

Successful Farms are More Consistent

Part 1: Milk Quality

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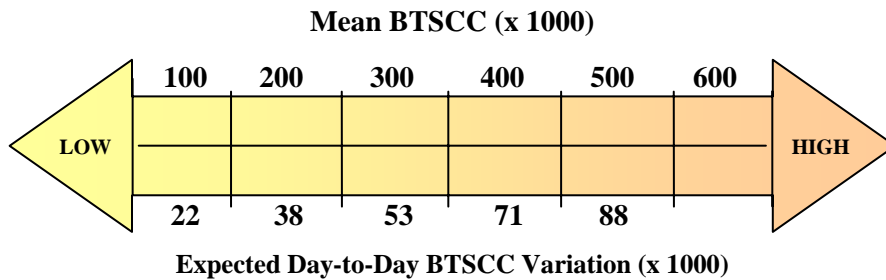
How consistent are you managing your dairy? How consistent and compliant are your employees in carrying out the management protocols on your farm? Successful farms are consistent in how work is done. Cows love to be bored. They love it when everything is always the same. Cows love it when they don't even know there is a different milker milking them. They milk best when milking routines are the same time after time.

A recent University of Minnesota study of over 1500 Upper Midwest dairies indicates that day to day variation is a reliable way to measure the quality of herd management processes. The study shows the benefits of doing the work in a consistent and routine manner on your farm. In this study day to day variation of bulk tank butterfat %, protein % and BTSCC were measured for an entire year.

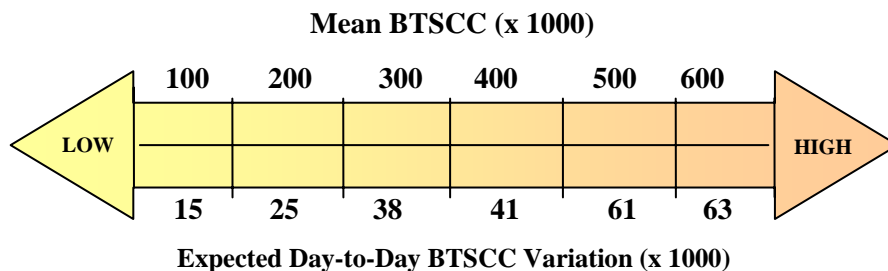
Variation is a measure of process quality, compliance and consistency. For a bulk tank somatic cell count (BTSCC), the magnitude of the variation can be a good indicator of the level of those on farm management processes (or procedures) that result in milk quality. Figure 1 indicates the relationship between day to day BTSCC variation and BTSCC level. Since herd size will have an effect on the degree of variation the data in this study was categorized for herds less than 100 cows and herds with greater than 100 cows.

Figure 1. BULK TANK SCC

ARROW A (Herds less than 100 cows)



ARROW B (Herds 100 cows or more)



Therefore, if you know your average BTSCC and the day to day variation you will be able to determine the quality of the processes or the consistency with which the processes are applied on your farm.

How Can You Utilize BTSCC Variation Data for Managing Your Herd?

For herds subscribing to MILKLAB now being offered to farms in the Upper Midwest this calculation is automatically done. This Internet service uses bulk tank test results to make a daily control chart plot in which the herd mean and sigma value (a measure of variation) is calculated. Any herd selling milk to LOL, AMPI, or First District Association as well as any of those dairies whose milk is being tested at the Dairy Quality Control Inc milk testing laboratory can get this service. If you have not heard of this service ask your milk plant field man for further information or log on to www.dairyperformance.com. Otherwise you can calculate and evaluate your herd variation in three easy steps described below.

Step 1. Calculate the mean and standard deviation

Take the last twenty bulk tank SCC results and calculate their mean and standard deviation. You may want to use a scientific calculator, computer software like Excel or obtain the Feeding and Milk Quality Variation Worksheet from the Dairy Extension Website www.extension.umn.edu/dairy. Then click on “Dairy Diagnostic Toolbox” and download the free worksheet.

Step 2. SCC Interpretation

You should first find the arrow appropriate for your herd size and then mark an **X** at BTSCC mean closest to your farm’s mean BTSCC in the upper row of the arrow (Figure 1. arrows A and B). Mark the variation (sigma or standard deviation) on the lower row of the arrow. It is expected that the **X** for your variation should be in the same column as the **X** you marked for the mean. For example, For a herd with less than 100 cows and a mean BTSCC of 300,000 the expected day to day BTSCC variation would be around 53,000. If you marked an **X** for variation above (to the right) the indicated value for the particular mean, that means that your day to day SCC variation is large; a value below the expected value indicates a small variation.

Step 3. Draw your conclusions.

What if your variation is high?

If the variation is higher than expected, this suggests a need to improve process compliance and consistency. Evaluation of employee compliance to protocols and / or the consistency with which protocols are followed is needed. On farms where SOP’s (standard operating procedures) are not in place encouragement should be given to write them. Routine employee training should be implemented to be sure that each employee understands their duties and is committed to following all SOPs. Training is effective in reducing variation. Recent University of Wisconsin studies indicated that herds with more frequent training for milkers had lower BTSCC.

What if variation is low?

When the variation is low the good news is that the employees are being consistent in their work. The bad news is that, if the dairy is still not producing milk of desired quality, some things are being done consistently wrong. Take a closer look at how all tasks are performed, take measurements and make observations. Some examples of the measurements to take when attempting to lower the SCC are: cow density, bedding cultures, cow hygiene score, bulk tank cultures and a number of other indicators that might help identify the root cause of the problem.

What if variation is average?

If the variation for BTSCC somewhere in the middle of the indicated range there is room for improvement in both consistency in people performance and the processes themselves. Experience has shown that it is best to start by improving consistency and protocol compliance. This makes it easier to identify true improvement in performance. By first reducing the variation in performance, when changes are made to the procedures used, it will be easier to determine if the implemented changes actually resulted in any improvement in milk quality.

Monitoring variation is not the panacea remedy that will automatically solve all problems on the farm. However experience in nonagricultural industry has shown that taking a closer look at variation can be very helpful in spotting emerging problems early as well as aid in the discovery of the root causes. This approach can result in both an improved herd and employee performance. Part 2: Feeding Consistency will be featured in the next issue of DairyStar. For more information about this article please contact Jeff Reneau (tel: 612-624-9791; email: renea001@umn.edu).

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