Changes in Antibiotic Labeling
Veterinary Feed Directive
Craig A. Payne, DVM, MS
Extension Veterinarian
Commercial Agriculture Program
University of Missouri

Changes in Antibiotic Regulations
• How did we get here?
• What changes will occur?
• Getting prepared

Concerns with Antibiotic Use
• Antibiotic residues
• Contribution to antibiotic resistance in humans
Monitoring System for Residues

- USDA – Food Safety Inspection Service (FSIS)
- The domestic sampling plan includes:
  - Scheduled Samples
  - Inspector Generated Samples

Scheduled Samples

- Consists of random sampling of tissue from healthy appearing food animals who have passed ante-mortem inspection

Results from 2012 – All Species

- Approximately 5400 samples taken
- 12 violations (0.02%) – 9 of which were found in bob veal calves
Inspector Generated Samples
(High Risk Population for Antibiotic Use)

• Test animals with active lesions
  – Respiratory System (Pneumonia)
  – Reproductive System (Uterine Infection)
  – Musculo-skeletal System (Lame or Swollen Joints)
  – Secretory System (Mastitis)
  – Lymphoreticular (Liver disease, including abscess)
  – Wounds (open sores or lacerations)
• Test animals with apparent injection lesions
• Test animals from previous violators

Results from 2012 – All Species

• Approximately 215,000 samples taken
• Approximately 940 or 0.04% of samples were confirmed positive for a violative residue
• These carcasses never entered the food supply

ANTIBIOTIC RESISTANCE
All animals carry bacteria in their intestines

RESISTANCE: Some bacteria are resistant to antibiotics

SPREAD: Resistant bacteria can spread to other animals, people, and environments

EXPOSURE: People can get sick with resistant infections from animals, food, and the environment

IMPACT: Some resistant infections can be severe or deadly
**FDA Guidance for Industry 152**  
Finalized 2003

“Evaluating the Safety of Antimicrobial New Animal Drugs with Regard to their Microbiological Effects on Bacteria of Human Health Concern”

- Discusses the use of antibiotics in herds or flocks for production purposes
- Contains the list of antibiotics used in livestock industry that FDA considers medically important in human medicine

**Medically Important Antimicrobials**

- Penicillins
- Tetracyclines  
  - Chlorotetracycline  
  - Oxytetracycline
- Macrolides  
  - Tylosin  
  - Tilmicosin  
  - Erythromycin
- Lincosamides  
  - Lincomycin

- Streptogrammins  
  - Virginiamycin
- Aminoglycosides  
  - Gentamycin  
  - Neomycin
- Sulfonamides  
  - Only potentiated sulfonamides are listed in GFI 152 however the FDA-CVM has indicated all sulfas are medically important

Not listed in 152: Ionophores, Bacitracin, Bambermycins, Carbachox, Coccidiostats, Laidlomycin

**FDA Guidance for Industry 209**  
Released in 2010, Finalized 2012

“The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals”

- Specifically addresses use of antibiotics in food producing animals for production or growth-enhancement purposes
Summary of GFI 209

- Begins with trying to build a case that production uses are detrimental to human health
- Transitions to discussing that administration of medically important antimicrobials to entire herd or flocks for production practices poses a qualitatively higher risk to public health (GFI 152)

Recommended Principles from GFI 209

**Principle 1:** The use of medically important antimicrobial drugs in food-producing animals should be limited to those uses that are considered necessary for assuring animal health.

**Principle 2:** The use of medically important antimicrobial drugs in food-producing animals should be limited to those uses that include veterinary oversight or consultation.

FDA Guidance for Industry 213

Released 2012, Finalized December 2013

- “New Animal Drugs and New Animal Drug Combination Products Administered in or on Medicated Feed or Drinking Water of Food-Producing Animals: Recommendations for Drug Sponsors for Voluntarily Aligning Product Use Conditions with GFI #209”
Summary of GFI 213
• Defines medically important antimicrobials
  – All drugs listed in GFI 152 Appendix
  – Does not include ionophores
• Describes the process for voluntarily phasing out
  antibiotics for production purposes
• Discusses the phasing in of veterinary oversight for
  all therapeutic uses of antibiotics in the feed or water
• Also provides a timeline for implementation – 3 years
  from the date of publication of the guidance (December 2016)

Summary of Changes
Increased rate of weight gain/improved feed
efficiency indications removed from labels:
  – Tetracyclines –
    • Chlortetracycline (Aureomycin®)
    • Oxytetracycline (Terramycin®)
    • Chlortetracycline/Sulfamethazine (AS-700®)
  – Aminoglycosides
    • Neomycin w/ oxytet combos (Neo-Terramycin®)
  – Streptogramins
    • Virginiamycin (V-Max®)

Summary of Changes
A Veterinary Feed Directive (VFD) will be
required to:
  – Obtain and use antibiotics that are delivered in
    the feed
  – Obtain and use products that already contain an
    antibiotic
    • Bagged feeds, mineral blocks, milk replacer, etc.
• A prescription will be required to:
  – Obtain and use antibiotics that are delivered in
    the water
Important Points

• These changes DO NOT apply to ionophores such as Rumensin®, Bovatec®, Deccox® or Corid®

• A Veterinary Client Patient Relationship (VCPR) is required before a veterinarian can write a VFD or prescription

