



DRY COWS DESERVE COMPLETE CARE

Orbenin-DC™
(cloxacillin benzathine
intramammary infusion)

SHUTOUT™

Bovilis® J-5

Guardian®





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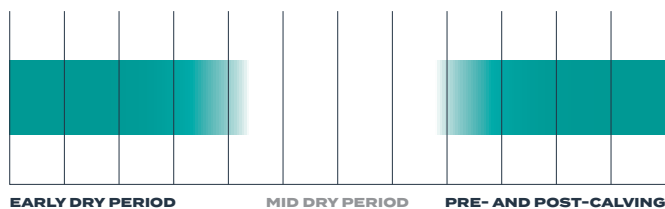
PROTECTION NOW PRODUCTION LATER

The dry period is a critical time that must be properly managed to ensure cows remain healthy and productive during their next lactation. Cows that are not provided a proper dry period length can have reduced milk production in the next lactation.¹ Another important opportunity during the dry period is to minimize the risk of mastitis after dry-off and in early lactation with targeted use of intramammary therapy and prevention.

Protect your cows from mastitis

Mastitis is recognized as the most common disease in dairy cattle, affecting 99.7% of dairy farms and 1 in every 4 dairy cows nationwide.² This is a significant concern during the dry period, when cows are most vulnerable to new intramammary infections.³

HIGH-RISK PERIODS FOR DEVELOPING A MASTITIS INFECTION



2-3 weeks after dry-off and the 2-3 weeks before and after calving are when cows are at increased risk for developing a mastitis infection.

Whether it's newly developed cases or pre-existing subclinical infections that failed to resolve, mastitis infections during the dry period have lasting impacts that carry over into the next lactation. In fact, more than 50% of environmental mastitis cases in the first 100 days in milk originate during the dry period.³ These infections have negative effects on cows and dairy operations as a whole, with all mastitis costing the industry as much as \$2 billion per year.

Benefits of Mastitis Prevention



BETTER MILK QUALITY



PREVENT PRODUCTION LOSSES



MAINTAIN REPRODUCTIVE EFFICIENCY⁴



REDUCED CULLING



LESS DEATH LOSS



LOWER DIRECT AND INDIRECT COSTS DUE TO MASTITIS⁵

Make every calf count with scours prevention

The dry period is also an ideal time to vaccinate cows to protect their calves from scours, which is the #1 killer of pre-weaned calves. Maternal scours vaccines, which increase specific protective antibodies found in colostrum, provide calves defense against the four major bacterial and viral pathogens associated with scours.



Orbenin-DC™

(cloxacillin benzathine intramammary infusion)



Dry Cow Mastitis Treatment

Most dairy cows are treated with a dry cow antimicrobial, with the primary purpose of curing existing subclinical infections at dry-off. But not all treatments are the same – and neither are all mastitis pathogens. More than 94% of subclinical mastitis infections at dry-off are caused by Gram-positive bacteria^{6,7}, which makes these bacteria the target for dry cow therapy.

94% of all subclinical mastitis infections are Gram-positive.

ORBENIN-DC delivers a targeted treatment of Gram-positive bacteria with the shortest required dry period and no milk withhold. This approach achieves a proactive stewardship of antimicrobial selection that holds great significance in today's environment of heightened awareness of antimicrobial use.

WHY ORBENIN-DC?



AS EFFECTIVE AS LEADING COMPETITORS^{6,7,8}



SHORTEST MINIMUM DRY PERIOD – just 28 days



ZERO MILK WITHHOLD post-calving



SHORT TIP for fewer intramammary infections



TRUSTED for more than four decades

For more information, visit OrbeninDC.com.

 **MADE IN THE USA**

SHUTOUT™

Internal Teat Sealant

During the dry period, a cow's primary natural defense mechanism against mastitis is the formation of a teat canal keratin plug. The formation of this plug can be delayed, and sometimes it fails to form altogether.^{9,10} Dry cows are highly susceptible to developing new intramammary infections from environmental bacteria, and the use of an internal teat sealant can reduce the risk by more than 70%.¹¹

For cows that receive an internal teat sealant, infections can be further reduced by up to 50% by partial- vs. full-tip insertion.¹² SHUTOUT offers a short-tip option that not only reduces new infection risk but results in less disruption to the keratinized epidermis within the streak canal, which is needed to form the keratin plug.



