Antibiotic Use on Dairy Farms

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This issue is high visibility!

This issue is growing

Antibiotic Usage Guidelines

- All antibiotics have been classified relative to their value for treating humans
- Of antibiotics on this list only Ceftiofur is considered Critically Important
  - Spectramast
  - Excede, Excenel, Naxcel

Changing Expectations About Antibiotic Usage

- Consumers perceive risk but...
  - Detected residues are declining
  - Detection limits for residues appear to be far below level of harm to humans
- Concern is growing about antibiotic resistance and use of antibiotics on farms
- Preventive health programs focus on minimizing the need for use of antibiotics

BUT...
Perceptions are Reality
As an industry we must be responsible and responsive

Mastitis is the Most Common Reason for Antibiotic Use

- Incidence & recurrence greatly exceed other bacterial diseases
- 65-85% of antibiotics are used to treat or prevent mastitis
  - Pol & Ruegg, JDS 2005
  - Saini, et al., JDS 2012

Graph showing median annual antibiotic treatments on 47 large WI dairy herds.
Types of Treatments Used for Mastitis

- **Drugs Used for Treatment**
  - 39 Cases per 100 cows per year
  - 4 days antibiotic treatment
  - Almost all cases receive intramammary tubes
  - About 33% also receive an injectable treatment
    - Polyflex, Excenel, Oxytet, & others.

Treatment of Mastitis

- **ALL Approved Intramammary Products**
  - Amoxicillin
  - Hetacillin
  - Pirlimycin
  - Ceftiofur
  - Cephapirin
  - Cloxacillin
  - Penicillin

Criteria for Justifiable Antibiotic Usage

- **Local veterinarians** should develop & assess protocols
- Cows should be **examined** before antibiotics are used
- There should be a **reasonable belief** that bacterial infection is present
- **Narrow spectrum** drugs should be 1st choice
- Duration should be as **short** as possible
  - To result in effective cure
- **Extra-label use** should be avoided
  - When on-label use is possible

The most common use of IMM Antibiotics is to treat a no-growth mastitis case

We Need to Be Responsible in How We Use Antibiotics

- Consumers are concerned that those of us in dairy industry are overusing drugs
- It is important for us to understand these concerns and make sure that
  - We use drugs responsibly
  - We use them only when needed to maintain the wellbeing of the cows we care for

When using Antibiotics We Need to be Accountable

- Treatment and control of disease can be confusing
  - What is a lactating cow?
- Many of the rules are confusing and understanding allowable drug usage requires working closely with a local veterinarian to ensure that all drugs are used responsibly
Confusion Point 1
What is a Lactating Cow?

- Lactating dairy cattle are defined by FDA as dairy cattle 20 months of age or older regardless of whether they are milking or dry.

Confusion Point 2
How Can Sulfonamide Drugs be Used?

- The only sulfonamide available for use in dairy cattle older than 20 months of age is sulfadimethoxine (SDM) boluses.
  - In adult dairy cattle this drug may only be used on-label.
  - "Albon Boluses for Cattle is used for bacterial pneumonia, shipping fever, foot rot, calf diphtheria. Effective against some strains of Streptococcus, Staphylococcus, Klebsiella, Shigella, Proteus, E. coli, and Salmonella.
  - No usage allowed for other diseases such as mastitis.

Allowable Drug Usage

- Over the Counter
  - Can be purchased without a veterinary prescription
  - Must be used exactly as the label indicates
  - If used not according to the label then OTC drug requires a prescription for extralabel usage

- Example – PPG
  - Label indication is for bacterial pneumonia
  - Dosage is 3,000 IU/lb
  - 1cc/100 lbs
  - IM: no more than 10 cc in one site
  - No more than 4 days

OTC Penicillin

- Example – Banamine
  - Indications: pyrexia associated with bovine respiratory disease, endotoxemia, and acute bovine mastitis.
  - Control of inflammation in endotoxemia.
  - Dosage: 1-2 ml/100 lb
  - IV administration
  - 36 hours milk; 4 d meat

Confusion Point 3
What is Extralabel Drug Use?

