Environmental Streptococci

This is a group of catalase-negative, Gram-positive cocci, and includes many different species in the bacterial genera *Streptococcus, Enterococcus, Aerococcus, and Lactococcus*. Environmental *Streps* are considered to be major mastitis pathogens because they are a common cause of mastitis resulting in high somatic cell counts and persistent infection. It should be noted that the species *Streptococcus agalactiae* is not an environmental organism and is addressed in a different factsheet.

**Source / Transmission**

Environmental *Streps* are ubiquitous in the environment of dairy cows. Cows become infected when teat ends are exposed to high levels of bacteria that overcome the protective mechanisms of the udder. These bacteria are shed in feces and thus can contaminate any type of bedding. However, straw bedding has been associated with high numbers of *Streps*, particularly long straw used in deep-bedded packs or maternity pens. Environmental *Streps* can also be found under certain conditions in the pasture environment.

**Infection**

Approximately half of all infections caused by environmental *Streps* will become clinical, meaning that half will remain subclinical. One-third will become chronic infections. Cows infected with environmental *Streps* will have elevated somatic cell counts. Most clinical cases are mild or moderate, with abnormal milk and a swollen udder being the only clinical symptoms. A very small proportion of cases will result in systemic symptoms such as fever and inappetence.

**Risk Factors**

Similar to other environmental mastitis pathogens, cows are most at risk for new infection during periods of compromised immunity. This includes recently dried-off, fresh, high-producing and other cows experiencing negative energy balance. Several studies have shown that the dry period represents a particular period of high risk for new infection with environmental *Streps*.

**Treatment**

Intramammary therapy is recommended for cows infected with an environmental *Strep*. An approved intramammary product with a good Gram-positive spectrum should be used.

**Control**

Maintaining a clean, dry cow environment is important to reduce exposure of the teat end to dirt and manure. This includes frequent scraping of alleys and holding pens, and keeping stalls or areas where cows lie down clean and well-bedded. Pre- and post-milking teat disinfection and good milking practices are also important, as well as identifying and treating affected cows. Cows with persistent infections that fail to respond to therapy should be considered as cull candidates.

**Note on Streptococcus uberis**

Although *Streptococcus uberis* is commonly grouped as an environmental organism because of its source in the environment, it can also behave as a contagious pathogen. Some studies have found evidence that *Strep uberis* may be transmitted from one cow to another through infected milk. In addition, the cure rate for *Strep uberis* is generally lower than that of other *Strep* species, and a higher proportion of cows may develop chronic infections. One study showed improved treatment success with extended duration therapy for experimentally-induce *Strep uberis* mastitis.

**References**


