



Vol. 52, No. 1  
SPRING 2018

# The *Bovine* PRACTITIONER

THE OFFICIAL PUBLICATION OF THE  
AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

© Copyright American Association of Bovine Practitioners; open access distribution.



## 51st ANNUAL CONFERENCE

Phoenix, Arizona  
September 13-15, 2018

# Moraxella bovoculi Bacterin

## World's First Commercially Available Moraxella bovoculi Pinkeye Preventative!

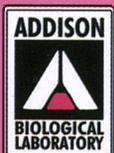
- 8 Different M. bovoculi Isolates
- Cost Effective for All Cattle Herds
- Proven Safety Record
- More Convenient than Autogenous Programs



Addison Biological Laboratory, Inc. announces the approval of the world's first commercial Moraxella bovoculi vaccine for the prevention of pinkeye in cattle. This USDA conditionally licensed product is the first of this kind. Previously the only method of prevention against *Moraxella bovoculi* was autogenous services. This vaccine signifies a breakthrough in convenience for the large number of veterinarians and herd owners battling the challenging problem of pinkeye caused by *Moraxella bovoculi*. This product license is conditional; efficacy and potency have not been fully demonstrated.



***From the LEADERS in pinkeye prevention!***



Addison Biological Laboratory, Inc.  
www.addisonlabs.com  
info@addisonlabs.com  
800-331-2530





# The Bovine PRACTITIONER

**EDITOR:**  
**ROBERT A. SMITH, DVM**  
3404 Live Oak Lane  
Stillwater, Oklahoma 74075  
Tel: (405) 372-8666  
Fax: (405) 743-8422

**PUBLISHER:**  
**VM PUBLISHING COMPANY**  
205 W. 7th Avenue, Suite 201  
Stillwater, Oklahoma 74074  
Tel/Fax: (405) 533-1883  
kellijo.vmpubco@gmail.com

## OFFICERS

President.....	<b>Mike D. Apley, DVM</b> Manhattan, Kansas
President-Elect .....	<b>Glenn M. Rogers, DVM</b> Aledo, Texas
Vice President .....	<b>Calvin Booker, DVM</b> Okotoks, AB, Canada
Past President .....	<b>Mark J. Thomas, DVM</b> Lowville, New York
Executive Vice President.....	<b>K. Fred Gingrich II, DVM</b> Ashland, Ohio
Treasurer.....	<b>Bryan D. Halteman, DVM</b> Turlock, California
Parliamentarian.....	<b>Christine B. Navarre, DVM</b> Baton Rouge, Louisiana

## BOARD OF DIRECTORS

<b>Carie Telgen, DVM</b> Greenwich, New York 1st District, 2020	<b>Hunter Lang, DVM</b> Prairie du Sac, Wisconsin 5th District, 2018	<b>Joe M. Hillhouse, DVM</b> Panhandle, Texas 8th District, 2018	<b>Dale A. Moore, DVM</b> Moscow, Idaho 11th District, 2018
<b>Thomas B. Massie, Jr., DVM</b> Washington, Virginia 2nd District, 2018	<b>Vickie L. Cooper, DVM</b> Ames, Iowa 6th District, 2019	<b>Jeff D. Ondrak, DVM</b> Fairbury, Nebraska 9th District, 2019	<b>Wayne S. Shewfelt, DVM</b> Tavistock, Ontario, Canada 12th District, 2019
<b>Lee Jones, DVM</b> Tifton, Georgia 3rd District, 2019	<b>Carl Meyer, Jr, DVM</b> Oskaloosa, Kansas 7th District, 2020	<b>Gerard J. Koenig, DVM</b> Tulare, California 10th District, 2020	<b>Eric Behlke, DVM</b> Okotoks, Alberta, Canada 13th District, 2020
<b>Mark E. Hardesty, DVM</b> Maria Stein, Ohio 4th District, 2020			

**AVMA DELEGATE:** **Brian J. Gerloff, DVM**  
Marengo, Illinois

**EXHIBITS CHAIRMAN:** **Charles W. Hatcher, DVM**  
College Grove, Tennessee

**ADVERTISING AGENCY:** **J. T. O'Brien & Assoc.**  
12118 Nieman Road  
Overland Park, Kansas 66213  
(913) 579-4084

THE BOVINE PRACTITIONER is published by The American Association of Bovine Practitioners, Inc., at **VM Publishing Co., 205 W. 7th, Suite 201, Stillwater, OK 74074 (Telephone and Fax: (405) 533-1883)**. Over 6000 copies are mailed to veterinarians engaged in cattle practice and allied institutions. Send new address (please include old address) to:

**AABP**  
1130 East Main St., Ste. 302  
Ashland, OH 44805  
Tel: (419) 496-0685; FAX (419) 496-0697  
e-mail: aabphq@aabp.org  
<http://www.aabp.org>

THE BOVINE PRACTITIONER is the official publication of The American Association of Bovine Practitioners, published in the spring and summer annually. It serves as a communication medium between bovine practitioner organizations around the world. All manuscripts and communications must be presented in English. Beginning in 2018, THE BOVINE PRACTITIONER is an open access journal following a 6-month post-publication embargo to allow AABP members and veterinary medical libraries first access.

