Dispensing a Prescription

• Importance
  • Antibiotic Resistance
  • Residues

• Prescription Requirements
  • Animal Species and Production Classes
  • Active Ingredients
  • Administration Components (Dose, Route, Frequency and Duration)

• Components of a Drug Label
Examples of How Antibiotic Resistance Spreads

- Animals get antibiotics and develop resistant bacteria in their guts.
- Drug-resistant bacteria can remain on meat from animals. When not handled or cooked properly, the bacteria can spread to humans.
- Fertilizer or water containing animal feces and drug-resistant bacteria is used on food crops.
- Drug-resistant bacteria in the animal feces can remain on crops and be eaten. These bacteria can remain in the human gut.
- George gets antibiotics and develops resistant bacteria in his gut.
- George stays at home and in the general community. Spreads resistant bacteria.
- George gets care at a hospital, nursing home or other inpatient care facility.
- Resistant germs spread directly to other patients or indirectly on unclean hands of healthcare providers.
- Resistant bacteria spread to other patients from surfaces within the healthcare facility.

Simply using antibiotics creates resistance. These drugs should only be used to treat infections.
Residues

• Whenever a drug is used in animals, there is the potential for drug residues in edible tissues and other foods consumed by humans.

• Human health effects of drug residues:
  • Allergic reaction
  • Chronic reactions due to long term, low level exposure
  • Microbial resistant pathogens

• How do we protect consumers from drug residues?
  • Rigorous drug approval process, which includes residue studies to determine the FDA established labeled withdrawal time.
Prescription Requirements

- Date of issue
  - Medication dispensation must be within 6 months of this date
- Prescribing veterinarian’s name, signature, address, telephone number, and license number
- Client name and address
- Species / production class to receive the medication
- Name/number/identifying information of the animal(s)

\section*{Rx}:

- Drug Brand Name/ Active Ingredient
- Drug Strength / Concentration
- Quantity of Drug to be Dispensed (volume or quantity)
  - Indication
- Administration Instructions: Dose, Administration Route, Frequency of Administration, Treatment Duration or Total Number of Doses.
  - Species and/or production class: eg. beef cattle; non-ruminating dairy calves; laying hens
  - Withdrawal time for food product

Refill: NR – 1 – 2 – 3 – 4 – PRN

Dr. \underline{Veterinarian’s Signature}
Prescription Requirements

• Drug name and strength
• Quantity of the drug to be dispensed
• Dose
• Route of Administration
• Frequency of administration
• Treatment Duration
• Number of refills
• Withdrawal Time
• Indication

Rx:
• Drug Brand Name/ Active Ingredient
• Drug Strength/ Concentration
• Quantity of Drug to be Dispensed (volume or quantity)
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• Administration Instructions: Dose, Administration Route, Frequency of Administration, Treatment Duration or Total Number of Doses.
• Species and/ or production class: eg. beef cattle; non-ruminating dairy calves; laying hens
  • Withdrawal time for food product

Refill: NR – 1 – 2 – 3 – 4 – PRN

Dr. ___________ Veterinarian’s Signature ___________
Animal Species/Production Class

**Major Species**
- Cattle
  - Dairy
    - Dry
    - Lactating
  - Beef
  - Calves
    - Veal
    - Non-veal
- Swine
- Chickens
- Turkeys

