time in the USA, a large portion of the land we use to produce grass and grain to feed our cattle is in the severe drought category according to the National Weather Service. These severe drought conditions exist in the western half of the country where a large portion of our beef cattle are raised and fed to market weight. There were 17,800 news stories in the United States reporting on the impact of drought on cattle and beef from July to September 2022. This is an increase of 56% from the previous guarter. The severe drought conditions are now entering the second year in some regions of the USA. The lack of rain has led to the shortage of forages (grass and hay) and the liquidation of cows in some states like Texas where nearly half of the beef cattle herd has been sold in the past six months. Liquidation of beef cows has also been prevalent in other western states. It is only a matter of time before the reduction in beef cows will result in a shortage of feeder cattle and eventually a shortage of market cattle to produce the meat needed to feed a growing population.

ROADMAP TO SUSTAINABLE

BEEF CATTLE PRODUCTION IN THE USA

As we think about a roadmap for sustainable beef cattle production in the USA, we must first discuss what is means to be sustainable. The most often quoted definition comes from the UN World Commission on Environment and Development: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The University of California, Los Angeles (UCLA) defines sustainability as "the balance between the environment, equity, and economy." Sustainability presumes resources are finite and should be used conservatively and wisely with a view to long-term priorities and consequences of the ways in which resources are used. In simplest terms, sustainability is about our children and our grandchildren, and the world we will leave them. In an article written on June 23, 2022, Daniel Mollenlkamp says, "in the broadest sense, sustainability refers to the ability to maintain or support a process continuously over time. In business and policy contexts, sustainability seeks to prevent the depletion of natural or physical resources, so they will remain available for the long term." When

asked about the meaning of "sustainable", I think about the cattle ranchers who have been managing their operations for 40-70 years in such a way that their management practices ensure the survivability of the ranch for future generations to be successful and their cowherds to be profitable.

Now that we have discussed what it means for a practice to be sustainable, let's discuss the changes we anticipate between now and 2050 that will affect the way we raise beef cattle. 1) Experts say the world population will continue to increase at an increasing rate. These same experts predict we will have a world population of approximately 9.7 billion people by 2050. 2) the acres of land needed to raise forage for ruminant animals is decreasing daily. Thus, the number of beef cows available to breed in 2050 will be less than the number we currently have in the USA. To feed the world in 2050 with fewer cows, we will need to utilize all the technologies available to us, including the latest advancements in beef cattle breeding, genetics, nutrition, and reproduction. Because of their rapid growth from birth to harvest weight, their feed efficiency (the ability to produce a pound of meat from fewer pounds of grain than other breeds), and their inherent muscling; Continental breeds of cattle like Charolais will play a significant role globally as governments prepare to feed the world in 2050 and beyond. With increasing populations and decreasing land for cattle production, we will be forced to produce more meat from fewer cattle. At the end of the day, cattle producers will naturally look to those breeds of cattle who are the most efficient at converting grass and other feedstuffs into red meat; those breeds who are known to grow rapidly to their ideal harvest weight; and those breeds who produce a high percentage of carcasses that grade Choice or higher with minimal percentages of Yield Grade 4s and 5s.

As we start laying out a roadmap for sustainable beef production in the USA, let's start with an animal breeding technique that has been around for many years. This simple breeding scheme is called "crossbreeding' and



it results from mating two or more breeds who are complimentary to one another. One significant benefit from crossbreeding is heterosis where the resulting offspring are superior in some traits to both their sire and their dam. Another word for heterosis is hybrid vigor which results in an increase in such characteristics as size, growth rate, fertility, and yield of a hybrid organism over those of its parents. Animal breeders exploit heterosis by mating two different purebred lines that have certain desirable traits. Crossbred offspring will often demonstrate an increase in health and hardiness at birth, an increase in growth and performance prior to weaning, as well as additional growth postweaning and on through the finishing phase as cattle reach their ideal market weight. Crossbred cattle tend to be more efficient in the pasture and in the feedyard.

positive reputation for vigorous health, rapid grow, improved muscularity, and very good efficiency. In addition, these "smokie" colored steer calves traditionally sell for more \$ per pound at weaning than heifer calves of similar breeding. The first year of this experiment went very well. The cattle producer's goals were met.

However, the following year, the same cattle producer did the math and decided to breed all his black cows to sexed male Charolais semen to maximize the income from his calf crop. The cattle producer then took a portion of the profit from his mostly male calf crop and purchased black heifer calves from a reputable source known for producing heifer calves who excel at maternal traits including good udder quality, good milking ability and excellent fertility. Two vears later, this cattle producer is still breeding his entire herd of black cows to sexed male

As we plan our roadmap to produce cattle in a sustainable manner, some consumers prefer to purchase beef raised in an environmentally friendly manner.

