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FEBRUARY 2014
Volume 17 | Issue 7



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VIEW FROM THE BLOCK

Feed cattle traded from \$147 to \$150 in late January, marking all-time highs. That's unheard of! Let the good times roll. Everybody wants to know what the market is going to do. At these all-time high prices, I don't know what to tell them because I've never seen it this high before. I don't know what it's going to do. What I do know is that the market is good, and if you've got some to sell the price is right.

We had the single-largest sale ever at JRS on Monday, Jan. 20, with receipts over 14,000. The weather all through December was pretty tough and the frigid temperatures we've seen make it hard to keep cattle. The market was at all-time highs and we had a little pretty weather. Why not sell? At these prices if you have some to sell in the near future, there's no reason not to go ahead and sell them now.

Right now it's full steam ahead and if there is something to come along and change the situation it will be from an outside source. The weather could be one of those factors as the West Coast is currently experiencing a drought. There are also dry areas in central Kansas and Oklahoma, north and west of there. The market itself is on solid ground so it will have to be something like a disease outbreak, a governmental issue or the weather to really affect us.



Good, young replacement cows are bringing \$2000-\$2500. And, you can sell a 400 lb. calf off of her for about \$1000. Realistically, a cow is a better buy today at that price than a few years ago when she would have only brought \$800 and her calf would have sold for \$500-\$600. Consider interest rates and look at her on paper. There's just more profit in those calves.

Feed prices have come down some, certainly from where we saw them year ago. Commodities, though, just continue to hang in there with prices higher than they really should be. We are exporting a lot of DDGs and soy products so that is helping keep our grain prices higher than they should be.

Cattle are making money, the runs are big, my family is healthy and that's what makes my world go 'round. It just doesn't get much better than this.

Good luck and God bless.

Jackie



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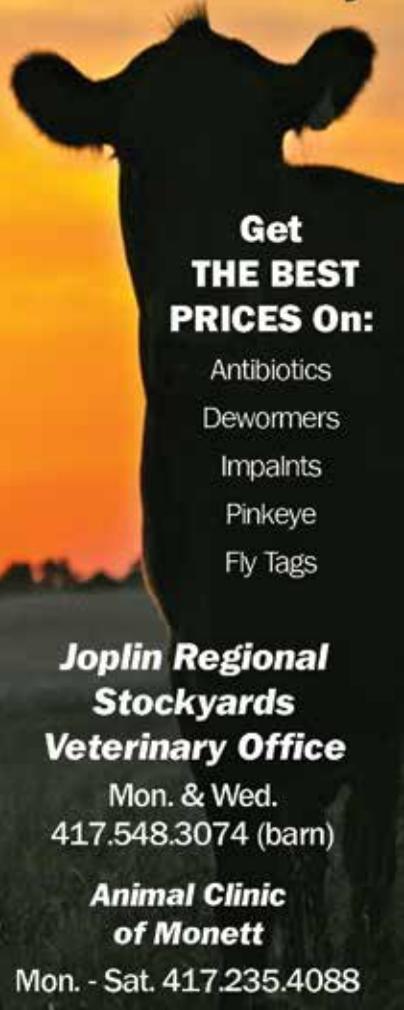
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About the Cover

Spring breeding season is right around the corner. Find out how you can get your herd on track for success inside this issue. —Photo by Joann Pipkin

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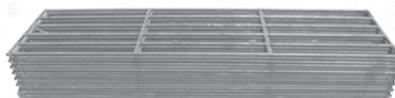


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BEEF IN BRIEF

2013 Yields Record Crop

According to the latest U.S. Department of Agriculture (USDA) report, America's corn growers produced a record 2013 crop. Yields averaged 158.8 bushels per acre and total production was pegged at 13.92 billion bushels harvested from 87.7 million acres. Both beginning and ending stock estimates decreased with beginning stocks projected at 821 million bushels and ending stocks pegged at 1.6 billion bushels.

Missouri corn growers had the third highest acreage planted and harvested in the state since 2000 and the seventh best yield of all time. Corn yield was estimated at 136 bushels per acre. Production was pegged at 435 million bushels, 76 percent above last year. Corn stocks increased in all positions, totaling 270 million bushels, up nearly 90 percent from Dec. 2012. On-farm stocks are estimated at 185 million bushels with off-farm stocks at 85.2 million bushels.

According to the World Agriculture Supply and Demand Estimates also released this month, projected corn use for 2013-14 increased with feed and residual use projected up 100 million bushels based on Sept.-Nov. disappearance. Corn used to produce ethanol also increased 50 million bushels. A 50-million-bushel reduction in other food, seed, and industrial use offsets the increase in use for ethanol. Corn ending stocks for 2013/14 are projected 161 million bushels lower at 1.6 billion. The projected 2013/14 season-average farm price for corn is unchanged at the midpoint with the range narrowed to \$4.10 to \$4.70 per bushel.

—Source: Missouri Corn Growers Association

Elliott Named Agricultural Educator of the Year

Anson Elliott, head of Missouri State University's William H. Darr School of Agriculture, received high honors during the 44th Missouri Governor's Conference on Agriculture, hosted by Gov. Jay Nixon and the Missouri Department of Agriculture.

A 1972 graduate of the University of Missouri, Elliott focuses on forages and animal performance in his academic research. He has led Missouri State University's agriculture programs since 1980, balancing his responsibilities as a member of the teaching faculty and for the school's off-campus facilities with those of his administrative role. He also advises undergraduate and graduate students, as well as student organizations, within the Darr School of Agriculture.

Elliott is committed to growing opportunities for Missouri agriculture students as well as producers. In 2012, he traveled to Russia with the USDA Foreign Agriculture Service and Missouri agriculture leaders in an effort to develop and grow partnerships among educators and employers. He also continues to be involved in partnerships to grow Missouri State University's research farms and facilities, as well as to strengthen the already outstanding genetics within the university's livestock.

—Source: Missouri Department of Agriculture

Beef Sets New Value Mark Amid Strong Exports

U.S. beef meat exports jumped dramatically in November 2013, setting a new annual record for value with one month remaining in the year, according to statistics released by the USDA and compiled by the U.S. Meat Export Federation (USMEF), contractor to the Beef Checkoff Program.

Driven by sustained export growth to Japan and Hong Kong and the continued rebound of the Mexican market, U.S. beef exports surged 11 percent in volume and 16 percent in value compared to November 2012, putting 11-month totals at nearly 2.42 billion pounds, up 3 percent compared to the same 11 months in 2012. Export value reached \$5.61 billion by the end of November, an 11 percent increase over last year's pace and already ahead of the 2012 year-end total of \$5.51 billion!

—Source: Cattlemen's Beef Board

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BEEF Checking in on the Checkoff

The Missouri Beef Council and Cattlemen's Beef Board created a partnership to launch a new line of fresh beef products in five Price Cutter grocery stores in Springfield, Missouri. The line of products meet consumer demands for convenient fresh beef and keep preparation to 30 minutes or less, with a complete meal in one dish. The work has included development of five products and labels, point of sale materials, promotional plans, and training for store staff.



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Managing Replacement Heifers Before Breeding

Selection: Keep heifers born early in calving season

Story By Justin Sexten for Cattlemen's News



In two months the cold, winter weather will give way to warm temperatures and green grass. With green grass the breeding season begins for spring-calving herds. February is a good time to visit the replacement heifer pens to evaluate heifer growth and development prior to the breeding season.

Allowing adequate nutrition so heifers are cycling prior to the breeding season and remain in the herd after calving is one goal in replacement heifer development programs.

Start replacement heifer selection by keeping heifers born early in the calving season. Cows calving early in the calv-

ing season are more productive throughout life. Selecting heifers from early calving cows indirectly selects cows adapted to your operation. These cows are generally in good condition and rebreed in a timely manner. Focus selection on heifers born in the first half of the calving season.

After considering birth date, now is also a good time to evaluate heifers for disposition, health and post-weaning growth. Cull aggressive, flighty and unhealthy heifers prior to breeding to focus feed and management inputs on cattle more likely to remain in the herd.

Acceptable post-weaning growth is operation and management dependent. Some producers want heifers weighing 900 pounds at breeding while others are content to breed heifers at 750 pounds. Historically, replacement heifer development focused on getting heifers to 60-65% of mature weight prior to breeding.

Nebraska research has explored heifer development systems where cattle are managed to weigh 55-58% of mature weight prior to breeding. These management programs allow heifers to gain a greater percentage of weight grazing spring and summer pastures. In these systems, fewer lightweight heifers were cycling at the beginning of the breeding season. However, pregnancy

rates were comparable following breeding with lower development costs.

February is roughly halfway through the heifer development period. How should heifers be managed during this period? Should gain be focused in the first half to ensure heifers are heavy enough for breeding? Or should heifers gain a constant 2 pounds a day from weaning to breeding? Alternatively, should replacements gain more during the second half of the development period?

The answer to those questions is yes. Depending on the operation goals, arguments can be made for each system. Research has shown once heifers reach adequate body weight to trigger puberty how and when they gain this weight is flexible.

Purebred operations may prefer to push heifers early during development to test post-weaning growth potential. Commercial operations may prefer to restrict early

CONTINUED ON PAGE 11

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MCA Names 2014 Leadership

Missouri Cattlemen's Association named its 2014 leadership positions during the 46th MCA Annual Convention and Trade Show held at the Lake of the Ozarks' Tan-Tar-A Resort.

Jim McCann, Miller, Mo., was elected to serve as president of the association.

Along with McCann, Janet Akers, Clinton, Mo., was elected as president-elect, and Keith Stevens, Bolivar, Mo., was elected as vice president. Sheryl Brewe, Marthasville, Mo., will serve as secretary and treasurer of the association.

Regional vice presidents from across the state also were elected at the convention and are: Luke Miller, Region 1; Greg Buckman, Region 2; Mike Hinkebein; Region 3; Mark Garges, Region 4; Patty Wood, Region 5; Marvin Dieckman, Region 6; and Dustin Schnake, Region 7.—Source: Missouri Cattlemen's Association

Missouri Cattlemen Set 2014 Policy Issues

Educating the public, lawmakers is crucial

Story From Our Staff

During the Missouri Cattlemen's Association's (MCA) Annual Convention and Trade Show held last month, members discussed policy issues that can potentially impact beef producers across the state of Missouri.

Issues such as the Farming Rights Amendment, property rights, state hauling limits and minimizing property taxes were all discussed. MCA wanted those in attendance to know that it was up to them to educate lawmakers and the public about how these policies would affect agriculture, as well as Missouri's farmers and ranchers.

According to MCA President Jim McCann, last month's MCA Convention was historically high in attendance and feedback from attendees was very positive.

Legislatively, MCA is focused on the Farming Rights Amendment, which guarantees the right of Missourians to farm and ranch in the state.

"We need to be working to get lawmakers familiar with that so we can keep farming," McCann explained.

The bill, MCA says, is a proactive step to protect Missouri's farm and ranch families from out-of-state animal rights extremists and ensures consumer choice by protecting the food chain.

In addition, McCann says MCA is very interested in the weight limit for livestock haulers. MCA will pursue increasing the hauling limits in Missouri from 80,000 pounds to 85,500 pounds throughout the entire state. The increase would bring Missouri in line with several bordering states. MCA contends that increasing the hauling limits will save money and increase the safety of both livestock and truck drivers.

Property rights have long been on the minds of Missouri cattlemen and MCA will again keep watchful eye on those issues. MCA also plans to work with county commissioners to take a closer look at the fencing laws in the state.

Another issues of importance to cattlemen is property taxes. MCA will also continue to work with state officials to revamp the current Trichomoniasis rule and to ensure a smooth process in enforcing the federal Animal Disease Traceability program.

—Source: Missouri Cattlemen's Association Release.




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Don't Get Tricked by Trich

Follow these plans to keep trichomoniasis out of your herd

Story By Dr. Dave Rethorst for Cattlemen's News

Modern transportation methods for cattle combined with an extreme drought lasting several years in some areas have caused trichomoniasis to become nearly epidemic in the Great Plains states as cattle have moved from drought-stricken native areas to new herds throughout the plains.

Trichomoniasis is caused by a protozoa called *Tritrichomonas foetus*. This disease is usually seen as an early embryonic death which results in more open cows than is normal for an operation and a prolonged calving season. Abortion late in pregnancy can be seen with this disease, but is much less common than the early embryonic death. The bull is considered the primary reservoir for trichomoniasis, which is sexually transmitted. The protozoa

live in crypts within the lining of the prepuce and can also be found in uterine discharge of cows that lose an embryo at 40 to 90 days of pregnancy.

Because the bull is the primary reservoir we usually associate the spread of trichomoniasis with the lease or purchase of non-virgin bulls. Fences that are not in a good state of repair and allow cattle to mix with neighboring cattle are a contributing factor in the spread of this disease. Infected pregnant cows that later experience embryonic death loss can also serve as a reservoir and are responsible for the spread of trichomoniasis. Such is the case the past several years as cows that were less than 100 days pregnant were shipped from areas where trichomoniasis is endemic to areas where the disease is usually



not a problem. Some of these cows were infected and lost their pregnancy after arriving at their destination. As these cows came into heat, they were bred by the bull who became infected and he passed it on to the next cow he bred. Transmission successful!

Cows that experience loss of pregnancy due to trichomoniasis will develop a short-term immunity that will allow the cow to become pregnant and carry a calf to term. The immunity is gone by the time she calves and she will again be susceptible to the disease. There is a vaccine available to aid in the control of trichomoniasis. It requires two doses the first year followed by an annual booster. However, this vaccine is not as effective as most vaccines we have in the beef industry. The short term immunity it provides will im-

prove pregnancy rates but will not clear the infection from the herd without the concurrent use of other animal husbandry strategies. This vaccine is not labeled for use in bulls.

Bulls can be tested for presence of the disease using preputial scraping. The smegma collected is submitted to a diagnostic laboratory where either a culture test or a PCR test is performed. This can be done at the same time as a breeding soundness exam. It is highly recommended that bulls be sexually rested for two weeks prior to testing for trichomoniasis. The only legal, known treatment for trich-infected bulls in the U.S. is slaughter.

The Beef Cattle Institute at Kansas State University (BCI-KSU) recommends the following five point plan for keeping trichomoniasis out of your herd:

1. Keep fences in good repair
2. Purchase only virgin bulls

CONTINUED ON NEXT PAGE

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Sign-Up for EQIP Funding

February 21 deadline at NRCS offices

From Our Staff

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) announces a cut-off date of February 21 for the Environmental Quality Incentives Program (EQIP) and four tie-in initiatives.

EQIP is the agency's largest Farm Bill conservation program. It helps producers of agricultural products improve water quality, build healthier soil, improve grazing and forest lands, conserve energy, enhance organic op-

erations, and achieve other environmental benefits.

NRCS accepts applications for EQIP on a continuous basis, but producers must file applications by February 21 for consideration for the next round of application funding. Applications filed after February 21 will be considered in the next ranking period if funds are available.

EQIP offers farmers, ranchers, and forestland managers a variety of options to conserve natural resources

while boosting production on their lands. EQIP also provides financial assistance for a variety of conservation activities, such as irrigation water management, reduced tillage, field buffers, rotational grazing systems, animal waste management systems, and much more.

Applicants can sign up at their local NRCS service center. More information is available on the web at www.nrcs.usda.gov.

—Source: Natural Resources Conservation Service Release.

TRICH • FROM PREVIOUS PAGE

3. If buying pregnant females, buy only females that are at least 120 days pregnant.
4. Consider testing the bulls for trichomoniasis on a regular basis.
5. Communicate with your veterinarian and your neighbors. Find out what is going on around you.

In the event that you are trying to clean up an infected herd, BCI-KSU recommends the following five point plan:

1. Be a good neighbor. Inform all neighboring producers of the situation. Make sure that fences are in good repair.
2. Sell all bulls that are infected or potentially infected, slaughter only.
3. Sell all open cows, slaughter only.
4. Sell all cows diagnosed pregnant that fail to calve, slaughter only.
5. Monitor the herd on at least an annual basis by testing the bulls. If the bulls are rotated between spring and fall herds, consideration should be given to testing prior to each breeding season.

Remember, trichomoniasis is a disease of biosecurity. As such, management strategies are necessary to keep it out of a herd or to clean up an infected herd. Use of the vaccine is an aid in control, but will not do the job by itself. Learn the regulations of the states involved if you are buying or selling breeding stock. Most of the Great Plains states have trichomoniasis regulations for breeding cattle coming into their state and many have regulations for cattle within the state. Trichomoniasis is a reportable disease in some states.

—Dr. Dave Rethorst is director of outreach for The Beef Cattle Institute, Kansas State University.



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Our Program
Ludvigson Stock Farms is a family operation established in 1954. Our roots are based in the commercial cow calf and cattle feeding sectors. We understand what is needed to be successful in these areas and it has shaped our breeding philosophies in the genetics that we produce.

Our Ozark Performance Group
Our performance group is the who's who of beef producers in the Midwest. From historic breed impact operations to some of the hottest young breeders in the industry today. We are like minded breeders that have the same vision for the breed and the industry. This is a program developed and managed by Ryan Ludvigson to offer the beef industry in the Midwest large uniform groups of Red Angus genetics.

Our Genetics
We have established a breeding philosophy over the years that incorporates optimizing multiple traits without over emphasizing any single trait. We are now utilizing the patented Leachman \$Profit Index that essentially takes our philosophy and ranks cattle on their ability to return a profit to our customer's operations. Herd sires such as Night Calver, Next expectation, Takeover and Saga are perfect examples of our genetics that balance all traits and produce least cost cattle with exceptional phenotypes.