LONG-TIP
INSERTION

LONG-TIP
PARTIAL INSERTION

SHORT-TIP
INSERTION



WHY SHUTOUT?



PROVIDES EXTRA PROTECTION against mastitis during the dry period



HIGHLY SYRINGEABLE with minimal air in tube and short plunger stroke



FLEXIBLE short- and long-tip options



BIODEGRADABLE disinfectant wipes decompose in 6-12 weeks



AVAILABLE in 144-syringe buckets and 24-syringe boxes

For more information, visit ShutOutForDairy.com.



Bovilis® J-5

Mastitis Vaccine

Coliform bacteria are a constant threat to the mammary glands of cows. Gram-negative infections from bacteria like *Escherichia coli* can cause mastitis that leads to milk loss, culling and even death.

BOVILIS J-5 is a Gram-negative core-antigen vaccine that aids in the reduction of mastitis due to *E. coli*. Core-antigen vaccines have been proven to reduce the frequency and severity of clinical coliform mastitis cases.¹³

In comparison to competitor products, BOVILIS J-5 had the lowest endotoxin levels (EU/mL) and was 15-fold below the U.S. Pharmacopeia (USP) recommendation.¹⁴ USP helps ensure the quality, safety and benefit of medicines and foods.

| | BOVILIS® J-5 | ENDOVAC-DAIRY® | ENVIRACOR™ J-5 | J-VAC® |
|-------------|-----------------|---------------------|--------------------|----------------------|
| Dose | 5 mL | 2 mL | 5 mL | 2 mL |
| Mean EU/mL* | 44 ^a | 85,156 ^b | 5,936 ^c | 351,636 ^d |

^{a,b,c,d}Means with different superscripts differ ($P < 0.05$).

WHY BOVILIS J-5?



PROVEN TO FIGHT E. COLI
mastitis infections¹⁵



PROVEN EFFECTIVE
in older cows¹⁵



NO NEGATIVE EFFECT
on milk production¹⁵



ENDOTOXIN LEVELS
the lowest on the market¹⁴



LOW STRESS on cows

For more information,
visit **BovilisJ5.com**.



MADE IN THE USA



Guardian®

Scours Vaccine

Calf scours accounts for half of all deaths of pre-weaned calves.² 74% of pre-weaned calves that develop scours are treated with antibiotics,¹⁶ but the cost of scours goes far beyond loss of life and cost of treatment. Scours can also have a negative effect on milk production in the first lactation.¹⁷

Maternal vaccination of the cow or heifer prior to calving can reduce the incidence of neonatal calf scours in the period just after birth. With GUARDIAN and proper colostrum management, costly losses can be prevented and the next generation of the herd will have a healthy and productive start in life.

GUARDIAN protects calves against the four major bacterial and viral pathogens associated with scours.

- Rotavirus types G6 and G10
- Coronavirus types 1 and 3
- *Clostridium perfringens* types C and D
- *E. coli* type K99

WHY GUARDIAN?



MOST COMPLETE, broadest-spectrum scours vaccine



MOST SOPHISTICATED sub-unit *E. coli* technology



MINIMAL vaccine endotoxin exposure



LONG-LASTING ACTIVITY due to patented water and oil adjuvant



FLEXIBLE dosing schedule

For more information, visit GuardianForCattle.com.



 **MADE IN THE USA**

GIVING YOUR DRY COWS THE COMPLETE CARE THEY DESERVE

It's just another way **Merck Animal Health Works** for you.



Guardian

Bovilis J-5

SHUTOUT

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For more information, talk to your veterinarian or visit MAHCattle.com.

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- ¹⁴Comparison 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.
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ORBENIN-DC: 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 4 weeks (28 days) of treatment. For additional information, see the product label.

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

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