

Changes in the Use of Feed-Grade Antibiotics for Livestock



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Beef Cattle Specialist
VFD Short Course 2016



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Mountains & Minds

Animal Antibiotics: Methods of Delivery



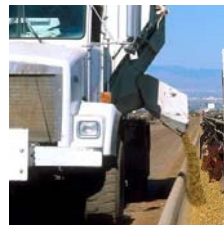
Injectable



Oral Bolus



Drinking Water



Feed



Slide courtesy Dr. Russ Daly, SDSU

Animal Antibiotics: Currently

Labeled Uses:

- Treatment of disease
- Control of disease
- Prevention of disease
- Feed efficiency
- Growth promotion

Drinking Water

Feed

Label Claim Examples

[illegible]

Label Claim Examples

Tylosin Phosphate

For use in Swine, Beef Cattle and Chicken Feeds Only

Type A Medicated Article

Do Not Feed Undiluted

Equivalent to 40 g Tylosin per Pound

Swine:
For increased rate of weight gain and improved feed efficiency.
For maintaining weight gains and feed efficiency in the presence of atrophic rhinitis.
For control of swine dysentery associated with *Brachyspira hyodysenteriae*.
For the treatment and control of swine dysentery associated with *Brachyspira hyodysenteriae* immediately after medicating with **Tylan Soluble** (tylosin) drinking water.
For control of porcine proliferative enteropathies (PPE, ileitis) associated with *Lawsonia intracellularis*.
For control of porcine proliferative enteropathies (PPE, ileitis) associated with *Lawsonia intracellularis* immediately after medicating with **Tylan Soluble** (tylosin) in drinking water.

Beef Cattle:
For reduction of incidence of liver abscesses associated with *Fusobacterium necrophorum* and *Arcanobacterium pyogenes*.

Chickens:
For increased rate of weight gain and improved feed efficiency.

Laying Chickens:
For improved feed efficiency.

Broilers and Replacement Chickens:
To aid in the control of Chronic Respiratory Disease associated with *Mycoplasma gallisepticum*.

Beginning January 1, 2017, this product will require a veterinary feed directive issued by a licensed veterinarian and will be subject to the following restriction:

Caution: Federal law restricts medicated feed containing this veterinary feed directive (VFD) drug to use by or on the order of a licensed veterinarian.

Effective January 1, 2017, this product will no longer be approved for increased rate of weight gain or improved feed efficiency in any species which means the use of this product for these purposes will no longer be legal.

Label Claim Examples

CTC 4G MEDICATED

The medicated claims for different species are given with the feeding directions later in this label.

ACTIVE DRUG INGREDIENT

Chlortetracycline 4 g/lb

GUARANTEED ANALYSIS

Crude Protein	not less than	9.5	%
Crude Fat	not less than	2.0	%
Crude Fiber	not more than	27.0	%

INGREDIENTS

Roughage Products, Calcium Carbonate, Processed Grain Byproducts, Molasses Products.

FEEDING DIRECTIONS

Spread recommended dose of CTC 4G MEDICATED on top of feed when each animal is fed individually; otherwise, mix thoroughly in each day's ration.

SWINE

Increased rate of weight gain and improved feed efficiency (10 to 50 g/ton): Add not less than 2.5 nor more than 12.5 pounds per ton of complete ration. Reducing the incidence of cervical lymphadenitis (owl abscesses) caused by group *Escherichia streptococci* susceptible to Chlortetracycline (50 to 100 g/ton): Add not less than 12.5 nor more than 25 pounds per ton of complete ration. Control of leptospirosis (reducing the incidence of abortion and shedding of leptospira) caused by *Leptospira pomona* susceptible to Chlortetracycline: Feed continuously for not more than 14 days. (400g/ton breeding): Add 100 pounds per ton of complete ration.

Treatment of bacterial enteritis caused by *Escherichia coli* and *Salmonella choleraesuis* and bacterial pneumonitis caused by *Pasteurella multocida* susceptible to Chlortetracycline (10 mg/lb bodyweight): Add 0.25 lb. per 100 pounds of bodyweight to ration to provide 10 mg/lb. bodyweight. Feed continuously for not more than 14 days.

CALVES (weighing up to 250 lbs.)

For an increased rate of weight gain and improved feed efficiency (0.1 mg/lb bodyweight per day) Feed 0.04 oz per 100 pounds bodyweight per day.

CALVES (250 to 400 lbs.)

Increased rate of weight gain and improved feed efficiency (0.3 to 0.7 mg/head/day): Feed 0.4 to 1.0 pounds per 57 head per day.

GROWING CATTLE (over 400 lbs.)

Increased rate of weight gain, improved feed efficiency and reduction of liver condemnations due to abscesses (70 mg/head/day): Feed 1.0 pound per 57 head per day.

