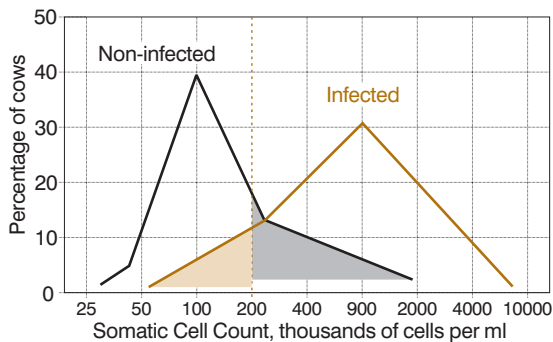


Almost all producers on DHI subscribe to the Somatic Cell Count Option. But many of the concepts and calculations used to generate the Somatic Cell Count (SCC) reports are poorly understood. Here is a brief explanation of what the numbers mean.

Somatic cells

Somatic cells are literally 'body' cells, as opposed to microbial cells. A small proportion of the somatic cells found in milk may be secretory cells sloughed from the alveoli where milk is produced. The rest are white blood cells, produced by the immune system and sent to the mammary gland to fight infection or injury. Their purpose is to engulf and kill microbes causing the infection. The main assumption behind counting somatic cells is that SCC increases with the severity of the infection. But even milk from uninfected quarters will contain some somatic cells—generally less than 200,000 cells per millilitre (ml).

Although a count of 200,000 cells/ml is used as the cut-off between infected and uninfected cows, as shown in the graph below, about 15% of cows with SCCs below this threshold will be infected; an equal proportion of uninfected cows will have SCCs above 200,000 cells/ml.



Milk loss and Linear Score

As SCC increases, so does milk loss. But, as shown in the top graph opposite, this is not a straight-line (linear) relationship. Milk loss rises very rapidly as SCC increases from 50,000 to 500,000 cells/ml but rises much less rapidly as SCC reaches higher levels.

Understand Somatic Cell Counts and Linear Scores

A number of surveys conducted in Canada, the US and Europe have demonstrated a linear relationship between milk loss and the *logarithm* of SCC. This is the reason for the introduction of Linear Scores which are derived from the logarithm of the SCC. The table below shows the relationship between LS and SCC.

Linear Score (units)	Linear Score (tenths)				
	0.0	0.2	0.4	0.6	0.8
Somatic Cell Counts, thousands					
0	12	14	16	19	22
1	25	29	33	38	41
2	50	57	66	71	76
3	100	115	132	152	174
4	200	230	264	303	348
5	400	459	528	606	650
6	800	919	1056	1213	1393

As shown in the lower graph below, for first lactation cows, milk loss rises by about 90 kg per 305 day lactation for every unit increase in Linear Score above 2. For subsequent lactations, milk loss is estimated at 180 kg per unit increase in LS.

