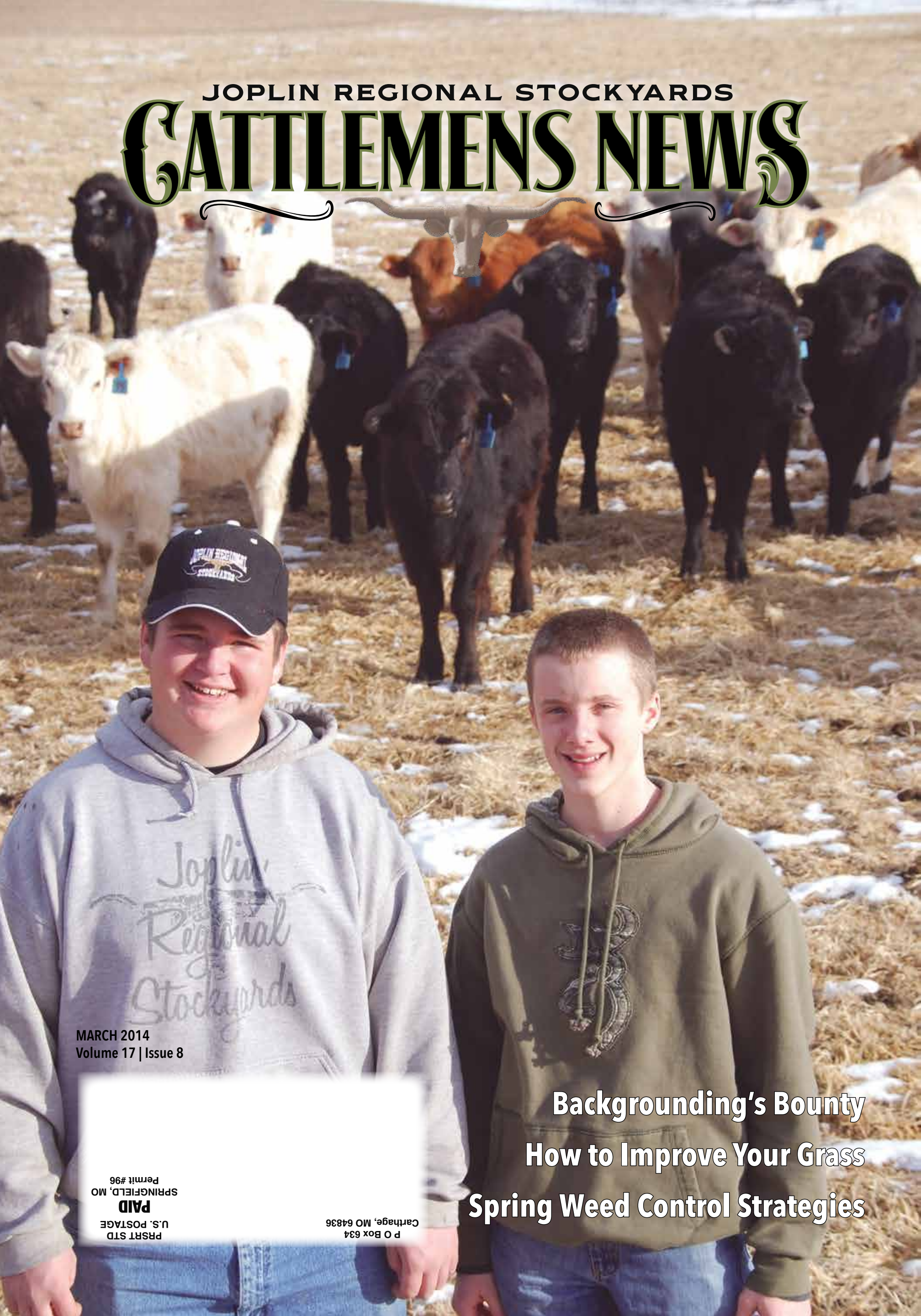


# JOPLIN REGIONAL STOCKYARDS CATTLEMENS NEWS



MARCH 2014  
Volume 17 | Issue 8

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## VIEW FROM THE BLOCK

After fed cattle prices hit record levels back in early January at \$150, we saw them fall back a bit in February. At press time, fed prices were around \$145 and I expect we are at a level we'll stay at for a little while. The February Cattle on Feed Report showed placements nine percent higher than a year ago. That's not inconceivable to me; the market simply brought cattle to town to be sold.

We will continue to see the lightweight cattle that can be grazed sell high. There's a big demand for the cattle weighing less than 700 lbs that can be grazed this summer. Cattle weighing more than 700 pounds typically as we go into March will see a little bit of pressure. Overall, the market is pretty typical right now; we are just trading at higher levels than we are used to.

Stock cows are trading really good—even the salvage value of those cows is high right now. There aren't a lot of those stock cows around, so if you run into a set of them that you like, it will cost you because the demand is



really high. Likely for the next three to five years we'll continue to see the cow/calf producer in the driver's seat. Cows will make some money and there's nobody that deserves it more than the cowman.

We're going to have a special video sale on March 13. We'll be featuring some of the grazing-type cattle in that offering. Then, we'll have a special replacement cow sale on March 14.

As we get closer to spring, we're just ready for the grass to start growing! It's been a long, tough winter!

Good luck and God bless.

*Jackie*



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—Photo by Joann Pipkin

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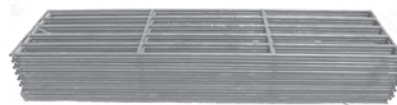


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## BEEF IN BRIEF

### U.S. Beef Exports Close 2013 With Record Value

Exports of U.S. beef closed 2013 by eclipsing the \$6 billion mark for the first time, setting a new annual value record. At the same time, pork exports declined below 2012's record highs while lamb sales rose in value on lower volumes according to statistics released by the USDA and compiled by the U.S. Meat Export Federation (USMEF), contractor to the Beef Checkoff Program.

Beef exports continued their surge in December, surpassing year-ago totals by nearly 13 percent in volume and 20 percent in value led by growth in sales to Japan, Mexico, Hong Kong and Central/South America. Totals for 2013 were up 3 percent in volume to 2.58 billion pounds and 12 percent in value (\$6.157 billion) – breaking the 2012 value record.

"2013 presented a new set of challenges," said USMEF President and CEO Philip Seng. "Last year, the closure of the Russian market to U.S. red meat products and our continued absence from the dynamic beef market in the People's Republic of China stand out. And there were challenges in other markets, ranging from Indonesia to Saudi Arabia. The industry is focused on these challenges, and USMEF is targeting the markets where we have the best chance of succeeding and creating a positive return for American producers and exporters."

—Source: [www.mybeefcheckoff.com](http://www.mybeefcheckoff.com)

### New Beef Research Publications Available

Three new checkoff-funded research publications were released at the 2014 National Cattle Industry Convention held last month in Nashville, Tenn.:

**Sustainability Executive Summary.** A summary of Phase 1 of the research. This important work positions the beef industry to lead the conversations about industry sustainability and was first announced at the 2013 Annual Cattle Industry Convention.

**Lean Matters booklet.** This booklet documents the checkoff's effort to produce leaner beef and to work with USDA to make the data reflecting the leaner option in the meat case available on the Nutrient Data Base.

**Updated version of the Beef Cuts Guide.** Beef checkoff research provides technology and knowledge to all sectors of the beef supply chain to increase understanding of beef products offered to today's consumer. In the end, all development, education and communications programs are founded on research. Marketing and communication programs must have a story worth telling. In today's social climate, to answer challenges from the health community and the consumer's need for convenience, marketing and communications messages must be data-driven, based on irrefutable research.

—Source: [www.mybeefcheckoff.com](http://www.mybeefcheckoff.com)

### Missouri Cattlemen Earn New Holland Equipment

The Missouri Cattlemen's Association earned use of a piece of equipment from New Holland for their efforts to recruit new members to the National Cattlemen's Beef Association. The NCBA affiliate will get its choice of a one-year lease on a New Holland Roll-Belt® 560 Specialty Crop round baler or a one-year lease on a New Holland T6 175 tractor. Missouri received its award during the Best of Beef Breakfast at the 2014 Cattle Industry Convention and NCBA Trade Show in Nashville Feb. 8. The Texas and Southwest Cattle Raisers Association was the recruitment leader for the contest period, which lasted from Oct. 1, 2013 to Dec. 31, 2013. This automatically earned them the one-year lease on a piece of equipment. The MCA earned their use of a baler or tractor through a drawing of 25 affiliates who met recruitment goals during the same time period. The top five state affiliates for NCBA membership recruitment were: Texas and Southwestern Cattle Raisers Association, Missouri Cattlemen's Association, Pennsylvania Cattlemen's Association, Kentucky Cattlemen's Association and Oklahoma Cattlemen's Association.

—Source: *National Cattlemen's Beef Association Release*



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## 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 Spring Forages

### Selection: Keep heifers born early in calving season

Story By Justin Sexten for Cattlemen's News



It has been said many times, "We don't plan to fail; we fail to plan." As winter weather gives way to spring, planning pasture management for the upcoming grazing season should begin. Spring pasture management is key to setting the pasture up for the remainder of the growing season. Over or under-grazing in April will impact forage growth and quality in July.

As cool season forages begin to break dormancy, growth is supported by root reserves until there is sufficient leaf area to bring on photosynthesis. For tall fescue and other cool season forages, producers should wait until four to six inches of leaf growth are available to minimize root reserve use during early growth. Allowing

cattle to steadily graze new leaves before adequate leaf area is present continually consumes root reserves, potentially reducing long-term plant persistence. Initial root reserves may be lacking in drought-stressed or overgrazed pastures, so plan on delaying early season grazing of previously stressed pastures.

In spring calving cow herds, spring pasture management can be challenging due to calving and breeding management. In these herds the same pastures are often grazed at the same time each year. Consider rotating calving and breeding pastures from year to year to allow these heavy use areas the opportunity to rest during early spring. Rotating calving

areas over time may have the added benefit of reducing scour potential.

Grazing early spring forage growth can present a dry matter intake challenge due to high forage water content. Many producers will refer to early season grass as "washy." Early growth may be 70 percent water or more so cows needing to consume 35 lbs of dry matter need to take in over 110 lbs of forage to meet dry matter intake demands. With limited leaf area and high water content, cows may be on a restricted diet due simply to inability to consume adequate dry matter in 24 hours. Consider supplementing early season forage growth by allowing dry hay access or continue

feeding supplemental feed to ensure cows can consume sufficient dry matter.

Pasture fertilization may be a viable option for producers who lost rental acres or had pastures converted to row crops. Fertilized pasture is only useful if you can consume the forage before it becomes overly mature. In most cases additional forage growth in spring is not necessary in a grazing system. However, pastures used as hay fields would benefit from fertilization due to earlier green-up as well as earlier and improved yield. For those challenged to harvest hay in a timely manner, consider not spreading fertilizer to delay spring growth and prevent forages from becoming overly mature before harvest.

Once adequate leaf area is available, management should focus on maintaining forage height between the eyes and nose of the cow, when her head is down. These are good reference

CONTINUED ON PAGE 12

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## IN THE NEWS

# Net Farm Income Expected to Fall in 2014

## Seed, fertilizer, pesticide expenses to decline

Story From Drovers CattleNetwork

While USDA's latest farm income projections indicate an overall decline in net farm income of around 26.6 percent in 2014, there are some positive projections in the report, especially for livestock producers.

USDA "Livestock receipts are up marginally," said USDA Chief Economist Joe Glauber. "They're up at \$183.4 billion. It's the first time in a long while that we've seen livestock and crop receipts at around roughly the same magnitude."

Crop receipts are projected at \$189.4 billion in 2014, down more than 12 percent and back to pre-2011 levels. According to the report, declines in cash receipts are expected for almost all major crop categories, including food grain, feed, oil, fruits/tree nuts, and vegetables/melons. Large anticipated declines in the 2014 price for corn are impacting farmers' decisions regarding other major crops. According to the report, use of corn for ethanol is expected to rise in 2014. Additionally, USDA is projecting declines in hay, wheat and soybeans receipts as well.

USDA is projecting a 0.7 percent increase in livestock receipts in 2014. For cattle and calves, steady receipts are projected due to lower production levels. Additionally, USDA is forecasting a decline in beef and veal export quantities in 2014.

Overall, net farm income, earnings only from current year production, is forecast to be \$95.8 billion in 2014, down 26.6 percent from 2013 and projected to be the lowest since 2010. Net cash income, which includes income from carryover stocks from 2013, is forecast at \$101.9 billion, down 22 percent from 2013.

For just the second time in the last 10 years and the first time since 2009, USDA is projecting a decline in production expenses, with an expected \$3.9 billion decrease in 2014.

"Expenses are down," Glauber said. "We're forecasting them at \$310 billion. That's down almost \$5 billion from last year, and that's largely lower feed costs."

Feed expenses are expected to decline by \$6.6 billion, 11.3 percent, but livestock and poultry purchases are projected to increase, driven by an expected double-digit increase in the price of feeder steers due to tight supplies and strong beef demand. The overall expenses for the two major livestock-related expenses, however, are projected to fall by 6.1 percent, or \$5.1 billion.

Other farm expense projections include a 4.7 percent decline for the three major crop-related expenses – seed, fertilizer and pesticides; a 9.6 percent decline in net rent

to non-operators; a 4.6 percent increase in total labor; and a 3.2 percent increase for miscellaneous expenses, including things like animal health and breeding expenses, contract production fees, irrigation water, and general production and management decisions.

Adoption of the Agricultural Act of 2014, the farm bill, will bring significant changes to government payments to farmers in 2014. Specifically, elimination of the direct payment program and uncertainty related to sign-up and payments for new commodity programs during calendar year 2014, led USDA to project government payments to total \$6.12 billion in 2014, a 45 percent decline compared to 2013.

Also included in the farm bill were disaster assistance programs for livestock producers, which lapsed in 2012 but were made retroactive in the newly passed bill. Livestock producers are eligible for payments under the Livestock Forage Program and Livestock Indemnity Program, and payments under the two programs are expected to be \$810 million in 2014 for covering losses from multiple years.



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## Are Your Cows at Risk for Tetany?

Monitor spring nutrition of the cow herd

Story By Daniel U. Thomson, DVM, PhD; Chris Reinhardt, PhD; and Dave Rethorst, DVM for *Cattlemen's News*

Springtime might be the best and most emotionally rewarding time to be in the cow-calf business—after calving is over, that is. Spring turnout is the time when we have the least nutritional concerns for the cows. Abundant spring moisture, warm temperatures and sunshine allow the pasture forage to do all the work and the cows reap the harvest. Energy, protein and mineral content of the forage is peaking at the time when the cow's demands are also at their peak due to lactation. There is little we need to do nutritionally for the cow this time of year.

However, there are some cows that may have come through the winter in very poor condition, and calving and subsequent lactation will only pull more condition off the cows, if there's any left to use. Body condition score (BCS) is a visual "dip stick" we have available to measure the nutritional status of cows through the year. If you can count 4-5 ribs easily, first thing in the morning, the cow is considered a BCS 4; if you can only easily see 2 ribs, the cow is a BCS 5. There are certainly cows who are the exception to this simple rule, but this rule can be applied to most cows.

If cows are BCS 5 or greater at the time they calve and they have access to good quality and quantity of pasture to support lactation, they will likely cycle and breed back in less than 90 days, resulting in a 365-day calving cycle. The challenge for ranchers comes with cows who calve in a BCS 4 or below.

If cows calve in a BCS of 4, we can expect that 30 to 40 percent will not be able to cycle and settle in 90 days after calving, resulting in a greater than 365-day calving interval. These cows will calve roughly 21 days later in the calving season next year. But if she calved late in this year's calving season, she simply may not cycle before the bulls are pulled this

summer, and will be open and culled this fall at preg check time.

If we value this cow and hope to retain her in the herd, we need to intervene nutritionally. To move from BCS 4 to 5 requires the addition of approximately 70-90 lbs of body weight, depending on cow size. If we need to add 90 lbs in 90 days during the peak of lactation, we must add to the already abundant amount of nutrients available in good quality pasture. Simply put, it is very difficult to add weight to heavy milking cows. Most of our modern genetics demand that milk production comes at the expense of depositing body fat on the cow. We will not likely add the full 90 lbs, but we can make a dent in the energy deficiency and give at-risk cows a better chance to breed back.

Segregate the thin cows from those in adequate flesh. Along with good pasture, supplement 6 lb of some form of fibrous by-product feed per cow to the cows; distiller's grains, soy hulls, wheat middlings and corn gluten feed all are desirable over grain as an energy source because the energy they contain is stored as cellulose fiber instead of starch. Optimum forage digestion happens when rumen pH is high—between 6.0 and 7.0. Still, feeding grain causes a rapid drop in pH due to acid production by rumen bacteria. Although the pH in the rumen will decline even after feeding byproduct feeds, the pH decline will be less extreme if feeding fiber instead of starch.

From a mineral standpoint, phosphorus and most essential trace elements, such as copper, zinc and manganese, are at their highest concentration in lush, spring pasture grasses. However, some spring pastures and forage types may pre-

CONTINUED ON NEXT PAGE

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## GRASS TETANY FROM PREVIOUS PAGE

dispose cows to develop grass tetany. Grass tetany is characterized by very low blood magnesium, which results in cows going down, unable to stand and potentially death. Because magnesium and calcium concentrations in young, rapidly growing forage is very low, and because potassium, which is an antagonist to magnesium and calcium in the blood stream, levels can be very high in lush forages, the amount of magnesium available to the cow is insufficient, causing grass tetany.

