

INNOVATIVE SOLUTIONS FOR EVERYDAY DAIRY HERD MANAGEMENT

Merck Animal Health Dairy Portfolio



Merck Animal Health knows dairy.

At Merck Animal Health, we're dedicated to providing a wide range of solutions to meet your dairy's needs. We offer a complete portfolio of trusted products that are backed by science and rooted in innovation. We invest in developing the latest tools, technology and training that accompany our products to help your dairy prosper. We listen to the cows and work with you to provide a holistic approach to animal health. Simply put, we're dairy people.

**Merck Animal Health supports you
in a way no other company can.**

“There are never two days that are the same, and the science and the research that Merck provides helps keep us on the cutting edge. It’s innovation and imagination that make us stand above the rest, and Merck is dedicated to helping us do things better. It makes us feel like we’ve got a true partner.”

- PAUL WOLCOTT, OWNER, LENT HILL DAIRY, COHOCTON, NEW YORK



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Livestock Intelligence®

MARKET-LEADING MONITORING TECHNOLOGY

Today's dairies are constantly being challenged to do more with less. That's why Allflex Livestock Intelligence works to put the power of information directly into your hands. Allflex provides dairy producers with tools to identify, monitor and trace each individual animal within a herd – making it easier to efficiently manage health, well-being and productivity. **Visit [AllflexUSA.com](https://www.allflexusa.com)**

“It streamlines treatment, and the cows that really need treatment get it. And the cows that don't? You're not wasting money and labor to do that.”

- ANDY BUTTLES, STONE-FRONT FARM, LANCASTER, WISCONSIN



ALLFLEX LIVESTOCK
INTELLIGENCE



“Since starting Allflex in 2010, we’ve basically kept the same amount of labor, doubled the herd size and taken our pregnancy rate up 10%.”

- SETH ATWATER, ATWATER FARMS, BARKER, NEW YORK

Animal Monitoring

Allflex’s monitoring technology collects and analyzes critical data points for every cow on the dairy – all day, every day. The technology utilizes proprietary algorithms that continually improve to meet the needs of your dairy.¹



1 million
cows monitored

These systems transform all tracked data into easy-to-read reports that allow you to make critical real-time decisions regarding:

- **TRACKING OVERALL HEALTH**, with the ability to help identify sick cows one to two days sooner than a physical evaluation.²
- **HELPS REVEAL NUTRITION AND HEAT STRESS** insights within and across specific groups.
- **HEAT DETECTION AID** to improve conception rates while reducing labor and time spent.
- Allowing “cows to be cows” and **REDUCING UNNECESSARY DISRUPTIONS** to their daily routines.



Animal Identification

The Allflex Identification portfolio helps streamline breeding, management and milking processes so that your dairy can march ahead with predictable consistency.

As the global leader in animal identification, Allflex provides intelligent solutions for a wide variety of dairy herd needs.

VISUAL IDENTIFICATION

Tags of various sizes and colors can be tailored to the unique ways you manage and market your cattle. Tags are customizable using an ID system with easy-to-read, permanent laser ink.



TISSUE SAMPLING UNITS (TSUs)

Allflex TSUs eliminate the hassle of taking blood or hair samples. One squeeze (similar to a tag application) is all it takes to capture high-quality DNA.



ELECTRONIC IDENTIFICATION (EID)

Based on low-frequency RFID technology, Allflex EID tags are the backbone of digital herd management records. Each tag features a unique 15-digit number for convenient record keeping within your management software.



MATCHED SETS

Matched sets allow you to sync your custom visual tag, EID tag and Tissue Sampling Units (TSUs) together with one identification number for added convenience.



RFID READERS

Allflex offers a variety of handheld readers, such as the AWR300 and LPR for rapid reading of Allflex EIDs.



¹This product is not intended to diagnose, treat, cure, or prevent any disease in animals. For the diagnosis, treatment, cure, or prevention of disease in animals, you should consult your veterinarian. The accuracy of the data collected and presented through this product is not intended to match that of medical devices or scientific measurement devices.
²Stangaferro ML, et al. Use of rumination and activity monitoring for the identification of dairy cows with health disorders: Part I. Metabolic and digestive disorders. *J Dairy Sci.* 2016;19(9):7395-7410.

OPTIMIZE REPRODUCTIVE EFFICIENCY

Even small improvements in reproduction can have a big impact on a dairy. Fine-tuning your herd's reproduction can lead to greater profitability through increased pregnancy

rates, reduced days open and more heifers entering the milking string earlier.



REPRODUCTIVE MANAGEMENT CONSULT

There are many factors that can have an impact on timely and efficient reproduction. We offer thorough guidelines to help you ensure compliance with reproductive protocols, including:

- Product storage and handling
- Synchronization program
- Artificial insemination technique
- Monitoring technology system integrity

Talk to your Merck Animal Health representative about taking advantage of this service.

Talk to your veterinarian about estrus synchronization protocols for your operation.



REPRODUCTION

ESTRUMATE® (cloprostenol injection)

The #1 cloprostenol.¹

Trusted for more than 40 years, ESTRUMATE is a leading estrus synchronization tool in the dairy space, bringing dairy operations:

- **LONG HALF-LIFE** of three hours²
- **EXCELLENT** estrous response
- **A STRONG LUTEOLYTIC AGENT**

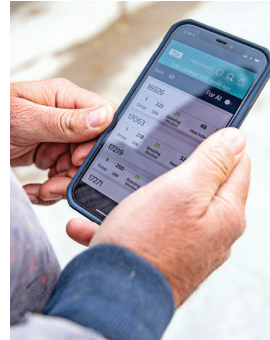


AVAILABLE IN 10-DOSE AND 50-DOSE

ESTRUMATE IS APPROVED FOR USE IN DAIRY COWS AND REPLACEMENT HEIFERS FOR THE FOLLOWING REPRODUCTIVE ISSUES:

- Unobserved or nondetected estrus
- Treatment of pyometra or chronic endometritis
- Treatment of mummified fetus
- Treatment of luteal cysts
- Estrus synchronization
- Termination of unwanted pregnancies

Estrumate.com



Allflex Livestock Intelligence monitoring technology generates reports of cows in heat, helping you achieve **more timely breeding** and **higher conception rates**.

See more on page 7.

FERTAGYL® (gonadorelin)

The #1 GnRH.¹

FERTAGYL is approved for use with cloprostenol sodium to synchronize heat cycles and allow for the convenience of fixed-time AI (FTAI) in lactating dairy cows. Using FTAI:

- **SUBMITS COWS** into AI in a timely manner
- **SAVES TIME AND LABOR** by increasing reproductive efficiency
- **SIMPLIFIES REPRODUCTIVE MANAGEMENT** by facilitating scheduled breeding times



AVAILABLE IN 10-DOSE AND 50-DOSE

A FEW REASONS WHY FERTAGYL IS THE LEADING GnRH:

- Formulated with gonadorelin acetate for better results^{3,4}
- Proven to deliver high ovulation and conception rates^{5,6}
- Trusted across the industry for nearly 25 years

Fertagyl.com

CHORULON® (chorionic gonadotropin)

Reliable treatment for cystic ovaries.

