The Bovine PRACTITIONER

Vol. 55 | No. 2 | 2021

The Bovine PRACTITIONER

THE OFFICIAL PUBLICATION OF THE
AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

Plan now to attend the

55th Annual Conference

Long Beach, California

September 22-24, 2022

Vol. 55 | No. 2 | 2021

Pinkeye Problem?
Pinkeye Solution!

MAXI/GUARD®

delivers twice the pinkeye protection with single dose convenience

Broad coverage
8 different M. bovis isolates
Over 90% efficacy

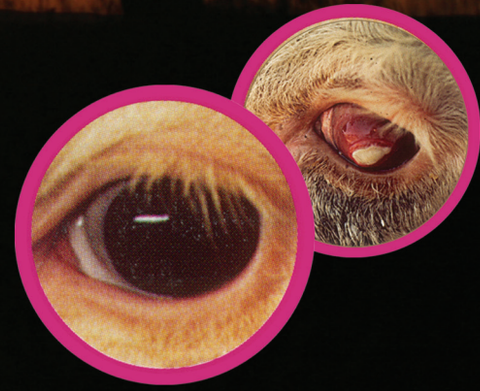
Easy syringeability

Approved for subcutaneous administration

Minimal injection site reactions

Strong safety record
Extremely low endotoxin levels

Single dose protection



PINKEYE071921

ADDISON BIOLOGICAL LABORATORY

Addison Biological Laboratory, Inc.
800-331-2530
www.addisonlabs.com
/AddisonLabs

ISSN 0524-1685

The Bovine PRACTITIONER

Vol. 55 | No. 2
2021

EDITOR:
ROBERT A. SMITH, DVM
3404 Live Oak Lane
Stillwater, Oklahoma 74075
Tel: (405) 743-9133
Fax: (405) 743-8422
cowdr@sbcglobal.net

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

THE BOVINE PRACTITIONER is published by The American Association of Bovine Practitioners, at **VM Publishing Company, LLC, 205 W. 7th, Suite 201, Stillwater, OK 74074 (Telephone and Fax: (405) 533-1883)**. Over 500 copies are mailed to veterinarians engaged in cattle practice and allied institutions. Send new address (please include old address) to:

AABP
1130 East Main Street, Suite 302
Ashland, Ohio 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.

THE BOVINE PRACTITIONER is an open access journal.

Copies of THE BOVINE PRACTITIONER are available to non-members. **Contact editor for details.**

Editorial Review Board 2021

The *Bovine Practitioner* articles are reviewed by three Editorial Review Board members. Reviewers for 2021 included:

