

Mastitis in Small Ruminants

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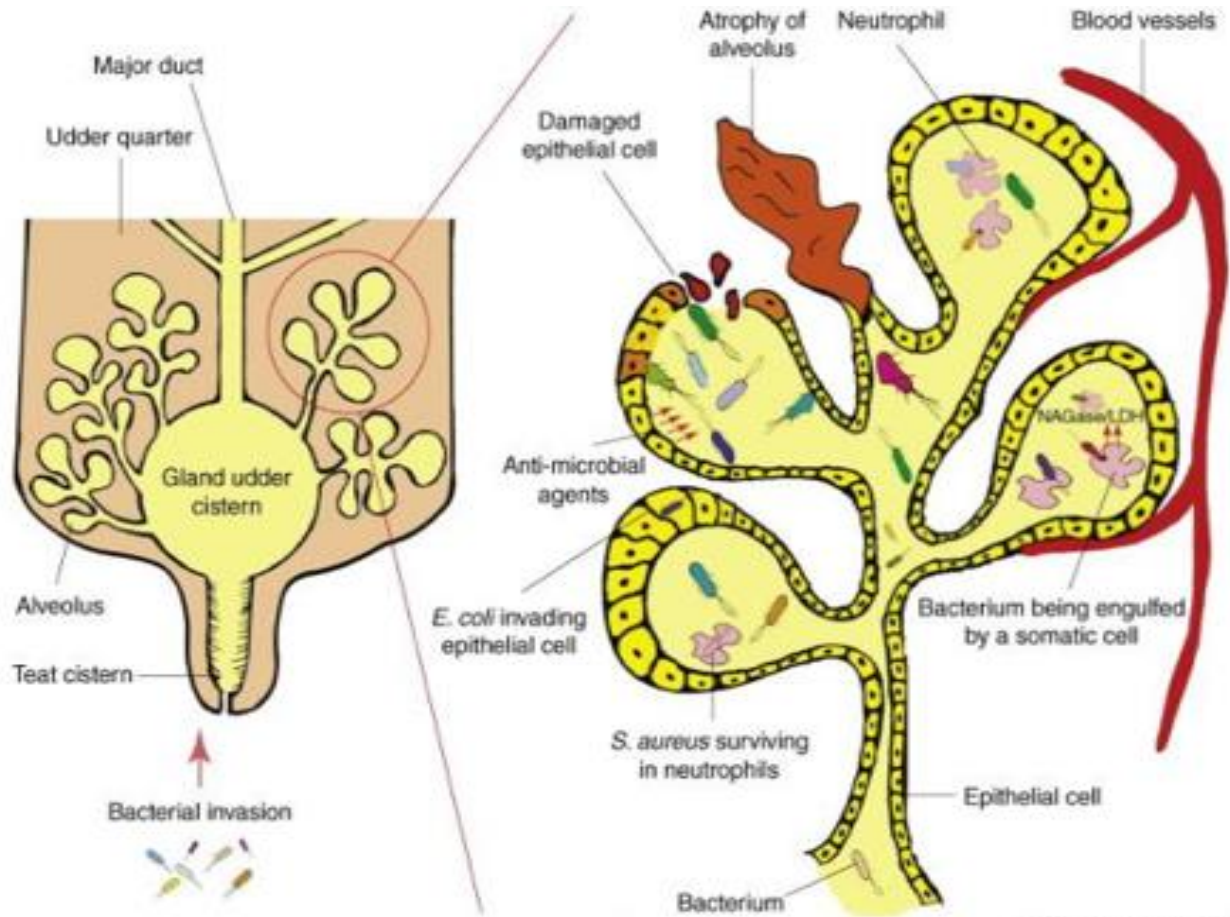
Why is Udder Health Important?