If grass tetany is indeed a risk in your area, you should supply a mineral which is high in magnesium. Unfortunately, high magnesium mineral formulations are often consumed poorly or sporadically by cows, so you'll need to be vigilant. You could also supply magnesium to the cows by mixing 1-2 ounces of magnesium oxide per cow, blended into 1-2 pounds of a concentrate feed such as dried distillers grains and fed either

in a bunk or on the ground. Another preventative strategy involves feeding roughly half of the cows' daily energy needs in the form of alfalfa or an alfalfa-grass-mix hay daily, in the morning prior to turning cows out onto the lush pasture. This benefits the cow in three ways: first, it provides a feed high in calcium and magnesium and, second, it reduces the cows' appetite for the lush pasture, which, third, reduces intake of potassium. After the early phase of rapid forage growth has slowed, potassium content in the forage declines, and the risk for tetany also decreases accordingly. So, these preventative measures can be abated over time.

Make sure to discuss the risk of grass tetany with your local veterinarian; if it's at all common in your area, your veterinarian will know and can suggest preventative measures.

—Daniel U. Thomson, Chris Reinhardt and Dave Rethorst are with The Beef Institute at Kansas State University.

## IN THE NEWS

### Eldon Cole Honored: 50 Years with Extension

Back in 1964, Cassius Clay beat Sonny Liston for the World Heavyweight championship, the first Ford Mustang came off the assembly line, the 24th Amendment to the Constitution of the United States was ratified, President Johnson signed the Civil Rights Act, the Beatles made their first appearance on the Ed Sullivan show and Eldon Cole began his career with University of Missouri Extension.

Members of the Lawrence County Extension Council honored Cole during a council meeting Feb. 3, 2014 celebrating his 50 years with Extension. Cole, who is currently a livestock specialist and the county program director for MU Extension in Lawrence County, was presented a plaque by council chair Edward Dingman.

Cole was raised on a livestock farm at Potosi, Mo., and gradu-

ated from the University of Missouri College of Agriculture in 1962 and received a Master's in Animal Husbandry in 1963.

Cole started as an Extension Balanced Farming Agent on Feb. 1, 1964 in Saline County. On Oct. 1, 1966 his title was changed to Extension Farm Management Agent. On June 1, 1968 he became the Area Livestock Agent in Lawrence and Greene counties. On Jan. 1, 1970 his responsibilities included Barry, Christian, Dade, Dallas, Polk, Stone, Taney and Webster counties. On Sept. 1, 1970 his title changed to Area Livestock Specialist, still headquartered in Lawrence County. On Feb. 1, 1996 the title of County Program Director was added and on Sept. 1, 2011 Cole was approved for a promotion to the rank of Extension Professional.

—Source: University of Missouri Extension

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## Share—and Share Alike

### Next generation farm decision-making

Story By Darren Frye for Cattlemen's News



**H**ave you ever felt like you just don't have time to make all of the decisions that need to be made in your farm business? Chances are if your operation is growing, you've felt like that at one time or another.

That may mean you need to get others involved in making some of the decisions for the farm. It's a great move for the future of the farm, too, and this part of the legacy plan can really make or break a farm transition. When your successor leader is ready and prepared to lead because they've already been making decisions on the farm, you're in a very good situation.

The flip side of the coin is if the farm leader keeps a tight hold on the farm's informa-

tion and makes all the decisions. It's true, sharing that can be tough. We might feel like we're giving up our control or that we're letting others in on too much. We start to feel vulnerable.

The key here is to think about the future of the operation. If we're not letting others in on the information or showing them how we make decisions, then what will happen to the farm if you're not around anymore? It could be a very painful future indeed for the next generation as they attempt to pick up the pieces and figure out what was going on.

Here's one way to get your successor leader more involved in decision-making. As you are making some of the larger decisions for your

operation, have your successor leader sit down with you. As you work through a decision, say out loud what you are taking into consideration.

Be very transparent; literally talk through what you are thinking about. Take them through your whole process. That shows them exactly what you are taking into account as you make the decision. Then, he or she can use that as a model for times when they need to make similar decisions.

Once you've gone through a decision like that together, watch for a similar decision that needs to be made on the farm. Use that opportunity to ask them what they would do – and then have

them talk you through their process. You're still there to help if they get stuck or have questions. You get to find out exactly how they arrived at their decision.

We recently worked with one farmer who wants a closer look at his farm's financials. The key in this is that his son is transitioning into the operation right now. The farmer told us that he thinks having a third party helping with the financial side of the farm will set his son up for success. His son will have the chance to understand – in a very transparent way – the finances of the operation. He can start participating in decision-making and prepare to lead the business.

The farmer and his son want to make sure they're including everything that they need to calculate their costs. They want to know and understand their costs and how those costs are spread over the operation right now. They plan to partner with an

CONTINUED ON PAGE 12

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## Know What's in the Litter

### Develop nutrient management plan before applying

Story By John Hobbs

Poultry litter can be utilized as a fertilizer for cropland and is recognized as an excellent source of the plant nutrients phosphorus (P) and potassium (K). In addition, litter returns organic matter and other nutrients such as nitro-

rate required for optimum crop growth and yield. Once the rate of litter has been calculated from the phosphorus requirements supplemental nutrient rates can be estimated to fill the crop nutrient requirements.

Table 1

	Moisture %	N lbs per ton	P <sub>2</sub> O <sub>5</sub> lbs/ton	K <sub>2</sub> O lbs/ton
Minimum	2	22	18	23
Maximum	47	98	96	80
Median	22	60	57	52
Average	23	60	57	52

gen, calcium, magnesium and sulphur to the soil, building its fertility and quality. Those using poultry litter should use a nutrient management plan to prevent imbalances and protect surface-water and ground-water contamination. A nutrient management plan is a road map for your farm and how to manage manure in an efficient and environmentally sound way. A nutrient management plan matches the nutritional requirements of the crop with nutrients available in the poultry litter. The value of poultry manure varies not only with its nutrient composition and availability, but also with management, transportation and spreading costs.

### What is the typical nutrient content in poultry litter?

The nutrient content in litter varies depending on the bedding system, feed ration and cleanout system. When using poultry litter, a litter test can be requested from the poultry grower to determine the amounts of nutrients from that particular source of litter. Table 1 shows a seven year average of nutrient values from samples submitted to the University of Arkansas Ag Diagnostic Laboratory.

### How much should be applied?

Poultry litter should be applied based on the PHOSPHORUS needs of the crop to be grown. A soil test will determine the amount of phosphorus needed. Applying litter based on the crop's NITROGEN requirements will result in phosphorus rates well above the P-fertilizer

### Recommended Practices to Properly Use Poultry Litter:

1. Take a soil sample to know how much P<sub>2</sub>O<sub>5</sub> fertilizer is needed.
2. Obtain an analysis of the litter.
3. Calculate the amount of litter needed to supply the amount of P<sub>2</sub>O<sub>5</sub> required for your crop.
4. Calculate the amount of supplemental nutrients (N & K) needed.
5. Apply litter during times of the year runoff is unlikely.
6. Take soil samples on a regular basis to monitor buildup of nutrients in the soil.

### Is litter right for my farm?

It depends! Transportation costs to your area from poultry concentrated areas in Missouri could prohibit you dollar-wise. If your

phosphorus levels are too high at the present time, it would keep you from applying poultry litter. If soil test levels of phosphorus is above 300 pounds per acre, do not apply poultry litter. However, litter can be a great source in many situations to provide nutrients for both row crops and forages.



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BW: 79  
WW Ratio: 104  
Dam  
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3 @ 101 WWR  
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WW Ratio: 120  
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SHARE ALIKE  
CONTINUED FROM PAGE 10

ag finance specialist for regular, forward-looking financial reviews of their operation.

The farmer said he has to remind himself more and more to take off his ‘farmer hat’ and put on his ‘business hat’ when he’s making decisions. He believes that is a very important behavior and way of thinking to pass on to his son. He wants to demonstrate this business thinking for his son so he has that as a model for the future, when he’ll be

making those decisions on his own for the operation.

Another idea to prepare the next generation is to go to training or farm seminars together, and then talk about and plan to implement what you’ve learned there. That can be a very powerful way for each of you to learn something from each other — and to learn about each other and how you think as you share new ideas and plans.

Getting and sharing these new ideas – through networking with other operations – is one

way that farms are collecting ideas for the future and planning for the best way to bring in the next generation. Many operations are also recognizing that they want a guide to bring them step-by- step through the legacy planning and farm transition process.

What is your operation doing to get the next generation more involved in decision-making?

—*Water Street Solutions helps farmers across the Midwest achieve success using financial analysis, insurance, commodity marketing and legacy planning.*

SPRING FORAGES  
CONTINUED FROM PAGE 6

points for grazing management as forage shorter than a cow’s nose is getting overgrazed while grass taller than her eyes is getting excessively mature. One challenge in the spring is balancing grass needing grazed for the first time and previously grazed pastures needing grazed again.

There are two options for managing forage growth in early spring—hay harvest or managed grazing systems. For producers with grazing as the only pasture management option, management groups are key to efficient forage harvest. Allow stocker cattle or young cows nursing calves access to the best quality pastures, while overly mature pastures are harvested with dry or mature gestating cows. Operations with plans to harvest hay can minimize overgrown pastures by timely hay harvest.

Untimely hay harvest results in poor quality hay and increases the pasture recovery time. Producers harvesting hay early allow hayed acres to return to grazing system earlier and take advantage of cooler, wetter growing conditions. Delayed hay harvest might improve hay yield but grazing yield, will be reduced as a result.

Finally, while not directly forage management related, grass tetany season is fast approaching so plan to feed a high magnesium mineral ( $\geq 10\%$  Mg) 30 days prior to green up, allowing cattle time to increase Mg intake prior to the increased magnesium demand associated with milk production. High-producing and older cows are most at risk for grass tetany due to reduced bone magnesium mobilization and increased milk production potential.

—*Justin Sexten is state extension specialist, beef nutrition with University of Missouri-Columbia. Contact him at sextenj@missouri.edu.*

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## MANAGEMENT MATTERS

# Dried Distillers Grains Benefit Forage-based Operations

Add nutrients to the diet without hurting your wallet

Story By Cheyenne Shipps for Cattlemen's News

Increased ethanol production in the United States has sparked a desire to further investigate the uses of distillers dried grains with soluble (DDGS) as alternative feedstuffs. United States' ethanol production is predicted to reach 15 million gallons by 2015. According to the Missouri Corn Growers Association, Missouri currently produces 275 million gallons of ethanol yearly; and therefore produced 825,000 tons of distillers grains. This amount of distillers is equivalent to 30 million bushels of corn. DDGS is highly palatable and a good source of undegradable protein, or in other words, the protein is available to the animal, not the microbes.

These by-products contain more energy per pound than corn.

Nutrient content of distiller's grains are significantly higher than corn and most feed sources. Typically, DDGS has at least 30% crude protein. U.S. Grain Council explains distillers is an excellent source of energy, and many cases net an energy gain at least 21% higher than corn. Performance improvements are seen due to reduction in acidosis and less problems with animals going "off-feed," especially in the finishing stage.

Nutrient content can vary significantly with distillers grains; however, using a single source for purchasing can eliminate the variation. Alternative uses of ethanol by-products for feedstuffs can reduce the amount of unused products from ethanol and help with the dilemma of using food for fuel. Limited information is available regarding the use of DDGS as a supplement for cattle consuming a forage-based diet, especially long-stem hay. In 2010 and 2013, Missouri State University conducted a study to determine some of the potential benefits of using DDGS as a supplement to cattle that were consuming a forage-based diet.

In these studies, several interesting changes took place when adding DDGS to the diet of cattle. For example, when animals were consuming 0.8% of their body weight in DDGS, hay intake was decreased by 1.33%. DDGS supplementation tended to increase dry matter digestibility. These results suggest that feeding DDGS improves overall digestibility of the diet and reduces hay intake. Feeding the DDGS decreased hay consumption, improved digestibility and increased the animal's body weight; benefits that would be desirable for any producer.

DDGS could be used to reduce hay intake and increase crude protein in the diet. DDGS is a relatively cheap protein source. Grass-based operations that find it undesirable to feed high amounts of starch could benefit from the use of DDGS. Currently, the demand for DDGS is high due to increased soybean meal prices and demand from China for livestock feeds. Large amounts of ethanol are being produced in the United States; therefore, supply is maintaining the demand from both China and America. The cold and wet weather conditions have caused difficulties for animals maintaining body condition scores and DDGS could add nutrients to the diet without hurting the pocketbook.

—Cheyenne Shipps is an animal science graduate student at Missouri State University.



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**Lot 10** #226 Pld BD: 9/4/12  
BW: 82 lbs. AWW: 774 lbs.  
Ledger x Grid Maker x Rio Blanco  
EPDs: BW: 0.5 WW: 37 YW: 75 M: 12 TM: 30



**Lot 3** #253 P/S BD: 9/22/12  
BW: 82 lbs. AWW: 793 lbs.  
Ledger x Grid Maker x Cigar  
EPDs: BW: 0.7 WW: 40 YW: 78 M: 12 TM: 32



**Lot 2** #237 Pld BD: 9/8/12  
BW: 78 lbs. AWW: 811 lbs.  
Gold Standard x Easy Pro x Grid Maker  
EPDs: BW: -1.2 WW: 37 YW: 69 M: 16 TM: 34



**Lot 24** #304 Pld BD: 1/8/13  
BW: 82 lbs. AWW: 791 lbs.  
Gold Standard x Polled Value x 0383  
EPDs: BW: -0.2 WW: 33 YW: 67 M: 15 TM: 31



**Lot 11** #234 Pld BD: 9/7/12  
BW: 80 lbs. AWW: 791 lbs.  
Ledger x Polled Value x 066  
EPDs: BW: 0.3 WW: 39 YW: 76 M: 11 TM: 30



**Lot 12** #241 Pld BD: 9/11/12  
BW: 86 lbs. AWW: 762 lbs.  
Ledger x Makers Mark x Grid Maker  
EPDs: BW: 1.0 WW: 36 YW: 77 M: 15 TM: 33

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## Plan to Pass Down the Farm

### Recommendations for steadfast succession plan

Story from K-State Research & Extension

The average age of a farm operator in the United States is 57 years, according to the U.S. Department of Agriculture's latest census of agriculture. The majority of farm operators are between 45 and 64 years old, but the fastest growing group is 65 years and older.

The many farmers in their 50s and 60s remember what it was like when the farm was handed to them initially, and in earlier times, maybe not much planning had gone into the transition, said Gregg Hadley, a farm management specialist and current assistant director for agriculture, natural resources and community development for Kansas State Research and Extension.

"Today, a lot of farmers and ranchers are realizing, especially with the dollar amounts that the farms and ranches are worth now, that there needs to be more of a business approach to passing on the family farm or ranch," Hadley said.

Passing down the farm successfully requires much planning, Hadley said, and it's never too early to begin the planning process.

Hadley said that while every farm or ranch situation is different, all should have a succession plan in place. Through his career in dealing with farm management and succession issues, he identified 10 common succession beliefs, some of which are true, while others bring forth misconceptions. The 10 common beliefs include:

#### 1. We don't need a detailed succession plan.

The current farm owner likely doesn't have the same business and management philosophies as the next generation's owner, Hadley said. The same is often true that the next generation's owner often has different opinions. Detail is essential in making a smooth transition.

"When you disagree about a family business that could be worth millions of dollars, you need to start planning how you're going to transfer the farm, the assets, the decision-making process and the responsibilities to the next generation," he said.

#### 2. Most successions fail due to the lack of a good estate plan.

There are subtle differences between estate planning and succession planning, Hadley said.

"The truth is that other issues contribute to the failure of farm succession, other than the estate plan," he said. "In fact, 85 percent of the time by some research estimates, it's not the estate plan. It has to do with family communication, relationships and business philosophy issues."

#### 3. Estate planning is succession planning.

Estate planning is about how assets and wealth of the farm or ranch will be transferred to the heirs, Hadley said, while succession planning involves discussing the estate plan in addition to establishing business philosophy rights, management and workload transference, partnership details and succession feasibility.

"Farm succession planning does take into consideration the estate planning, but it's really about the overall business," he said. "How are we going to transfer this big thing called a farm or ranch and that philosophy behind that farm or ranch to the next generation?"

#### 4. Estate planning is the first step of the process.

Hadley said most people he talks to about farm succession planning believe they are finished with the process because they have an estate plan in place. He recommends estate planning as the last step. Learning how to communicate should be the first step in farm succession, followed by

dealing with emotional roadblocks, and developing a business plan, financial plan and estate plan.

"Go to the estate planner with a succession and business plan, and that person can develop a synchronistic estate plan that transfers the assets in a way that fits your farm succession needs, rather than coming up with the one that fits most farms," Hadley said.

#### 5. Succession planning should be conducted when the owner wants to retire.

It's not too early to start, and it's an on going process, as the plan should be reassessed frequently, Hadley said.

"A good point in time (to start) is when son or daughter are considering coming back to the farm as a significant part of their professional career, but really it is something that you should start as soon as possible," he said. "You never know when the five Ds—unexpected death, disease, disability, disagreements or divorce—are going to haunt you. You need to start planning, and you need to continue throughout the life of the farm or ranch, because things change along the way."