Dr. Arn Anderson
Bowie, TX

Dr. Chance Armstrong
Elgin, TX

Dr. Michelle Arnold
Lexington, KY

Dr. Murl Bailey
College Station, TX

Dr. Jason Banta
Overton, TX

Dr. Rosslyn Biggs
Stillwater, OK

Dr. Dale Blasi
Manhattan, KS

Dr. Robert Callan
Ft. Collins, CO

Dr. Kyle Clymer
Sioux Center, IA

Dr. Robert Corbett
Spring City, UT

Dr. Maisie Dawes
Pomona, CA

Dr. Lionel Dawson
Stillwater, OK

Dr. Andre Desrochers
St-Hyacinthe, QB, Canada

Dr. John Ellis
Saskatoon, SK, Canada

Dr. Ronnie Elmore
Manhattan, KS

Dr. Terry Engelken
Ames, IA

Dr. Ronald Erskin
East Lansing, MI

Dr. Charles Estill
Corvallis, OR

Dr. Chuck Fossler
Fort Collins, CO

Dr. Trent Fox
Hays, KS

Dr. John Gilliam
Stillwater, OK

Dr. Sandra Godden
St. Paul, MN

Dr. Dee Griffin
Lincoln, NE

Dr. Thomas Hairgrove
College Station, TX

Dr. Brad Heins
Watkinsville, GA

Dr. Julia Herman
Windsor, CO

Dr. Randall Hinshaw
Rockingham, VA

Dr. Larry C. Hollis
Flint, TX

Dr. Carla L Huston
Mississippi State, MS

Dr. Andy Johnson
Green Bay, WI

Dr. Lee Jones
Tifton, GA

Dr. Meredyth Jones
Perkins, OK

Dr. Erin King
Woodstock, CT

Dr. Michael Kleinhenz
Manhattan, KS

Dr. Whitney Knauer
St. Paul, MN

Dr. Kaitlyn Kremer
Geneva, NY

Dr. Robert Larson
Manhattan, KS

Dr. Tiffany Lee
Leavenworth, KS

Dr. Dustin Loy
Lincoln, NE

Dr. John Maas
Ashland, OR

Dr. Gabriele Maier
Davis, CA

Dr. Scott McVey
Lincoln, NE

Dr. Pedro Melendez
Amarillo, TX

Dr. Matt Miesner
Manhattan, KS

Dr. Myrna M. Miller
Laramie, WY

Dr. Pierre-Yves Mulon
Knoxville, TN

Dr. Christine Navarre
Baton Rouge, IA

Dr. William Pinchak
Vernon, TX

Dr. Jeremy G. Powell
Fayetteville, AR

Dr. Thomas R. Reece
Tipton, OK

Dr. Emily Reppert
Manhattan, KS

Dr. John Richeson
Canyon, TX

Dr. Pamela Ruegg
East Lansing, MI

Dr. Kendall Samuelson
Canyon, TX

Dr. Mike Sanderson
Manhattan, KS

Dr. Patty Scharko
Columbia, SC

Dr. Jennifer Schleining
College Station, TX

Dr. Jan Shearer
Ames, IA

Dr. Katie Simpson
Fort Collins, CO

Dr. Billy I. Smith
Philadelphia, PA

Dr. Geoffrey Smith
Raleigh, NC

Dr. Emily Snyder
Saskatoon, SK, Canada

Dr. Keith Sterner
Ionia, MI

Dr. Kelly Still Brooks
Loveland, CO

Dr. Anthony Tarpoff
Manhattan, KS

Dr. Miles Theurer
Cimarron, KS

Dr. Daniel Thomson
Ames, IA

Dr. Brandon Treichler
Canyon, TX

Dr. Michael Van Amburgh
Ithaca, NY

Dr. Robert Van Saun
University Park, PA

Dr. Brian Vander Ley
Clay Center, NE

Dr. Heidi Ward
Little Rock, AR

Dr. Brian Warr
Linden, AB, Canada

Dr. Caitlin Wiley
State Center, IA

Dr. Lou Anne Wolfe
Claremore, OK

Appreciation is extended to each board member for volunteering their time and expertise to review articles for the *Bovine Practitioner*.

The Bovine PRACTITIONER
THE OFFICIAL PUBLICATION OF THE
AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

Parting Comments from your Retiring Editor

This is a bittersweet moment . . . I have been honored to serve as the editor of the AABP publications from 1998 through 2021, but there is a time when we should step aside and turn the reins over to others. I appreciate the confidence that Dr. Walt Guterbock and the search committee placed in me when Dr. Eric Williams announced his retirement. During my tenure I have been blessed to work with so many wonderful authors of manuscripts, and have had outstanding support from volunteer peer reviewers. When I assumed office, I quickly fulfilled my promise to develop a peer review system for the *Bovine Practitioner*, and years later the entire library of AABP publications was scanned and placed on the AABP website to improve access and make the digital library searchable. Without enormous efforts by Texas A&M medical librarians Heather Moberly and Laura Rae, this project would not have been possible.

This "part-time" job as editor took an inordinate amount of my time, but I've certainly enjoyed the opportunity to contribute to continuing education opportunities for bovine practitioners. I am also appreciative of the support provided by several generations of AABP board members, and three outstanding executive directors of the AABP, Dr. Jim Jarrett, Dr. Gatz Riddell, and Dr. Fred Gingrich.

A brief history of the AABP publications. Dr. Ray Bradbury was the first editor, serving from 1965-1968. He actually wrote many of the articles himself as the call for manuscripts often went unanswered. In addition, he purchased an antique printing press for $100, and edited, printed, and mailed the publications to about 300 members. Following Dr. Bradbury was Dr. Eric Williams, who was appointed as the editor in 1968 and served until 1998. Dr. Williams and his family immigrated from Wales to Stillwater, Oklahoma on the Queen Mary in 1960, having practiced in Wales near the legendary James Herriott. Dr. Williams was a stickler for the "Queen's English", and the colorful Welshman often ended his editor's report with, "The sun never sets on the bovine practitioner". He was loved and respected by veterinarians around the world, and was very active in the WVC. It was in the final couple of years of his tenure that the AABP began publishing two issues of the *Bovine Practitioner* each year.