Immediate Postpartum Period

- Udder is full
- Edema
- Colostrum

Mastitis-Intramammary Infection

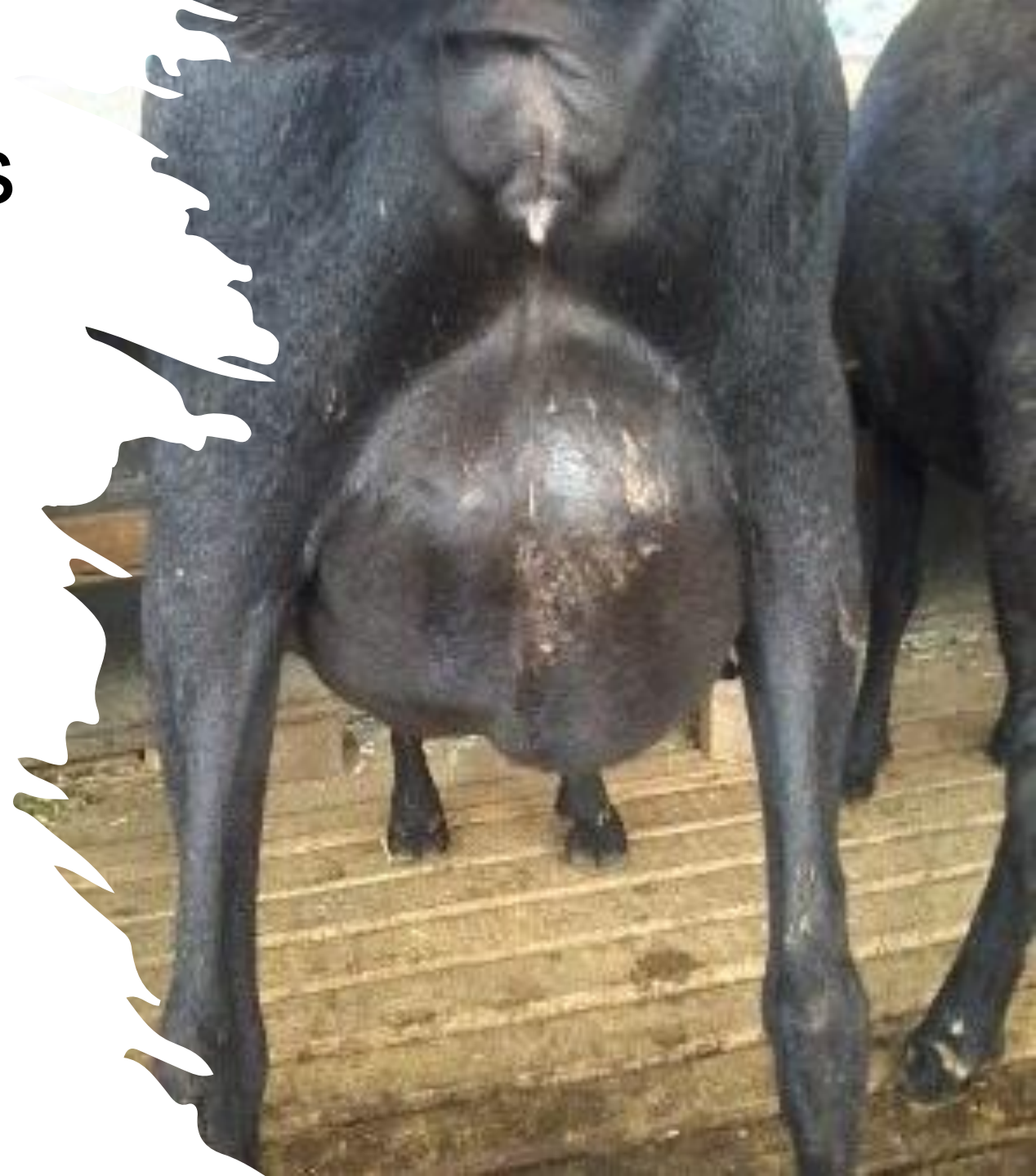


TRENDS in Biotechnology



Risk Factors of Mastitis

- Udder and teat shape
- Nursing kids/lambs
- Wound in teats/udder
- Rainy, humid conditions
- Improper milking procedures/poor hygiene
- Lactation stage



