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The Bovine PRACTITIONER

Guidelines for Authors

The Bovine Practitioner is the official publication of The American Association of Bovine Practitioners, published in February and June annually. It also serves as a communication medium between bovine practitioner organizations around the world. All manuscripts and communications must be presented in English.

Most articles in the journal are peer-reviewed or refereed. Papers submitted for publication in the peer-reviewed section are anonymously reviewed by three members of the editorial board. In some cases, papers may be reviewed by an outside expert(s) who is not a regular member of the editorial board. Papers published in the peer-reviewed section of the journal will be identified with a "Peer-Reviewed" banner at the top of the first page. Papers rejected by the editorial board for publication as peer-reviewed articles do not automatically qualify for publication in the non-peer-reviewed sections.

Articles published in *The Bovine Practitioner* are intended to address the needs of bovine practitioners. Types of articles considered appropriate for the journal include research reports, case reports, review articles, retrospective studies and articles describing new techniques.

All papers should begin with an abstract. Research reports should follow with an introduction, materials and methods (including experimental design and statistical analysis), results, discussion and conclusions. At the author's discretion, results and discussion may be combined.

Case reports should be written to include an introduction, history, clinical findings, appropriate laboratory data, surgical/therapeutic management, discussion and conclusions.

Review articles covering topics important to the practitioner are welcome. They should address more recent advances and bring the reader cutting edge information related to bovine practice or to beef or dairy production.

Papers reporting retrospective studies should include an introduction, clinical implications or objectives of the study, the methodology used to evaluate the data, a section that details the significance of the findings to the practitioner and conclusions.

Two manuscripts and a diskette should be submitted to the editor through the mail or via a parcel delivery service. Manuscripts should be double-spaced, using 12-point Times type and 1-inch margins. Both lines and pages should be numbered. When possible Microsoft Word should be used.

Figures, tables and photographs are welcome. Figures should be numbered on the back: legends for figures should be submitted on a separate sheet of paper. When photographs are submitted, prints are preferred over 2x2 slides.

English units of measure should be used for weights, measures and temperature. If the author desires, it is acceptable to follow English units with metric units in parenthesis, i.e....440 lb (200 kg) steer had a rectal temperature of 101.5°F (38.6°C). When the use of brand names is necessary, they should be listed in footnotes, including the name of product, manufacturer, and manufacturer's city and state.

References to literature cited in the paper must be identified in the text by the use of superscripts. References should be listed in **alphabetical order**. Suggested style for citations in the reference section is as follows:

1. Allen WM, Sansom BF: Parturient paresis (milk fever) and hypocalcemia (cows, ewes, and goats), in Howard JL (ed): *Current Veterinary Therapy III. Food Animal Practice.* Philadelphia, WB Saunders Co, 1993, pp 304-308.
2. Barth AD, Cates WF, Harland RJ: The effect of body fat and loss of fat on breeding soundness classification of beef bulls. *Can Vet J* 36:758-764, 1995.
3. Nutrient Requirements of Beef Cattle, ed 7. Washington DC, National Academy Press, 1996.
4. Syvrud R: Vaccination for bovine respiratory syncytial virus: Benefits for both cow/calf and feedlot cattle. *Proc Am Assoc Bov Prac* 21:204-206, 1989.

All correspondence and manuscripts should be addressed to:

The Bovine Practitioner
Dr. Bob Smith, Editor
3404 Live Oak Lane
Stillwater, OK 74075
405-372-8666 Office
405-743-8422 Fax

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American Association of Bovine Practitioners

Prudent Drug Usage Guidelines

The production of safe and wholesome animal products for human consumption is a primary goal of members of the AABP. In reaching that goal, the AABP is committed to the practice of preventive immune system management through the use of vaccines, parasiticides, stress reduction and proper nutritional management. The AABP recognizes that proper and timely management practices can reduce the incidence of disease and therefore reduce the need for antimicrobials; however, antimicrobials remain a necessary tool to manage infectious disease in beef and dairy herds. In order to reduce animal pain and suffering, to protect the economic livelihood of beef and dairy producers, to ensure the continued production of foods of animal origin, and to minimize the shedding of zoonotic bacteria into the environment and potentially the food chain, prudent use of antimicrobials is encouraged. Following are general guidelines for the prudent therapeutic use of antimicrobials in beef and dairy cattle.