Crossbred cattle also have a reproductive advantage over their purebred counterparts. A simple two-breed crossbreeding system will allow cattle breeders to produce more units of beef per acre than is typically possible on a purebred cattle operation.

An example of a crossbreeding scheme described above has been used in a research setting in recent years in the U.S. With the improvement in fertility of sexed semen, a commercial cattle producer in South Dakota chose to breed 80% of his black commercial cows to sexed male semen from Charolais bulls. The reason for this decision was twofold: 1) the cattle producer decided to continue breeding 20% of his cows to Angus sires who excelled in maternal traits to produce his own replacement females. 2) He chose to breed 80% of his black cowherd to male Charolais semen because Charolais X Angus cross calves have a

Produced by:

Charolais semen and buying black replacement females. He now has the data to show the increase in profit over the days when he bred his black cows to black bulls.

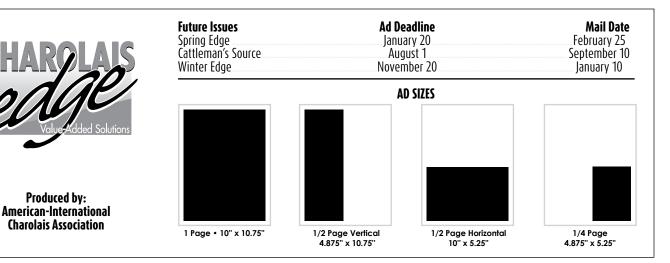
Because of the extra carcass merit (marbling and muscling) found in crossbred calves from Charolais sires, these animals are excellent candidates for premiums offered by carcass based "grids" such as "GeneNet" and "Sterling Silver". During the past year, I learned that one of the major U.S. packers is now offering a premium for market cattle weighing over 1600 pounds. In my opinion, this is good news for cattle breeders who utilize Charolais sires on English bred cows. The crossbred calves from these matings tend to be leaner at heavier market weights than crossbred calves resulting from mating two English breeds together. In addition, crossbred calves from Charolais sires should produce a lower percentage of

yield grade 4 and 5 carcasses at 1600 pounds, making them an excellent choice for packers seeking heavier market cattle.

As we plan our roadmap to produce cattle in a sustainable manner, some consumers prefer to purchase beef raised in an environmentally friendly manner. Additional research is needed to document various breeds of cattle and their ability to produce sustainable beef in a manner that consistently leaves a smaller carbon footprint than other breeds. When the research is complete and the reports are released, we look forward to sharing the results and making a compelling argument with consumers that some breeds of U.S. cattle are excellent choices for producing sustainable and environmentally friendly beef.

The other management technique that added value to U.S. feeder cattle is a combination of backgrounding and preconditioning treatments intended to increase the price feeder calf buyers are willing to spend to purchase the calves they want to raise. To start with, the feeder calf buyers asked the cattle producers to give their calves pre-weaning shots while the calves are still nursing their mothers. These shots for blackleg, respiratory disease, and shipping fever, greatly increased the health status of the calves during and after weaning. Next, the calf buyers asked the cattle producers to wean their calves a minimum of 45 days prior to offering them for sale. Whether they used abrupt separation of the calves from their mothers or practiced a technique called "fenceline weaning" where the cows and calves could still hear, see, smell, and touch each other, weaning the calves prior to selling resulted in healthier, heavier calves who presented less "risk" to the calf buyers. Some cattle producers further increased the value of their calves by "bunk training" them so the calves are accustomed to eating out of feed bunks for at least seven days prior to being sold to a new owner and being moved to a new home.

A successful value-added program in Oklahoma is called the "Oklahoma Quality Beef Network". This program has been in





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Charolais Journal 11700 NW Plaza Circle Kansas City, MO 64153 Phone: (816) 464-2474 | FAX (816) 464-5759 Website: CharolaisUSA.com

> Find us on Facebook Facebook.com/CharolaisUSA

ASSOCIATION STAFF Dr. Clint Rusk Executive Vice President, ext. 101 crusk@charolaisusa.com

Maggie Smithee Recording Secretary, ext. 401 msmithee@charolaisusa.com

David Hobbs Vice President of Operations, ext. 200 dhobbs@charolaisusa.com

Kaitlyn Chism Director of Youth Activities and Foundations, ext. 201 kchism@charolaisusa.com