Our Bull and Heifer Development
We develop our "Ozark" bulls at the Fischer Family Farms Development Center located near Butler, Missouri. The bulls are fed a high roughage ration designed to produce a 3.0 ADG with 0.2 of an inch of backfat. The bulls run in 10-40 acre fescue pastures which allows for plenty of exercise and muscle development. The replacement females are developed on pasture with minimal supplementation. All of the cattle are developed for low input conversions.

Our Team
The LSF team includes not only our family but our managers, cooperators and customers. It takes a team to remain competitive in the industry today and we value the input from all of our team members.

Our Key Members
Ryan Ludvigson – is our main marketing representative and oversees the Ozark Performance Group.



Park Ludvigson – is our main breeding specialist, managing our embryo collection and transfer program as well as our embryo export program.



Clint Berry – is our main commercial marketing representative, helping our customers to market their Red Angus influenced feeder cattle and replacement females.



Kirby Lane – is our expert "Ozark" consultant and cooperator that helps us to design and develop regional genetics that best fit the central region.



Fischer Family Farms – develop our bulls to meet our high expectations.

Cooperators – Historic as well as "hot" new operations (Wood, Diamante, Rhodes, Butcher and Braesch)

Our Customers
Our customers play an integral and ongoing part in our breeding program. It would be impossible for us to remain competitive without constant input by our customers. We have had many customers from Missouri and the surrounding states over the years and we felt like we could better serve their needs by developing bulls closer to their area. We have always bred our cattle to adapt to any environment but we feel that by developing bulls closer to our customers operations, we can be even more successful at providing a better product for our customers.



Seminars
We will be holding several "toolbox" seminars in the "Show Me" state that will help our customers to put the right animal health, genetics and marketing "tools" in your "toolbox" to make them more competitive in this fast paced beef industry. Clint Berry along with Ryan Ludvigson will headline these seminars. Look for more information to come later in the month. If you have questions or would like to attend one of these seminars please contact us.

Contact us to be put on our mailing list!



All bulls are being developed in 10-40 acre fescue pastures for added exercise and adaptability.

Go to www.ludvigsonstockfarms.com for updates.



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Legacy Plans Keep Farm Families Moving into the Future

Navigating the balance between business, family

Story By Darren Frye for *Cattlemen's News*

As our legacy advisors work with farm families this winter, they are discovering some common issues. While they're working with families to set up a legacy plan to transfer the farm to the next generation, they are discovering some gaps between what families have in place and what they think they have in place.

Would you suddenly be in business with your sister-in-law if something happened to one of your farming partners? If a family member wants to retire, dies or suffers a permanent disability that's going to prevent him or her from working on the farm, it can potentially be a big problem.

That could happen much sooner for the farm to transition to the next generation; however many families do not have a plan in place regarding the farm's future.

We talked with a farmer who worked with two of his family members. He said he did not think it would matter whether or not a formal written plan was in place covering what would happen if one of them wanted to retire or suffered a disability. This is because, according to him, they all got along very well and would just figure it out if they needed to.

This sounds alright in theory, but can become very difficult in reality. Without a



guide to follow on how things will occur — such as valuing assets, time frames for buy-outs and who is going to be in business with whom after the transition — it would be very difficult to figure out. If the situation involves the death or permanent disability of a family member, then you would have to deal with emotions of the family on top of everything else. When emotions are running high, it probably is not the best time to sit down and figure out detailed business agreements allowing the operation to move forward.

You must remember that your lender also has a stake in this and having a written plan in place will increase his comfort level with the

operation. The best method is to have this figured and planned out — in writing — before a transition could potentially happen. Even if everybody gets along and immediately agrees on how a business transition should occur, having a clear plan in writing lets you ensure that the operation will continue to run smoothly.

A good legacy plan includes agreements that address and plan for this type of scenario, not just for when the farm transitions to the next generation. Use some of your office time this winter to meet with a legacy advisor who can help you figure out your family's wants and needs. Develop a strong plan by working with this advisor, as well as by working with an agricultural estate-planning attorney.

In agriculture, we often do work with our family members, which has its joys and challenges. I see two important things to remember when it comes to working with family. The first is separation.

CONTINUED ON NEXT PAGE

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HEIFERS • FROM PAGE 6

development growth to minimize heifer weight until 60 days prior to breeding to minimize feed costs. Many producers prefer to have heifers gain at a constant rate from weaning to breeding.

Many management systems have proven effective as long as heifers reach puberty prior to or during the breeding season. Observe heifers for heat during development to determine at what age and weight heifers in your operation begin cycling.

Recommendations have encouraged breeding heifers prior to the cow herd. Early heifer breeding allows replacements a longer period following calving to prepare for rebreeding and focuses labor needs during calving. Additionally, calves from heifers will have 2 weeks of growth on those from cows making for a more uniform calf crop.

An alternative to breeding heifers before the cows is a shorter heifer breeding season. Restricting heifers to a 45-day breeding season reduces late calving heifers and allows 14 extra days in the recovery period prior to breeding.

Another goal in replacement heifer development is the more important management target. Getting heifers to calve at 85% of mature weight with a body condition score of 6 is key to getting cattle you have spent two years developing to remain in the herd after the first calf.

Producers with first-calf heifers approaching calving need to make sure nutritional management will support adequate condition prior to calving. Once heifers calve, little opportunity exists to add additional condition to heifers prior to rebreeding.

Considerable flexibility exists in replacement heifer development programs. Use this flexibility to minimize development costs during non-critical periods and focus management during the key development periods, two months prior to breeding and calving.

—Justin Sexten is University of Missouri state extension beef specialist, nutrition.

LEGACY FROM PREVIOUS PAGE

When you're working in a family farm business, you end up spending quite a bit of time with the family members involved. On top of working with them every day and spending a lot of time together, they are still a part of your family, which leads to some challenges. As much as you love them, you might start to feel like you are just not going to have very much separation from them.

The bottom line is that you are going to be spending time with them regardless of whether there is healthy communication on the business side of things or you

are in the thick of a heated disagreement about the future of the farm. You have to set some boundaries. Maybe think in terms of wearing different "hats." Ask yourself, "Do I need to act here as the farm leader, as the parent or as the son/daughter?"

The second thing to consider is how to navigate the balancing act between business and family. Where do you draw the line to keep things balanced? You will probably end up feeling like all you ever talk about is farming and your farm business if you are not careful.

Maybe you have a family member who is good at noticing when that balance is a little "off" and brings it to the attention of the others. That's a tough job, but is necessary for healthy relationships and a healthy farm business. Every farm family is a work in progress and must learn to work together while planning ahead for the future.

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Time to Replace Your Herd Sire?

Do your homework before making a purchase

Story By Darrh Bullock

For commercial beef producers it is not too soon to start the process of assessing your herd bull situation for the upcoming breeding season. If you will be shopping for a bull this winter/spring now is the time to get the ball rolling. Here are some brief reminders of the details that need your attention prior to breeding season.

Crossbreeding - Assess your herd in terms of breed make-up. Over the past five to 10 years how many breeds of bull have you used? If you keep back replacement heifers and your answer is one, then you definitely need to consider using a bull of a different breed this time. As a general rule of thumb we recommend that you don't keep back replacement heifers that have greater than 75% of any one breed, so if you have used the same breed for two generations or longer then it is time to rotate. If your answer is greater than three, then you need to consider focusing in on two or three breeds and establish a sound crossbreeding rotation.

Breed Selection - Once you have decided on a crossbreeding program, then decide which breeds fit your management, and each other, best. If you are a low-input manager, and your nutritional program is limited, then you need to consider breeds that have more moderate production and, thus, lower maintenance requirements. On the other hand, if you have a great forage and nutrition program then more productive breeds may fit your situation better. Breeds also differ in terms of calving ease, temperament, color, horned/polled and other factors.

Selection Criteria - Now that you have settled on the breed of bull that fits your operation best, it is time to start doing your homework prior to seeing any bulls.

First, go to the association website of the breed you are interested in and learn as much as you can. Get familiar with their EPDs by locating their EPD percentile-ranking table. This will help you identify

what traits of EPDs are computed for the breed and how bulls rank within the breed for the traits of importance to you. This chart is critical when evaluating a bull's EPDs, unless you are already extremely familiar with the breed.

Next, identify seedstock breeders that have goals similar to yours; this may require some consultation with people in the beef business that you trust and some follow-up phone calls. If you're a low input producer you may want to avoid buying from a seedstock producer that focuses on maximizing production and provides the necessary inputs to accommodate that production. Make sure you are on the same page in regard to other factors such as disposition, calving ease, etc. Prior to going to an on-farm visit or sale, get the performance records (EPDs) so that you can study them and know which bulls will work, based on their EPD values, prior to ever seeing the bulls. This should help you to avoid spontaneous reactions based on a bull's visual appearance. Have a list of acceptable bulls prior to going to purchase and don't stray from that list.

Purchasing the Bull - The last step is actually buying the bull. Once you have your list, you can now evaluate the bulls on their structure and temperament in person. If a bull on your list

fails either of these traits then it should be scratched off the list. Now you should have a list of bulls that fit your needs and a price can be negotiated. This is another area that requires a lot of thought and there is no concrete or easy answer. Recognize what value the bull has to your long-term operation and determine a reasonable price

TIP: Identify seedstock breeders with production goals similar to yours.

on that basis. Always think in terms of cost and returns; for every \$100 increase in price you pay, you should expect at least a \$100 increase in return.

With these simple steps in mind you should be able to locate and purchase a bull that fits your needs; it is not too early to start in that process. Always remember to have a breeding soundness exam performed on your bulls approximately a month prior to the breeding season to ensure that he is capable of settling cows.

—Darrh Bullock is University of Kentucky Beef Extension Professor

Bull Breeding Soundness Exams Scheduled

The schedule for the spring Bull Breeding Soundness Clinics has been set. The following are the dates and locations.

March 5 – Barry County Vet Services, Cassville, Mo.
Contact Dr. Voyd Brown – 847-2677

March 11 – Animal Clinic of Diamond, Mo.
Contact Dr. Harold Haskins – 325-4136

March 12 – Dake Veterinary Clinic, Miller, Mo.
Contact Dr. Chuck Dake – 452-3301

March 13 – Countryside Animal Clinic, Aurora, Mo.
Contact Dr. Mike Bloss – 678-4011

There are limits on the numbers of bulls that can be evaluated each day so call ahead to schedule your time with the clinic staff. If they're full on that day they'll be glad to give you an alternate time.

The clinics give the veterinarians and their staff a day to devote primarily to BSEs. Ed Trotter and Zoetis cooperate with the veterinarians to give clients a break on insecticides and vaccines during these clinics.

In addition to the basic BSE, testing bulls for trichomoniasis is available. Hair or blood samples may be collected for DNA genetic testing through Zoetis. They have in the past offered this evaluation at a reduced rate. Genetic evaluation such as this can contribute to improving a bull's EPD accuracy equivalent to him producing 10 to 20 progeny. This enhances his EPDs and may also enhance his value if you plan to sell him.

As a rule, 10% or more of the bulls tested fail or are deferred for a re-test. Since this winter has been extremely cold the percentage could be greater this spring. Frostbite of the scrotum will be more likely than in the recent, relatively mild winters. Semen, penile or other physical problems need to be discovered well ahead of bull turnout. This allows cattle producers more time to search for a really good bull at the sales or private treaty.

Eldon Cole, livestock specialist, Mt. Vernon will be at the clinics to answer questions about bull buying, using expected progeny differences when buying bulls and other questions related to beef cattle production in southwest Missouri. He says that bulls are a large investment and it pays to invest a small amount in the BSE test for insurance that your bull is capable of going out and breeding several cows in a 45 to 60 day breeding season.

For other details on the clinic you may call Cole at 417-466-3102.

—Source: Eldon Cole, University of Missouri Extension Service.



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zoetis

Mirror Mirror on the Wall

Who is the fairest bull of them all?

Story By Beth Walker for Cattlemen's News

When I write articles for *Cattlemen's News*, I always try to do a little research to build credibility for my articles. For this article about selecting a herd sire, I googled "selecting a herd bull" and in 0.46 seconds, came up with 466,000 hits. Wow! I did read a few, and there is undoubtedly some great information to be found.

It seems as if the articles I opened all recommend using both Expected Progeny Differences (EPD's) and visual estimates when considering bulls, which is good, sound and reasonable advice. I decided to pick out information and advice that I think is most relevant, or at least food for thought.

1. "You can't look at one attribute in isolation; you have to look at the whole."

I actually discovered this from a discussion I was reading. Before we focus on any trait, we need to consider the entire animal and not fall in love, or hate, with any one attribute. Admittedly, I am guilty of doing this, especially when it comes to structural soundness. If you also fall in love, or hate, with a trait, make sure you admit it. Always be sure that you are not missing out on a good bull because of a love/hate relationship you have with a particular trait.

2. EPD's are just a tool.

They should be in your toolbox just like production records, visual appraisal, trust of the bull breeder, intuition,

knowledge, etc. Do not put all your eggs in the EPD basket.

3. More is not better.

Growth and milk EPD's are certainly important traits we should use in the bull selection process; however, these EPD's only measure output, not profit. If you are retaining heifers and are chasing growth EPD's, you could end up with 1600+lb cows that cost you more money than they can bring in.

4. Not every EPD is important to you.

If you are retaining ownership of your steers and heifers through the slaughter process, then

you should pay attention to \$B, \$F and \$G. These EPD's are estimates of how animals do in the feedlot and on the rail. If you are not retaining them, why spend the money for a bull that excels in these EPD's? Not every EPD is important to your business model or your marketing strategy.

5. Go for the total package with emphasis on masculinity.

A bull should not look like his sister; they need to be masculine. Muscle on the bull should be ample and be well defined. However, do not confuse muscle with fat, as fat can actually be detrimental to fertility. "Sex should not be work for a bull," and so bulls should not lose an excessive amount of weight during breeding season. If you manage your forages, you shouldn't have to pour the feed to the bull to keep them healthy. There are certain critical nutritional stages for cows including breeding season and the early lactation period. With that

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BULL • CONTINUED FROM PREVIOUS PAGE

said, you should make sure your cows and your bulls are out on a good quality pasture or have good quality hay available to them.

6. There is as much variation within breeds as there is between breeds. If you are not a purebred producer, then there is no reason why you should limit yourself to just one breed. Good and sound genetics can be found in almost any breed. Do not be afraid of Continental or British beef breeds. You can find extremes and moderates in any breed. You might just be able to bring in quality genetics that fit your program while gaining hybrid vigor in the process. Remember, you can't necessarily compare EPD's between the different breeds, but you can get an idea for what that cross will produce. Hybrid cows can be a real asset to the farm and could help with overall profitability.

7. Accurate EPD's. Just because a bull has a low birth weight EPD, for example, doesn't mean that he will throw small, easy-calving offspring. An animal's EPD's get more accurate with more recorded progeny, and a young bull may not have as accurate EPD's compared to older generations. Also, keep in mind fall calves tend to have lighter birth weights than spring calves.

8. Learn how to accurately visually evaluate your animals. I put accurately in there for a reason. I know we in agriculture are a bit opinionated. We seem to think that "our" way of doing something makes much more sense than our "crazy" neighbor. We think that our bull is better than our neighbor's. We do have a lot of variability in our industry – right or wrong – but some things are just efficient production practices. Purchasing a structurally sound bull is one of them.

9. Do not buy on a whim. If you happen to go to a bull sale or to a bull producer's farm, make sure you have your goals in mind and only purchase an animal that will help you obtain those goals. Do not buy something just because it is inexpensive, because chances are it will be a costly decision in the long run. My husband and I now have a deal with each other. We never purchase a new breeding animal without taking a few minutes to just walk away from the "action" – sale ring, producer selling us the animal, etc. – and talk it out. If we do not get the bull or bulls we planned on purchasing, we don't just buy one for the sake of taking something home. We have done this before and it always resulted in buyer's remorse. Live and learn. Do as I say, not as I have done.

10. Get a guarantee— a breeding soundness exam. Some bulls do not like cows. When a bull doesn't like a cow, he will not mate with a cow no matter how pretty she is. A breeding soundness exam won't tell you the sexual orientation of a bull, but it will tell you if that animal has viable sperm. With the advice of your veterinarian, a bull may need to go back to his previous owner. Injuries can temporarily render a bull infertile, so you

and your veterinarian need to discuss possible causes and solutions.

A colleague and I were talking one morning, and he made a great point by saying EPD's are only as good as the person taking the weights. Honesty and integrity are important in the cattle industry. I guess folks who cheat on EPD's are cut from the same cloth as folks who used to drug horses before some poor, unsuspecting soul came to purchase them. Honest mistakes happen; they are forgivable and fixable. Little white EPD lies can really hurt honest, hardworking producers. Remember, EPD's are just a tool. Do not be afraid to get the bull that will work best for you, under your management.

—Beth Walker is associate professor of animal science at Missouri State University.



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Frost seeding in late winter economical choice

Story By John Hobbs

How Can You Get the Most from Fertilizer?

Know what your soil needs first

Story By Samantha Warner for *Cattlemen's News*

Cattle prices are soaring, the drought is subsiding and spring is right around the corner. Those conditions can be both scary and exciting for producers. Sound management practices are essential in the coming months to succeed in the cattle industry. One area that often takes a backseat to other management practices, but can make a big difference, is fertilizing your pasture and hay ground.

Dale Guss, branch manager of West Central Ag Service in Adrian, Mo., stated with cattle prices as high as they are it's easy to pencil fertilizer out of the management plan, especially on years when hay prices are \$20 to \$30 a bale. "If your P (phosphorus) and K (potassium) levels are good, you're going to have a lot less leaf problem and going to have a whole lot better quality hay," Guss noted.