#### 6. Developing a succession plan is a lengthy process.

Developing a succession plan usually takes at minimum one year, Hadley said. Several meetings should take place that involve team building, conflict management, business philosophy and strategy issues, operations, finances, decision-making, transitioning work responsibility, estate planning and plan finalization.

"Even in a time when there's not a huge work demand (on the farm), carving out a half a day or so each month is a major undertaking for many farms, but that's what it takes to plan a succession," he said.

#### 7. Only blood relatives should be involved in succession planning.

This subject is controversial, but Hadley said it is better to be inclusive, as it eliminates emotional roadblocks. Possible participants might include the current owner or manager, the next generation owners and managers, non-farming heirs and spouses.

"If you exclude people from the planning process, you might be making the front-end of the discussions easier, but you're building a bigger roadblock down the road," he said. "What I tell people is, bring everybody together that you think may need to be involved at the beginning. I encourage people to have the in-laws present and have the blood relatives who aren't interested and those who are interested in the farm present. They are all going to be affected by this, and they can always elect not to participate down the road."

#### 8. Our farm won't have to change.

It is rare that a farm won't have to change, Hadley said. The farm or ranch has to pay for itself, its investment, the current owner's labor and management, and the next generation owner's labor and management. The farm or ranch might have to grow, perhaps not in size but usually economically.

"In reality, every time you come in with a new family unit to be paid, the farm needs to change in some ways," he said. "(Everyone involved) needs to be getting a competitive wage with the industry, taking into consideration that they are also building ownership equity along the way."

#### 9. Farm succession planning sessions can be stressful.

Succession planning can be stressful, and it helps to have rules that govern the planning process. Farm families, Hadley said, do a lot of things great, such as getting work done and taking care of the animals and the land. Communication among family members might not be as effective, especially if there are emotional roadblocks, past disagreements, or perceptions that parents favor one sibling over another.

"One example might be that one son drove an old model pickup, while the daughter who is also going into the farm got to drive a brand new pickup," he said. "Most people looking at that might not see it as a big issue, but it could be something that really disgruntles the people who are trying to succeed the farm."

CONTINUED ON PAGE 23





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## MANAGEMENT MATTERS

# Managing with the Big Three

Use soil, grass, record books to keep cowherd in check

Story By Beth Walker for Cattlemen's News

**L**ike it or not, you are not a rancher. You are nothing more than a simple grass farmer who chooses to harvest grass with cows.

If we are going to manage our cows, we have to start with managing our soil. The first thing you might want to do as you plan your cow management strategies is obtain soil samples and have them analyzed. If you need to, have those results explained to you. Managing your cow herd may mean you start



with fertilizing your pasture. Personally, I like poultry litter, but that mode of fertilization isn't for everyone. Poultry litter is loaded with microbes, bacteria that help rejuvenate the soil, and the slow conversion of organic to inorganic makes nitrogen available more evenly through the growing season. Poultry litter is also high in phosphorus and nearly 100 percent of the potassium is available to the plants. Other trace minerals can also be found in poultry litter that helps maintain soil pH, decreasing the amount of lime that might need to be applied. Whatever you choose to fertilize with, be sure you do it only after you have a soil test so you are not spending money that you don't need to spend. In addition, too many soil nutrients can be as bad for the soil and the environment as too few.

Soon, I hope, the grass will be turning green and growing. Cows will be "chasing grass." Taking a plant sample for nutrient analysis should be done once you have enough green grass to sample. I doubt folks would buy a ton of feed without knowing what you are purchasing, so you should have an idea of what is in or is not in your grass as well. As a general rule, grass is more nutritious in the early stages of growth than once it heads out. Keep in mind, though, if the nutrients are not in or are not available in your soil, then they are not going to be in your grass. If they are not in your grass, they are not going to be in your cows. Mineral supplementation is probably a good safe bet for most producers and there are some great commercial mineral programs available. The more deficient in minerals an animal is, the more they will consume. If you haven't been providing minerals, and you start, your cows may eat you out of house and home before they start leveling off.

During this time of spring green-up, cattle should be replenishing those fat stores that they might have lost during the leaner months. Gaining and losing weight is natural and during the spring green-up, animals should start to gain weight, and hair coats should start looking better. If you have animals that are lagging behind, you probably should find out why and take care of any issues that come about.

Production records should always be close at hand. Since cattle prices are up, going through production records should be done. I use a website, [www.dropbox.com](http://www.dropbox.com) as a way of storing important files that I have maintained on the computer. When all else fails, printing or hand writing records is always a safe bet, except for me; I lose stuff I print, and that's why I use Dropbox.

Once your animals start to gain weight and hair coats improve, evaluate cohorts or animals of similar age, gender and production phase. Older animals may need to be fattened if you have the grass; culled and younger replacement heifers should be selected. I recommend

CONTINUED ON NEXT PAGE

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## Congress Agrees on Farm Bill

### Laws final specs still to sort out

Story From Purdue University

While Congress has agreed on a long-debated and much-anticipated farm bill, a Purdue Extension agricultural economist says the process of interpreting and finalizing specifics of the law is far from complete.

The \$956.4 billion bill immediately eliminates direct payments for all commodities except cotton and instead offers farmers an enhanced safety net that includes insurance revisions and higher base-price levels - or the crop price at which farmers could claim payment. A vast majority of the bill's cost - about 75 percent - is in nutrition programs, while 15 percent goes to commodities, and the rest is divided up among conservation programs, university research and risk management for specialty crops.

The Senate passed the bill Feb. 4 following House approval a week earlier. Although the bill became law when the president signed it, there are still many specifics to work out. Roman Keeney, who specializes in agricultural policy, said the U.S. Department of Agriculture will be left to analyze and interpret what is included in the bill's more than 900 pages. The department will then be charged with writing the rules that determine how the farm bill will be implemented.

As part of the bill, farmers will now have the opportunity to choose between Agricultural Risk Coverage (ARC) or Price Loss Coverage (PLC), depending on which program best suits individual farms. Along with that decision will come options for varying degrees of crop insurance coverage and other supplemental programs to protect farmers from yield and revenue losses.

"One of the things this farm bill does is greatly increase farmer options," Keeney said. "Farmers now have a suite of programs. They will have to make some decisions, and they will have to make those

decisions for a five-year time frame. They are going to have to look at a lot of information about their farms and the different options and think about which policy options will pay them the best over the next five years."

—Adapted from a release by Jennifer Stewart, Purdue University Agriculture Communications.

### BIG THREE FROM PREVIOUS PAGE

keeping as many replacement heifers as possible to help manage your grass during the spring flush and to allow them a bit more time to develop. You can always cull them as open heifers. Your best genetics should be in those younger animals so keeping them should increase the genetic traits you feel are most profitable.

Production records are a must when evaluating animals. Be sure to note not just the normal production records such as growth data, but also any health issues that the animal might have. You might find that some of those health issues are genetic and are passed

down from mother to daughter. With prices the way they are, you might just want to cull a mother-daughter pair just to make your life a bit easier later. Remember, your cows are your employees, but you have to give those employees tools so they can perform their jobs, and you have to evaluate their job performance. Firing a cow is never fun, but sometimes the best management tool you have is the power of the truck and trailer.

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



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\*French et al. 2013, presented at the 2013 BIF 45th Annual Research Symposium and Convention



# New Weed to Watch

## Palmer pigweed becomes Missouri's No. 1 bad weed

Story From University of Missouri Cooperative Media Group

There's a new No. 1 bad weed to watch in Missouri, says Kevin Bradley, University of Missouri Extension weed specialist.

Palmer pigweed, aka Palmer amaranth, acts bad in more ways than most, Bradley adds.

"The weed pest has been in the state for as long as I've been here (10 years)," Bradley says. It was just another weed, not noteworthy. However, three years ago that changed when Palmer became resistant to glyphosate herbicide, the most-used weed control in the state.

Palmer turned aggressive and worked its way from the Bootheel to northwestern Missouri. For now it's found mainly in counties along the Mississippi and Missouri rivers.

Soybean growers in particular face a challenge from the weed, which brings multiple threats, Bradley says.

For starters, each weed produces about 300,000 seeds. Worse, the herbicide resistance is transmitted by pollen.

Unlike most weeds, male and female Palmer pigweed plants are separate. Pollen must travel through the air to fertilize the flowers that produce the seeds. A characteristic of the pigweeds is the tall flower stalks with hundreds of florets.

There's more. Palmer germinates from early spring until late in the growing season. "It just doesn't stop reproducing," Bradley says. That allows it to outlast the longest-lasting residual herbicides.

The plant grows fast, up to 2.5 inches a day. And it grows tall, taking over a soybean field by shading out the crop.

Only 2.5 plants per foot of row can hide a growing soybean crop. Bradley shows slides of soybean fields where you must look close to see a soybean plant.

No other weed has so many bad things going for it, Bradley says. Control requires constant intensive management.

As with most weeds, but especially Palmer pigweed, the days of "one spray one day and done" are long gone.

Palmer resists glyphosate and four other herbicide modes of action. In Missouri, Palmer is resistant only to glyphosate.

In spite of resistance, producers can control the pest. "It just takes lots of work," Bradley told the MU Crop Management Conference. "When I see growers using crews of choppers with hoes, I know they understand this is one tough weed."

Another slide shows workers with pitchforks gathering chopped weeds. Weeds, and seed heads, are hauled from the field.

Palmer pigweed has weaknesses. The seed doesn't survive for decades in the soil bank, as some do. When buried deep, the seeds don't come up. Bradley only suggests

plowing deep to bury seed on level, non-erodible fields.

The seedlings are susceptible to herbicides, but they must be sprayed early. If sprayed late, the weeds escape death.

With more foliage, it's hard to get enough ingredient on the plants.

More than one herbicide mode of action is a must. For that, Bradley recommends "overlapping residuals." That



Palmer pigweed germinates from early spring until late in the growing season. The pesky weed grows fast, up to 2.5 inches per day. —Photo provided by Eldon Cole, University of Missouri Extension.

"It's a serious weed threat and takes serious management," Bradley says. "But it can be controlled with extra work and expense."

Controlling early before seed-set pays off. First priority is to prevent seed production and to build a seed bank.

Narrower soybean row-width helps control pigweeds. Drilled beans have fewer pigweeds as shade covers the ground earlier. More weeds are found in 30-inch rows.

Increasing seed planting rates boosts odds in favor of the soybean over pigweed seedlings.

Herbicides give control, but lax management won't work with the rapidly growing Palmer pigweeds. The seedlings quickly accumulate growth, requiring more herbicide. Palmer produces up to 65 percent more dry matter after two weeks than other weed species.

leaves less time for the continuation germination of the Palmer pigweed.

Using just one mode leads to resistance. "I visualize how Palmer pigweeds became resistant to glyphosate," Bradley says. "Someone used only that herbicide season after season."

Liberty herbicide mode of action still works, he says. "But with abuse, we lose it." He says Liberty must be used with a pre-emergent residual herbicide. And the Liberty application must be timely at early seedling stage.

Palmer pigweed looks much like other pigweeds, except the stems and leaves are smooth. Flowering heads are elongated and the plants are taller.

Bradley maintains a website for weed identification at [weedID.missouri.edu](http://weedID.missouri.edu).

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## PASTURE PLANNING

# Control Weeds for the Long Haul

Weed management is key to better quality pastures

Story By Laura Wolf for Cattlemen's News

Weed control in pastures can be a difficult task, but Kevin Bradley, a University of Missouri weed scientist, says the considerations for this spring are not all that different from other years.

"I would definitely put thistles, both musk thistle and bull thistle, at the top of the list," Bradley said. The next concern on his list for producers to watch for this spring is ragweed.

"Year in and year out, these are some of the most common and troublesome weed problems," Bradley said. He added that a lot of producers reported having trouble with thistles in the past year. Thistles can germinate in the fall or spring, so rosettes may already be present in pastures, and others may currently be germinating.

Thistles are simplest to control during the rosette stage, which

is good because the plant spends the majority of its life in the rosette stage. According to an MU integrated pest management publication, chemical control of thistles such as musk thistle is best before the plant bolts, which is the rosette stage. Mowing is more effective, however, shortly after the terminal flower head blooms.

Some research indicates that with thistles in particular, an infestation of about one plant per 100 square meters results in a reduction of grazing capacity by 13 to 14 percent.

Researchers have not conducted similar studies on many other common weeds in the Midwest, so weighing the costs

and benefits of herbicide application is a bit of a guessing game.

"It would depend on every field and a lot of other factors," Bradley said. "You are going to have a reduction in grazing capacity with any weed infestation."

Bradley said cattlemen often make the judgment call based on a visual survey. They see weeds in their pastures and think, "This is getting bad, and I've got to do something," Bradley said.

Leaving weeds in a pasture causes cattle to graze unevenly. Their natural tendency is to choose food that they have encountered and had good experiences with in the past. They avoid whatever is new and different in a pasture, meaning they miss not only the thistle or other weeds, but also the perfectly good grasses surrounding the weed.

This means the weed is allowed to grow and the pasture matures in an uneven pattern that makes grazing inefficient and haying more difficult. Cattle can and will graze on weeds, but do so only when given no other option.

Studies have shown that some weeds are just as – if not more – nutritionally beneficial as compared to traditional grasses, especially in early stages of growth, but cattle preferentially graze the grasses they are used to encountering.

A few options exist for removing weeds from pastures. Holistic management methods include removal and mowing. Removal, as with hoeing, is best for small infestations and is a good way to prevent the plants from going to seed. Mowing frequently also can keep weeds under control, and may satisfy other economic and management needs.

"It depends on the producer's attitude," Bradley said, "but there comes an economics question where if you're mowing a lot, it may be that the cost to mow versus an herbicide application may show that it costs more to mow than it would to get a more complete removal with an application."

CONTINUED ON NEXT PAGE

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Thistles have been troublesome for farmers in the past year. While they can germinate in both spring and fall, the simplest control for thistles is achieved during the rosette stage.

—Photo by Jera Pipkin

## WEED CONTROL FROM PREVIOUS PAGE

If you're considering a spring herbicide application on your tall fescue pasture, take careful note of the active ingredient. Bradley advises against using an herbicide like Chapparral or Cimmaron, among others, that has metsulfuron as an active ingredient.

In tall fescue stands, a spring application of a metsulfuron-containing herbicide has the ability to stunt fescue growth according to a University of Missouri research study. It reduces the tonnage produced significantly but can have some benefits as well.

"It can be good or bad," Bradley said. "[An herbicide application with metsulfuron] can reduce seed heads, which reduces the risk of toxicosis, but it also can result in significant yield loss."

This application concern is only a problem before fescue seedheads emerge. Studies showed that herbicides with metsulfuron was not an issue after the seed heads emerged on the plant, Bradley said.

Producers can also look to develop long-term habits that will improve pasture weed management.

"Weeds are opportunistic," Bradley said. They encroach whenever production is reduced, whether that is a drought, a summer slump, or some other cause of low production. Therefore, keeping your grasses and land producing at their best is also a weed management technique.

Maintain fertility by monitoring soil pH and other factors. Don't overgraze or allow cattle to graze plants too low to the ground. If plants have to spend more energy getting back to a healthy state, weeds have a better chance to get a foothold.

"The key to better pastures is weed management," Bradley said.



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## PASTURE PLANNING

# Addressing Inconsistent Weed Control

### Temperature, light, moisture affect end result

Ever wondered why some years you spray your pastures and they are completely weed-free while the following year, they left you wondering what you did wrong? Chances are you did absolutely nothing wrong. A host of things are causing you some grief when you get your herbicide bill from your ag chemical supplier. And, it makes you want to dig up every surviving thistle and plant it in your retailer's lawn! Don't get too upset with them; we need to look at a number of possibilities of why there is so much inconsistency in your weed control.

First, remember that those weed plants are living things. Much like us humans, weeds like it when their environment is just right. Unlike humans, if there is a sudden change in the environment, a weed plant can't make abrupt changes and be fine with it. For instance, here in the Ozarks, we can enjoy 70 degrees on any given Monday in January and then put on a parka the following Tuesday because our temps have dropped to minus 10 degrees. That change in environment drastically changes a plant's physiological processes. In the spring, when we are thinking about making a trip over our pastures to spray weeds, I realize we probably will not have that drastic of an environmental change. The environmental change doesn't have to be that severe to cause sporadic weed control from herbicides.

Although several university trials have been conducted to date, there are not true cut and dried certainties of why we get variations in weed control. We do know that several factors play major roles in herbicide efficacy. Temperature, light, moisture and adjuvants can all determine your spraying outcome.

**Temperature:** Most of your pasture herbicide labels will say to apply when the ambient air temperature is between 65 and 85 degrees Fahrenheit.

That is when most of our weed plants are green and growing. But, it is also the time when those weeds are the most susceptible to an herbicide spraying. These times of rapid plant growth play right into the hands of the way most pasture herbicides work. Did you know that the herbicide commonly named 2,4-D is a plant growth hormone herbicide that actually makes the plant grow so rapidly it basically grows itself to death? However, make yourself aware of any upcoming drastic changes in temperature. An application made after a night of below freezing temperatures or an application made too soon after sub-freezing temperatures can cause undesirable weed control. On the other end of the spectrum, when a plant gets too hot, it will close up or shut down several physiological processes in order to survive. During these times of heat stress, the plants aren't likely to absorb much herbicide.