CHORULON is indicated for treating frequent or constant heat in cows due to cystic ovaries. CHORULON treats cystic ovaries with no required meat or milk withdrawal when used according to label directions.



AVAILABLE IN 5-DOSE

MAHCattle.com



“ESTRUMATE and FERTAGYL are cost-effective, and we’re pleased with the results.”

– JORDAN MATTHEWS,
ROSY-LANE HOLSTEINS,
WATERTOWN, WISCONSIN



“Giving FERTAGYL to our animals – timing the shots and getting cows bred at the optimum time – has made a big difference for us.”

– DAVE OECHSNER, OECHSNER DAIRY, BROWNSVILLE, WISCONSIN

¹Analytix, MAT, January 2021.

²European Agency for the Evaluation of Medicinal Products, Committee for Veterinary Medicinal Products, Cloprostenol and R-Cloprostenol Summary Report, 1997.

³Luchterhand M, et al. Merck Animal Health (2018). Fertility response to commercially available GnRH products in lactating cows synchronized with the Double-Ovsynch protocol.

⁴Souza AH, et al. A new presynchronization system (Double-Ovsynch) increases fertility at first postpartum timed AI in lactating dairy cows. *Theriogenology*. 2008;70:208-215.

⁵Luchterhand M, et al. Ovulation and fertility response to commercially available GnRH products in lactating cows synchronized with Double-Ovsynch protocol. *Anim Repro Sci*. 2019;202:42-48.

⁶Souza AH, et al. Comparison of gonadorelin products in lactating dairy cows. *Theriogenology*. 2009;72:271-279.

FERTAGYL IMPORTANT SAFETY INFORMATION: Not for use in humans. Keep out of reach of children. For complete safety information, refer to the product label.

ESTRUMATE IMPORTANT SAFETY INFORMATION: Do not administer ESTRUMATE to a pregnant cow unless abortion is desired. Severe localized post-injection clostridial infections have been reported; in rare instances infection has led to death. Women of childbearing age, asthmatics, and persons with respiratory problems should exercise extreme caution when handling ESTRUMATE. ESTRUMATE is readily absorbed through the skin and can cause abortion and/or bronchospasms; direct contact with the skin should be avoided, and accidental spillage on the skin should be washed off immediately with soap and water. For complete safety information, refer to the product label.

CHORULON IMPORTANT SAFETY INFORMATION: Chorionic gonadotropin is a protein. In the unlikely event of an anaphylactic reaction, epinephrine should be administered. The administration of an antihistamine may also be indicated. No withdrawal period is required for cows treated according to label directions. For complete safety information, refer to the product label.



UDDER
HEALTH

UDDER HEALTH FOR SUPERIOR COWS



DRY-OFF CONSULT

Proper care before and during the dry period helps set cows up for success in the next lactation. Talk to your Merck Animal Health representative about taking advantage of this value-added benefit that includes a comprehensive overview of:

- Proper udder and teat hygienic preparation
- Administration of intramammary treatment, including internal teat sealants
- Storage and handling of materials used at dry-off

Mastitis is an ever-present concern on dairies. It negatively impacts the health of the cow, milk quality and overall profitability. Rely on Merck Animal Health for complete dry cow care, including trusted solutions for mastitis prevention as well as treatment during lactation.

ORBENIN-DC™ (benzathine cloxacillin intramammary infusion)

Targeted treatment at dry-off.

ORBENIN-DC effectively targets Gram-positive bacteria for producers who want to cure mastitis at dry-off and prevent new infections from taking hold. With zero milk withhold, it also allows fresh cows to move into the milking string faster while reducing antibiotic residue risk.

94% of all subclinical mastitis infections are Gram-positive.^{1,2}



AVAILABLE IN 144-SYRINGE PAIL OR 12-SYRINGE BOX

WHY ORBENIN-DC HAS BEEN TRUSTED FOR MORE THAN FOUR DECADES:

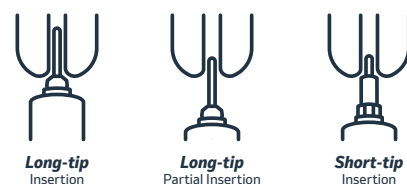
- Targeted treatment of Gram-positive bacteria, the most common cause of subclinical mastitis
- Just as effective as competitor products with a "broad-spectrum" label^{1,5}
- Zero milk withhold post-calving, after a minimum 28-day dry period following administration at dry-off
- Short tip for partial insertion reduces the risk of new infection

OrbeninDC.com

SHUTOUT®

A teat sealant designed with your operation in mind.

SHUTOUT provides a physical barrier to prevent environmental bacteria from invading the udder. Using SHUTOUT at dry-off gives producers both an easy and flexible way to prevent new mastitis infections during this critical time.



AVAILABLE IN 144-SYRINGE PAIL OR 24-SYRINGE BOX

SHUTOUT INTERNAL TEAT SEALANT:

- Supplements the natural keratin plug in the teat canal
- Is highly syringeable for easy administration
- Contains both short- and long-tip options for enhanced flexibility at administration
- Comes with large biodegradable disinfectant wipes

ShutOutForDairy.com

AMOXI-MAST® (amoxicillin intramammary infusion)

The effective, affordable way to cut mastitis losses.

AMOXI-MAST effectively targets Gram-positive bacteria, delivering the lowest cost-per-cure for producers who want to effectively treat clinical mastitis infections and get milk back in the tank fast.



Only four days out of the milk tank



AVAILABLE IN 12-SYRINGE BOX

AMOXI-MAST:

- Features a simple, three-treatment regimen over 1.5 days
- Has a short milk withhold of just 60 hours
- Delivers a high overall cure rate of 80%^{6,7} or more

AmoxiMast.com

BOVILIS® J-5

Protect cows from environmental threats.

BOVILIS J-5 is a Gram-negative core-antigen vaccine with the lowest level of endotoxin on the market.⁸ Core-antigen vaccines are proven to help reduce the frequency and severity of clinical coliform mastitis (CCM) cases.⁹



AVAILABLE IN 50-DOSE

BOVILIS J-5:

- Is over 2x more effective than ENVIRACOR® J-5 at reducing CCM rate in the first 100 days of lactation⁹
- Has no negative effect on milk production¹⁰
- Contains the lowest endotoxin levels on market, which helps minimize potential side effects⁸
- Is the only core-antigen vaccine with endotoxin levels printed on the label
- Provides strong protection during a time when cows are at the greatest risk

BovilisJ5.com



"It's not uncommon for a cow to be milking over 100 pounds at dry-off. SHUTOUT gave me reassurance that the teat canal would remain protected."