Farmers need to realize, Guss said, "Whenever we take a cool season grass crop off, we're going to remove somewhere in the neighborhood of 45 pounds of nitrogen, 15 pounds of phosphorus and 45 pounds of potassium per ton of dry matter on that. You can kind of see from those numbers it doesn't take very long before we really start deplet-

ing the available nutrients that are in our soil."

The basics of N-P-K

According to the Oklahoma Forage and Pasture Fertility Guide, nitrogen (N) is an essential nutrient and the most commonly observed yield-limiting factor, with the exception of water. It is essential as it is an important part of amino acids, which are the building blocks of proteins.

"Phosphate is a key nutrient in your chlorophyll process that helps you transport sugars inside that plant," Guss said.

The Oklahoma Forage and Pasture Fertility Guide also noted that plants remove a lot of potassium from the soil. Guss added, "Potassium's going to have a lot to do with water use efficiency, drought tolerance; cell wall strength."

What to look for

Guss suggested producers look for the following in pastures and hay fields as signs of low nutrients: When asked what producers:

- Look for decreased production. "If you're really paying attention, you'll be able to pick that up pretty

CONTINUED ON PAGE 19

The benefits of establishing clover in grass pasture are well-known. They can include increased forage yield, improved forage quality, reduced nitrogen fertilizer costs, dilution of toxic fescue, and good livestock performance. The practice of frost seeding has long been used by forage producers as an effective means to improve pasture yields or change forage species composition. Frost seeding is a relatively low-cost practice that, when implemented at the correct time and managed properly, can yield successful results.

Steps for Successful Frost Seedings

1. Site Selection

Frost seeding can be used at any geographical location but is particularly effective where tillage can create potential erosion problems. Sites where maximum seed-to-soil contact can be achieved are essential. Thinning grass stands have been a preferred site to use frost seeding. A bunch-type grass, such as fescue, offers a more favorable environment for frost seedings than does a sod-forming species, such as bluegrass. Regardless of the current grass species present, the site should be closely grazed in the

fall or winter to open the stand and expose soil. A chain drag or light disking can also be used to help open the stand. This will increase the opportunity for seed-to-soil contact.

2. Soil Fertility

Proper soil pH and fertility are essential for efficient forage production. Soil tests should be taken every 2 to 3 years to determine nutrient status. Tests should be taken at least six months prior to seeding to allow for corrective measures.

For optimum production, soil pH should be maintained above 6.0. Regardless of the seeding method used, corrective applications of phosphorus and potassium should be applied prior to seeding. If you are frost seeding a legume, applications of nitrogen should not be made the year of the seeding because of the potential for increased competition from grasses.

Frost seeding should not be considered as a substitute for poor fertility management. If a poor pasture is the result of low fertility, frost seeding will not remedy this situation.

CONTINUED ON PAGE 18



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Flies are attracted to damaged and watery eyes. So reduce irritants like seed heads, pollen and UV light by mowing tall pastures and adding shade where needed.

For complete pinkeye control from every angle, contact your veterinarian, animal-health supplier or Merck Animal Health representative today and visit stopcattlepinkeye.com.

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Minimum Fertility Recommendations

Forage	pH	Phosphorus soil test Pounds per acre	Potassium soil test
Alfalfa	6.5	40	300
Red Clover	6.0	25	250
White Clover	5.5	25	250
Birdsfoot trefoil	5.5	20	250
Lespedeza	5.0	20	200

Minimum fertility recommendations are outlined above.

3. Species Selection

Historically, most frost seedings have been made to introduce or increase a forage legume species into an established grass stand. The producer needs to select the legume best suited to the soil conditions and intended use.

Forage quality is improved when legumes are added to grass stands. Quality improvement is seen in increased palatability, intake, digestibility and nutrient content. Research has proven that legumes will improve animal growth rates, milk production and reproductive efficiency.

Red clover has widely been accepted as the legume of choice for frost seeding. Red clover has high seedling vigor and is somewhat tolerant of a wide range of conditions relating to pH and fertility, drainage, and drought. While work is being done to improve the persistence of red clover varieties, it must be treated as a biennial and will probably require reseeding every two years.

Red clover has proven highly effective as a means to improve the productivity of fescue stands. Fescue is recognized for its vigorous seedlings, responsive growth with adequate fertility levels, and as a superior species for use in stockpiling programs. However, fescue is also associated with complications arising from infections of the endophyte fungus, poor palatability, and low production in the summer months.

Research has shown the benefits of introducing red clover to grass stands. University of Kentucky research compared renovating a fescue pasture using red clover at 6 lbs/acre compared to fertilizing the grass with 90 or 180 lbs/acre of nitrogen. Red clover growth with fescue produced higher yields than fescue fertilized with nitrogen at either level.

Other legumes can be added to grasses through frost seeding. Birdsfoot trefoil is difficult to establish but is bloat-free and, when established, does well in a wide range of conditions. Ladino clover will last somewhat longer than red clover, but is less tolerant of low fertility, drought, and overgrazing. The high cost of alfalfa seed, makes it a less desirable option for frost seeding and is not compatible to the rocky, shallow Ozarks soils.

Regardless of the species, all seedings should be made with high-quality seed. While frost seeding is an economical practice, there is no justification to use low-quality seed. The economics will be in favor of high-quality seed when you consider the entire lifetime of a stand.

There is less experience with trying to establish cool-season grasses through frost seeding. It does appear that grasses do not establish with the same level of success as do legumes. Broadcasting grass seed can present

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Bryan Mussard
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some problems when mixed with legume seed, as the grass seed will not spread as far. Therefore, it is recommended that grasses be seeded separately from legumes when using a broadcast seeder. Minimal work or success rates have been reported with attempts to add grasses to established grass stands through frost seeding.

Work done at the University of Wisconsin compared frost seeding establishment of several cool-season grasses into older established alfalfa stands. Results from this two-year trial showed that perennial ryegrass and orchardgrass exhibited the best establishment success, while reed canarygrass and timothy had the least success.

4. Seeding Rates

Seeding Rates

Forage Species	Seeding Rate (lb/A)
Red Clover	8
Birdsfoot Trefoil	6
Ladino Clover	1 to 2
Alsike Clover	3 to 4
Alfalfa	10
Annual Lespedeza	20
Orchardgrass	2 to 5
Perennial Ryegrass	3 to 5

These stated seeding rates are based on traditional establishment methods. Frost seeding may require higher seeding rates depending on the given location and desired level of production.

5. Seeding Time, Method

The basic principal behind frost seeding is the “honey-combing” action that is created by alternating freezing and thawing cycles in late winter. This activity helps to incorporate broadcast seed into the soil surface. To take advantage of these

environmental changes, frost seeding should occur in late winter in southwest Missouri. The trampling effect of high livestock densities can also be effective to ensure seed-soil contact. Use caution when frost seeding on top of snow as rapid meltdown of snow may result in the runoff of seed.

Frost seeding can be accomplished with any broadcast type seeder. Tractor 3-point hitch mounted seeders have been typically used. In recent years, seeders mounted onto all-terrain vehicles (ATVs) such as four-wheelers have become a popular choice for seeding.

6. Seed Treatments

Seed treatments containing nitrogen-fixing rhizobia bacteria are widely available for most common legumes. Rhizobia do survive in soil, so if the legume of interest is present in low amounts in the field to be seeded, rhizobia coating is usually not required. If the legume is not present in the pasture, then a rhizobia seed coating is recommended.

Frost seeding can be an effective, economical means of introducing a new

forage species to an existing forage stand or to maintain the current composition of a stand. This practice has been very useful for helping farmers reduce the effects of endophyte-infected fescue. Frost seeding is frequently implemented where tillage is not a viable option because of erosion concerns. Desired results can be obtained when attention is paid to site selection, fertility, species selection, seeding rates, seeding times and method.

—John Hobbs is an agriculture specialist with University of Missouri Extension.

FERTILIZER • CONTINUED FROM PAGE 16

quick, in conjunction with the weather, of course,” he said.

- Short plants that only get shorter. Plants that “want to turn stemmy” likely don’t have necessary plant or leaf growth.
- Grass stand doesn’t look up to par. If it doesn’t look like the stand that you once had, Guss said, some of the weak plants will die off whenever stressed.

Types and when to apply

“A basic nitrogen, phosphate, potash blend is going to run in the neighborhood of \$85 an acre,” Guss said. The price will vary depending on yield

goals and nutrient sources.

The Oklahoma Forage and Pasture Fertility Guide lists several different kinds of fertilizers available depending on the specific needs of your soil.

- Granular fertilizers: urea, ammonium nitrate, ammonium sulfate, diammonium phosphate, monoammonium phosphate, potassium chloride (muriate of potash), triple super phosphate (TSP).
- Liquid fertilizers: ammonium polyphosphate solutions (APP) and urea ammonium-nitrate (UAN).

CONTINUED ON NEXT PAGE

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NADA 141-334, Approved by FDA.

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BRIEF SUMMARY: for full prescribing information use package insert.

INDICATIONS: Zuprevo™ 18% is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, and *Histophilus somni* in beef and non-lactating dairy cattle, and for the control of respiratory disease in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica*, *P. multocida*, and *H. somni*.

WARNINGS: FOR USE IN ANIMALS ONLY. NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. TO AVOID ACCIDENTAL INJECTION, DO NOT USE IN AUTOMATICALLY POWERED SYRINGES WHICH HAVE NO ADDITIONAL PROTECTION SYSTEM. IN CASE OF HUMAN INJECTION, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THE PACKAGE INSERT OR LABEL TO THE PHYSICIAN.

Avoid direct contact with skin and eyes. If accidental eye exposure occurs, rinse eyes with clean water. If accidental skin exposure occurs, wash the skin immediately with soap and water. Tildipirosin may cause sensitization by skin contact.

For technical assistance or to report a suspected adverse reaction, call: 1-800-219-9286.

For customer service or to request a Material Safety Data Sheet (MSDS), call: 1-800-211-3573. For additional Zuprevo 18% information go to www.zuprevo.com.

For a complete listing of adverse reactions for Zuprevo 18% reported to CVM see: <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

DO NOT USE ZUPREVO 18% IN SWINE. Fatal adverse events have been reported following the use of tildipirosin in swine. NOT FOR USE IN CHICKENS OR TURKEYS.

RESIDUE WARNING: Cattle intended for human consumption must not be slaughtered within 21 days of the last treatment. Do not use in female dairy cattle 20 months of age or older. Use of this drug product in these cattle may cause milk residues. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

PRECAUTIONS: The effects of Zuprevo 18% on bovine reproductive performance, pregnancy and lactation have not been determined. Swelling and inflammation, which may be severe, may be seen at the injection site after administration. Subcutaneous injection may result in local tissue reactions which persist beyond the slaughter withdrawal period. This may result in trim loss of edible tissue at slaughter.

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FERTILIZER • CONTINUED FROM PAGE 19

For more information visit:
<http://npk.okstate.edu/documentation/factsheets/>.

“I’d recommend putting P and K, your phosphate and potash, on in the fall, and then just coming back in the spring and putting your nitrogen on,” Gus suggested. “That gives phosphate and potash time to break down and get in the soil.” And application early enough in the season, Gus said, helps the grass through the winter. “It’ll have a lot of reserves already in that plant that are usable instead of waiting to have to pick it up in the spring.”

If producers are looking for an organic substitute for chemical fertilizers, chicken litter is often a viable source. The Oklahoma Forage and Pasture Fertility Guide cites poultry litter as an excellent source of the primary plant nutrients nitrogen (N), phosphorus (P) and potassium (K). Litter returns organic matter, secondary nutrients—such as calcium (Ca), magnesium (Mg) and sul-

phur (S)—and micronutrients to the soil, building soil fertility and quality.

Final Thoughts

Guss highlighted three final thoughts for producers to remember when managing fertilizer. Getting a soil test tops the list. “You wouldn’t want to open your checkbook up and just write a check without knowing what’s really in the bank,” Guss said.

Once you know your soil needs, decide what time is best to apply the fertilizer. Set realistic goals; do you want to focus on seed or grass production?

Lastly, remember pastureland requirements are different than hay land nutrient requirements. Nutrients are removed from hay ground, but cattle return some nutrients to pasture, Guss said.

Remembering the importance of fertilizing and managing soil needs will help producers succeed in the coming months and years of an ever-changing cattle industry.

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PASTURE PLANNING

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Liming, soil sampling good for pasture improvement

From Our Staff

According to Jill Scheidt, Agronomy specialist with the University of Missouri Extension, liming is one of the most important additives a producer can apply to a field or pasture, along with adopting proper soil sampling techniques.

“Lime is a soil conditioner that allows other nutrients to become more available through optimizing the soil pH. Taking a representative soil sample is key to receiving accurate soil test results, which are the first step in correcting soil pH,” Scheidt said.

Soil samples should be taken every three to five years. Between 10- to 20, six-inch deep cores should be collected from every field. Producers should avoid sampling soon after fertilizing, liming or applying manure as nutrient availability in soil can fluctuate with soil moisture.

“Sampling at the same time of year will provide more consistent soil test results,” Scheidt said. “In pastures, avoid sampling within 150-feet of shade areas, watering points and field edges where livestock may congregate and crop field’s end.”

Grading Lime

Lime is graded according to the effective neutralizing material (ENM). Most lime companies in southwest Missouri have an ENM ranging from 400 to 450. The finer the lime is ground, the higher the ENM. Finer grinding of limestone improves breakdown and speeds reaction with the soil to change pH levels.

“Limestone is more effective when incorporated in soil because it is not very water soluble so it reacts slowly with soil,” said Scheidt.

According to Scheidt, priority on a limited fertilizer budget should go to correcting soil pH through liming. Lime increases the efficiency of fertilizers like phosphorus and many

micronutrients, by increasing their availability to the plant.

“Soil structure, microbial activity, activity of soil incorporated herbicide applications and legume persistence are all improved with a proper soil pH,” she said.

The ideal pH range for cool-season grasses is 5.5-7.0; for legumes, 6.0-7.5; and for row crops, 6.0-6.5.

Acid Soil

Many common fertilizers acidify the soil but the impact on soil pH is relatively small. For example, nitrogen fertilizers have long been known to acidify the soil. According to John Lory, University of Missouri Plant Scientist, it takes about 180 pounds of calcium carbonate to neutralize 100 pounds of nitrogen added as anhydrous ammonia.

At this rate, less than one ton per acre of pure lime is needed every five years to offset an application of 200 pounds per acre, per year of nitrogen. If producers have a corn-soybean rotation, only one ton per acre of lime is needed every 10 years to offset that same nitrogen application.

“Nitrogen fertilizers vary in their ability to acidify the soil. Ammonium sulfate is the most acidifying nitrogen fertilizer; the impact of urea will be similar to anhydrous ammonia,” Scheidt said.

Given the slow effects of fertilizers like nitrogen on soil pH, the best way to manage acidification by fertilizers is to monitor soil pH using soil testing.

“Sampling fields every three to five years will allow you to monitor trends in soil, such as soil pH, and identify fields where soil pH is close to dropping below optimum,” Scheidt said.

—Source: University of Missouri Extension

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Growing Replacements: Interval Feeding of Supplements

Viable option for heifers at distance from headquarters

Story By Glenn Selk

Interval feeding of supplements has been shown to be an efficient method of feeding supplements to adult beef cows. Less is known, however, about the use of “every other day feeding” for growing weaned replacement heifers.

The objective of this University of Florida study was to examine the effects of daily versus three-day-per-week supplementation on growth, age at puberty, estrous synchronization response and pregnancy rates of yearling Brangus and Angus heifers.



Interval feeding of heifers is an economical option for cattlemen when labor and fuel costs are taken into consideration.

—Photo by Joann Pipkin

Brief Summary of Full Prescribing Information



Antibiotic
100 mg of tulathromycin/mL

For subcutaneous injection in beef and non-lactating dairy cattle and intramuscular injection in swine only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

CAUTION
Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS
Beef and Non-lactating Dairy Cattle
BRD – DRAXXIN Injectable Solution is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*; and for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*.

IBK – DRAXXIN Injectable Solution is indicated for the treatment of infectious bovine keratoconjunctivitis (IBK) associated with *Moraxella bovis*.

Foot Rot – DRAXXIN Injectable Solution is indicated for the treatment of bovine foot rot (interdigital necrobacillosis) associated with *Fusobacterium necrophorum* and *Porphyromonas levis*.

Swine
DRAXXIN Injectable Solution is indicated for the treatment of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bordetella bronchiseptica*, *Haemophilus parasuis*, and *Mycoplasma hyopneumoniae*; and for the control of SRD associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, and *Mycoplasma hyopneumoniae* in groups of pigs where SRD has been diagnosed.

DOSAGE AND ADMINISTRATION
Cattle
Inject subcutaneously as a single dose in the neck at a dosage of 2.5 mg/kg (1.1 mL/100 lb) body weight (BW). Do not inject more than 10 mL per injection site.

Swine
Inject intramuscularly as a single dose in the neck at a dosage of 2.5 mg/kg (0.25 mL/22 lb) BW. Do not inject more than 2.5 mL per injection site.

CONTRAINDICATIONS
The use of DRAXXIN Injectable Solution is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS
FOR USE IN ANIMALS ONLY.
NOT FOR HUMAN USE.
KEEP OUT OF REACH OF CHILDREN.
NOT FOR USE IN CHICKENS OR TURKEYS.

