

**DEPARTMENT OF AGRICULTURE, TRADE AND
CONSUMER PROTECTION
RURAL ELECTRIC POWER SERVICES PROGRAM
(REPS)**

**STREP. AG. MASTITIS
DETECTION, ERADICATION AND PREVENTION
BY**

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Why Is It a Problem? The National Mastitis Council says that Strep. ag. is the single most common factor associated with somatic cell counts (SCC) in the range of 500,000 to 1,000,000. The elimination of Strep. ag. from a herd is the single most important step to regaining control of a herd's somatic cell count. Successful elimination of Strep. ag. can be very satisfying to farmers who have been frustrated with a Strep. ag. herd problem. If a farmer is not interested in eliminating Strep. ag., the control of the somatic cell count problem will be nearly impossible to achieve. Attempting to eliminate Strep. ag. by following only part of the suggested eradication program is unlikely to be successful. (Let's get some \$ numbers here—estimated income loss per cow, etc. Also should use full scientific name with first usage of term.)

What If I Discover It in My Herd? Finding Strep. ag. in a herd culture is both good and bad. The bad characteristic of Strep. ag. is the fact that it is highly contagious. It can produce extremely high cell counts with comparatively little change in the appearance of the milk or udder. However, with some persistence, it is not too difficult to eliminate Strep. ag. Once eliminated, it is gone from the herd.

How Can I Eliminate Strep ag.? The practical reasons for eliminating Strep. ag. are that having this bacteria, in even a few cows, can produce an amazingly elevated SCC in the bulk tank and, commonly, the SCC will fluctuate wildly from test to test. It is also common that attempts to treat or cull a few cows may help for a very short period, but very quickly the herd SCC will increase again. This does not occur because the treatment or culling was not effective. The problems are that this bacterium is very contagious and produces a terrific cell response. Any attempts to treat the Strep. ag. cows a few at a time will be disappointing because the organism will reinfect cows rapidly unless totally eliminated from the herd. Successful treatment absolutely requires a methodical and comprehensive plan.

The favorable characteristic of Strep. ag. is that it responds, with rare exception, to almost any antibiotic used. The cure rate is very high because the organism does not invade udder tissue; and it does not develop resistance to antibiotics. In addition, the organism only lives inside the udder. It does not live in the environment (bedding, manure, soil, etc.). **Because it does not live outside the cow, it is possible and desirable to eliminate Strep. ag. from a herd.**

SETTING UP A PROGRAM TO ELIMINATE STREP. AG.

If elimination of Strep. ag. is desired, the procedure that is required starts with a culture of all of the individual cows currently milking in the herd to determine which are infected. Treatment of all of the infected cows at once is the most difficult, but necessary, next step. Typically, a substantial drop in SCC occurs within days of treating a cow that is infected with Strep. ag. only.

The expectation is that this treatment will be around 70-90% effective, meaning that follow up diagnostic and treatment work is essential for the elimination of Strep. ag from your herd. A follow up milk sample should be taken 2-3 weeks after this initial treatment. If the treatment was successful, the number of cows which need to be treated with a second and third treatment effort will be significantly reduced.

Strep. ag. lives only in the udders of cows so elimination is very possible. Strep. ag. is very contagious and produces very high cell counts with very little abnormal milk or udder changes, so elimination is very desirable. Elimination of Strep. ag. from the herd is expected to allow the farmer to be able to have a consistently more tolerable herd cell count, to increase production, and to increase the chance of being paid a premium for higher quality milk. This program for elimination of Strep. ag. stands an excellent chance of success if followed properly. It is unlikely, but possible, that a few cows may not respond, so culling may be necessary.

REPS PROGRAM ASSISTANCE

The REPS program veterinarian can visit your farm to assist you in setting up a Strep. ag. elimination program. Herd assessment and program set-up may be provided at no cost. However, the REPS program will not cover the cost of antibiotic tubes used in treatment and cannot offer support for the income lost from the dumping of antibiotic contaminated milk. Because of the time demands of providing service to many farmers across the state, the veterinarian would not be able to assist farmers beyond three rounds of treatment and testing. If four or more culture and treatment efforts are required, it may be necessary for the farmer to do that himself or with local assistance. If desired, the veterinarian can instruct a farmer, or a person of his choosing, in the proper procedures for collecting milk samples.

REQUIREMENTS TO PARTICIPATE

The three requirements which farmers must follow during any eradication effort in which REPS is involved:

- 1) That all teats of all cows are dipped after each milking;
- 2) That every quarter of every dry cow is treated with a commercial, penicillin based dry cow tube; and
- 3) That treatment must be given as soon possible after the culture results are reported.