**Minor Species**
- Everything besides major species

**Examples:**
- Sheep
- Goats
<table>
<thead>
<tr>
<th>Animal Use Class</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEEF CATTLE</strong></td>
<td>Cattle that are intended for meat production or to produce offspring intended for meat production. Excludes veal calves.</td>
</tr>
<tr>
<td>Beef Bulls</td>
<td>Intact male beef cattle intended for breeding (beef breeds) or slaughter (either beef or dairy breeds).</td>
</tr>
<tr>
<td>Steers</td>
<td>Castrated male cattle (including dairy breeds) intended for slaughter.</td>
</tr>
<tr>
<td>Beef Heifers</td>
<td>Female beef cattle intended for breeding (beef breeds) or slaughter (either beef or dairy breeds) that have not yet calved.</td>
</tr>
<tr>
<td>Replacement Beef Heifers</td>
<td>Female cattle that have not yet calved and are intended solely for breeding to produce calves intended for meat production.</td>
</tr>
<tr>
<td>Replacement Beef Heifers on Pasture</td>
<td>Replacement beef heifers maintained on pasture and receiving the majority of their diet from grazing.</td>
</tr>
<tr>
<td>Beef Cows</td>
<td>Beef breed female cattle that have calved.</td>
</tr>
<tr>
<td>Suckling Beef Calves</td>
<td>Beef breed cattle from birth until weaning. Veal calves are <strong>NOT</strong> considered suckling calves.</td>
</tr>
<tr>
<td>Growing Cattle on Pasture (stocker, feeder, and slaughter)</td>
<td></td>
</tr>
<tr>
<td>Weaned Cattle</td>
<td>Refers to cattle considered to be stockers, feeders, or slaughter cattle. Parenthetical reference to stocker, feeder, or slaughter cattle is typically included in drug labeling.</td>
</tr>
<tr>
<td>Stockers</td>
<td>Refers to weaned calves grazing pasture to enhance growth prior to finishing and slaughter; they are usually younger, weigh less, and are of lower condition (finish) than “feeders.”</td>
</tr>
<tr>
<td>Feeders</td>
<td>Refers to weaned calves grazing pasture and of sufficient weight and maturity to be placed on high-energy rations for finishing; they are generally older, weigh more, and carry more condition (finish) than stockers.</td>
</tr>
<tr>
<td>Slaughter Cattle</td>
<td>Refers to cattle grazing on pasture and suitable for slaughter. Sex differentiation (e.g., heifers, steers and/or bulls) should be indicated on product labeling.</td>
</tr>
<tr>
<td>Beef Cattle Fed In Confinement for Slaughter (Steers and/or Heifers)</td>
<td>Weaned growing (incl. dairy breeds) confined in group pens and fed a high-energy diet ad libitum until slaughter. Sex differentiation (heifers, steers, and/or bulls intended for slaughter) should be indicated on product labeling. Also known as feedlot cattle.</td>
</tr>
<tr>
<td>Growing beef Cattle in Dry Lots (Steers and/or Heifers)</td>
<td>Weaned growing beef cattle (incl. dairy breeds), that are maintained in a dry lot, receiving the majority of their diet from harvested forage.</td>
</tr>
<tr>
<td><strong>VEAL CALVES</strong></td>
<td>Immature cattle, including beef and dairy breeds, that lack a functional rumen and are intended for meat production. Veal calves are recognized as a distinct regulatory class from suckling calves because of their handling, housing, and proximity to slaughter.</td>
</tr>
<tr>
<td><strong>DAIRY CATTLE</strong></td>
<td>Cattle that are intended for or related to the production of milk for human consumption and/or offspring that will produce milk or meat for human food (including veal calves).</td>
</tr>
<tr>
<td>Lactating Dairy Cows</td>
<td>Female dairy breed cattle that are producing milk for human food.</td>
</tr>
<tr>
<td>Dry Dairy Cows</td>
<td>Female dairy breed cattle that lactated previously, but are not currently producing milk for human food (i.e. dairy cows between lactations).</td>
</tr>
<tr>
<td>Replacement Dairy Heifers</td>
<td>Female dairy cattle that have not yet calved and intended solely for breeding and future milk production.</td>
</tr>
<tr>
<td>Replacement Dairy Heifers on Pasture</td>
<td>Replacement dairy heifers maintained on pasture and receiving the majority of their diet from grazing.</td>
</tr>
<tr>
<td>Dairy Bulls</td>
<td>Intact male dairy breed cattle intended for reproductive purposes.</td>
</tr>
<tr>
<td>Dairy Calves</td>
<td>Female or male dairy cattle fed a ration that includes milk or liquid milk replacer and <strong>NOT</strong> intended for veal production.</td>
</tr>
</tbody>
</table>

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1 All definitions and descriptions of animal use classes are based on information in Guidance for Industry #191 published by the Food and Drug Administration Center for Veterinary Medicine in May 2015.
Lactating vs Non-Lactating Dairy Cattle

**Lactating:** Are currently lactating or will again come back into lactation after a dry period (between two lactations).