- ALAN OECHSNER, OECHSNER DAIRY, BROWNSVILLE, WISCONSIN

¹Johnson AP, et al. Randomized noninferiority study evaluating the efficacy of 2 commercial dry cow mastitis formulations. *J Dairy Sci.* 2016;99:593-607.

²Aruda AG, et al. Randomized noninferiority clinical trial evaluating 3 commercial dry cow mastitis preparations, Part 1. *J Dairy Sci.* 2013;96:4419-4435.

³Aruda AG, et al. Randomized noninferiority clinical trial evaluating 3 commercial dry cow mastitis preparations, Part 2. *J Dairy Sci.* 2013;96:6390-6399.

⁴Cox E, et al. Cow-level responses to two commercial dry cow mastitis preparations. *J Dairy Sci.* 2017;100:216 (Suppl.2).

⁵Cow Level Performance of ORBENIN-DC vs. SPECTRAMAST DC in Two Commercial Dairies. Merck Animal Health technical bulletin, 2018.

⁶Tomazi T, et al. Negatively controlled, randomized clinical trial comparing different antimicrobial interventions for treatment of clinical mastitis caused by Gram-positive pathogens. *J Dairy Sci.* 2021;104(3):3364-3385.

⁷Wilson DJ, et al. Comparison of seven antibiotic treatments with no treatment for bacteriological efficacy against bovine mastitis pathogens. *J Dairy Sci.* 1999;82:1664-1670.

⁸Comparison of endotoxin concentrations in BOVILIS® J-5 with those in three commercially available Gram-negative, lipopolysaccharide core-antigen vaccines, Merck Animal Health technical bulletin, 2020.

⁹Hogan JS, Smith KL, Todhunter DA, Schoenberger PS. Field trial to determine efficacy of an *E. coli* J5 mastitis vaccine. *J Dairy Sci.* 1992;75:78-84.

¹⁰Field trial to compare the efficacy of BOVILIS® J-5 and ENVIRACOR® J-5 vaccines against clinical mastitis during early lactation, Merck Animal Health technical bulletin, 2020.

ORBENIN-DC IMPORTANT SAFETY INFORMATION: For use in dry cows only. Do not use within four weeks (28 days) of calving. Treated animals must not be slaughtered for food purposes within four weeks (28 days) of treatment. For additional information, see the product label.

AMOXI-MAST IMPORTANT SAFETY INFORMATION: Milk taken from animals during treatment and for 60 hours (2.5 days) after the last treatment must not be used for food. Treated animals must not be slaughtered for food purposes within 12 days after the last treatment. For complete information, see the product label.

BOVILIS J-5 IMPORTANT SAFETY INFORMATION: This product contains oil adjuvant. In the event of accidental self-injection, seek medical attention immediately. For additional information, see the product label.



VACCINES

PREVENTION STARTS WITH PROTECTION. PROTECTION STARTS WITH BOVILIS.[®]

The BOVILIS vaccine line from Merck Animal Health is one of the most comprehensive vaccine lines in the industry. It offers a vast number of high-quality solutions that address not only the most common challenges but the most critical.

Industry-leading research is another cornerstone of the BOVILIS portfolio. Over the years, Merck Animal Health has pioneered multiple vaccine innovations, including the use of intranasal technology, as well as a focus on minimizing post-vaccination reactions. Because in this industry, it's all about moving your herd forward with as few setbacks as possible.

ChooseBovilis.com



VACCINATION CONSULT

Successful immunization of dairy cattle hinges on doing the little things right, such as:

- Storing at the recommended temperatures
- Proper hygiene during administration
- Accurate dosage and record keeping
- Following modified live vaccine reconstitution steps
- Good colostrum management to ensure calves receive vital antibodies
- Animal husbandry practices that support a herd's overall well-being

Talk to your Merck Animal Health representative to learn more about fine-tuning your vaccination practices for optimum results.

Clostridial Disease Prevention

Clostridial diseases are caused by bacteria found in soils and the intestinal tract. Clostridia spores are highly resistant and can survive for long periods of time. Disease occurs when they enter the

animal and encounter conditions of little or no oxygen, which causes them to multiply and release toxins. Once disease spreads, treatment is usually unsuccessful.

Choosing a proven clostridial vaccine can help prevent potential loss. BOVILIS® vaccines offer strong protection against fatal diseases caused by clostridial organisms – and are also proven to result in less post-vaccination stress.¹⁻³

Proven Clostridial Vaccines

	<i>Clostridium chauvoei</i>	<i>C. haemolyticum</i>	<i>C. novyi</i> , including Type B	<i>C. novyi</i> Type B	<i>C. perfringens</i> Type B	<i>C. perfringens</i> Type C	<i>C. perfringens</i> Type D	<i>C. septicum</i>	<i>C. sordellii</i>	<i>C. tetani</i>	<i>Histophilus somni</i>
BOVILIS® VISION® 7 with SPUR®	•		•			•	•	•	•		
BOVILIS® VISION® 7 SOMNUS with SPUR®	•		•			•	•	•	•		•
BOVILIS® VISION® 8 with SPUR®	•	•	•			•	•	•	•		
BOVILIS® VISION® 8 SOMNUS with SPUR®	•	•	•			•	•	•	•		•
BOVILIS® VISION® CD with SPUR®						•	•				
BOVILIS® VISION® CD-T with SPUR®						•	•			•	
BOVILIS® CAVALRY® 9	•	•		•	•	•	•	•	•	•	
BOVILIS® COVEXIN® 8	•	•		•	•	•	•	•		•	



BOVILIS® VISION® 7 with SPUR®

The #1 clostridial vaccine for calves.⁴



AVAILABLE IN 10-DOSE, 50-DOSE AND 250-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. novyi* (Black disease)
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. sordellii*

Powered-By-Spur.com

BOVILIS® VISION® 7 SOMNUS with SPUR®



AVAILABLE IN 10-DOSE, 50-DOSE AND 250-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. novyi* (Black disease)
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. sordellii*
- *H. somni*

Powered-By-Spur.com

BOVILIS® VISION® CD with SPUR®



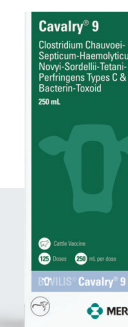
AVAILABLE IN 250-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. perfringens* Types C and D (Enterotoxemia)

Powered-By-Spur.com

BOVILIS® CAVALRY® 9



AVAILABLE IN 10-DOSE, 50-DOSE AND 125-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. haemolyticum* (Bacillary Hemoglobinuria/Red Water)
- *C. novyi* Type B
- *C. perfringens* Type B
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. sordellii*
- *C. tetani* (Tetanus)

ChooseBovilis.com

BOVILIS® VISION® 8 with SPUR®



AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. haemolyticum* (Bacillary Hemoglobinuria/Red Water)
- *C. novyi* (Black disease)
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. sordellii*

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BOVILIS® VISION® 8 SOMNUS with SPUR®



AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. haemolyticum* (Bacillary Hemoglobinuria/Red Water)
- *C. novyi* (Black disease)
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. sordellii*
- *H. somni*

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BOVILIS® VISION® CD-T with SPUR®



AVAILABLE IN 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. perfringens* Types C and D (Enterotoxemia)
- *C. tetani* (Tetanus)

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BOVILIS® COVEXIN® 8



AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *C. chauvoei* (Blackleg)
- *C. haemolyticum* (Bacillary Hemoglobinuria/Red Water)
- *C. novyi* Type B
- *C. perfringens* Type B
- *C. perfringens* Types C and D (Enterotoxemia)
- *C. septicum* (Malignant edema)
- *C. tetani* (Tetanus)

ChooseBovilis.com



Reproductive Disease Prevention

In order to maximize reproductive potential, it's important that cows and heifers are protected. Diseases like bovine respiratory disease (BRD) and leptospirosis can lead to significant losses in the form of infertility, abortion and poor milk yield. A strong

reproductive management program should focus on the critical breeding and gestation periods – and is certainly not complete without comprehensive fetal protection.

