

# The *Strep. Agalactiae* Herd: An Alternate Approach

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*Strep. agalactiae* as the causative agent in problem mastitis, elevated somatic cell count (SCC), and/or high tank standard plate count (SPC) herds has been around for some time. It is not as new and exotic as are some of the more recently identified pathogens, yet it remains a significant contributor to the number of problem mastitis herds throughout the country, despite its relative ease of control. Therefore, it is important that we not bypass *Strep. Ag.* in a discussion of Quality Milk Production.

This case is typical of the way a *Strep. ag.* problem herd has presented itself during my clinical experience.

## Background

The dairy is owned by a father and son. They average milking 90 grade Holstein cows in a double-5 herringbone parlor with weigh-jars. They had been on DHIA for a short time a few years back but since they never used the records, they dropped it. Most breeding is done with a bull running with the cows. They are not on any regular herd health program and have not been clients. Emergency work has been done by a neighboring mixed animal practice. Since they operate an earth moving/bulldozing business as well, milkers are hired hands with supervision from the father as the son is running the heavy equipment most of the time.

## Observations

Chief complaint is a high tank SCC. This complaint is relayed almost simultaneously by the owners and the local milk inspector. They report a history of SCC's ranging from 800,000 to 1,200,000 over the past five or so years concurrent with erratic SPCs ranging from 4,000 to 60,000. However the most recent SCC is 1,600,000 and the most recent SPC is 99,000 and the threat of loss of permit is now real. (This was prior to 7/1/86 while the cutoff level for SCC was still 1,500,000). The threat of cutoff is the trigger that finally drives home the point that there is a problem. The owner further reports that his regular veterinarian pulled some cultures and mixed up a mastitis treatment for intramammary infusion. He didn't know yet whether this approach had been effective, but in an effort to assure the inspector that he was serious about the problem he required that I come and check out his milking system.

On-farm evaluation of the milking system reveals a swing-type arrangement of five units attaching to five weigh-jars

located down the center of the pit. Weight-type regulators are located on the pulsator line (two) and on the vacuum line supplying the high line glass receiver jar (one). These lines measure 15" Hg during milking. A 2" Stainless steel line serves as a wash line and supplies the milking vacuum to the weigh-jars. There is no regulator between the vacuum pump and the jars on this line. Its vacuum level during milking is variable but averages 16.5" Hg. Vacuum pump capacity and reserve air measurements are adequate for five units. Pulsation is measured at 70:30 milk:rest single type with 60 pulsations per minute.

Noted milking procedures consist of washing udders and teats with a drop hose using the milker's hand to scrub. Inconsistent stripping of foremilk with little observation of milk is done. Udders and teats are wiped with a common cloth and dipped in a bucket with an udderwash solution in it. Upon completion of milking, machines are fairly promptly removed by shutting off vacuum prior to cluster removal. Machines are then dipped (all four cups at once) in a bucket containing a sanitizer solution. An iodine based teat dip is erratically applied with a hand held sprayer.

Cows with visible evidence of mastitis in a quarter are not milked into the line from that quarter. Treatment of clinical cases is accomplished by drawing 5cc from a gallon jug sitting on the back steps of the parlor into a used syringe or by pouring the solution first into an old coffee cup and then drawing into the syringe and injecting intramammary with cannulas stored in alcohol. The milkers report that only a couple of quarters appear to be responding to this treatment. Several have become worse and most just seem to be drying up in the quarter following treatment.

The cows have access to pasture most of the time, but also have access to freestalls bedded with cedar-sawdust bedding. There are numerous ducks and chickens in the cow yard. Five or six Jerseys are found in the herd. Upon inquiry it is learned that these are descendants of cows brought from a neighbor when he went out of business some 10 years back. (I had known the herd of origin and knew that it had infected at least one other herd with *Strep. ag.* when they bought animals from them at the same time.)

