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Veterinary Feed Directive Coming Soon to an Antibiotic You May Use

Dr. Shane Gadberry, Associate Professor

If *veterinary feed directive* or *VFD* isn't in your ranching dictionary, it's something you need to learn the definition of, how it will apply to your health management program and what communications you will want to initiate with your veterinarian and feed mill or feed distributor to ensure you can manage disease without delay.

For beef cattle producers in Arkansas, chlortetracycline followed by sulfamethazine are two medicated feed additives that are affected. The FDA has identified these, along with several other antibiotics, as medically important. In an effort to protect the efficacy of these drugs and prevent subtherapeutic use from contributing to antimicrobial resistance, access to feeds containing them will only be available with veterinary oversight instead of over-the-counter.

Historically, cattle producers have been able to purchase several types of supplements fortified with chlortetracycline, including protein tubs fortified with insect growth regulators and medicated with chlortetracycline, mineral supplements, range meals and special purpose feed blends such as starter rations and milk replacers. The labeled use of chlortetracycline in cattle feed included improvements in weight gain and feed efficiency, control of bacterial pneumonia, control of active infection of anaplasmosis and control of bacterial enteritis caused by *E. coli* and pneumonia caused by *Pasteurella multocida*. Being over-the-counter, producers have also fed chlortetracycline for off-label purposes, including cattle grazing fescue, pinkeye and foot rot management.

Several changes cattle producers who have used chlortetracycline in the past will have to adjust to include:

- 1) Subtherapeutic use for improved weight gain and feed efficiency will no longer be an approved use. There are good alternative medicated feed additives approved for weight gain and feed efficiency improvements that are not used in human medicine and will remain available over-the-counter, including Bovatec (ai lasalocid), Gainpro (ai bambamycin) and Rumensin (ai monensin).
- 2) With veterinary oversight, producers will no longer be able to use VFD antibiotics off-label, so producers will need to work with their veterinarian on treatment protocols and injectable antibiotic solutions for controlling bacterial diseases that are not covered by the label, including pinkeye and foot rot.
- 3) Anaplasmosis is a concern in Arkansas, and cattle producers who have used chlortetracycline in the feed for anaplasmosis control should plan early with their veterinarian. Feeding free-choice minerals and purchasing concentrated forms of chlortetracycline to mix into minerals have been historical standard methods of delivery. Since the dose for anaplasmosis is based on weight and mineral tags have historically given varied intake rates but were offered in free-choice access feeders,

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it will be interesting to see how the feed directive and medicated feed options develop for dealing with this common health issue.

Arkansas is an approved state for using an experimental anaplasmosis vaccine that has been around since 2000. Producers who have had a difficult time controlling anaplasmosis should consider visiting with their veterinarian about the vaccine.

- 4) Another area of change that producers might not anticipate is when they purchase milk replacers or starter feeds. Non-medicated options are available, but medicated formulations will require a VFD. Stocker cattle receiving rations containing AS700 for bovine respiratory disease control will require a VFD. As veterinary-client-patient relationships develop, the veterinarian can provide direction on the cost effectiveness of medicated feed additives in shipping fever management compared to pulling and treating calves with prescription injectable antibiotics based on farm constraints of available pens for receiving, labor skill and time.

The more commonly recognized medicated feed additives used in Arkansas cow/calf and stocker cattle

management that do not require a VFD include:

- *Bloat Guard*: prevention of legume and wheat pasture bloat
- *Bovatec*: approved for increased weight gain and coccidiosis prevention
- *Corid*: approved for coccidiosis prevention
- *Deccox*: approved for coccidiosis prevention
- *MGA*: granted for use in heifers intended for breeding for suppression of estrus
- *Safe-guard*: internal worm parasite control
- *Rumensin*: approved for increased weight gain and coccidiosis prevention

When used according to the label, medicated feed additives can be a cost effective way of increasing weight gain in cattle and improving health and well-being. Always keep in mind that there is currently no allowance for off-label use and only approved combinations of medicated feed additives can be fed together. For example, Rumensin and Deccox is an approved combination; whereas, Bovatec and Deccox is not an approved combination. Bovatec has an approved combination with Aureomycin (chlortetracycline), but when used in combination will require a VFD for the chlortetracycline.