RESIDUE WARNINGS
Cattle
Cattle intended for human consumption must not be slaughtered within 18 days from the last treatment. Do not use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Swine
Swine intended for human consumption must not be slaughtered within 5 days from the last treatment.

PRECAUTIONS
Cattle
The effects of DRAXXIN on bovine reproductive performance, pregnancy, and lactation have not been determined. Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Swine
The effects of DRAXXIN on porcine reproductive performance, pregnancy, and lactation have not been determined. Intramuscular injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

ADVERSE REACTIONS
Cattle
In one BRD field study, two calves treated with DRAXXIN at 2.5 mg/kg BW exhibited transient hypersalivation. One of these calves also exhibited transient dyspnea, which may have been related to pneumonia.

Swine
In one field study, one out of 40 pigs treated with DRAXXIN at 2.5 mg/kg BW exhibited mild salivation that resolved in less than four hours.

STORAGE CONDITIONS
Store at or below 25°C (77°F).

HOW SUPPLIED
DRAXXIN Injectable Solution is available in the following package sizes: 50 mL vial, 100 mL vial, 250 mL vial, 500 mL vial

NADA 141-244, Approved by FDA



To report a suspected adverse reaction call 1-800-366-5288.
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The heifers used in this study were consuming bermudagrass round bale silage containing 12.9% crude protein.

Sixty heifers – 30 Angus and 30 Brangus – were sorted into 12 randomly allocated pens based on initial body weight, breed and age. Pens were randomly assigned to one of two treatments: 1) distillers grains and soybean meal supplemented daily; or 2) distillers grains and soybean meal supplemented three days per week. The total weekly intake of supplement was designed to be identical for both treatment groups. The heifers started at about 600 pounds. They received the equivalent of about four pounds of distiller’s grains and one-half to one pound of soybean meal per day. The diets were calculated to produce an average daily gain of about 1 ½ pounds per day. Supplement consumption and bermudagrass round bale silage offered were similar for both treatments.

Heifers supplemented daily had similar average daily gain as compared to heifers supplemented three days per week (1.82 vs. 1.79 pounds per day). The number of heifers reaching puberty by breeding tended to be greater for daily fed heifers.

Synchronized pregnancy rates and total 28-day artificial in-

semination (AI) pregnancy rates were also similar for both treatments. Dried distillers grains had no negative impact on the development of Brangus or Angus heifers. In this study, three days per week supplementation of developing heifers had no effect on heifer growth rates or pregnancy rates as compared to daily supplementation.

It must be noted that as producers look at interval or daily feeding with ethanol by-product feeds, they need to have the feed tested for sulfur content. Excessive sulfur intake may cause a toxicity called “polioencephalomalacia.”

Dried distillers grains are not as competitively priced today as they were when this study was conducted; therefore other sources of feed ingredients may be the most optimal choice for this day in time. The concept of interval feeding should still be attractive to those producers with replacement heifers in pastures that are some distance from the headquarters. When one considers labor and fuel costs, the interval feeding protocol should be less expensive.

—Glenn Selk is Oklahoma State University Emeritus Extension Animal Scientist.

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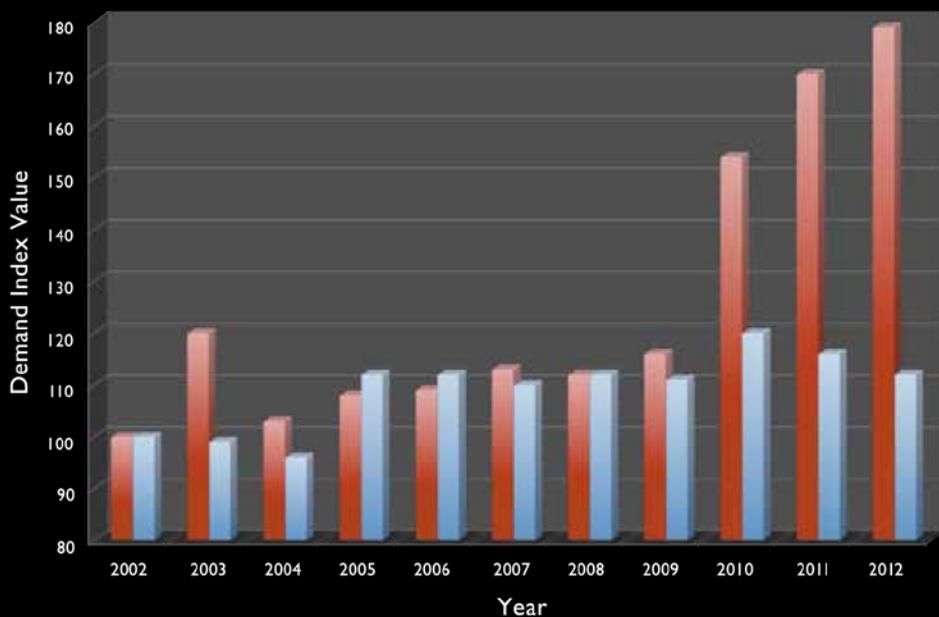
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What Do the Numbers Mean?

Use calving ease EPDs to select sires for replacements

Story By Bob Weaber, Ph.D.

When one begins the process of bull selection to produce replacement heifers or bulls to be service sires of replacement heifers a number of criteria come to mind. Certainly among these are breed composition and the contribution the bull may provide to direct and/or maternal heterosis, as well as a variety of growth, maternal and carcass traits. Perhaps among the most important is calving ease.

In the case of replacement heifers, we need to think of calving ease as both a trait of a calf (how easy it is born or direct calving ease) as well as a trait of the cow (how easy the cow gives birth or maternal calving ease). There is a genetic component to both the direct and maternal aspects of the calving ease trait. As such, producers should be aware of when to use which measure to aid in the production of high quality replacement females with the expectation of long productive lives as well as to minimize dystocia in first calf heifers.

Before we discuss the two different Calving Ease EPDs, a brief discussion on why producers should use Calving Ease EPDs rather than birth weight EPDs to control dystocia rates in heifers and cows. For cow-calf producers, calving ease is the economically relevant trait associated with dystocia. Economically relevant traits (ERTs) are those that directly generate revenue or incur costs in beef production systems.

For a commercial cow-calf producer, dystocia (or lack of 'calving ease') is what generates costs in a cow herd through direct losses of calves and their dams, increased labor costs, and certainly lower reproduc-

tive rates among cows that have experienced dystocia. Birth weight is an indicator trait. In this case, birth weight provides some information on calving ease. Birth weight alone doesn't directly gener-

TABLE 1

Recommended minimum values for Calving Ease and Maternal Calving Ease EPD for Service Sires
Minimum recommended EPD value

Breed Group	Sire Breed	Calving Ease	Maternal Calving Ease *
British	Angus	8.0	10.0
Hybrid	Balancer	13.0	9.0
Continental	Charolais	8.2	6.4
Continental	Gelbvieh	11	8.0
Hybrid	LimFlex	11.0	5.0
Continental	Limousin	12.0	6.0
Continental	Maine Anjou	10.5	5.2
Hybrid	MaineTainer	8.9	3.9
British	Polled & Horned Hereford	2.1	2.7
British	Red Angus	8.0	8.0
Continental	Salers	0.9	0.6
British	Shorthorn	1.92	0.6
Hybrid	SimAngus	13.0	10.1
Continental	Simmental	12.3	12.3

*Depending on breed - Maternal Calving Ease, Calving Ease Maternal, Calving Ease Daughters

ate revenue or incur costs independent of calving ease.

It's important to recognize that there is an optimal range of birth weights in beef cattle. Certainly, too heavy of a calf is a problem during delivery of the calf hence our selection, at least historically, for lower birth weights. However, too small of a calf at birth is problematic as well. This is especially true for winter/spring calving herds. During severe cold stress, low body weight calves are more susceptible to hypothermia and subsequent death or disease issues. Indeed, very low birth weight calves in northern latitudes can have dramatically reduced survivability when born in winter months.

Birth weight only accounts for 55 to 60 percent of the genetic variation in calving ease. Thus, selection for reduced birth weight alone won't improve calving ease as much as selecting directly on calving ease. And since birth weight is strongly correlated with other growth traits, reduction

in birth weight is usually associated with decreased growth performance at weaning and yearling. When selecting a service sire for use on virgin heifers, it is recommended to focus on selection of bulls with Calving Ease EPDs in the top 20% of the breed being considered or better. If you are using artificial insemination, select bulls with high accuracy Calving Ease EPDs to further minimize risk of dystocia events.

We'll start our discussion on the use of Maternal Calving

nal calving ease genetic potential in the cowherd.

Once a producer has used MCE in the selection of sires to produce replacement heifers, one should transition the selection focus to identification of high Calving Ease (CE) EPD (Calving Ease Direct or CED in some breeds) sires to be mated to virgin heifers to produce their first calf. In this scenario, selection for high CE EPD helps increase the percentage of calves born without assistance to first-calf heifers. In this case if Bull C has a CE EPD of +12 and Bull D has a CE EPD of +2, we'd expect Bull C's calves to have 10% more unassisted births.

Recommendations for MCE EPD minimums for sires to be used to produce replacement heifers and CED EPD minimums for heifer service sires are in Table 1. Regardless of breed group (British, Continental, or Hybrid) the MCE recommendation reflects the upper 25th percentile of active sires. Percentile requirements for CED EPD vary with breed groups:

Continental upper 15%, Hybrid upper 20% and British upper 30%. Producers may adjust this recommendation up or down based on individual needs that reflect herd-based experience in dystocia rates in first-calf heifers.

Combining the use of Calving Ease and Maternal Calving Ease EPDs in your selection system will help assure a successful calving season and decreased dystocia in your first-calf heifers. Dystocia in heifers due to poor selection decisions can be a very expensive mistake resulting in lost profits due to cow and calf death loss, extended post-partum intervals and poorer conception rates in rebreeding first-calf heifers. Be sure to do your part this spring when selecting bulls or semen for building and breeding replacement heifers!

—Bob Weaber, Ph.D., is associate professor and cow-calf extension specialist, Department of Animal Sciences and Industry, Kansas State University.

Begin with the End in Mind

Replacement heifers take time; remember to plan ahead

Story by Samantha Warner for *Cattlemen's News*

The past several months have been record setting in the cattle industry. The U.S. cattle herd is the smallest it's been since the 1950s. Drought conditions are slowly decreasing, feed prices are dropping and cattle prices are soaring. It is a scary and yet exciting time to be involved in agriculture. Producers are trying to figure out how to manage cost and risk while taking advantage of the record setting prices. One way they are doing this is by expanding their herds through heifer replacement programs.

The do's and don'ts

Dr. Voyd Brown, Barry County Veterinary Services of Cassville, Mo., said one of the biggest factors to consider when developing a heifer replacement program is heifer temperament.

"Temperament is extremely important. You need animals that you can handle, that you can work with in the field," Brown said.

Brown doesn't expect producers to pick the biggest or smallest heifers, but noted they need to be a uniform size.

"If you have 20 heifers and you've got one big, one small and the other 18 are basically peas in a pod, those are the ones I would say let's take and go from there," Brown said.

Once the heifers are selected by temperament and size, he recommends evaluating them using the Show-Me-Select Replacement Heifer Program criteria. For more information on

the criteria visit the SMS program website at <http://agebb.missouri.edu/select/>.

After the heifers are selected, they must be prepared for breeding. This starts with nutrition.

"Nutrition is so very critical with those heifers," Brown said. Heifers should be on a nutritional plan so that they're gaining, 1 ½ to 1 ¾ pounds a day. "If they don't kind of hit that bench mark, what we'll see is that we won't have the cycling of the ovaries."

Dr. Sandy Johnson, K-State Extension specialist and associate professor, wrote in the January issue of *Beef Tips*, heifers should have a body condition of five or six at the start of breeding season.

"Higher target weights (60-65 percent) are appropriate when used with an AI program and feed cost is less of a concern. Body condition scores of seven or greater are expensive to achieve and generally result in lower fertility," Johnson said.

Most likely heifers will need to be fed a supplement of cubes, pellets or something similar. Brown said, "Some of it needs to be done by hand, so that the heifers are accustomed to having the producer in and around them."

Brown also said heifers need a good vaccination program. They should be vaccinated against respiratory and reproductive issues, as well as leptospirosis. Producers should

also consider deworming, ear notching and testing for BVD-PI (Bovine Viral Diarrhea Virus Persistent Infection).

Fixed time AI

Brown recommended producers, especially those developing heifers, consider a fixed time artificial insemination program.

He said, "One benefit, and this is probably the most obvious, is that you're able to use bulls that have proven genetics."

"You can buy bulls with known EPDs and then the accuracy associated with those EPDs is above 90 percent," Brown said. "If you go to a performance test sale and you're buying that yearling bull, if you're lucky and they've used some genomics his accuracy may only be 20 percent."

Johnson said, "Risk of calving difficulty is minimized when high accuracy calving ease sires are used via artificial insemination."

Another benefit of a fixed AI system is the opportunity to breed 50-60 percent of those animals on the first day of breeding season, Brown said.

Brown further noted, "A cow cycles 21 days so the next time the animal is going to come in is 21 days later, so they'll calve about 21 days later. A calf's going to gain about 2 pounds a day. When you go to market (with) her offspring that's an additional 42 pounds that you're able to market."

Johnson said, "Heifers born in the first 21 days of the calv-

ing season remain in the herd longer than those born in later cycles. Data show from .6 to 1.2 years longer."

"Then if you keep that animal until she's 8 or 10 years old, by the time she gets to the end of her useful life in your herd that added advantage of keeping her on the front end means that you will have weaned off one extra calf out of that heifer," Brown said.

Plan Ahead

"We have clients starting to look at going and buying a heifer bull. You know heifer bulls are running four grand. You can do a lot of artificial insemination with four thousand dollars," Brown stated. He added that with AI you don't have to worry about bull injury or him getting out on the neighbors.

Even though Brown believes in a fixed-time AI system, he cautions producers to consider how many bred replacement heifers they want to ultimately maintain. Even with 50-60 percent breeding, if you want to add 20 bred heifers you better buy 40, he said.

Lastly, Brown said producers have to remember heifer development takes time. Heifers probably need to be purchased three months before producers want to breed them.

With cattle prices predicted to continue rising, producers need to evaluate their production methods and plan ahead. Proper heifer development is one way producers can take advantage of the current livestock market.

Buying More Cows?

Replacement cow traits affect producer success

By Clay Wright

Many producers who reduced cow numbers in the recent drought years are considering adding females to their herds again. At current replacement female prices, we have to do everything possible to enable the cows to cover their initial cost over time and to set them up for success.

There are general and specific criteria that should come into play when selecting cows to bring into the herd. The new cows must fit the goals, product and marketing end point, and the operation's environment. The environment is not only climate, but also soil, forage and water resources, infrastructure, personnel and management. New (and existing) cows should be expected to wean a desirable calf every 365 days, have an acceptable disposition and stay in the herd for as long as possible. Here are a few considerations I think are vital to think through as new purchases are contemplated.

- New females should be in a stage of reproduction to calve early in or preceding your calving season. A defined, 60- to 90-day calving season simplifies and optimizes all aspects of management, including the health program, nutrition and marketing. It usually will reduce labor and feed costs, allow flexibility in forage management, and increase calf uniformity and value. Further, cows calving early in the calving season will wean bigger calves.

- New females should be moderate in size, with average milk production. Cow size and level of milk production drive the nutritional requirements of the cow. A larger, heavier milking cow needs more protein and energy throughout the year than a more moderate one. More than anything else, proper nutrition affects her reproduction and ability to

bring a calf to the weaning pen every year. The forage base provides most of the cow's nutrition throughout the year, so we need to match her size and milk to the production capability of the grass.

- New females should be composed of a market-acceptable maternal breed or cross. Several breeds fit this criterion, and your choice will be driven by goals and personal preference. However, if optimizing calf size and marketability is the primary objective, individual and maternal heterosis should be a part of the breeding program. A single-breed cow bred to a "terminal" sire can add 5 percent to the calf's weaning weight through individual heterosis. Additionally, if the cow is crossbred, you can see an additional 5 to 6 percent increase in weaning weight due to maternal heterosis. This hybrid vigor is a "free" increase in production just by crossbreeding. There are other factors to consider in these scenarios, such as the availability of a source of quality replacement females.

- New females should maximize the uniformity of the cow herd. Regardless of the marketing end point of the calf crop, uniformity will always add value, and it begins with uniformity in the cows. New cows should match the breed, size and reproduction cycle of the existing herd.

These are not all the factors that should be considered before adding new cows, but I believe they are some of the most important. I recently heard a wise old cowman say, "the cow that best fits our region is a moderate-framed, 1,100- to 1,350-pound cow with average milk production; she is late-winter- to spring-calving, in a 90-day period or less. She is made up of two maternal breeds and looks just like the rest of the cows in the herd." I'm not saying there is one cow type that fits all operations, but I doubt he is too far off in any direction.

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Do your homework when purchasing replacement cows by making sure they calve early in the calving season, are moderate in size and have moderate milk production.