A copy of the results of the cultures pulled by the regular veterinarian is obtained from the State Lab. It reveals 15 samples with *Strep. ag.*, 4 with a Staphylococcus, 3 with both, and 1 with no growth. The *Strep. agalactiae* is sensitive to Ampicillin, Erythromycin, Furadantin, Penicillin, and Keflex

while resistant to Gentamicin, Kanamycin, Neomycin, Streptomycin, SXT, Tetracyclines, and Novobiocin. The *Staphylococcus* is sensitive to Furadantin, Gentamicin, Kanamycin, Neomycin, SXT, Tetracyclines, and Keflex while resistant to Ampicillin, Erythromycin, Penicillin, Streptomycin, and Novobiocin. A call to the veterinarian who supplied the mastitis treatment reveals that the gallon jug used for intramammary treatment contains a mixture of Nitrofurazone solution, Oxytetracycline, and Kanamycin.

### Diagnosis

Considering the herd history of chronically elevated SCC's and SPC's, the presence of cows from a known *Strep. Ag.* problem herd, and the culture and sensitivity reports already available, a diagnosis of herd infection with *Streptococcus Agalactiae* is made. After reviewing the mode of transmission, replication habits, etc. of the organism with the owners, they are satisfied with the diagnosis.

### Recommendations

The standard regime of blitz treatment of all quarters of all cows with a commercial mastitis tube containing an antibiotic to which the organism is sensitive is recommended as the preferred and most effective means of controlling and eliminating this problem from the herd. However, the owners express an unwillingness to do this as they are in the middle of base building period (Class I base plan period with this particular year being their first opportunity to build base in several years due to increased sales) and have a large number of stale cows which they feel they can treat when they go dry at the end of base building period in three months. In view of this position, the following recommendations are made as a second best alternative to blitz treatment:

1. Move one of the regulators from the pulsator line to the wash line so that the teat end vacuum will be better regulated.
2. Install a device to meter in a disinfectant into the drop hoses.
3. In prepping cows, use drop hose with disinfectant to wash teats. Strip foremilk from each quarter and observe carefully for abnormal milk. Use a single service dry cloth or paper towel to completely dry the teats and udder. Rinse the hands in disinfectant water between each cow.
4. Instead of dipping machines in buckets between cows, take the drop hose with disinfectant and spray up one

teat cup with hose clamp in off position. This should effectively backflush the entire cluster manually and remove any Strep contaminated milk.

5. Shorten milk hoses approximately 1 to 2 feet.
6. Do NOT use anything other than a commercially prepared mastitis tube for intramammary infusion. Treat all cows with visibly abnormal milk as well as all cows showing any quarter at 2 or 3 on CMT. (Cowside instruction is given in how to properly run the CMT) Follow label instructions for antibiotic withdrawal. Also treat all fresh cows for the first two milkings in all four quarters until such time as dry treated cows begin to freshen (See #7).
7. Dry treat all cows going dry with agreed on dry cow tubes in all four quarters. Again follow label instructions regarding milk and slaughter withdrawal times.
8. Attempt to segregate the cows that have been treated and cleared up and the treated fresh cows from the rest of the untreated herd and milk the clean, treated cows first.

It is emphasized to the owners that the main hazard of this protocol is re-infection of treated clean cows by untreated infected cows. Also another warning is given about proper antibiotic withdrawal times in milk and the suggestion made that a Delvo-P test kit be purchased. It is additionally brought to the owners attention that additional improvements can be made to the milking system, milking practices, and overall herd health once this problem is under control.

### Results

The following month the bulk tank SCC dropped to 250,000 and the SPC stabilized at between 1,000 and 2,000. Needless to say the owners, inspector, and the plant fieldman were all overjoyed. Upon the opportunity to set up a herd vaccination program some six months later, it is reported that they have so far been able to maintain these results.

### Discussion

Although the blitz treatment of all cows would still be the preferred treatment in a case such as this, it does appear that a different protocol such as is outlined here can work when mandated by the client's insistence on an alternative. It does seem that *Strep. agalactiae* will continue to present itself in herd problem situations such as this most likely with an increasing incidence due to the lowering of the permissible bulk tank SCC level to 1,000,000 on 7/1/86.