1. The veterinarian's primary responsibility to the client is to help design management, immunization, housing and nutritional programs that will reduce the incidence of disease and the need for antimicrobials.

2. Antimicrobials should be used only within the confines of a valid veterinarian-client-patient relationship; this includes both dispensing and issuance of prescriptions.

3. Veterinarians should properly select and use antimicrobial drugs.
   a. Veterinarians should participate in continuing education programs that include therapeutics and emerging and/or development of antimicrobial resistance.
   b. The veterinarian should have strong clinical evidence of the identity of the pathogen causing the disease, based upon clinical signs, history, necropsy examination, laboratory data and past experience.
   c. The antimicrobial selected should be appropriate for the target organism and should be administered at a dosage and route that are likely to achieve effective levels in the target organ.
   d. Product choices and regimens should be based on available laboratory and package insert information, additional data in the literature, and consideration of the pharmacokinetics and pharmacodynamics of the drug.
   e. Antimicrobials should be used with specific clinical outcome(s) in mind, such as fever reduction, return of mastitic milk to normal, or to reduce shedding, contagion and recurrence of disease.
   f. Periodically monitor herd pathogen susceptibility and therapeutic response, especially for routine therapy such as dry cow intramammary antibiotics, to detect changes in microbial susceptibility and to evaluate antimicrobial selections.
   g. Use products that have the narrowest spectrum of activity and known efficacy *in vivo* against the pathogen causing the disease problem.
   h. Antimicrobials should be used at a dosage appropriate for the condition treated for as short a period of time as reasonable, i.e., therapy should be discontinued when it is apparent that the immune system can manage the disease, reduce pathogen shedding and minimize recurrence of clinical disease or development of the carrier state.
   i. Antimicrobials of lesser importance in human medicine should be used in preference to newer generation drugs that may be in the same class as drugs currently used in humans if this can be achieved while protecting the health and safety of the animals.
   j. Antimicrobials labeled for use for treating the condition diagnosed should be used whenever possible. The label, dose, route, frequency and duration should be followed whenever possible.
   k. Antimicrobials should be used extra-label only within the provisions contained within AMDUCA regulations.
   l. Compounding of antimicrobial formulations should be avoided.
   m. When appropriate, local therapy is preferred over systemic therapy.
   n. Treatment of chronic cases or those with a poor chance of recovery should be avoided. Chronic cases should be removed or isolated from the remainder of the herd.
   o. Combination antimicrobial therapy should be discouraged unless there is information to show an increase in efficacy or suppression of resistance development for the target organism.
   p. Prophylactic or metaphylactic use of antimicrobials should be based on a group, source or production unit evaluation rather than being utilized as standard practice.
   q. Drug integrity should be protected through proper handling, storage and observation of the expiration date.

4. Veterinarians should endeavor to ensure proper on-farm drug use.
   a. Prescription or dispensed drug quantities should be appropriate to the production-unit size and expected need so that stockpiling of antimicrobials on the farm is avoided.
   b. The veterinarian should train farm personnel who use antimicrobials on indications, dosages, withdrawal times, route of administration, injection site precautions, storage, handling, record keeping and accurate diagnosis of common diseases. The veterinarian should ensure that labels are accurate to instruct farm personnel on the correct use of antimicrobials.
   c. Veterinarians are encouraged to provide written guidelines to clients whenever possible to describe conditions and instructions for antimicrobial use on the farm or unit.

Presented by the Bacterial Resistance and Prudent Therapeutic Antimicrobial Use Committee. Board approved March 1999.

Mark your calendars!

Upcoming AABP Conferences

2005
Salt Lake City, Utah • September 24-26

2006
Saint Paul, Minnesota • September 21-23

2007
Vancouver, British Columbia • September 20-22

2008
Charlotte, North Carolina • September 25-27

Micotil® 300*
Tilmicosin Injection, USP

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 to injection site. Emergency medical telephone numbers are 1-800-722-0987 or 1-317-276-2000. Avoid contact with eyes.