Examples: Dry & milking/ lactating cattle

**Non-lactating:** The terms non-lactating dairy cattle includes replacement dairy heifers, replacement dairy bulls and dairy calves. These classes of dairy cattle have not yet, or would never, produce milk for human consumption

******* The term non-lactating does not include dry dairy cows*******

Examples: Dairy heifers, dairy calves, replacement dairy bulls
### SWINE: DEFINITIONS OF USE CLASSES

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boars</td>
<td>Intact male pigs intended for breeding purposes or slaughter.</td>
</tr>
<tr>
<td>Barrows</td>
<td>Castrated male pigs intended for slaughter.</td>
</tr>
<tr>
<td>Gilts</td>
<td>Female pigs that have not farrowed a litter and are intended for slaughter or breeding purposes.</td>
</tr>
<tr>
<td>Replacement Gilts</td>
<td>Female pigs that have not farrowed a litter.</td>
</tr>
<tr>
<td>Sows</td>
<td>Female pigs that have farrowed one or more litters.</td>
</tr>
<tr>
<td>Nursing Pigs (aka suckling pigs, weanlings)</td>
<td>Pigs from birth until weaning that are currently nursing.</td>
</tr>
<tr>
<td>Starter or Nursery Pigs</td>
<td>Boars, barrows, and gilts from approximately 40-70 lb (18-32 kg).</td>
</tr>
<tr>
<td>Growing Pigs</td>
<td>Boars, barrows, and gilts from approximately 40-70 lb (18-32 kg) to 120-150 lb (55-68 kg).</td>
</tr>
<tr>
<td>Finishing Pigs</td>
<td>Boars, barrows, and gilts from approximately 120 to 150 lb (55-68 kg) to market weight for slaughter.</td>
</tr>
</tbody>
</table>

1. All definitions and descriptions of animal use classes are based on information in [Guidance for Industry #191](http://www.farad.org/regulatory-animal-use-classes.html), published by the Food and Drug Administration Center for Veterinary Medicine in May 2015.
# Poultry: Definitions of Use Classes

## Chickens

<table>
<thead>
<tr>
<th>Term</th>
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<tbody>
<tr>
<td><strong>Egg</strong></td>
<td>Includes all developmental stages from <em>in ovo</em> until hatching.</td>
</tr>
<tr>
<td><strong>Chicks</strong></td>
<td>Chickens from day of hatch until they are able to survive in ambient temperature (no longer brooded).</td>
</tr>
<tr>
<td><strong>Broiler Chickens (fryers or frying chickens)</strong></td>
<td>Chickens (incl. Cornish game hens and roasters) intended to be raised from hatch to processing for meat.</td>
</tr>
<tr>
<td><strong>Laying Hens (layers)</strong></td>
<td>Mature chickens that produce eggs for human consumption.</td>
</tr>
<tr>
<td><strong>Replacement Chickens</strong></td>
<td>Chickens, from hatch to maturity, intended to become laying hens or breeding chickens.</td>
</tr>
<tr>
<td><strong>Breeding Chickens</strong></td>
<td>Sexually mature male or female chickens, of any type, intended for the production of fertile eggs; the eggs are <strong>not</strong> intended for human consumption.</td>
</tr>
</tbody>
</table>

