

# FDA-Approved Injectable Beef Cattle Antimicrobials

---

**A.J. Tarpoff, DVM, MS**  
Extension Beef Veterinarian

A number of antimicrobial products are available to beef producers for treating bacterial and rickettsial diseases that infect livestock. Some products require a daily dose to produce an antimicrobial effect. Others are long acting, providing multiple days of therapeutic effect from a single injection.

The amount needed to treat a specific condition varies by product. Doses are measured in volume per unit of animal body weight, so the ability to determine or at least estimate the animal's body weight is critical. The volume per injection site of 10 to 15 cc should not be exceeded in order to prevent injection site irritation, possible lesions, and extended withdrawal times. Most syringes measure capacity in cubic centimeters. When preparing injections keep in mind that 1 cubic centimeter (cc) is equal to 1 milliliter (ml).

There are three injection methods: intravenous (into a vein, IV), intramuscular (into a muscle, IM), or subcutaneous (under the skin, SC). Some products can be administered in a variety of ways, but others are approved for only one method. Follow Beef Quality Assurance (BQA) guidelines and use the subcutaneous (SC) route of injection when it is an approved route.

The dosing regimen should be listed on the bottle or package insert. Follow it for optimal effectiveness in treating diseases for which the product is approved. Some products are sold over-the-counter to producers, while others require a veterinary prescription (Rx).

For antimicrobials approved for use in beef cattle, there is a period of time required between the last treatment and the earliest time that treated cattle can be sold for slaughter for human consumption. This

withdrawal period, normally listed in days, is based on scientific research and mandated by the Food and Drug Administration (FDA). Failure to observe withdrawal times could result in illegal residues remaining in the meat when the animal is harvested. Withdrawal times are meaningful only when the product is used according to label directions, i.e., proper dose, proper route of administration, proper volume per injection site, and such. Withdrawal periods are designed to protect consumers.

The table on page 2 contains the following information:

- Common retail product names of antimicrobial products approved for use in beef cattle,
- Dose in milliliters (cc) required per 100 pounds of animal body weight,
- FDA-approved route(s) of administration,
- FDA-approved treatment regimen for product,
- FDA-approved indications,
- FDA-approval for bovine respiratory disease (BRD) control,
- Required withdrawal time in days, and
- Whether the product requires a veterinary prescription.

Note that none of the antimicrobials listed in the table are effective for treating viral infections.

**Warning:** Information provided in the table was current as of November 2016 and should serve as a general guideline. The list is subject to change as the FDA modifies requirements or manufacturers update label claims on existing products. Always read the product label or package insert or consult your veterinarian before using an antimicrobial to ensure that product information has not changed since publication.

## FDA-Approved Injectable Beef Cattle Antimicrobials

Type	Product Name	mL/100 lb	Route	Doses Required	Indications	BRD Control	Withdrawal (days)	Rx
Long Acting	Advocin (multidose)	1.5	SC	2, 48 hrs apart	BRD*		4	x
	Advocin (single dose)	2	SC	1	BRD*	Yes	4	x
	Baytril 100 (multidose)	1.1-2.3	SC	3 to 5	BRD*		28	x
	Baytril 100 (single dose)	3.4-5.7	SC	1	BRD*	Yes	28	x
	Bio-Mycin 200	4.5	SC	1	BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		28	
	Draxxin	1.1	SC	1	BRD*, IBK, foot-rot,	Yes	18	x
	Enfroflox 100	3.4-5.7	SC	1	BRD*	Yes	28	x
	Excede	1.5	SC ear	1	BRD*, foot-rot, metritis	Yes	13	x
	Excenel RTU EZ	2	SC, IM	2, 48 hrs apart	BRD*, foot-rot, metritis		4	x
	Excenel RTU EZ	1-2	SC, IM	3-5 d	BRD*, foot-rot, metritis		4	x
	Excenel RTU	2	SC, IM	2, 48 hrs apart	BRD*, foot-rot, metritis		3	x
	Excenel RTU	1-2	SC, IM	3-5 d	BRD*, foot-rot, metritis		3	x
	Generic Oxy 200	4.5	SC, IM, IV	1	BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		28	
	Hexasol	4.5	SC, IM	1	BRD*, fever		21	x
	LA-200	4.5	SC, IM	1	BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		28	
	LA Penicillin	1.33	SC	1	BRD*, rhinitis, pharyngitis, blackleg		30	
	Liquamycin/Terramycin	4.5	IV, SC	1	BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		28	
	Loncor	6	SC	1	BRD*, foot-rot	Yes	38	x
	Loncor	3	IM	2, 48 hrs apart	BRD*, foot-rot		28	x
	Micotil 300	1.5-3	SC	1	BRD*	Yes	42	x
LA-300	4.5	SC, IM	1	BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		28		
Norfenicol	6	SC	1	BRD*, foot-rot	Yes	33	x	
Norfenicol	3	IM	2, 48 hrs apart	BRD*, foot-rot		28	x	
Nuflor Gold	6	SC	1	BRD*		44	x	
Nuflor	6	SC	1	BRD*, foot-rot	Yes	38	x	
Nuflor	3	IM	2, 48 hrs apart	BRD*, foot-rot		28	x	
Resflor Gold	6	SC	1	BRD*, pyrexia		38	x	
Zactran	1.8	SC	1	BRD*	Yes	35	x	
Zuprevo	1	SC	1	BRD*	Yes	21	x	
Daily	Adspec	4.5-6.8	SC	3-5 d	BRD*		11	x
	Naxcel	1-2	SC, IM	3-5 d	BRD*, foot-rot		4	x
	Oxytet 100	5	IM, IV		BRD*, IBK, foot-rot, diphtheria, scours, wooden tongue, lepto, metritis, wounds		22	
	Penicillin	1	IM	Up to 4 d	BRD*		14	
	Polyflex	Variable	IM	Up to 7 d	BRD*		6	x
	Tylan 200	4	IM		BRD*, foot-rot, diphtheria, metritis		21	

SC = Subcutaneous IM = Intramuscular IV = Intravenous  
 IBK = Infectious Bovine Keratoconjunctivitis, commonly known as "pinkeye"

\*Bovine respiratory disease (BRD) may be caused by or involve multiple organisms. Antibiotic products listed may not be labeled for treatment of all BRD pathogens. Read the product label for approved use against specific microorganisms.

Updated: November 2016

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Publications from Kansas State University are available at [www.ksre.ksu.edu](http://www.ksre.ksu.edu)

Publications are reviewed or revised annually by appropriate faculty to reflect current research and practice. Date shown is that of publication or last revision. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. In each case, credit A.J. Tarpoff, *FDA-Approved Injectable Beef Cattle Antimicrobials*, Kansas State University, November 2016.

### Kansas State University Agricultural Experiment Station and Cooperative Extension Service

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, John D. Floros, Director.

MF2848 November 2016