Samantha Corn AICA Communications & Event Coordinator, etc.102 scorn@charolaisusa.com

Sarah Page Assistant Recording Secretary/Data Coordinator, ext. 402 spage@charolaisusa.com

> **IOURNAL STAFF** Dr. Clint Rusk **CPI** President

David Hobbs

Manager

Molly Schoen Editor, Ext. 104 mschoen@charolaisusa.com

To uses the extension numbers listed for the above staff, phone (816) 464-2474



SOUTHWEST REPRESENTATIVE Cody Beck C (765) 719-1622 fwampler@charolaisusa.com cbeck@charolaisusa.com WEST

REPRESENTATIVE **Contact AICA**

Hadley Schotte C (785) 562-6632 hschotte@charolaisusa.com

CENTRAL/NORTHEAST REPRESENTATIVE David Hobbs (816) 464-2474, ext. 200 C (913) 515-1215

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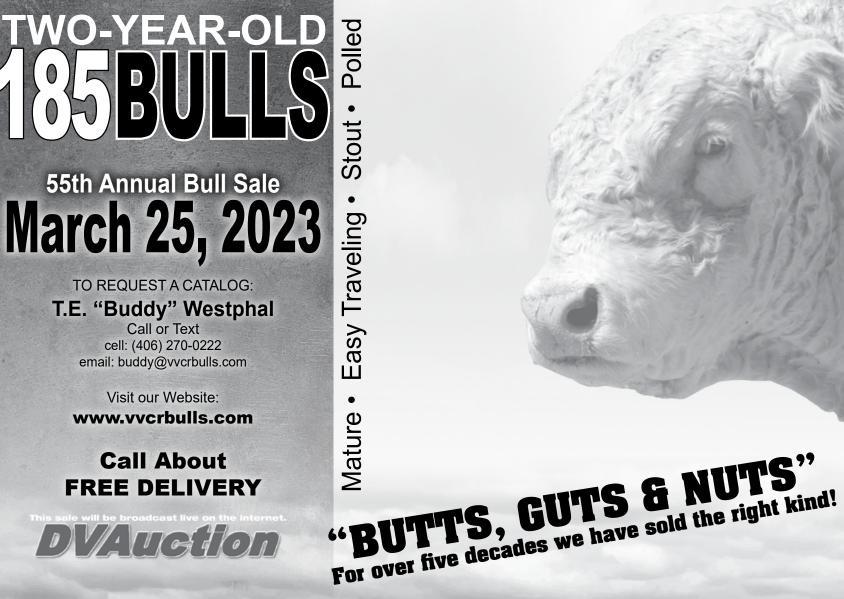
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PAGE 4 WINTER 2023



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existence since 2011. The Oklahoma Quality Beef Network (OQBN) is a joint project of the Oklahoma Cooperative Extension Service and the Oklahoma Cattlemen's Association (OCA). OOBN is a network of beef producers, Extension Educators, veterinarians, and industry professionals committed to increasing producers' access to value added marketing opportunities and improving the quality of cattle produced in Oklahoma by increasing communication between all segments of the beef industry. The weighted average premium for preconditioned calves relative to nonpreconditioned calves at the same sale has ranged from a low of \$8.35/hundred weight in 2020 to a high of \$19.35 in 2014. For example, 600-pound calves would have received a premium of \$50.10 per head in 2020 and \$116.10 per head in 2014.

During my lifetime, there have been amazing advancements in the technology used to produce livestock. Artificial insemination (A.I.) has been around for more than 60 years. Synchronization protocols have improved to the point a cattle producer can use timed A.I. to get over half of their herd bred on one day. The benefits of this technology are numerous. For instance, most replacement heifers can be produced from cows who become pregnant in the first month of the breeding

season. The length of the breeding season can be controlled by the producer which could result in shorter calving seasons and a more uniform set of replacement heifers and sale bulls. The use of artificial insemination. coupled with synchronization protocols, sexed semen (both male and female), and crossbreeding have increased the profitability of beef and dairy operations across the U.S. As I said in the opening paragraph, producing enough animal protein to feed the world in 2050 is a daunting task that will require using the very best in animal genetics, growth promoting technologies and the latest in scientific techniques. I have tremendous confidence in the ability of future generations to develop novel ideas and labor-saving devices that will allow future cattle raisers to produce more beef from fewer cows to do their part to help feed the world in 2050...and beyond!