Copies of THE BOVINE PRACTITIONER are available to non-members for \$30.00 per copy for domestic destinations, or \$35.00 for international addresses. **Contact editor for details.**

# Table of Contents

What dairy veterinarians should know about bovine leukemia virus <b>Paul C. Bartlett, Rebecca M. LaDronka, Vickie J. Ruggiero, Holden Hutchinson</b> .....	1
Review of epizootic hemorrhagic disease in cattle and a study defining seroprevalence of epizootic hemorrhagic disease virus serotype 2 in Texas cattle <b>Thomas B. Hairgrove, Sandy Rodgers, Walter Cook, Christine Budke, William B. Smith</b> .....	10
Association of floor type with health, well-being, and performance parameters of beef cattle fed in indoor confinement facilities during the finishing phase <b>Reneé D. Dewell, Grant A. Dewell, Russ M. Euken, Larry J. Sadler, Chong Wang, Brent A. Carmichael</b> .....	16
A randomized controlled trial to test the effect of on-arrival vaccination and deworming on stocker cattle health and growth performance <b>Courtney M. Griffin, Jenna A. Scott, Brandi B. Karisch, Amelia R. Woolums, John R. Blanton, Ray M. Kaplan, William B. Epperson, David R. Smith</b> .....	26
Review of health and performance effects of bovine viral diarrhea virus and testing for persistently infected feedlot cattle <b>Miles E. Theurer, J. Trent Fox, Travis McCarty</b> .....	34
A randomized trial to compare the efficacy of tildipirosin and tulathromycin for initial treatment of bovine respiratory disease in naturally exposed commercial feedlot heifers <b>Charles C. Dodd, David T. Bechtol, Audie Waite, Marilyn Corbin, David G. Renter</b> .....	39
An evaluation of eprinomectin extended-release injectable (LongRange®) on the performance of yearling cattle on pasture in western Canada <b>Ryan D. Rademacher, Eric J. Behlke, Sandi L. Parr, Sherry J. Hannon, Christina M. Williams, R. Kent Fenton, G. Kee Jim, Calvin W. Booker</b> .....	46
Influence of vaccination with a combined chemically altered/inactivated BHV-1/BVD vaccine or a modified-live BHV-1/BVD vaccine on reproductive performance in beef cows and heifers <b>George A. Perry, Thomas W. Geary, Julie A. Walker, Jerica J.J. Rich, Emmalee J. Northrop, Stephanie D. Perkins, Christina L. Mogck, Megan L. Van Emon, Abby L. Zezeski, Russell F. Daly</b> .....	53
Considerations for veterinary practitioners involved in feed-related toxicology cases <b>Simon J. Timmermans, Scott L. Radke, Steve M. Ensley</b> .....	59
Effect of elevated storage temperatures on the concentration of active ingredients in 5 commonly used large animal pharmaceuticals <b>J.D. Ondrak, M.L. Jones, V.R. Fajt, L. Deng</b> .....	62
Guidelines for Authors .....	67
New Officers/Directors .....	73
Welcoming Receptions and Opening Ceremony .....	78
Eighth Annual Quiz Bowl .....	83
AABP Foundation-Zoetis Scholarships and Auction .....	86
Cattle Production Hall of Fame Inductees .....	88
Annual Business Luncheon and Awards .....	89
Executive Vice-President's Report .....	92
President's Reception and Closing Event .....	105

## Advertisers Index

Addison Biological Laboratory, Inc. ....	inside front cover
American Board of Veterinary Practitioners .....	8
BCF Technology .....	25
Boehringer Ingelheim .....	108, back cover
Merck Animal Health .....	front of book
Norbrook Laboratories Limited .....	9

*Cover photo courtesy of Kerstin Mitchell, Western Images, Syracuse, KS. Conference photos courtesy of Dr. Bob Smith.*

*The abstracts were translated to French by Dr. Guy Beauchamp and revised by Dr. Emile Bouchard.*

### Notice to Readers

All statements, opinions and conclusions contained in articles in *The Bovine Practitioner* are those of the author(s), and are not necessarily those of the American Association of Bovine Practitioners (AABP) unless specifically approved by the AABP Board of Directors.

**Banamine<sup>®</sup>**  
**Transdermal**  
(flunixin transdermal solution)



**FOR PAIN AND FEVER IN CATTLE,  
RELIEF IS IN THE PALM OF YOUR HAND.**

## **New Banamine<sup>®</sup> Transdermal.** **The first FDA-approved pour-on for pain control in cattle.**

Pain and fever can cause cattle to go off feed. But new, easy-to-use Banamine<sup>®</sup> Transdermal (flunixin transdermal solution) helps get 'em back where they belong.

FDA-approved to control pain due to foot rot and fever due to BRD, Banamine Transdermal is the only non-steroidal anti-inflammatory (NSAID) cattle product available with a convenient pour-on route of administration. Visit [BanamineTD.com](http://BanamineTD.com) to learn more.