If there is any unwillingness to agree to these three requirements, the effort will either not succeed or will wind up being very drawn out in its completion. In such cases, REPS may choose not to continue to offer this service.

Further details to help with your decision follow:

EXAMPLE OF TREATMENT PROCEDURE TO ELIMINATE STREP. AG.

Treatment Procedure:

- Treat all quarters (Dariclox or Aquamast) of all the infected cows at the same time.
- Treatment should be right after a milking.
- Clean teat ends (ends only) thoroughly and carefully with individual alcohol swabs.
- Infuse each quarter with treatment and dip right after treatment.
- Treatment should be for two consecutive milkings.
- All milk from quarters of all treated cows needs to be withheld until cleared by the milk plant.

Note: If any of the cows to be treated are scheduled to be dried up in the next 2-3 weeks, it would be more effective to dry these cows up and dry treat all 4 quarters, with Quartermaster, rather than treating before drying up.

ANTIBIOTIC TREATMENT TO BE USED

There are several choices of mastitis tubes to use. A couple of those commonly used are:

- Dariclox is a 48 hour withholding tube that is available through veterinarians. Its cost is higher, but the shorter withholding makes it more cost effective.
- Aquamast, a penicillin-based product for lactating cows, is available at Fleet Farm and other similar outlets. The labeled withholding is 5 milkings or 60 hours. The cost of Aquamast is approximately \$9.59 per box of __ tubes.

TESTING FOR ANTIBIOTICS

It is important to withhold all of the milk from treated cows until it tests negative for antibiotics. All of the milk from each treated cow should be pooled together for testing. A sample of the pooled milk should be tested after each milking starting with the third milking after treatment and continuing with each milking until it is clear of antibiotics. Testing of individual animals is less accurate and more likely to produce false positive results, prolonging the withholding period needlessly.

This will require that you work with your milk hauler and fieldman closely. Any future treatments will involve considerably fewer animals and withholding will be less of a logistical problem. But when treating half of your herd, it is important to have everything

set up in advance. This assures that you can continue to ship milk from the untreated cows; and you can return the treated cows back into the tank as soon as possible.

A useful procedure that has been used is to arrange to have the milk truck on the farm during milking. Milk all of the cows that were not treated first. As soon as the last of the milk from the untreated cows is in the tank, the milk can be pumped into the bulk truck. The treated cows are then milked into the emptied bulk tank. When all of those cows are milked, a sample of the milk should be tested. If the sample tests positive for antibiotics, the milk must be removed from the bulk tank and the tank must be well cleaned before the next milking.

An alternate procedure is to milk the untreated cows into the bulk tank for regular pick up. Then milk from the treated cows would be pooled in garbage cans for testing. If need be, the REPS veterinarian can fax a copy of this report to your fieldman and discuss the basic plan with him so that things can go as smoothly as possible.

FOLLOW UP CULTURE WORK

In addition to a farmer choosing to collect any additional samples himself, some have chosen to obtain the assistance of veterinarians, dairy plant field persons, or to hire relief milkers from the community. Follow up culture and treatment should be continued until all of the cows come back negative for Strep. ag.

As soon as the individual herd cultures are negative for Strep. ag., monthly bulk milk cultures should be started and continued for at least 6 months. The purpose of the monthly bulk milk cultures is to provide an early warning in case all of the Strep. ag. was not eliminated from the herd. Ideally, monthly individual somatic cell counts should be continued for at least 12 months in order to monitor and detect the progress of any individual problem cows. It is unlikely, but possible, that a few cows may not respond; so culling may be necessary.

FRESH COWS AND HEIFERS, PURCHASED ANIMALS, AND DRY COWS

Fresh cows that were dry treated are unlikely to be infected with Strep. ag. However, any fresh cow that produces a somatic cell count over 200,000 should be cultured. Heifers can be infected at a very young age (especially if fed discarded milk and housed in groups) and carry Strep. ag into the herd when fresh. Any heifers that freshen with a somatic cell count over 200,000 should be cultured. Purchased cows and heifers are the most common source of reintroduction of Strep. ag into the herd. If purchasing of cows or heifers is necessary, cultures should also be run on any cows with a somatic cell count over 200,000. Dry treatment is very effective against Strep. ag.; and the treatment of all cows in all quarters is essential. The product that is recommended is Quartermaster.