There are several other people that I want to recognize that have been very helpful to me. Rudy Bittle (Frontier Printers) and Mike Chamberlain (PPI, Inc.) owned the printing companies that I utilized, and both gave high priority to our publications. Dr. Lou Anne Wolfe is a small animal practitioner in Tulsa, Oklahoma who served as my part-time copy editor. She was a journalist prior to veterinary school, and she was a valuable partner to make sure that the final galleys were grammatically correct. Although credited earlier in this letter, the reviewers played a critical role in the production of peer-reviewed manuscripts . . . generally 60 to 70 people served in this role each year.

And finally, I could not have tackled this project without the help of Kelli Jo Carrier. Kelli actually started working with AABP publications in 1988 while working for First Word Desktop Publishing, typing for Dr. Eric Williams. In 1991 she joined Frontier Printers, and was assigned the AABP publications as one of her top priorities. When Frontier Printers closed in 2009, I hired her to be my full-time production manager. Her patience in working with a full-time feedlot practitioner and a part-time editor who is out of town 230 nights per year is highly appreciated. She was very instrumental in any successes I was able to have . . . she corrected manuscripts that I had edited; formatted tables and figures; communicated with authors; prepared mailing lists; re-typed an occasional manuscript, and on and on. It was obvious that she took great pride in her job, and being a part of the AABP mission. During the time I have worked with her, she and her husband raised three children, cared for aging parents, and still had the normal family responsibilities that you and I have. I am deeply grateful for her service to the AABP over the past 30+ years . . . Thank you Kelli Jo!!

Although Dr. Williams often said "The sun never sets on the bovine practitioner", the sun is setting on this phase of my professional life. Thanks to all past and present AABP members for this wonderful opportunity.

Respectfully,

Bob Smith, DVM, MS, DABVP
Editor Emeritus

Dr. Bob Smith, *Editor* • 3404 Live Oak Lane • Stillwater, OK 74075 • Phone: 405/372-8666 • Fax: 405/743-8422

Table of Contents

Advertisers Index

Cover photo courtesy of Chisolm Kinder, editor of the *Oklahoma Cowman Magazine*, the official publication of the Oklahoma Cattlemen's Association.

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.

When you spot BRD, that's your

GOLDEN OPPORTUNITY

to target both infection and fever with a single dose of

RESFLOR GOLD®

(Florfenicol and Flunixin Meglumine).

Learn more at TargetBRD.com

BRD can lead to permanent lung damage and lower production.[1] That puts your profitability at risk. But when you spot the signs, that's the time to act with the dual-therapy treatment of RESFLOR GOLD:

Florfenicol – fights all four major BRD bacterial pathogens
Flunixin Meglumine – a non-steroidal anti-inflammatory, to reduce fever associated with BRD

Together, they produce consistent results and you can see improvement in as little as six hours. Choose RESFLOR GOLD, the treatment therapy producers and veterinarians have trusted for over a decade.

IMPORTANT SAFETY INFORMATION: Animals intended for human consumption must not be slaughtered within 38 days of treatment. This product is not approved 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. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal. For more information, see packaging insert.

[1]Lekeux P. Bovine respiratory disease complex: a European perspective. *Bov Pract*. 1995;29:71-75.

MERCK Animal Health

MAHCattle.com • 800-521-5767

PRODUCT INFORMATION
NADA 141-299, Approved by FDA.

(Florfenicol and Flunixin Meglumine)
Antimicrobial/Non-Steroidal Anti-Inflammatory Drug

For subcutaneous use in beef and non-lactating dairy cattle only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

BRIEF SUMMARY: For full prescribing information, see package insert.

INDICATION: RESFLOR GOLD® is indicated for treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, and control of BRD-associated pyrexia in beef and non-lactating dairy cattle.

CONTRAINDICATIONS: Do not use in animals that have shown hypersensitivity to florfenicol or flunixin.

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains material that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. 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. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information.

For customer service or to obtain a copy of the MSDS, call 1-800-211-3573. For technical assistance or to report suspected adverse reactions, call 1-800-219-9286.

Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Toxicity studies in dogs, rats, and mice have associated the use of florfenicol with testicular degeneration and atrophy. NSAIDs are known to have potential effects on both parturition 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. The effects of flunixin on imminent parturition have not been evaluated in a controlled study. NSAIDs are known to have the potential to delay parturition through a tocolytic effect.

RESFLOR GOLD®, when administered as directed, may induce a transient reaction at the site of injection and underlying tissues that may result in trim loss of edible tissue at slaughter.

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 38 days of treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk residues. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

ADVERSE REACTIONS: Transient inappetence, diarrhea, decreased water consumption, and injection site swelling have been associated with the use of florfenicol in cattle. In addition, anaphylaxis and collapse have been reported post-approval with the use of another formulation of florfenicol in cattle.

In cattle, rare instances of anaphylactic-like reactions, some of which have been fatal, have been reported, primarily following intravenous use of flunixin meglumine.

Made in Germany
Intervet Inc. Roseland, NJ 07068

May 2009 US 3448_IV

Pinkeye Problem?
Pinkeye Solution!

MAXI/GUARD®
delivers twice the pinkeye protection with single dose convenience

Broad coverage
8 different M. bovis isolates
Over 90% efficacy

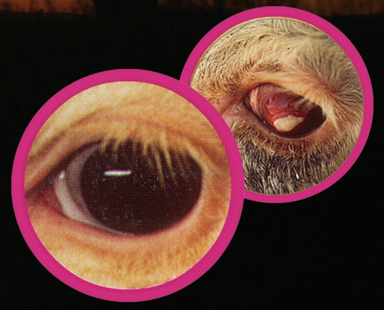
Easy syringeability

Approved for subcutaneous administration

Minimal injection site reactions

Strong safety record
Extremely low endotoxin levels

Single dose protection



PINKEYE071921

ADDISON BIOLOGICAL LABORATORY

Addison Biological Laboratory, Inc.
800-331-2530
www.addisonlabs.com
/AddisonLabs

CYSTORELIN®
(gonadorelin)

50mcg/mL gonadorelin diacetate tetrahydrate Injectable Solution

For treatment of cystic ovaries in dairy cattle

For use with cloprostenol sodium to synchronize estrous cycles to allow for fixed time artificial insemination (FTAI) in lactating dairy cows and beef cows.

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

DESCRIPTION:
CYSTORELIN® (gonadorelin) is a sterile solution containing 43 mcg/mL of gonadorelin (GnRH) as 50 mcg/mL gonadorelin diacetate tetrahydrate suitable for intramuscular or intravenous administration according to the indication. Gonadorelin is a decapeptide composed of the sequence of amino acids—
5-oxoPro-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-NH2—
a molecular weight of 1182.32 and empirical formula $C_{55}H_{75}N_{17}O_{13}$. The diacetate tetrahydrate ester has a molecular weight of 1374.48 and empirical formula $C_{59}H_{91}N_{17}O_{21}$.
Each mL of CYSTORELIN contains:
Gonadorelin diacetate tetrahydrate (equivalent to 43 mcg gonadorelin).....50 mcg
Benzyl Alcohol .....9 mg
Sodium Chloride .....7.47 mg
Water for Injection .....q.s.
pH adjusted with potassium phosphate (monobasic and dibasic).

Gonadorelin is the hypothalamic releasing factor responsible for the release of gonadotropins (e.g., luteinizing hormone [LH], follicle stimulating hormone [FSH]) from the anterior pituitary. Synthetic gonadorelin is physiologically and chemically identical to the endogenous bovine hypothalamic releasing factor.

INDICATIONS FOR USE:
Cystic Ovaries
CYSTORELIN is indicated for the treatment of ovarian follicular cysts in dairy cattle. Ovarian cysts are non-ovulated follicles with incomplete luteinization which result in nymphomania or irregular estrus. Historically, cystic ovaries have responded to an exogenous source of LH such as human chorionic gonadotrophin. CYSTORELIN initiates release of endogenous LH to cause ovulation and luteinization.

Reproductive Synchrony
CYSTORELIN is indicated for use with cloprostenol sodium to synchronize estrous cycles to allow for fixed time artificial insemination (FTAI) in lactating dairy cows and beef cows.