## Turkeys

<table>
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<tr>
<th>Term</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Egg</strong></td>
<td>Includes all developmental stages from <em>in ovo</em> until hatching.</td>
</tr>
<tr>
<td><strong>Poults</strong></td>
<td>Turkeys from day of hatch until they are able to survive in ambient temperature (no longer brooded).</td>
</tr>
<tr>
<td><strong>Growing Turkeys</strong></td>
<td>Turkeys intended to be raised from hatch to processing for meat.</td>
</tr>
<tr>
<td><strong>Replacement Turkeys</strong></td>
<td>Mature turkeys intended to become laying hens or breeding turkeys.</td>
</tr>
<tr>
<td><strong>Breeding Turkeys</strong></td>
<td>Sexually mature male or female turkeys intended for the production of fertile eggs.</td>
</tr>
</tbody>
</table>

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1 All definitions and descriptions of animal use classes are based on information in [Guidance for Industry #191](http://www.farad.org/regulatory-animal-use-classes.html) published by the Food and Drug Administration Center for Veterinary Medicine in May 2015.
Drug/Active Ingredient

- Penicillin
- Oxytetracycline
- Neomycin
- Spectinomycin
- Tylosin
- Cephapirin
- Sulfadimethoxine
- Lincomycin
- Sulfamethazine
Dose

Definition: The amount of drug taken at any one time

• mg/lb or mg/kg
• g/100lbs or mg/100lbs or # boluses/100lbs
• Units/lb or IU/lb (ex/ penicillin)
  • IU = international units
• mL/quarter (for intramammary formulations)
• cc or mL (1cc = 1mL)
Dosage forms

Definition: The physical form of a dose of the drug

Examples:
- Injectable = for IV /IM/ SC administration
- Bolus = for oral administration
- Tablet
- Capsule
- Ointment
Route of Administration

Definition: The way in which the dosage form is given.

- IV = intravenous
- IM = intramuscular
- SC = subcutaneous
- PO = orally
- IMM = intramammary
- OU/OD/OS = to the eye
  - OU = Both eyes
  - OD = Right eye
  - OS = Left eye
- IU = intra-uterine
- Top: Topical
- POMF: orally as a medicated feed
- POMW: orally as a medicated water

Additional definitions of routes of administration abbreviations can be found at [http://www.farad.org/administration-route-abbreviations.html](http://www.farad.org/administration-route-abbreviations.html)
Frequency of Administration

Definition: Frequency at which the drug doses are given

• SID = once daily
• QD = once daily
• Q day = once daily
• BID = twice daily or every 12 hours
• TID = three times daily or every 8 hours
• QID = 4 times daily or every 6 hours
Other abbreviations

• q = every
• h or hr = hours
• NR= No additional refills of prescription allowed
• PRN= Refill prescription as needed
Definition: How long the medication is to be administered for

*Normally written as number of doses or for number of days

Examples:
- Administer for 10 days
- 12 doses
Drug Strength/ Concentration

Definition: The amount of drug in the dosage form or a unit of the dosage form

Examples of Drug Strength:
- 200 mg oxytetracycline/mL
- 15 g sulfadimethoxine/bolus
- 300,000 units (IU) penicillin activity/mL
Indication

• Definition: what the drug is being used for to treat.

Examples of Indication:
  • Use for the treatment of bacterial pneumonia (shipping fever) caused by *Pasteurella multocida*.
  • Foot rot
  • Anaplasmosis
Types of Drug Labels

- **OTC (over the counter)**
  - Do not require a veterinarian’s prescription when used according to label directions.

- **Rx (prescription)**
  - Drugs that have special safety concerns related to animal, administrator, or food safety. Required to have a warning statement on the label of “Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian”

- **VFD (veterinary feed directive)**
  - Prescription only medicated feed. Must be used according to the labeled directions

- **ELDU (extra label drug use)**
  - Rx or OTC drugs used differently than described on the manufacturer’s label. Can only be performed under the direction of a veterinarian who will apply their own label to the medication
Components of a Drug Label

- Established/brand name of the drug
- Active ingredient
- Drug Strength
- Species/ production class
- Indication
- Dose and frequency of administration
- Route of administration
- Duration of treatment
- Withholding period
- Cautionary statements
  - Ex/ volume per injection site not to exceed
  - Ex/ Production class not to be used in
- Lot number and expiration date
- Storage requirements
Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (colibacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days.

