



SCC DIAGNOSTICS TOOL BOX



R-MP-1: Can You Meet the New 400,000 SCC Requirement – How Can You Tell?

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Published in Dairy Star, September 2010

What bulk tank somatic cell count (BTSCC) average do you really need to maintain and NEVER go over the new 400,000 SCC requirement? The most important factors are herd size, season, your present BTSCC average, and milk pickup-to-pickup variation.

We know that a single high SCC cow in a small herd will have a much greater impact on the BTSCC than that same cow in a larger herd just because of the dilution effect. This means that small herd owners will need to be extra vigilant in identifying their high SCC cows and then take some action (like quarter milking) to keep that high SCC milk out of the bulk tank. On the other hand, large herds may require more overall effort (more cows to keep low) to accomplish the same goal.

The season of the year has a tremendous effect on the degree of teat exposure to environmental mastitis pathogens. It is much harder during summer to keep BTSCCs low. In addition, cows under heat stress will often have compromised immune systems and are thus more vulnerable to getting mastitis infections.

A few years ago, the University of Minnesota did a study of BTSCC tests on 1500 upper Midwest dairies. The questions asked were: what were the BTSCC monthly averages, and what were the milk pickup-to-pickup variations for those herds that never had a BTSCC over 400,000 in the 2-year period of the study? The answers to these questions were quite informative and especially useful as we consider the current 400,000 SCC requirement.

The study showed that herds that NEVER had a single milk pickup greater than 400,000 during the two years had an annual BTSCC average of 171,000 and a pickup-to-pickup variation of 29,000. During the summer months, these same herds average 194,000 BTSCC with a 33,000 pickup-to-pickup variation. Some of you may think, does that mean in order to keep my BTSCC under 400,000, I need to maintain a BTSCC average of at least 200,000 or less? Although I recommend it as a goal for every herd, it will not be necessary to keep it under 200,000 to meet the 400,000 requirement. The challenge of staying under 400,000 gets harder as either the BTSCC average or the milk pickup-to-pickup BTSCC variation increases. Consider the table accompanying this article to better understand what I mean. The table gives what the percent probability is that your herd BTSCC will be over 400,000 during the next month based on your current BTSCC average and pickup-to-pickup variation.

To check out your own situation do the following:

1. Average your last month's milk pickup BTSCC tests.
2. Calculate the average milk pickup-to-pickup BTSCC variation and divide this number by the factor 1.13. This gives you the average milk pickup-to-pickup sigma value (a measure of BTSCC variation).
3. Find the column that matches your average BTSCC and the row that matches your current BTSCC variation.
4. Where those rows and columns cross is the percent probability that you will have a BTSCC greater than 400,000 during the next month.

Table 1 shows that if you have a low BTSCC and low BTSCC variation, there is very little chance that you will have a BTSCC over 400,000 during the next month. But if you have a fairly respectable BTSCC, such as 250,000, but also have a high BTSCC variation (i.e. 50,000), your chances of having a BTSCC greater than 400,000 will be 55%. If your present BTSCC is greater than 300,000 and you also have a high BTSCC variation (i.e. 75,000), your chances of having at least one BTSCC greater than 400,000 is almost certain.

What can we learn from these calculations? First, being consistent in applying all the milk quality best management practices is very important. Second, if your average BTSCC is greater than 250,000, you need to take a hard look at how to improve implementation of your overall milk quality best management practices as well as how to improve your consistency.

A BTSCC Excel spreadsheet is available on our Dairy Extension website that will automatically benchmark your average BTSCC and BTSCC variation as well as calculate the probability of your BTSCC being greater than 400,000. Go to www.extension.umn.edu/dairy, click "Milk Quality/SCC Tool Box" in the upper right corner box, select "Monitoring BTSCC" listed under Spreadsheets, and input your last 20 BTSCC tests.

BTSCC VARIATION Between Milk Pickups (Sigma)	RANGE BTSCC AVERAGE (X 1000)					
	100-149	150-199	200-249	250-299	300-349	350-400
10-20,000	4%	6%	7%			
20-30,000	5%	9%	14%	31%	51%	81%
30-45,000	7%	13%	23%	45%	68%	>90%
45-60,000	17%	21%	33%	55%	73%	>90%
60-75,000		23%	40%	56%	75%	>90%
75-100,000		33%	44%	57%	80%	>90%
100-125,000				62%	77%	>90%
125-150,000					81%	>90%

