



Judicious Antimicrobial Usage in Livestock

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Antimicrobial products are widely used in livestock production. They are used to prevent, control and treat many types of microbial infections and exposures encountered by livestock. As our scientific knowledge increases regarding unintended consequences derived from using antimicrobials, we must adjust our thinking and production practices to include decisions based on judicious use of antimicrobials and the best management practices associated with judicious use. Using antimicrobials incorrectly can contribute to increased antimicrobial resistance (AMR). This is a concern for both human and animal health and is the reason for changing the way that the livestock industry will use antimicrobials in the future.

The Food and Drug Administration (FDA) has issued guidelines for using Medically Important Antimicrobial Drugs (MIAD) including Guidance for Industry (GFI) #152, #209, #213 and the Veterinary Feed Directive (VFD). The principles associated with antimicrobial usage guided by these documents need to become incorporated as the standard for using these products by all segments of the livestock industry. Antimicrobial resistance is a very complex problem with no single cause or solution. It will take a concerted effort by all involved in both human and livestock health to face this challenge and modify behaviors that may contribute to AMR.

Some basic definitions:

- Antibiotic- a naturally occurring compound (drug) that fights infection caused by bacteria by either killing it (cidal drugs) or inhibiting its growth (static drugs).
- Antimicrobial- does the same but also includes synthetic compounds, including compounds that act on other microorganisms besides bacteria, such as anti-virals, anti-fungals and parasiticides. All antibiotics are antimicrobials, but not all antimicrobials are antibiotics.
- The New Mexico Veterinary Practice Act defines a valid Veterinarian/Client/Patient Relationship (VCPR) to exist when:
 - *The veterinarian has assumed responsibility for making medical judgments regarding the health of an animal being treated and the need for and the course of the animal's medical treatment.*
 - *The client has agreed to follow the instructions of the veterinarian.*
 - *The veterinarian is sufficiently acquainted with an animal being treated, whether through examination of the animal or timely visits to the animal's habitat for purposes of assessing the condition in which*

the animal is kept, to be capable of making a preliminary or general diagnosis of the medical condition of the animal being treated: and

- *The veterinarian is reasonably available for follow-up treatment*

- Prescription drug (Rx) - a drug or medication for use by, or on the order of, a licensed veterinarian. This requires veterinary oversight and a valid Veterinary Client Patient Relationship.
- Over-The-Counter drug (OTC) - A drug or medication that does not require veterinary oversight and can be purchased and used by anyone. When using an OTC drug, you must follow the label directions exactly or you are in violation of the law unless Extra Label Drug Use guidelines are followed (see below). Medically important OTC antibiotics will not be available in the near future.
- Labeled drug use (LDU) - any purchased drug or medication must be used **EXACTLY** as stated on the label. Legally, no variation may be used from labeled directions, including any variation in species, indication, dosage, route, frequency, timing or withdrawal time unless a valid VCPR is established and your veterinarian prescribes the variation, known as extra- label drug use. This includes OTC or RX medications.
- Extra Label Drug Use (ELDU) - to use a drug or medication in a way that varies from labeled directions in any form or manner. To legally use a drug extra label, it must be prescribed by a licensed veterinarian under a valid VCPR and carry additional label directions for use and a stated withdrawal time on that label.

The label contains all the information necessary for the use of the particular drug, and you should be familiar with all of the label information prior to use. The livestock species, class, indications, dosage, administration and withdrawal requirements must be followed exactly for legal use unless your veterinarian prescribes a variance or extra- label drug use. If a particular species is not listed on the label, it may only be used if EDLU is permitted for that species.

Critically Important drugs (and highest priority):

- Fluoroquinolones- (All)- Baytril ®, Advocin® (formerly A180®)- **Extra- Label Drug Use (ELDU) Prohibited**
- Macrolides- Tylan 40®, Micotil®, Draxxin®, Zactran®, and Zuprevo®- ELDU with VCPR
- 3rd Generation Cephalosporins- Naxcel®, Excenel®, Excede®- **(ELDU) Prohibited in Cattle and Swine**
- Trimethoprim/Sulfa- Sulfa- trim®, Uniprim®- ELDU with VCPR

Highly Important drugs: Can be used Extra - Label with a valid VCPR where permitted

- Penicillins- Pen BP, Procaine Pen G, Pen V
- Aminopenicillins- Amoxicillin, ampicillin
- Aminoglycosides- Gentamicin (prohibited to use in food animals), Spectinomycin, Amikacin, Kanamycin, Tobramycin, Neomycin, Netilmicin
- 4th Generation Cephalosporins-Cefepime
- Tetracyclines- Chlortet, Oxytet

Important Drugs: Can be used Extra - Label with a valid VCPR where permitted

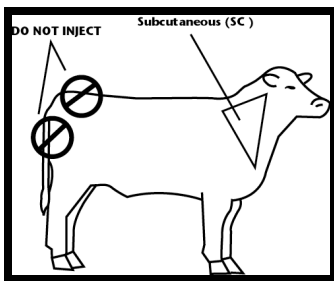
- 1st and 2nd Generation Cephalosporins
- 4th Generation Cephalosporin- Cephamycins

General Principles

- Communicate and consult with your veterinarian- give them all the information and clinical signs possible. Try to determine what “system” is involved- such as the respiratory system vs. the digestive system and let your veterinarian know what system you think is involved.
- When possible, the pathogen should be identified, and antimicrobial susceptibility testing used to help determine the best antimicrobial to choose
- Which antimicrobial to use should be based on what is the best choice for the suspected agent, with the economics of this choice being of secondary importance.
- As cow/calf producers, it is our responsibility to use all the technology available when developing preventative and herd health care options- preventing disease through other management factors will help decrease the overall need for antibiotics.
- Developing the immune system in the calves is the key to preventing Bovine Respiratory Disease (BRD), the most costly and most treated bovine disease.
 - Review your nutrition, mineral and vitamin supplementation programs.
 - Review your vaccination program and include Modified- Live Viral vaccines in your prevention program.
- Good calving management and adequate colostrum intake will help decrease calf scours and other calfhood diseases. Colostral immunity is the first step in developing immuno-competent calves- take care of the cows!
- All involved in the cattle industry should take antimicrobial resistance seriously. Ag groups have adopted judicious use guidelines and all segments of the industry should follow these guidelines.

Remember to follow BQA recommendations when administering any medications to food animals. All injections should be in front of the shoulder in the neck region whether intramuscular or under the skin. Give no more than 10-15 cc in any one location and separate injections by five inches or more.

Proper injection site:



Preventative health care and judicious antimicrobial usage should be a priority of all livestock producers. It is our responsibility to the consumer to reduce antimicrobial usage by using all the technology available to prevent disease in livestock under our stewardship.

References:

Guidance for Industry #152. Referenced June 15th, 2020 <https://www.fda.gov/media/69949/download>

Guidance for Industry #209. Referenced June 15th, 2020 <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cvm-gfi-209-judicious-use-medically-important-antimicrobial-drugs-food-producing-animals>



AUGUST AND SEPTEMBER 2021

Grant County Beef Cow Pregnancy Diagnosis Class – Silver City, August 24th

Labor Day Holiday – September 6th

NM State Fair – Albuquerque, NM – Sept. 9 – 19th

Beef Feeder Contest Entry Deadline – September 15th

5 State Beef Range Management Conference – September 20th
Clayton Civic Center - Clayton, NM

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