How to Prepare for the Veterinary Feed Directive (VFD)


Bruce W. Hoffman, DVM
Technical Consultant
Beef Business Unit
A Robust Portfolio

Health Management Products
- *ARSENAL® 4.1*
- *BVD Shield® 3*
- *Clostri Shield®*
- *Pinkeye Shield® XT4*
- *Somnu Shield®*

Vaccines
- *BOVINE ECOLIZER®+C20*
- *Bovine Pill Shield®*
- *Clostridium Perfringens Type A Toxoid*
- *Fusogard®*
- *Quick Shield®*
- *ReproSTAR®*
- *Titanium*
- *Vib Shield® Plus L5*

Antibiotics & Parasiticides
- *Micotil® (tilmicosin injection)*
- *Pulmotil®*
- *StamGuard®*

Feed Optimization Products
- *Kefermix® B50*
- *Kefermix® X30*
- *Kefermix® X25*
- *Tytan®*

End-point Management Products
- *Component®*
- *Compudose®*
- *Encore®*
- *Optiflex®*

The Good News

- **Today**, antibiotics used in farm animals are not top-of-mind
- Few think about them as they shop for food
2013 International Consumer Attitudes Study (ICAS)

2nd Edition: May 2013

34 studies
26 countries
100,000+ consumers

Unaided questions
Spending data

Food Buyer: 95%
- Taste
- Cost
- Nutrition

Luxury Buyer: 4%
- Luxury/Gourmet
- Organic/Local
- Gardens

Fringe
- Food bans
- Restrictions
- Propositions

Consumer Concerns

Antibiotic use, among other things, makes consumers uncomfortable.

<table>
<thead>
<tr>
<th>Method</th>
<th>Total</th>
<th>Food communicators</th>
<th>&quot;I'm not aware of this method&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplementing naturally occurring animal hormones</td>
<td>55%</td>
<td>72%</td>
<td>2%</td>
</tr>
<tr>
<td>Using dihydrogen monoxidation (H₂O₂) on crops &amp; farm animals</td>
<td>52%</td>
<td>53%</td>
<td>14%</td>
</tr>
<tr>
<td>Using pesticides on crops</td>
<td>49%</td>
<td>59%</td>
<td>1%</td>
</tr>
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<td>Administering animal antibiotics</td>
<td>48%</td>
<td>61%</td>
<td>1%</td>
</tr>
<tr>
<td>Using genetically modified (GMOs) or biotech seeds</td>
<td>43%</td>
<td>51%</td>
<td>2%</td>
</tr>
<tr>
<td>Using fertilizers on crops</td>
<td>26%</td>
<td>31%</td>
<td>—</td>
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Source: m&i research for USFRA, 10/11, n=1,400
Consumer Concerns

Antibiotic use, among other things, makes consumers uncomfortable.

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<th>1-10 scale; percent responding “uncomfortable” (1-3)</th>
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The Challenge...

It’s not what you say, it’s what they hear.
The Disconnect

<table>
<thead>
<tr>
<th>YOU SAY</th>
<th>THEY HEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>We use antibiotics to be more efficient.</td>
<td>Because you only care about making money…</td>
</tr>
<tr>
<td>We use antibiotics to keep animals healthy.</td>
<td>You HAVE to use antibiotics because animals are kept in poor conditions.</td>
</tr>
<tr>
<td>Regulatory agency reviews have approved antibiotics as safe after rigorous review processes.</td>
<td>We don’t know if it’s safe for the long term. They’ve been wrong before…</td>
</tr>
<tr>
<td>There are rules that dictate maximum residue levels allowed in animals.</td>
<td>How can we be sure ANY residue is safe?</td>
</tr>
<tr>
<td>There is no evidence that use of antibiotics in animals causes resistance in humans.</td>
<td>Yeah right. We’re using so many, that has to be part of the reason.</td>
</tr>
</tbody>
</table>

What Do We Do?

• In a world where our audience doesn’t TRUST
  – That antibiotics are safe
  – That they’re used judiciously
  – That they’re used for the right reasons
Rebuilding Trust in Antibiotics

- Acknowledge concerns
- Accept responsibility
- Add context
- Align language

Access to Antibiotics

- A public health issue
- Access to effective antibiotics

Critical for public health
Vital for livestock & poultry production
Essential for animal well-being
FDA Releases Antibiotic Guidance

- FDA goal: protect human health & curb development of antimicrobial resistance
- 3 proposed documents to modify use of medically-important antibiotics in food producing animals

Compliance Timeline

- FDA pursuing voluntary compliance
- FDA to evaluate progress 3 years after final publication
  - Guidance for Industry #213 finalized Dec. 2013
  - FDA will consider “further actions” as warranted