For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in lactating dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Refer to folded package insert attached to this container for complete product information.

Storage: Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F). For use in animals only.

Restricted Drug (California) - Use Only as Directed

Manufactured for: DURVET INC.
Blue Springs, MO 64014
683411-02
85229893
Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (colitis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days. For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

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Manufactured for:
DURVET INC.
Blue Springs, MO 64014
663411-02
85229893

NET CONTENTS: 25 BOLUSES

For the control and treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves.

NADA 141-002, Approved by FDA
Drug Strength/Concentration

Each bolus contains 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (coli bacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days. For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in lactating dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Refer to folded package insert attached to this container for complete product information.

Storage: Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F). For use in animals only. Restricted Drug (California) - Use Only as Directed.

Manufactured for: Durvet Inc.
Blue Springs, MO 64014
683411-02
85229893

NADA 141-002, Approved by FDA
NET CONTENTS: 25 BOLUSES
Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (coli bacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days.

For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in lactating dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Refer to folded package insert attached to this container for complete product information.

Storage: Store at 20°C to 25°C (68°F to 77°F). Excursions permitted between 15°C and 30°C (between 59°F and 86°F).

For use in animals only.

Restricted Drug (California) - Use Only as Directed.

Manufactured for:

DURVET INC.
Blue Springs, MO 64014
653411-02
85229893
Indication

Each bolus contains 500 mg oxytetracycline hydrochloride.

**Indications:** Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by *Salmonella typhimurium* and *Escherichia coli* (coli bacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by *Pasteurella multocida*.

**Dosage:** For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days.

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**Storage:** Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F). For use in animals only.

**Restricted Drug (California) - Use Only as Directed**

Manufactured for:

DURVET INC.
Blue Springs, MO 64014
633411-02
85229893
Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (colibacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

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For use in animals only.

Restricted Drug (California) - Use Only as Directed

Manufactured for:

DURVET INC.
Blue Springs, MO 64014
683411-02
85229893
Treatment Duration

Each bolus contains: 500 mg oxytetracycline hydrochloride.

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DURVET INC.
Blue Springs, MO 64014
683411-02
85229893

NADA 141-002, Approved by FDA
NET CONTENTS: 25 BOLUSES
Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (coli bacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days.

For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in in utero dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Refer to folded package insert attached to this container for complete product information.

Storage: Store at 20° to 25°C (65° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F).

For use in animals only.

Restricted Drug (California) - Use Only as Directed

Manufactured for: Durvet Inc.

Blue Springs, MO 64014

683411-02

NADA 141-002, Approved by FDA

NET CONTENTS: 25 BOLUSES

Rev 0416

85229893
Cautionary Statements

Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli (coli bacillosis); bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

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Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in lactating dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

For the control and treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves.

NADA 141-002, Approved by FDA

NET CONTENTS: 25 BOLUSES
Lot Number & Expiration Date

Each bolus contains: 500 mg oxytetracycline hydrochloride.

Indications: Calf Scour Bolus is recommended for oral administration for the control and treatment of the following diseases of beef and dairy calves caused by organisms sensitive to oxytetracycline: bacterial enteritis (scours, diarrhea) caused by Salmonella typhimurium and Escherichia coli; colibacillosis; bacterial pneumonia (shipping fever complex, pasteurellosis) caused by Pasteurella multocida.

Dosage: For the control of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally half a bolus (250 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (5 mg/lb body weight in divided doses) for up to four consecutive days.