DOSAGE AND ADMINISTRATION:
Cystic Ovaries
The intravenous or intramuscular dosage of CYSTORELIN is 100 mcg gonadorelin diacetate tetrahydrate (2 mL) per cow.

Reproductive Synchrony
The intramuscular dosage of CYSTORELIN is 100 mcg gonadorelin diacetate tetrahydrate (2 mL) per cow, used in reproductive synchrony programs similar to the following:
1. Administer the first CYSTORELIN injection (2 mL) at Time 0.
2. Administer 500 mcg cloprostenol (as cloprostenol sodium) by intramuscular injection 6 to 8 days after the first CYSTORELIN injection.
3. Administer the second CYSTORELIN injection (2 mL) 30 to 72 hours after the cloprostenol sodium injection.
4. Perform FTAI 0 to 24 hours after the second CYSTORELIN injection, or inseminate cows on detected estrus using standard herd practices.

WARNINGS AND PRECAUTIONS:
Not for use in humans.
Keep out of reach of children.

WITHDRAWAL PERIODS:
No withdrawal period or milk discard time is required when used according to the labeling.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim Animal Health USA Inc. 1-888-637-4251. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS, or www.fda.gov/reportanimalae.

PHARMACOLOGY AND TOXICOLOGY:
Endogenous gonadorelin is synthesized and/or released from the hypothalamus during various stages of the bovine estrus cycle following appropriate neurogenic stimuli. It passes via the hypophyseal portal vessels, to the anterior pituitary to effect the release of gonadotropins (e.g., LH, FSH). Synthetic gonadorelin administered intravenously or intramuscularly also causes the release of endogenous LH or FSH from the anterior pituitary.

Gonadorelin diacetate tetrahydrate has been shown to be safe. The LD50 for mice and rats is greater than 60 mg/kg, and for dogs, greater than 600 mcg/kg, respectively. No adverse effects were noted among rats or dogs administered 120 mcg/kg/day or 72 mcg/kg/day intravenously for 15 days.

It had no adverse effects on heart rate, blood pressure, or EKG to unanesthetized dogs at 60 mcg/kg. In anesthetized dogs it did not produce depression of myocardial or system hemodynamics or adversely affect coronary oxygen supply or myocardial oxygen requirements.

The intravenous administration of 60 mcg/kg/day of gonadorelin diacetate tetrahydrate to pregnant rats and rabbits during organogenesis did not cause embryotoxic or teratogenic effects. Further, CYSTORELIN did not cause irritation at the site of intramuscular administration in dogs with a dose of 72 mcg/kg/day administered for seven (7) days.

TARGET ANIMAL SAFETY:
In addition to the animal safety information presented in the PHARMACOLOGY AND TOXICOLOGY section, the safety of CYSTORELIN was established through the review and evaluation of the extensive published literature available for the use of gonadorelin-containing products.

The intramuscular administration of 1000 mcg gonadorelin diacetate tetrahydrate on five (5) consecutive days to normally cycling dairy cattle had no effect on hematology or clinical chemistries.

In field studies evaluating the effectiveness of CYSTORELIN for the treatment of ovarian follicular cysts, the incidence of health abnormalities was not significantly greater in cows administered CYSTORELIN than cows administered a placebo injection.

The target animal safety of, and injection site reactions to, gonadorelin when used with cloprostenol sodium were evaluated during the conduct of effectiveness field studies. The incidence of health abnormalities was not significantly greater in cows administered gonadorelin than cows administered a placebo injection.

