

***Streptococcus ag* Infections in dairy cattle**

Streptococcus agalactiae is a common mastitis agent whose eradication from individual herds is practical and cost effective. Most infected cows show few clinical signs of mastitis, such as abnormal milk, but they usually have high somatic cell counts (SCC). A decrease in milk production almost always accompanies infection. Mastitis caused by *Strep. agalactiae* should be suspected in a herd if cow or bulk tank SCCs begin to rise and remain high, especially when bulk milk SCC is 1,000,000 cells/ml or higher. Occasionally, high bacteria counts in bulk tank milk will occur when infected udders shed high numbers of *Strep. agalactiae* in the milk.

Streptococcus agalactiae primarily infects the cisterns and the ductal system of the mammary gland. An irritant is produced, causing inflammation of the gland that is mostly subclinical with occasional clinical symptoms. Accumulation of bacterial waste products intensifies the inflammatory response, resulting in destruction of milk-producing tissue and reduced milk yield or agalactia. *Streptococcus agalactiae* rarely causes severe illness, but extensive scarring of a quarter may render it unproductive in subsequent lactations

Control Procedures

Contagious organisms, for which the primary source is the mammary gland of the cow, are transferred primarily by events associated with milking. Good milking procedures, including cleaning and sanitizing teats before milking and post-milking teat dipping, help reduce the spread of infection from infected to uninfected cows. In mycoplasma-infected herds, the use of rubber or plastic gloves when milking is recommended. Ideally, gloved hands should be disinfected between cows and dried off with paper towels. Some research trials have indicated additional control of contagious pathogens by automated disinfection of teat cup clusters (backflushing) or dipping teat clusters in disinfectant between cows. However, this practice in the field has minimal effect in reducing the rate of new infection, especially when compared to what can be achieved when an effective post-milking teat dip is properly used.

Streptococcus agalactiae

Streptococcus agalactiae is an obligate parasite of the mammary gland, which means that, in nature, it can only live and reproduce in the gland. Because of this host-parasite relationship, *Strep. agalactiae* can be controlled and eradicated from a herd by identifying and treating infected animals. This can be done by obtaining milk samples for microbiological culture from all cows in the herd and by treating the *Strep. agalactiae*-infected udders with an appropriate intramammary infusion product. *Streptococcus agalactiae* infection responds well to beta-lactam intramammary mastitis preparations in both lactating and dry cows. Using other classes of antibiotics often results in poor cure rates. Some chronic infections do not recover. If two regimens of treatment do not eliminate the infection, culling should be considered to prevent infecting other cows.

Once *Strep. agalactiae* has been eliminated from a herd, careful control measures should be maintained to prevent reinfection, including monitoring bulk tank milk with monthly cultures for at least six months to assure clearance of infections. A closed herd is required to maintain it free from this pathogen.

Breakdowns frequently happen due to the purchase of infected animals or by using contaminated milking equipment at fairs or livestock shows. New arrivals should be sampled before joining the milking herd. Dry cows and heifers also need to be included in *Strep. agalactiae* eradication programs because they can represent a source of reintroduction of the organism to the milking herd. Calves fed discarded milk containing *Strep. agalactiae* can spread the infection by suckling themselves or other penmates. Once *Strep. agalactiae* is established within the immature gland, it can persist until first parturition many months later. Therefore, dry cows and heifers should be cultured at calving before joining the milking herd

Summary: Controlling Contagious Mastitis

1. Prepare teats properly prior to milking. Udders should be dry, and teats should be cleaned and dried prior to machine attachment using single-service paper towels or individual cloth towels that have been laundered and dried after each milking.
2. Use adequately sized, properly functioning milking equipment. Use milking machines in a proper manner on properly prepared cows. Avoid unnecessary air admission into the teat cups during unit attachment, machine stripping, and unit takeoff that can cause irregular vacuum fluctuations.
3. Disinfect teats. Use an effective product after every milking. Post-milking teat disinfection is the single most effective practice to reduce the rate of new intramammary infection by contagious pathogens.
4. Assess clinical cases for treatment decisions. Most cases of clinical mastitis, other than those caused by *Strep. agalactiae*, are only minimally affected by antibiotic therapy during lactation. Work together with the herd veterinarian to design a management protocol for mild, moderate, and severe cases of clinical mastitis.
5. Use dry cow therapy. Treat each quarter of every cow at drying off with a single dose of a commercially formulated, FDA-approved dry cow treatment product.
6. Consider culling chronically infected cows. Cows that are infected with *Strep. agalactiae*, *Staph. aureus*, or *Mycoplasma* spp. present a risk to noninfected cows in the herd.
7. Maintain a closed herd. If new animals are purchased, culture milk from them before adding them to the herd.
8. Establish an active milk-quality program with the herd veterinarian. Achievable goals for controlling contagious mastitis include: 0 percent cows infected with *Strep. agalactiae* and *Mycoplasma* spp.; and less than 5 percent of cows infected with *Staph. aureus*.