Q2, 2012: 209/213/VFD published
Q3, 2012: Docket comments due
Q1, 2014: Sponsors must notify CVM of intent to engage
Q2, 2013: Public hearings
Q1, 2017: Implementation complete
Implications

- Food producers aren’t losing all feed-grade antibiotics
- The way they’re used will change
- Key phrase is “medically-important”
  - Refers to drugs important for therapeutic use in humans

Three Classes of Antibiotics

- **Human-only antibiotics** are not approved for use in animals, creating a reserve of unique antibiotics for human health needs
- Because animals are susceptible to different diseases & have different needs than humans, **animal-only antibiotics** have been developed to treat specific health requirements of animals & are not used in human medicine
- **Shared-class antibiotics** are approved for animals & humans. Going forward, Elanco will only promote this class of antibiotics for therapeutic uses in animals under veterinarian supervision
FDA/CVM (GFI #209) Will Phase Out Performance Indications for Certain Antibiotics

**Therapeutic uses**

- **Disease Treatment**: Administration of an antimicrobial to an animal or group of animals that exhibit clinical disease.
- **Disease Control**: Administration of an antimicrobial to an animal or group of animals whose morbidity or mortality has exceeded baselines.
- **Disease Prevention**: Administration of an antimicrobial to an animal or group of animals that are considered to be at risk, but prior to onset of clinical disease.
- **Growth, Nutrition, Health Maintenance**: Administration of an antimicrobial to an animal or group of animals that results in improved performance, i.e. weight gain or feed conversion.

**What Will Change?**

<table>
<thead>
<tr>
<th>Antibiotic classes</th>
<th>Animal-only</th>
<th>Shared-use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance</strong></td>
<td>Ionophore — ADG/FE</td>
<td>CTC — ADG/FE</td>
</tr>
<tr>
<td></td>
<td>Bambermycin — ADG</td>
<td></td>
</tr>
<tr>
<td><strong>Prevention</strong></td>
<td>Ionophore — Coccidosis</td>
<td>Oxytetracycline — SFC</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>Ionophore — Coccidosis</td>
<td>Tylan — Liver abscess</td>
</tr>
<tr>
<td></td>
<td>Carbodox — dysentery</td>
<td>CTC — Pneumonia</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>Tiamulin — dysentery</td>
<td>CTC — Liver abscess</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CTC — Anaplasmosis</td>
</tr>
</tbody>
</table>

- No longer allowed
- VFD required
Establishment of VFDs

• First passed in 1996 (ADAA; 21 CFR 558)
• Requires a coordinated effort: producer, veterinarian, nutritionist & feed supplier
  – Requires veterinary oversight of feed use antimicrobials
  • Written statement (VFD form) by licensed veterinarian that authorizes client/producer to obtain & use (on designated products)
  – Follow “Standards of Practice” in state where cattle reside. Drops the requirement for VCPR

Modernizing VFD

• GFI #209 proposed to modernize & add “shared-class” products
• This raised concerns….
  – Limited experience with VFD process
  – Logistical & administrative burden
  – Access to veterinarians
  – Increased cost (producer, vet, feedmills)
Veterinarian Use & Oversight

• Each product approved under the VFD regulations includes the following caution:

CAUTION: Federal law limits this drug to use under the professional supervision of a licensed veterinarian. Animal feed bearing or containing this veterinary feed directive drug shall be fed to animals only by or upon a lawful veterinary feed directive issued by a licensed veterinarian in the course of the veterinarian's professional practice.

Caution: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

VFD Regulations on Distribution

• One-time Notifications
  – Notice to FDA of distribution of VFD feeds
    • Notification to FDA that you intend to handle/distribute VFD drug-containing medicated feeds
  – Acknowledgement of distribution limitations for VFD feeds
    • Document stating that the purchasers will sell the VFD feeds only to producers with valid VFD orders or to other distributors for whom they have acknowledgement notices
Visit globalvetlink.com to get started
Click “Login/Sign Up” in the top-right corner to create a new account or to sign in
Key Points: Feed Antibiotics & VFD

- Coordinated effort, but still allow judicious use of medically-important antibiotics
  - One-time notification
  - Require vet oversight
  - Pen or group animal detail
  - Written or electronic form authorization

- Effort to protect human & animal health & secure food safety
Investing in Innovation

Pursue advances & treatments that lessen reliance on antibiotics
Seek new therapeutic indications for treatment, control & prevention of diseases
Support use of antimicrobials used only in animals for growth & performance (where permitted)
Provide services that help verify & validate responsible product use

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How to use Tylan® premix for swine

**For ileitis control:**

<table>
<thead>
<tr>
<th>Recommendation:</th>
<th>Feed Tylan at 100 g/ton for at least 3 weeks, followed by 40 g/ton to market weight.</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Begin feeding Tylan at 12-15 weeks of age or 3 weeks prior to seroconversion,**1,2</td>
<td><em>No withdrawal required when fed according to label directions.</em></td>
</tr>
</tbody>
</table>