CATTLE

Control of bacterial pneumonia associated with shipping fever complex caused by *Pasteurella* spp. susceptible to Chlortetracycline (200 mg/head/day): Feed 1.75 pounds per 20 head per day. Feed 6.75 pounds per 100 head per day.

WARNING: Withdraw 48 hours prior to slaughter.

BEF CATTLE (Under 700 lbs.)

Control of active infection of anaplasmosis caused by *Anaplasma* marginale susceptible to Chlortetracycline (350 mg/head/day): Feed 1.75 pounds per 20 head per day. Feed 6.75 pounds per 100 head per day. **WARNING: Withdraw 48 hours prior to slaughter.**

BEF CATTLE (Over 700 lbs.)

Control of active infection of anaplasmosis caused by *Anaplasma* marginale susceptible to Chlortetracycline (0.5 mg/lb. of bodyweight): Feed 0.0125 lb. per 100 pounds of bodyweight. **WARNING: Withdraw 48 hours prior to slaughter.**

CALVES, BEEF AND NON-LACTATING DAIRY CATTLE

Treatment of bacterial enteritis caused by *Escherichia coli* and bacterial pneumonitis caused by *Pasteurella multocida* organisms susceptible to Chlortetracycline (10 mg/lb bodyweight daily): Feed 0.25 lb. per 100 pounds bodyweight/day. **WARNING: Feed for not more than 5 days. WARNING: Withdraw 24 hours prior to slaughter.**

SHEEP (Growing)

Increased rate of weight gain and improved feed efficiency (20 to 50 g/ton): Add not less than 5 nor more than 12.5 pounds per ton of complete ration.

SHEEP (Breeding)

Reducing the incidence of (vibriosis) abortion caused by *Campylobacter fetus* infection susceptible to Chlortetracycline (80 mg/head/day): Feed 0.2 lb per 10 head per day.

WARNING: A withdrawal period has not been established for this product in pre-mating calves. Do not use in calves to be processed for veal.

LIMITATIONS: Feed for not more than 5 days. Feed approximately 140g/ton varying with bodyweight and feed consumption to provide 10 mg/lb. per day.

2728.

Manufactured By:
CHS NUTRITION
Sioux Falls, SD 57107
www.chsinc.com

Bulk or 50lb (22.68 kg) Net Weight

This feed was made in a feed manufacturing facility that does not handle or store products containing animal proteins prohibited in ruminant feed.

Label Claim Examples



SWINE

Increased rate of weight gain and improved feed efficiency (10 to 50 g/ton): Add not less than 2.5 nor more than 12.5 pounds per ton of complete ration.

Reducing the incidence of cervical lymphadenitis (jowl abscesses) caused by group Escherichia streptococci susceptible to Chlortetracycline. (50 to 100 g/ton): Add not less than 12.5 nor more than 25 pounds per ton of complete ration.

Control of leptospirosis (reducing the incidence of abortion and shedding of leptospirae) caused by Leptospira pomona susceptible to Chlortetracycline. Feed continuously for not more than 14 days (400g/ton breeding): Add 100 pounds per ton of complete ration.

Treatment of bacterial enteritis caused by Escherichia coli and Salmonella choleraesuis and bacterial pneumonia caused by Pasteurella multocida susceptible to Chlortetracycline. (10 mg/lb. bodyweight): Add 0.25 lb. per 100 pounds of bodyweight to ration to provide 10 mg/lb. bodyweight. Feed continuously for not more than 14 days.

Label Claim Examples



CALVES (weighing up to 250 lbs.)

For an increased rate of weight gain and improved feed efficiency. (0.1 mg/lb bodyweight per day) Feed 0.04 oz per 100 pounds bodyweight per day.



CALVES (250 to 400 lbs.)

Increased rate of weight gain and improved feed efficiency. (25 to 70 mg/head/day): Feed 0.4 to 1.0 pounds per 57 head per day.



GROWING CATTLE (over 400 lbs.)

Increased rate of weight gain, improved feed efficiency and reduction of liver condemnations due to abscesses. (70 mg/head/day): Feed 1.0 pound per 57 head per day.

Label Claim Examples

CHICKENS

Increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously
Control of infectious synovitis caused by <i>Mycoplasma synoviae</i> ; control of fowl cholera caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	100-200 g/ton Feed continuously for 7-14 days
Control of chronic respiratory disease (CRD) and air sac infection caused by <i>Mycoplasma gallisepticum</i> and <i>Escherichia coli</i> susceptible to oxytetracycline	400 g/ton Feed continuously for 7-14 days
Reduction of mortality due to air sacculitis (air sac infection) caused by <i>Escherichia coli</i> susceptible to oxytetracycline	500 g/ton Feed continuously for 5 days

⚠ WARNING: At 500 g/ton level, withdraw 24 hours before slaughter. Zero-day withdrawal period for lower use levels. In low calcium feeds withdraw 3 days before slaughter. Do not administer to chickens producing eggs for human consumption.