**Light:** What time of the day should you spray? There are great differences in control from applications made in the same day. Opinions differ on the effects of dew on herbicide activity. Yet, research has shown no significant differences in weed control with the presence of dew or without dew. Although no real conclusion has been made on what time of day is best to make an herbicide application, research has shown that some plants will physically move their leaves to follow the sun's path in order to intercept light more efficiently. Light drives photosynthesis in any plant, and photosynthesis drives the production of chlorophyll. It would make sense that a plant soaking in the sun's rays would probably be more apt to absorb an herbicide than one that has gone to rest for the night. That is not to say a late evening or even nightly application isn't effective; it just might risk efficacy.

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## WEED CONTROL • CONTINUED FROM PREVIOUS PAGE

**Moisture:** While rain is necessary for plant growth, it's another story with herbicide application. When a plant becomes "Chlorotic" or water-logged, it will actually close its stomata on the undersides of the leaves and will not allow any more liquid to enter into the cell walls of the leaf. The end result is a useless herbicide application that costs us money. When we flip the coin and have extremely dry conditions, a couple of different things take place. First, the waxy layer on most weed leaves will thicken as a defense mechanism. Second, the cuticle will harden making it extremely difficult to uptake any herbicide. We do, however, get better application results during a "wet" season than we do during a "dry" season.

**Adjuvants:** An adjuvant is anything added to a spray tank mixture that will increase the chance of getting the pesticide to the intended target. A high-quality surfactant will greatly increase your chances of getting a lethal dose of herbicide into the weed plant you are trying to kill. A surfactant is exactly as its name implies— a surface-acting agent. Think about a thistle plant growing in your pasture. That little guy has only about a dozen or so leaves showing. On those dozen leaves are little barriers that keep unwanted things out of the plant like hairs, wax, dirt and animal manure. Think about the fact that you are spreading between 15 and 20 gallons of spray mixture over 43,560 square feet. At 15 gallons per acre, that is approximately .4 oz./square foot. To round it up, that's about half an ounce of mixture covering a square foot. So, each square foot of every acre you are covering will be hit with half an ounce of herbicide/water mixture. Not only are you expecting that half-ounce to kill every weed within that square foot, but also you want it to do its job while breaking through all the barriers mentioned above. The bottom line is you have to give your herbicide a fighting chance and using a high-quality surfactant is a small price to pay when you think about what you are expecting.

In summary, weeds we are trying to rid our pastures of are complex, living organisms that are doing their best to live and multiply. All of the changes in their physiological status can alter how the plants will react to different herbicides. It's mentioned nearly every year how important it is to get the weeds sprayed while they are small. Although, there is some correlation to spraying smaller plants to herbicide efficacy, the bigger factors are temperature, light, moisture and using the right adjuvants. I do realize that we all live in the real world. I understand that most of us have a job in town and our pasture management is done on a part-time basis. While it is easy to overlook the little things that can make a big difference, you need to take the time to plan your herbicide program on your pastures; the results will pay in dividends. If you are unsure of how to develop an herbicide application program, consult with an ag chemical supplier, and don't be afraid to ask questions.

—Source: Article provided by So-Mo Agri-Supply.

## SUCCESSION PLAN CONTINUED FROM PAGE 14

### 10. All we need to make this work is a good lawyer.

"To think that an attorney is going to be able to cover all of the issues is really short-sided," Hadley said. "It's important to get the best human resources there to use at your disposal."

In addition to a lawyer or lawyers present, he said families should use experts that might include communication specialists, conflict management

experts, counselors, mediators, financial analysts and succession planning facilitators.

A video interview with Hadley is available on the K-State Research and Extension YouTube page. To read more about how K-State succession-planning experts are helping Kansas' farm and ranch families, visit Making a Difference for Kansans.

—Source: Kansas State Research and Extension Release

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## Drone on the Range

### Agricultural uses for drones endless

Story From University of Missouri Cooperative Media Group

For centuries, farmers have braved the elements to walk their land to check for problems ranging from wind damage and calving cows to pests and predators.

Unmanned aerial vehicles may save farmers time and money with bird's-eye views of farmland, says Bill Wiebold, University of Missouri Extension agronomy specialist. It opens

up endless possibilities for precision agriculture, he said.

Wiebold's recent talks on drones during MU Extension crop conferences have drawn attention from producers anxious to learn how to use them.

Wiebold and other MU researchers have been studying how farmers can use the new technology.

Drones suited for farm applications vary widely in cost and size. Entry-level aircraft cost \$500-\$1,500 and can fly for 10-20 minutes without recharging batteries. Most weigh less than 5 pounds, have a wingspan of less than 3 feet and travel less than 30 mph. For about \$300, farmers can install cameras in drones that can send clear still or video images to a smartphone.

Drones can provide information to answer questions like "How bad was last night's hail storm? Are all of my cows on the north 40? Does my corn need more nitrogen?"

Entry-level systems can be guided by a handheld remote control. More sophisticated vehicles can be programmed to fly designated routes using GPS and GIS technology, but only skilled flyers should try this type of aircraft, Wiebold said.

The uses are as varied as Missouri farmland, Wiebold said. Entomologists may find the devices especially helpful for directed scouting of pests. Drones can collect information on plants that have grown to heights that make it difficult to walk through narrow rows.

Additionally, farmers can use the unmanned devices to document conditions when applying for government programs such as crop insurance.

While much of the recent media attention has centered on unmanned aircraft as a way to deliver packages, commercial agriculture likely will be the largest beneficiary of drone technology, Wiebold said.

Drone technology has raised concerns about privacy issues, but drones used in agriculture likely are less controversial than those used for commer-

cial applications. Currently, the Federal Aviation Administration (FAA) does not allow drone use for commercial purposes. Farmers must follow FAA guidelines for hobbyists.


Unmanned aircraft are restricted to airspace no higher than 400 feet. If flights occur within 3 miles of an airport, airport officials must be notified. Recent information suggests that producers are permitted to fly over areas they farm, Wiebold said. However, regulations may be updated, so farmers should follow FAA announcements.

Flying near spectators is not recommended until operators become skilled. Populated areas should be avoided. Wiebold suggests that until a farmer gains confidence and skill, drones should be kept within line of sight. Winds of 20 mph or greater may present problems with stability and image quality, he said.

Farmers in Japan and Brazil have used drone technology for decades. As much as 30 percent of Japan's rice fields were sprayed by unmanned vehicles in 2010, according to the nonprofit Association for Unmanned Vehicle Systems International (AUVSI).

In 2012, Congress directed the FAA to grant unmanned aircraft access to U.S. skies by 2015. The FAA has released a "road map" for potential drone use, and six federally designated test sites have been approved.

A study by the AUVSI estimates that drone use could create 70,000 new jobs in the U.S. in five years after FAA approval. The group also estimates that 90 percent of the economic activity will come from precision agriculture and public safety applications.



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**BRIEF SUMMARY:**  
Before using Baytril® 100, please consult the product insert, a summary of which follows:

**CAUTION:**  
Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.  
Federal (U.S.A.) law prohibits the extra-label use of this drug in food-producing animals.

**PRODUCT DESCRIPTION:**  
Each mL of Baytril® 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.

**INDICATIONS:**  
**Cattle - Single-Dose Therapy:** Baytril® 100 is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni* and *Mycoplasma bovis* in beef and non-lactating dairy cattle; and for the control of BRD in beef and non-lactating dairy cattle at high risk of developing BRD associated with *M. haemolytica*, *P. multocida*, *H. somni* and *M. bovis*.  
**Cattle - Multiple-Day Therapy:** Baytril® 100 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.  
**Swine:** Baytril® 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Haemophilus parasuis*, *Streptococcus suis*, *Bordetella bronchiseptica* and *Mycoplasma hyopneumoniae*.

**RESIDUE WARNINGS:**  
**Cattle:** Animals intended for human consumption must not be slaughtered within 28 days from the last treatment. This product is not approved for 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 this product in pre-ruminating calves. Do not use in calves to be processed for veal.  
**Swine:** Animals intended for human consumption must not be slaughtered within 5 days of receiving a single-injection dose.

**HUMAN WARNINGS:**  
**For use in animals only. Keep out of the reach of children.** Avoid contact with eyes. In case of contact, immediately flush eyes with copious amounts of water for 15 minutes. In case of dermal contact, wash skin with soap and water. Consult a physician if irritation persists following ocular or dermal exposures. Individuals with a history of hypersensitivity to quinolones should avoid this product. In humans, there is a risk of user photosensitization within a few hours after excessive exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight. For customer service or to obtain product information, including a Material Safety Data Sheet, call 1-800-633-3796. For medical emergencies or to report adverse reactions, call 1-800-422-9874.

**PRECAUTIONS:**  
The effects of enrofloxacin on cattle or swine reproductive performance, pregnancy and lactation have not been adequately determined.  
The long-term effects on articular joint cartilage have not been determined in pigs above market weight.  
Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter. Baytril® 100 contains different excipients than other Baytril® products. The safety and efficacy of this formulation in species other than cattle and swine have not been determined.  
Quinolone-class drugs should be used with caution in animals with known or suspected Central Nervous System (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation which may lead to convulsive seizures. Quinolone-class drugs have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. See Animal Safety section for additional information.

**ADVERSE REACTIONS:**  
No adverse reactions were observed during clinical trials.


**ANIMAL SAFETY:**  
In cattle safety studies, clinical signs of depression, incoordination and muscle fasciculation were observed in calves when doses of 15 or 25 mg/kg were administered for 10 to 15 days. Clinical signs of depression, inappetence and incoordination were observed when a dose of 50 mg/kg was administered for 3 days. An injection site study conducted in feeder calves demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue and underlying muscle.  
In swine safety studies, incidental lameness of short duration was observed in all groups, including the saline-treated controls. Musculoskeletal stiffness was observed following the 15 and 25 mg/kg treatments with clinical signs appearing during the second week of treatment. Clinical signs of lameness improved after treatment ceased and most animals were clinically normal at necropsy. An injection site study conducted in pigs demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue.

U.S. Patent No. 5,756,506

GHG010614

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# PRODUCT INFORMATION

NADA 141-299, Approved by FDA.



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**BRIEF SUMMARY:** For full prescribing information, see package insert.

**INDICATION:** RESFLOR GOLD® is indicated for treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, and control of BRD-associated pyrexia in beef and non-lactating dairy cattle.

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For customer service or to obtain a copy of the MSDS, call 1-800-211-3573. For technical assistance or to report suspected adverse reactions, call 1-800-219-9286.

Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Toxicity studies in dogs, rats, and mice have associated the use of florfenicol with testicular degeneration and atrophy. NSAIDs are known to have potential effects on both parturition and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. The effects of flunixin on imminent parturition have not been evaluated in a controlled study. NSAIDs are known to have the potential to delay parturition through a tocolytic effect.

RESFLOR GOLD®, when administered as directed, may induce a transient reaction at the site of injection and underlying tissues that may result in trim loss of edible tissue at slaughter.

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**ADVERSE REACTIONS:** Transient inappetence, diarrhea, decreased water consumption, and injection site swelling have been associated with the use of florfenicol in cattle. In addition, anaphylaxis and collapse have been reported post-approval with the use of another formulation of florfenicol in cattle.

In cattle, rare instances of anaphylactic-like reactions, some of which have been fatal, have been reported, primarily following intravenous use of flunixin meglumine.

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## PASTURE PLANNING

### 3 Strategies to Speed Pasture Recovery

Weed control, fertility, grazing management get grass in shape

Story By Samantha Warner for Cattlemen's News

It's no secret the past few years have been extremely trying for farmers. Extended drought seasons have put our grass pastures and hay fields in dire straits. Although it appears we might slowly be ushering the drought out the door, the ramifications of the last several years are not going to magically fix themselves in one growing season.

"We don't really know what's going to happen this year," said Dr. Daren Redfearn, associate professor and Extension forage and pasture management specialist, Oklahoma State University. "What's going to happen this year is maybe positive compared to the past couple years, but I still don't think

we're going to see back to what we were prior to 2011."

He said the past couple years have been obviously dry; that coupled with the heat reduced potential production even more for farmers just because limited moisture was quick to evaporate.

In the end to improve our pastures, Redfearn said, "It doesn't make any difference what's out there; it matters what we can do to manage the pastures."

The status of pasture recovery is dependant on a combination of factors, according to Redfearn.

"One of them is have (pastures) received any moisture

so they could recover, because if it doesn't rain it doesn't make any difference," Redfearn said. "The second thing is going to be was grazing deferred or were the pastures rested enough that they had an opportunity to recover with some of the more appropriate growing conditions. I think a lot of them were by default because producers had reduced the herd size so much."

He also said that no special product can be bought to speed up recovery of pasture ground, but three management practices can be followed:

1. Weed control
2. Add fertility when needed
3. Grazing management


These management practices are crucial because if desirable grasses start to thin, that allows some open areas for weed encroachment to occur, Redfearn said. Also, when ideal grasses start to decrease, that leaves an open opportunity for winter annuals like cheat grass and brome to greatly increase.

"That's going to allow an extremely rapid flush in growth from the seed germ," Redfearn said. "When those (winter annuals) are growing they use up any of the soil moisture that could be used for later growth in the summer pastures."

#### Forage Toxicity

When desired forages are lacking, cattle are more susceptible to forage toxicity because they are likely to eat forages they would normally avoid.


According to Dave Sparks, DVM and area food-animal quality and health specialist, Oklahoma State University Cooperative Extension Service, several different plants can cause gastrointestinal upsets, including oleander, ivy, iris, pokeberry, wisteria and mistletoe. "Lupine causes breathing difficulty. Mushrooms can cause gastrointestinal upset and breathing difficulty." He noted oak leaves and shoots, under certain conditions, can cause kidney damage which might not show up until weeks or months after the toxin is ingested. Oral irritation is caused by ingesting poison ivy, poison oak, rosary pea and castor bean. Sparks said other plants that could cause toxicity include:



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- Musk thistle
- Larkspur
- Curly dock
- Nightshades
- Death camas

Sparks said there is no way to eliminate all risk associated with plant toxicity, but there are practices producers can follow to reduce those risks. Some of those practices include:

- Don't overgraze.
- Do not introduce cattle to new pastures while they are hungry. Give them a chance to fill up on good palatable hay so they start to graze selectively.
- Turn a few older, low-value individuals into new areas first. If they experience no difficulty, follow a day later with herd mates.
- Spend time with your cattle, and note what they are eating. If you don't recognize the plants, have them identified by someone who can help.
- Watch closely for diarrhea, rapid breathing, staggers, or other signs of distress. If you observe these signs early and move affected animals to another pasture, many will recover uneventfully.

The state of pasture and hay ground is not the best, but with proper management practices they can be improved.

"It's going to take some more strict grazing management practices than we've had over the past several years," Redfearn said. "We know how to do these things. There's nothing that's magic. There's nothing that's secret. We just need to be reminded that to give these plants a chance to be productive this year, they have to be productive the previous year."

## BUSINESS BEAT

# Interest-Free Funding Available for 4-H, FFA Projects

## FCS Financial launches new ag youth program

*Release From FCS Financial*

FCS Financial is launching a new agricultural youth funding program to assist Missouri 4-H and FFA members with their agricultural projects. The agreement provides interest-free funding for qualifying projects, is available to all 4-H and FFA members in the association's lending service area and is repayable within one year.

"Missouri is home to more than 105,000 4-H members and supports 324 FFA chapters consisting of 25,000 students," says Scott Gardner, FCS Financial Marketing and Sales Vice President. "There is no better way to prepare these future farmers and ranchers for their career in agriculture than providing financial assistance and education at this point in their lives."

FCS Financial will require a detailed projected cash flow as part of the application process. The goal is to emphasize the importance of accurate records, budgeting and honoring obligations to repay in order to provide the future farmer or rancher with the tools, skills and contacts to move forward into a rewarding and successful agricultural career. If approved for funding, the applicant must keep accurate records available for FCS Financial to review throughout the term of the agreement.

"As agricultural lending experts, the staff at FCS Financial is able to share their knowledge and help the next generation of Missouri's farmers navigate the financial world," says Gardner.

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## PASTURE PLANNING

# Legumes Give Greater Gain

**Adding legumes to pastures increases protein, dilutes fescue endophyte**

*Story By Samantha Warner for Cattlemen's News*

We can all remember back to our elementary science classes and learning about how legumes are “nitrogen-fixing” plants. They were the “cool” plants because they put nitrogen back into the soil instead of taking it out. Who knew those science classes could be so beneficial in the cattle industry, and those plants could make such a big difference in improving pasture ground.

### Reasons Legumes Work

“The number one reason we would want to have legumes in pasture is they improve the gain of animals that are grazing there,” said Robert Kallenbach, state extension forage specialist, University of Missouri. “For instance, on stocker calves typically if we have legumes in the pasture versus just straight grass pasture, we’ll improve average daily gain by about a quarter of a pound per head per day.”

Kallenbach also said legumes usually have less fiber and more protein, and well managed legumes could exceed 15-16 percent crude protein. Another reason for using legumes, he said, is that they help mitigate the effects of fescue toxicosis by giving producers a dilution effect.

Legumes typically used include red, white or ladino clover and annual lespedeza. But, there are other choices, too.

Dr. Daren Redfearn, associate professor and Extension forage and pasture management specialist, Oklahoma State University, Department of Plant and Soil Sciences said, “One of the reasons that clover always gets a big interest is that it doesn’t require nitrogen fertilization because it fixes its own nitrogen.”

However, Redfearn cautioned that just because legumes help provide nitrogen to plants, that doesn’t mean they provide other needed nutrients. Producers should not completely disregard fertilizers if they utilize legumes in their pastures.