One challenge producers face with medicated feed additives is practical application when mixing feeds on-farm, especially when trying to use the most concentrated forms of medicated feeds. For example, a medicated feed additive

with a 90 g/lb concentration contains enough active ingredient in 1 pound to treat 450 calves if the dose is 200 mg per calf. As an alternative to the most concentrated forms, producers can source supplemental feed premixes and mineral supplements that provide more manageable concentrations of medicated feed additives. For example, a complete mineral with 1,440 g/ton Bovatec will provide 200 mg at 4.44 oz. The U of A fact sheet FSA3012, *Medicated Feed Additives for Beef Cattle*, has recently been revised and renamed and is available as FSA3012, *Medicated Feed Additives for Cow-Calf and Stocker/Backgrounding Production Systems*, through an Arkansas county Extension office or online publication system at www.uaex.edu. The fact sheet provides information on medicated feed additives by approved use category.

While the VFD implementation does not go into full effect until January 1, 2017, the rule becomes active in October 2015. The period between October 2015 and December 2016 allows the pharmaceutical industry time to address label changes while veterinarians, producers and feed mills begin navigating feed directive logistics and implementing record keeping practices.

For more information regarding medicated feed additives, veterinary feed directives or formulating supplements with medicated feed additives, visit with your veterinarian, feed supplier and local county Extension agent. ■

Arkansas 4-H Stallion Service Auction

Mark Russell, Assistant Professor

Coming in January of 2016, the Second Annual Arkansas 4-H Stallion Service Auction will take place online and will assist the Arkansas 4-H Horse Program as well as the University of Arkansas Horse Judging Team. We have a variety of cutter, working cow, halter and pleasure stallions. For the 4-H Horse Program, proceeds go primarily to fund:

- Scholarships
- Internships
- Learning opportunities such as camps, workshops
- National travel to various competitions

- Equipment for activities
- Books and other learning tools for 4-H Horse Clubs in Arkansas

For the U of A Horse Judging Team, proceeds go primarily to fund:

- Travel costs associated with judging competitions
- Registration fees
- Scholarships

While there will be more added to the list, breedings to these stallions will be available for 2016:

Cutting/Cow Type Horses

- | | |
|----------------------|-------------------|
| 1. SPOTS HOT | Sunrise Ranch |
| 2. DUAL R SMOKIN | J Five Ranch |
| 3. BAMA CAT | Austin Shepard |
| 4. ALITTLE SMOKE | Jennifer Forinash |
| 5. MISSISSIPPI CAT | Vick Etheridge |
| 6. MANDALAY REY | Vick Etheridge |
| 7. IM COUNTIN CHECKS | Circle Y Ranch |
| 8. CD SHADOW | Double J Ranch |

Western Pleasure Horses

- | | |
|------------------------|-----------------------|
| 9. PSU DYNAMIC KRYMSUN | Penn State University |
|------------------------|-----------------------|

Racing Horses

- | | |
|-------------------|-------------|
| 10. ILL SHINE TOO | David Payne |
|-------------------|-------------|

Halter Horses

- | | |
|---------------------------|----------------|
| 11. PLAYGIRLS RC RENEGADE | Jerry Wright |
| 12. ENQUEST | Double J Ranch |

4-H Horse Program activities are designed to teach youth leadership, responsibility, pride, respect, initiative and self-reliance. The 4-H Horse Program provides dedicated, hard-working youth with an opportunity to learn the tools to

enhance horse ownership. Participants in youth programs develop skills in communication, decision-making, problem solving, self-discipline, self-motivation, teamwork and organization. All of these have proven to be important factors to the participants in career preparation.

A University Judging Team offers students a rare opportunity to receive a head start in the horse industry before leaving college. Students gain knowledge in areas such as evaluating, decision making, communicating and teamwork, among other benefits. These students receive a “leg up” on the competition when seeking employment in the equine industry. Team members also develop contacts while on judging trips to the AQHA World Show, AQHA Congress, NCHA Triple Crown Events, and the NRHA Futurity, along with other regional judging contests. These contacts will be a valuable resource as they continue their endeavors after college.