The reproductive vaccine lineup from Merck Animal Health protects cattle against early persistent infection of bovine viral diarrhea (BVD) as well as congenital infection later in pregnancy. Protection begins in the critical first trimester to provide comprehensive fetal protection during all three trimesters.

ChooseBovilis.com

Proven Reproductive Vaccines

	IBR	PI ₃	BRSV	BVD Type 1, including Type 1b*	BVD Type 2	Leptospira canicola	L. grippityphosa	L. pomona	L. icterohaemorrhagiae	L. hardjo	L. borgpetersenii serovar Hardjo-bovis	Campylobacter fetus
BOVILIS® VISTA® 5 L5 SQ CFP	•	•	•	•	•	•	•	•	•	•	•	
BOVILIS® VISTA® 5 VL5 SQ CFP	•	•	•	•	•	•	•	•	•	•	•	•
BOVILIS® VISTA® BVD CFP				•	•							
BOVILIS® L5 SQ						•	•	•	•	•		

*Cross protection against strain.

BOVILIS® VISTA® 5 L5 SQ CFP

AVAILABLE IN 5-DOSE, 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- Infectious bovine rhinotracheitis (IBR)
- Parainfluenza-3 (PI₃) virus
- Bovine respiratory syncytial virus (BRSV)
- Bovine viral diarrhea (BVD) Types 1, including Type 1b, and 2
- *L. canicola* • *L. grippityphosa*
- *L. pomona* • *L. icterohaemorrhagiae*
- *L. hardjo* • *L. borgpetersenii* serovar hardjo bovis

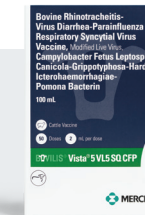


BOVILIS® VISTA® 5 VL5 SQ CFP

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- IBR
- PI₃
- BRSV
- BVD Types 1, including Type 1b, and 2
- *L. canicola* • *L. grippityphosa*
- *L. pomona* • *L. icterohaemorrhagiae*
- *L. hardjo* • *L. borgpetersenii* serovar hardjo bovis
- *Campylobacter fetus*

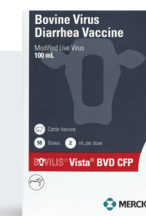


BOVILIS® VISTA® BVD CFP

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- BVD Types 1, including Type 1b, and 2



BOVILIS® L5 SQ

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *L. canicola* • *L. grippityphosa*
- *L. pomona* • *L. icterohaemorrhagiae*
- *L. hardjo* • *L. borgpetersenii* serovar hardjo bovis



Respiratory Disease Prevention

BRD has the potential to wreak havoc on dairy farms. Beyond the direct cost of treatment, the BRD complex can lead to reduced growth, added time to first calving, increased calving difficulty and lower milk production. It's the second-leading cause of death in pre-weaned dairy heifers and the leading cause of death in weaned heifers.⁵



“The technology behind BOVILIS NASALGEN 3 gives me a lot of confidence. It's an intranasal, so my experience is we get an immunological response in a less stressful manner.”

- TERA BARNHARDT, DVM,
JOHNSON CITY, KANSAS

Vaccination is a critical step in reducing the incidence of BRD in your herd. The respiratory vaccine portfolio from Merck Animal Health offers multiple routes of administration, proven efficacy and strong duration of immunity.

ChooseBovilis.com



Respiratory Vaccine Portfolio

	IBR	PI ₃	BRSV	BVD Type 1, including Type 1b	BVD Type 2	Mannheimia haemolytica	Pasteurella multocida
BOVILIS® VISTA® ONCE SQ	•	•	•	•	•	•	•
BOVILIS® VISTA® 5 SQ	•	•	•	•	•		
BOVILIS® VISTA® BVD CFP				•	•		
BOVILIS® ONCE PMH® SQ						•	•
BOVILIS® ONCE PMH® IN						•	•
BOVILIS® NASALGEN® 3-PMH	•	•	•			•	•
BOVILIS® NASALGEN® 3	•	•	•				
BOVILIS® NASALGEN® IP	•	•					

BOVILIS® VISTA® ONCE SQ

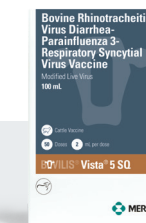


AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- Infectious bovine rhinotracheitis (IBR)
- Parainfluenza-3 (PI₃) virus
- Bovine respiratory syncytial virus (BRSV)
- Bovine viral diarrhea (BVD) Types 1, including Type 1b, and 2
- *P. multocida*
- *M. haemolytica*

BOVILIS® VISTA® 5 SQ

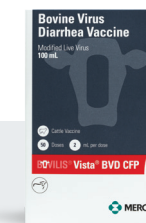


AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- IBR
- PI₃
- BRSV
- BVD Types 1, including Type 1b, and 2

BOVILIS® VISTA® BVD CFP



AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- BVD Types 1, including Type 1b, and 2



BOVILIS® ONCE PMH® SQ



AVAILABLE IN
10-DOSE AND
50-DOSE

SHOWN EFFECTIVE AGAINST:

- *P. multocida*
- *M. haemolytica*

BOVILIS® ONCE PMH® IN



AVAILABLE IN
10-DOSE, 25 X
1-DOSE AND
50-DOSE

SHOWN EFFECTIVE AGAINST:

- *P. multocida*
- *M. haemolytica*

INTRANASAL ROUTE OF ADMINISTRATION

BOVILIS® NASALGEN® 3-PMH



AVAILABLE IN
10-DOSE, 25 X
1-DOSE AND
50-DOSE

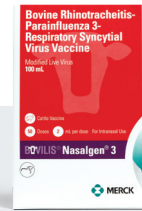
SHOWN EFFECTIVE AGAINST:

- IBR
- BRSV
- PI₃
- *P. multocida*
- *M. haemolytica*

INTRANASAL ROUTE OF ADMINISTRATION

Nasalgen3PMH.com

BOVILIS® NASALGEN® 3



AVAILABLE IN
10-DOSE, 25 X
1-DOSE AND
50-DOSE

SHOWN EFFECTIVE AGAINST:

- IBR
- BRSV
- PI₃

INTRANASAL ROUTE OF ADMINISTRATION

Nasalgen3.com

BOVILIS® NASALGEN® IP



AVAILABLE IN
10-DOSE AND
50-DOSE

SHOWN EFFECTIVE AGAINST:

- IBR
- PI₃

INTRANASAL ROUTE OF ADMINISTRATION

Nasalgen.com



“BOVILIS NASALGEN 3 allows for a strong, early immune response – calves look better, and they do better. Plus, it makes a little tint on the calf’s nose, so you know they’ve had their dose.”