Signs of Mastitis

Clinical

- Mild: milk abnormal with flakes, clots and watery
 - Udder may be swollen, hot or sensitive
- Severe: hot, hard, painful and sensitive udder
 - fever (105-107°F), depression, weakness, loss of appetite

Subclinical

- No physical changes
- Production losses
- High Somatic Cell Counts
- May be chronic

Types of Mastitis Pathogens

A close-up photograph of a cow's udder. The teat tips are visible, with one tip on the right showing significant redness and swelling, characteristic of mastitis. The surrounding skin is pinkish and appears slightly irritated.

Contagious

- Animal to animal transmission
- Fomite: animal-fomite-animal

Environmental

- Agents originate in the animal's environment
- Occasionally animal-to animal transfer

How to Detect Mastitis?

- Clinical signs/symptoms
- Examination of udder and milk
- California Mastitis Test (CMT)
- Somatic cell counts
- Milk Culture

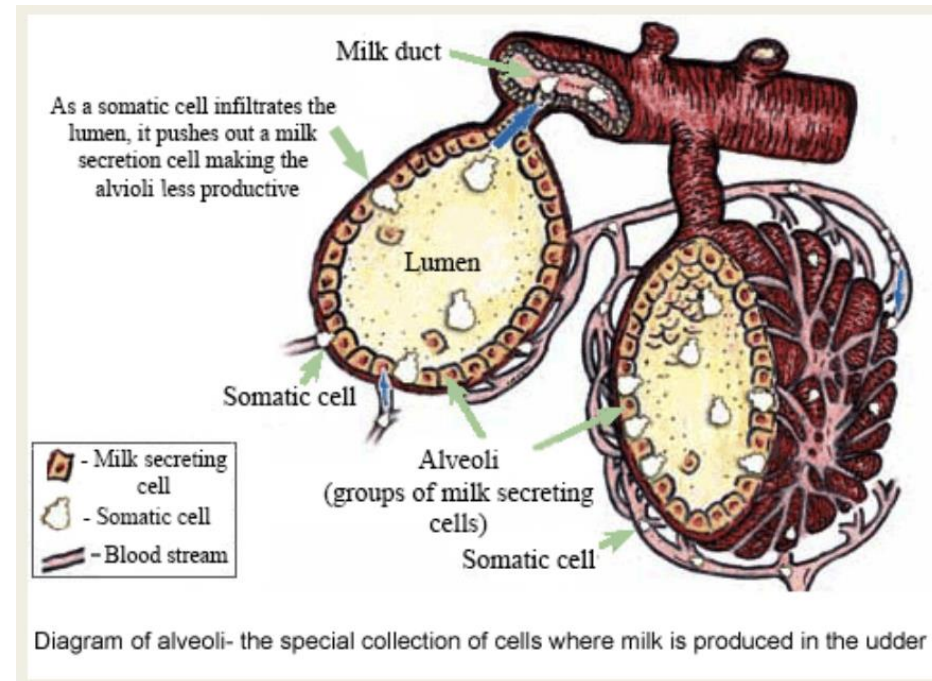


Somatic Cell Counts

LINEAR SCORE	SOMATIC CELL COUNT (CELLS/ML)
0	12,500
1	25,000
2	50,000
3	100,000
4	200,000
5	400,000
6	800,000
7	1,600,000
8	3,200,000
9	6,400,000



Linear Score	Log SCC (cells/ml)
1	25,000
2	50,000
3	100,000
4	200,000
5	400,000
6	800,000
7	1,600,000
8	3,200,000
9	6,400,000





Abnormal Milk

Visual inspection of milk

- Use strip cup
- Color, consistency, flakes

California Mastitis Test (CMT)

CMT Supplies

- CMT Paddle
- CMT Solution



A Step by Step Guide

STEP 1.