How to use Tylan Soluble for swine

**Swine:**

For the treatment and control of swine dysentery, medicate with 250 mg tylosin per gallon in drinking water for 3 to 10 days, depending upon severity of infection. Alternatively, medicate with 250 mg tylosin per gallon in drinking water for 3 to 10 days, followed by 40 to 100 g tylosin per ton of complete feed (Type C medicated feed manufactured from TYLEN Type A medicated article) for 2 to 6 weeks. For control of porcine proliferative enteropathies (PPE, ileitis), medicate with 250 mg tylosin per gallon in drinking water for 3 to 10 days, followed by 40 to 100 g tylosin per ton of complete feed (Type C medicated feed manufactured from TYLEN Type A medicated article) for 2 to 6 weeks. Swine must consume enough medicated water to provide a therapeutic dose. Only medicated water (250 mg tylosin per gallon) should be available while medicating with TYLEN Soluble.

**RESIDUE WARNING:** Swine must not be slaughtered for food within 48 hours after treatment.

How to use Tylan® premix for broilers and breeders

• For increased rate of weight gain feed Tylan at:
  - Tylan 40 per ton of Type C feed: 0.1 to 1.25 lbs.
  - Tylosin per ton of Type C feed: 4 to 50 g
• To aid in the control of chronic respiratory disease associated with Mycoplasma gallisepticum:
  - Tylan 40 per ton of Type C feed: 20 to 25 lbs.
  - Tylosin per ton of Type C feed: 800 to 1,000 g
• Feed continuously as the sole ration.
  - Tylan requires a 5-day withdrawal period before slaughter when fed at 800-1,000 g/ton.

How to use Tylan Soluble for broilers

• As an aid in the treatment of chronic respiratory disease (CRD) caused by Mycoplasma gallisepticum sensitive to tylosin in broiler and replacement chickens. For the control of chronic respiratory disease (CRD) caused by Mycoplasma gallisepticum sensitive to tylosin at time of vaccination or other stress in chickens. For the control of chronic respiratory disease (CRD) caused by Mycoplasma synoviae sensitive to tylosin in broiler chickens.
• Chickens should be treated for 3 days; however, treatment may be administered for 1 to 5 days depending upon severity of infection. Treated chickens must consume enough medicated water to provide 50 mg/lb. of body weight per day. Only medicated water should be available to the birds.

How to use Tylan Soluble for turkeys

• For maintaining weight gain and feed efficiency in the presence of infectious sinusitis caused by Mycoplasma gallisepticum sensitive to tylosin.
• Turkeys should be treated for 3 days; however, treatment may be administered for 2 to 5 days depending upon the severity of infection. Treated turkeys must consume enough medicated water to provide 60 mg/lb. of body weight per day. Only medicated water should be available to the birds.

How to use Tylan® Premix for beef cattle

• For reduction of incidence of liver abscesses associated with Fusobacterium necrophorum and Arcanobacterium pyogenes:
  - Feed tylosin continuously at 8-10 g/ton (90% DM) to deliver 60-90 mg/hd/d.

Hygromix® directions for use

• For use as an aid in the control of parasite infections in chickens associated with Ascaris galli, Heterakis gallinae and Capillaria obsignata.
  - Mix 1.0-1.5 lbs. Hygromix 8 per ton of Type C medicated feed for 8-12 g of hygromycin B per ton.
  - Feeds containing Hygromix must be withdrawn 3 days prior to slaughter.
• Recommendation1,2
  - Feed to pullets and breeders at 12 g/ton from placement through 50 weeks.

The labels contain complete use information, including cautions and warnings. Always read, understand and follow the label and use directions.

Coban® for broilers and breeders
- For coccidiosis prevention, feed Coban at 90-110 g/ton.
- Feed continuously as the sole ration.
- Requires a zero-day withdrawal (when fed according to the label).
CAUTION: Ingestion of monensin by horses and guinea fowl has been fatal.

Coban® for turkeys
- For coccidiosis prevention, feed Coban at 54-90 g/ton.
- Feed continuously as the sole ration.
- Requires a zero-day withdrawal (when fed according to the label).
CAUTION: Ingestion of monensin by horses and guinea fowl has been fatal.

Skycis® indications
**Appropriate concentrations of narasin in Type C Medicated Feed**
- Increased rate of weight gain in growing-finishing swine when fed for at least 4 weeks:
  - 13.6 to 27.2 g/ton (15 ppm to 30 ppm)
- Increased rate of weight gain and improved feed efficiency in growing-finishing swine when fed for at least 4 weeks:
  - 18.1 to 27.2 g/ton (20 ppm to 30 ppm)
- No increased benefit in rate of weight gain has been shown when narasin concentrations in the diet are greater than 13.6 g/ton (15 ppm).
- No withdrawal period is required when used according to the label.