As we approach the 44th National Charolais Sale in Denver, CO on January 14, 2023, I am reminded the National Sale officially marks the beginning of "Charolais Sale Season" for 2023. If any of our field staff or other AICA employees can be of service to you in the coming months as you seek your next herd bull or replacement females, please let us know. You can find our contact information on our website at www.charolaisusa.com/ headquarters.php.





SCR Sir Frontline 244 PLD Sire: EC Front Line 734 PLD BD: 3-8-2022 SCR Sir Superman 293 PLD Sire: SCC Superman 61Z PLD BD: 3-17-2022 BW: 65 205: 774 Index: III CE: 4.6 BW: 2.9 WW: 82 YW: 126 MK: 21 TM: 62 TSI: 264 BW: 85 205: 728 Index: 104 CE: 10.3 BW: 2 WW: 63 YW: 111 MK: 27 TM: 58 TSI: 253

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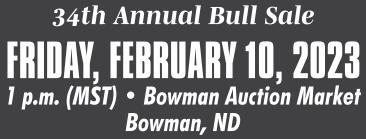
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are stylish and deep with super dispositions. He has outstanding foot structure and was the sire of our hiah-sellina bull last vear.

Thank you to all our past customers and new customers. Wishing everyone a blessed and prosperous 2023.

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FEEDLOT RESEARCH LEADS SCIENTISTS TO SEEK CHAROLAIS-INFLUENCED CATTLE

South Dakota's land grant university uncovers potential for Charolais genetics to help solve cattle feeding challenges.

By Hilary Rossow and Amy Blum

While black-hided cattle have long been seen as desirable in feedyards and packing plants across the country, research from South Dakota State University in Brookings, SD gives colored cattle – specifically Charolais-sired cattle – exciting new legs to stand on.

There is no real dispute over the value of heterosis or "hybrid vigor," which occurs when two breeds are crossed. Usually, the best traits from each animal are exhibited in the offspring resulting in an animal that is superior to either parent.

Cattlemen know that although Angus beef, for example, may have more marbling than continental breeds, Angus cattle are generally lighter muscled and cutability often suffers when they are fed to greater slaughter weights. Crossing Angus cattle with largerframed continental breeds like Charolais often results in high-performing cattle without sacrificing quality carcasses.

Enter South Dakota State University's research team.

The university boasts two locations in eastern South Dakota designed to perform research using real-world feedlot environments. Graduate students and Animal Science PhDs create and execute experiments at each the South Dakota State University (SDSU) Ruminant Nutrition Center located near Brookings, SD and the Southeast Research Farm located near Beresford, SD.

A rolling population of cattle is required for accurate testing. Recent research projects include testing feed ingredient inclusion accuracy, trace mineral delivery methods, and the effects of different cattle receiving protocols.

Dr. Zach Smith and Dr. Warren Rusche oversee the operations of both facilities and are largely responsible for ensuring accuracy of many research components as well as supporting graduate students.

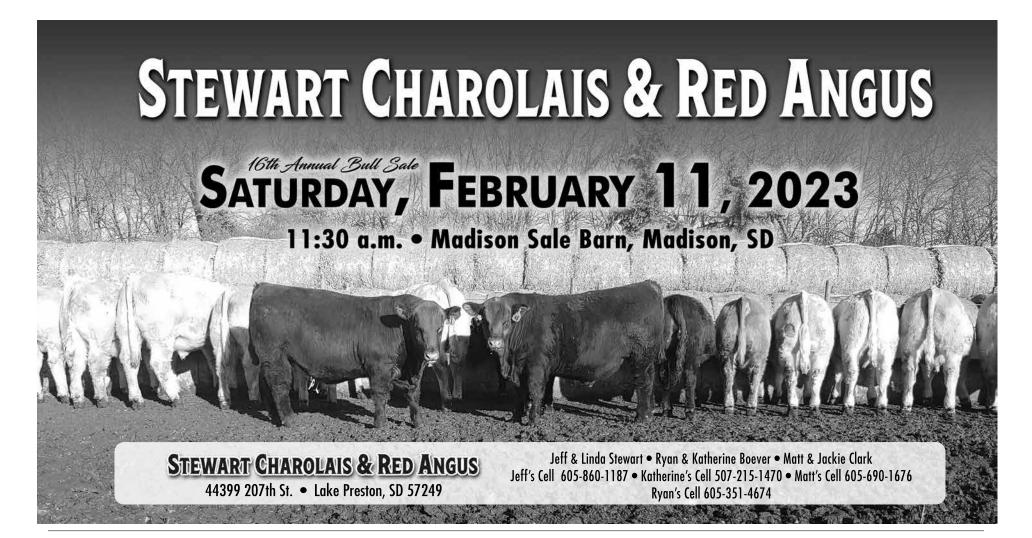
"The goal is to make sure the grad students graduate with their masters. These research