TURKEYS

For growing turkeys for increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously
Control of hexamitiasis caused by <i>Hexamita meleagridis</i> susceptible to oxytetracycline	100 g/ton Feed continuously for 7-14 days
Control of infectious synovitis caused by <i>Mycoplasma synoviae</i> susceptible to oxytetracycline	200 g/ton Feed continuously for 7-14 days
Control of complicating bacterial organisms associated with bluecomb (transmissible enteritis, coronaviral enteritis) susceptible to oxytetracycline	25 mg/lb of body weight daily Feed continuously for 7-14 days

⚠ WARNING: At 200 g/ton use level or higher, withdraw 5 days before slaughter. Zero-day withdrawal period for lower use levels. Do not administer to turkeys producing eggs for human consumption.

Label Claim Examples

SWINE

Increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and <i>Salmonella choleraesuis</i> susceptible to oxytetracycline and treatment of bacterial pneumonia caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days
For breeding swine for control and treatment of Leptospirosis (reducing the incidence of abortion and shedding of leptospirae) caused by <i>Leptospira pomona</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for not more than 14 days

CALVES INCLUDING PRE-RUMINATING (VEAL) CALVES, BEEF CATTLE, AND NONLACTATING DAIRY CATTLE

For calves (up to 250 lb) for increased rate of weight gain and improved feed efficiency	0.05-0.1 mg/lb of body weight daily Feed continuously
For calves (250-400 lb) for increased rate of weight gain and improved feed efficiency	25 mg/head/day Feed continuously
For growing cattle (over 400 lb) for increased rate of weight gain, improved feed efficiency, and reduction of liver condemnation due to liver abscesses	75 mg/head/day Feed continuously
Prevention and treatment of the early stages of shipping fever complex (Feed 3-5 days before and after arrival in feedlots)	0.5-2.0 g/head/day
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and bacterial pneumonia (shipping fever complex) caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days

SHEEP

Increased rate of weight gain and improved feed efficiency	10-20g/ton Feed continuously
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and bacterial pneumonia caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days

⚠ WARNING: 5-day withdrawal before slaughter at 10 mg/lb dosage.

Animal Antibiotics: Currently



Injectable



Oral Bolus



Drinking Water



Feed

What is a VFD?

- Veterinary Feed Directive
 - Paperwork for the drug in question
 - Filled out by a veterinarian
 - Gives description of livestock to be treated, some instructions to the feedmill, expiration date
 - Valid veterinary-client-patient relationship should be in place
 - Feedmill must have VFD before feed can be distributed; must notify FDA

Veterinary Client Patient Relationship (VCPR)

- Veterinarian has assumed responsibility for medical judgments about the animals, client has agreed to follow the vet's instructions
- Veterinarian has sufficient knowledge of the animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s) and timely visits
- Veterinarian available for follow-up in case of adverse reactions or treatment failure



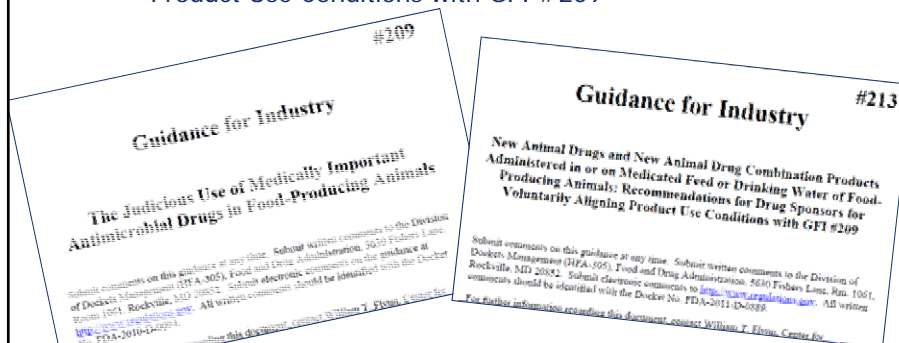
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FDA's Proposals

- **Guidance for Industry #209**
 - "The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals"
- **Guidance for Industry #213**
 - "Recommendations for Drug Sponsors for Voluntarily Aligning Product Use Conditions with GFI #209"



FDA Guidance for Industry #209

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



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FDA Guidance for Industry #209

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



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FDA Guidance for Industry #209: Medically Important Antibiotics

Class of antibiotic	Feed-Grade Examples
Aminoglycosides	Neomycin, Streptomycin
Lincosamides	Lincomix®
Macrolides	Pulmotil®
Penicillins	Penicillin, CSP
Streptogramins	Stafac®
Sulfonamides	Sulfamethazine, Aureomix®
Tetracyclines	Aureomycin®, CTC



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FDA Guidance for Industry #213

- Final as of December 2013
- For the drug companies
- For “medically important antibiotics”
- Asks companies to voluntarily revise their product labels to remove growth promotion and feed efficiency
- Provides for moving OTC products to Rx or VFD status
- Full implementation: December 2016



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So... What Will Change?