- Permitted only under the supervision of a veterinarian.
- Allowed only for FDA approved animal and human drugs.
- Not allowed for non-approved compounds including botanicals.
- Must have a valid VCPR.
- Allowed only for therapeutic purposes only. Not drugs for production use.
- ELU in feed is prohibited.
- Milk replacer is FEED.
- ELU is not permitted if it results in a violative food residue.
Allowable Drug Usage

- **Extralabel**
  - Any administration of a product that does not exactly follow the label indications and dosage
  - Different dosage
  - Different frequency
  - Different route
  - Different animal
  - Different disease

- Example – PPG
  - 3 cc/100 lbs
  - Given for >4 days
  - Given for treatment of metritis, mastitis or other non-label indication
  - Given subcutaneous

Not All Drugs Can be Used in Dairy Cows Even by Vets

- **Drugs prohibited from use in food animals:**
  - DES, Chloramphenicol, Nitroimidazoles (including metronidazole)
  - Nitrofurans (including topical use), Clenbuterol, Dipyrene, Glycopeptides (example vancomycin)
  - Gentian violet, Phenylbutazone in adult dairy cattle
  - Drugs **prohibited from extralabel use in food-producing animals:**
    - Sulfonamides in adult dairy cattle
    - Fluoroquinolones
      - Baytril
      - A180
    - Antibiotics used off label in feed

Confusion Point 4

FDA Rules on Cephalosporins

- Extralabel use of cephalosporin drugs are prohibited
- Not Permitted even by Vet
  - Twice daily intramammary treatment using SpectramastLC
- Exceptions:
  - Extralabel use of Today
  - Extralabel use of Ceftriaxone products to treat diseases not on the label
  - Only if the labeled dosage & duration are followed

Confusion Point 5

Veterinary Feed Directive

- New rule initiated on January 1, 2017
- Applies to medically important antibiotics that are given in feed and water
  - Does not apply to coccidiostats
    - Rumensin, Corid, Bovatec, Decox are not medically important
- All antibiotics that are given in feed or water are now require vet authorization
  - VFD is for feed
  - Prescription for water
- Does not apply to injectable antibiotics
  - OTC injectables are still available

What is a VFD?

- A form from the veterinarian that authorizes use of the drug in the feed
- The form must specify:
  - Farm
  - Group of animals
  - Specific drug to be used
  - Feeding rate
  - Duration of treatment
- Veterinarian must
  - Provide a signed copy to BOTH
    - producer
    - and feed mill or feed distributor
  - Keep a copy for 2 years
  - have license in state where animals are treated
  - No phone in VFD are allowed

VFD Rules

- Must be written by a veterinarian that has the veterinary-client patient relationship
- Are effective for up to 6 months
  - But apply to a specific group of animals
  - Not at discretion of producer
- Only labeled usage of these products is allowed
  - No extralabel use of antibiotics in feed is allowed
- VFD are written for a specific claim
  - Written for a specific group, indication and a time period
Impact of VFD on Dairy Herds

• Adult dairy cows are not fed antibiotics
  – Very limited impact
• Impact is mostly on medicated milk replacers
  – Oxytetracycline, neomycin, chlortetracycline require VFD

• All VFD must be for treatment
  – No extralabel usage for production or prevention is allowed
• All VFD must follow the label directions for the product

Impact of VFD on Dairy Herds

• Hoof Trimmers cannot buy or dispense powdered antibiotics to treat heel warts
  – These products are not labeled for this use
  – Lincomycin or Tetracycline powders
• Producers must get a prescription for these products from their vet

How Can We Ensure Responsible Use Of Antibiotics?

• Ensure the local veterinarian has a strong relationship with the producer
  – Vet must be involved in animal health decisions
  – Discuss and agree upon treatment protocols
• Understand differences in allowable types of drug usage
  – Read & follow labels
  – All extralabel drug usage must be supervised by veterinarian
• Focus must be on providing good animal health care
  – Prevent disease & don’t treat without a diagnosis

• Producers should limit who is allowed to treat
  – Provide training
  – Monitor drug usage
  – Don’t treat cows in the milking parlor
• Identify all animals using permanent ID
  – Keep temporary (cowside) and Permanent cow records
• Labels of all drugs should be reviewed regularly

Conclusion

• Veterinarians and farmers need to work closely together to ensure that drugs are used appropriately on dairy farms
• Each farm should work with their veterinarian to establish a written agreement that defines the role of the vet
  – This agreement will form the basis for ensuring proper usage of drugs and oversight that minimizes the risk of residues in milk and meat