Kallenbach also said, “There are some other options for legumes as far as pastures. Alfalfa can be used in these systems, and that’s something we’re trying to encourage. It’s not for every acre of the farm, but it’s a legume that has a lot of potential both in terms of yield as well as drought.”

### Management

“A lot of times you’ll hear people say, ‘Well I’m only going to grow clover because I’m going to eliminate my fertilizer bill,’” Redfearn said. “You’re reducing the nitrogen, but it still has almost enormous requirements for phosphorus, potassium and then soil pH has to be appropriate in a lot of the soils.”

**CONTINUED ON NEXT PAGE**

### Advantages of Legumes in Pastures

- Increase animal average gain
- Increase weaning weight of calves
- Increase cow conception rates
- Decrease grass tetany risk
- Decrease herd health problems
- Increase protein yield per acre
- Furnish nitrogen for themselves and the companion grass
- Provide a higher quality hay than grass alone
- Produce more forage during July and August to offset the summer slump in grass growth
- Decrease pasture production costs

—Source: University of Missouri Extension



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Legumes like alfalfa increase protein yield per acre and improve gain in grazing animals. The nitrogen-fixing plants also help reduce the effects of fescue toxicosis.—*Photo by Joann Pipkin*

## LEGUMES FROM PREVIOUS PAGE

Legumes require a different level of soil fertility than do most grasses, Kallenbach said. They will have higher requirements for soil pH, phosphate and often higher requirements for potash as well. You can spread a lot of legume seed on really poor-looking ground or low fertility ground and while the plants may establish, they won't be very productive.

He went on to say, "Soil testing is by far our best way to manage that."

One other management observation to keep in mind Kallenbach said is the possibility of bloat. "Typically, if we can keep a mix of about 70 percent grass, 30 percent legume pasture, we have very little bloat," Kallenbach said.

## Legume Growth

"They produce in the spring, so you've got to plant them back in the fall," Redfearn explained. "To do that, we've got to have the pastures that we're going to plant them in grazed short or hayed short. When we plant those, the seed will germinate and they'll come up through the warm season thatch."

He continued by saying fall participation is critical to the early legume stand. Producers won't get a lot of use out

of them in the fall and winter. They'll die back some, but the first of March you'll see a big flush of growth.

"The best managed in that situation is not to have animals on them until the spring because those little seedlings are pretty sensitive to trampling and being grazed out," Redfearn noted. "Then once they begin growth in March, they grow so rapidly often times it's pretty hard for the animals to keep up with a lot of that rapid growth."

Redfearn added, "You've got to have an area that's ungrazed for about five to six months to allow those legumes a chance to flourish so that you can graze them for March, April, May and into June some years depending on moisture. If you don't graze the clovers down because they can be so productive, they can out-compete the grasses."

Kallenbach said a rotational management system works well, and the ideal situation is to get on paddocks when they're 8-10 inches tall, graze it down to about a 3" stubble and move on to the next.

While legumes aren't for everyone, Redfearn maintains they can be utilized if producers are willing to implement alternative management strategies.



## Never Too Young to Start

Backgrounding provides opportunities for young cattlemen

Story By Joann Pipkin, Editor

When Jason Thompson told his mom he wanted to farm full-time instead of further his education in college, the Mount Vernon school-teacher wasn't exactly thrilled.

Now, though, Thompson says his family, which includes mom Cindy and dad Greg, embraces his decision and accepts that farming is truly what he enjoys.

With more than one-third of the nation's farmers older than 65, Thompson doesn't exactly fit the mold. At just 19, the Mount Vernon native is expanding his high school FFA project into a full-time occupation.

Thompson got his first taste of the cattle business from his grandparents, Forrest and Donna Thompson. "Grandpa and Grandma would feed out calves when I was little. My brother Forrest Paul and I would each get to pick out a calf that we would receive the proceeds from when it was sold," Thompson explains.

Over the years, Thompson and his brother partnered on feeder calves as part of their FFA supervised agricultural experience project. Now the Lawrence County cattleman back-grounds his own cattle while also helping his grandfather on the farm. He also recently

purchased a 200-acre farm just east of Stotts City.

Thompson's backgrounding operation has him buying and selling approximately 50 head of calves each month. He says that system helps create cash flow. He hopes to background about 500 head each year.

Buying calves that weigh 200-300 lbs works best for Thompson. "The input costs are lower," he explains. Thompson grows the calves for about a year, marketing them at about 700-800 lbs.

Thompson has sold the cattle both through live auction and on video at Joplin Regional Stockyards. "I like the video market," he explains, "because you can contract to sell two months out for later delivery. It's also easier to handle the cattle. I can load out at home. There are no trucking costs to the market, and I don't have to worry about shrink."

Penciling out his costs on items such as feed and fertilizer helps Thompson know about how much he can afford when purchasing the calves. "That's not always easy to do knowing it will be a year before the calves are sold," he admits.

Thompson vaccinates his calves upon arrival to help

keep them healthy. They are also boosted, given wormer and implanted about two to three weeks later. He monitors the calves for sickness daily and treats the pulls as needed.

To help get them started on feed, Thompson puts hay in bunks the day of arrival and sprinkles grain on top of it. "It seems like those younger calves will start on feed almost over night whereas a 400-600 pound calf just wants to run the fence and bawl," Thompson says.

Thompson's feed ration is somewhat unique; it's composed of corn, peanuts and cereal plant by-products. Roughage includes dry hay like fescue and bermuda as well as silage-wrapped fescue.

"I have had good luck with the smaller calves," he adds. "They do take a lot of time and you have to be out there with them to notice the sick ones."

Newly arrived calves are hand-fed twice a day before being transitioned to pasture. "It's really important to spend time with the calves," Thompson advises. "The sooner you can catch one that is sick, the better. They get over sickness easier, the sooner you can get medicine in them and then perform better later down the road."

Thompson targets his rate of gain at about 1 ½ lbs per day during the winter months. Once grass arrives, though, that quickly increases. "As the cattle get older and more mature, they will start to

utilize the feed and grass better," he says.

One key element to his back-grounding success is allowing the calves plenty of access to fresh water, Thompson says. "That's really important. The more full their gut is, the better they seem to start (on feed)."

While Thompson prefers back-grounding young calves, his cousin Blane Schnake's success comes with 400 to 500-pounders. At 16, Schnake back-grounded 115 head last year.

"I enjoy backgrounding because you don't have the long-term investment like you do with a cow/calf operation," Schnake says. "You can buy when the market is right and have the calves for a shorter time period. It just works better for me."

Like Thompson, Schnake's family has helped him get his backgrounding operation off the starting blocks. He buys calves from a neighbor at weaning and then fills in with purchases from JRS.

Schnake marketed 61 head of heifers last summer on the video market at JRS and liked the program so much that he's anxious to try it again. "It guaranteed me a price as long as I could guarantee a weight on the calves at market time," he explains.

He says having the right connections has really helped him get his operation going. "The

**CONTINUED ON PAGE 43**



Jason Thompson (left) and Blane Schnake (above) have found success backgrounding feeder calves and marketing them on video at Joplin Regional Stockyards. —Photos by Joann Pipkin





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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.

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The material safety data sheet (MSDS) contains more detailed occupational safety information. To report adverse effects, obtain an MSDS or for assistance, contact Merial at 1-888-637-4251.

**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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## ECONOMIC INDICATORS

# Cow-Calf Sector in Driver's Seat

**CattleFax projections include improved weather conditions, record prices**

Story From National Cattlemen's Beef Association

CattleFax analysts unveiled their projections for the year ahead at the 2014 Cattle Industry Convention last month in Nashville. Creighton University Professor Emeritus Art Douglas told the audience he expects improved moisture conditions in the majority of the United States, including improvements of the drought-affected areas of the West Coast.

As precipitation returns back to more normal levels for the 2014 growing season, CattleFax predicts farmers in the U.S. should grow an adequate corn crop to build the carry over supply. The improved corn supplies should assure lower corn/input costs over the next 12-24 months, according to CattleFax Grain Market Analyst Mike Murphy. “The lower input cost will have a direct correlation to improved feeder cattle and calf values in 2014 and with continued help from Mother Nature, we will be in better shape with regard to hay supply and prices moving forward,” Murphy said.

Global Market Specialist Brett Stuart indicated that beef exports are expected to be near even in 2014 with record high prices being the limiting factor. At the same time, expectations are for beef imports to be near even, despite the need for 90 percent trim due to the expected lower non-fed slaughter rates in the U.S. The driving factor for stagnant imports is the growth of Chinese demand for global beef, which will continue to divert beef from Australia into the Chinese market and away from the U.S. market.

CattleFax Senior Analyst Kevin Good indicated the combination of improved moisture conditions resulting in lower input costs and record high calf values should lead to beef cowherd expansion beginning in 2014.

Beef production in the U.S. will fall, with per-capita sup-

ply declining 4.5 percent. However, he said the pork and poultry supplies are expected to increase, leaving total meat supplies near even. CattleFax projects the Retail Beef Demand Index will improve by one percent due to continued modest economic growth.

“As we think about our consumers today, not only domestically but globally, they’re a lot more diverse than they have been in past,” Good said. “We’ve got different customers with different preferences and different pocket books.”

Good said because of the continued tighter feeder cattle supply, the margin segments of the beef production system, both feed yards and packers, will struggle with excess capacity. Look for continued closure of both packing and feeding entities over the next 12-24 months. Prices are expected to average \$135 compared to \$126 during 2013, an increase of seven percent. Yearling prices are expected to average \$168, an increase of 13 percent from the 2013 average of \$146. According to Good, calf prices will average \$193, up 13 percent from last year's average of \$168.

“After years of tightening supplies, the cow-calf sector will again remain in the driver's seat during 2014,” Good said. CattleFax CEO Randy Blach summarized the year ahead by saying almost all segments of the production chain will be profitable though margin operators will continue to face challenges over the next few years.

Blach remains optimistic for the long-term cattle industry as the profit incentives will result in a larger U.S. cattle herd over the next five years, creating business opportunities for those willing to adapt to a dynamic and changing business environment. “We have the most efficient production system in the world and we are the largest exporter of protein onto the global market,” he said.



## ECONOMIC INDICATORS

# Cattle Inventory Report: DejaVu?

## What happened in 2013, what may happen in 2014

Story By Derrell S. Peel

As expected, the annual cattle inventory report confirmed that the U.S. cattle herd continued to liquidate in 2013. The inventory of all cattle and calves was 87.7 million head, down 1.8 percent from one year ago and the smallest total U.S. cattle herd since 1951. The beef cow inventory was 29.0 million head, down 0.9 percent from last year and the smallest beef cow herd since 1962. The numbers indicate that the industry is poised to begin rebuilding in 2014—weather permitting.

Among the 10 largest beef cow states, the cow herd was up in five states and down in five. The largest decrease in cow numbers occurred in Texas, followed by South Dakota, Montana and Kentucky and Nebraska. Beef cow numbers increased in Kansas, Missouri, Oklahoma, Arkansas and North Dakota. On net, there was a slight increase in beef cow numbers in the top 10 beef cow states.

The inventory of beef replacement heifers was up 1.7 percent, a bit smaller than pre-report expectations. However, the number of beef replacement heifers as a percent of the beef cow herd, at 18.8 percent was the largest in more than 20 years, including the last cyclical expansion in the early 1990s. Among the top 10 beef cow states, beef replacement heifers were up in seven states. The result is a net increase of beef replacement heifers of 4.1 percent among top 10 states. Only Montana, North Dakota and Kentucky had fewer replacement heifers compared to last year while Texas, Missouri, Oklahoma, Nebraska, South Dakota, Kansas and Arkansas had an increase from 2013. Oklahoma led the increase among states with 45,000 more beef replacement heifers, an increase of 16.1 percent year over year.

The 2013 U.S. calf crop was 33.93 million head, down one percent from 2012. A smaller calf crop, combined with increased heifer retention and fewer feeder cattle imports, resulted in a 2.7 percent decrease in estimated feeder cattle supplies on January 1, at 24.8 million head, down from 25.5 million head one year ago. Inventories of steers over 500 pounds were down 2.5 percent; calves under 500 pounds were down 3.7 percent and other (not for replacement) heifers were down 5.0 percent. The fact that cattle on feed was also down 5.0 percent limited the decrease in estimated feeder supplies outside of feedlots to 2.7 percent. Estimated feeder supplies as a percent of the 2013 calf crop was 72.9 percent, down from 74.2 percent last year and below the 10-year average of 74.4 percent. This indicates that a smaller than average

percent of feeder cattle supplies were carried over from 2013 into 2014. The number of cattle grazing small grains pasture on January 1 in Kansas, Oklahoma and Texas was 1.61 million head, up 20 percent from last year and the highest total for the region since 2010. The share of estimated feeder supplies in these three states on January 1 increased to 25.7 percent, up from the 2013 low of 25.1 percent but still below the 10-year average of 28.3 percent.

The January 1 cattle inventories for all cattle as well as beef cows can be the lows from which the industry rebuilds over the next several years. However, the industry is quite vulnerable to drought conditions that could re-intensify this spring and postpone herd expansion once again. Market signals for expansion are strong and growing, and the industry is poised to respond. We know what we want to do; we just don't know what Mother Nature is going to let us do.

—Derrell S. Peel is Oklahoma State University Extension livestock marketing specialist.

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<sup>1</sup> ZACTRAN product label.

<sup>2</sup> 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.

<sup>3</sup> 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.

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



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## Where's the Value?

Study shows consumers have eyes on freshness, safety

Story From K-State Research & Extension

A look around the local grocery store might show images of consumers reading meat labels or checking the expiration date on a gallon of milk. Each consumer has a set of values when making food purchases, and the level of importance placed on each value by consumers allows for food producers and distributors to better meet the needs of their end user.

A recent nationwide online survey of U.S. consumers by Kansas State University found that freshness and safety were the most important values consumers placed on buying popular livestock products—milk, ground beef, beef steak and chicken breast. The findings for livestock-specific products were consistent with prior research examining consumers' general food values.

Ted Schroeder, professor and livestock economist for K-State Research and Extension, worked with other faculty and graduate students in the Department of Agricultural Economics on this research. Schroeder said as consumers make decisions to purchase food products, they might think about taste, underlying production practices, concerns they have about production, safeness, freshness, quality and price, to name a few.

"It's about a host of things that might go through consumers' minds as they purchase a product," he said. "As you compile those into a list, how do they rank? And, do they rank the same for different products?"

### Details of the study

The prior research by Lusk and Briggeman in 2009 found that safety, nutrition, taste, price and natural were the top five values consumers desired out of the 11 total values assessed for general food products. Schroeder and his graduate students wanted to see if similar results could be found when consumers considered buying specific livestock products.

"We wanted some diversity among those (livestock) products," said Garrett Lister, a K-State graduate student who worked on the study. "We also wanted them to be specific, which is why we kept them in the livestock sector."

The popular products they chose to examine included milk, ground beef, beef steak and chicken breast. The 11 food values they chose to examine included freshness, health, hormone-free/antibiotic-free, animal welfare, taste, price, safety, convenience, nutrition, origin and environmental impact. These are similar to the general food product study, aside from a few modifications that apply to livestock products. Adding freshness was one of those modifications.

"There's more issues with spoilage in some of these livestock products than food in general," Lister said.

A total of 1,950 people responded to the livestock products survey, which was a big jump from the 176 respondents included in the prior general food product survey. This was mainly due to the online nature of the livestock products survey versus the mailed method of the general food products survey, said Marcus Brix, another K-State graduate student who worked on the study.

Safety was the most important value in the general food products study, and it was either first or second most important for milk, ground beef, beef steak and chicken breast. Freshness was the other top value for livestock products. In contrast, the values of environmental impact, animal welfare, origin and convenience were less important for the livestock products, and this was also comparable to the prior research.

Price fell in the middle of the list, Lister said. This was because some consumers valued price as one of their key com-

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ponents in making a decision on what foods to buy, while others felt it was less important.

Brix said economists often presume that price is the most important factor in choice, because price is an important driver of purchase behavior. Researchers tend to assume food is going to be safe when purchased at a retail outlet. However, consumers in general don't necessarily have that presumed trust in food safety.

"A majority of consumers still question some things about their food," Brix said. "If they think that one product is more safe than another at a different price point, they are going to be less responsive to the price and more responsive to the product freshness or safety of said product."

### Needs in the industry

Consumers want products that deliver a high-quality eating experience, Schroeder said, and this study, as well as prior research, reflects that. "Freshness, nutritional components and health attributes

are desirable, and consumers absolutely demand a product that is safe," he said. "These are messages we've been saying for a long time, and they've shown up remarkably strong across all four of these particular products."

The social values, including animal welfare, environmental impact and origin, for example, aren't irrelevant,

Schroeder said. Some segments of society hold those as more important than others, but overall they aren't the major drivers that lead the average consumer to purchase a particular product.

Understanding some of these consumer food value preferences helps the food industry know where to focus its marketing and production energy

to ensure that high-quality eating experience.

A research paper explaining all of the findings from the livestock products consumer survey is available at Food Values Applied to Livestock Products.

—Source: K-State Research and Extension Release



A recent nationwide online survey of U.S. consumers by Kansas State University found that freshness and safety were the most important values consumers placed on buying milk, ground beef, beef steak and chicken breast.

—Photo by K-State Research and Extension

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## CONSUMER TRENDS

# Sustainability and the Future of Beef

**Beef's largest marketer asks producers to join in defining what sustainability means for the beef industry**

Story By Kindra Gordon

McDonald's statistics are impressive. It has 34,000 restaurants and just reached the milestone of serving 70 million customers a day. The famous golden arches can be found in 119 countries — and in mid-February 2014 that will bump up to 120 with the addition of a restaurant in Vietnam. The company employs 1.8 million people, and it is the world's largest marketer of beef, purchasing 2% of the beef produced in the United States and around the world.