- J. HALL, HALL'S CALF RANCH, LUXEMBURG, WISCONSIN

Scours Prevention

Scours is a major concern on today's dairy operations and can have a detrimental impact on the health and performance of calves. While management practices go a long way in reducing scours levels among calves, vaccination helps to curb this common and significant threat.

ChooseBovilis.com

Scours Vaccines

	Bovine coronavirus	Clostridium perfringens Type C	C. perfringens Type D	Escherichia coli Type K99	Rotavirus Group A Serotype G6
BOVILIS® GUARDIAN®	•	•	•	•	•
BOVILIS® CORONAVIRUS	•				



BOVILIS® GUARDIAN®

A comprehensive scours vaccine given to pregnant cows and heifers to protect neonatal calves.

AVAILABLE IN 10-DOSE, 25 X 1-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- Rotavirus Group A Serotype G6
- Two separate isolate of Bovine Coronavirus
- *C. perfringens* Types C and D (Enterotoxemia)
- *E. coli* Type K99



GuardianForCattle.com

BOVILIS® CORONAVIRUS

Intranasal vaccine option effective in calves as young as 3 days of age.

AVAILABLE IN 10-DOSE, 25 X 1-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- Bovine coronavirus



ChooseBovilis.com



Pinkeye Prevention

Pinkeye has been a long-standing problem for cattle producers, with the potential to leave lasting eye damage and cause performance setbacks. While all animals are susceptible to it, calves tend to experience more severe infections.

Pinkeye is primarily thought to be caused by the bacteria *Moraxella bovis* – but a recent study found up to 80% of cases include *Moraxella bovoculi* alone or along with *M. bovis*.⁶ The pinkeye vaccines from Merck Animal Health work in tandem with other management strategies to help prevent pinkeye in both cows and calves.

StopCattlePinkeye.com

Pinkeye Prevention

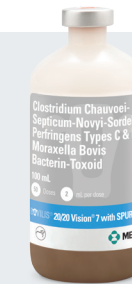
	<i>Clostridium chauvoei</i>	<i>C. novyi</i>	<i>C. perfringens</i> Type B	<i>C. perfringens</i> Type C	<i>C. perfringens</i> Type D	<i>C. septicum</i>	<i>C. sordellii</i>	<i>Moraxella bovis</i>	<i>Moraxella bovoculi</i>
BOVILIS® 20/20 VISION® 7 with SPUR®	•	•		•	•	•	•	•	
BOVILIS® PILIGUARD® PINKEYE								•	
BOVILIS® PILIGUARD® PINKEYE +7	•	•	•	•	•	•	•	•	
MORAXELLA BOVOCULI BACTERIN									•

BOVILIS® 20/20 VISION® 7 with SPUR

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *M. bovis* (Pinkeye or infectious bovine keratoconjunctivitis)
- *C. chauvoei* (Blackleg)
- *C. septicum* (Malignant edema)
- *C. novyi* (Black disease)
- *C. sordellii*
- *C. perfringens* Types C and D (Enterotoxemia)



BOVILIS® PILIGUARD® PINKEYE

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *M. bovis* (Pinkeye or infectious bovine keratoconjunctivitis)



BOVILIS® PILIGUARD® PINKEYE +7

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *M. bovis* (Pinkeye or infectious bovine keratoconjunctivitis)
- *C. chauvoei* (Blackleg)
- *C. septicum* (Malignant edema)
- *C. novyi* (Black disease)
- *C. sordellii*
- *C. perfringens* Type B
- *C. perfringens* Types C and D (Enterotoxemia)



MORAXELLA BOVOCULI BACTERIN

AVAILABLE IN 10-DOSE AND 50-DOSE

SHOWN EFFECTIVE AGAINST:

- *M. bovoculi* (Pinkeye or infectious bovine keratoconjunctivitis)



¹FTR 92-3 Vision 8 Injection Site Blemish Study.
²FTR 96-2 Analysis of Post-Vaccinal Injection Sites Using Ultrasound.
³FTR 96-4 Evaluation of Injection Site Blemishes Using Ultrasonography Following Administration of Two Commercial Multivalent Clostridial Vaccines.
⁴Based on Animalyx data 1/1/2021-12/1/2021.

⁵Respiratory Diseases in Dairy Calves. University of Kentucky College of Agriculture, Food and Environment, Department of Animal & Food Sciences.
⁶Addison, B. New Findings with Bovine Pinkeye. June 2018. Progressive Dairy. <https://www.progressivedairy.com/topics/herd-health/new-findings-with-bovinepinkeye>. Accessed Feb 3, 2020.



BRD
MANAGEMENT

THE RIGHT ANTIBIOTIC SOLUTION FOR THE SITUATION

Even with the best prevention methods in place, bovine respiratory disease (BRD) can sneak into your operation and leave a lasting impact. Merck Animal Health offers a robust portfolio of industry-leading anti-infectives and non-steroidal anti-inflammatory drugs (NSAID) to deliver the right treatment at the right time. Multiple products in the portfolio provide improved, cost-effective outcomes for dairy calves and heifers under 20 months of age.

RESFLOR GOLD® (florfenicol and flunixin meglumine)

Treat BRD the smart way with the original dual therapy option.

RESFLOR GOLD is the industry-standard dual therapy, combining the powerful antibiotic florfenicol and the trusted NSAID flunixin meglumine. Together, they quickly target the infection of BRD and reduce BRD-associated fever. With RESFLOR GOLD, improvement in fever can be seen in as little as six hours.

6 hours to visible improvement



AVAILABLE IN 100-mL, 250-mL AND 500-mL VIALS

INDICATED FOR NON-LACTATING DAIRY CATTLE FOR THE TREATMENT OF BRD ASSOCIATED WITH:

- *Mannhaemia haemolytica*
- *Pasteurella multocida*
- *Histophilus somni*
- *Mycoplasma bovis*
- Control of BRD-associated pyrexia

ResflorGold.com

AROVYN™ (tulathromycin injection)

Harness the power of tulathromycin.

AROVYN is a cost-effective choice for dairy producers who want to manage BRD with tulathromycin. Producers receive all the benefits of tulathromycin, plus the benefits of working with Merck Animal Health BRD experts.