NOTE TO THE PHYSICIAN: The cardiovascular system is the target of toxicity and should be monitored closely. This antibiotic persists in tissues for several days. Apply ice to injection site and provide supportive treatment. Epinephrine potentiated lethality of Micotil in pigs. Dobutamine partially offset the negative inotropic effects induced by Micotil in dogs. ß-adrenergic antagonists, such as propranolol, exacerbated the negative inotropy of Micotil-induced tachycardia in dogs.

For Subcutaneous Use in Cattle and Sheep Only. Do Not Use in Automatically Powered Syringes.

Indications: Micotil 300 is indicated for the treatment of bovine respiratory disease (BRD) and ovine respiratory disease (ORD) associated with *Mannheimia (Pasteurella) haemolytica*. Micotil 300 is indicated for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia (Pasteurella) haemolytica*.

Description: Micotil 300 is a solution of the antibiotic tilmicosin. Each mL contains 300 mg of tilmicosin, USP as tilmicosin phosphate in 25% propylene glycol, phosphoric acid as needed to adjust pH and water for injection, Q.S. Tilmicosin, USP is produced semi-synthetically and is in the macrolide class of antibiotics.

Actions: Activity — Tilmicosin has an *in vitro*** antibacterial spectrum that is predominantly gram-positive with activity against certain gram-negative microorganisms. Activity against several mycoplasma species has also been detected.

Ninety-five percent of the *Mannheimia (Pasteurella) haemolytica* isolates were inhibited by 3.12 µg/mL or less.

Microorganism	MIC** (µg/mL)
Mannheimia (Pasteurella) haemolytica	3.12
Pasteurella multocida	6.25
Haemophilus somnus	6.25
Mycoplasma dispar	0.097
M. bovirhinis	0.024
M. bovoculi	0.048

**The clinical significance of this *in vitro* data in cattle and sheep has not been demonstrated.

Directions — Inject Subcutaneously in Cattle and Sheep Only. Administer a single subcutaneous dose of 10 mg/kg of body weight (1 mL/30 kg or 1.5 mL/100 lbs). Do not inject more than 15 mL per injection site. Do not use in lambs less than 15 kg body weight.

If no improvement is noted within 48 hours, the diagnosis should be reevaluated.

For cattle and sheep, injection under the skin in the neck is suggested. If not accessible, inject under the skin behind the shoulders and over the ribs.

Note — Swelling at the subcutaneous site of injection may be observed but is transient and usually mild.

CONTRAINDICATION: Do not use in automatically powered syringes. Do not administer intravenously to cattle or sheep. Intravenous injection in cattle or sheep will be fatal. Do not administer to animals other than cattle or sheep. Injection of this antibiotic has been shown to be fatal in swine and non-human primates, and it may be fatal in horses and goats.

WARNINGS: Animals intended for human consumption must not be slaughtered within 28 days of the last treatment. Do not use in female dairy cattle 20 months of age or older. Use of tilmicosin in this class of cattle may cause milk residues. Do not use in lactating ewes if the milk is intended for human consumption.

CAUTION: Read accompanying literature fully before use. Do Not Administer to Swine. Injection in Swine Has Been Shown to be Fatal. The safety of tilmicosin has not been established in pregnant cattle and in animals used for breeding purposes. Intramuscular injection will cause a local reaction which may result in trim loss. The safety of tilmicosin has not been established for sheep with a body weight of less than 15 kg or in pregnant sheep or sheep used for breeding purposes.

How Supplied: Micotil 300 is supplied in 50 mL, 100 mL and 250 mL multidose amber glass bottles.

Storage: Store at or below 86˚F (30˚C). Protect from direct sunlight.

Revised September 2003

Manufactured for:
Elanco Animal Health
A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

*Elanco® and Micotil® are trademarks of Eli Lilly and Company.

