

# Streptococcus agalactiae

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## Background:

Streptococcus is a general name for a class of bacteria capable of causing mastitis (inflammation of the udder) in dairy cows. *Streptococcus agalactiae* (commonly called "*Strep ag*") is a common cause of subclinical and mild to moderate clinical mastitis infections in dairy cows. With subclinical infections the cows have an elevated somatic cell count without abnormal milk. Cows infected by *S. agalactiae* often have more than one infected quarter. Mastitis caused by *S. agalactiae* is described as contagious. Infections are spread from infected cows to non-infected cows during milking via milking machines, milkers' hands, and teat cleaning materials such as towels used on more than one cow.

*S. agalactiae* survives a very short time in the environment, but it can persist indefinitely within the mammary gland. Infected heifers and cows are the reservoir of *S. agalactiae*. The number of herds infected by *S. agalactiae* has been reduced by modern mastitis control programs. *S. agalactiae* can be eradicated from dairy farms, however it remains a biosecurity threat for dairies that purchase cattle.

## Symptoms:

Herds with *S. agalactiae* mastitis frequently have bulk tank milk or DHIA weighted somatic cell counts that are consistently greater than 400,000 cells/ml with occasional counts reaching 700,000 cells/ml and greater. The standard plate count may occasionally rise above 100 colony-forming units (CFUs) in bulk tank milk, despite proper cleaning and sanitizing of milking and cooling equipment. Despite these alarming results the herd may only experience a monthly clinical mastitis rate of one or two percent. Heifers may freshen with "blind" or non-functional quarters. The herd may experience a very high cure rate (>70%) of clinical mastitis cases treated with approved intramammary antibiotics. DHI records may indicate rising somatic cell counts as cows get older and milk later in their lactation.

Cows' with *S. agalactiae* mastitis usually have elevated somatic cell counts but normal milk. Occasionally the cow may progress from subclinical to clinical mastitis. During episodes of clinical mastitis the signs are usually limited to abnormal milk and udder swelling. Cows affected by *S. agalactiae* infections can shed very high levels of the bacteria into the bulk tank and cause elevated plate counts.



**Diagnosis:**

Culture the bulk tank to determine if *S. agalactiae* is present within the herd. If *S. agalactiae* is confirmed in the bulk tank, aseptically collect milk samples for bacteriological culture from individual cows with somatic cell counts of 200,000 or higher (linear score of 4). Isolating *S. agalactiae* from greater than 15 percent of milk samples indicates a significant non-clinical mastitis problem.

**Treatment:**

*S. agalactiae* only lives in the udder of cows and 85-95% of infected cows are often cured by intramammary treatment using penicillin type drugs. Herd managers have two treatment options when trying to eradicate *S. agalactiae* from the herd. The first is called "blitz therapy." In this treatment scheme you treat all quarters of all cows with a penicillin type intramammary antibiotic tube for three milkings. Consult your veterinarian for advice on which antibiotic preparation to use. The second option is to culture and treat all cows that are diagnosed with *S. agalactiae* infections.

The difference between the treatment options is the cost of discarded milk versus the cost of additional bacteriological cultures. To determine what these costs are you may want to consult with your veterinarian. It will also be helpful to examine individual cows somatic cell counts or culture a group of cows to estimate the number of cows infected in the herd. Be sure to test the bulk tank for antibiotic residues after observing the appropriate withdrawal time.

A small percentage (5-15%) of treated animals will not be cured. Therefore three weeks after treatment, cows that continue to have high SCC values should be cultured again. You may retreat a second time, but segregate cows that remain chronically infected from the herd to prevent reinfection. These non-responding cows should be culled when economically feasible.

Treatment of cows subclinically infected with *S. agalactiae* usually results in increased production and dramatic decreases in bulk tank SCC values. Virtually all mastitis experts agree that treating *S. agalactiae* infections is economically beneficial.



### Preventive Management:

The "five-point plan" for mastitis control developed in the 1970's has proven to be very effective for controlling contagious mastitis caused by *S. agalactiae*. The five points are listed here:

1. Post milking teat disinfection.
2. Dry cow treatment with antibiotics on all quarters of all cows.
3. Prompt treatment of clinical case of mastitis with antibiotics.
4. Regular milking system analysis and maintenance.
5. Culling chronically infected cows.

Regular bulk tank culturing will provide an early warning if *S. agalactiae* infected cows have entered the herd. Culturing all new arrivals to the herd is also a good biosecurity practice to limit the damage of introducing this mastitis pathogen to your herd.

Separating the infected cows from the uninfected cows can help reduce the rate of spread of this mastitis causing pathogen. This can be accomplished by grouping, designating a separate unit for infected cows or backflushing. It is very important not to spread the bacteria by using a paper or cloth towel on more than one cow, during the milking preparation procedure.

Milker training is very important in contagious mastitis control. The milkers need to understand how the bacteria can be spread in order to ensure that their milking habits are not contributing to the problem. The use of latex or nitrile gloves allows the milkers to easily disinfect their hands. Proper milking procedures, employee training and teat dipping can reduce the spread of *S. agalactiae* within your herd.

House nursing calves individually and avoid feeding waste milk from treated cows.