Pharmaceutical equivalence to the pioneer product



AVAILABLE IN 50-mL, 100-mL, 250-mL AND 500-mL VIALS

INDICATED FOR NON-LACTATING DAIRY CATTLE FOR THE TREATMENT OF BRD AND CONTROL OF RESPIRATORY DISEASE IN ANIMALS AT HIGH RISK OF DEVELOPING BRD ASSOCIATED WITH:

- *Mannhaemia haemolytica*
- *Pasteurella multocida*
- *Histophilus somni*
- *Mycoplasma bovis*

AROVYN IS ALSO INDICATED FOR THE TREATMENT OF PINKEYE (INFECTIOUS BOVINE KERATOCONJUNCTIVITIS) ASSOCIATED WITH *MORAXELLA BOVIS* AND FOOT ROT ASSOCIATED WITH *FUSOBACTERIUM NECROPHORUM* AND *PORPHYROMONAS LEVII*.

ArovynForBRD.com

AROVYN IMPORTANT SAFETY INFORMATION: AROVYN has a pre-slaughter withdrawal time of 18 days in cattle. Do not use in female dairy cattle 20 months of age or older. Do not use in animals known to be hypersensitive to the product. See full Prescribing Information.

RESFLOR GOLD IMPORTANT SAFETY INFORMATION: Not for use in humans. Keep out of reach of children. Do not use in animals that have shown hypersensitivity to florfenicol or flunixin. Avoid direct contact with skin, eyes and clothing as product contains materials that can be irritating. Animals intended for human consumption must not be slaughtered within 38 days 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. Not for use in animals intended for breeding purposes. See package insert for complete information.

NUFLOR IMPORTANT SAFETY INFORMATION: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains materials that can be irritating to skin and eyes. RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 28 days of the last intramuscular treatment. Animals intended for human consumption must not be slaughtered within 38 days of subcutaneous 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. Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Intramuscular injection may result in local tissue reaction which persists beyond 28 days. This may result in trim loss of edible tissue at slaughter. Tissue reaction at injection sites other than the neck is likely to be more severe. WITH Do not use in animals that have shown hypersensitivity to florfenicol or animals intended for breeding purposes. Transient inappetence, diarrhea, decreased water consumption, injection site swelling, anaphylaxis and collapse have been associated with the use of florfenicol in cattle. Do not use in calves to be processed for veal or 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. Animals intended for human consumption must not be slaughtered within 28 days of the last intramuscular treatment or 38 days of subcutaneous treatment. A withdrawal period has not been established in pre-ruminating calves. Avoid direct contact with skin, eyes, and clothing. Pregnant women should wear gloves and exercise caution or avoid handling this product. For complete information, see the product package insert.

ZUPREVO IMPORTANT SAFETY INFORMATION: For use in animals only. Not for human use. Keep out of reach of children. To avoid accidental injection, do not use in automatically powered syringes which have no additional protection system. In case of human injection, seek medical advice immediately and show the package insert or label to the physician. RESIDUE WARNING: Cattle intended for human consumption must not be slaughtered within 21 days of the last treatment. Do not use in female dairy cattle 20 months of age or older. Use of this drug product in these cattle may cause milk residue. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal. The effects of ZUPREVO 18% on bovine reproductive performance, pregnancy and lactation have not been determined. Swelling and inflammation, which may be severe, may be seen at the injection site after administration. Subcutaneous injection may result in local tissue reactions which persist beyond slaughter withdrawal period. This may result in trim loss of edible tissue at slaughter. DO NOT USE ZUPREVO 18% IN SWINE. FATAL ADVERSE EVENTS HAVE BEEN REPORTED FOLLOWING THE USE OF TILDIPROSIN IN SWINE. NOT FOR USE IN CHICKENS OR TURKEYS.

ZUPREVO® (tildipirosin)

The fast BRD treatment that lasts.

ZUPREVO is rapidly absorbed, long-lasting – and all in one cost-effective low-volume dose.

- ZUPREVO reaches peak plasma levels just 45 minutes after administration²
- Lasts 28 days in the lungs against *M. haemolytica* and *P. multocida* and 14 days against *H. somni*^{*2}
- A low-volume dose of 1 mL/100 lbs. means less handling and more doses per bottle



Lasts 28 days in the lungs*



AVAILABLE IN 50-mL, 100-mL AND 250-mL VIALS

A DOSE OF 1 ML/100 LBS. MEANS LESS HANDLING AND MORE DOSES PER BOTTLE:

- *Mannhaemia haemolytica*
- *Pasteurella multocida*
- *Histophilus somni*

Zuprevo.com

*The correlation between pharmacokinetic data and clinical effectiveness is unknown.

NUFLOR® (florfenicol)

A proven BRD treatment for over 25 years.

NUFLOR is a tried and trusted antibiotic for the treatment of BRD, foot rot and control of respiratory disease in cattle at high risk of developing BRD.

- Eliminates 99.9% of BRD-causing bacteria within 24 hours¹
- Continues eliminating bacteria for 68 hours – and remains inhibitory through 96 hours¹



30 MINUTES Goes to work fast¹



AVAILABLE IN 100-mL, 250-mL AND 500-mL VIALS

INDICATED FOR NON-LACTATING DAIRY CATTLE FOR THE TREATMENT OF BRD AND CONTROL OF RESPIRATORY DISEASE IN ANIMALS AT HIGH RISK OF DEVELOPING BRD ASSOCIATED WITH:

- *Mannhaemia haemolytica*
- *Pasteurella multocida*
- *Histophilus somni*

NUFLOR IS ALSO INDICATED FOR THE TREATMENT OF FOOT ROT ASSOCIATED WITH *FUSOBACTERIUM NECROPHORUM* AND *BACTEROIDES MELANINIGENICUS*.

Nuflor.com





BANAMINE TRANSDERMAL®

(flunixin transdermal solution)

Relief is in the palm of your hand.

BANAMINE TRANSDERMAL is the first FDA-approved pour-on for cattle that can reduce fever caused by BRD and pain due to foot rot. The convenient application mode requires less handling, resulting in less stress on your herd during an already stressful time.



Absorbs quickly into the bloodstream

- Absorbs into the blood stream quickly to control pain and fever
- The pour-on application makes it easier to administer - for both you and your cattle
- BQA-friendly with the gentle application eliminating injection-site lesions

AVAILABLE IN 100-DOSE, 250-DOSE AND 1-L DOSE

BANAMINE TRANSDERMAL IS INDICATED FOR THE CONTROL OF PYREXIA ASSOCIATED WITH BRD AND THE CONTROL OF PAIN ASSOCIATED WITH FOOT ROT IN REPLACEMENT DAIRY HEIFERS UNDER 20 MONTHS OF AGE.



BanamineTD.com

BANAMINE®

(flunixin meglumine injection)

The cattle industry's pioneer NSAID.

BANAMINE is a long-trusted NSAID that works quickly to control inflammation within two hours of administration.