For the treatment of bacterial enteritis (scours, diarrhea) and bacterial pneumonia in beef and dairy calves: administer orally one bolus (500 mg oxytetracycline hydrochloride) per 100 lb of body weight every 12 hours (10 mg/lb body weight in divided doses) for up to four consecutive days.

Dosage should continue until the animal returns to normal and for 24 to 48 hours after symptoms have subsided. Treatment should not exceed four consecutive days.

Residue Warning: There is no pre-slaughter withdrawal period when used at the recommended dosage level. Not for use in lactating dairy cattle. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Refer to folded package insert attached to this container for complete product information.

Storage: Store at 20° to 25°C (66° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F). For use in animals only.

Restricted Drug (California) - Use Only as Directed

Manufactured for:
DURVET INC.
Blue Springs, MO 64014

68341-02
85229893

NADA 141-002, Approved by FDA

NET CONTENTS: 25 BOLUSES
Storage Requirements

Storage: Store at 20° to 25°C (68° to 77°F), excursions permitted between 15° and 30°C (between 59° and 86°F).

For use in animals only.

Restricted Drug (California) - Use Only as Directed

Manufactured for: DURVET INC.
Blue Springs, MO 64014
693411-02
85229893
PRACTICE TIME
What is the drug strength?

- Please refer to label inserts and packaging provided for a closer look.

Answer: 50mg per ml
What is the drug strength?

- Please refer to label inserts and packaging provided for a closer look.

Answer: Each bolus contains 495 grains (32.1 grams)
What is the drug strength?
• Please refer to label inserts and packaging provided for a closer look.

Answer: 200mg per 10ml syringe
What is the drug strength?

- Please refer to label inserts and packaging provided for a closer look.

Answer: Each bolus contains 5g sulfadimethoxine
Answer: Each mL contains 200mg oxytetracycline or 200mg/mL
Please refer to label inserts and packaging provided for a closer look.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the labeled dose?</td>
<td></td>
</tr>
<tr>
<td>What species/production class is this product to be used in?</td>
<td></td>
</tr>
<tr>
<td>Can a QI dispense this medication as follows:</td>
<td>Use 1 tube IMM in each front quarter. Repeat once in 12 hours.</td>
</tr>
<tr>
<td>What is the meat withdrawal time? Milk?</td>
<td></td>
</tr>
</tbody>
</table>
Answer:

Today IMM infusion

• What is the labeled dose? **1 syringe per infected quarter every 12 hours for a maximum of 2 doses.**

• What species/production class is this product to be used in? **Lactating cattle (beef or dairy)**

• Can a QI dispense this medication as follows: Use 1 tube IMM in each front quarter. Repeat once in 12 hours. **Yes**

• What is the meat withdrawal time? Milk? **Meat= 4 days; Milk= 96 hours**
What species/production class can these drugs be used in?

- Please refer to label inserts and packaging provided for a closer look.

Answer: Beef and non-lactating dairy cattle; Swine
What species/production class can these drugs be used in?

- Please refer to label inserts and packaging provided for a closer look.

Answer: Beef cattle; dairy cattle; calves, including pre-ruminating (veal) calves; swine
What species/production class can these drugs be used in?
• Please refer to label inserts and packaging provided for a closer look.

Answer: Beef and non-lactating dairy cattle
Do These Directions Match the Label?

• Rx written for 400lb beef cow with bacterial pneumonia:
• Administer 4.5ml/100lb every 12 hours for 2 doses SC

Answer: No, label states only a single dosage should be administered
How would you store these medications?

Answer: Store between 2°C-8°C (36°F-46°F). Protect from freezing.
How would you store these medications?

Answer: Store between 20°C-25°C (68°F-77°F).
How would you store these medications?

Answer: Store at or below 25°C (77°F)
Using the label inserts provided, can this prescription be filled by a QI?

**Answer:** NO. Label states for use in swine over 300lbs. This rx is written for a 200lb pig.
No, the Rx is missing information, including client name & address, species, production class.