Milk samples from each quarter are collected in a clean CMT paddle. Be sure to discard the first stream of milk, then fill each cup with milk. You can tilt the paddle to discard excess milk until equal volumes remain in each well.



STEP 2.

Slowly add an equal amount of CMT solution to each well in the paddle. One method is to tilt paddle back until milk is halfway between the inner and outer circles.



STEP 3.

Gently swirl the CMT paddle in a circular motion to homogenize the solution.



California Mastitis Test (CMT)

STEP 4.

Results can be observed within 10 seconds.

STEP 5.

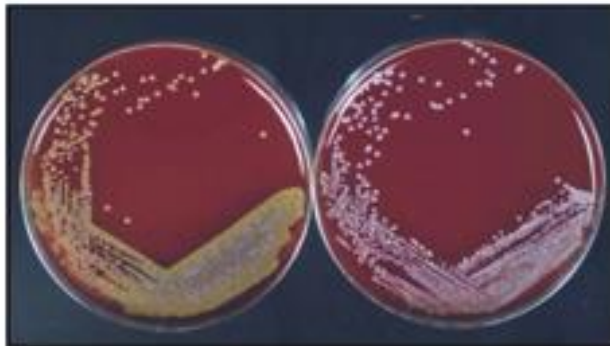
Remember to always rinse the CMT paddle after each test.



Rating	Reaction	Description of Visible Reaction	Interpretation
-	Negative	Mixture remains liquid and smooth. Perfectly clean	0-200,000 cells/mL
T	Trace	A light slime forms and is seen most easily by tipping the paddle back and forth and observing the mixture as it flows over the bottom of the cup. There is a distorted reflection in the bottom of the paddle. Trace reaction tends to disappear quickly with continued movement of the fluid	150,000-500,000 cells/mL
1	Weak	Numerous distinct clumps appear but with no tendency toward a single gel mass. With some milk, the reaction is reversible and may disappear with continued movement of the paddle	400,000-1,500,000 cells/mL
2	Distinct Positive	The mixture thickens immediately with gel formation. As the mixture is swirled, it tends to move as a mass around the periphery of the cup forming a tail. When you tip the paddle, you can break the stream of liquid as it pours over the edge	800,000-5,000,000 cells/mL
3	Strong Positive	A gel is formed which causes the surface of the mixture to become convex. An egg like appearance. This central peak may adhere to the bottom of the cup. When you tip the paddle, you cannot break the stream of liquid as it pours over the edge of the cup; it all comes out as one mass.	Cell number greatly over 5,000,000 cells/mL

Source: <http://www.omafra.gov.on.ca/english/livestock/goat/news/dgg1308a1.htm>

Milk Samples for Culture



Interpretation of Culture Results



Mastitis Costs

- Poor milk quality
 - Decreases in milk production
 - Decreases in milk components
- Increased management costs
- Treatment costs
- Decreased welfare
- Increases in early culling and replacement costs



PREVENTION OF MASTITIS

Udder Health Management Program

- Housing
- Proper detection of mastitis
- Proper milking procedures
- Maintenance of milking equipment
- Cull chronically infected animals
- Dry Period- antibiotic therapy
- Effective treatment
- Vaccination?



Vaccination- Goats Only!

VIMCO® Mastitis Vaccine

★★★★★ (8) Read reviews »

New! First and only mastitis vaccine USDA approved for use in dairy and meat goats.

VIMCO® targets *Staphylococcus aureus* and CNS (Coagulase Negative Staphylococci), the bacteria most commonly associated with mastitis.

Implementation of a **mastitis control program** is an essential step in improving milk quality and preventing infection.