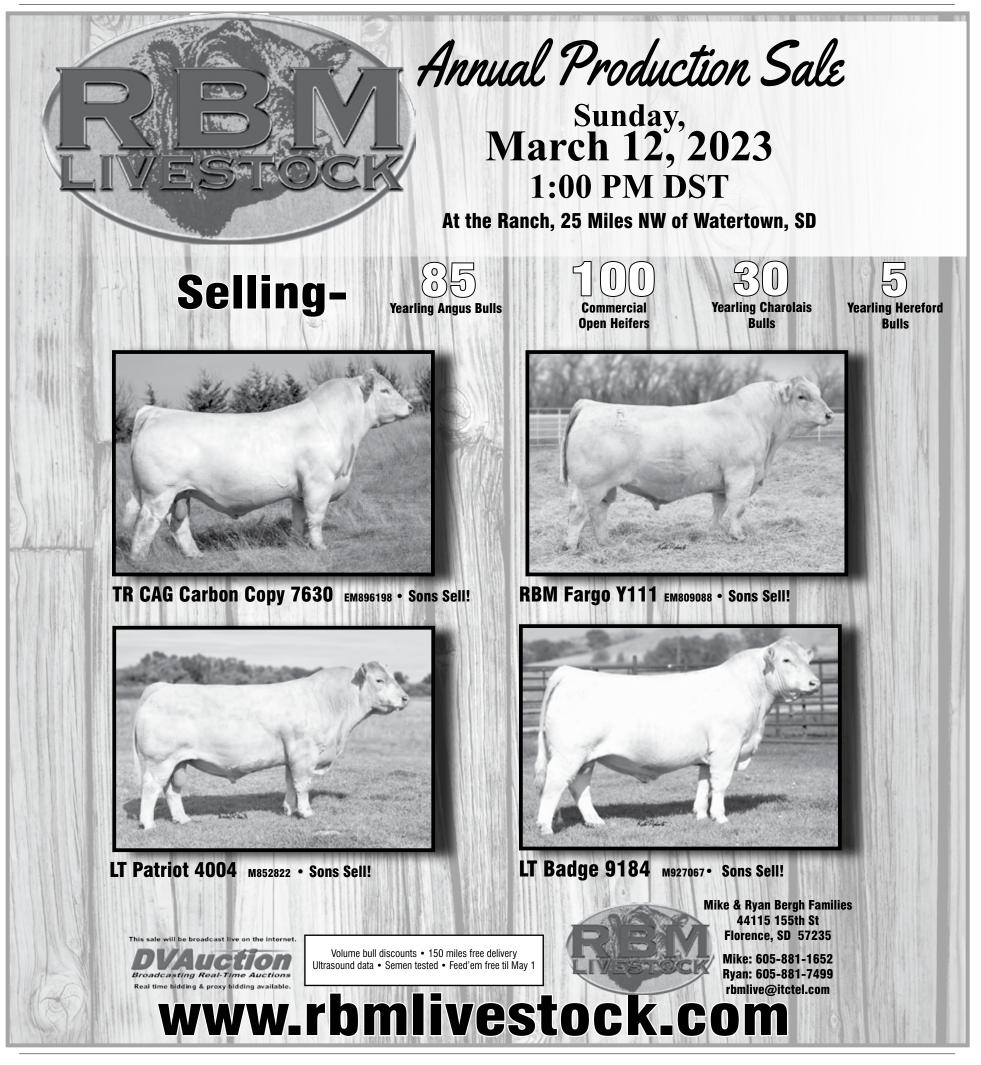
projects are a huge component of that," said Dr. Rusche.

In the spring of 2019, SDSU's cattle buyer was given a budget and sent to the Ft. Pierre Livestock Auction in central South Dakota to purchase cattle for the Brookings site. There, he found an impressive set of Charlolais-influenced cattle. Uniformity in size, age, and finish are important in a research setting, and the Charolais calves met each of those requirements.



Charolais steers on feed at South Dakota State University remain on feed during heat stress events whereas the feed intake of black-hided steers suffered.





Additionally, the cattle used in SDSU studies need to be adaptable to the harsh climate of eastern South Dakota where temperatures vary from -20 to over 100 degrees including wind, all forms of precipitation, and humidity. Since the Charolais-influenced cattle were born and raised in South Dakota, there was little concern they would be able to adapt.