—Photo by Joann Pipkin



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W Lot 1



WC CCC Devil's Cut 3444 P ET
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EPDs: BW: -0.9, WW: 26, YW: 41, Milk: 6, Mtnl: 19

W Lot 94



WC Total Rush 3044 P
2-20-13 BW: 65 lbs. AWW: 863 lbs.
EPDs: BW: -3.1, WW: 28, YW: 55, Milk: 14, Mtnl: 28

W Lot 38



WC Over Time 3015 P
1-23-13 BW: 78 lbs. AWW: 815 lbs.
EPDs: BW: 0.2, WW: 36, YW: 56, Milk: 12, Mtnl: 30

W Lot 92



WC Land Shark 3118 P
1-13-13 BW: 80 lbs. AWW: 739 lbs.
EPDs: BW: -0.6, WW: 30, YW: 54,
Milk: -2, Mtnl: 13

W Lot 12



WC Unleashed 3128 P ET
1-17-13 BW: 78 lbs. AWW: 769 lbs.
EPDs: BW: 1.5, WW: 39, YW: 69,
Milk: 16, Mtnl: 35

W Lot 33



WC Limitless 3216 P
2-14-13 BW: 89 lbs. AWW: 839 lbs.
EPDs: BW: 3.4, WW: 48, YW: 74, Milk: 6,
Mtnl: 30

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INDICATIONS FOR USE

LONGRANGE, when administered at the recommended dose
volume of 1 mL per 110 lb (50 kg) body weight, is effective in the
treatment and control of 20 species and stages of internal and
external parasites of cattle:

Gastrointestinal Roundworms	Lungworms
<i>Cooperia oncophora</i> – Adults and L ₄	<i>Dictyoaulus viviparus</i> – Adults
<i>Cooperia punctata</i> – Adults and L ₄	
<i>Cooperia sumabada</i> – Adults and L ₄	Grubs
<i>Haemonchus placei</i> – Adults	<i>Hypoderma bovis</i>
<i>Oesophagostomum radiatum</i> – Adults	
<i>Ostertagia lyrata</i> – Adults	Mites
<i>Ostertagia ostertagi</i> – Adults, L ₄ and inhibited L ₄	<i>Sarcoptes scabiei</i> var. <i>bovis</i>
<i>Trichostrongylus axei</i> – Adults and L ₄	
<i>Trichostrongylus colubriformis</i> – Adults	

Parasites	Durations of Persistent Effectiveness
Gastrointestinal Roundworms	
<i>Cooperia oncophora</i>	100 days
<i>Cooperia punctata</i>	100 days
<i>Haemonchus placei</i>	120 days
<i>Oesophagostomum radiatum</i>	120 days
<i>Ostertagia lyrata</i>	120 days
<i>Ostertagia ostertagi</i>	120 days
<i>Trichostrongylus axei</i>	100 days
Lungworms	
<i>Dictyoaulus viviparus</i>	150 days

DOSAGE AND ADMINISTRATION

LONGRANGE® (eprinomectin) should be given only by
subcutaneous injection in front of the shoulder at the
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WARNINGS AND PRECAUTIONS

Withdrawal Periods and Residue Warnings
Animals intended for human consumption must not
be slaughtered within 48 days of the last treatment.
This drug product is not approved for use in female
dairy cattle 20 months of age or older, including
dry dairy cows. Use in these cattle may cause drug
residues in milk and/or in calves born to these cows.
A withdrawal period has not been established for
pre-ruminating calves. Do not use in calves to be
processed for veal.

Animal Safety Warnings and Precautions

The product is likely to cause tissue damage at the site of injection,
including possible granulomas and necrosis. These reactions have
disappeared without treatment. Local tissue reaction may result in
trim loss of edible tissue at slaughter.
Observe cattle for injection site reactions. If injection site reactions
are suspected, consult your veterinarian. This product is not for
intravenous or intramuscular use. Protect product from light.
LONGRANGE® (eprinomectin) has been developed specifically for
use in cattle only. This product should not be used in other animal
species.

When to Treat Cattle with Grubs

LONGRANGE effectively controls all stages of cattle grubs. However,
proper timing of treatment is important. For the most effective
results, cattle should be treated as soon as possible after the end of
the heel fly (warble fly) season.

Environmental Hazards

Not for use in cattle managed in feedlots or under intensive
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Other Warnings: Underdosing and/or subtherapeutic
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may encourage the development of parasite resistance. It is
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recommended dose resulted in a statistically significant reduction
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label dose. Treatment-related lesions observed in most cattle
administered the product included swelling, hyperemia, or necrosis
in the subcutaneous tissue of the skin. The administration of
LONGRANGE at 3 times the recommended therapeutic dose had no
adverse reproductive effects on beef cows at all stages of breeding
or pregnancy or on their calves.
Not for use in bulls, as reproductive safety testing has not been
conducted in males intended for breeding or actively breeding. Not
for use in calves less than 3 months of age because safety testing
has not been conducted in calves less than 3 months of age.

STORAGE

Store at 77° F (25° C) with excursions between 59° and 86° F (15°
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ECONOMIC INDICATORS

All Eyes on the Consumer

As herd expansion builds, what can you afford to pay
for replacements?

Story By Joann Pipkin, Editor

It's tough to put all of your
Leggs in one basket if you
are a farmer, but right now
putting them all in the one la-
beled "herd rebuilding" sure
seems like a step in the right
direction.

Oklahoma State University
Extension Area Ag Economist
Scott Clawson told cattlemen
at the Jan. 14 KOMA Beef Con-
ference at Joplin Regional
Stockyards that anticipated
returns for cow/calf opera-
tions this year are shaping up
to be really good.

"The market says 'bring us
more cattle, we can handle
it,'" Clawson said.

Currently, a number of fac-
tors are encouraging the herd
rebuilding process including
restored hay supplies, lower
corn prices and a moderated
drought that has improved
pasture conditions. Couple
those with strong calf prices
and Clawson stated, "All of
these should be good news for
folks wanting to expand."

Clawson noted that recent
market prices on open re-
placement heifers in Kansas
and Missouri have been be-

tween \$1050 and \$1166 on 560
to 730 pound females.

But the question is, do we
know how much to pay for
those replacements?

Clawson said using the Net
Present Value (NPV) approach
could serve as a guideline.
"NPV analysis helps guide you
in determining how much you
can possibly pay for replace-
ments based on your assump-
tions as to where the market
is heading," he explained. The
idea behind using NPV to look
at this decision is that over the
lifecycle of that replacement
you are anticipating a series
of cash flows.

"For instance," Clawson said,
"you sell the cow's calf every
year for \$750. It costs you
\$500 a year to run that cow.
You have a \$250 cash flow."

He noted that \$250 is expected
for roughly three to 10 years
depending on what you pur-
chase. "Take that series of
cash flows and add in a rate of
return that you want to make
on the investment. Plug all of
that in the calculator and it

CONTINUED ON NEXT PAGE

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CONSUMER • CONTINUED FROM PREVIOUS PAGE

tells you what you can pay right now to achieve that return based on all of our assumptions, which you make quite a few in the process,” Clawson explained.

Overall, he said the process helps you look to expand by assisting with your determination of what to pay for the replacements.

Clawson said right now it doesn't really seem to matter what type of cattle you raise; they will bring big money.

“As managers, you need to worry about what you put in those cattle,” he stated.

For Clawson, the on-going issue is annual cow cost. Cash expenses and total expenses must be considered including depreciation, management and opportunity cost.

“NPV measures the value of your dollar over time,” Clawson noted. “But, it is based on multiple assumptions and it doesn't mean that other buyers will act rationally.”

Certainly another factor weighing on market prices for cattlemen is what consumers are willing to pay for their end-product.

Clawson cited a number of factors affecting consumer prices including:

- Beef demand—both domestic and abroad
- Higher prices for slaughter cattle
- Anticipated 6-7% reduction in 2014 beef production
- Prices for competing proteins

“Consumers look for ‘cheaper’ substitutes,” Clawson said. “But that does not mean that other proteins are ‘perfect’ substitutes.”

All in all, he said we paint a really great picture for cow/calf producers for the next couple of years. But, don't assume something won't come along to rock the boat.

“Many of the barriers will be based on the individual operation,” Clawson said. “For instance, how bad were our pastures damaged from the two previous years of drought? Will my forage production withstand additional grazing pressure right now?”

According to Clawson, a significant barrier that all cattlemen looking to expand will face is the sheer size of the investment. In other words, the cost of replacements may get so high that some producers may not want to take on that financial risk. “As the price tag on bred heifers breaks \$2000 to \$2500, who knows where it ends,” he said.

“So, the investment in 30 replacements may have cost you \$40,000 in the past; it may cost closer to \$70,000 in the near future. If we are financing these cattle on a five-year note, are we confident that we can manage that annual debt

service with conservative market outlook? I think that is a question that producers will be asking themselves as they make this decision.”

Systematic risks to the cattle market include government shut-down, recessions, interest rates and international conflicts.

Still, the million-dollar question is, ‘how long will high cattle prices last?’ Clawson said,

“On the supply side, it will take at least a couple of years under good conditions for us to see increased calf crops or feeder supplies,” he summed up. “The demand side will be interesting as we have never experienced fed cattle and boxed beef prices so high. How consumers react to increased prices will be interesting to see.”



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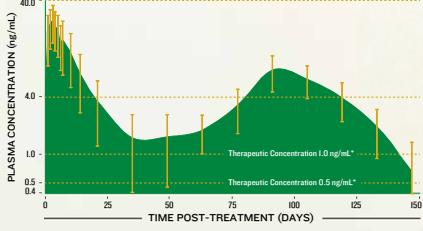
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¹ Dependent upon parasite species, as referenced in FOI summary and LONGRANGE product label.
² LONGRANGE product label.
³ Morley FH, Donald AD. Farm management and systems of helminth control. *Vet Parasitol.* 1980;6:105-134.
⁴ Brunson RV. Principles of helminth control. *Vet Parasitol.* 1980;6:185-215.

Dietary Guidelines Committee Hears From Public

As guidelines change, so has beef industry

Story from Cattlemen's Beef Board

The 2015 Dietary Guidelines Advisory Committee held its second public meeting in January to hear testimony regarding potential changes. Director of Nutrition Research at the National Cattlemen's Beef Association, a contractor to the Beef Checkoff Program, Clara Lau, Ph.D, spoke to the importance of lean beef in healthy diets.

Lau explained as the guidelines have changed over time, so has the beef industry. In 1980 when the first edition of the dietary guidelines was published, it was common to see one-half of an inch of fat trim on beef in the grocery store meat case. Now, retail beef cuts are virtually void of external fat, averaging less than one-tenth of an inch, according to Lau.



Photo by Joann Pipkin

"The broad category of red meat used in large observational studies, like the Nurses' Health Study, does not reflect the leaner supply of beef," Lau said.

"So, the lean beef people are actually consuming is not used when comparing beef consumption with health outcomes. Therefore, these comparisons fall short in assessing lean beef as part of a healthful dietary pattern."

"Farmers and ranchers have responded to dietary guidance by supporting research and education to maximize the availability of lean beef," Lau said. "The industry has selected for leaner cattle, trimmed excessive fat, and encouraged people to choose appropriate portions of lean beef more often. We listened, we changed, and we wanted you to know about it."

The beef checkoff submitted written comments prior to this meeting, and will continue to be engaged as the 2015 dietary guidelines discussion continues.

Lau also addressed the lag in the USDA Nutrient Database to reflect lean beef changes, affecting the accuracy of data used in some observational studies.

This meeting was originally scheduled for Oct. 3-4, 2013, but was postponed due to the government shutdown.

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CONTRAINDICATIONS
As with all drugs, the use of ZACTRAN is contraindicated in animals previously found to be hypersensitive to this drug.

WARNING: FOR USE IN CATTLE ONLY. NOT FOR USE IN HUMANS. KEEP THIS AND ALL DRUGS OUT OF REACH OF CHILDREN. NOT FOR USE IN CHICKENS OR TURKEYS.
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RESIDUE WARNINGS: Do not treat cattle within 35 days of slaughter. Because a discard time in milk has not been established, do not use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

PRECAUTIONS
The effects of ZACTRAN on bovine reproductive performance, pregnancy, and lactation have not been determined. Subcutaneous injection of ZACTRAN may cause a transient local tissue reaction in some cattle that may result in trim loss of edible tissues at slaughter.

ADVERSE REACTIONS
Transient animal discomfort and mild to moderate injection site swelling may be seen in cattle treated with ZACTRAN.

EFFECTIVENESS
The effectiveness of ZACTRAN for the treatment of BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* was demonstrated in a field study conducted at four geographic locations in the United States. A total of 497 cattle exhibiting clinical signs of BRD were enrolled in the study. Cattle were administered ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline as a subcutaneous injection once on Day 0. Cattle were observed daily for clinical signs of BRD and were evaluated for clinical success on Day 10. The percentage of successes in cattle treated with ZACTRAN (58%) was statistically significantly higher ($p < 0.05$) than the percentage of successes in the cattle treated with saline (19%).
The effectiveness of ZACTRAN for the treatment of BRD associated with *M. bovis* was demonstrated independently at two U.S. study sites. A total of 502 cattle exhibiting clinical signs of BRD were enrolled in the studies. Cattle were administered ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline as a subcutaneous injection once on Day 0. At each site, the percentage of successes in cattle treated with ZACTRAN on Day 10 was statistically significantly higher than the percentage of successes in the cattle treated with saline (74.4% vs. 24% [$p < 0.001$], and 67.4% vs. 46.2% [$p = 0.002$]). In addition, in the group of calves treated with gamithromycin that were confirmed positive for *M. bovis* (pre-treatment nasopharyngeal swabs), there were more calves at each site (45 of 57 calves, and 5 of 6 calves) classified as successes than as failures.
The effectiveness of ZACTRAN for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica* and *Pasteurella multocida* was demonstrated in two independent studies conducted in the United States. A total of 467 crossbred beef cattle at high risk of developing BRD were enrolled in the study. ZACTRAN (6 mg/kg BW) or an equivalent volume of sterile saline was administered as a single subcutaneous injection within one day after arrival. Cattle were observed daily for clinical signs of BRD and were evaluated for clinical success on Day 10 post-treatment. In each of the two studies, the percentage of successes in the cattle treated with ZACTRAN (86% and 78%) was statistically significantly higher ($p = 0.0019$ and $p = 0.0016$) than the percentage of successes in the cattle treated with saline (36% and 58%).

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CONSUMER TRENDS

Certified Angus Beef® Brand Resonates with Consumers

Consumers recognize brand quality

Story from *Certified Angus Beef*

A nationwide study confirms that the premium quality of the Certified Angus Beef® brand resonates with consumers. Seventy-five percent of those interviewed by Firebox Research & Strategy of Beachwood, Ohio, ranked the Certified Angus Beef® brand logo as representing the highest quality Angus beef available. Moreover, they said they would pay more for it in restaurants and grocery stores.

The research builds on findings from 900 in-store intercepts in 2007 and focus groups in 2010. The latest information adds results from 900 U.S. store intercepts in 2013, as well as a Web survey of 1,100 consumers from the United States and Eastern Canada. Participants in the studies were age 35-54, 75% women and 25% men, with annual household income of \$50,000 or more, who consume beef at least once or twice per week.

"The studies provide two very different views of the consumer," says Michael Schiller, managing director of Firebox Research & Strategy and the primary researcher on the studies. "The web survey allows us to look at the consumer market for premium beef, while the in-store survey gives us great insight into customers who shop at stores carrying the Certified Angus Beef® brand in their meat case."

The brand's logo advanced to 94% consumer recognition, more than double the closest ranking brand and 3 percentage points higher than in 2007. Given a list of beef grades and brands by name, awareness for the Certified Angus Beef® brand name rose to 92%, which is 5 points higher than in 2007.

The Certified Angus Beef® brand is not only recognized but regarded by consumers as the best of any grade or brand of beef. The brand's logo outranked other Angus brands and received the highest quality rating by 75% of consumers surveyed. And when it comes to the brand's name, nearly 6 in 10 say they expect beef items marked with the Certified Angus Beef® brand name to be the "best or top quality beef."

"Positive perception is essential," says Tracey Erickson, the brand's vice president of marketing. "Consumers have a very strong perception of the brand's quality and associate it with the logo when dining out and shopping at grocery stores."

Premium Beef Research

The Web study yielded nuggets for retailers, with more than 4 out of 5 grocery

shoppers willing to pay at least \$1 more per pound to upgrade to the Certified Angus Beef® brand. And, when consumers were hypothetically given \$20 for their next beef purchase, they preferred the brand by 2-to-1 over competing brands.

Similar results for foodservice indicate that nearly 70% of restaurant patrons are willing to pay \$3 more to upgrade an \$18 beef menu choice to the Certified Angus Beef® brand. The results also show that nearly 8 in 10 consumers say restaurants offering the brand are perceived as better in quality than those that don't.

In a separate 2013 web study surveying 999 U.S. consumers, nearly half would be willing to drive up to 30 minutes to purchase a Certified Angus Beef® brand offering at a restaurant and another 1 in 10 would travel longer. For purchases at a grocery store, 3 in 10 would travel up to 30 minutes and nearly 1 in 10 would travel longer.

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¹ ZACTRAN product label.

² Lechtenberg K, Daniels CS, Royer GC, et al. Field efficacy study of gamithromycin for the control of bovine respiratory disease in cattle at high risk of developing the disease. *Intern J Appl Res Vet Med.* 2011;9(2):189-197.

³ Sifferman RL, Wolff WA, Holste JE, et al. Field efficacy evaluation of gamithromycin for treatment of bovine respiratory disease in cattle at feedlots. *Intern J Appl Res Vet Med.* 2011;9(2):171-180.

⁴ Van Donkersgoed J, Merrill JK. A comparison of tilmicosin to gamithromycin for on-arrival treatment of bovine respiratory disease in feeder steers. *Bovine Practitioner.* 2012;46(1):46-51.