**IMPORTANT SAFETY INFORMATION: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.** Only for topical use in beef and dairy cattle. Do not use Banamine Transdermal pour-on within 48 hours of expected parturition. Do not use in animals showing hypersensitivity to flunixin meglumine. Cattle must not be slaughtered for human consumption within 8 days of the last treatment. Not for use in female dairy cattle 20 months of age or older, including dry dairy cows; use in these cattle may cause drug w in milk and/or in calves born to these cows or heifers. Not for use in suckling beef calves, dairy calves, and veal calves. A withdrawal period has not been established for this product in pre-ruminating calves. Not for use in dairy or beef bulls intended for breeding because reproductive safety has not been evaluated.

Copyright ©2018 Intervet Inc., d/b/a Merck Animal Health, a subsidiary of Merck & Co., Inc. All rights reserved.



**PRODUCT INFORMATION**

NADA #141-450, Approved by FDA

**Banamine<sup>®</sup>  
Transdermal**

(flunixin transdermal solution)

Pour-On for Beef and Dairy Cattle 50 mg/mL

**BRIEF SUMMARY:** (For full prescribing information, see package insert)

**Non-Steroidal Anti-inflammatory Drug**

Only for topical use in beef and dairy cattle. Not for use in beef bulls intended for breeding, dairy bulls, female dairy cattle 20 months of age or older, including dry dairy cows, and suckling beef calves, dairy calves, and veal calves.

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

**DESCRIPTION:** Each milliliter of Banamine Transdermal pour-on contains 50 mg flunixin (equivalent to 83 mg flunixin meglumine), 150 mg pyrrolidone, 50 mg L-menthol, 500 mg propylene glycol dicaprylate/dicaprate NF, 0.20 mg FD&C Red No. 40, and glycerol monocaprylate NF as

**INDICATIONS:** Banamine Transdermal pour-on is indicated for the control of pyrexia associated with bovine respiratory disease and the control of pain associated with foot rot in steers, beef heifers, beef cows, beef bulls intended for slaughter, and replacement dairy heifers under 20 months of age.

**CONTRAINDICATIONS:** NSAIDs inhibit production of prostaglandins which are important in signaling the initiation of parturition. The use of flunixin can delay parturition and prolong labor which may increase the risk of stillbirth. Do not use Banamine Transdermal pour-on within 48 hours of expected parturition. Do not use in animals showing hypersensitivity to flunixin meglumine.

**USER SAFETY WARNINGS:** Not for use in humans. Keep out of reach of children. Flunixin transdermal solution is a potent non-steroidal anti-inflammatory drug (NSAID), and ingestion may cause gastrointestinal irritation and bleeding, kidney, and central nervous system effects.

This product has been shown to cause severe and potentially irreversible eye damage (conjunctivitis, iritis, and corneal opacity) and irritation to skin in laboratory animals. Users should wear suitable eye protection (face shields, safety glasses, or goggles) to prevent eye contact; and chemical-resistant gloves and appropriate clothing (such as long-sleeve shirt and pants) to prevent skin contact and/or drug absorption. Wash hands after use.

**In case of accidental eye contact, flush eyes immediately with water and seek medical attention.** If wearing contact lenses, flush eyes immediately with water before removing lenses. **In case of accidental skin contact and/or clothing contamination, wash skin thoroughly with soap and water** and launder clothing with detergent. **In case of ingestion do not induce vomiting and seek medical attention immediately.** Probable mucosal damage may contraindicate the use of gastric lavage. Provide product label and/or package insert to medical personnel.

**RESIDUE WARNINGS:** Cattle must not be slaughtered for human consumption within 8 days of the last treatment. Not for use in female dairy cattle 20 months of age or older, including dry dairy cows; use in these cattle may cause drug residues in milk and/or in calves born to these cows or heifers. Not for use in suckling beef calves, dairy calves, and veal calves. A withdrawal period has not been established for this product in pre-ruminating calves.

**PRECAUTIONS:** As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal, and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with renal, cardiovascular, and/or hepatic dysfunction. Banamine transdermal should be used with caution in animals with suspected pre-existing gastric erosions or ulcerations. Concurrent administration of other NSAIDs, corticosteroids, or potentially nephrotoxic drugs should be avoided or used only with careful monitoring because of the potential increase of adverse events.

NSAIDs are known to have potential effects on both parturition (see Contraindications) and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. NSAIDs are known to have the potential to delay parturition through a tocolytic effect. The use of NSAIDs in the immediate post-partum period may interfere with uterine involution and expulsion of fetal membranes. Cows should be monitored carefully for placental retention and metritis if Banamine Transdermal pour-on is used within 24 hours after parturition.

Not for use in dairy or beef bulls intended for breeding because reproductive safety has not been evaluated.

**HOW SUPPLIED:** Banamine Transdermal pour-on, is available in 100-mL (NDC 0061-4363-01), 250-mL (NDC 0061-4363-02), and 1-L (NDC 0061-4363-03) bottles.

Copyright ©2018, Intervet Inc., a subsidiary of Merck & Co. All rights reserved.

Made in Germany  
5/2017

merck-animal-health-usa.com • 800-521-5767

BV-BTD-0001 01/18