After the first experience feeding the Charolais-influenced calves, the SDSU research team decided to purchase calves from this ranch in subsequent years. A variety of research projects were conducted, none of which focused on cattle breed. After the projects were concluded, the cattle were harvested. According to Rusche, here is when highlights specifically tied to breed composition emerged.

The steer calves purchased in the fall of 2021 were finished to 1,475 pounds and harvested in July. Even though they were heavy, and July was particularly hot, the Charolais-influenced cattle's feed intake was not affected.

The cattle graded exceptionally well with over 50% grading upper 2/3 Choice or Prime and only 17% Yield Grade 4 or 5. Only 12% of the cattle did not grade Choice or better.

Interestingly, the heifers from this ranch graded even better than the steers with nearly

80% grading upper 2/3 Choice or Prime with only 15% Yield Grade 4 or 5. Breaking this down according to Rusche, even though the cattle appeared to be over-finished, they did an exceptional job of depositing fat in the muscle rather than backfat or KPH fat.

While the Charolais-sired calves were fed in Brookings, black-hided calves meeting the same research criterion were fed simultaneously at the Southeast Research Farm. These cattle were fed through the summer, and their feed intake suffered during heat stress events. Because of the differences in how cattle responded to heat stress, the SDSDU researchers are considering a limitation on the number of black-hided cattle on feed during the summer months.

With the current year's group of Charolaisinfluenced calves already on feed for research in Brookings, work is underway to ensure the next round of cattle brought into Brookings will be sourced from the same rancher. The South Dakota rancher's herd handling techniques coupled with the herd's uniformity in size, age, and genetics, plus overall herd health at receiving make these Charolais-influence cattle ideal for research.

Having quality, healthy, productive stock from day one is key. The cattle can perform immediately while letting graduate students, staff, and faculty gauge the efficacy of protocols, feed ingredients, and environment without having to hypothesize about why certain animals in groups do not perform or dealing with health issues.

"SDSU's Ruminant Nutrition Unit and its faculty are evaluated on publishing, grad students completed degrees, and mentoring. The cattle are the tool. The research SDSU does answers questions for cattle feeders in the upper Midwest. How can we use feedstuffs grown here combined with genetics available here? The ultimate goal is to turn the cattle into something that provides a high degree of eating satisfaction to consumers," Rusche says.

Rusche considers himself a "breed agnostic" stating there are "good ones of every color". Yet, the veteran cattle producer turned researcher finds the possibilities triggered by early research exciting.

"I think we've used color as proxy for quality and value," he says. "But, we've had a chance to feed enough of these [Charolais-influenced cattle] that I'd put them up against an awful lot of cattle in an awful lot of places."

Rusche continues, "As our knowledge advances, we can evaluate cattle based on their value while being color blind. Biological basis of heterosis has not changed. There are real advantages to using breeds complementary. These [Charolais-sired] cattle have been grading particularly well. The producer has made decisions to use Angus on the female side to make these good calves. It's hard to find cattle that excel in everything from feed conversion plus quality grade and cutability, but I think we're seeing that."

To say SDSU has been pleased with the way their Charolais-influence cattle have performed is an understatement.

"Combining Charolais and Angus genetics to keep quality without having excess fat while maintaining feed efficiency has proven very effective. Small differences in feed conversion adds up in a hurry with the rising cost of feed," Rusche says.

Identifying cattle sources with exceptional growth, efficiency, and carcass potential is a key component to the future of South Dakota State University's feedlot research program. Charolais-influenced cattle have proven to meet those criteria well. Given all that's already been learned, Charolais genetics will likely continue to be an important tool in the university team's mission to find answers to today's cattle feeding challenges while also training the next generation of animal scientists.

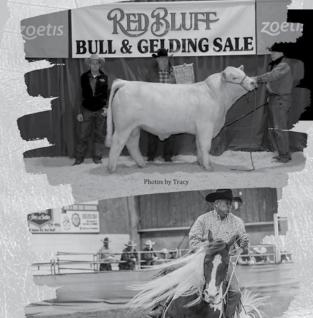


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HOW YOU FEED HAY THIS WINTER IS MORE IMPORTANT THAN EVER

By C. Tim Schnakenberg

With a shortage of standing forage for cattle and the low availability of hay, it is more important than ever this winter to reduce waste when feeding hay.

Hay waste is normal, but it can be controlled and minimized, said University of Missouri Extension agronomy specialist Tim Schnakenberg.