Begins working in 2 HOURS

AVAILABLE IN 25-mL AND 100-mL VIALS

BANAMINE IS INDICATED FOR THE CONTROL OF PYREXIA ASSOCIATED WITH BRD, ENDOTOXEMIA AND ACUTE BOVINE MASTITIS, AND CONTROL OF INFLAMMATION IN ENDOTOXEMIA.



The-BRD-Experts.com

¹Varma, K.J., Lockwood PW, Cosgrove MS, Rogers ER, Pharmacology, Safety and Clinical Efficacy of Nuflor (flunixin) Following Subcutaneous Administration to Cattle. Proceedings of a Symposium Held in Conjunction with the XX World Buiatrics Congress. Sydney, Australia. July 1998:13-19.

²Menge M, et al. Pharmacokinetics of tildipirosin in bovine plasma, lung tissue, and bronchial fluid (from live, non-anesthetized cattle). *J Vet Pharm Ther.* 2011;1349:1365-2885.

BANAMINE TRANSDERMAL IMPORTANT SAFETY INFORMATION: 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 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. Not for use in dairy or beef bulls intended for breeding because reproductive safety has not been evaluated.

BANAMINE IMPORTANT SAFETY INFORMATION: Cattle must not be slaughtered for human consumption within 4 days of the last treatment. Milk that has been taken during treatment and for 36 hours after the last treatment must not be used for food. Not for use in dry dairy cows. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. Not for use in horses intended for food. Approved only for intravenous administration in cattle. Intramuscular administration has resulted in violative residues in the edible tissues of cattle sent to slaughter.



PARASITE
CONTROL

PROVEN PARASITE CONTROL IN A VARIETY OF FORMULATIONS

If left unchecked, parasites prey on your herd's productivity and your profitability. Choosing the right dewormer is an important decision that can

help prevent this from happening. That's why Merck Animal Health offers a variety of products in a range of formulations targeting both internal and external parasites to keep your cattle protected and your operation thriving.



PUT YOUR DEWORMER TO THE TEST

A Fecal Egg Count Reduction Test (FECRT) is a diagnostic tool that can tell you whether or not your deworming program is working. A successful deworming should result in a 90% or greater reduction in parasite eggs found in manure.¹

Merck Animal Health offers complimentary FECRT kits to help you evaluate the effectiveness of your current protocol.

**Talk to your
Merck Animal Health
representative about
how to receive your
free FECRT kit.**

Internal Parasite Control

Internal parasites can quietly impact your herd's performance by reducing dry matter intake, milk production and conception rate. Parasites also directly suppress the immune system, which decreases the animal's ability to fight infection and effectively respond to vaccines.

SAFE-GUARD® (fenbendazole) and PANACUR® (fenbendazole) take care of the toughest internal parasites, all while providing flexibility you can count on.

SafeGuardWorks.com



Internal Parasite Control

	Bankrupt worm (adult and L4)	Barberpole worm (adult and L4)	Brown stomach worm (adult)	Hookworm (adult and L4)	Lungworm (adult)	Nodular worm (adult and L4)	Small stomach worm (adult and L4)	Small intestinal worm (adult and L4)	Thread-necked intestinal worm (adult and L4)
SAFE-GUARD® Suspension (Drench)	•	•	•	•	•	•	•	•	•
SAFE-GUARD® Paste	•	•	•	•	•	•	•	•	•
SAFE-GUARD® En-Pro-AL® Molasses Block	•	•	•	•	•	•	•	•	•
SAFE-GUARD® Protein Block	•	•	•	•	•	•	•	•	•
SAFE-GUARD® Free-Choice Mineral	•	•	•	•	•	•	•	•	•
SAFE-GUARD® Alfalfa-Based Pellets	•	•	•	•	•	•	•	•	•
PANACUR® Suspension (Drench)*	•	•	•	•	•	•	•	•	•

*PANACUR is only approved for dairy cattle at a 5 mg/kg rate.



SAFE-GUARD

All these years and still 98.7% effective.¹

SAFE-GUARD is a member of the benzimidazole class of dewormers and is proven effective in the face of parasite resistance – making it a powerful choice to use as part of a strategic deworming protocol.²

SAFE-GUARD® Suspension (Drench)



AVAILABLE IN 1L, 10L AND 1GAL

- 1 L deworms 43,478 lbs. of cattle
- 10 L deworms 434,780 lbs. of cattle
- 1 gal. deworms 164,565 lbs. of cattle

SAFE-GUARD® Paste



AVAILABLE IN 92G AND 290G PASTE CARTRIDGES

- Each 290-g paste cartridge deworms 12,000 lbs. of cattle

SAFE-GUARD® Protein Block



AVAILABLE IN 25-LB. BLOCKS

- One block treats 8,000 lbs. of cattle

SAFE-GUARD® En-Pro-AL® Molasses Block



AVAILABLE IN 25-LB. BLOCKS

- One block treats 8,000 lbs. of cattle
- Designed for deworming pastured cattle by feeding cattle medicated blocks for three days only as the sole source of salt

SAFE-GUARD® 32SG Mineral Dewormer



AVAILABLE IN 25-LB. BUCKETS

- One 25-lb. bucket treats 25,000 lbs. of cattle
- Free-choice mineral with a 3-6 day feeding label

SAFE-GUARD® Alfalfa-Based Pellets



AVAILABLE IN 10-LB. BAG

- 1 lb. deworms 1,000 lbs. of cattle
- Alfalfa-based pellets allow for feeding and deworming in just one step

PANACUR® Suspension (Drench)



AVAILABLE IN 1L AND 1GAL

- 1 L deworms 43,478 lbs. of cattle
- 1 gal. deworms 164,565 lbs. of cattle



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PARASITE CONTROL - INTERNAL

42

External Parasite Control

External parasites, such as flies, lice and ticks, are more than just a nuisance on a dairy. They disrupt daily patterns that result in reduced milk production and increased risk of infection and disease within the herd. Parasite control in calves is especially important to support healthy growth and productivity. MAHCattle.com

External Parasite Control

	Lice	Horn flies	Face flies	Horse flies	Stable flies	Mosquitoes	Black flies	Ticks
ULTRA BOSS® Pour-On Insecticide	•	•	•	•	•	•	•	•
ULTRA SABER™ Pour-On Insecticide	•	•						
SYNERGIZED DELICE® Pour-On Insecticide	•	•	•	•	•	•	•	
DOUBLE BARREL® VP Insecticide Ear Tags		•	•					

ULTRA BOSS® Pour-On Insecticide

AVAILABLE IN 1QT AND 1GAL



- 5% permethrin formulation with 5% piperonyl butoxide optimizes control¹
- Effective horn fly control for 8 weeks; also controls face flies²
- Season-long lice control with one application (January through April)³
- No milk discard⁴
- 1 qt. Squeeze 'N' Measure Bottle™ treats 57 550-lb. cattle
- 1 gal. treats 229 550-lb. cattle

ULTRA SABER™ Pour-On Insecticide*

AVAILABLE IN 30-OZ AND 1GAL



- Contains 1% lambda-cyhalothrin insecticide with 5% piperonyl butoxide, a synergist that enhances insecticidal activity³
- Provides rapid knockdown of flies and consistently provides significant reduction in fly pressure³
- From 87% to 99% reduction in fly pressure for eight weeks¹
- One 30-oz. Squeeze 'N' Measure Bottle™ treats 90 550-lb. cattle
- 1 gal. treats 378 550-lb. cattle

*Ultra Saber is not approved for dry or lactating dairy cows.

