

Dairy Pipeline

By
Glenn A. Shirk

Extension
Dairy
Agent

Reducing Somatic Cell Counts

As of July 1, the "action level" for somatic cell counts was reduced from 1.5 million to 1 million. Shippers, whose milk exceeds this 1 million count, run the risk of losing their milk market. But, that should not be the only reason why you want to keep your cell counts low.

High cell counts also mean you are losing milk production; that's lost income. The reason for this loss is, infectious organisms are destroying milk secreting cells in the cow's udder. Many of those damaged cells will not be repaired until the cow is in her dry period. Then, it may be repaired only if the dry udder is relatively free of infection and if the udder tissue is not too severely scarred.

Very little udder repair occurs during lactation. That's why cows once cured, seldom ever return to full production during that same lactation.

At what levels of cell counts do the biggest production losses occur? Contrary to what you might think, it's at the lower levels! Studies show these approximate losses in production at different levels of cell counts.

Production losses start to occur at SCC levels as low as 100,000. Note that every time SCC levels double, you lose another 1.5 pounds

Approximate SCC Level	Production Loss per Day	
	Incremental	Cumulative
100,000	1.5	1.5
200,000	1.5	3.0
400,000	1.5	4.5
800,000	1.5	6.0
1,600,000	1.5	7.5

of milk per cow per day. That's lost income — an expense you don't see, just feel.

That is why you don't see much improvement in production when you reduce a high count of 1.6 million down to .8 million or a 1 million count down to .5 million. That sounds like a big drop, but at these high levels these big drops may improve production by only 1.5 pounds — hardly noticeable.

But don't give up at this point; you are headed in the right direction. If you continue to stick with a good mastitis prevention and control program you might be able to drop the count down to the 100,000 to 200,000 level. This second drop of 600,000 to 700,000 may result in an additional increase in production of 3.0 to 4.5 pounds of milk; that's two to three times as great as that first drop from those real high levels.

Know Thy Enemy

To conduct an effective mastitis prevention and control program, and to make more effective and efficient use of your time and dollars, know your enemy (the infectious organisms), and plan to attack them on all fronts simultaneously. Culturing will help you identify the organisms involved. Basically they fall into two general categories, contagious and environmental.

The contagious group spreads from cow to cow at milking time.

The two main culprits in this group are: streptococcus agalactiae (strep ags) and staphylococcus aureus (staph).

Strep ags are fairly easy to control. The only place they can survive well is in the cow's udder. So, once you've eliminated it from all the udders, strep ag infections are fairly easy to prevent.

Staph organisms, on the other hand, can invade udder tissue, become deep seated, and cause cysts; they are more difficult to control. Chronic staph cows that fail to respond to treatment should be culled so they won't serve as seeds of infection for other cows.

Another nasty and very contagious organism is mycoplasma. There is no cure for this organism. The best solution is culling infected cows. Fortunately, the incidence of mycoplasma has been very small.

The second category of organisms is the environmental type. It consists primarily of coliform and streptococcus non agalactiae (strep non ags). They thrive in warm, moist filthy areas — dirty stall beds, sloppy lots, filthy udders, etc. They are more of a problem during periods of wet, hot and muggy weather. It is also the type of infection cows may pick up around calving time.

The two most common coliforms are escherichia coli (E. coli) and klebsiella. E. coli are generally associated with manure. Klebsiella is associated with saw dust bedding. Some coliform bacteria are very toxic and fast acting; udders can become hot and hard overnight, production can drop to near zero, and unless the cow is treated immediately toxins from the bacteria can be fatal to the cow.

The information below was developed from a chart used by

Penn State Extension Veterinarian, Lawrence Hutchinson. I thought it was an effective way of showing which practices are most effective against certain types of infections. It may help you target your efforts more effectively.

Three Ring Circus

For a mastitis prevention and control program to be effective, you need to focus your efforts on three major areas at once: 1. the infectious organism, 2. the cow,

and 3. the environment in which the organism thrives and the avenues by which they spread to the cow.

Eliminating current infections helps to give the udder an opportunity to heal and it reduces a source of infection for other cows. Culturing and treating plus complete and frequent milkouts will help. It is hard to rid cows of infection by treating during lactation. The best opportunity is to treat during the dry period.

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Effectiveness Of Procedures

	Contagious	Environmental
Clean, Dry Surroundings:		
Maternity Area		Yes
Lots and Alleys		Yes
Stalls		Yes
Udders (teats)		Yes
Teat Dipping:		
Barrier Dips		Yes
Pre Dips		Yes?
Germicidal Dips	Yes	
Cow Towels - Disposable	Yes	
Back Flushing	Yes	
Segregate Infected Cows	Yes	
Cull Chronic Cows	Yes	
Dry Treating	Yes	
Treating Clinical Cases	Yes?	Yes?
Loops in Teats		Yes?
Milking Practices		
Complete Milkout	Yes	Yes
- good technique		
- oxytocin		
Infected Cows Last	Yes	
Frequent Milking	Yes	Yes
Pre-milk Leakers		Yes
Maintain Cow's Resistance	Yes	Yes
Nutrition & Health		
Se & Vit. E		
Cow Comfort		
Stall Beds		
Milking Equipment	Yes	Yes
Installation		
Maintenance		
Operation		

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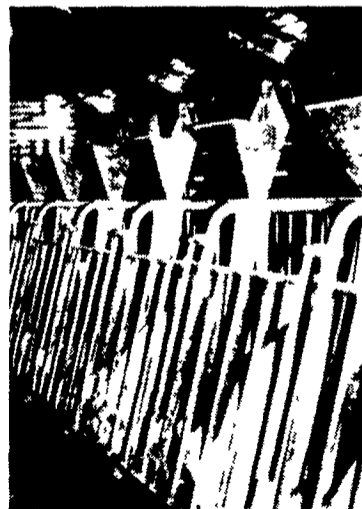
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