Cautions:
- Swine being fed with Skycis (narasin) should not have access to feeds containing pleuromutilins (e.g., tiamulin) as adverse reactions may occur. If signs of toxicity occur, discontinue use.
- Do not allow adult turkeys, horses or other equines access to narasin formulations. Ingestion of narasin by these species has been fatal. Not approved for use in breeding animals because safety and effectiveness have not been evaluated in these animals.

Maxiban® directions for use
- For coccidiosis prevention, feed Maxiban at 54-90 g/ton.
- Feed continuously as the sole ration.
- Requires a 5-day withdrawal.
CAUTION: Ingestion of narasin by adult turkeys, horses or other equine species has been fatal. Do not feed to laying hens.

Monteban® directions for use
- For coccidiosis prevention, feed Monteban at 54-90 g/ton.
- Feed continuously as the sole ration.
- Requires a zero-day withdrawal (when fed according to label).
CAUTION: Ingestion of narasin by adult turkeys, horses or other equine species has been fatal. Do not feed to laying hens.

Rumensin® directions for use
Consumption by unapproved species or feeding undiluted may be toxic or fatal. Do not feed to veal calves.
**Dairy Cow:** For increased milk production efficiency (production of marketable solids-corrected milk per unit of feed intake):
- Total Mixed Rations: Feed continuously to dry and lactating dairy cows a total mixed ration ("complete feed") containing 11 to 22 g/ton monensin on a 100% dry matter basis.
- Component Feeding Systems (including top dress): Feed continuously to dry and lactating dairy cows a Type C Medicated Feed containing 11 to 400 g/ton monensin. The Type C Medicated Feed must be fed in a minimum of 1 pound of feed per cow per day to provide 185 to 860 mg/head/day monensin to lactating cows or 115 to 410 mg/head/day monensin to dry cows. This provides cows with similar amounts of monensin they would receive by consuming total mixed rations containing 11 to 22 g/ton monensin on a 100% dry matter basis.
- Growing cattle on pasture or in dry lot (Dairy replacement heifers): For increased rate of weight gain: Feed at the rate of not less than 50 nor more than 200 mg/head/day in not less than 1 pound of Type C Medicated Feed; or after the 5th day, feed at the rate of 400 mg/head/day every other day in not less than 2 pounds of Type C Medicated Feed. The monensin concentration in the Type C Medicated Feed must be between 25 and 400 g/ton. During the first 5 days, cattle should receive no more than 100 mg/day contained in not less than 1 pound of feed. Do not self feed.
- For the prevention and control of coccidiosis due to *Eimeria bovis* and *Eimeria zuernii*: Feed at a rate to provide 0.14 to 0.42 mg per pound body weight per day, depending upon severity of challenge, up to a maximum of 200 mg/head/day. The monensin concentration in Type C Medicated Feed must be between 25 and 400 g/ton. During the first 5 days, cattle should receive no more than 100 mg/day contained in not less than 1 pound of feed.
Important Safety Information

• See label on slide 63 for complete use information, including boxed human warnings and non-target species safety information.

• Micotil is to be used by, or on the order of, a licensed veterinarian. For cattle or sheep, inject subcutaneously. Intravenous use in cattle or sheep will be fatal. Do not use in female dairy cattle 20 months of age or older. Use in lactating dairy cattle or sheep may cause milk residues.

• The following adverse reactions have been reported: in cattle: injection site swelling and inflammation, lameness, collapse, anaphylaxis/anaphylactoid reactions, decreased food and water consumption, and death; in sheep: dyspnea and death.

• Always use proper drug handling procedures to avoid accidental self-injection. Do not use in automatically powered syringes.

• Consult your veterinarian on the safe handling and use of all injectable products prior to administration.

• Micotil has a pre-slaughter withdrawal time of 42 days.

Boxed Warning

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

Human Warnings: Not for human use. Injection of this drug in humans has been associated with fatalities. Keep out of reach of children. Do not use in automatically powered syringes. Exercise extreme caution to avoid accidental self-injection. In case of human injection, consult a physician immediately and apply ice or cold pack to injection site while avoiding direct contact with the skin. Emergency medical telephone numbers are 1-800-722-0987 or 1-800-428-4441. Avoid contact with eyes.

Note To The Physician: The cardiovascular system is the target of toxicity and should be monitored closely. Cardiovascular toxicity may be due to calcium channel blockade. In dogs, administration of intravenous calcium offset Micotil-induced tachycardia and negative inotropy (decreased contractility). Dobutamine partially offset the negative inotropic effects induced by Micotil in dogs. β-adrenergic antagonists, such as propranolol, exacerbated the negative inotropy of Micotil in dogs. Epinephrine potentiated lethality of Micotil in pigs. This antibiotic persists in tissues for several days.