Missouri VCPR

"Veterinarian-client-patient relationship", the veterinarian has assumed the responsibility for making medical judgments regarding the health of the animal and the need for medical treatment, and the client, owner or owner's agent has agreed to follow the instructions of the veterinarian. There is sufficient knowledge of the animal by the veterinarian to initiate at least a general or preliminary diagnosis of the medical condition of the animal. Veterinarian-client-patient relationship means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal by virtue of an examination or by medically appropriate and timely visits to the premises where the animal is kept. The practicing veterinarian is readily available for follow-up care in case of adverse reactions or failure of the prescribed course of therapy"

Important Points

• Extra-label use of feed grade antibiotics is illegal
• Extra-label use is using a drug at a dose, by a route, for a condition or indication, or in a species not on the label
• Aureomycin® example
  • In cattle Aureomycin® is labeled for
    – control of anaplasmosis,
    – treatment and control of pneumonia
    – treatment of bacterial enteritis
Important Points

• Length of expiration date on a VFD is not to exceed 6 months if not specified on the antibiotic label
• The producer, veterinarian and distributor will need to keep a copy of the VFD on file for 2 years

Important Points

• Information your veterinarian will need from you to fill out a VFD
  – Production class – weaned calves, cows, etc
  – Approximate number of animals to be fed the medicated feed prior to the expiration date
  – Location of animals
  – If you are using other feed additives
  – Where you will get the medicated feed

Producer Responsibilities

21 CFR Part 558.6

1. Can only feed VFD feed upon receipt of valid VFD from vet
2. Follow VFD exactly, including withdrawal times
3. Do not feed VFD feed past the VFD expiration date
4. Do not transfer VFD feeds to another user
5. Feed only to the species/classes of animals specified on the VFD
6. Do not mix VFD feed with other medicated feeds unless authorized by the VFD
7. No off label or extra-label use
8. Keep VFD records a minimum of 2 years
9. Make records available to FDA for inspection upon request
According to 2009 FDA data

- 96% of antibiotics used in the livestock industry are administered through the feed and water
- 61% of these antibiotics are considered medically important by the FDA
- 98% of those medically important antibiotics are available OTC

Questions?

- Growth promotion/feed efficiency: the antibiotics are administered, usually in feed, to increase growth rates and improve feed efficiency. The goal of this is to maximize production from the animals.
- Prevention of disease: there is a known disease risk present and the antibiotics are administered to prevent infection of animals.
- Control of disease: disease is present in a percentage of a herd or flock and antibiotics are administered to decrease the spread of disease in the flock/herd while clinically ill animals are treated.
- Treatment of disease: the antibiotics are administered to treat sick animals.
Principles for Judicious Use of Antibiotics

Craig A. Payne, DVM, MS
Beef Veterinary Extension Specialist
Commercial Ag Program
Animal(s) Treated

Resistant Bacteria Develops and Leaves Farm

Resistant Bacteria in Meat

Person Infected

Antibiotic Treatment in Person Ineffective

#1: Prevent Problems

• Emphasize appropriate animal health care practices such as
  – Adequate nutrition
  – Biosecurity
  – Vaccination protocol designed by a local veterinarian

#2: Select Antibiotics Carefully

• Consult with the herd veterinarian regarding the disease condition
  – Will the condition respond to an antibiotic
  – If so, which antibiotic should I use
• Avoid combination therapies unless there is clear evidence to show the practice is beneficial
#3: Use Antibiotics Carefully

- Extra Label Drug Use (ELDU)
  - Using a drug at a dose, by a route, for a condition or indication, or in a species not on the label
  - Applies to all drugs including over the counter (OTC) products (Question 11)

ELDU

- A careful diagnosis has been made within the context of a veterinarian/client/patient relationship (VCPR)
- Procedures are instituted to assure the identity of the treated animal(s) is carefully maintained
- Extended withdrawal period is used prior to marketing the animal

ELDU

- When is ELDU not appropriate?
  - When not prescribed by a veterinarian
  - When route of administration is changed for convenience
  - When cost is the factor driving the decision regarding antibiotic selection
  - When using antibiotics in feed (Question 2)
  - When drug is not FDA approved for animal or human use
  - When used for purposes other than therapy
#3: Use Antibiotics Carefully

- Extra Label Drug Use (ELDU)
- Limit antibiotic treatment to ill or at risk animals
- Administer no more than 10 cc’s at any one site
- Treat for the recommended time period
- Calculate dosage based upon animals weight

#4: Maintain Records

- Animal ID
- Treatment date
- Drug and dose administered
- Weight
- Earliest date the animal would clear the withdrawal period
- Keep for at least 3 years (Question 10)

It’s Time to Play

The Good, The Bad, and The Illegal
You have a 6 month old steer with bacterial pneumonia. You decide to treat with gentamicin.  
– Is this Good, Bad or Illegal?  
**Bad**

You determine a 5 year old beef cow has footrot. You decide to treat her with LA-200 using the label dose of 4.5 cc’s/cwt.  
– Is this Good, Bad or Illegal?  
**Good**

You determine a 5 year old beef cow has footrot. You decide to treat her with 60 cc’s of penicillin.  
– Is this Good, Bad or Illegal?  
**Illegal**
• You have a 6 month old steer with bacterial pneumonia. You decide to treat with Banamine and you administer it in the neck muscle.
  – Is this Good, Bad or Illegal

Illegal