Reducing Mastitis: Not Rocket Science!

Jim Salfer, University of Minnesota Extension Service, Stearns County

The most frustrating and costly problem on most dairy farms is mastitis. Mastitis and associated high somatic cell counts (SCC) cost producers because of decreased milk production, treatment costs, discarded milk, and increased involuntary culling. The National Mastitis Council estimates that the economic loss to mastitis is $185 per cow per year.

The average SCC in the Minnesota is 350,000 to 450,000. There are many reasons to try to lower that. Controlling mastitis will lower costs and boost your profit. As producers we have the responsibility to provide the highest quality product for consumers, and consumers of the future will demand it more than ever. High SCC decreases fluid milk shelf life and cheese yield. In addition, many countries have a maximum SCC limit of 400,000. If Minnesota dairy products are going to compete in the export market, we are going to have to lower our SCC.

Experience has shown that if new infections occur at greater than 5 percent of the milking cows each month, SCC will increase. If you can keep new infections less than 5 percent, herd SCC will decrease.

Mastitis treatment can be frustrating and is often futile. That means the focus of mastitis control should be on preventing new infections.

How do you go about that? One excellent approach is to form a diagnostics team to help solve the problem (see “Do It Right” on page 3). Include your veterinarian, dairy plant field representative, Extension personnel, and others.

Diagnosis is an important part of solving your mastitis problem. The flow chart below will help you diagnose your mastitis problem.
Below are the general steps in solving a high SCC problem.

1. **Define the problem.**
   Use DHIA and/or on-farm records, bulk tank SCC records, bulk tank cultures, and individual cow cultures to try and understand which cows are infected and when they are getting infected.

2. **Identify the troublemakers.**
   Use bulk tank and individual cow cultures to determine the main organisms causing elevated SCC or clinical cases. Different organisms will require different solutions (see flow chart).

3. **Generate possible solutions.**
   Based on the information you gathered in steps 1 and 2, work with your diagnostics team to generate a list of possible solutions. If several organisms are responsible, you will need to use a multiple-pronged approach.

4. **Develop an action plan.**
   Work with your team to develop an action plan based on step 3.

5. **Set up plan to monitor progress.**
   One of the most important components of any plan is to set up monitors to show whether your plan is working. The use of multiple monitors (e.g., BTSCC and bulk tank culture) is often best since no monitor is perfect. Some possible monitors:
   - Bulk tank SCC graph for each milk pickup
   - Monthly bulk tank culture for mastitis pathogens
   - Individual cow DHI SCC
   - CMT of all fresh cows (How many cows are calving infected? Which quarters are infected?)
   - Culture of all fresh cows with high CMTs (What organisms are causing infection?)
   - Culture of all new clinicals and new infections (new cows over 200,000 SCC) each month (What organisms are causing infection?)
   - New infection rate on all cows (goal < 5%)
   - New infection rate on fresh cows (goal <10%)
   - Rate of clinical mastitis (goal < 2%/month)

6. **Carry out the plan.**
   Make the changes you and your team decided are appropriate.

7. **Monitor progress and adjust plan as needed.**
   Review the monitors and progress monthly (or more frequently) to determine if the desired progress is being made. If it is, continue on the same course. If not, find out why. Is the problem the plan of action or failure to successfully implement the plan? Reevaluate the action plan and/or retrain personnel. Continue to fine-tune your plan until you achieve your SCC goals.

   Progress can be slow depending on the organism and plan implemented. However, if you use a systematic approach, you will make consistent progress toward your goal. Once reached, a low SCC will reward your farm with increased profitability.
As important as culturing bulk tank or inline samples is to identifying and solving environmental mastitis problems, doing it wrong is little (or no) better than not doing it at all.

- Make sure samples are correctly taken, handled, shipped, and processed by a competent lab.
- Make sure your cooling system is working right. Cooling can be evaluated by tracking bulk tank temperatures on a recording thermometer.
- Make sure your milking system cleaning is working right. Cleaning problems may be determined to some extent by using lab-pasteurized counts along with a system cleaning analysis.