Of the company's more than 50-year uber-successful history, Bob Langert told Cattlemen's College® attendees on Feb. 4 in Nashville, Tenn., "If we didn't change, we'd be a

withering and dying business. ... The customer is our primary business driver for McDonald's."

Langert has been with the food giant for 31 years and today serves the company as vice president of corporate social responsibility and sustainability.

He told the more than 6,000 in attendance at the opening general session that what McDonald's and the beef industry have in common is a "commitment to selling beef — great-tasting beef."

That said, Langert noted that customers have — and are — dramatically changing their food demands. One way Mc-

Donald's is addressing this is its announcement a month ago that it plans to start purchasing verified sustainable beef by 2016. They already purchase certified sustainable fish and coffee.

"This is not a do-gooder effort. This is a journey for good — together," Langert said of this most recent initiative focused on beef. "We feel with sustainability we can grow our business and, in turn, grow your business."

He admitted that the company does not currently have a detailed, defined plan of what sustainability means for the beef industry. He emphasized that they recognize a sustainable supply chain includes the three Es — ethical, environmental and economical.

He encouraged the industry to be a partner — and leader — in helping create a sustainability definition and plan for the future.

"Let's take charge in defining what is sustainable beef — and not let activists do it," he emphasized.

Langert mentioned the Global Roundtable for Sustainable Beef as one group they will look to heavily as they prepare to implement their new initiative for 2016.

As that future approaches, he emphasized, "Our pledge is to continue to collaborate, not mandate."

To the producers in attendance, he said, "You might be sustainable, but you have to prove it and have evidence points. Telling stories and saying trust us isn't enough. It's about doing more."

He concluded by noting that sustainability "is part of business" and said, "Let's create this future together."

—Reprinted with permission from the Newsroom at [www.4cattlemen.com](http://www.4cattlemen.com), the Angus Journal's event coverage site for the 2014 Cattle Industry Convention

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## MANAGEMENT MATTERS

# Creating Superior Carcasses by Using Technology

### How to move away from select, low choice carcasses

Story By Robin Salverson



Yield Grade 1 carcasses occur 12.4 percent of the time in the fed cattle population. Rarer are cattle that grade USDA Prime, approximately 2.25 percent of the population. What are the chances of a Prime Yield Grade 1? Approximately 0.03 percent of the fed beef population in the U.S. matches the desired Prime Yield Grade 1 carcass.

How can the beef industry increase the percentage of these superior carcasses? Dr. Dean Hawkins from West Texas A&M University shared at the Range Beef Cow Symposium how

imagination can be turned to reality when working with tissue from exceptional carcasses and cloning. Awareness and the potential of cloning in the livestock industry was first noticed in 1996 with the cloning of “Dolly” the ewe. Since “Dolly” more cloning has occurred in the livestock industry including cattle, horses and sheep. Typically clones are produced from a tissue biopsy from a superior living sire or dam.

However, West Texas A&M Beef Carcass Research Center wanted to start with the end product, the carcass. They took on the challenge of identifying the rare Prime Yield Grade 1 carcasses and collecting muscle tissue samples to clone a sire and/or dam that will pass on the desirable carcass characteristics.

Tissue samples were collected and tested at a commercial gene marker company to verify that what was seen phenotypically (Prime Yield Grade 1 carcass) at the slaughter house matched the DNA markers. The goal was to increase the likelihood that the traits for carcass, growth and feed efficiency would be passed on. Animals that matched both phenotypically and genetically were cultured.

When they confirmed the animals that had both the phenotypic traits, and the gene markers for growth, feed efficiency and carcass traits it narrowed the percentage of animals eligible to be cloned to

0.006 percent of the fed beef population. Since the project started in 2010, one cloned -bull calf (Alpha) and three cloned heifer calves (Gamma) have been born from tissue collected from USDA Prime Yield Grade 1 carcasses.

This project is in its infancy; however, it creates excitement in the livestock industry. Can we start moving away from select and low choice carcasses to a higher percentage of high choice and prime carcasses to meet consumer demands? The future for this project involves super-ovulating the cloned-heifers and inseminating them with Alpha semen. Additionally, testing will be completed for DNA markers for carcass merit and growth efficiency along with yield and quality grade. Likewise, additional cows will be inseminated with either Alpha semen or another purebred bull to make a comparison. There will be much more to come from this project in determining whether or not the animals being produced are genetically superior animals.

—Source: Robin Salverson is a cow/calf field specialist with South Dakota State University Extension.

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## Practical Applications in Animal Welfare

### Animal welfare scientists relate purpose and measures of animal well-being

Story By Kasey Brown

“We have a moral obligation to treat the animals in our care humanely,” Karen Schwartzkopf-Genswein, beef welfare scientist with Agriculture Canada, told attendees of the 21st Cattlemen’s College hosted during the 2014 Cattle Industry Convention in Nashville, Tenn., Feb. 3-7.

Animal welfare is not just a buzzword, she emphasized. Its technical definition is the multifaceted concept combining animal, technical, legal and human perspectives. It is the state of an individual as it attempts to cope with its environment, and welfare is adversely affected when the animal must shift energy away

from biological functions to manage discomfort or pain. Behavior is the first indicator an animal isn’t doing well.

Welfare matters because it has a relationship to animal health, food quality and food safety. Public and consumer concern also make it relevant, and mean that animal welfare will not go away, she said. Compromised welfare equals a stress response, which suppresses the animal’s immune system, increases morbidity and mortality, lowers feed intake and growth, and increases antibiotic use and pathogen shedding.

Often dismissed as a soft science, quantifiable and objective ways to measure animal welfare exist. Behavior observations can be counted, like tail flicking, foot stomping, vocalization, escape behavior, respiration rate, panting and drooling, feeding and drinking, lying or standing, walking, locomotion score, posture or body alignment and rumination. Cattle are often noted as stoic animals, and pain is hard to notice, but Schwartzkopf-Genswein says cattle are anything but stoic if you observe them closely enough.

Physiological signals include cortisol in the blood, saliva or hair; catecholamines or adrenaline; substance P, a neuropeptide biomarker of pain; immune function; and infrared thermography and heart rate. These can show that the body is reacting to certain stresses and to what extent.

#### Farm Check

Dean Denilson of Tyson’s Farm Check® program explained that the program was designed to maintain responsible on-farm treatment of animals. He noted that customer requests have changed from 15 years ago. Back then, they wanted to ensure proper handling was done at the slaughter facilities. Now they want to ensure proper handling is

done in all aspects of the supply chain. This program is designed to hold all suppliers of Tyson accountable, but not to tell producers how to raise their animals.

Denilson mentioned that consumers like beef and pork quality-assurance programs, but they don’t like that they are voluntary and without a third-party audit.

The Farm Check program was launched in 2012 with its business-to-business pork audits. The beef program is still in the works, with a projected timeline of a mid- to late-2014 launch.

“You can say what you’re doing, but it has to be verified to be credible,” Denilson explained.

“Report cards” from the pork audits have indicated areas that could use improvement. For instance, improvements could be made in animal welfare training, site self-checks from managers and daily observations. He said Tyson will work with producers if any areas are unacceptable or need improvement to improve those practices or management.

“It doesn’t tell you how to manage your animals, but it will observe if animals are handled appropriately,” he concluded. “The supply chain accountability has changed. If we don’t do it, someone else will do it for us. We don’t want undercover videos to be the driver of business. We are blessed that the beef industry doesn’t have a real ‘lightning rod’ issue right now, but let’s keep it that way.”

—Kasey Brown is associate editor of the Angus Journal. Article reprinted with permission from the Newsroom at [www.4cattlemen.com](http://www.4cattlemen.com), the Angus Journal’s event coverage site for the 2014 Cattle Industry Convention.

ANADA 200-495, Approved by FDA

## Enroflox 100 (enrofloxacin) 100 mg/mL Antimicrobial Injectable Solution

**For Subcutaneous Use in Beef Cattle, Non-Lactating Dairy Cattle and Swine Only. Not for Use in Female Dairy Cattle 20 Months of Age or Older Or In Calves To Be Processed For Veal.**

**Brief Summary:** Before using Enroflox 100, consult the product insert, a summary of which follows.

**CAUTION:** Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian. Federal (U.S.A.) law prohibits the extra-label use of this drug in food producing animals.

**PRODUCT DESCRIPTION:** Each mL of Enroflox 100 contains 100 mg of enrofloxacin. Excipients are L-arginine base 200 mg, n-butyl alcohol 30 mg, benzyl alcohol (as a preservative) 20 mg and water for injection q.s.

#### INDICATIONS:

**Cattle:** Enroflox 100 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.

**Swine:** Enroflox 100 is indicated for the treatment and control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Haemophilus parasuis* and *Streptococcus suis*.

Enroflox 100 is administered as a single dose for one day (swine) or for multiple days (cattle) of therapy. Enroflox 100 is not approved for a one-day, single dose of therapy in cattle.

#### RESIDUE WARNINGS:

**Cattle:** Animals intended for human consumption must not be slaughtered within 28 days from the last treatment. This product is not approved for 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 this product in pre-ruminating calves. Do not use in calves to be processed for veal.

**Swine:** Animals intended for human consumption must not be slaughtered within 5 days of receiving a single-injection dose.

**HUMAN WARNINGS:** For use in animals only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with copious amounts of water for 15 minutes. In case of dermal contact, wash skin with soap and water. Consult a physician if irritation persists following ocular or dermal exposures. Individuals with a history of hypersensitivity to quinolones should avoid this product. In humans, there is a risk of user photosensitization within a few hours after excessive exposure to quinolones. If excessive accidental exposure occurs, avoid direct sunlight.

#### PRECAUTIONS:

The effects of enrofloxacin on cattle or swine reproductive performance, pregnancy and lactation have not been adequately determined. The long-term effects on articular joint cartilage have not been determined in pigs above market weight.

Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Enroflox 100 contains different excipients than other enrofloxacin products. The safety and efficacy of this formulation in species other than cattle and swine have not been determined.

Quinolone-class drugs should be used with caution in animals with known or suspected Central Nervous System (CNS) disorders. In such animals, quinolones have, in rare instances, been associated with CNS stimulation which may lead to convulsive seizures. Quinolone-class drugs have been shown to produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species. See Animal Safety section for additional information.

**ADVERSE REACTIONS:** No adverse reactions were observed during clinical trials.

#### ANIMAL SAFETY:

In cattle safety studies, clinical signs of depression, incoordination and muscle fasciculation were observed in calves when doses of 15 or 25 mg/kg were administered for 10 to 15 days. Clinical signs of depression, inappetence and incoordination were observed when a dose of 50 mg/kg was administered for 3 days. An injection site study conducted in feeder calves demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue and underlying muscle. In swine safety studies, incidental lameness of short duration was observed in all groups, including the saline-treated controls. Musculoskeletal stiffness was observed following the 15 and 25 mg/kg treatments with clinical signs appearing during the second week of treatment. Clinical signs of lameness improved after treatment ceased and most animals were clinically normal at necropsy. An injection site study conducted in pigs demonstrated that the formulation may induce a transient reaction in the subcutaneous tissue.

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## Managing Fescue Requires Different Thinking

### Consider endophyte, its risks

Story By Laura Wolf for Cattlemen's News

Tall fescue is one of the most common forage crops in Missouri, boasting easy establishment and high persistence. Well-managed tall fescue can be a high-quality cattle feed, but it comes with a serious drawback that makes management more difficult. If your pasture features tall fescue, there's a chance it is of the Kentucky-31 variety, which has a symbiotic relationship with a fungus called an endophyte that can produce ergot-like alkaloids under certain conditions according to Craig Roberts, an agronomy professor at the University of Missouri.

The endophyte causes "fescue foot" in cattle when they consume too much of the endophyte fungus present in tall fescue.

"The production-side risks of grazing fescue with the common endophyte are slowed rate of gain with cattle in particular, reductions in milk production and complications in reproduction," Roberts said. "Those are the risks that directly affect production, but cattle will have other symptoms as well; they are basically sick."

Feed intake is decreased, which reduces weight gains. Internal body temperature and respiration rates increase. The animal's immune system is compromised, and it may become lame, among other risks.

Given that the risks are high, it may seem prudent to eradicate infected tall fescue entirely. Pasture renovation is an option available to producers, and endophyte-free and novel endophyte varieties are available from several seed dealers.

However, according to a survey of state extension specialists in the eastern fescue region of the U.S., many producers choose not to renovate. The most cited reasons for that choice were the costs and processes involved with renovation itself.

"In Missouri, the process is not just spraying and going in the next spring to seed," Roberts said. "There is more involved in our process, and elements like land ownership – if you're renting – or landscapes with a slope that won't allow for a no-till drill or sprayer to be

variety. It seeks to encourage producers to reduce the risk of fescue toxicosis by renovating pastures, so it offers educational and cost-share opportunities to interested producers.

One-day schools will be offered by the alliance March 31 through April 3. More information is available on the website, or you can contact extension specialist Craig Roberts. (See related article on page 51 inside this issue of Cattlemen's News.)

"The program is in its second year, so it's just getting off the ground, but we're excited to see what comes out of it," Roberts said.

can be exaggerated, and interseeding legumes is just part of the solution."

Another option for management to reduce toxicosis is to supplement with feed additives.

"There is no magical fescue toxicosis alleviator," Roberts said. However, real additives like corn, corn gluten, dried distillers grains, and soy hulls – good energy sources – can curb the effects of grazing K-31 fescue.

Fescue stored as hay can also present a risk. If you're feeding toxic hay, one option that is not often talked about according to Roberts is ammoniation. Treating the bale with ammonia before feeding breaks down the toxin and has the added benefit of increasing digestibility.

The last consideration Roberts suggests is closing the herd. Research has been conducted to look for resistant individuals, and while varying degrees of susceptibility exist, no animal has been observed to be

truly resistant to the common endophyte in K-31. Naïve cattle go through an adjustment period to grazing K-31, and you can determine susceptibility to fescue toxicosis during that time to make a culling decision.

"Certain individuals can tolerate it better than others," Roberts said. "Cull out highly susceptible individuals."

It takes a variety of management skills and a different approach to manage fescue toxicosis safely and effectively, but it is possible. Renovating pastures is one option that can be costly and time-consuming, but the Alliance for Grassland Renewal aims to reduce those barriers. If you choose not to renovate, fertilizing at low nitrogen levels, interseeding legumes, utilizing feed additives, ammoniating toxic hay and closing the herd are all options that can be combined to protect your herd from the damaging effects of fescue toxicosis.

Effect of the endophyte on weight gain in steers

Research location	Gain		Forage fed
	High endophyte	Low endophyte	
Texas	0.99 pound per day	2.14 pounds per day	Pasture
Alabama	1.41 pounds per day	2.18 pounds per day	Pasture
Georgia	1.02 pounds per day	1.31 pounds per day	Pasture
Alabama	1.00 pounds per day	1.83 pounds per day	Pasture
Missouri	0.97 pound per day	1.41 pounds per day	Pasture
Alabama	0.44 pound per day	2.12 pounds per day	Seed
Alabama	0.62 pound per day	1.46 pounds per day	Hay

Research from across the southern United States shows that the endophyte can reduce weight gain by more than 50 percent in steers fed on pasture.

Source: "Tall Fescue Toxicosis" - University of Missouri Extension publication G4669

effective might discourage a rancher from renovating."

The process requires a spray-smother-spray method. To increase renovation success, research has shown that spraying a chemical herbicide, planting a smother crop that competes directly with the plant to be eradicated – K-31 – and following with another herbicide application before planting the new variety of fescue or other forage replacement is the most effective method in this region.

To learn more about the renovation process and cost-share options available, visit the website [www.grasslandrenewal.org](http://www.grasslandrenewal.org). The site features information about the Alliance for Grassland Renewal. The alliance is a cooperative effort among the University of Missouri, governmental and nonprofit organizations, producers who have successfully renovated pastures, and every seed company that offers a novel endophyte fescue

If renovation is not your choice this season, Roberts offers several options for management to protect cattle from fescue toxicosis.

"There is a whole special way of thinking when it comes to managing Kentucky-31 Tall Fescue," Roberts said. "It's not like managing other forages, because management is not based on yield or degrees of maturity, how stemmy it is. The question becomes how much toxin is ingested and how to keep that at a low level."

When you fertilize, use low levels of nitrogen, as from manure or poultry litter. High levels increase the risk.

Interseeding legumes can increase gain about a quarter-pound per day, but Roberts said to beware of depending too much upon legumes.