AH 0230
NADA 140-929, Approved by FDA
PA9041DEAMP

EXCEDE™ (Ceftiofur Crystalline Free Acid)
Sterile Suspension

For subcutaneous injection in the middle third of the posterior aspect of the ear of beef and non-lactating dairy cattle.

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

INDICATIONS
EXCEDE Sterile Suspension is indicated for treatment of BRD (shipping fever, pneumonia) associated with *Mannheimia haemolytica*, *P. multocida* and *H. somnus*. EXCEDE SterileSuspension is also indicated for the control of respiratory disease in cattle which are at high risk of developing BRD associated with *Mannheimia haemolytica*, *P. mu tocida* and *H. somnus*.

DOSAGE
Treatment
Administer as a single subcutaneous injection in the middle third of the posterior aspect of the ear of beef and non-lactating dairy cattle at a dosage of 3.0 mg ceftiofur equivalents/lb (6.6 mg CE/kg) body weight (1.5 mL sterile suspension per 100 lb body weight).
Most animals will respond to treatment within three to five days. If no improvement is observed, the diagnosis should be reevaluated.
Control
Administer as a single subcutaneous injection in the middle third of the posterior aspect of the ear to beef and non-lactating dairy cattle at the dosage of 3.0 mg CE/lb (6.6 mg CE/kg) body weight (1.5 mL sterile suspension per 100 lb body weight).
Clinical studies indicate that administration of EXCEDE Sterile Suspension is effective for the control of respiratory disease in cattle at "high risk" of developing BRD. One or more of the following factors typically characterizes calves on arrival at high risk of developing BRD:
— Cattle are from multiple farm origins,
— and/or cattle have extended transport times (that may have included few if any rest stops),
— and/or ambient temperature change from origin to arrival of 30°F or more,
— and/or animals have had continued exposure to extremely wet and cold weather conditions,
— and/or cattle have experienced excessive shrink or stressful arrival processing procedures (such as castration, dehorning).

ADMINISTRATION
— **Shake well before using.** Please read the complete package insert before administering EXCEDE Sterile Suspension subcutaneously in the posterior ear of cattle
— Deposit as a single subcutaneous injection in the middle third of the posterior aspect of the ear, avoiding all blood vessels.
— Adjust the needle insertion point to avoid any blood vessels, previous implants, ear tags or ear tag holes. Do not administer intra-arterially.
— Deliver the full contents of the syringe.
— When administered correctly, a subcutaneous bleb of EXCEDE Sterile Suspension will appear.
— When withdrawing the needle, apply pressure to the needle insertion point, and massage toward the base of the ear.

CONTRAINDICATIONS
As with all drugs, the use of EXCEDE Sterile Suspension is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS
FOR USE IN ANIMALS ONLY. NOT FOR HUMAN USE.
KEEP OUT OF REACH OF CHILDREN.
Restricted Drug — Use Only as Directed (California).
Penicillins and cephalosporins can cause allergic reactions in sensitized individuals. Topical exposures to such antimicrobials, including ceftiofur, may elicit mild to severe allergic reactions in some individuals. Repeated or prolonged exposure may lead to sensitization. Avoid direct contact of the product with the skin, eyes, mouth and clothing. Sensitization of the skin may be avoided by wearing latex gloves.
Persons with a known hypersensitivity to penicillin or cephalosporins should avoid exposure to this product.
In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. If allergic reaction occurs (e.g., skin rash, hives, difficult breathing), seek medical attention.
The material safety data sheet contains more detailed occupational safety information. To obtain a material safety data sheet (MSDS), please call 1-800-733-5500. To report any adverse events, please call 1-800-366-5288.
Injection of EXCEDE Sterile Suspension into the arteries of the ear is likely to result in sudden death to the animal.