SYNERGIZED DELICE® Pour-On Insecticide

AVAILABLE IN 1GAL



- Ready to use, no mixing required
- Migrates over animal's skin and hair coat for maximum coverage
- Convenient application methods: pour on animal, spray on animal and spray on premises
- Oil-based for application that holds up any time of year
- 1 gal. treats 46 550-lb. cattle

DOUBLE BARREL® VP Insecticide Ear Tags

AVAILABLE IN ONE 20-TAG BOX



- Combines two different active ingredients – an organo-phosphate and a synthetic pyrethroid – which minimizes resistance development and eliminates the need for ear tag rotation
- Unique triangular shape prevents tag from breaking off at neck
- 20 tags and buttons per box
- One 20-tag box treats 10 head of cattle (use two tags per head)

¹Data on file, Merck Animal Health.

²Parasite resistance may develop to any dewormer, and has been reported for most classes of dewormers.

³Chemical Watch Factsheet. Piperonyl Butoxide (PBO). Pesticides and You. Beyond Pesticides/National Coalition Against the Misuse of Pesticides. 2006;20(1):17-20.

⁴Dobson R, Jackson R, Leveck B, Besier B, et al. Guidelines for fecal egg count reduction tests (FECRT). World Association for the Advancement of Veterinary Parasitology (WAAVP) (2001) Proceedings: 23rd International Conference of the World.

IMPORTANT SAFETY INFORMATION FOR SAFE-GUARD Suspension (Drench) and Paste: Cattle must not be slaughtered within eight days following last treatment. For dairy cattle, the milk discard time is zero hours. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism.

IMPORTANT SAFETY INFORMATION FOR SAFE-GUARD En-Pro-AL Molasses Block and Protein Block: Cattle must not be slaughtered within 11 days following last treatment. For dairy cattle, the milk discard time is zero hours. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism.

IMPORTANT SAFETY INFORMATION FOR SAFE-GUARD Free-Choice Mineral and Alfalfa-Based Pellets: Cattle must not be slaughtered within 13 days following last treatment. For dairy cattle, there is no milk withdrawal. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism.

PANACUR IMPORTANT SAFETY INFORMATION: Cattle must not be slaughtered for human consumption within 8 days following treatment. For dairy cattle, there is no milk withdrawal period at the 5mg/kg dose. Do not use at 10mg/kg in dairy cattle. Dose rate of 10mg/kg is for beef cattle only. Dose rate of 10mg/kg in dairy cattle could result in violative residues in milk. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal. Federal law restricts this drug to use by or on the order of a licensed veterinarian.



NUTRITIONALS

MEET NUTRITIONAL NEEDS FROM THE START

White muscle disease, also known as nutritional myopathy of calves, is associated with selenium and/or vitamin E deficiencies – two critical dietary components for cattle. This is especially devastating to young calves, as affected calves will show signs of weakness, stiffness and a reluctance to stand.

MAHCattle.com

BO-SE® Injection

An emulsion of selenium-tocopherol for the prevention and treatment of white muscle disease (selenium-tocopherol deficiency syndrome) in calves.



AVAILABLE IN 100 ML

MU-SE® Injection

An emulsion of selenium-tocopherol for the prevention and treatment of white muscle disease (selenium-tocopherol deficiency syndrome) in weanling calves.



AVAILABLE IN 100 ML

BO-SE IMPORTANT SAFETY INFORMATION: DO NOT USE IN PREGNANT EWES. Deaths and abortions have been reported in pregnant ewes injected with this product. **WARNINGS:** Anaphylactoid reactions, some of which have been fatal, have been reported in animals administered BO-SE. Signs include excitement, sweating, trembling, ataxia, respiratory distress and cardiac dysfunction. Discontinue use 30 days before the treated calves are slaughtered for human consumption. Discontinue use 14 days before the treated lambs, ewes, sows and pigs are slaughtered for human consumption. Selenium-Vitamin E preparations can be toxic when improperly administered.

MU-SE IMPORTANT SAFETY INFORMATION: CONTRAINDICATION. Do not use in adult dairy cattle. Premature births and abortions have been reported in dairy cattle injected with this product during the third trimester of pregnancy. **WARNINGS:** Anaphylactoid reactions, some of which have been fatal, have been reported in cattle administered the MU-SE product. Signs include excitement, sweating, trembling, ataxia, respiratory distress, and cardiac dysfunction. Use only as directed in weanling calves and breeding beef cows. Discontinue use 30 days before the treated cattle are slaughtered for human consumption.

“DAIRY CARE365 has changed the way I do my job. If I’m having difficulty moving an animal, I’m more likely to stop and reevaluate what I’m doing.”

— SARA HANSON DE PERALTA, DVM, MAYVILLE ANIMAL CLINIC, MAYVILLE, WISCONSIN



EMPOWERING THE BEST CARE EVERY DAY

The support Merck Animal Health provides dairy producers and veterinarians goes far beyond any sales transaction. That’s why we’re proud to offer value-added training through DAIRY CARE365.

DAIRY CARE365® is designed to complement and help fulfill the animal care guidelines of the National Dairy FARM Program: Farmers Assuring Responsible Management™.

It offers e-learning modules (available in English and Spanish), standard operating procedures and other resources to help dairy producers train employees in proper animal care and handling. Launched in 2012, this industry-wide collaboration has reached thousands of employees on dairies across the U.S.

Available learning modules include:

- Introduction to Dairy Stockmanship
- Moving Cows to the Milking Parlor
- Low-Stress Handling of Calves and Heifers
- Humane Euthanasia
- Handling Non-ambulatory Cows
- Newborn Care and Handling
- Calf Handling and Stockmanship
- Bioawareism #1 - Biosecurity
- Bioawareism #2 - Biocontainment
- Creating a Culture of Care
- Dry Cow Management

[DairyCare365.com](https://www.DairyCare365.com)



“DAIRY CARE365 has helped our employees be more confident in their day-to-day tasks and has helped us take training to the next level.”

— CHRIS HEINS, HEINS FAMILY FARM, HIGGINSVILLE, MISSOURI

Merck Animal Health is invested in your success.

We work hard every day to arm you with the latest science, knowledge, technology and products to support the health of your dairy on multiple levels. Our comprehensive product lines for everyday needs, coupled with robust technical expertise, real-world technology applications and other value-added services allow us to support you in a way no other company can. That's Merck Animal Health.

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