You can visit www.arkansasstallionauction.com to keep up with the latest information or go like our Facebook page: “Arkansas 4-H Stallion Service Auction.”

For specific questions, contact Mark Russell at 501-590-5748 or mrrussell@uaex.edu. ■

Reduced Hay Quality in 2015 Will Increase Supplemental Costs This Winter

Paul Beck, Professor

The early test results are in for our yearly Winter Feeding and Hay Testing Extension meetings across the state, and although we likely have a final hay harvest in store for us (at least in Southern Arkansas), these results can be informative to examine. So far the Forage Testing Lab at the University of Arkansas Southwest Research and Extension Center has analyzed 94 samples from producers in four counties. We expected hay quality to decline this year with our exceptionally wet and cool spring and early summer, limiting our ability to harvest our first cutting of hay until late June or July in some cases. This also limited our ability to control weeds and fertilize our hay fields further impacting hay quality.

To date the average crude protein of these samples is 9.85 percent, and the average total digestible nutrients (TDN) of these samples is 54.5 percent. From 2012 to 2014, we analyzed 334 samples with average crude protein

of 11.3 percent and TDN averaging 56 percent; the decline in average hay quality from our previous three-year average appears to be minor until we dig deeper into the analyses.

The downward trend in crude protein is troublesome because it indicates that fertilization of hay fields is likely decreasing, which also decreases hay yield and indirectly (because of extending harvest interval to maintain yield per harvest) decreases TDN.

A dry (non-lactating) mature cow that is in the third trimester of pregnancy requires about 10 percent crude protein and 50 percent TDN. In the previous three years, only 39 percent of the samples tested were deficient in crude protein for the dry cow and only 15 percent of the samples tested were deficient in TDN. In the current year, 12 percent of the hay samples analyzed are considered deficient in TDN, but

64 percent are deficient in crude protein. These results are different from the long-term average (10 year) hay test results, where crude protein content was deficient for dry cows in 28 percent of the samples and TDN deficient in 53 percent of the samples. In essence, TDN has not been declining at the same rate as crude protein. The downward trend in crude protein is troublesome because it indicates that fertilization of hay fields is likely decreasing, which also decreases hay yield and indirectly (because of extending harvest interval to maintain yield per harvest) decreases TDN.

A lactating mature cow (in peak milk) requires about 12 percent crude protein and 60 percent TDN in her diet. The previous three-year average hay results indicate that 57 percent were deficient in crude protein and 76 percent were deficient in TDN for this lactating cow, but 84 percent of the hays sampled in the current year are deficient in crude protein and

97 percent are deficient in TDN. In most cases, the hays sampled this year were deficient in both crude protein and TDN for the lactating cow, and potentially large amounts of supplemental feed will be required to meet the cow's requirements. In previous years, there were hays (24 percent of samples) that would be adequate for a lactating cow without any supplementation, which proves to me that high-quality hay can be produced if properly managed with fertilizer and short harvest intervals.

What can you do? In the short run, the first step is to analyze each cutting or lot of hay separately and feed the lowest-quality hay to the cows with the lowest nutrient requirements, increasing the quality of hay offered as cows get closer to calving. Use the right supplements that meet the cow's needs. Do not rely on a one-size-fits-all approach to supplementation this winter. In the future, take steps to minimize the length of time lactating cows are fed hay, by either changing calving seasons to fit the supply of growing

forage or by planting complementary forages (cool season annuals for instance) to offset low hay quality for cows with high nutrient requirements. Also, hay producers should consider intensifying management of hay fields by fertilizing to meet soil test requirements for high production levels and shortening harvest interval of hay crops. Intensified hay production of at least some of the hay acres will ensure high-quality hay is available for cows with the highest nutrient requirements. ■

Grazing Management of Stockpiled Forages

Kenny Simon, Program Associate - Forages
Dr. John Jennings, Professor - Forages

Stockpiled forages can be valuable under any grazing method, but length of the grazing period can be increased substantially by using improved grazing practices. If cattle are allowed to continuously graze the entire pasture with unrestricted access to the stockpiled forage, the potential grazing period will be shortened because of waste and trampling damage to the ungrazed forage. However, strip grazing stockpiled forages using a temporary electric fence can offer the highest utilization.