- Growth promotion uses in feed no longer allowed
 1. Tetracyclines: CTC, Aureomycin, NeoTerra
 2. Stafac (virginiamycin)
- Use of “medically important” feed antibiotics will need a VFD
 - Can only use for treatment, control, prevention
 1. Tetracyclines (CTC, Aureomycin, NeoTerra)
 2. Tylan
 3. Sulfamethazine (Aureomix)
 4. Stafac for liver abscesses
 5. Medicated milk replacers (w/ oxytetracycline, neomycin...)

So... What Will Change?

- Changes to the VFD process
 - Veterinarian keeps original, feedmill & client keep copies
 - No longer need to estimate amount of feed consumed
 - Approximate number of animals
 - Maximum expiration date of 6 months
 - Electronic delivery



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So... What Will Change?

- Who defines a valid Veterinary Client Patient Relationship
 - Will be left to each state's regulations or veterinary board
 - Veterinarian must be licensed in state where the animals are
- "Medically important" water medications will move to prescription status



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What Won't Change

- Use of non- "medically important" drugs:
 - Ionophores (Bovatec, Rumensin, etc.)
 - Coccidiosis treatments (Corid, Deccox, etc.)
 - Bacitracin (BMD)
- Ability to use the same products currently used for treatment, control, prevention
 - But will need a VFD now
- Injectable medication uses
- Extra-label uses of feed-grade medications
 - Is illegal now, will continue to be illegal



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What Won't Change

- Ability for current feed mill operators to supply feed medications
 - VFD documentation and records need to be kept
 - VFD drugs will not automatically need to be handled only by licensed feed mills
- Need for veterinarians to be involved in medication decisions



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Questions and Discussion



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Label Claim Examples

Rachel Endecott
MSU Extension Beef Cattle Specialist
rachel.endecott@montana.edu
406-994-3747

Tylan™ 40

TM

Net Weight: **50 lbs**
(22.68 kg)

Tylosin Phosphate

For use in Swine, Beef Cattle and Chicken Feeds Only
Type A Medicated Article

Do Not Feed Undiluted

Equivalent to **40 g Tylosin per Pound Swine:**

For increased rate of weight gain and improved feed efficiency.

For maintaining weight gains and feed efficiency in the presence of atrophic rhinitis.

For control of swine dysentery associated with *Brachyspira hyodysenteriae*.

For the treatment and control of swine dysentery associated with *Brachyspira hyodysenteriae* immediately after medicating with **Tylan Soluble** (tylosin) drinking water.

For control of porcine proliferative enteropathies (PPE, ileitis) associated with *Lawsonia intracellularis*.

For control of porcine proliferative enteropathies (PPE, ileitis) associated with *Lawsonia intracellularis* immediately after medicating with **Tylan Soluble** (tylosin) in drinking water.

Beef Cattle:

For reduction of incidence of liver abscesses associated with *Fusobacterium necrophorum* and *Arcanobacterium pyogenes*.

Chickens:

For increased rate of weight gain and improved feed efficiency.

Laying Chickens:

For improved feed efficiency.

Broilers and Replacement Chickens:

To aid in the control of Chronic Respiratory Disease associated with *Mycoplasma gallisepticum*.

Important: Must be Thoroughly Mixed in Feeds Before Use.

Restricted Drug (California), Use only as Directed.

NADA # 12-491, Approved by FDA

Elanco, Tylan and the diagonal bar are trademarks owned or licensed by Eli Lilly and Company, its subsidiaries or affiliates.

Manufactured For:

Elanco Animal Health • A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

To report adverse effects, access medical information, or obtain additional product information, call 1-800-428-4441.

Directions for Use

Read All Directions Carefully Before Mixing and Feeding

Type A Medicated Article

Do Not Feed Undiluted.

Active Drug Ingredient—Tylosin (as tylosin phosphate) . . . 40 g per lb

Ingredients: Roughage products, calcium carbonate and mineral oil.

Important: Must be Thoroughly Mixed In Feeds Before Use,

To ensure adequate mixing, an intermediate blending step should be used prior to manufacturing a complete feed. Do not use in any finished feed (supplement, concentrate or complete feed) containing in excess of 2% bentonite.