There can be considerable loss when livestock producers feed large round or square hay bales, Schnakenberg said. Research shows that losses from improper feeding of hay bales can be as high as 40%, depending on how hay is presented to the cows, he said. Feeding losses may be more typically around 10% to 20%. A 20% loss can make a \$60 bale of hay cost \$72 by the time it is fed.

Some believe hay can make great bedding for cattle and calves during cold weather. While true, it makes for some very expensive bedding, Schnakenberg said. Even poor-quality hay this year was expensive to roll up.

"There are several methods producers can use to minimize losses when feeding round bales," said Schnakenberg. At the very least, use a bale ring to restrict full access to the hay and minimize cattle stomping on hay and making bedding out of it. In one MU study, using rings kept losses to about 5% whether feeding a one-day supply or a seven-day supply of hay. Rings or racks are crucial for producers who do not choose to feed cattle on a daily basis, he said.

"Be sure to purchase enough rings so all cows can eat at the same time," Schnakenberg said. "If you have 50 cows and your rings have 10 spaces for feeding, five rings are needed. If you do not have adequate space, the aggressive cows crowd out the timid cows, forcing them to eat lower-quality hay."

The type of feeder can make a big difference in the degree of hay loss. Studies on types of ring feeders by MU, Oklahoma State University and Michigan State University found very similar results when feeding grass hay. In the MU study, an open-bottom ring feeder resulted in a 20% loss of hay. A sheetedbottom ring feeder had a 13% loss, and a cone feeder resulted in only a 5% loss. The studies found that having a sheeted ring around the base made a huge difference in all cases. While cone feeders are much more expensive, they can be worth it in the long run, Schnakenberg said. "If you can drop hay losses 8%-15%, that extra cost starts to be made up in hay remaining for cow consumption. These feeders also have a longer life, support heavier bales and have been found to keep cattle from pulling hay off the top and dragging it into the mud. Since they have a longer life, you can spread the investment of that feeder out over more animals."

One of the best ways to reduce losses is to feed hay in small amounts. This gives cattle less opportunity to trample hay and make it unappealing for consumption. This requires some calculations of how much hay per animal is needed, factoring in potential losses associated with your feeding method. There are some who will unroll hay every day or even twice a day, making cows finish all the hay before they get more. This is the most efficient way to feed hay, but it takes more labor.

Bale unrollers are quite popular, and some producers use bale choppers that leave windrows of hay on the ground. These approaches work very well for distributing manure around the farm by moving the hay feeding to different locations each day. The practice also allows both aggressive and timid cows to eat together more efficiently. The losses can vary greatly from farm to farm depending on how this practice is done.

"If producers use these methods, it is imperative to not feed more hay than your cows can consume in a day," Schnakenberg said. Otherwise, hay losses may be more than 40%, according to one MU study. In this case, seven days of hay was unrolled. In comparison, daily amounts fed at one time resulted in about a 12% loss in that study.

Finally, it's very important to feed in a well-drained area. A pad or an elevated surface for feeding is best. Keeping the area dry helps with body condition. "It has been determined that cow body condition can begin to drop in 8 inches or more of mud," Schnakenberg said. "The most recommended way is to move the feeding area around the farm to better distribute manure and minimize excess mud."



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RBM FARGO Y111 EM809088 CE: 7.6 || BW: 0.7 || WW: 77 || YW: 149 M: 28 || TSI: 283 TOP 5% WW, 1% YW, 3% TSI



LT PATRIOT 4004 PLD M852822 CE: 2.2 || BW: -0.5 || WW: 65 || YW: 124 M: 26 || TSI: 263 TOP 15% YW





LT PRIDE 0401 M943564 CE: 10.3 || BW: -4.0 || WW: 52 || YW: 91 M: 22 || TSI: 238 Top 15% MB, CE · DAM IS A BRENDA HEIFER SAFE - CALVING EASE



WCR MASTER CHIEF 037 P M939613 CE: 12.1 II BW: -3.8 II WW: 62 II YW: 119 M: 28 II TSI: 267 TOP 2% CW, REA OUTCROSS SIRE "BLACKJACK" HTA MISSLE 110H M954353 CE: -2.4 || BW: 3.2 || WW: 58 || YW: 109

M: 20 II TSI: 251

TOP 2% FAT; 8% SC, REA

CANADIAN OUTCROSS SIRE "HIGH CLASS"