"Many producers believe that if they have legumes, the problem is solved," Roberts said. "There are benefits, but they



## Viralign™ 6 — More complete BVD protection

**Brad Williams, D.V.M., MBA, Elanco technical consultant, answers questions about BVD and talks about a new vaccine innovation**

- 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).<sup>2</sup> BVD usually spreads calf-to-calf, normally nose-to-nose, but also through contaminated surfaces, such as feed, water tanks and equipment. PI (persistently infected) calves are also major sources of BVD as they shed the virus their entire lives. Studies looking at the cost of exposure to a PI animal vary, but one of the largest studies shows losses approaching \$67.50 per head.”<sup>3</sup>
- Q. Is the industry making any progress in addressing the impact of BVD?**
- A.** “No, not really. In fact, over the last few years the incidence of BVD has not decreased in the beef industry.<sup>1</sup> We know that the major BVD viral strains in the United States are 1a, 2 and 1b.<sup>1</sup> 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.<sup>1</sup> During the same period, we saw the incidence of 1b rise from 41 to 61 percent.<sup>1</sup> Multiple studies also indicate that almost 78 percent of PI calves are infected with 1b.<sup>4,5</sup> 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.”
- Q. How is Viralign 6 different from other vaccines on the market today?**
- A.** “Viralign 6 is the first combination modified-live virus (MLV) vaccine to provide targeted protection against BVD strains — 1a, 2 and 1b. Traditional vaccines that only provide protection against 1a and 2 may not adequately cross-protect calves from 1b infections. This makes Viralign 6 an important health tool when it comes to targeting the most predominant type of BVD — 1b.”
- Q. What supports the effectiveness and safety of Viralign 6?**
- A.** “Initial research evaluating Viralign 6 showed no adverse effects on animals that were tested.<sup>6</sup> And, in a study challenging calves with BVD 1b, none of the vaccinated calves showed signs of BVD infection, but 80 percent of the control or non-treated animals did.<sup>6</sup> Viralign 6 was also proven to protect against BVD viral strains 1a and 2, bovine respiratory syncytial virus (BRSV), infectious bovine rhinotracheitis (IBR) virus and parainfluenza<sub>3</sub> (PI<sub>3</sub>) virus. Additionally, it’s important to know that Viralign 6 is labeled for low-volume, subcutaneous administration in cattle five months of age and older.”
- Q. When will Viralign 6 be available?**
- A.** “Viralign 6 is now available in 10-dose and 50-dose bottles. You can contact your veterinarian, Elanco sales representative or animal health products distributor to purchase product and to learn more.”

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.

<sup>1</sup>Ridpath, 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.

<sup>2</sup>Bartlett, 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>.

<sup>3</sup>Hessman, B. E., R. W. Fulton, D. B. Sjeklocha, T. A. Murphy, J. F. Ridpath, and M. E. Payton. 2009. Evaluation of economic effects and the health and performance of the general cattle population after exposure to cattle persistently infected with bovine viral diarrhea virus in a starter feedlot. *Am J Vet Res.* 70:73.

<sup>4</sup>Fulton, 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.

<sup>5</sup>Elanco Study No. BIOUS120010.

<sup>6</sup>Data available upon request.

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For years, the industry has relied on cross protection from commonly used combination vaccines that include bovine viral diarrhea (BVD) virus 1a and 2 to protect against 1b. Yet, at the same time, 1b has increased in predominance from 41% to 61% among BVD-positive calves and the incidence of BVD has not been reduced.<sup>1</sup>

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## MANAGEMENT MATTERS

# Monitoring Lameness Promotes Timely Culling

Locomotion scoring aids in assessing lameness

Story By Heidi Carroll

Profit margin forecasts for cow/calf producers and feeders have been positive and on the rise. These forecasts combined with the need to grow the national cow herd challenges all producers to make critical decisions about retaining cows or selling them to capture record high prices. Typical culling rates for beef herds can range from 10-20

percent depending on the manager's production goals, and 20 percent of the annual paycheck can come from the value of cull cows. When cows are on the cull list because of lameness, it is important to monitor them. This is especially critical if you choose to feed the cows to increase their value before selling them.

Lameness problems can arise for various reasons, but the limping cow will always be seen as a welfare concern. Perhaps a cow's conformation was simply poor for genetic reasons, which hinder her mobility. Culling cows with poor conformation is important to prevent lameness problems from escalating as she ages. Early culling also prevents her from passing on the same problems to her offspring. Keep good breeding records to monitor conformation problems that could lead to lameness problems and decrease the longevity of cows in the herd.

Lameness in cows can impact their well-being and behavior that in turn affect their productivity. It has been

shown that lame dairy cows decreased their time grazing, had a lower bite rate, and laid down longer than non-lame cows, which essentially translates to less nutrient intake. Additionally, lame dairy cows had decreased milk production. Lameness in dairy cows has been estimated to cost the producer \$300-\$400 because of the decreased production and extra treatment costs incurred. Within the dairy industry, locomotion scoring using a 5-point scale has been used to assess the severity, duration and prevalence of lameness in a cow herd. However, it does not indicate the specific cause of the lameness. To find a herd average that can

CONTINUED ON NEXT PAGE

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## LAMENESS • FROM PREVIOUS PAGE

be used to evaluate general management decisions, score each cow and take the average of all locomotion scores. In the case of large herds, scoring a small sample of cows to determine a herd average might be more appropriate. Locomotion scoring can be also be a useful diagnostic tool. One study validated the use of locomotion scoring in diagnosing painful foot lesions. Scores of 3 or higher were highly associated with a diagnosis of painful foot lesions.

What does lameness look like in the beef industry? On the feedlot side, lame cattle had 0.2 pounds less average daily gain than non-lame cattle. These findings from the feedlot should make cow/calf producers think about the impacts of limping cows in the herd when extreme weather changes her maintenance requirements. Also, the prevalence of lameness in feeder cattle rose from 1.6% to 2.5% after processing at the feedlot, which identifies handling as having an impact on the occurrence of lameness. Calm handling and maintained facilities are the keys to minimizing handling-induced lameness.

Like in the dairy industry, locomotion scoring in beef cattle settings can also help assess management decisions. Maybe you are curious if implementing a new mineral supplement has been effective to improve feet or leg health. If drylotting cows, maybe you want to know if the bedding or flooring is impacting lameness. Monthly assessment and collection of locomotion scores and tracking the herd to look for trends can help assess lameness. Identifying changes in normal locomotion can help detect painful foot problems that can affect production. Early treatment of lameness will improve cow well-being and might help limit the potential effects on cow production, and subsequently her calf's performance.

Once a subtle change is noticed, quick diagnosis is crucial. Investigate the foot and leg for obvious problems, such as debris, a wound or foot rot. Determine the most appropriate treatment options with a veterinarian. Consider the likelihood of recovery and the withdrawal times of any medications chosen for treatment. If an animal does not show signs of improvement following a veterinarian's recommended treatment time, the decision of either marketing the animal or humanely euthanizing it on the farm must then be discussed. Cows that become unable to stand freely or move on their own should not be transported and an approved method of euthanasia should be chosen to stop the animal's suffering. If the cow is able to be transported review withdrawal times of medications used and ensure all withdrawal times are met before marketing the cow. Implementing these best management practices helps guarantee our food supply remains safe, wholesome and free of residues.

—Source: Heidi Carroll is livestock stewardship extension associate with South Dakota State University.

## BACKGROUNDING FROM PAGE 30

biggest challenges are feed costs and managing the sick ones," he says. "They don't typically bring as much in the long run."

All in all, Thompson and Schnake say backgrounding has worked well for them, allowing more control over the price they receive for their cattle.

"As long as those calves are growing, they're going to make you money," Schnake

says. "Buy when the calves are cheap, sell 'em when they're high."

Thompson says trips to JRS serve as a learning experience and make him want to be in the agriculture industry that much more. He enjoys visiting with experienced cattlemen and hearing how they have made their way over the years. "All of their different ideas, meshed with my own, have gotten me where I am," he says. "It's an opportunity to learn."

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# Watch the Pendulum Swing

## February adjustments in cattle, beef prices, margins

Story By Derrell S. Peel

After the wild January ride, cattle and beef markets are settling into somewhat more stable and realistic levels moving forward. A barrage of winter storms has affected consumption and distribution of beef as well as feedlot production. For the year to date, beef production is down 8.6 percent with cattle slaughter down 9 percent. As a result, margins continue to adjust with relative winners and losers among the various beef industry sectors.

Wholesale boxed beef cutout had the wildest ride with Choice cutout spiking up to \$240/cwt., up 20 percent from the beginning of the year, and retreating to current levels under \$208/cwt. Packers benefitted only partially from the short-lived price increase because the values represented a limited spot market for wholesale beef and many packers had a significant portion of their beef production forward priced at lower values. The concurrent

increase in fed cattle prices has squeezed packer margins because the higher fed prices are being paid on all cattle, but only a portion of the boxed beef was sold at the high spot prices. Subsequently packer margins have been further squeezed as boxed beef prices have fallen more than fed cattle prices.

The relative winner in all this is the fed cattle market, where prices have retained more than half of the January gains. Fed prices were about \$135/cwt. the first week of January and have dropped to current levels of \$142/cwt. after peaking at \$150/cwt. Feedlots are very current at this time as the combination of high prices and winter weather have conspired to pull cattle forward and limit slaughter-ready supplies. Feedlot breakevens are at current market price levels or higher in many cases so the current situation might be one of limiting losses more than profitability, but it is still well above earlier expectations for the market at this time. A series of winter storms continues to pummel the northern half of the country, and winter-weather impacts on fed cattle perfor-

mance will continue for some time.

Feeder cattle markets did not, for the most part, participate in the January market roller coaster as feeder prices were already at high levels. However, the increase in fed cattle prices has made those feeder price levels more sustainable. Feeder cattle markets have been relatively quiet the past couple of weeks, staying mostly hunkered down through the severe weather that affected much of the country. However, feeder markets reawakened with higher prices noted in many markets, though somewhat less in the Southern Plains. Replacement heifer demand continues strong in a growing part of the country. Cull cow and bull markets are strengthening seasonally with reduced supplies and strong hamburger markets. Breaking and Boning cows are pushing \$100/cwt. in many locations with slaughter bulls bringing \$110-120/cwt.

— Derrell S. Peel is Oklahoma State University extension livestock marketing specialist.

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Extended-Release Injectable Parasiticide  
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NADA 141-327, Approved by FDA for subcutaneous injection  
For the Treatment and Control of Internal and External  
Parasites of Cattle on Pasture with Persistent Effectiveness

**CAUTION:** Federal law restricts this drug to use by or on the  
order of a licensed veterinarian.

### 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 <sub>4</sub>	<i>Dictyocaulus viviparus</i> – Adults
<i>Cooperia punctata</i> – Adults and L <sub>4</sub>	
<i>Cooperia sunabada</i> – Adults and L <sub>4</sub>	<b>Grubs</b>
<i>Haemonchus placei</i> – Adults	<i>Hypoderma bovis</i>
<i>Oesophagostomum radiatum</i> – Adults	
<i>Ostertagia lyrata</i> – Adults	<b>Mites</b>
<i>Ostertagia ostertagi</i> – Adults, L <sub>4</sub> , and inhibited L <sub>4</sub>	<i>Sarcoptes scabiei</i> var. <i>bovis</i>
<i>Trichostrongylus axei</i> – Adults and L <sub>4</sub>	
<i>Trichostrongylus colubriformis</i> – Adults	

Parasites	Durations of Persistent Effectiveness
<b>Gastrointestinal Roundworms</b>	
<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
<b>Lungworms</b>	
<i>Dictyocaulus viviparus</i>	150 days

### DOSAGE AND ADMINISTRATION

LONGRANGE® (eprinomectin) should be given only by  
subcutaneous injection in front of the shoulder at the  
recommended dosage level of 1 mg eprinomectin per kg body  
weight (1 mL per 110 lb body weight).

### 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  
rotational grazing because the environmental impact has not been  
evaluated for these scenarios.

**Other Warnings:** Underdosing and/or subtherapeutic  
concentrations of extended-release anthelmintic products  
may encourage the development of parasite resistance. It is  
recommended that parasite resistance be monitored following the  
use of any anthelmintic with the use of a fecal egg count reduction  
test program.

### TARGET ANIMAL SAFETY

Clinical studies have demonstrated the wide margin of safety  
of LONGRANGE® (eprinomectin). Overdosing at 3 to 5 times the  
recommended dose resulted in a statistically significant reduction  
in average weight gain when compared to the group tested at  
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°  
and 30° C). Protect from light.


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# Virtual Cloud Eases Record-Keeping Woes

## Google Drive provides producer record keeping, analysis

Story By Bryan Nichols

As the saying goes, knowledge is power. But it is more than that—knowledge is also time and money. Records provide the knowledge necessary to make informed and objective decisions. This is why accurate, detailed and accessible records are such a vital part of any successful business, including agricultural production.

If you are like me, a difficult part of record keeping is remembering to transfer information that has been collected on paper to a centralized location that is organized and maintained. This information also tends to simply collect dust and never be summarized. Another problem that arises in record keeping is that data may be coming from multiple people. To keep it organized, one person must collect all of the data and enter it into a system. In general, the more times that information changes hands, the more likely it ends up incorrect.

This is where the smartphone comes in. Today's technology allows us to have a computer in our hands at all times. We can use these devices to enter information into documents or spreadsheets that reside in the "cloud," which is, in essence, like a secure computer hard drive that can be accessed through the Internet from any authorized device. One such service is Google Drive, provided free of charge by Google. To get started, all you need is a Gmail account. Let's examine one way in which a producer might benefit from using Google Drive.

A stocker operator just received a load of cattle that will need to be checked daily and treated for sickness. Depending on the day, either Bob or Kenny may be responsible for these duties. Through Google Drive, both Bob and Kenny have access to the spreadsheet on which the treatment records are kept. Using this system, a spreadsheet does not have to be emailed back and forth each time a change is made. The spreadsheet that resides on Google Drive is updated in real time. Bob can even be looking at the spreadsheet from his device and see the edits that Kenny is making while he makes them. The same type of scenario could play out during calving season, with feeding schedules, etc.

Another service that works in a similar way is Dropbox. A benefit to using Google Drive over Dropbox is that Google Drive allows you to set up "Forms," which are essentially questionnaires that you design. These forms are easier to navigate from a small device and automatically format the data into a spreadsheet.

Now that we have the data in one place and it is kept in real time, the data can also be analyzed in real time. The spreadsheet can be set up to perform certain functions on all of the data that is entered. For instance, if the new load of cattle that

was just received is having health problems and you would like to visit about it with your veterinarian, he is likely to ask what the pull rate and death loss is. Answers to these questions can be automatically generated if the spreadsheet was set up correctly and are accessible wherever you have Internet access.

The University of Wyoming Extension and Wyoming Private Grazing Lands Team have developed a series of four short videos on the use of Google Drive that are very informative and can help you get started. To view the videos, go to YouTube and search for "smartphone ranch records."

This system is not the answer for everyone. However, this technology has the potential to simplify the record-keeping process, expedite the analysis of information and benefit many producers.

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SMALL INTESTINAL WORM ( <i>C. punctata</i> )	100-150
STOMACH HAIRWORM	100-150
BARBER'S POLE WORM	100-150
NODULAR WORM	100-150
BROWN STOMACH WORM ( <i>O. ostertagi</i> )	100-150
BROWN STOMACH WORM ( <i>O. lyrata</i> )	100-150
LUNGWORM	100-150

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For more information, visit [theLONGRANGElook.com](http://theLONGRANGElook.com)

**IMPORTANT SAFETY INFORMATION:** Do not treat within 48 days of slaughter. Not for use in female dairy cattle 20 months of age or older, including dry dairy cows, or in veal calves. Post-injection site damage (e.g., granulomas, necrosis) can occur. These reactions have disappeared without treatment.



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<sup>1</sup> Dependent upon parasite species, as referenced in FOI summary and LONGRANGE product label.  
<sup>2</sup> LONGRANGE product label.  
<sup>3</sup> Morley FH, Donald AD. Farm management and systems of helminth control. *Vet Parasitol.* 1980;6:105-134.  
<sup>4</sup> Brunson RV. Principles of helminth control. *Vet Parasitol.* 1980;6:185-215.  
<sup>5</sup> CYDECTIN® Injectable product label.  
<sup>6</sup> DECTOMAX® Injectable product label.  
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# Arkansas Bucks National Decline in Cattle Numbers

**Arkansas cattle numbers up 4 percent from last year**

*Story From University of Arkansas Extension Service*

Arkansas' cattle numbers are recovering nearly two years after the start of a drought that caused \$128 million damage to the state's beef industry, while national numbers plummet to their lowest levels in more than 60 years.

The number of cattle nationwide declined to 87.7 million head in January, the smallest since 1951, but Arkansas is continuing to buck the trend, with the January count up 4 percent from the year-earlier count to 1.66 million head, according to the National Agricultural Statistics Service.

"Due to the 2012 drought, the 2013 Arkansas cattle inventory declined 4 percent, and the national cattle inventory declined 2 percent," said Tom Troxel, professor and associate head of Animal Science for the University of Arkansas System Agriculture Division.

"However, with rains returning in 2013, the Arkansas cattle inventory recovered to about the cattle inventory level of Jan. 1, 2012."

As of Feb. 11, Arkansas was 99.66 percent drought-free. A year ago, nearly half the state suffered from drought. In 2012, the state was drought-free according to the U.S. Drought Monitor report issued April 24. By May 29, all of the state had some drought classification.

Arkansas beef cow numbers increased from 851,000 head in 2013 to 882,000 in 2014. Other states with a 4 percent or greater increase in beef cow numbers included Kansas, Mississippi, New York and Pennsylvania.

With drought deepening in California and still affecting

**CONTINUED ON PAGE 50**

While the nation's cow herd continues to decline, both Arkansas and Missouri saw increases in cattle inventory in 2013. Missouri returned as the number 2 beef cow state in the nation with a 63,000-cow increase last year.

# Missouri Regains No. 2 Spot in Cow Numbers

**National herd size continues decline**

*Story From University of Missouri Cooperative Media Group*

Missouri returned as No. 2 beef cow state in the nation, with a 63,000-cow increase in 2013. The USDA cow count shows Missouri rose from No. 3 back to the position it held from 1983 to 2008.