Warning: **Tylan 40** may be irritating to unprotected skin and eyes. When mixing and handling **Tylan 40** use protective clothing, impervious gloves and a dust respirator. In case of accidental eye exposure, flush eyes with plenty of water. Exposed skin should be washed with plenty of soap and water. Remove and wash contaminated clothing. Seek medical attention if irritation becomes severe or persists. The material safety data

sheet (MSDS) contains more detailed occupational safety information. To report adverse effects, access medical information, or obtain additional product information, call 1-800-428-4441.

Mixing and Feeding Directions for Swine Feeds	Feed	Tylan 40 Per Ton Of Type C Feed	Tylosin Per Ton Of Type C Feed
For increased rate of weight gain and improved feed efficiency.	Pre-Starter or Starter	0.5 to 2.5 lbs	20 to 100 g
	Grower	0.5 to 1.0 lbs	20 to 40 g
	Finisher	0.25 to 0.5 lbs	10 to 20 g
	Feed continuously as the sole ration.		

For maintaining weight gains and feed efficiency in the presence of atrophic rhinitis.

Feed 100 g of tylosin per ton (2.5 pounds **Tylan 40** per ton) of complete feed.

Feed continuously as the sole ration.

For control of swine dysentery. Feed 100 g of tylosin per ton (2.5 pounds **Tylan 40** per ton) of complete feed for at least three weeks. Follow with 40 g tylosin per ton (1 pound **Tylan 40** per ton) of complete feed until pigs reach market weight.

For the treatment and control of swine dysentery. Feed 40 to 100 grams of tylosin (1.0 to 2.5 pounds of **Tylan 40**) per ton of complete feed for 2 to 6 weeks immediately after medicating with 250 mg tylosin (as **Tylan Soluble**) per gallon in drinking water for 3 to 10 days.

For control of porcine proliferative enteropathies (PPE, ileitis). Feed 100 g of tylosin per ton (2.5 pounds **Tylan 40** per ton) of complete feed for 21 days. Alternatively, feed 100 g of tylosin per ton (2.5 pounds **Tylan 40** per ton) of complete feed for at least three weeks, followed by 40 g tylosin per ton of complete feed until pigs reach market weight. Alternatively, feed 40 to 100 grams of tylosin (1.0 to 2.5 pounds of **Tylan 40**) per ton of complete feed for 2 to 6 weeks immediately after medicating with 250 mg tylosin (as **Tylan Soluble**) per gallon in drinking water for 3 to 10 days. Feed continuously as the sole ration when feeding Tylan. Diagnosis should be confirmed by a veterinarian when results are not satisfactory.

NOTICE: Organisms vary in their degree of susceptibility to any chemotherapeutic.

If no improvement is observed after recommended treatment, diagnosis and susceptibility should be reconfirmed.

Mixing and Feeding Directions for Beef Cattle Feeds	Tylan 40 Per Ton Of Type C Feed	Tylosin Per Ton Of Type C Feed
For reduction of incidence of liver abscesses in beef cattle associated with <i>Fusobacterium necrophorum</i> and <i>Arcanobacterium pyogenes</i> .	0.2 to 0.25 lbs	8 to 10 g
Mixing Directions for Liquid Type B Cattle Feeds	To be fed so that each animal receives not more than 90 mg per head per day and not less than 60 mg per head per day. Feed continuously as the sole ration.	
	LIMITATIONS: <ol style="list-style-type: none"> pH must be between 4.5 and 6.0. For liquid feeds stored in recirculating tank systems: Recirculate immediately prior to use for not less than 10 minutes, moving not less than 1 percent of the tank contents per minute from the bottom of the tank to the top. Recirculate daily as described even when not used. For liquid feeds stored in mechanical, air, or other agitation-type tank system: Agitate immediately prior to use for not less than 10 minutes, creating a turbulence at the bottom of the tank that is visible at the top. Agitate daily as described even when not used. Liquid Type B Cattle Feeds must bear an expiration date of 31 days after the date of manufacture. 	
Mixing and Feeding Directions for Chicken Feeds	Tylan 40 Per Ton Of Type C Feed	Tylosin Per Ton Of Type C Feed
For increased rate of weight gain and improved feed efficiency.	0.1 to 1.25 lbs	4 to 50 g
	Feed continuously as the sole ration.	
Mixing and Feeding Directions for Broiler and Replacement Chicken Feeds	Tylan 40 Per Ton Of Type C Feed	Tylosin Per Ton Of Type C Feed
To aid in the control of chronic respiratory disease associated with <i>Mycoplasma gallisepticum</i> .	Broilers Replacement Chickens	20 to 25 lbs 25 lbs 800 to 1000 g 1000 g

For Broiler and Replacement Chickens: Administer in the feed to chickens 0 to 5 days of age, follow with second administration in feed for 24 to 48 hours at 3 to 5 weeks of age.