DC/CRJ TANK E108 P M905524 CE: 13.0 II BW: -1.9 II WW: 66 II YW: 146 M: 37 II TSI: 294 Top 1% TSI, CW → Top 2% YW, M

2023 Annual Production Sale II February 17 II Aberdeen, SD

All Reference Sires Are Tested PA Free



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PAGE 14 WINTER 2023





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43rd Annual Production Sale

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Tuesday March 7, 2023 1:30 p.m. Kist Livestock, Mandan, ND

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Selling Top Genetics in Both Breeds 90 Spring Charolais Bulls Avg. AWW: 815 lbs. 60 Spring Simmental Bulls Avg. AWW: 820 lbs. 5 Open Charolais & Simmental Heifers

Other Sires Include— HCR OVERLOAD 2022, CAG TR GHC BILLY 9951G, TRI-N BONANZA 2446H, DCR MR HEAVY POWER H236, DCR MR GIMORE G356, DCR MR GLADSTONE G86

DCR MR KING'S KEEPER K1 ET EM976182 BD: 1/10/2022 AWW/R: 835/100 Sire: WCF MR SILVER GUN 467 Dam: M&M MS CARBINE 1567 PLD EPDs: BW: 0.8 WW: 84 YW: 134 MLK: 28 MTL: 70 TSI: 268.3 Top 9%



DCR MR KENDRICK K206 M976100 BD: 2/21/2022 AWW/R: 923/115 Sire: LT PATRIOT 4004 PLD Dam: DCR MS COMMISSIONER F220 EPDs: BW: 0.3 WW: 74 YW: 135 MLK: 24 MTL: 61 TSI: 271.87 Top 6%



DCR MR KING'S KNIGHT K358 M976107 BD: 3/8/2022 AWW/R: 933/116 Sire: DCR MR GENERAL RIDGE G117 Dam: DCR MS LADY TUFF A115 EPDs: BW: 1.3 WW: 80 YW: 129 MLK: 28 MTL: 68 TSI: 261.02 Top 20%

Directions: West of Bismarck, ND. Take I-94 to exit 134. Go 2 miles north 1 mile west.



DCR MR KIPLING K34 M976103 BD: 2/1/2022 AWW/R: 876/102 Sire: LT DILLINGER 9629 PLD Dam: DCR MS RIDGE G262 EPDs: BW: 0.6 WW: 65 YW: 109 MLK: 29 MTL: 62 TSI: 247.11 Top 55%



DCR MR KINKO MAN K210 M976099 BD: 2/22/2022 AWW/R: 853/113 Sire: TR CAG CARBON COPY 7630E ET Dam: DCR MS RANSOM H407 EPDs: BW: 0.1 WW: 68 YW: 114 MLK: 26 MTL: 60 TSI: 252.69 Top 40%

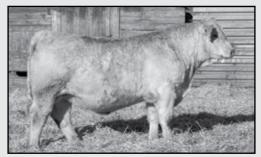


DCR MR KERMIT K440 M976113 BD: 3/22/2022 AWW/R: 852/103 Sire: SCC RIPTIDE 19H PLD Dam: DCR MS COMMISSIONER G220 EPDs: BW: -0.3 WW: 69 YW: 124 MLK: 27 MTL: 61 TSI: 265.18 Top 15%

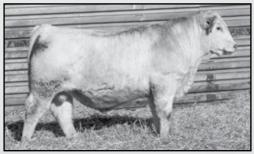
Visitors Always Welcome. 3991 36th Street New Salem, ND 58563 dollfarm@westriv.com dollboyz@westriv.com



DCR MR KEYSRED K068 QM202525 BD: 2/5/2022 AWW/R: 855/106 Sire: DCR MR RED MORGAN G141 Dam: DCR MS RED SOLUTION G413 EPDs: BW: -1 WW: 71 YW: 127 MLK: 23 MTL: 59 TSI: 264.42 Top 15%



DCR MR KENWORTH K286 M976095 BD: 3/2/2022 AWW/R: 911/113 Sire: WCF MR SILVER GUN 467 Dam: DCR MS DOUBLE TAKE F438 EPDs: BW: 1.8 WW: 86 YW: 151 MLK: 23 MTL: 66 TSI: 290.48 Top 1%



DCR MR KOOPERSTONE K372 M976111 BD: 3/9/2022 AWW/R: 801/100 Sire: DC/CRJ TANK E108 P Dam: DCR MS CENTURY E293 EPDs: BW: -0.2 WW: 64 YW: 126 MLK: 27 MTL: 58 TSI: 267.4 Top 10%

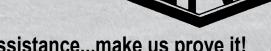
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