In Arkansas, strip grazing management demonstrations doubled the number of animal unit (AU) grazing days per acre compared to continuous grazing. For strip grazing, a single strand of temporary electric fence wire was placed across the field to allow the herd access to a strip of pasture large enough for a two- to three-day grazing allotment. After cattle graze each strip of forage, the electric wire was advanced across the field to provide fresh strips of forage.

Some producers found that two wires work better for strip grazing. One wire limits the cattle to the strip being grazed, and the other wire was placed one strip ahead to prevent the cattle from moving across the entire field each time a new strip was offered. Only one wire needs to be moved each time in an alternating pattern to provide a fresh strip of forage. Grazing should begin on the end of the field nearest the water source. This reduced trampling damage to the remaining forage because the cattle travel back across the grazed area for water. A back wire was not needed when grazing dormant stockpiled forages so the cow's loafing area becomes larger as each strip is grazed. For pastures with the water source near the middle of the pasture, simply strip graze each side of the pasture starting at the water source. Place a second fence wire to restrict access to the half of the pasture that is not being grazed until grazing of the first half is finished.

The following is an example material list of electric fence items needed for strip grazing a 40-acre field.

- Electric fence energizer
- Digital voltage meter
- ½ inch x 6 foot ground rod
- ½ mile of poly-wire
- 2 fence reels
- 50 step-in post
- 12.5 gauge double-insulated wire

The energizer acts as the heart of the electric fence system, converting electric power into high-voltage pulses supplied to the electric fence wire. The energizer should be low impedance and have a joule rating of at least 0.10 output joules. Solar-powered energizers are commonly used for strip grazing due to their portability and ease of set-up. Solar-powered energizers commonly used in 300 Day Grazing demonstrations included Gallagher S17, Patriot Solarguard 155 and Stafix SXS. A digital voltage meter was used to measure the voltage of the fence. To ensure an accurate voltage reading, the voltage meter should be the same brand as the energizer.

Proper grounding of the energizer is essential for an effective electric fence. Galvanized ground rods of ½ inch or larger diameter should be used. Install the ground rod at least 3 feet into the ground and then connect the ground rod to the ground terminal of the energizer with 12.5 ga double-insulated wire. Temporary polywire was used to subdivide the field into smaller paddocks. The polywire should have a minimum of 6 strands of wire filament. Polywires that are white or contain white in combination with other colors tend to be the most visible.

Polywire can be rolled onto a fence reel and is easily moved from place to place as needed. Fence reels are available in a 1:1 or 3:1 gear ratio.

Polywire can be rolled onto 3:1 geared reels faster and easier than 1:1 geared reels. Pigtail posts were the most common temporary step-in post used in 300 Day Grazing demonstrations. Posts were installed in the ground by stepping on the small "foot plate" located at the base of the post. Wire was then threaded through the curled top of the posts.

Electric fence is a psychological barrier, so animals must be trained to the electric fence before they will respect it. When training livestock, the energizer should be set to deliver a full charge and set at a fast pulse rate (one pulse per second). Tying short pieces

of survey ribbon on the fence between each post increases the visibility of the fence, and the ribbons waving in the wind will pique the interest of the livestock. Let the animals investigate the fence at their own pace; do not crowd or rush them. As they walk slowly toward the fence to investigate, eventually touching the fence, the energizer will deliver a powerful shock that will be embedded in the memory of the animal. While the shock is unpleasant, the amperage is very low and its duration is extremely short allowing the animal time to back away from the wire once shocked without physical harm. Cattle may be trained

using a single strand wire placed 26 to 38 inches above ground with posts spaced every 40 to 50 feet. A minimum of 4,000 to 5,000 volts is required on the fence during the training phase.

An electric fence kit used for strip grazing can be purchased for approximately \$700. If the purchase price is depreciated over five years (average usability), then the cost per year equals \$140. Therefore, it would cost \$3.50/acre/year to strip graze 40 acres. In Arkansas demonstrations, savings per AU averaged \$10 more for strip-grazed demos than for continuously grazed demos. ■