RESIDUE WARNINGS
Because ears are inedible tissue and are removed and discarded at slaughter (9 CFR 301.2), there is no pre-slaughter withdrawal period following label treatment with EXCEDE Sterile Suspension. Use of dosages in excess of 6.6 mg CE/kg or administration by an unapproved route (subcutaneous injection in the neck or intramuscular injection) may lead to violative residues. Do not use in female dairy cattle 20 months of age or older. Use in this class of cattle may cause violative milk residues. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

ADVERSE EFFECTS
Administration of EXCEDE Sterile Suspension into the ear arteries is likely to result in sudden death in cattle. During the conduct of clinical studies, there was a low incidence of acute death (nine out of approximately 6000 animals). Three of these deaths were confirmed to be the result of inadvertent intra-arterial injection. No other adverse systemic effects were noted for either the antibiotic or formulation during any of the clinical and target animal safety studies.

PRECAUTIONS
Following subcutaneous injection in the middle third of the posterior aspect of the ear, thickening and swelling (characterized by aseptic cellular infiltrate) of the ear may occur. As with other parenteral injections, localized post-injection bacterial infections may result in abscess formation. Attention to hygienic procedures can minimize their occurrence.

HOW SUPPLIED
EXCEDE Sterile Suspension is available in the following package size: 100 mL vial

NADA #141-209, Approved by FDA

Distributed by:
Pharmacia & Upjohn Company
Division of Pfizer Inc,
NY, NY 10017
www.EXCEDE.com or call 1-866-387-2287

January 2004

THE ONLY BRD TREATMENT THAT WORKS THE WAY YOU DO

It's about working hard, working smart and getting results for your clients. You do it all the time, every day, like clockwork. And so should your first-line Bovine Respiratory Disease (BRD) treatment and control program. That's why thousands of veterinarians recommend Micotil® every day—for both pull and treat and metaphylaxis—just like clockwork.

Working hard... Micotil gets to the lung tissue in two hours and stays there for at least three days.

Working smart... Micotil works with the animal's own immune system to fight and eliminate BRD pathogens. And it only requires one, low-dose subcutaneous injection per treatment.

Getting results... Micotil reduces mortality and morbidity, allowing your clients' cattle to reach their full production potential.

ELANCO
Micotil™

Easy on your cattle. Tough on BRD.

Micotil is to be used by, or on the order of, a licensed veterinarian. For cattle, inject subcutaneously. Intravenous use in cattle will be fatal. Do not use in female dairy cattle 20 months of age or older. Use in lactating dairy cattle may cause milk residues. See label for complete use information, including human warnings. Always use proper drug handling procedures to avoid accidental self-injection.

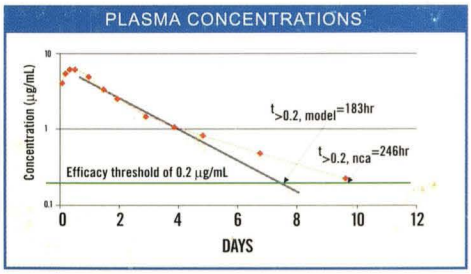
Please remember to advise your clients on the safe handling and use of all injectable products prior to administration.

Illustration of EXCEDE molecules providing 7 days of sustained-release activity from the injection site in the ear.

INTRODUCING EXCEDE™

THE SCIENTIFIC BREAKTHROUGH THAT PROVIDES LONG-LASTING THERAPY FOR THE CONTROL AND TREATMENT OF BRD.

Cutting-edge innovation now delivers 7 days of therapeutic blood levels with a single injection.



[1] Non-compartmental analysis (nca) is representative of the observed mean plasma concentrations. Model represents conservative concentration estimates based on repeatable mathematical modeling. Efficacy threshold of 0.2 µg/mL is 3 to 6 times the MIC_{90} values for targeted BRD pathogens.

- Extended BRD therapy creates a wider range of management options for high-risk cattle.
- EXCEDE attacks all three major BRD bacterial pathogens.
- Unique ear route of administration promotes better beef quality.
- For all the right reasons, new EXCEDE is the one to use first.™

Appropriate subcutaneous injection of EXCEDE in the middle one-third of the posterior aspect of the ear is essential for animal safety.

NEW EXCEDE™
(Ceftiofur Crystalline Free Acid)
Sterile Suspension

THE ONE TO USE FIRST.™

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Pfizer Animal Health