EFFECTIVENESS:
The use of CYSTORELIN for treatment of ovarian follicular cysts in dairy cattle was demonstrated to be effective with a treatment dose of 100 mcg gonadorelin diacetate tetrahydrate. The effectiveness of gonadorelin for use with cloprostenol sodium to synchronize estrous cycles to allow for FTAI in lactating dairy cows was demonstrated in a field study at 10 different locations in the U.S. Four of the locations represented conditions that would typically cause heat stress in lactating cows. A total of 1607 healthy, non-pregnant, primiparous or multiparous lactating dairy cows within 40-150 days postpartum were enrolled in the study. A total of 805 cows were administered gonadorelin (1 mL; 100 mcg gonadorelin as the acetate salt) and 802 cows were administered an equivalent volume of water for injection as an intramuscular injection twice in the following regimen:
Day 0: 100mcg gonadorelin (as the acetate salt) or sterile water for injection
Day 7: 500 mcg cloprostenol (as cloprostenol sodium)
Day 9: 100mcg gonadorelin (as the acetate salt) or sterile water for injection
Fixed time AI was performed on Day 10, approximately 11 - 31 hours after the Day 9 injection. Cows were evaluated for pregnancy on Day 45 ± 5 days by trans-rectal ultrasound or rectal palpation. Pregnancy rate to FTAI was significantly higher ($P < 0.0001$) in cows treated with gonadorelin (33.4%) than the pregnancy rate to FTAI in cows treated with water (13.6%). The environmental condition (heat stress or not heat stress) did not affect the conclusion of effectiveness. The effectiveness of gonadorelin for use with cloprostenol sodium to synchronize estrous cycles to allow for FTAI in beef cows was demonstrated in a field study at 10 different locations in the U.S. A total of 706 healthy, non-pregnant, primiparous or multiparous beef cows within 40-150 days postpartum were enrolled in the study. A total of 364 cows were administered gonadorelin (1 mL; 100 mcg gonadorelin as the acetate salt) and 342 cows were administered an equivalent volume of water for injection as an intramuscular injection twice in the following regimen:
Day 0: 100mcg gonadorelin (as the acetate salt) or sterile water for injection
Day 7: 500 mcg cloprostenol (as cloprostenol sodium)
Day 9: 100mcg gonadorelin (as the acetate salt) or sterile water for injection
Fixed time AI was performed immediately after the Day 9 injection. Cows were evaluated for pregnancy on Day 55 ± 5 days by trans-rectal ultrasound. Pregnancy rate to FTAI was significantly higher ($P = 0.0006$) in cows treated with gonadorelin (21.7%) than the pregnancy rate to FTAI in cows treated with water (7.4%).

The effectiveness of a 2-mL dose of CYSTORELIN delivering 100 mcg gonadorelin diacetate tetrahydrate (86 mcg gonadorelin) for use with cloprostenol sodium to synchronize estrous cycles to allow for FTAI in lactating dairy cows and beef cows was also demonstrated through references to scientific literature.

HOW SUPPLIED:
CYSTORELIN is available in a concentration of 50 mcg/mL gonadorelin diacetate tetrahydrate (43 mcg/mL gonadorelin) pH adjusted with potassium phosphate (monobasic and dibasic).

CYSTORELIN is supplied in multi-dose vials containing 10ml, 30ml,50ml, and 100ml of sterile solution.

STORAGE, HANDLING, AND DISPOSAL: Store at or below 77°F (25°C). Brief excursions to 86°F (30°C) are permitted. Use within 6 months of first puncture.

1050-2907-05
Rev. 08/2019

Approved by FDA under NADA#098-379

Made in Australia.
Marketed by:
Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096

SYNCHSURE®
(doprostenol sodium)

Prostaglandin Analogue for Cattle
Equivalent to 250 mcg cloprostenol/mL

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

DESCRIPTION:
SYNCHSURE® (cloprostenol sodium) is a synthetic prostaglandin analogue structurally related to prostaglandin F2 (PGF2ῼ) [NOTE: 2ῼ should be subscript]. Each mL of the colorless aqueous solution contains 263 mcg of cloprostenol sodium (equivalent to 250 mcg of cloprostenol), chlorocresol 1.0 mg as a bactericide, citric acid anhydrous 0.66 mg, sodium citrate 5.03 mg, sodium chloride 6.76 mg. The pH is adjusted, as necessary, with sodium hydroxide or citric acid.

SYNCHSURE causes functional and morphological regression of the corpus luteum (luteolysis) in cattle. In normal, nonpregnant cycling animals, this effect on the life span of the corpus luteum usually results in estrus 2 to 5 days after treatment. In animals with prolonged luteal function (pyometra, mummified fetus, and luteal cysts), the induced luteolysis usually results in resolution of the condition and return to cyclicity. Pregnant animals may abort depending on the stage of gestation.

INDICATIONS: For intramuscular use to induce luteolysis in beef and dairy cattle. The luteolytic action of SYNCHSURE can be utilized to manipulate the estrous cycle to better fit certain management practices, to terminate pregnancies resulting from mismatings, and to treat certain conditions associated with prolonged luteal function.