Answer: Using the label inserts provided, can this prescription be filled by a QI?
Individual Practice problems

• Please refer to provided practice problems
Answers to practice problems:

1. As a qualified individual, please indicate if you can you dispense the FDA approved medication for the following written prescription?
   - Yes or no.
   - Why/why not?

Answer: No, the clients name and Rx details are illegible. Missing indication.
Answers to practice problems:

- Using the provided manufacturer drug box and package insert for ToDAY®, please identify the following:

  - **Brand**: ToDAY®
  - **Active ingredient**: cephradin sodium
  - **Drug strength**: 200mg/10ml
  - **Package size**: 12 syringes
  - **FDA approved species for use**: lactating cattle
  - **Storage requirements**: at or below 77 Fahrenheit. Do not freeze
  - **Dose instructions (amount, administration site, treatment frequency, dosing limitations)**: 1 syringe to each affected quarter. Repeat in 12 hours. Total of 2 doses
  - **FDA approved food products and withdrawal times (WDT)**: Milk: 96 hours. Meat: 4 days.
Answers to practice problems:

• Using the provided manufacturer drug box and package insert for ToMORROW®, please identify the following:

  • Brand: ToMORROW®
  • Active ingredient: cephalirin benzathine
  • Drug strength: 300mg/10ml
  • Package size: 12 syringes
  • FDA approved species for use: Dry cattle (Both beef and dairy)
  • Storage requirements: at or below 77 Fahrenheit. Do not freeze
  • Dose instructions (amount, administration site, treatment frequency, dosing limitations): Infuse each quarter at the time of drying off with a single 10ml syringe.
  • FDA approved food products and withdrawal times (WDT): Not to be used within 30 days of calving Milk: milk not to be used during the first 72 hours after calving. Meat: 42 days.
Answers to practice problems:

• Using the provided manufacturer drug box and package insert for Liquamycin® LA-200®, please identify the following:

  • Brand: Liquamycin® LA-200®
  • Active ingredient: Oxytetracycline
  • Drug strength: 200mg/ml
  • Package size: 250ml
  • FDA approved species for use: beef cattle; dairy cattle; calves, including preruminating (veal) calves; and swine.
  • Storage requirements: at room temperature (59-86°F). Keep from freezing.
  • Dose instructions (amount, administration site, treatment frequency, dosing limitations):
    • Cattle: Single 9mg/lb bw SC. —OR- 3 to 5mg/lb IV or SC per day up to 4 days.
    • Swine: Single 9mg/lb bw IM. —OR- 3 to 5mg/lb IM per day up to 4 days
  • FDA approved food products and withdrawal times (WDT):
    • Cattle: Milk: 96 hours. Meat: 28 days.
    • Swine: meat: 28 days
Answers to practice problems:

3. Please match the following dosing frequency acronyms with their correct definitions:

- q: 3 (every)
- hr: 7 (hours)
- q 24h: 1 (every 24 hours)
- q12h: 8 (every 12 hours)
- SID: 2 (once daily)
- BID: 4 (twice daily)
- TID: 6 (three times daily)
- QID: 5 (four times daily)
Answers to practice problems:

4. Please match the following abbreviations with their correct routes of administration:

- IMM: 4 (intramammary)
- OD: 9 (right eye)
- OU: 12 (both eyes)
- OS: 1 (left eye)
- IU: 3 (intra-uterine)
- PO: 10 (orally)
- POMF: 6 (per oral medicated feed)
- POMW: 11 (per oral medicated water)
- IV: 2 (intravenously)
- IM: 7 (intramuscularly)
- SC: 8 (subcutaneous)
- Top: 5 (topical)
Key Points

• Can’t dispense if the Rx doesn’t match the FDA approved drug label exactly.
• Can’t break drug down into individual units
• If the prescription does not match the drug label:
  • Client or QI can call the veterinarian of record and have the veterinarian resubmit a corrected version via fax or email.
• Consulting pharmacists can aid in answering any future questions and filling Rx’s.