



***Streptococcus dysgalactiae* – A practical summary for controlling mastitis**

Christina S. Petersson-Wolfe¹ and John Currin²

¹Virginia Tech, Department of Dairy Science and ²Virginia-Maryland Regional College of Veterinary Medicine

Streptococcus dysgalactiae (*S. dysgalactiae*) has the unique characteristic of being considered both a contagious and environmental pathogen. These organisms can spread from cow to cow at milking time, and are also commonly found in the cow's environment. A successful control program includes prompt treatment of cases, the use of proper milking procedures and dry cow therapy. All streptococci bacteria are Gram positive and similar in structure to *Staphylococcus* spp. Milk culturing laboratories can distinguish *S. dysgalactiae* from other streptococci using standard biochemical tests.

Where are these organisms found?

The reservoirs for *S. dysgalactiae* are **infected udders, manure and other organic matter, including bedding**. Poor udder cleanliness and stall management appear to increase risk of spreading *S. dysgalactiae* to uninfected cows.

How does *S. dysgalactiae* infect the mammary gland?

Streptococcus dysgalactiae can gain access to the mammary gland through **washcloths and teat cup liners**. During milking, irregular vacuum fluctuations can force bacteria up into the teat canal leading to the potential for new infection. In addition, *S. dysgalactiae* will spread to uninfected cows through **environmental contact**. 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 as the organic matter builds on the bedding material.

How can you prevent and control mastitis caused by *S. dysgalactiae*?

The control of *S. dysgalactiae* includes the maintenance of a clean and dry housing environment and the 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 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 start of manual stimulation (forestrip or wipe) to unit attachment should be in the range of 60-120 seconds. This will allow the appropriate time for milk letdown. Following unit detachment, the application of an efficacious **post-milking teat disinfectant** should be applied with coverage over at least 2/3 of the teat barrel. In herds with a particular environmental mastitis problem, the use of a **barrier teat dip** is recommended. A backflush system may help reduce bacterial numbers within the liners, but rinsing units by hand is not 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**, are effective at reducing the bacterial load in the bedding. However, the activity of these products is short lived, and thus, frequent application is required. It is recommended that 2 lb be applied per stall and it must be applied every other day.

When are *S. dysgalactiae* mastitis infections most likely to occur?

Cows in early lactation are at increased risk for new infections due to the increased stress and immune suppression associated with the postpartum period. Also, 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 with high milk production are not at greater risk than cows with low milk production.

How likely is *S. dysgalactiae* to cure?

Successful treatment of *S. dysgalactiae* can be achieved with the use of a broad-spectrum intramammary antibiotic preparation. **New clinical infections should be treated promptly** and appropriately. The use of **dry cow therapy** at the time of milk cessation will help to cure infections existing at drying off. In general, use of a strip cup or similar device is strongly recommended for detecting abnormal milk. The use of Dairy Herd Improvement (DHI) SCC records in addition to visual observation of fore-stripped milk and milk culture results will indicate effectiveness of treatment.

Quick Notes

- *S. dysgalactiae* is considered both a contagious and environmental mastitis pathogen spread from cow to cow at milking and also through environmental contact
- Use of proper milking procedures including gloves, efficacious pre- and post-milking teat disinfectants, single use towels and dry cow therapy will help control this pathogen
- It is imperative to keep bedding clean and dry
- Use of washed sand bedding that is properly dried will help reduce the environmental load of *S. dysgalactiae*
- *S. dysgalactiae* responds relatively well to a broad-spectrum antibiotic therapy

This project is supported by Agriculture and Food Research Initiative Competitive Grant no. 2013-68004-20424 from the USDA National Institute of Food and Agriculture.