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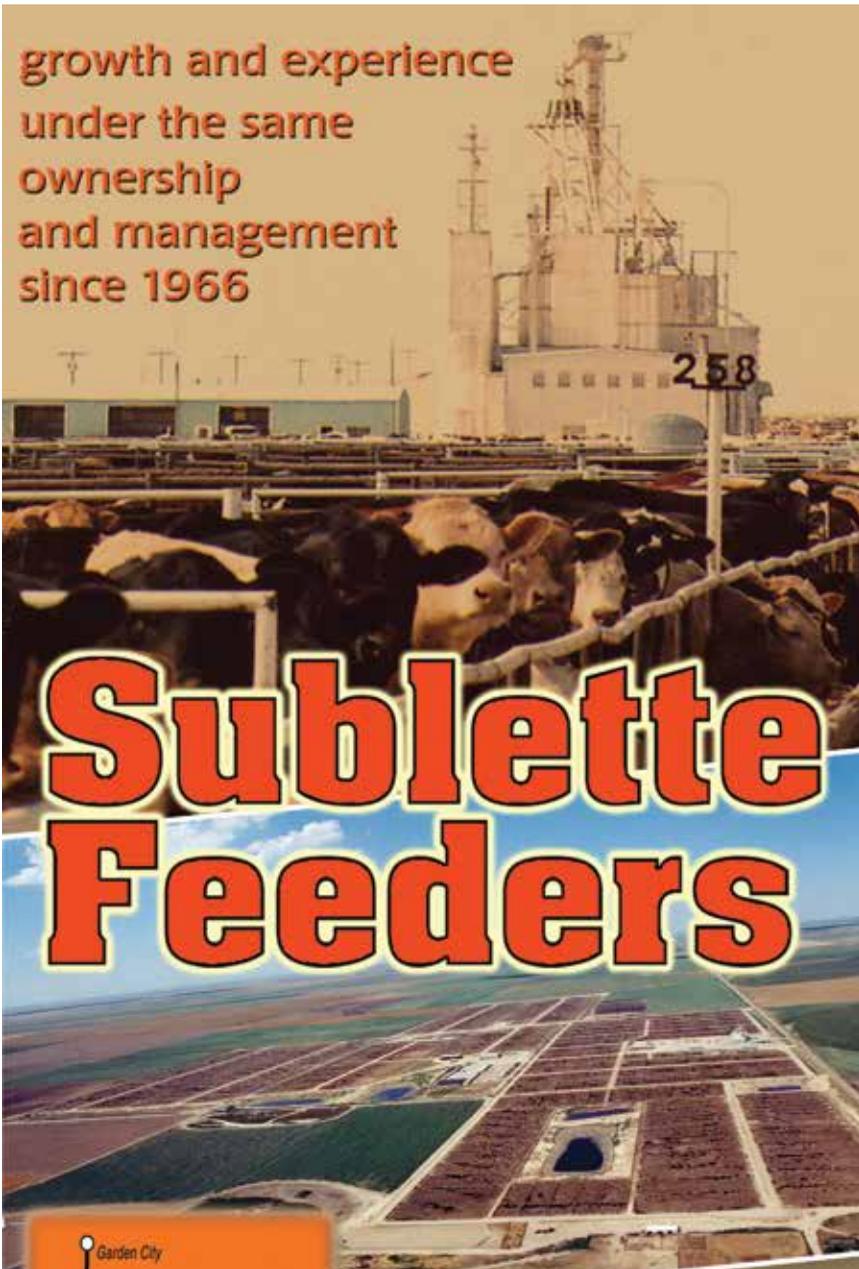
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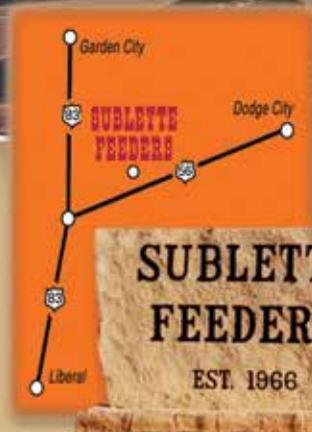
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CONSUMER TRENDS

Adults Choosing Healthier Foods, Consuming Healthier Diets

USDA research shows improvements in diet quality
between 2005 and 2010

Story from USDA

American adults are eating a better, making better use of available nutrition information, and consuming fewer calories coming from fat and saturated fat, consuming less cholesterol and eating more fiber, according to a new report from the U.S. Department of Agriculture's Economic Research Service; Changes in Eating Patterns and Diet Quality Among Working-Age Adults, 2005-2010.

The study, released today, underscores the importance of robust efforts undertaken since 2009 to improve food choices and diet quality and ensure that all Americans have access to healthy food and science-based nutrition education and advice.

Reduced consumption of food away from home (such as food from restaurants and fast food) accounted for 20 percent of the improvements in diet quality. A recent study found that during the recession of 2007-2009, U.S. household overall food expenditures declined approximately 5 percent, mostly due to a 12.9 percent decline in spending on food away from home. Calories consumed through food away from home dropped by 127 calories per day, and the average person ate three fewer meals and 1.5 fewer snacks per month away from home. Eating at home more often was also associated with more frequent family meals.

CONTINUED ON NEXT PAGE

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HEALTHIER FOODS • CONTINUED FROM PREVIOUS PAGE

The report also indicates changing attitudes toward food and nutrition. Compared with 2007, the percentage of working-age adults who believed they have the ability to change their body weight increased by three percentage points in 2010. During the same time period, the report shows there was little change in the importance that price played when making choices at the grocery store, but working-age adults placed increased importance on nutrition when choosing items to purchase.

“When individuals believe that their actions directly affect their body weight, they might be more inclined to make healthier food choices,” said study author Jessica Todd, Ph.D., of the Economic Research Service.

The researcher used individual dietary intake data for working-age adults from the National Health and Nutrition Examination Survey (NHANES), which collects detailed individual and household information on a wide range of health-related topics through questionnaires, physical exams and lab work, in two-year segments. The survey is designed to be nationally representative, with a sample composed of 9,839 individuals. Overall, daily caloric intake declined by 78 calories per day between 2005 and 2010. There were overall declines in calories from total fat (3.3 percent), saturated fat (5.9 percent), and intake of cholesterol (7.9 percent). Overall fiber intake increased by 1.2 grams per day (7.5 percent).

This research was conducted by the Economic Research Service, which is a primary source of economic information and research at USDA.

Expanding the availability of healthy food to all Americans, while providing science-based nutrition information and advice is a key focus of USDA's nutrition assistance programs and the Obama administration. USDA is focused on strategies that empower families to make healthy food choices, including:

- USDA's MyPlate symbol and the resources at ChooseMyPlate provide quick, easy reference tools to facilitate healthy eating on a budget for parents, teachers, healthcare professionals and communities. The site includes shopping strategies and meal planning advice to help families serve more nutritious meals affordably through its 10-Tips Nutrition Series and the Thrifty Food Plan.
- USDA's SuperTracker, a free online planning and tracking tool, helps more than three million Americans improve food choices, maintain a healthy weight, and track physical activity on a daily basis.
- America's students now have healthier and more nutritious school meals due to improved nutrition standards implemented as a result of the historic Healthy, Hunger-Free Kids Act of 2010. USDA recently announced Smart Snacks in Schools, which

sets healthy guidelines for all foods and beverages sold in school to ensure that students will be offered only healthier food options during the school day.

- USDA expanded eligibility for \$4 million in grants to improve access to fresh produce and healthy foods for SNAP shoppers at America's farmers markets. By increasing the number of farmers markets that are able to accept SNAP benefits, USDA is encouraging SNAP recipients to use their benefits to purchase and prepare healthy foods for their families.
- Through USDA's Know Your Farmer, Know Your Food, the department has worked to increase access to nutritious food through the development of strong local and regional food systems. The number of farmers markets increased by more than 67 percent in the last four years and there are now more than 220 regional food hubs in operation around the country.

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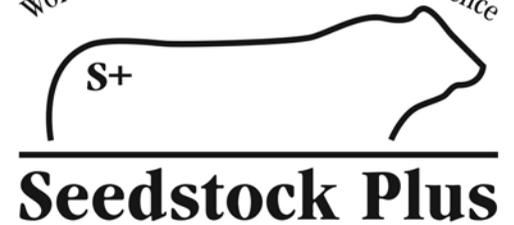
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What's Next for Cattle, Beef?

Keep watchful eye on weather, cattle reports

Story By Derrell S. Peel

Mid-January brought with it a rapid advance in boxed beef and fed cattle markets. While these advancements happened much quicker and more dramatically than anticipated, the overall price levels are not at all unreasonable relative to conditions that have been building for many months. The general tightening of market supplies of fed cattle combined with moderating carcass weights,

no doubt partly reflecting the withdrawal of Zilmax last fall, means that beef supplies were sensitive to any disruptions. The disruptions came with the large winter storms during the holidays that negatively affected fed cattle production and slaughter, and wholesale and retail beef distribution. In addition, while the recent market run should not be taken directly as all due to the strength of beef demand, there clearly is

significant demand strength to warrant the buyer fervor that has taken boxed beef to new record levels every day for the past two weeks. It will take some time yet to sort out how much is due to refilling the wholesale and retail pipeline and rebuilding post-holiday inventories and how much is due to continued demand strength in the New Year.

What's next for fed price and the boxed beef cutout? Obviously these are uncharted waters so market predictions are scary and probably humbling. However, a couple of things seem likely to me. First, I doubt that the breathless run of the past 10 days will continue much longer. Moreover, I wouldn't be surprised to see both boxed beef and fed prices

es back up a bit as the market tries to figure out exactly where we are and to consolidate the market fundamentals. Both fed cattle and boxed beef prices could drop back a few dollars and still be well ahead of earlier expectations for this point in time. That said, I don't necessarily see any reason for a major unwinding of recent market advances and first quarter averages of fed cattle and boxed beef prices are likely to be higher than previously expected. The cash fed cattle market is ahead of futures and provides an incentive to pull cattle forward, which will keep both numbers and weights in check. The market is clearly being driven by short supplies with a decent demand underpinning. Winter is a difficult time to rebuild supplies under average conditions and means that the market is particularly susceptible to more winter disruptions. More cold weather is forecast across the eastern half of the country the last week of January.

The advances in wholesale beef and fed cattle prices have relieved a lot of pressure on both beef packer and feedlot margins. This is important as feedlots move into higher breakevens ahead due to high prices paid last fall for feeder cattle. Feeder markets have not participated as much in the recent fed cattle and boxed beef price rally, after moving higher in December, but the increase in prices in those markets does support feeder prices as margins realign in the industry. In the short run, the dramatic increase in boxed beef prices is at the expense of retail margins and will accelerate the pressure to pass on higher cost to consumers with higher retail prices. Over the next several months, that will be the key to how all of this plays out.

The weather is one factor to watch right now, as well as the January Cattle on Feed Report and annual Cattle Inventory Report due out Jan. 31. These will provide critical information to sort out the immediate market status and the overall situation for the next several weeks and months.

—Derrell S. Peel is Oklahoma State University livestock economist.

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All Eyes on Cows, Land

Focus on 5 keys to profitability

Story By Joann Pipkin, Editor

Ever wondered why you farm?

Whether you farm because it is your family's livelihood or because you just enjoy it, the bottom line is if you aren't making any money, then the farm is not sustainable.

University of Missouri Extension Livestock Economist Wesley Tucker told attendees at the recent Missouri Cattlemen's Association Convention at Osage Beach, Mo., there are five keys to profitability in farming and it all boils down to management.

Tucker outlined those five keys as:

1. Control feed costs
2. Stock pastures for winter not spring
3. Extend the grazing season and maximize utilization of pastures
4. Manage nutrients
5. Plan marketing

Here's a closer look at how you can put each one to work and make your farm sustainable.

1. Control feed costs. A 2001 Beef Research Report conducted at Iowa State University explained the variation in returns to labor and management. Feed costs alone encompassed greater than 52 percent of the economic variables in beef production, Tucker said. He challenged cattlemen to focus most on controlling their feed costs since it affects the highest amount of production costs.

"The beef industry was built on cheap land, cheap feed, cheap fuel and cheap fertilizer," Tucker stated. "These will never be cheap again."

He further stated that returns are more variable across producers at any point in time than they are on average over time. In other words, "Even in hard times, some producers are profitable," Tucker said.

"Cost differences explain a much bigger portion of profitability differences across producers than do income differences," he noted.

And although 2014 is staged to bring record cattle prices, Tucker said profits might not be as high as we might think when input costs are considered. "You must manage your inputs."

2. Stock pastures for winter not spring. Tucker told cattlemen the biggest challenge they face is the cool season grass growth curve. "We have based our stocking rate on spring grass growth when it should be based on fall growth."

"Our grandfathers always said to only run as many cows as you can in a drought year," he explained. "Technology has helped us push the buttons on how many cows we can run. And, we want more."

What happens, Tucker said, is in good years we buy more cows and in turn we buy hay in bad years. "No one ever wants to sell cows."

3. Extend the grazing season and maximize the utilization of pastures. Discussing his own cattle operation, Tucker noted that every day he can keep cows grazing is a day he can make more money.

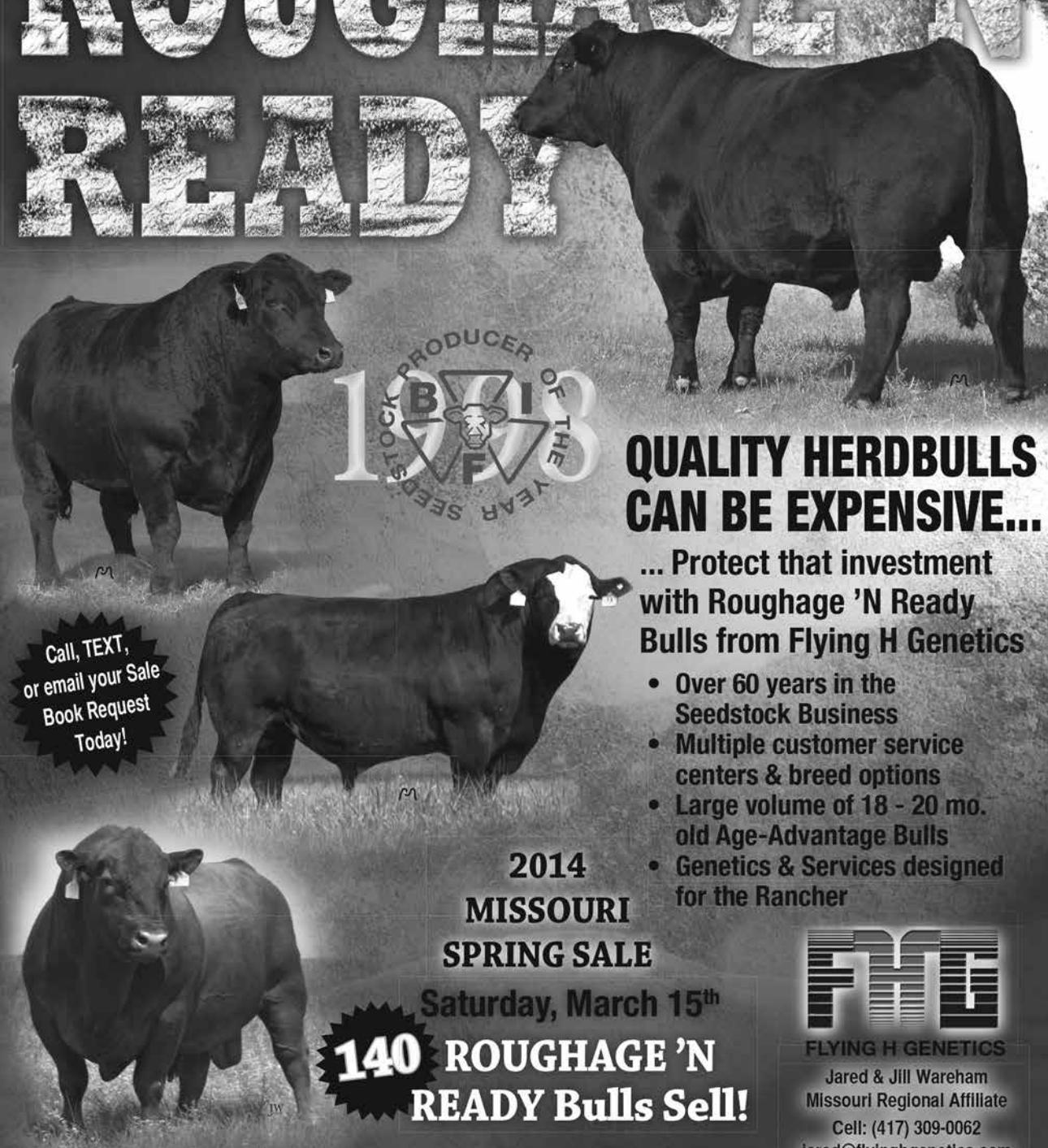
By strip-grazing his pastures, Tucker said he is better able to utilize the grass in his pastures. "Your neighbor wastes one-third to one-half of the grass he grows."

Tucker cited a 30 percent utilization rate of one pasture, continuously grazed compared to 24 pastures grazed one to two days with a greater than 70 percent utilization rate.

CONTINUED ON NEXT PAGE

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Plan Now for Less Waste Later

5 tips for hay storage

From Our Staff

As you feed hay this winter, you could actually do a little homework that will help you minimize waste when hay harvest and storage time rolls around. Reducing hay crop losses with more thoughtful bale yard management is important and profitable in the long term, says Eldon Cole, University of Missouri Extension livestock specialist.

Here are some hay storage tips to keep in mind when harvest season rolls around.

1. Choose a site that is both convenient for summer storage and winter-feeding. However, take into consideration access for thieves and pranksters.