NOT FOR HUMAN USE

WARNING: Withdraw 5 days before slaughter when fed to chickens at 800 to 1000 grams per ton.

Mixing and Feeding Directions for Laying Chicken Feeds	Tylan 40 Per Ton Of Type C Feed	Tylosin Per Ton Of Type C Feed
For improved feed efficiency.	Laying Chickens	0.5 to 1.25 lbs 20 to 50 g

Store at Room Temperature, 25°C (77°F). Avoid moisture.
Not to be used after the date printed on the bottom of the bag.



CTC 4G MEDICATED

The medicated claims for different species are given with the feeding directions later in this label.

ACTIVE DRUG INGREDIENT

Chlortetracycline 4 g/lb

GUARANTEED ANALYSIS

Crude Protein	not less than	9.5	%
Crude Fat	not less than	2.0	%
Crude Fiber	not more than	27.0	%

INGREDIENTS

Roughage Products, Calcium Carbonate, Processed Grain Byproducts, Molasses Products.

FEEDING DIRECTIONS

Spread recommended dose of CTC 4G MEDICATED on top of feed when each animal is fed individually; otherwise, mix thoroughly in each day's ration.

SWINE

Increased rate of weight gain and improved feed efficiency (10 to 50 g/ton): Add not less than 2.5 nor more than 12.5 pounds per ton of complete ration.

Reducing the incidence of cervical lymphadenitis (jowl abscesses) caused by group Escherichia streptococci susceptible to Chlortetracycline. (50 to 100 g/ton): Add not less than 12.5 nor more than 25 pounds per ton of complete ration.

Control of leptospirosis (reducing the incidence of abortion and shedding of leptospirae) caused by Leptospira pomona susceptible to Chlortetracycline. Feed continuously for not more than 14 days (400g/ton breeding): Add 100 pounds per ton of complete ration.

Treatment of bacterial enteritis caused by Escherichia coli and Salmonella choleraesuis and bacterial pneumonia caused by Pasteurella multocida susceptible to Chlortetracycline. (10 mg/lb. bodyweight): Add 0.25 lb. per 100 pounds of bodyweight to ration to provide 10 mg/lb. bodyweight. Feed continuously for not more than 14 days.

CALVES (weighing up to 250 lbs.)

For an increased rate of weight gain and improved feed efficiency. (0.1 mg/lb bodyweight per day) Feed 0.04 oz per 100 pounds bodyweight per day.

CALVES (250 to 400 lbs.)

Increased rate of weight gain and improved feed efficiency. (25 to 70 mg/head/day): Feed 0.4 to 1.0 pounds per 57 head per day.

Increased rate of weight gain, improved feed efficiency and reduction of liver condemnations due to abscesses. (70 mg/head/day): Feed 1.0 pound per 57 head per day.

CATTLE

Control of bacterial pneumonia associated with shipping fever complex caused by Pasteurella spp. susceptible to Chlortetracycline. (350 mg/head/day): Feed 1.75 pounds per 20

head per day. Feed 8.75 pounds per 100 head per day.

WARNING: Withdraw 48 hours prior to slaughter.

BEEF CATTLE (Under 700 lbs.)

Control of active infection of anaplasmosis caused by Anaplasma marginale susceptible to Chlortetracycline. (350 mg/head/day): Feed 1.75 pounds per 20 head per day. Feed 8.75 pounds per 100 head per day. WARNING: Withdraw 48 hours prior to slaughter.

BEEF CATTLE (Over 700 lbs.)

Control of active infection of anaplasmosis caused by Anaplasma marginale susceptible to Chlortetracycline. (0.5 mg/lb. of bodyweight): Feed 0.0125 lb. per 100 pounds of bodyweight. WARNING: Withdraw 48 hours prior to slaughter.

CALVES, BEEF AND NON-LACTATING DAIRY CATTLE

Treatment of bacterial enteritis caused by Escherichia coli and bacterial pneumonia caused by Pasteurella multocida organisms susceptible to Chlortetracycline. (10 mg/lb. bodyweight daily): Feed 0.25 lb. per 100 pounds bodyweight/day. WARNING: Feed for not more than 5 days. WARNING: Withdraw 24 hours prior to slaughter.

SHEEP (Growing)

Increased rate of weight gain and improved feed efficiency. (20 to 50 g/ton): Add not less than 5 nor more than 12.5 pounds per ton of complete ration.