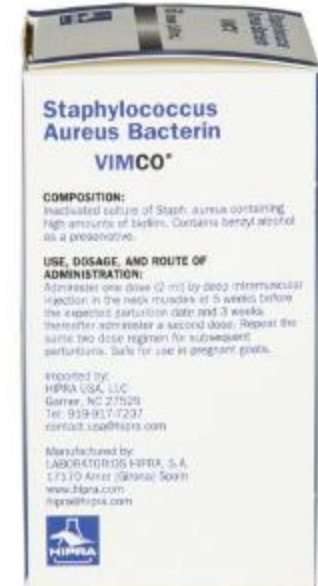
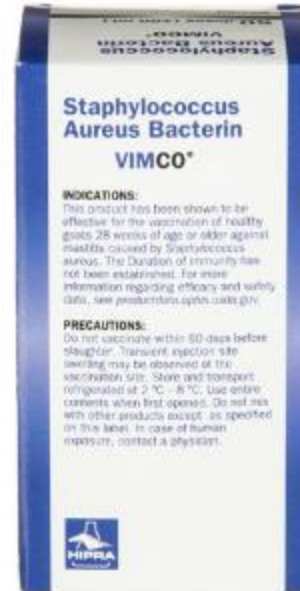
Vaccines and cold products are packed with frozen ice packs and ship via an Air Service. **These items do NOT count toward the \$100 free shipping threshold.** [Learn More »](#)

Like 65 Save 2

VIMCO®, 10 mL (5 doses)

Item #888250 | Weight 0.50 lbs

\$13.00



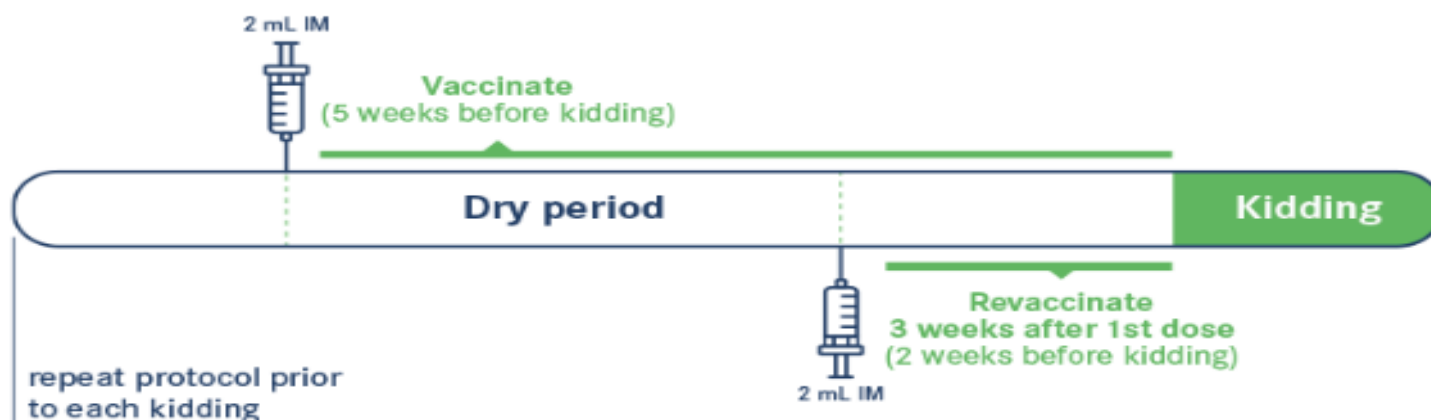
Benefits

The combination of the **VIMCO**[®] vaccination against Staphylococcal mastitis with a **mastitis control program** can lead to:

- Fewer clinical and subclinical mastitis cases (minimizes the need for antibiotics and NSAIDs)
- A reduction in the severity of clinical signs (udder and milk aspect)
- Less discarded milk from high somatic cell counts
- Less bacterial shedding
- Fewer replacement animals required (fewer culls)
- Increased profits from milk production, reduces milk loss (from SCC)
- Healthier animals

Dosage & Administration

Give 2 doses annually via intramuscular injection: 5 weeks prior to kidding; revaccinate 3 weeks after 1st dose.



Store and transport between 35°F–46°F. Bring to room temperature (59°F–77°F) and shake well before use. Use a clean needle per animal.

All doses must be administered within 12 hours of opening bottle.



Thank you

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