2. Select a storage site on sloping ground that provides good drainage. Not every convenient bale yard will have

a slope to it. Soils in southwest Missouri are rockier which does add to the dryness of the yard.

“If those conditions don’t exist, place the bales on tires, railroad ties, a graveled area, up on some type of object or net wrap them. These items reduce the wicking effect that is so damaging to the lower portions of the bale,” said Cole.

3. Remember to place the bales running in a north to south row. It is best to leave about three feet between rows of bales for air movement and drying purposes. “The row of bales should be butted snugly end-to-end. Do not allow the sides of the bales to touch. Again the reason is to reduce the soaking of rain or snow into the bale,” said Cole.

PROFITABILITY • CONT'D FROM PAGE 37

“We have to do it on grass. Don’t get in a position where you are out of grass and out of hay. Animals can harvest forage cheaper than you. Cows are made to walk and eat.”

4. Manage nutrients. Tucker said his experience has taught him manure is worth about \$200 to \$250 per year. If you feed hay to your cattle, he said spread the nutrients around. Unrolling a bale of hay in the pasture aids in nutrient distribution.

It takes a pasture that is continuously grazed about 27 years to get one pile of manure per square yard. Whereas, on a pasture with a two-day grazing rotation it only takes about two years to get one pile of manure per square yard.

4. Don’t choose a bale yard located near fencerows under shade trees. The shade and drips from the trees will prevent the bales from drying out sufficiently.

5. Plan marketing. “The value of gain is not what you sell a calf for,” Tucker said. Typically, gain is worth \$70 to \$80 / cwt. However, that value varies based on the season, the weight of the cattle and the cost of gain (the price of corn).

The most profitable producers are flexible, Tucker noted. “The amount of quality forage available should drive your marketing program.”

When feed is high, the value of gain is worth more in stocker cattle than in cows, he said. “When feed cost goes up, so does the value of our grass. Grass has to dictate your marketing program.”

All in all, Tucker noted that cattlemen should plan to feed hay for 45 to 60 days, not 100. “Cows and land make us money. Focus on these.”

5. Avoid stacking hay uncovered. “Once in a while I see stacks of bales two, three or four high that are uncovered. This is a perfect design for waste. Using a tarp or plastic on the top rows will minimize waste,” said Cole.

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BVD 1b — Emerging profit-robbing strain

Carl Guthrie, D.V.M. and director of Elanco beef technical consultants, answers questions about BVD and the emerging predominance of subtype 1b

Q. What impact does bovine viral diarrhea (BVD) have on the beef industry?

A. “BVD is often referred to as the most costly viral disease in cattle because it causes a highly complex disease that affects multiple animal body systems, decreases the immune system’s ability to fight infections, and is closely associated with bovine respiratory disease (BRD).¹ In fact, BVD is the most commonly identified virus in BRD outbreaks,² which is significant when you consider that 75 percent of feedlot morbidity and 50 to 75 percent of mortality is attributed to BRD.^{3,4,5} Not to mention that there can be unseen, subclinical impacts from BRD as well.”⁶

Q. How does BVD spread?

A. “BVD can spread calf-to-calf or through contaminated surfaces, such as feed, water tanks and equipment. PI (persistently infected) calves also have a big impact on the prevalence of the disease, as they shed BVD their entire lives. Just one PI calf can create an exponential spread of BVD, leading to clinical disease and costly losses.”

Q. How can BVD be managed?

A. “To effectively control BVD, we have to understand what the most common BVD viral strains infecting your cattle are, and then identify how the predominance of those strains has changed over time. We also know that the more similar a vaccine is to the disease-causing organism, the

better the immune system responds to the vaccine.⁷ So, specifically targeting the most predominant strains with a vaccine is essential to adequate protection.”

Q. What is the most prevalent strain of BVD?

A. “We know that the major BVD viral strains in the United States are 1a, 2 and 1b.⁸ Traditionally, 1a has been identified as the most predominant strain. However, a 20-year study of diagnostic samples showed that while the predominance of 1a decreased, the incidence of BVD stayed the same.⁸ During the same period, we saw the incidence of 1b rise from 41 to 61 percent.⁸ Multiple studies also indicate that almost 78 percent of PI calves are infected with 1b.”^{9,10}

Q. How can BVD 1b be addressed?

A. “The fact that the prevalence of BVD has not gone down — even though the industry has been using vaccination programs with 1a and 2 — points to the need for a vaccine with targeted protection against 1b. To address this need, Elanco introduced Viralign™ 6, the first combination modified-live virus (MLV) vaccine to provide targeted protection against BVD 1b. This makes Viralign 6 an important health tool when it comes to targeting the most predominant type of BVD — 1b — and helping to reduce the costly impact of both BVD and BRD.”

Viralign 6 is the first commercially approved MLV vaccine that provides targeted protection against BVD virus 1b — the most predominant BVD virus subtype in the United States.¹ Viralign 6 also protects against BVD viral strains 1a and 2, bovine respiratory syncytial virus (BRSV), infectious bovine rhinotracheitis (IBR) virus and parainfluenza₃ (PI₃) virus and is labeled for low-volume, subcutaneous administration in cattle five months of age and older.

The label contains complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

Precautions: Do not vaccinate pregnant cows or calves nursing pregnant cows since abortions may occur. Do not vaccinate within 21 days of slaughter.

For vaccination of healthy cattle five months of age or older. Dose: 2 mL subcutaneous in the side of neck. See insert for full instructions.

¹Bartlett, B. and D. Grooms. 2008. BVD-PI Eradication: Unintended Consequences. Michigan Dairy Review. Accessed June 12, 2013. <https://www.msu.edu/user/mdr/vol13no3/bartlett.html>.

²Grooms, D. 2010. Role of bovine viral diarrhea virus in feedlots. CVC, San Diego. Accessed June 12, 2013. <http://veterinarycalendar.dvm360.com/avhc/Veterinary+Food+Animal/Roleof-bovine-viral-diarrhea-virus-in-feedlots-Pr/ArticleStandard/Article/detail/773327>.

³Edwards, A. J. 1996. Respiratory Diseases of Feedlot

Cattle in the Central USA. Bovine Practitioner. 30:5-7.

⁴Galyean, M. L., L. J. Perino and G. C. Duff. 1999. Interaction of Cattle Health/Immunity and Nutrition. J. Anim. Sci. 77:1120-1134.

⁵Loneragan, G. H., D. A. Dargatz, P. S. Morley, and M. A. Smith. 2001. Trends in Mortality Ratios Among Cattle in US Feedlots. J. Am. Vet. Med. Assoc. 219:1122-1127.

⁶Wittum T. E., N. E. Woollen, L. J. Perino and E. T. Littlelike. 1996. Relationships among treatment for respiratory tract disease, pulmonary lesions evident at slaughter, and rate of weight gain in feedlot cattle. J. Am. Vet. Med. Assoc. Aug 15;209(4):814-8.

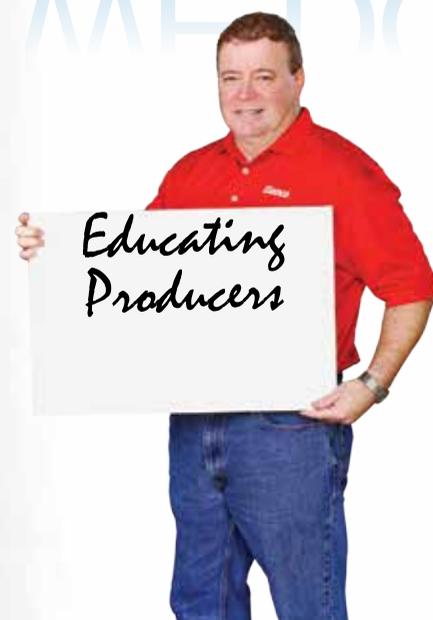
⁷CDC. 2012. Principles of Vaccination. National Center for Immunization and Respiratory Diseases. Accessed June 13, 2013. <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/01-prinVac.pdf>.

⁸Ridpath, J. F., G. Lovell, J. D. Neill, T. B. Hairgrove, B. Velayudhan, and R. Mock. 2011. Change in predominance of bovine viral diarrhea virus subgenotypes among samples submitted to a diagnostic laboratory over a 20-year time span. J. Vet. Diagn. Invest. 23:185-193.

⁹Fulton, R. W., B. Hessman, B. J. Johnson, J. F. Ridpath, J. T. Saliki, L. J. Burge, D. Sjeklocha, A. W. Confer, R. A. Funk, and M. E. Payton. 2006. Evaluation of diagnostic tests used for detection of bovine viral diarrhea virus and prevalence of subtypes 1a, 1b, and 2a in persistently infected cattle entering a feedlot. JAVMA, Vol 228, No. 4.

¹⁰Elanco Study No. BIOUS120010.

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PORT 30476-2
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Get Early Pregnancy Detection with Ultrasound

Technology aids in extra profits for cattlemen

Story By S.E. Poock, DVM, DABVP

For many years, rectal palpation has been a mainstay to veterinarians for pregnancy diagnosis. Undoubtedly, it will continue to be important for palpation of the reproductive tract of the cow. To the experienced practitioner, it is most reliable 35 days or greater post breeding. However of growing importance in the last 15 to 20 years is the use of ultrasound for cattle reproduction because of its many benefits.

Ultrasound has been investigated for approximately 25 years. Some of the earliest papers came out of Dr. Ollie Ginther's lab at the University of Wisconsin. The ultrasound provides the practitioner a way to gather more information than from rectal palpation. The ultrasound was investigated as a tool for early pregnancy diagnosis, ovarian structures, fetal sexing, fetal aging, etc. Initially, the high cost of the ultrasound machines dissuaded the use. Yet, because of advances in technology over the past 15 years, use of the ultrasound has been increased due to the development of relatively inexpensive, portable equipment.

On the average, the embryo, with a heartbeat visible, is first visualized around day 20-28 of gestation depending on the type of ultrasound and probe. Most ultrasound machines used in beef cattle will first pick up the heartbeat around 30 days. A typical benefit seen among practitioners using ultrasound is that they often become more proficient at rectal palpation. Several studies also show that there are very little deleterious effects of rectal palpation or ultrasound by the experienced veterinarian.

An ultrasound is used in beef cattle more for fetal ageing and/or fetal sexing in comparison to dairy cattle where early pregnancy detection is most important. Fetal aging is important to seedstock producers to determine accurate

sires and dam. Similarly, as commercial producers enter value-based markets, there is the need to know the genetic



Ultrasound in beef cattle assists producers with pregnancy detection through visible heartbeat as early as 20 to 28 days. The technology also can help cattlemen earn extra profits through special programs like the Show-Me-Select Replacement Heifer program. —Photo courtesy Scott Poock, DVM.

base of their cattle. Determining exact sire identification is enhanced through the use of ultrasound.

For cattlemen interested in extra profits through special programs, ultrasounding is essential. A majority of beef herds will choose a time to pregnancy check that minimizes trips through the chute. The Show Me Select Heifer (SMS) program in Missouri requires a palpation by 90 days after the start of the breeding season, whether bred by the bull or with timed artificial insemination (TAI). This timing has been beneficial to the veterinarian performing the

ultrasound, as it allows (in a timed artificial insemination program) owners to determine the AI bred animals from the cleanup bull—if the bull is put into the herd 14 days after TAI. Likewise, the veterinarian can fetal sex the TAI inseminations and most likely the first round of bull inseminations at approximately 70 days.

Fetal aging is also possible to detect through ultrasound. This can be determined by making various measurements of the

As part of the SMS program, several livestock specialists have followed calving results of heifers sold through the sales. They have correlated the resulting calving dates with estimation of breeding dates corresponding to whether the heifers were diagnosed via rectal palpation or ultrasound. The data would suggest that the use of the ultrasound improves the accuracy of the veterinarian, although several very experienced practitioners have very high accuracies. This would further suggest as noted in a recently published paper on the use of per rectum palpation, that experienced palpators can be quite accurate while less experienced veterinarians are less accurate.

Referring once more to the beginning of ultrasound research for cattle, fetal sexing was first described in 1989 by Dr. Curran. She discovered that around day 56 days of gestation, the genital tubercles have migrated to their proper positions. In general, the female genital tubercle will be under the tail earlier than the male genital tubercle will be caudal to the umbilical cord. Therefore, earliest practitioners can practically fetal sex at approximately 56 days. The latest fetal sexing can be done varies, but around 90 days of gestation in heifers, 100 days of gestation in dairy cattle and 110 days in beef cattle, the gravid uterus becomes more difficult to scan. It is generally concluded that sex determination is most practical between 60 and 85 days of gestation.

Remarkably, fetal sexing can predict the sex of the resulting calf by 92 to 100 percent. One should not be discouraged, realizing that this level of accuracy will take time and practice to achieve.

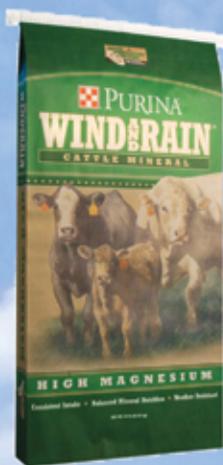
Taking time to learn the art of pregnancy diagnosis for cattle by ultrasound has many benefits. The early detection of pregnancy, fetal sexing, aging, ovarian and uterine pathology all aid the cattleman in increasing profits.

—Scott Poock, DVM, DABVP, is a veterinarian with the University of Missouri Commercial Agriculture Program.

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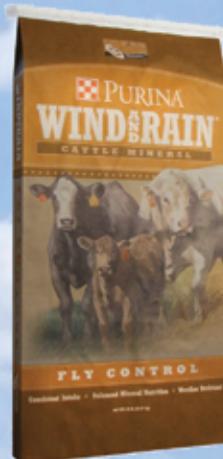


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EVENT ROUNDUP

30th Annual Spring Forage Conference set for February 25

Pre-registration needed by Feb. 18

From Our Staff

If you are interested in learning more about management strategies for forages and livestock, then you will want to mark your calendar for the 30th annual Southwest Missouri Spring Forage Conference to be held Tuesday, Feb. 25, 2014 at the University Plaza Hotel in Springfield, Mo.

This year's keynote speaker will be grassland consultant Jim Gerrish. Well-known throughout the United States and world, Gerrish has extensive knowledge of all aspects of managing pasture forages. He spent more than 20 years in Missouri conducting research and educating producers at the Missouri Forage Systems Research

Center near Linneus. While in Missouri, Gerrish operated his own 260-acre livestock grazing operation in the northern part of the state. He now resides in Idaho and continues to be actively involved in the livestock and forage industries through his private consulting business and busy schedule as a featured speaker and author for numerous grazing publications. His topic for the Spring Forage Conference is "How do you know a change in your management will be profitable?"

The conference will also feature several breakout sessions throughout the day. Topics will include: pasture renovation, quality hay production, managing

what you have, dairy grazing opportunities, poisonous plants, strip-grazing as a management tool, how to cut costs, soil health and grazing and addressing misconceptions with agriculture. A producer panel will also review how to get started with a grazing system. More than 30 companies and organizations will have exhibits; representatives will be available to discuss their products and services.

Conference registration begins at 8 a.m., with sessions running from 8:45 a.m. to 3:30 p.m. A banquet luncheon is included with the registration. The cost is \$35 per person in advance or \$45 at the door. To

pre-register by Feb. 18 or to get more information, contact the Greene County Soil and Water Conservation District at (417) 831-5246, extension 3. Additional conference details, lodging information, maps and registration forms can be found at <http://springforageconference.com/>.

Co-sponsors of the conference include by several southwest Missouri Soil and Water Conservation Districts, USDA Natural Resources Conservation Service, Missouri State University, University of Missouri Extension, Missouri Department of Conservation, Lincoln University, and the USDA Farm Service Agency.

Want To Go?

Get details online at:

<http://springforageconference.com>

Or call: 417.831.5246, ext. 3

Registrations Due Feb. 18

COMING SOON

Joplin Regional Stockyards will soon be offering a new marketing opportunity for beef producers. Our **New COUNTRY CATTLE** page on www.joplinstockyards.com is another innovative marketing tool for your future.

The screenshot shows the Joplin Regional Stockyards website. At the top, there is a navigation bar with the logo and the tagline "traditional values & innovative approach". Below this, there is a "Country Auction Search" section with a map of the United States and a search bar. To the right of the map is a photo of several black cows in a field. Below the map is an "Upcoming Events" calendar showing dates from 6 to 27. To the right of the calendar is a "Country Auction Sign Up" form with fields for Name, Company, and Email Address, and a "Register" button. A large, bold, yellow diagonal watermark reading "UNDER CONSTRUCTION" is overlaid across the entire screenshot.

Farm Management Course for Women Starts March 3

Springfield is site for Annie's Project meetings

Story from University of Missouri Extension

A series of farm management courses designed just for women - known as Annie's Project - will be offered at the University of Missouri Extension Center in Greene county starting March 3, 2014.

"The course should be of particular interest to women who want to learn how to run a farm as a business," said Dr. Gordon Carriker, an agriculture business specialist with MU Extension and coordinator of the class. "But, it is also good for those that want to do a better job of marketing or need to learn how to pass the farm on to the next generation."

The Annie's Project course includes six evening classes, each on Mondays (March 3, 10, 17, 24, and April 7, 14). The classes will be held from 6 p.m. to 9 p.m. at the Springfield-Greene County Botanical Center, 2400 S. Scenic Ave, in Springfield, Mo.

Class size will be limited to the first 25 women who register to ensure sufficient group interaction and one-on-one assistance. To register, contact the Greene County Extension Center at 417-881-8909 or greeneco@missouri.edu. A registration flyer is also available online at <http://extension.missouri.edu/greene>.

