

Streptococcus uberis: A Practical Summary for Controlling Mastitis

Christina S. Petersson-Wolfe, Assistant Professor, Dairy Science, Virginia Tech
John Currin, Clinical Instructor, Virginia-Maryland Regional College of Veterinary Medicine

The implementation of control measures for contagious mastitis pathogens has successfully reduced the prevalence of these organisms in U.S. dairy herds. However, controlling environmental pathogens remains a daunting task. *Streptococcus uberis* is Gram-positive, with a cell wall structure similar to *Staphylococcus* spp., as well as streptococci such as *S. agalactiae* and *S. dysgalactiae*. *S. uberis* is the most common *Streptococcus* species isolated from cases of mastitis.

Where Are These Organisms Found?

These are environmental organisms commonly found **in manure and other organic matter, including bedding**. Poor udder cleanliness, inadequate stall management, and damaged teat ends also appear to increase the risk of spreading *S. uberis* to uninfected cows.

How Does *S. uberis* Spread to the Mammary Gland?

S. uberis will spread to uninfected cows through environmental contact. Reducing environmental contact with *S. uberis* is especially important in the early dry period. As with all environmental organisms, maintaining a **clean and dry environment** for cows to lie in is of utmost importance. In particular, the use of inorganic bedding (sand) will reduce the environmental contamination with these bacteria. However, it is important to remember that recycled sand can still serve as a source of environmental contamination because the organic matter builds on the bedding material.

How Can You Prevent and Control Mastitis Caused by *S. uberis*?

The control of *S. uberis* includes maintenance of a clean and dry housing environment and implementation of **proper milking procedures**. At milking time, all quarters should be forestripped, which will begin the milk let-down process. Following forestripping, the use of an FDA-approved and efficacious pre-milking teat disinfectant is particularly important for this mastitis-causing pathogen. The pre-milking teat disinfectant should remain on the teats for 30 seconds prior to removal with either a paper towel or a single-use clean and dry cloth towel. Following these guidelines, the time from the start of manual stimulation (forestrip or wipe) to unit attachment should be in the range of 60 to 120 seconds. This will allow the appropriate time for milk let down.

Following unit detachment, the application of an FDA-approved and efficacious post-milking teat disinfectant should be applied with coverage over at least two-thirds of the teat barrel. In herds with a particular environmental mastitis problem, the use of a **barrier teat dip** is recommended.

In addition, reducing teat end exposure between milkings by scraping the back of cow stalls (where the udder rests) and applying fresh bedding frequently is imperative. The **application of bedding conditioners such as hydrated lime** is effective at reducing the bacterial load in the bedding. However, the activity of these products is short-lived. Thus, frequent application is required. It is recommended that 2 pounds be applied per stall, and it must be applied every other day.

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The use of blanket **dry cow therapy** with a long-lasting antibiotic preparation is an effective way to cure existing infections at drying off. Furthermore, studies report the use of an **internal teat sealant** will significantly reduce the new intramammary infection (acquired during the dry period) caused by environmental streptococci, which includes *S. uberis*. The use of an internal teat sealant in conjunction with blanket dry cow therapy will double the cost of dry cow treatment. However, in herds where environmental streptococci are the predominant bacteria isolated from clinical mastitis, this is an effective way to prevent new infections and cure existing infections during the dry period.

When Are *S. uberis* Infections Most Likely to Occur?

New infections can occur at any time during lactation and may also occur during the dry period. However, the risk for new infection with *S. uberis* has been reported **greatest during the early dry period**. Following milk cessation, cows do not experience the daily flushing of the gland and are at an increased risk for mastitis in the early dry period. Cows in **early lactation** are also at increased risk for new infections due to the increased stress and immune suppression associated with the postpartum period. Cows with high milk production are not at greater risk than cows with low milk production.

How Likely Are *S. uberis* Infections to Cure?

These infections are often difficult to cure with traditional intramammary antibiotic preparations. Some veterinarians have had greater success with systemic administration of penicillin. However, veterinary consultation is recommended prior to the start of any treatment protocol. Due to the nature of these bacteria, **emphasis needs to be placed on prevention** of these infections, rather than focused on treatment.

Quick Notes

- *S. uberis* is an environmental organism commonly found in manure and bedding.
- New infections are most likely to occur during the early dry period.
- It is imperative to keep bedding clean and dry.
- The use of washed sand bedding that is properly dried will help reduce the environmental load of *S. uberis*.
- Proper milking procedures, including predip and postdip applications, are extremely important in the prevention of these infections.