The state has 1.82 million cows, down from more than 2 million in 2008. The annual U.S. Department of Agriculture inventory shows Missouri to be one of only three states to grow herd size by more than 50,000 cows.

In 2013, Kansas went up 86,000 cows. Oklahoma grew by 51,000. Arkansas rose 31,000, making it the fourth-fastest-growing cow state in the nation.

Texas remains No. 1, with 3.91 million head. In a long-term drought, Texas cow numbers dropped 1.1 million head from the 2011 USDA report.

Nebraska, which had been No. 2 for two years, dropped to No. 4, with Oklahoma No. 3 in beef cow numbers.

In contrast, 37 states declined or held steady at 2013 levels,

says Daniel Madison, research economist at the University of Missouri Division of Applied Social Sciences.

Nationally, the cow herd continued declining, losing 255,000 head in 2013. The U.S. herd now has 29 million cows, the lowest level since 1962.

Observers anticipate an upturn in cow numbers. Declining beef supply brought sharp increases in cattle prices. Meanwhile, sharp drops in feed prices give economic signals for higher profits. That should lead to rebuilding the cow herd.

However, droughts and doubts about grass and hay supplies cause caution for herd owners nationally. Dry weather continues in parts of the United States.

"The economics seem to be in place for future growth in the beef cow numbers," says Scott Brown, MU beef economist.

"Missouri producers see those signals," he says. "Heifers retained in the herd are an indicator of optimism."

**CONTINUED ON PAGE 50**





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<sup>1</sup> Zoetis Trial MC013-07-AULA13 (Colorado study). <sup>2</sup> Zoetis Trial MC014-07-AULA13 (South Dakota study). <sup>3</sup> Zoetis Trial MC014-07-AULA13 (Oklahoma study). <sup>4</sup> Zoetis Trial MC017-07-AULA13 (New Mexico study).

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## BUSINESS BEAT

# New Intranasal Vaccine to Control Bacterial Pneumonia

## Merck introduces Once PMH® IN

**M**erck Animal Health has introduced Once PMH® IN, the only intranasal vaccine to deliver dual bacterial pneumonia protection in healthy beef and dairy cattle, including calves as young as one week of age. Once PMH® IN aids in the control of respiratory disease caused by Mannheimia haemolytica and in the prevention of disease caused by Pasteurella multocida – the leading causes of early-onset Bovine Respiratory Disease (BRD).

BRD has long-term health consequences that cost the U.S. cattle industry an estimated \$800 million to \$900 million annually in medical and treatment expense, reduced animal performance and mortality. It's also the single biggest killer of newly weaned calves.

"The intranasal administration of Once PMH® IN stimulates a strong immune response because vaccine antigens are delivered directly to mucosal surfaces in the nose – the major sites of immune response in cattle," said Rick Sibbel, DVM, Merck Animal Health director of beef cattle technical services. Studies demonstrate young calves given an intranasal administration of Once PMH® IN performed better on body temperature and weight gain measures when compared to calves given a commercial subcutaneous pasteurella vaccine.

"Calves given Once PMH® IN also had a dramatically reduced inflammatory protein level response, an indicator of infection and inflammation, which can adversely affect calf performance," explained Dr. Sibbel.

Once PMH® IN is a non-adjuvanted formulation with two dosing options – 1 mL applied in each nostril of the animal or a 2-mL dose delivered in one nostril. Because there is no vaccine injection site, carcass quality is not compromised.

While annual re-vaccination is recommended, the vaccine can be administered more frequently, depending on the farm's risk assessment or if the herd faces epidemic conditions. As always, consult your herd veterinarian for specific guidance. Once PMH® IN is available in 10-dose and 50-dose packages. To further assist in vaccine delivery, Merck Animal Health has developed new, less invasive cannula and pump-its, which are available through Merck Animal Health representatives or veterinarians. To learn more about Once PMH® IN, visit <http://www.merck-animal-health-usa.com/species/cattle/>.

—Source: Merck Animal Health



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## ARKANSAS COWS CONTINUED FROM PAGE 46

other western states, "The U.S. cattle inventory will continue to face difficulty recovering," he said.

### Beef expanding?

Troxel said that nationwide beef producers are starting to show some signs of expansion. The number of beef replacement heifers was up 2 percent or 5.5 million head.

"Arkansas beef cattle producers are also optimistic about the future -- they increased the number of replacement beef heifers by 6.2 percent," Troxel said.

It takes time to rebuild the cow numbers "but it starts with retaining heifers and it appears the cattle producers are beginning the process with the 2013 heifer crop," he said. "Beef cow replacements numbers have declined for many years. With an increase in beef replacement in 2013, there is an outside chance we could see an increase in beef cow numbers in 2015 or 2016, but much will depend on what happens with corn and feed prices."

Arkansas beef cattle producers may be a step ahead of the nation.

"With the smaller national herd, decrease in supply with an increase in demand for beef both domestically and foreign, beef prices are expected to be higher in 2014 than in 2013," Troxel said. "Cost of feed is expected to be lower than in recent years. If Arkansas cattle producers can manage their cost, profits can potentially be higher than in recent history."

### Calf numbers

In Arkansas, the calf crop for the full year of 2013 was 760,000, unchanged from 2012. The 2013 calf crop for the U.S. was 33.9 million head -- the smallest since 1949. All cows and heifers that have calved, at 890,000 head, were up 3 percent January 2014, and beef cows were at 882,000 head, up 4 percent. All heifers weighing 500 pounds and more were up 6.2 percent to 137,000 head. Steers were up 4 percent at 135,000 head, and calves weighing less than 500 pounds were down 2.7 percent to 360,000 head.

## MISSOURI INVENTORY CONTINUED FROM PAGE 46

Nationally, 1.7 percent more heifers are in the inventory over 2013. In Missouri, heifers are up 5.2 percent.

"Unlike the last few years, feed price projections are more promising for anyone raising cattle," Brown adds. "Feedlots are selling fed cattle at prices never seen before. Now that their feed bills are dropping, they pay more for feeder calves. They want to refill their lots."

The strongest developing trend in cattle prices is higher premiums for quality beef.

"The biggest premiums are paid for USDA prime grade

cattle," Brown says. "Missouri producers in the Quality Beef by the Numbers program gain current high market price, plus grid premiums in some cases of hundreds of dollars."

However, more than economics are in play, he adds. "Drought continues to be a concern. California and Nevada herds are being reduced because of lack of water and grass."

According to the U.S. Drought Monitor, conditions ranging from abnormally dry to moderate drought cover a swath from northern Missouri through Iowa, to southern Minnesota.

### Rain returns

During 2013, Arkansas experienced normal rainfall, producing adequate amounts of forage. This, along with strong selling prices in 2013, may have caused Arkansas beef producers to sell lightweight calves -- those less than 500 pounds -- rather than graze excess forage to improve

weights and hopefully profits, especially calves weaned in the fall.

The 2014 cattle and calf inventory is nowhere near the record numbers set in 1975. In 1975 there were 2.68 million all cattle and calves, 1.35 million cows and heifers that calve and 1.26 million beef cows.

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## EVENT ROUNDUP

# Fescue Schools Set Across State

## Find out how to replace toxic fescue pastures

Story From University of Missouri Cooperative Media Group

**T**oxic fescue pastures that cut Missouri livestock production are the target for four schools set to start at the end of March.

The Alliance for Grassland Renewal aims to teach how to eradicate and replant fescue pastures for better production.

"We have several novel-endophyte fescue varieties that eliminate the problem," says Craig Roberts, University of Missouri Extension forage specialist.

In four one-day schools, Missouri producers will learn steps for eradication and reseeding.

The intense schedule brings together state and national teachers to cover problems and solutions.

The toxicity has been recognized for years, but only recent-

ly did plant breeders release a number of fescue varieties to replace the long-established Kentucky 31. That grass, which belatedly was discovered to carry a toxic fungus, is now the dominant pasture grass in the state.

"We'll teach a plan for step-by-step replacement," Roberts says. No farm can replace all pasture at once and maintain their herds, he notes, but they can start with pastures that benefit the most.

"Kentucky 31 is one tough grass," Roberts says. That's why it is popular, it survives. But a downside is that it cuts calf growth by at least a half-pound per head per day.

"At today's prices, with feeder calves selling for nearly \$2 per pound, that's costly to Missouri farmers," he says. "With re-

placement, we will have huge economic impact. The time is right to take action."

Replacing pastures, killing the old and seeding the new, is a yearlong process.

University of Missouri researchers developed a spray-smother-spray method of eliminating K-31. Not only must the living plants be killed, but also the seed in the soil must be eradicated.

Then the new seeding must be established. Missourians have a recipe for that as well. A critical part is to use no-till planting to prevent soil erosion. Then the tiny seed must be planted about 1/8" deep in the soil. "Depth is critical," Roberts says.

A part of the alliance workshop will be on how to adjust seeding drills. "Planting too deep is the biggest source of failure," he says.

The day's agenda covers two major parts. First is establishment. Then grazing management of the new stand is critical. New varieties, because they are not toxic, can be overgrazed. The reason K-31 sur-

vived is that the toxin discouraged grazing, Roberts says.

The teaching plan also covers fescue toxicosis, testing, seed quality, new products, possible government incentives and farmer economics.

The schools run 9 a.m. to 5 p.m. at each location. A fee and advance registration is required.

School dates, locations and contacts are:

**March 31** • MU Southwest Research Center in Mount Vernon, Mo. Carla Rathmann, 417-466-2148.

**April 1** • MU Wurdack Farm in Cook Station, Mo. Will McClain, 573-775-2135.

**April 2** • MU Beef Research and Teaching Farm in Columbia. Lena Johnson, 573-882-7327.

**April 3** • MU Forage Systems Research Center in Linneus, Mo. Tamie Carr, 660-895-5121.

For more information about the schools, go to [www.grasslandrenewal.org](http://www.grasslandrenewal.org).

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Feeder Cattle & Calf Auction

February Receipts 19,236 • Last Month 44,095 • Last Year 18,467

February Video Sales

Video Sales from 2/17 & 2/24 • Total Video Receipts: 1,118

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 more than 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 more than 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: 318							
2/17/14											
	FEEDER STEERS		MED & LG 1				Eastern States	All States	East of the	Miss., La.,	& Ark.
HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY		FEEDER STEERS		MED & LG 1		
118	800	800	\$161.00	\$161.00	Current		WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY
	FEEDER HEIFERS		MED & LG 1-2			68	750	750	\$161.00	\$161.00	Jun-Jul
	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY						
68	725	725	\$151.00	\$151.00	Current						

Date:	South Central States	Texas, Okla.,	New Mexico, Kansas, Mo.	Offering: 792							
2/24/14											
	FEEDER STEERS		MED & LG 1				FEEDER STEERS		MED 2-3		
HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY	HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY
120	825	825	\$158.00	\$158.00	Current - Fleshy	380	825	825	\$155.00	\$155.00	Aug - Mexican origin
	FEEDER STEERS		MED & LG 1-2								
HEAD	WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY		FEEDER HEIFERS		MED & LG 1-2		
62	810	810	\$159.00	\$159.00	Current		WT RANGE	AVG WT	PRICE RANGE	AVG PRICE	DELIVERY
230	825	825	\$165.00	\$165.00	August						

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 a.m.  
(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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## ON THE CALENDAR

### March

- 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
- 21 Sunflower Genetics Annual Angus, Simmental &  
SimAngus Production Sale • Maple Hill, Kan.  
PH: 785-256-6461
- 21 Wildcat Creek Annual Angus & Red Angus Bull Sale  
Peabody, Kan. • PH: 316-799-1000
- 22 Aschermann Charolais Bull Sale • at the farm,  
Carthage, Mo. • PH: 417-793-2855
- 22 Professional Beef Genetics Open House Bull Sale  
Windsor Livestock Auction, Windsor, Mo.  
PH: 888-724-2855

- 23 Magness Land & Cattle Annual Bull Sale  
Miami, Okla. • PH: 918-541-5482
- 24 Oleen Brothers Angus & Hereford Bull Sale  
Dwight, Kan. • PH: 785-482-3398
- 24 Green Springs Bull Sale • Mo-Kan Livestock Auction  
Butler, Mo. • PH: 417-448-7416
- 24 Annie's Project for Farm Women  
Greene County Extension Center, Springfield, Mo.  
PH: 417-881-8909
- 28 Three Fires Ranch Angus Bull & Female Sale  
Fort Gibson, Okla. • PH: 918-541-0418
- 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
- 31 Fescue School • Southwest Center, Mount Vernon, Mo.  
PH: 417-466-2148

### April

- 1 Fescue School • Wurdack Farm, Cook Station, Mo.  
PH: 573-775-2135
- 2 Fescue School • MU Beef Research Farm,  
Columbia, Mo. • PH: 573-882-7327
- 3 Fescue School • MU Forage Systems Research Center,  
Linneus, Mo. • PH: 660-895-5121
- 4-6 Spring Ag & Urban Fest  
Ozark Empire Fairgrounds,  
Springfield, Mo. • PH: 417-833-2660

CONTINUED ON PAGE 54

# Replacement Cow Sale

6 p.m. | Friday | March 14

Joplin Regional Stockyards

I-44 & Exit 22 | Carthage, Mo.

**EXPECTING 1000 HEAD WITH THESE EARLY LISTINGS**

**60 Fall Calving Cows**—4 yrs to ss. Bred to Charolais bulls.

**41 Black Fall Calving Cow/Calf Pairs**—6-7 yrs old. Bred back to black bulls.

**25 Angus Cows**—4-6 yrs old. Fall calvers bred to Angus bulls.

**28 First Calf Heifers**—28 mos old. All half sisters bred to black Beefmaster bull.

Start calving April 1.

**40 Black and Black Baldie Cows**—4-7 yrs old. Bred to Angus bulls.

Spring calvers.

**75 Bred Heifers**—Bred to LBW Angus bull. Start calving Sept. 1

**10 Angus Bulls**—20-24 mos old. AI-sired by Connealy Final Product,  
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## ON THE CALENDAR

### April

- 5 Four State Angus Sale • Springfield Livestock  
Marketing Center, Springfield, Mo.  
PH: 417-844-2601
- 7 Annie's Project for Farm Women  
Greene County Extension Center, Springfield, Mo.  
PH: 417-881-8909
- 12 Buford Ranches Angus Bull Sale • Welch, Okla.  
PH: 918-948-5104
- 14 Annie's Project for Farm Women  
Greene County Extension Center, Springfield, Mo.  
PH: 417-881-8909
- 21 Annie's Project for Farm Women  
Greene County Extension Center, Springfield, Mo.  
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## **AUTO Abrinna 256A**

3/11/13 - Red/DBL Pld - 69% LF  
EXLR Review 7153R x SBLX Unknown 104U  
BW: -0.5 WW: 51 YW: 94 MA: 33 SC: 0.8  
CW: 26 RE: -.11 YG: .26 MS: .18 SMI: 50



## **AUTO Alesha 266A**

3/27/13 - HOMO Blk/HOMO Pld - 38% LF  
EXAR Upshot 0562B x AUTO Rebeca 292S  
BW: -0.3 WW: 56 YW: 117 MA: 35  
CW: -12 RE: -.05 YG: .04 MS: -.01 SMI: 47



## **AUTO Adele 213A**

2/3/13 - DBL Blk/Pld - 69% LF  
AUTO Will Power 160X x MAGS Manuela  
BW: 1.3 WW: 48 YW: 91 MA: 31  
CW: 14 RE: .03 YG: .14 MS: .32 SMI: 55



## **AUTO Akili 262A**

3/21/13 - HOMO Blk/HOMO Pld - 50% LF  
Sprng Crks Urlacher 311U x Logan's 903R  
BW: 2.5 WW: 48 YW: 88 MA: 25 SC: 0.2  
DC: 17 CW: 23 RE: -.46 YG: .44 MS: .19 SMI: 48



## **AUTO Arabella 245A**

4/20/13 - HOMO Blk/HOMO Pld - 38% LF  
S A V Brand Name 9115 x AUTO Rebeca 292S  
BW: 0.3 WW: 59 YW: 112 MA: 32 DC: 4  
CW: 17 RE: -.28 YG: .38 MS: .22 SMI: 53



## **AUTO Aries 247A**

5/2/13 - HOMO Blk/DBL Pld - 63% LF  
MAGS Xyloid x SBLX Unknown 104U  
BW: 0.1 WW: 49 YW: 93 MA: 30 SC: 0.8  
DC: 21 CW: 31 RE: -.06 YG: .26 MS: .21 SMI: 50



## **AUTO April 202A**

2/6/13 - HOMO Blk/Pld - 50% LF  
S A V Brave 8320 x MAGS Manuela  
BW: 1.0 WW: 54 YW: 100 MA: 38



## **AUTO Avalon 222A**

2/10/13 - Blk/HOMO Pld - 50% LF  
Dameron First Class x AUTO Lana 255L  
BW: 2.1 WW: 55 YW: 96 MA: 37  
CW: -15 RE: .04 YG: -.10 SMI: -.15 SMI: 42



## **AUTO Marie 4330A**

3/21/13 - Blk/DBL Pld - PB  
AUTO Cruze 132X x Carrousel's Peaches 4330P  
BW: 1.3 WW: 52 YW: 97 MA: 29 SC: 0.4  
CW: 21 RE: .39 YG: -.07 MS: -.04 SMI: 45

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