Annie's Project

Annie's Project began with a farm wife who grew up in northern Illinois. She spent her life learning how to be an involved business partner with her husband. This course takes Annie's experience and shares it with farm women so they can be better business partners.

According to Carriker, agriculture business specialist with University of Missouri Extension, the course provides mentoring for farm women with varying levels of business skills.

AT A GLANCE: Annie's Project is designed for farm women who want to learn how to run a farm or business and increase their marketing and generational transfer skills. More details online at: <http://extension.missouri.edu/greene>

The goal is to empower farm women and help them make better management decisions through networking and by using critical financial information. The course is to provide mentoring for farm women with varying levels of business skills.

Course Topics

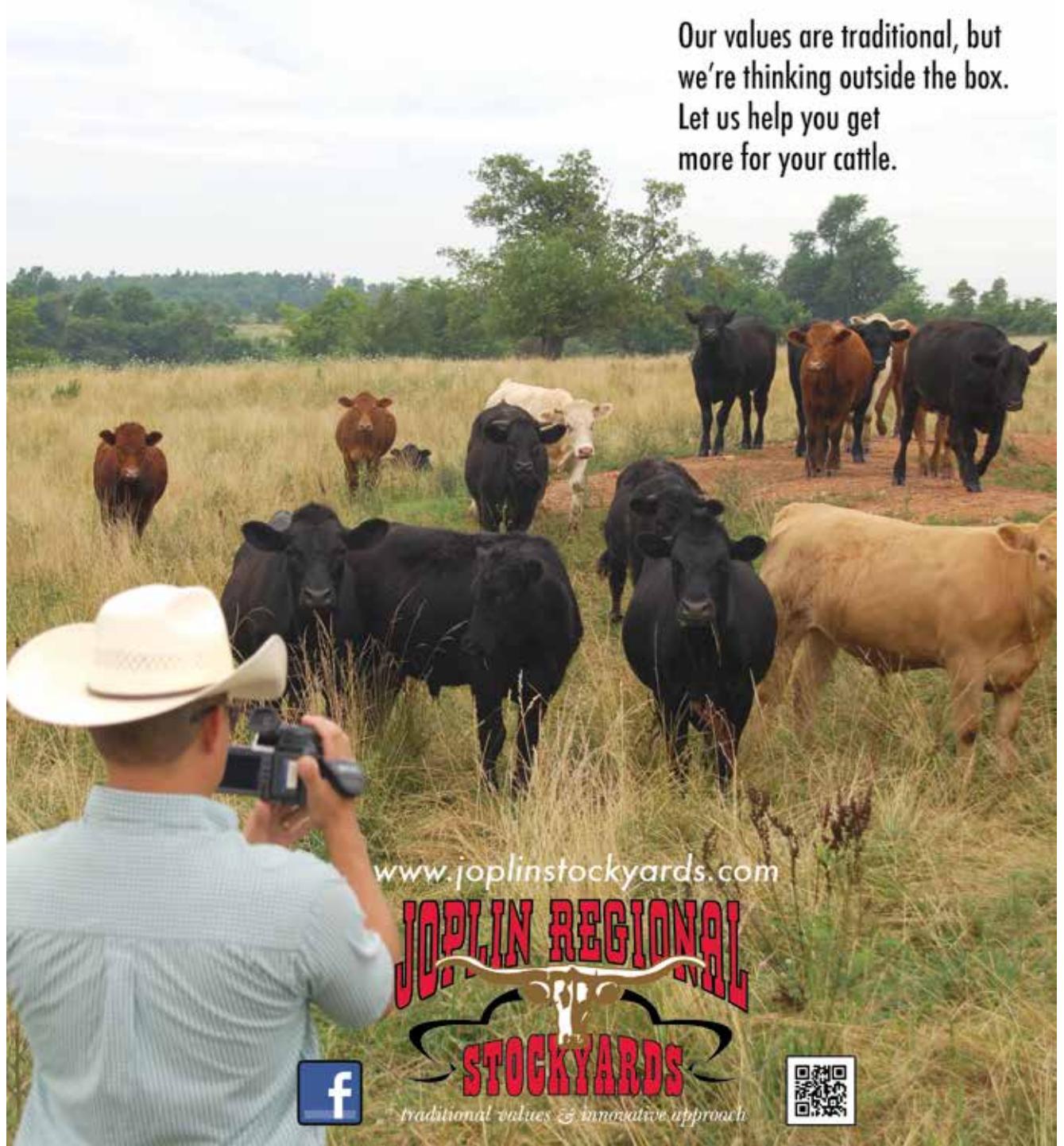
Course topics will include: learning to communicate and work with each of the four basic personality types, econom-

ics of land ownership, farm record keeping and taxes, business plans, pasture rental contracts, how property is titled, insurance needs, financial statements, retirement and estate planning, farm succession planning for the next generation, using computers and the internet on the farm, understanding Missouri fence laws, livestock marketing and risk management, keys to being a profitable livestock producer and more.

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MARKET WATCH

Feeder Cattle & Calf Auction

January Receipts 44,095 • Last Month 21,182 • Last Year 30,337

January Video Sales

Video Sale from 1/09/14 • Total Video Receipts: 4,002

The video auction is held directly following Joplin's Regular Monday feeder cattle sale. General weighing conditions: For yearling cattle loaded and weighed on the truck with a 2% shrink. Price slide will be .06 per lb. if cattle weigh 1 to 50 lbs over base weight; .08 per lb. if cattle weigh 51 to 90 lbs. over the base weight; contract is voidable by agent or buyer if cattle are more than 90 lbs over base weight. General weighing conditions on calves will be established on contract by seller and agent. Cattle weighed on the ground with certified scales will be agreed upon by seller and agent.

Date: South Central States Texas, Okla., New Mexico, Kansas, Mo. Offering: 4002											
1/9/14											
FEEDER STEERS						MED & LG 1					
HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY	HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY
90	540	540	\$198.00	\$198.00	Current Value Added	95	520	520	\$182.00	\$182.00	Current Value Added
234	850-880	865	\$157.50-\$160.50	\$159.01	Current	200	775	775	\$160.00	\$160.00	Jun-Jul
230	850-880	872	\$157.00-\$158.00	\$157.75	February	FEEDER HEIFERS					
62	800	800	\$162.75	\$162.75	March	FEEDER HEIFERS		MED & LG 1-2			
285	880	880	\$156.00	\$156.00	March	195	750	750	\$144.00	\$144.00	Current
285	880	880	\$157.50	\$157.50	April	66	750	750	\$159.75	\$159.75	June
62	800	800	\$164.00	\$164.00	May	66	750	750	\$159.75	\$159.75	Jun-Jul
124	825	825	\$163.50	\$163.50	May-Jun	Eastern States All States East of the Miss., La., & Ark.					
57	910	910	\$160.00	\$160.00	May-Jun	FEEDER STEERS		MED & LG 1-2			
58	850	850	\$162.50	\$162.50	June	195	775	775	\$160.00	\$160.00	February
110	900	900	\$158.00	\$158.00	June	56	875	875	\$156.00	\$156.00	Feb-Mar
228	850	850	\$164.75	\$164.75	Jun-Jul						
FEEDER STEERS						MED & LG 1-2					
HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY						
200	740	740	\$165.00	\$165.00	Current						
64	800	800	\$160.00	\$160.00	Current						
60	850	850	\$156.00	\$156.00	Current						
60	850	850	\$156.50	\$156.50	Mar-Apr						
120	850	850	\$154.50-\$156.75	\$155.62	April						
180	820	820	\$163.50	\$163.50	July						
360	850	850	\$162.35	\$162.35	July						
210	710	710	\$172.25	\$172.25	Jul-Aug						

Tune in to the JRS Market Report



Monday 11:38 a.m.
Wednesday 11:38 a.m.



Monday 12:15 p.m.
Wednesday 12:15 p.m.



Monday 12:40 p.m.
Wednesday 12:40 p.m.



M-F 9:55-10:05
(during break before AgriTalk)
M/W/F Noon Hour
(during Farming in the Four States)
T/Th Noon Hour (after news block)



Monday 12:50 p.m. & 4:45 p.m.
Wednesday 12:50 p.m. & 4:45 p.m.

JRS Sale Day Market Phone: (417)548-2012 - Mondays (Rick Huffman) & Wednesdays (Don Kleiboeker). Market Information Provided By: Tony Hancock Mo. Department of Agriculture Market News Service. Market News Hotline (573)522-9244. Sale Day Market Reporter (417)548-2012

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Annual Monett Beef Conference to be Held Feb. 18

Liability insurance for farmers, hay feeding waste, beef cow herd expansion and how to improve the bottom line are all speaker topics planned for the 45th Annual Monett Beef Cattlemen's Conference that begins at 3:30 p.m., Feb. 18 at the Monett National Guard Armory.

The conference opens with a trade show at 3:30 p.m. Vendors from a variety of beef and farm related businesses will be set up to explain what they offer to the beef cattle producer.

Featured speakers include Todd Schubert, Farm Bureau Insurance, Monett; Dr. Justin Sexten, University of Missouri Extension beef nutrition specialist, Columbia; Dr. Scott Brown, University of Missouri Extension agricultural econo-

mist, Columbia; and Wesley Tucker, University of Missouri Extension agricultural business specialist, Bolivar.

Prior to the chili supper at 6 p.m., Jim McCann of Miller, president of the Missouri Cattlemen's Association, will update the audience on activities of the MCA.

The conference is a cooperative effort of the Monett Chamber of Commerce, Southwest Missouri Cattlemen's Association, University of Missouri Extension and trade show exhibitors. Pre-registration is not necessary but a \$5 per person registration will be collected at sign in.

For more information call 417-466-3102

Stone County Livestock, Forage Conference Feb. 20

Crane, Mo., site of this year's program

Farmers in Southwest Missouri are invited to attend this year's Stone County Livestock and Forage Conference. "This long-running conference will continue to equip livestock producers to better manage their operations and provide quality beef products for consumers," according to Tim Schnakenberg, University of Missouri Extension Agronomy Specialist based in Galena.

This conference will be held from 6 to 9 p.m. Thursday, Feb. 20 at the Crane First Baptist Church, located 2/10 mile south of Crane, Missouri on highway 413.

The program will focus this year on three main topics. Dr. Rob Kallenbach, state forage specialist with the University of Missouri, will highlight

how to develop a forage program for the long-haul. Wesley Tucker, regional extension ag business specialist, will review options for cattle producers to either sell or not to sell calves at weaning time. Finally, veterinarians, Dr. Jason Salchow and Dr. Darren Loula, will be on hand to discuss how to keep herd health under control. They will give their recommendations on how to prevent health problems and when the livestock producer needs to call a vet.

There is a small fee to attend and participants must preregister. A ribeye steak sandwich meal will be provided. Pre-register by calling the Stone County Extension Center by February 17. Call 417-357-6812 to for information.



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ON THE CALENDAR

February

- 11 Forage Meeting • Stockton Christian Church, Stockton, Mo. • PH: 417-276-3313
- 15 Special Replacement Cow Sale
Joplin Regional Stockyards, Carthage, Mo.
PH: 417-548-2333
- 18 Monett Beef Cattlemen's Conference
National Guard Armory, Monett, Mo.
PH: 417-466-3102
- 18 Forage Meeting • Osceola First Baptist Church, Osceola, Mo. • 417-646-2419
- 20 Stone County Livestock & Forage Conference
Crane Baptist Church, Crane, Mo.
PH: 417-357-6812
- 22 Seedstock Plus North Missouri Bull Sale
Kingsville Livestock Auction, Kingsville, Mo.
PH: 877-486-1160
- 25 30th Annual Southwest Missouri Spring Forage Conference • University Plaza Hotel, Springfield, Mo. • PH: 417-831-5246, ext. 3
- 28 Cow Camp Ranch Annual Bull Sale
Lost Springs, Kan. • PH: 785-983-4483
- 27 Taney County Livestock & Forage Conference
Forsyth, Mo. • PH: 417-546-4431

March

- 1 Ludvigson Red Angus Ozark Bull & Female Sale • White's Livestock Center, Diamond, Mo.
PH: 515-450-3124
- 3 Annie's Project for Farm Women
Greene County Extension Center, Springfield, Mo.
PH: 417-881-8909
- 5 Soil Health Workshop • Thiebaud Auditorium, Lamar, Mo. • PH: 573-239-2179
- 8 Jacs Ranch Spring Bull Sale • Bentonville, Ark.
PH: 479-366-1759
- 8 Wright Charolais 7th Annual Bull Sale
Wright Sale Facility, Kearney, Mo.
PH: 816-776-3512
- 10 Annie's Project for Farm Women
Greene County Extension Center, Springfield, Mo.
PH: 417-881-8909
- 15 Circle A Ranch Spring Bull & Heifer Sale
Iberia, Mo. • PH: 1-800-CIRCLEA
- 15 Flying H Genetics Spring Bull Sale
Lowry City, Mo. • PH: 417-309-0062
- 15 Kranjec Valley Angus Farm Production Sale
Farmington Auction Barn, Farmington, Mo.
PH: 573-783-9500
- 17 Annie's Project for Farm Women
Greene County Extension Center, Springfield, Mo.
PH: 417-881-8909
- 22 Aschermann Charolais Bull Sale • at the farm, Carthage, Mo. • PH: 417-793-2855
- 24 Annie's Project for Farm Women
Greene County Extension Center, Springfield, Mo.
PH: 417-881-8909
- 29 Seedstock Plus South Missouri Bull Sale
Joplin Regional Stockyards, Carthage, Mo.
PH: 877-486-1160
- 31 KW Cattle Co. Angus Bull Sale • Fort Scott, Kan.
PH: 970-481-3921
- 31 Southwest Missouri All Breed Tested Bull Sale
Springfield Livestock Marketing Center, Springfield, Mo. • PH: 417-466-3102

Blevins Asphalt Construction Company

is now accepting asphalt shingle tear-offs at our facilities listed below:
Intersection of Highway 60 and James River Expressway Springfield, Mo,
200' east of Buddy's Auto Salvage. North of Carthage, Mo. @ Civil War Road and Highway 71
intersection, near the Carthage Underground.

SHINGLE TEAR-OFF AND NEW ROOF SCRAPS

Please NO garbage. Limited wood, metal, nails, etc. A loader & attendant are on site for trailer removal & assistance. Cash only, charge accounts available.

For questions please call: 417-466-3758, ask for Adam or Efton. www.blevinsasphalt.com



SAVE THE
03.15.14
 DATE

THE STARTING 5

These five studs lead-off our March 15 sale. Power, performance and pedigree are stacked in their favor. Be in your seat early so you don't miss this dynamic opportunity.



AUTO Black Coffee 512A
 3/4/13 - HOMO Blk/DBL Pld - PB
 MAGS Xyloplast x AUTO Coffe Cake 699W
 BW: 1.1 WW: 44 YW: 94 MA: 25 SC: 0.5
 CW: 32 RE: .44 YG: .06 MS: 10 SMI: 47
 Adj. BW: 71 - Adj. WW: 649



AUTO First Class 110A
 1/18/13 - Blk/HOMO Pld - 50% LF
 Dameron First Class x AUTO Lana 255L
 BW: 2.5 WW: 55 YW: 95 MA: 40 CW: 12
 RE: .06 YG: .09 MS: .13 SMI: 42
 Adj. BW: 70 - Adj. WW: 808



AUTO King James 162Z
 9/14/12 - HOMO Blk/DBL Pld - 75% LF
 COLE Windfall 144W x AUTO Luckie 246W
 BW: 2.7 WW: 64 YW: 112 MA: 35 SC: 0.5
 CW: 46 RE: .30 YG: .20 MS: 16 SMI: 53
 Adj. BW: 73 - Adj. WW: 760 - Adj. YW: 1,251



AUTO Dark Knight 100A
 1/10/13 - DBL Blk/HOMO Pld - 75% LF
 MAGS The General x BOHI Sunset 6156S
 BW: 1.6 WW: 61 YW: 108 MA: 36 SC: 0.4
 CW: 41 RE: .43 YG: .09 MS: .17 SMI: 54
 Adj. BW: 66 - Adj. WW: 812

Don't miss out on this powerful starting five. For the latest makes and models in Purebred, Fullblood and Lim-Flex, join us March 15.



AUTO Crossover 504A
 1/21/13 - DBL Blk/HOMO Pld - 50% LF
 MAGS Winston x MAGS Destiny 2912Y
 BW: 0.2 WW: 49 YW: 100 MA: 27 SC: -0.1
 CW: 42 RE: .14 YG: .40 MS: .57 SMI: 62
 Adj. BW: 71 - Adj. WW: 816

Sale Team...

-  R&R Marketing Co.
Randy Ratliff - 615/330-2735
-  American Cattle Services
Ken Holloway - 580/581-7652
-  Grossroots Genetics
Mark Smith - 515/229-5227



TOLL-FREE 1-877-PINEGAR

Ed and Carol Pinegar, owners • 417/833-6784
 850 West Farm Road 56 • Springfield, MO 65803
 Ty and Susie Heavin, farm managers
 417/833-2688
 James Henderson, show cattle

NUTRITION DONE RIGHT



Don't miss
**Dr. Glynn Tonsor at
Western Farm Show Kansas City**
February 21st 1:30 pm,
Wagstaff Room
Livestock Market Outlook
**Discount tickets
available at participating
MFA Locations.**



MADE FOR AGRICULTURE



Buy **2 ton** of **MFA
Gold Star** Mineral,

get an Applegate Low
Profile Mineral Feeder **FREE**

See your local MFA for more information. Offer good at participating stores.

Expires March 31, 2014.