SHEEP (Breeding)

Reducing the incidence of (vibronic) abortion caused by Campylobacter fetus infection susceptible to Chlortetracycline. (80 mg/head/day: Feed 0.2 lb per 10 head per day.

WARNING: A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. LIMITATIONS: Feed for not more than 5 days. Feed approximately 400g/ton varying with bodyweight and feed consumption to provide 10 mg/lb. per day.

2728.

GROWING CATTLE (over 400 lbs.)

Manufactured By:

CHS NUTRITION

Sioux Falls, SD 57107

www.chsinc.com

Bulk or 50lb (22.68 kg) Net Weight

This feed was made in a feed manufacturing facility that does not handle or store products containing animal proteins prohibited in ruminant feed.



Terramycin® 200

Type A Medicated Article

Description:

Terramycin is a broad-spectrum anti-infective that has been proven effective against a wide variety of infectious diseases caused by susceptible Gram-positive and Gram-negative bacteria. It can be fed to chickens, turkeys, swine, beef cattle, non-lactating dairy cattle and sheep. *Terramycin* is safe, stable and highly effective; it works in both the bloodstream and in the gastrointestinal tract.

Active Ingredient:

Oxytetracycline200 g/lb
(from oxytetracycline dihydrate base) equivalent
to oxytetracycline hydrochloride

Registered Claims and Directions for Use:

See Table 1 for the registered claims and usage directions of *Terramycin* 200.

Mixing Directions:

Thoroughly mix the amount of this premix according to the directions indicated in Table 1 with at least an equal amount by weight of feed formula ingredients prior to blending into a complete feed.

For use in dry feeds only. Not for use in liquid feed supplements.

Store at room temperature.

Caution:

For use in manufacturing medicated animals feeds only.

Certain components of animal feeds, including medicated premixes, possess properties that may be a potential health hazard or a source of personal discomfort to certain individuals who are exposed to them. Human exposure should, therefore, be minimized by observing the general industry standards for occupational health and safety.

Precautions such as the following should be considered: dust masks or respirators and protective clothing should be worn; dust-arresting equipment and adequate ventilation should be utilized; personal hygiene should be observed; wash before eating or leaving a work site; be alert for signs of allergic reactions - seek prompt medical treatment if such reactions are suspected.

Table 1. Registered Claims and Directions for Use		
Indications for Use	Oxytetracycline Amount	lb of Terramycin 200/ton
CHICKENS		
Increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously	0.05-0.25
Control of infectious synovitis caused by <i>Mycoplasma synoviae</i> ; control of fowl cholera caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	100-200 g/ton Feed continuously for 7-14 days	0.5-1
Control of chronic respiratory disease (CRD) and air sac infection caused by <i>Mycoplasma gallisepticum</i> and <i>Escherichia coli</i> susceptible to oxytetracycline	400 g/ton Feed continuously for 7-14 days	2
Reduction of mortality due to air sacculitis (air sac infection) caused by <i>Escherichia coli</i> susceptible to oxytetracycline	500 g/ton Feed continuously for 5 days	2.5
<div style="display: flex; justify-content: space-between;"> ➡ WARNING: At 500 g/ton level, withdraw 24 hours before slaughter. Zero-day withdrawal period for lower use levels. ⬅ In low calcium feeds withdraw 3 days before slaughter. Do not administer to chickens producing eggs for human consumption. </div>		
TURKEYS		
For growing turkeys for increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously	0.05-0.25
Control of hexamitiasis caused by <i>Hexamita meleagridis</i> susceptible to oxytetracycline	100 g/ton Feed continuously for 7-14 days	0.5
Control of infectious synovitis caused by <i>Mycoplasma synoviae</i> susceptible to oxytetracycline	200 g/ton Feed continuously for 7-14 days	1
Control of complicating bacterial organisms associated with bluecomb (transmissible enteritis, coronaviral enteritis) susceptible to oxytetracycline	25 mg/lb of body weight daily Feed continuously for 7-14 days	4.15 ¹
<div style="display: flex; justify-content: space-between;"> ➡ WARNING: At 200 g/ton use level or higher, withdraw 5 days before slaughter. Zero-day withdrawal period for lower use levels. Do not administer to turkeys producing eggs for human consumption. ⬅ </div>		
SWINE		
Increased rate of weight gain and improved feed efficiency	10-50 g/ton Feed continuously	0.05-0.25
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and <i>Salmonella choleraesuis</i> susceptible to oxytetracycline and treatment of bacterial pneumonia caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days	2.5 ²
For breeding swine for control and treatment of Leptospirosis (reducing the incidence of abortion and shedding of leptospirae) caused by <i>Leptospira pomona</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for not more than 14 days	2.5 ²
CALVES INCLUDING PRE-RUMINATING (VEAL) CALVES, BEEF CATTLE, AND NONLACTATING DAIRY CATTLE		
For calves (up to 250 lb) for increased rate of weight gain and improved feed efficiency	0.05-0.1 mg/lb of body weight daily Feed continuously	0.025-0.5 ³
For calves (250-400 lb) for increased rate of weight gain and improved feed efficiency	25 mg/head/day Feed continuously	0.125 ⁴
For growing cattle (over 400 lb) for increased rate of weight gain, improved feed efficiency, and reduction of liver condemnation due to liver abscesses	75 mg/head/day Feed continuously	.375 ⁴
Prevention and treatment of the early stages of shipping fever complex (Feed 3-5 days before and after arrival in feedlots)	0.5-2.0 g/head/day	2.5-10 ⁴
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and bacterial pneumonia (shipping fever complex) caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days	25 ⁵
SHEEP		
Increased rate of weight gain and improved feed efficiency	10-20g/ton Feed continuously	0.05-0.1
Treatment of bacterial enteritis caused by <i>Escherichia coli</i> and bacterial pneumonia caused by <i>Pasteurella multocida</i> susceptible to oxytetracycline	10 mg/lb of body weight daily Feed continuously for 7-14 days	6 ⁶
➡ WARNING: 5-day withdrawal before slaughter at 10 mg/lb dosage. ⬅		
¹ If bird weighs 10 lb, consuming 0.6 lb of complete feed per day ² If pig weighs 100 lb, consuming 4 lb of complete feed per day ³ If calf weighs 100 lb, consuming 2 lb of complete starter feed per day ⁴ Include in feed supplement based on consumption of 2 lb of supplement per head per day ⁵ If animal weighs 500 lb, consuming 2 lb of supplement per head per day ⁶ If lamb weighs 60 lb, consuming 1 lb of supplement per head per day		

