

How to Interpret the DHIA-520 Somatic Cell Count Profile

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Examining DHIA somatic cell count reports and using them as valuable aids in identifying the major causes of problems in individual herds are provided in this publication.

Losses to mastitis are estimated at more than \$200 per cow annually. In Nebraska annual losses total more than \$20 million dollars. The various items contributing to direct mastitis losses per cow are listed in *Table I*.

Table I. Mastitis losses per cow.

<i>Cause of Loss</i>	<i>\$ Per Cow</i>	<i>% of Total</i>
Decreased milk	140	70
Discarded milk	20	10
Replacement cost	16	8
Decreased sale value	10	5
Drug therapy	8	4
Vet service	4	2
Extra labor	2	1
Total loss	\$200	100%

Somatic cell programs offered by the Dairy Herd Improvement Association (DHIA) program provide the dairy industry with a much-needed tool to monitor both the herd and individual mammary health status. They offer a way to identify clinical or subclinical mastitis so associated milk losses can be calculated and/or measures initiated to correct the cause of SCC rise. Increased Somatic Cell Counts (SCC) have been associated with decreased milk and fat production. These losses occur even with low SCC readings of 200,000 cells/ml and below. The estimated milk lost for varying SCC scores is shown in *Table II*.

Table II. Milk production losses for various SCC scores.

<i>SCC (000's/ml)</i>	<i>Pounds/day</i>	<i>Pounds/lactation</i>
50	0	0
100	1.5	400
200	3.0	800
400	4.5	1,200
800	6.0	1,600
1,600	7.5	2,000
3,200	9.0	2,400
6,400	10.5	2,800

If herd size is 75 cows and SCC score is 800,000, the estimated loss in milk production is an astounding 120,000 pounds per year. With a milk price of \$11 per hundredweight, this lost milk amounts to a gross income of \$13,000 per year. Not only are you losing income from the sale of milk, but you also may be losing a premium for not selling high quality milk as well as other mastitis related losses.

An excellent way to monitor a herd's SCC score and to identify potential problem cows and management practices is to enroll in the DHIA-SCC testing program. This program enables the producer to monitor not only each individual cow's SCC level, but also helps in uncovering potential herd management problems. An SCC report is mailed monthly to each producer enrolled in the program. The report has seven major components.

Lactation Averages

The report stratifies the average SCC score for three lactation groupings — 1, 2, 3 and greater. This part of the report shows if there is a problem with animals in a certain lactation. If heifers have a serious SCC problem, the heifer rearing facilities may be dirty, wet, lack adequate ventilation,

or the freshening area for heifers may be harboring bacteria that is causing serious contamination. If the older animals are presenting the problem, perhaps: 1) cows are not being dry treated; 2) housing and dry lots need to be cleaned; or 3) calving stalls need to be cleaned and disinfected. One can normally expect the older animals to have slightly higher SCC scores than heifers.

Weighted Herd Average by Sample Day

This listing shows the average SCC for your herd weighted by the amount of milk each cow produced. This report shows a rolling six-month average on your herd's SCC level. Use this information to monitor any management changes made during the last six months. It also may indicate whether the herd's SCC is being affected by things of which you are not aware. This report also shows if SCC scores increase during certain seasons of the year. If there is a marked increase for a given season, examine the facilities to see if there is excess moisture in certain areas, poor sanitation, lack of shade, or other potential problems that should be avoided or corrected before next year.

SCC Summary

This gives a distribution of the number of cows regardless of lactation number that fall into five SCC levels below 100,000 to above 800,000 cells. This immediately lets you know where your cattle rank. This section also allows you to compare your herd with the average of all herds in the Mid State Processing Area. Remember one or two cows can greatly influence your herd's SCC score so be certain to look at this summary to aid in interpreting your overall score.

Days in Milk SCC Average

This section gives the average SCC score for all cows at different stages of lactation. The scores on cows fresh under 50, 50-100, 101-200, 201-300 and over 300 days are listed. By using this grouping you can see if you are having problems early, in the middle or during the latter part of the lactation. If cow's SCC scores are highest during the early stages of lactation, check freshening areas for possible problems. A clean, dry, well-ventilated freshening area is essential for low SCC scores. If the majority of scores are high, examine milking procedures, milking equipment, sanitation practices, treatment procedures and check for stray voltage.

Linear Score

This section lists your SCC score in a linear form. To provide more uniform SCC reporting, the Dairy Herd Improvement Association has adopted a uniform scoring method called the linear score. The linear score divides the somatic cell count into 10 categories from 0 through 9.

Animals Over 400,000 Cell Count

All animals that have cell counts in excess of 400,000 are listed under this section. These cows should have quarter samples taken and checked closely because their cell counts indicate serious clinical or subclinical mastitis problems. Also, included along with the cow's SCC score is the percent of the overall herd SCC score that each cow is contributing. Often one can greatly reduce the SCC level by simply culling a few cows. The quickest and easiest way to reduce SCC is simply to cull the top SCC cows. To permanently reduce SCC, it is necessary to get to the root of the problem.

Individual Animal Report

DHIA lists the SCC scores on all cows for the last six months. This is an excellent way to monitor cattle to spot those animals with chronic problems. If a cow always has a high SCC score, culture her milk to see if there is a particular pathogen causing the problem. Once a specific pathogen is identified, establish and follow your veterinarian's treatment program.

The DHIA-SCC report can be a valuable aid in identifying some of the major causes of mastitis. The common causes of mastitis that cause high cell counts are:

1. Faulty milking procedures
2. Milking equipment
3. Poor sanitation
4. Poor facilities
5. Stray voltage
6. Specific pathogen infection
7. Long lactations
8. A high proportion of older cows

For additional information on mastitis, refer to www.nebraskadairy.unl.edu.

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