RECOMMENDED USES:
Unobserved or Nondetected Estrus: Cows which are not detected in estrus, although ovarian cyclicity continues, can be treated with SYNCHSURE if a mature corpus luteum is present. Estrus is expected to occur 2 to 5 days following injection, at which time animals may be inseminated. Treated cattle should be inseminated at the usual time following detection of estrus. If estrus detection is not desirable or possible, treated animals may be inseminated twice at about 72 and 96 hours postinjection.

Pyometra or Chronic Endometritis: Damage to the reproductive tract at calving or postpartum retention of the placenta often leads to infection and inflammation of the uterus (endometritis). Under certain circumstances, this may progress into chronic endometritis with the uterus becoming distended with purulent matter. This condition, commonly referred to as pyometra, is characterized by a lack of cyclical estrus behavior and the presence of a persistent corpus luteum. Induction of luteolysis with SYNCHSURE usually results in evacuation of the uterus and a return to normal cyclical activity within 14 days after treatment. After 14 days posttreatment, recovery rate of treated animals will not be different than that of untreated cattle.

Mummified fetus: Death of the conceptus during gestation may be followed by its degeneration and dehydration. Induction of luteolysis with SYNCHSURE usually results in expulsion of the mummified fetus from the uterus. (Manual assistance may be necessary to remove the fetus from the vagina). Normal cyclical activity usually follows.

Luteal Cysts: A cow may be noncyclic due to the presence of a luteal cyst (a single, anovulatory follicle with a thickened wall which is accompanied by no external signs and by no changes in palpable consistency of the uterus). Treatment with SYNCHSURE can restore normal ovarian activity by causing regression of the luteal cyst.

Pregnancies from mismating: Unwanted pregnancies can be safely and efficiently terminated from 1 week after mating until about 5 months of gestation. The induced abortion is normally uncomplicated and the fetus and placenta are usually expelled about 4 to 5 days after the injection with the reproductive tract returning to normal soon after the abortion. The ability of SYNCHSURE to induce abortion decreases beyond the fifth month of gestation while the risk of dystocia and its consequences increases. SYNCHSURE has not been sufficiently tested under feedlot conditions; therefore recommendations cannot be made for its use in heifers placed in feedlots.

Controlled Breeding: The luteolytic action of SYNCHSURE can be utilized to schedule estrus and ovulation for an individual cycling animal or a group of animals. This allows control of the time at which cycling cows or heifers can be bred. SYNCHSURE can be incorporated into a controlled breeding program by the following methods:
1. Single SYNCHSURE Injection
2. Double SYNCHSURE Injections.
The use information provided here is not comprehensive. Talk to your veterinarian and consult the full prescribing information available at www.SyncTheHerd.com for further details on uses of SYNCHSURE.

SAFETY AND TOXICITY: At 50 and 100 times the recommended dose, mild side effects may be detected in some cattle. These include increased uneasiness, slight frothing, and milk let-down.

CONTRAINDICATIONS: SYNCHSURE should not be administered to a pregnant animal whose calf is not to be aborted.

WARNINGS: For animal use only. Women of childbearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise extreme caution when handling this product. In the early stages, women may be unaware of their pregnancies. SYNCHSURE is readily absorbed through the skin and may cause abortion and/or bronchiospasms; direct contact with the skin should therefore be avoided. Accidental spillage on the skin should be washed off immediately with soap and water.

PRECAUTIONS: There is no effect on fertility following the single or double dosage regimen when breeding occurs at induced estrus or at 72 and 96 hours posttreatment. Conception rates may be lower than expected in those fixed time breeding programs which omit the second insemination (i.e. the insemination at or near 96 hours). This is especially true if a fixed time insemination is used following a single SYNCHSURE injection.

As with all parenteral products, careful aseptic techniques should be employed to decrease the possibility of postinjection bacterial infection. Antibiotic therapy should be employed at the first sign of infection.

The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. To obtain an MSDS or for technical assistance, contact Boehringer Ingelheim Animal Health USA Inc. at 1-888-637-4251. To report suspected adverse drug experiences, contact Boehringer Ingelheim Animal Health USA Inc. at 1-888-637-4251. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS, or http://www.fda.gov.AnimalVeterinary.

1050-8918-01 Rev. 04/2020

Made in Australia.
Distributed by:
Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096
ANADA 200-310, Approved by FDA

Boehringer Ingelheim