HEALTHY ANIMALS. HEALTHY FOOD. HEALTHY WORLD.®



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TM11004/USA/0311

Pennox 100-MR[®]

..... OXYTETRACYCLINE HCL

NADA 138-938 APPROVED BY FDA

PRODUCT DESCRIPTION

Pharmgate's Pennox 100-MR[®] is an antibiotic formulation containing 100 grams Oxytetracycline Hydrochloride per pound. This formulation allows for convenient mixing and has good palatability. The product is indicated for treatment of bacterial enteritis in calves.



POTENCY

100 grams Oxytetracycline HCl per pound.

ACTIVE INGREDIENT

Oxytetracycline HCl

CARRIER

Sucrose.

COLOR

Soft yellow powder.

SOLUBILITY

Excellent.

BULK DENSITY

Approximately 70 lb./cu. ft.

FLOWABILITY

Excellent.

PALATABILITY

Excellent.

COMPATIBILITY

Compatible with most milk replacer formulas.

STABILITY

Excellent stability in original container.

DIRECTIONS FOR USE

See label instructions.

PACKAGING

25# plastic pails.

Pennox 100-MR[®]

..... OXYTETRACYCLINE HCL

TYPE A MEDICATED ARTICLE

Oxytetracycline Antibacterial Premix for use in calf milk replacers or starter feeds for improved feed efficiency and treatment of bacterial enteritis. For Animal Use Only.

Active Ingredient: Oxytetracycline Hydrochloride . . . 100 grams/lb.

Inactive Ingredient: Sucrose.

DIRECTIONS FOR USE

For An Increased Rate of Weight Gain and Improved Feed Efficiency in Replacement Calves Up To 250 Pounds:

Dose: 0.1 mg Oxytetracycline per pound body weight per day.

Mixing Directions: Mix 0.2 lb. Pennox 100-MR[®] in 1 ton of milk replacer or starter feed.

Warning: Zero-day withdrawal period.

For treatment of Bacterial Enteritis Caused by Escherichia Coli Organisms Susceptible to Oxytetracycline:

Dose: 10 mg Oxytetracycline per pound body weight per day. Feed for 7-14 days.

Mixing Directions: Mix 20 lb. Pennox 100-MR[®] in 1 ton of milk replacer or starter feed.

Warning: 5 days withdrawal at 10 mg/lb dosage.

Feeding Directions for Milk Replacers or Starter Feeds

Body Weight of Calf	75 lbs.	100 lbs.	150 lbs.	250 lbs.
Amount of Milk Replacer or Starter Feed for Calf Per Day	0.75 lbs.	1.0 lbs.	1.5 lbs.	2.5 lbs.

NADA 138-938

APPROVED BY FDA

Distributed by



14040 Industrial Rd. Omaha, NE 68144

“Restricted Drug (CA):
Use only as directed”
Not for Human Use
Livestock Remedy

